



CUMMINS ENGINE COMPANY, INC
Columbus, Indiana 47201

Marine Performance Curve

Basic Engine Model:
6CTA8.3-M (SW)

Curve Number:
M-90216

Marine
Pg. No.
6C
59

Engine Configuration:
D413030MX02

CPL Code:
8089

Date:
28Aug04

Displacement: **8.3 liters [504.5 in.³]**
Bore: **114 mm [4.49 in.]**
Stroke: **135 mm [5.32 in.]**
Fuel System: **Inline Bosch P7100**
Cylinders: **6**

Advertised Power:

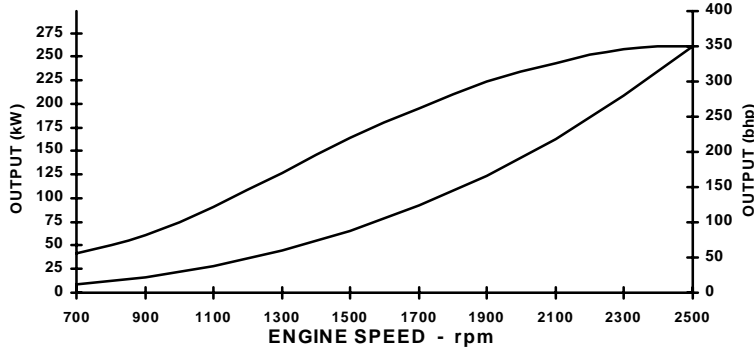
kW [bhp] @ rpm
261 (350) @ 2500

Aspiration:
Rating Type:

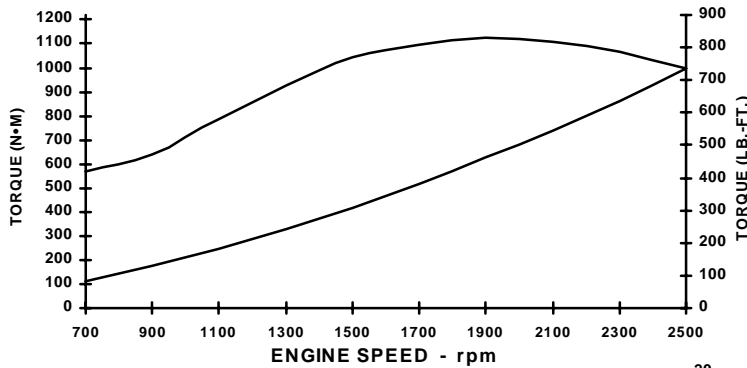
Turbocharged/Sea Water Aftercooled
Intermittent

CERTIFIED: This marine diesel engine conforms with the NOx requirements of the International Maritime Organization (IMO), MARPOL 73/78 Annex VI, Regulation 13 as applicable.

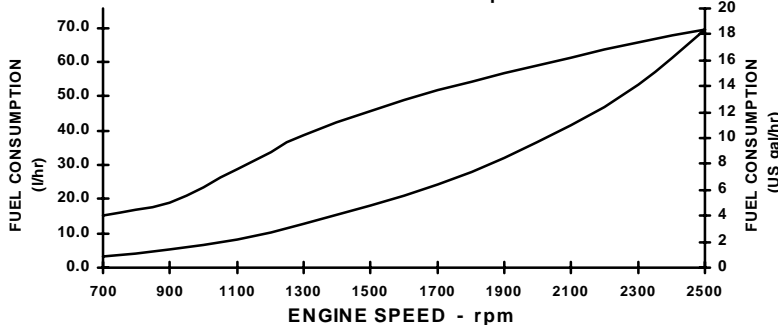
RATED POWER OUTPUT CURVE



FULL LOAD TORQUE CURVE



FUEL CONSUMPTION - PROP CURVE



Rating Conditions: Ratings are based upon ISO 8665 and SAE J1228 reference conditions; air pressure of 100 kPa [29.612 in. Hg], air temperature 25°C [77°F], and 30% relative humidity. Power is rated in accordance with IMCI procedures. Member NMMMA.

Rated Curves (upper) represent rated power at the crankshaft for mature gross engine performance capabilities obtained and corrected in accordance with ISO 3046. Propeller Curve (lower) is based on a typical fixed propeller demand curve using a 2.7 exponent. Propeller Shaft Power is approximately 3% less than rated crankshaft power after typical reverse/reduction gear losses and may vary depending on the type of gear or propulsion system used.

