

3508

MARINE PROPULSION

Image shown may not reflect actual Engine

STANDARD ENGINE EQUIPMENT

Air Inlet System

regular duty air cleaners with service indicator, turbocharger

Control System

3161 governor, air-fuel ratio control, remote positive locking governor control

Cooling System

Centrifugal non-self-priming auxiliary sea water pump, gear-driven centrifugal jacket water pump, expansion tank, engine oil cooler, thermostats and housing

Exhaust System

Air-shielded watercooled exhaust manifold and turbocharger, round flanged outlet

Fuel System

RH fuel filter with service indicators, fuel transfer pump

Flywheel and Flywheel Housings

SAE No. 0 Flywheel (151 Teeth) SAE No. 0 Flywheel Housing

SPECIFICATIONS

V-8, 4-Stroke-Cycle-Diesel

Displacement	
Rated Engine Speed	
Bore	170.0 mm (6.69 in)
Stroke	190.0 mm (7.48 in)
Aspiration	. Turbocharged-Aftercooled
Governor	Mechanical
Cooling System	Heat Exchanger
Weight, Net Dry (approx.)	5,216 kg (11,499 lb)
Refill Capacity	
Cooling System	102.7 L (27.1 gal)
Lube Oil System	424.0 L (112.0 gal)
Oil Change Interval	
Caterpillar Diesel Engine O	il 10W30 or 15W40
Shallow Sump Oil Pan	
Rotation (from flywheel end)	Counterclockwise
Flywheel and Flywheel Housing	SAE NO. 0
Flywheel Teeth	

Instrumentation

Corrosion resistant coated jacket water aftercooler core, RH instrument panel with gauges for engine oil pressure, engine water temperature, fuel pressure, oil filter differential pressure, service meter, tachometer

Lube System

Top mounted crankcase breather, RH oil filter with service indicators, RH oil level gauge, RH oil filler, gear type oil pump, shallow oil pan

Mounting System

Ledge type engine mounting rails

Protection system

Oil pressure and water temperature alarm contactors, RH manual shutoff

General

Vibration damper and guard, Caterpillar yellow paint, lifting eyes (Engines for heat exchanger cooling do NOT include heat exchanger. Keel cooling conversion is available.)

ISO Certification

Factory-designed systems built at Caterpillar ISO 9001:2000 certified facilities



867 mhp (855 bhp) 638 bkW

PERFORMANCE CURVES

A-RATING - TM0017-12

Aftercooler Temperature 82º C (180º F)



Engine Speed rpm

Engine Speed rpm	Engine Power kW	Engine Torque N·m	BSFC g/kW-hr	Fuel Rate L/hr	Engine Speed rpm	Engine Power kW	Engine Torque N·m	BSFC g/kW-hr	Fuel Rate L/hr
Zone 1 Curve	1	0005	0074	457.0	Max Limit Cu	rve 4	0005	0074	457.0
1600	637.5	3805	207.1	157.3	1600	637.5	3805	207.1	157.3
1400	587	4004	212.9	149.0	1400	586.9	4003	212.8	148.9
1200	476.1	3789	227.4	129.1	1200	569.1	4529	227.7	154.5
1000	307.4	2935	248.7	91.1	1000	378.4	3613	250.6	113.0
800	204.2	2437	278	67.7	800	238.9	2852	279.9	79.7
600	133.6	2126	327.3	52.1	600	149.6	2381	330.6	59.0
Zone 2 Curve	2				Prop Demand Curve P				
1600	637.5	3805	207.1	157.3	1600	637.5	3805	207.1	157.3
1400	586.9	4003	212.9	148.9	1400	427.1	2913	218	111.0
1200	530.2	4219	227.5	143.8	1200	268.9	2140	235.7	75.6
1000	375.2	3583	249.8	111.7	1000	155.6	1486	259.7	48.2
800	212.9	2541	278.2	70.6	800	79.7	951	297.1	28.2
600	137.6	2190	328.2	53.8	600	33.6	535	371.1	14.9
Zone 3 Curve	3								
1600	637.5	3805	207.1	157.3	1600	637.5	3805	207.1	157.3
1400	586.9	4003	212.8	148.9	1400	586.9	4003	212.8	148.9
1200	569.1	4529	227.6	154.4	1200	569.1	4529	227.7	154.5
1000	342.9	3274	249.3	101.9	1000	378.4	3613	250.6	113.0
800	221.6	2645	278.5	73.6	800	238.9	2852	279.9	79.7
600	141.6	2254	329.1	55.5	600	149.6	2381	330.6	59.0

NOTE: Curve P is a cubic prop demand curve with 3.0 exponent for displacement hulls only.



