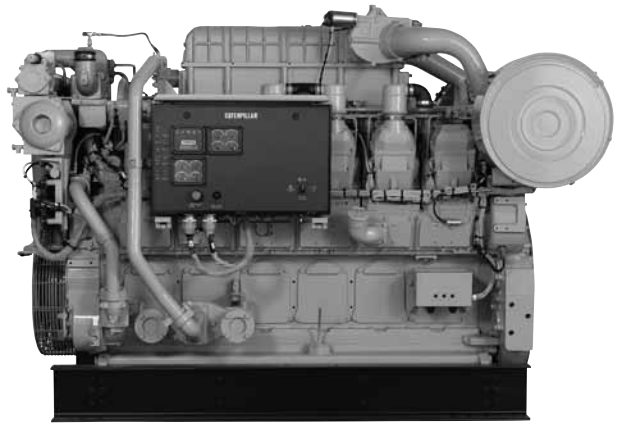
CATERPILLAR®

3508C Land Mechanical Engine

671 bkW (900 bhp) 1200 rpm



CAT® ENGINE SPECIFICATIONS

V-8, 4-Stroke-Cycle-Diesel

Emissions	2006 EPA/CARB Non-Road Tier 2 Emissions Certified
Peak Torque at Speed	3939 lb-ft
Bore	170 mm (6.7 in.)
Stroke	190 mm (7.5 in.)
Displacement	34.5 L (2115 cu. in.)
Aspiration	Turbocharged-Aftercooled
Governor and Protection	Electronic ADEM™ A3
Engine Weight, net dry (approx)	4581.7 kg (10,101 lb.)
Capacity for Liquids	
Lube Oil System (refill)	227.1 L (60 U.S. gal.)
Cooling System (engine only)	103 L (27.2 U.S. gal.)
Cooling System (radiator)	205.9 L (54.4 U.S. gal.)
Oil Change Interval	500 hours
Rotation (from flywheel end)	Counterclockwise
Flywheel and Flywheel Housing	SAE No. 00
Flywheel Teeth	183

FEATURES

Engine Design
- Proven reliability and durability
- Robust diesel strength design prolongs life and lowers owning and operating costs
- Market-leading power density
- Designed to perform in oilfield conditions, including high ambient high altitude applications
- Long overhaul life proven in oilfield applications
- Core engine components designed for reconditioning and reuse at overhaul
- Broad torque curve optimized for petroleum mechanical drive application

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. ADEM A3 has improved user interface, display system, shutdown controls, system diagnostics, and allows electronic integration with transmissions.

Safety
- E-Stop pushbutton on instrument panel
- Air shutoff and explosion relief valves
- Configurable alarm and shutdown features
- Extra alarm switches available for customer-supplied panel
- Instrument panel — LH analog and digital display of key package operation parameters

Improved Serviceability
Large inspection openings allow convenient access to core engine internals

Reduction of Owning and Operating Costs
- Long filter change intervals, aligned with service intervals
- Excellent fuel economy — direct injection electronic unit injectors precisely meter fuel
- Torsional vibration analysis available from factory to maximize component life

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, 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
Aftercooler core — corrosion resistant
Air cleaner — regular duty with soot filter
Service indicators

Control System
ADEM A3 ECU (LH) — includes adjustable speed droop capability
Pneumatic speed control, 10-100 psi

Cooling System
Radiator cooled land based
Outlet controlled thermostat and housing
Jacket water pump — gear-driven
Dual outlet
Aftercooler fresh water cooling pump (SCAC) — gear-driven, centrifugal

Exhaust System
Exhaust flexible fitting, adapter, flange

Flywheels & Flywheel Housing
Flywheel, SAE No. 00 and housing

Fuel System
Fuel filter — LH, priming pump — LH
Fuel transfer pump
Flexible fuel lines
Electronically controlled unit injectors

Instrumentation
Electronic instrument panel — LH
Analog gauges with digital display data for: engine oil pressure gauge, engine water temperature gauge, fuel pressure gauge, system DC voltage gauge, air inlet restriction gauge, exhaust temperature gauge, fuel filter differential pressure gauge, oil filter differential pressure gauge, service meter, tachometer, instantaneous fuel consumption, total fuel consumed, engine start-stop (off, auto start, manual start, cooldown timer)

Lube System
Crankcase breather
Oil cooler
Oil filter — LH
Oil pan drain valve, 2" NPT female connection

Mounting System
Rails — mounting, floor type, 254 mm (10 in)

Power Take-Offs
Accessory drive
Lower LH front (available for PTO usage)
Front housing — two-sided

Protection System
ADEM A3 ECU monitoring system provides engine protection strategies to protect against adverse operating.conditions. Selected parameters are customer programmable.

