

Image shown may not reflect actual engine

CATERPILLAR ENGINE SPECIFICATIONS

I-6, 4-Stroke-Cycle Diesel

Bore.....	145.0 mm (5.71 in)
Stroke.....	183.0 mm (7.2 in)
Displacement.....	18.1 L (1,104.53 in ³)
Aspiration.....	Turbocharged Aftercooled
Compression Ratio.....	16.3:1
Rotation (from flywheel end).....	Counterclockwise
Weight, Net Dry (approximate).....	1769 kg (3900 lb)

FEATURES

Emissions & Regulations

Non-certified rating. FM approved. UL listed - US and Canada. Meets NFPA 20 requirements.

Worldwide Supplier Capability

Caterpillar

- Casts engine blocks, heads, cylinder liners, and flywheel housings
 - Machines critical components
 - Assembles complete engine
 - Factory-designed systems built at Caterpillar ISO 9001:2000 certified facilities
- Ownership of these manufacturing processes enables Caterpillar to produce high quality, dependable product.

Testing

- Prototype testing on every model:
- proves computer design
 - verifies system torsional stability
 - functionality tests every model

Every Caterpillar engine is dynamometer tested under full load to ensure proper engine performance.

Full Range of Attachments

Wide range of bolt-on system expansion attachments, factory designed and tested.

Unmatched Product Support Offered Through Worldwide Caterpillar Dealer Network

More than 1,800 dealer outlets
Caterpillar factory-trained dealer technicians service every aspect of your industrial engine
99.7% of parts orders filled within 24 hours worldwide
Caterpillar parts and labor warranty
Preventive maintenance agreements available for repair before failure options

Scheduled Oil Sampling program matches your oil sample against Caterpillar set standards to determine:

- internal engine component condition
- presence of unwanted fluids
- presence of combustion by-products

Web Site

For all your industrial power requirements, visit www.cat-industrial.com.

STANDARD ENGINE EQUIPMENT**522 bkW/700 bhp @ 1500 rpm****Air Inlet System**

Dual turbocharger: front and rear inlet,
127.0 mm (5.0 in)
Separate Circuit Aftercooled (SCAC)

Charging System

Charging alternator 24 volt, 50 amp

Control System

Dual Electronic Control Modules (ECMs) - primary
and secondary
Electronic governing, PTO speed control
Programmable ratings
Cold mode start strategy
Automatic altitude compensation
Power compensation for fuel temperature
Programmable low and high idle and total engine
limit (TEL)
Electronic diagnostics and fault logging
Engine monitoring and protection system (speeds,
temperature, pressure)
J1939 Broadcast (diagnostic, engine status and
control)

Cooling System

Thermostats and housing, vertical outlet
Jacket water pump, gear driven, centrifugal
Heat exchanger (installed)
Expansion tank

Exhaust System

Exhaust manifold, dry
Dual turbo: exhaust elbow, dry 203 mm (8 in)

Flywheels and Flywheel Housing

Flywheel, SAE #1
Flywheel housing, SAE #1
SAE standard rotation

Fuel System

Electronic unit injector
Fuel filter, secondary, mid-mount (LH 2 micron high
performance)
Fuel transfer pump, LH front
Fuel priming pump, LH mid-mount
Fuel sample valve, mounted on fuel filter base
Primary filter / water separator

Instrumentation

Instrument panel, LH
Engine oil pressure gauge
Voltmeter gauge
Water temperature gauge
Tachometer / engine hour meter

Lube System

Crankcase breather, front valve cover
Oil cooler, RH (dual)
Oil filter, RH
Oil pan, front sump
Oil filler, LH front
Oil dipstick, LH front
Oil pump

Mounting System

Front and rear support

Power Take-Offs

Flywheel stub shaft

Protection System

Stop-Start System, automatic (compatible with
NFPA 20 requirements, able to be energized from
either of two battery sources and capable of manual
starter actuation)

Starting System

24 volt, LH electric starting motor
Jacket water heater (3 kW, 120-240 volt)

General

Vibration damper and guard
Paint, Caterpillar fire pump red
Lifting eyes
Automatic variable timing, electronic
Electronic installation kit, 70 pin connector
(connectors, pins, sockets)
Literature, Owner and Operator's Manual

PERFORMANCE CURVES**522 bkW/700 bhp @ 1500 rpm****EM0136-00**

Performance curve is not shown since fire pump technical data is published at constant speed (rpm).