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Engine Speed rpm

Engine Speed rpm	Engine Power hp	Engine Torque lb ft	BSFC lb/hp-hr	Fuel Rate gph	Engine Speed rpm	Engine Power hp	Engine Torque lb ft	BSFC lb/hp-hr	Fuel Rate gph
Zone 1 Curve 1				Max Limit Curve 4					
1600	855	2806	.340	41.6	1600	855	2806	.340	41.6
1400	787	2953	.350	39.4	1400	787	2952	.350	39.3
1200	638	2795	.374	34.1	1200	763	3340	.374	40.8
1000	412	2165	.409	24.1	1000	507	2665	.412	29.9
800	274	1797	.457	17.9	800	320	2104	.460	21.1
600	179	1568	.538	13.8	600	201	1756	.544	15.6
Zone 2 Curve	2				Prop Demand Curve P				
1600	855	2806	.340	41.6	1600	855	2806	.340	41.6
1400	787	2952	.350	39.3	1400	573	2149	.358	29.3
1200	711	3112	.374	38.0	1200	361	1578	.387	20.0
1000	503	2643	.411	29.5	1000	209	1096	.427	12.7
800	286	1874	.457	18.7	800	107	701	.488	7.4
600	185	1615	.540	14.2	600	45	395	.610	3.9
Zone 3 Curve	3								
1600	855	2806	.340	41.6	1600	855	2806	.340	41.6
1400	787	2952	.350	39.3	1400	787	2952	.350	39.3
1200	763	3340	.374	40.8	1200	763	3340	.374	40.8
1000	460	2415	.410	26.9	1000	507	2665	.412	29.9
800	297	1951	.458	19.4	800	320	2104	.460	21.1
600	190	1662	.541	14.7	600	201	1756	.544	15.6

NOTE: Curve P is a cubic prop demand curve with 3.0 exponent for displacement hulls only.



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RATING DEFINITIONS AND CONDITIONS

A Rating (Unrestricted Continuous) -

% Load Factor: 80 to 100 % Time at Rated RPM: up to 80 Typical Time at Full Load: No Limit Typical Hour/Year: 5000 to 8000 Typical Applications: For vessels operating at rated load and rated speed up to 100% of the time without interruption or load cycling (80% to 100% load factor). Typical applications could include but are not limited to vessels such as freighters, tugboats, bottom drag trawlers, or deep river tugboats. Typical operation ranges from 5000 to 8000 hours per year.

Power

at declared engine speed is in accordance with ISO3046-1:2002E. Caterpillar maintains ISO9001:1994/QS-9000 approved engine test facilities to assure accurate calibration of test equipment. Electronically controlled engines are set at the factory at the advertised power corrected to standard ambient conditions. The published fuel consumption rates are in accordance with ISO3046-1:2002E.

Fuel rates

are 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/L (7.001 lb/U.S. gal). Additional ratings may be available for specific customer requirements. Consult your Caterpillar representative for additional information.

Performance data is calculated in accordance with tolerances and conditions stated in this specification sheet and is only intended for purposes of comparison with other manufacturer's engines. Actual engine performance may vary according to the particular application of the engine and operating conditions beyond Caterpillar's control.

Power produced at the flywheel will be within standard tolerances up to 49° C (120° F) combustion air temperature measured at the air cleaner inlet, and fuel temperature up to 52° C (125°F) measured at the fuel filter base. Power rated in accordance with NMMA procedure as crankshaft power. Reduce crankshaft power by 3% for propeller shaft power.



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Engine Dimensions						
(1) Length to Flywheel Housing	2786.7 mm	109.71 in				
(2) Width	1735.6 mm	68.33 in				
(3) Height	1863.7 mm	73.37 in				
Weight, Net Dry (approx)	5216 kg	11,499 lb				

Note: Do not use for installation design. See general dimension drawings for detail (Drawing # 2W0268).



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