Starting System
Air starting motor — RH, 620 to 1034 kPa (90 to 150 psi), LH control
Air silencer

General
Paint — Cat yellow
Vibration damper and guard
Lifting eyes

OPTIONAL EQUIPMENT

Air Compressor

Air Inlet System
Air cleaners
Remote air inlet adapters

Charging Systems
Battery chargers and charging alternators

Control System
Load sharing modules
Local speed throttle control
Throttle position sensors

Cooling System
High gloss black folded core radiators and conventional core radiators
Belt guard
Blower fan
Fan drive and fan pulley
Radiator cover
Water level switch gauge
Coolant level sensors
Air separator

Exhaust System
Flexible fitting
Elbows
Flange and exhaust expanders
Mufflers

Flywheel and Flywheel Housing

Fuel System
Fuel priming pumps, flexible fuel lines
Fuel filter — primary and duplex
Fuel cooler, fuel level switch

Instrumentation
Remote panel display, remote cylinder temperature display
Gauges and instrument panels

Lube System
Fumes disposal
Oil filters
Prelube pumps, sump pumps

Mounting System

Power Take-Offs
Flexible couplings, coupling hubs
Front accessory drives
Auxiliary drive shafts and pulleys
Front stub shaft and flywheel stub shaft
Pulleys

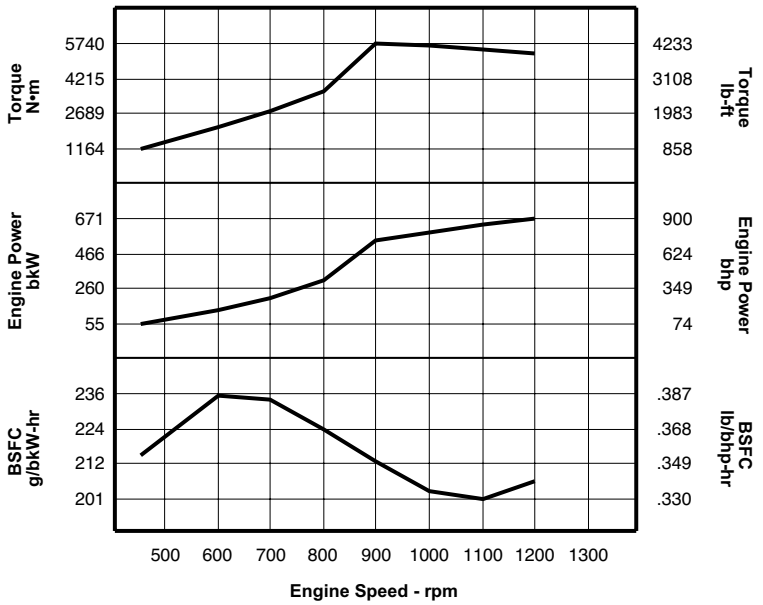
Protection System
Air shutoffs
Explosion relief valves
Oil pressure monitor

Starting System
Starting motors — air, gas, electric
Air pressure regulators, controls and silencer
Air controls — manual, electric
Redundant start systems
Start switch
Starting aids — JW heater and ether injection
Battery sets — 24 volts with rack

General
Tool kits
Special paint
Cat data link wire

PERFORMANCE CURVES

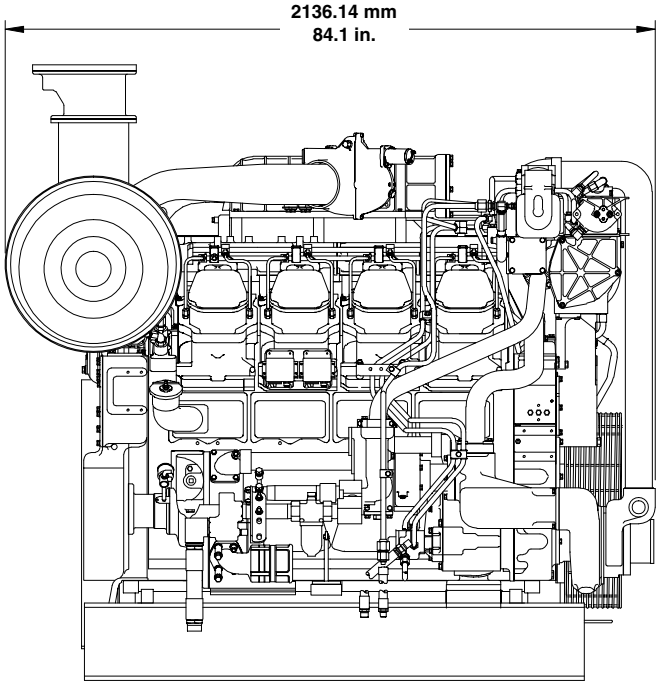
Turbocharged-Aftercooled
P/D MECH Rating — 671 bkW (900 bhp) @ 1200 rpm
DM8276-00



