

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•S<sup>SM</sup> 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](http://www.catoilandgas.cat.com).

**STANDARD EQUIPMENT**

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**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**

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**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**

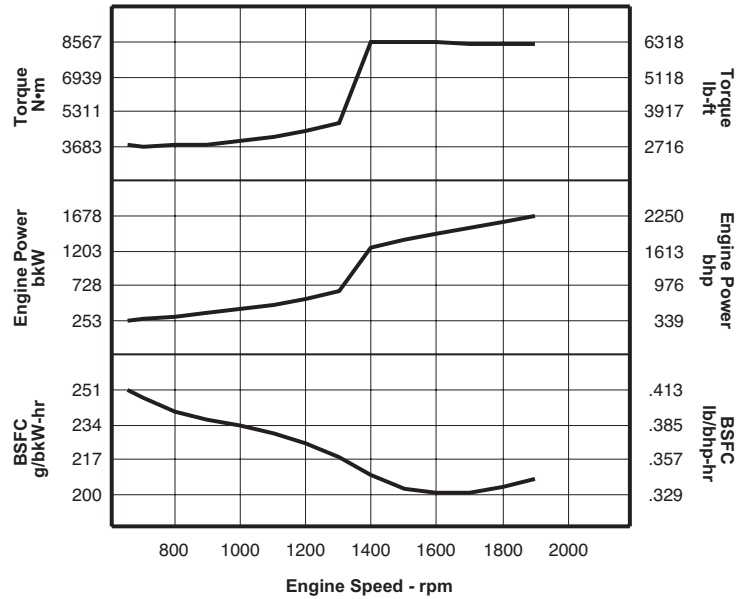
Air starting motors — electric  
Air pressure regulator  
Air silencer  
Hydraulic starter  
Air start controls — manual, electric  
Redundant start  
Starting aids  
Battery sets — 24V  
Battery cable and battery rack

### PERFORMANCE CURVES

Turbocharged-Aftercooled

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

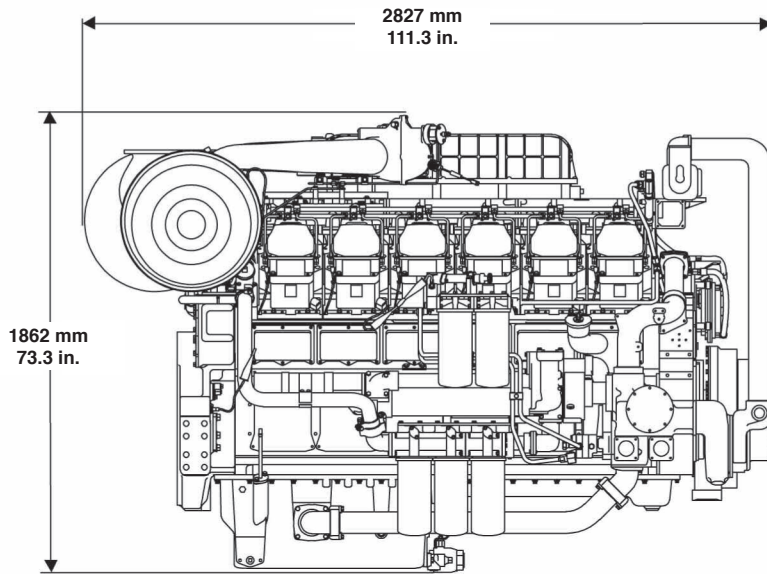
DM4584-03



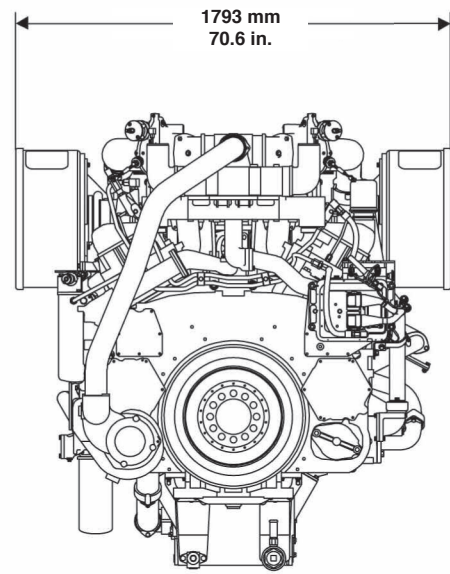
Heat Rejection Data										
Engine Speed rpm	Engine Power		Rej to JW		Rej to Atmos		Rej to Exh		From Aft Clr	
	bkW	bhp	bkW	Btu/min	bkW	Btu/min	bkW	Btu/min	bkW	Btu/min
1900	1678.0	2250.2	664	37762	134	7621	1583	90025	355	20189
1700	1514.0	2030.3	578	32871	127	7222	1368	77798	274	15582
1500	1345.0	1803.7	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		
<b>Length</b>	2827 mm	111.3 in
<b>Width</b>	1793 mm	70.6 in
<b>Height</b>	1862 mm	73.3 in
<b>Engine Weight (dry)</b>	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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