Fuel Consumption is based on fuel of 35° API gravity at 16°C [60°F] having LHV of 42,780 kJ/kg [18390 Btu/lb] and weighing 838.9 g/liter [7.001 lb/U.S. gal].

Intermittent Rating: This power rating is intended for Intermittent use in variable load application where full power is limited to two (2) hours out of every eight (8) hours of operation. Also, reduced power operation must be at or below 200 RPM of the maximum rated RPM. This rating is an ISO 3046 fuel stop power rating and is for applications that operate less than 1500 hours per year.

CHIEF ENGINEER

Marine Engine Performance Data

Curve No. M-90216
DS-4961
CPL: 8089
DATE: 28Aug04

General Engine Data

Engine Model	6CTA8.3-M (SW)
Rating Type	Intermittent
Rated Engine Power kW [hp]	261 [350]
Rated Engine Speed rpm	2500
Rated HP Production Tolerance	±5
Rated Engine Torque..... Nm [ft/lb]	997 [735]
Peak Engine Torque @ 1900 RPM	1125 [830]
Brake Mean Effective Pressure..... kPa [PSI]	1515 [220]
Minimum Idle Speed Setting	600
Normal Idle Speed Variation	±50
High Idle Speed Range - Minimum	2750
High Idle Speed Range - Maximum	2850
Maximum Torque Capacity from Front of Crank ²	N.A.
Compression Ratio.....	15.35:1
Piston Speed..... m/sec [ft/min]	11.3 [2217]
Firing Order	1-5-3-6-2-4
Weight (Dry) Engine Only - Average	801 [1765]
Weight (Dry) Engine With Heat Exchanger System - Average	855 [1885]

Fuel System¹

Approximate Fuel Flow to Pump liter/hr [gph]	193 [51]
Maximum Allowable Fuel Supply to Pump Temperature	60 [140]
Approximate Fuel Flow Return to Tank	123 [33]
Approximate Fuel Return to Tank Temperature..... °C [°F]	N.A.
Maximum Heat Rejection to Drain Fuel⁵	N.A.
Fuel Transfer Pump Pressure Range	124 - 172 [18-25]

Air System¹

Intake Manifold Pressure mm Hg [in. Hg]	1219 [48]
Intake Air Flow liter/sec [CFM]	369 [782]
Heat Rejection to Ambient	35 [2012]

Exhaust System¹

Exhaust Gas Flow liter/sec [CFM]	779 [1650]
Exhaust Gas Temperature (Turbine Out)	410 [770]
Exhaust Gas Temperature (Manifold)..... °C [°F]	N.A.

Emissions (in accordance with ISO8178 Cycle E3)

NOx (Oxides of Nitrogen)	g/kw-hr [g/bhp-hr]	6.96 [5.19]
HC (Hydrocarbons)	g/kw-hr [g/bhp-hr]	0.43 [0.32]
CO (Carbon Monoxide)	g/kw-hr [g/bhp-hr]	0.44 [0.33]
PM (Particulate Matter)	g/kw-hr [g/bhp-hr]	0.17 [0.13]

Cooling System¹

Coolant Flow to Engine Heat Exchanger/Keel Cooler	liter/min [gpm]	284 [75]
Standard Thermostat Operating Range (Min.)	°C [°F]	71 [160]
Standard Thermostat Operating Range (Max.)	°C [°F]	83 [182]
Heat Rejection to Engine Coolant ³	kW [BTU/min]	257 [14,600]
Sea Water Flow (With Heat Exchanger Option) ⁴	liter/min [gpm]	238 [63]
Pressure Cap Rating (With Heat Exchanger Option).....	kPa [PSI]	103 [15]

INSTALLATION DRAWING

Engine Only	3170262
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TBD = To Be Decided

N/A = Not Applicable

N.A. = Not Available

¹All Data at Rated Conditions

²Consult Installation Direction Booklet for Limitations

³Heat rejection values are based on 50% water/ 50% ethylene glycol mix and do NOT include fouling factors. If sourcing your own cooler, a service fouling factor should be applied according to the cooler manufacturer's recommendation.

⁴Consult option notes for flow specifications of optional Cummins seawater pumps, if applicable.

⁵May not be at rated load and speed. Maximum heat rejection may occur at other than rated conditions.

CUMMINS ENGINE COMPANY, INC.
COLUMBUS, INDIANA

All Data is Subject to Change Without Notice - consult the following Cummins intranet site for most recent data:
<http://www.cummins.com>