Below data is shown from 100% load to 10% load.

Engine Speed rpm	Engine Power kW	Torque N·m	BSFC g/kW-hr	Fuel Rate L/hr
1500	522	3323	186.8	120.5
1500	470	2991	188.5	104.6
1500	418	2659	189.5	93.8
1500	392	2492	190.7	88.4
1500	365	2326	193.5	83.0
1500	313	1994	193.7	72.3
1500	261	1662	197.5	61.4
1500	209	1329	202.1	50.3
1500	157	997	209.8	39.2
1500	131	831	216.1	33.6
1500	104	665	226.1	28.1
1500	52	332	277.3	17.3

PERFORMANCE CURVES**522 bkW/700 bhp @ 1500 rpm****EM0136-00**

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Below data is shown from 100% load to 10% load.

Engine Speed rpm	Engine Power bhp	Engine Torque lb·ft	BSFC lb/bhp-hr	Fuel Rate gal/hr
1500	700	2451	.307	31.8
1500	630	2206	.310	27.6
1500	560	1961	.312	24.8
1500	525	1838	.314	23.4
1500	490	1716	.318	21.9
1500	420	1471	.318	19.1
1500	350	1226	.325	16.2
1500	280	980	.332	13.3
1500	210	735	.345	10.4
1500	175	613	.355	8.9
1500	140	490	.372	7.4
1500	70	245	.456	4.6

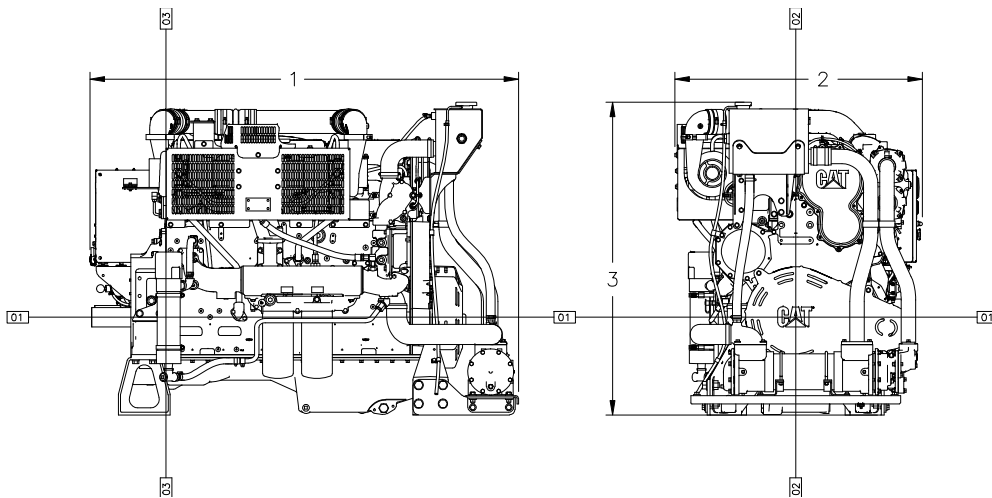
RATINGS AND CONDITIONS

522 bkW/700 bhp @ 1500 rpm

Standby Fire Pump Ratings represent the output which may be utilized to drive stationary fire pumps where the pumping equipment has been sized according to NFPA 20 standards. Engine rating is FM approved and UL listed (US and Canada).

Engine Performance Diesel Engines — 7 liter and higher

All rating conditions are based on SAE J1995, inlet air standard conditions of 99 kPa (29.31 in. Hg) dry barometer and 25°C (77°F) temperature. Performance measured using a standard fuel with fuel gravity of 35° API having a lower heating value of 42,780 kJ/kg (18,390 btu/lb) when used at 29° C (84.2° F) with a density of 838.9 g/L.



Engine Dimensions

(1) Length	1889.0 mm (74.37 in)
(2) Width	1091.0 mm (42.95 in)
(3) Height	1379.7 mm (54.32 in)

Note: Do not use for installation design. See general dimension drawings for detail (Drawing #3222516).

Performance Number: EM0136-00

Feature Code: C18DF04 Arr. Number: 3311790

Materials and specifications are subject to change without notice.

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