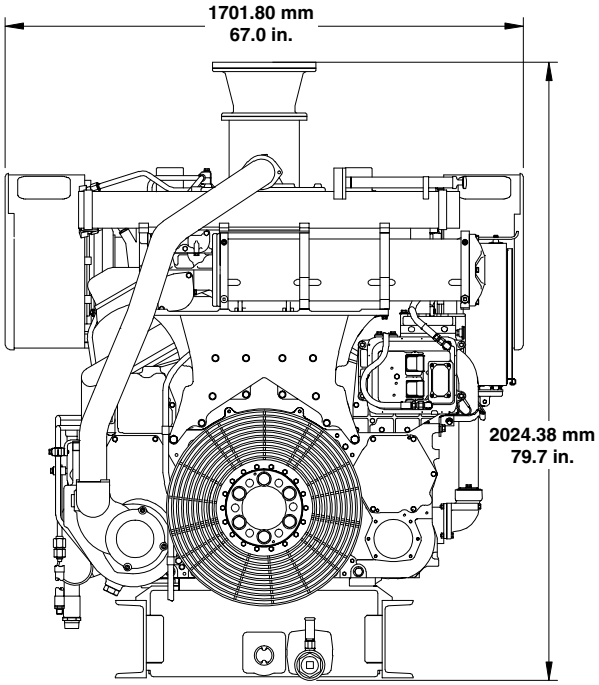
Heat Rejection Data										
Engine Speed rpm	Engine Power		Rej to JW		Rej to Atmos		Rej to Exh		From Aft Clr	
	bkW	bhp	bkW	Btu/min	bkW	Btu/min	bkW	Btu/min	bkW	Btu/min
1200	671.0	899.8	265	15071	100	5687	539	30653	177	10066
1100	630.4	845.4	258	14672	96	5460	487	27696	138	7848
1000	587.2	787.4	241	13706	105	5971	461	26217	107	6085
900	541.0	725.5	209	11886	127	7222	434	24682	81	4606
800	308.1	413.2	176	10009	130	7393	279	15867	12	682
700	206.4	276.8	134	7621	115	6540	167	9497	1	57
600	130.0	174.3	82	4663	78	4436	93	5289	N/A	N/A
450	54.9	73.6	11	626	50	2843	35	1990	N/A	N/A

Approximate Power (bhp) as function of Altitude and Inlet Manifold Temperature for DM8276-00									
Inlet Manifold Temp. (°F)	Altitude (feet)								
	10,499	9843	8202	6562	4921	3281	1640	984	0
50	638	654	697	742	760	760	760	760	760
68	616	632	673	716	760	760	760	760	760
86	595	612	650	693	736	760	760	760	760
104	577	591	630	671	713	758	760	760	760
122	559	573	610	650	691	735	760	760	760
Normal	638	652	687	723	760	760	760	760	760

LAND MECHANICAL ENGINE



Right Side View



Front View

Engine Dimensions		
Length	2136.14 mm	84.1 in.
Width	1701.80 mm	67.0 in.
Height	2024.38 mm	79.7 in.
Engine Weight (dry)	4581.7 kg	10,101 lb.

Note: Do not use for installation design. See general dimension drawings for detail. (Drawing #282-1774)

RATING DEFINITIONS AND CONDITIONS

Ratings are based on SAE J1995 standard conditions of 100 kPa (29.61 in Hg) and 25° C (77° F). These ratings also apply at ISO3046/1, DIN6271, and BS5514 standard conditions of 100 kPa (29.61 in Hg), 27° C (81° F), and 60% relative humidity. Ratings are valid for air cleaner inlet temperatures up to and including 50° C (122° F).

Fuel consumption has a tolerance of +5% and is based on fuel oil of 35° API [16° C (60° F)] gravity having an LHV of 42 780 kJ/kg (18 390 Btu/lb) when used at 29° C (85° F) and weighing 838.9 g/liter (7.001 lbs/U.S. gal). Fuel consumption shown with all oil, fuel, and water pumps, engine driven.

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