



**CUMMINS ENGINE COMPANY, INC.**  
Columbus, Indiana 47201

Basic Engine Model:  
**6BTA5.9-M (JW)**

Curve Number:  
**M-90807**

Marine  
Pg. No.

**B  
1**

### Marine Performance Curve

Engine Configuration:  
**D403045MX02**

CPL Code:  
**2956**

Date:  
**28Aug04**

Displacement: **5.9 liters [359 in.<sup>3</sup>]**  
Bore: **102 mm [4.02 in.]**  
Stroke: **120 mm [4.72 in.]**  
Fuel System: **P7100 RQVK**  
Cylinders: **6**

Advertised Power:

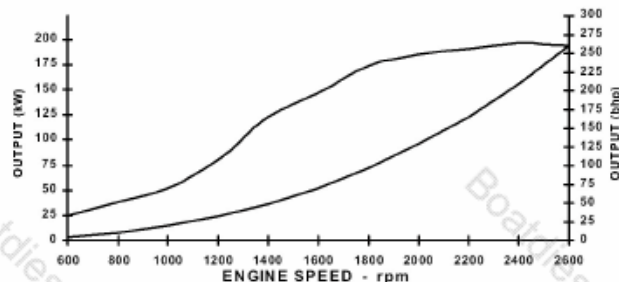
kW [bhp] @ rpm  
**194 [260] @ 2600**

Aspiration:  
Rating Type:

**Turbocharged / Jacket Water Aftercooled  
Intermittent**

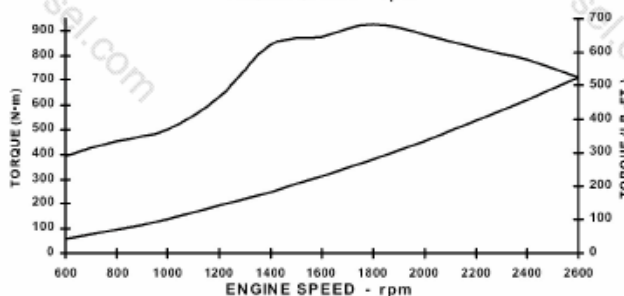
CERTIFIED: This marine diesel engine conforms with the NOx requirements of the International Maritime Organization (IMO), MARPOL 73/78 Annex VI, Regulation 13 as applicable.

### RATED POWER OUTPUT CURVE



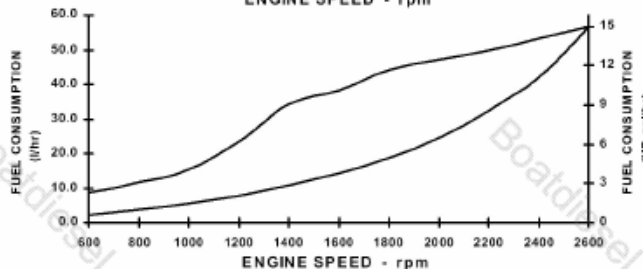
rpm	kW	bhp
2600	194	260
2400	197	264
2200	191	256
2000	186	249
1800	174	234
1600	147	197
1400	124	166
1200	80	107
1000	52	70
800	38	51
600	25	33

### FULL LOAD TORQUE CURVE



rpm	Nm	lb.-ft.
2600	712	525
2400	784	578
2200	830	612
2000	886	653
1800	925	682
1600	877	647
1400	843	622
1200	635	468
1000	500	369
800	456	336
600	396	292

### FUEL CONSUMPTION - PROP CURVE



rpm	l/hr	gal/hr
2600	56.8	15.0
2400	42.4	11.2
2200	32.3	8.5
2000	24.7	6.5
1800	18.5	4.9
1600	14.5	3.8
1400	11.0	2.9
1200	7.8	2.1
1000	5.7	1.5
800	3.9	1.0
600	2.3	0.6

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 NMMA.

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 [18,390 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

B  
2

## Marine Engine Performance Data

## General Engine Data

Engine Model .....	6BTA5.9-M (JW)
Rating Type .....	Intermittent
Rated Engine Power .....	194 [260] kW [HP]
Rated Engine Speed .....	2600 rpm
Rated HP Production Tolerance .....	±5 %
Rated Engine Torque .....	712 [525] Nm [ft/lb]
Peak Engine Torque @ 1800 .....	925 [682] Nm [ft/lb]
Brake Mean Effective Pressure .....	1521 [221] kPa [PSI]
Minimum Idle Speed Setting .....	600 rpm
Normal Idle Speed Variation .....	50 rpm
High Idle Speed Range - Minimum .....	2900 rpm
High Idle Speed Range - Maximum .....	3000 rpm
Maximum Torque Capacity from Front of Crank <sup>2</sup> .....	N.A. Nm [ft/lb]
Compression Ratio .....	15.3:1
Piston Speed .....	10.4 [2047] m/sec [ft/min]
Firing Order .....	1-5-3-6-2-4
Weight (Dry) Engine Only - Average .....	469 [1035] kg [lb]
Weight (Dry) Engine With Heat Exchanger System - Average .....	517 [1140] kg [lb]

Fuel System<sup>1</sup>

Approximate Fuel Flow to Pump .....	238 [63] liter/hr [GPH]
Max. Allowable Fuel Inlet to Pump Temperature .....	60 [140] °C [°F]
Approximate Fuel Flow Return to Tank .....	182 [48] liter/hr [gal/hr]
Approximate Fuel Return to Tank Temperature With Fuel Cooler .....	41 [106] °C [°F]
Maximum Heat Rejection to Drain Fuel <sup>5</sup> .....	2 [118] kW [BTU/min]
Fuel Transfer Pump Pressure .....	152 [22] kPa [PSI]

Air System<sup>1</sup>

Intake Manifold Pressure .....	1575 [62] mm Hg [in. Hg]
Intake Air Flow .....	276 [585] liter/sec [CFM]
Heat Rejection to Ambient .....	20 [1163] kW [BTU/min]

Exhaust System<sup>1</sup>

Exhaust Gas Flow .....	642 [1360] liter/sec [CFM]
Exhaust Gas Temperature (Turbine Out) .....	455 [850] °C [°F]
Exhaust Gas Temperature (Manifold) .....	N.A. °C [°F]

## Emissions (in accordance with ISO8178 Cycle E3)

NO <sub>x</sub> (Oxides of Nitrogen) .....	7.99 [5.96] g/kw-hr [g/bhp-hr]
HC (Hydrocarbons) .....	N.A. g/kw-hr [g/bhp-hr]
CO (Carbon Monoxide) .....	N.A. g/kw-hr [g/bhp-hr]
PM (Particulate Matter) .....	N.A. g/kw-hr [g/bhp-hr]

Cooling System<sup>1</sup>

Coolant Flow to Engine Heat Exchanger/Keel Cooler .....	151 [40] liter/min [GPM]
Standard Thermostat Operating Range (Min.) .....	83 [181] °C [°F]
Standard Thermostat Operating Range (Max.) .....	95 [203] °C [°F]
Heat Rejection to Engine Coolant <sup>3</sup> .....	170 [9,700] kW [BTU/min]
Sea Water Flow (With Heat Exchanger Option) <sup>4</sup> .....	193 [51] liter/min [GPM]
Pressure Cap Rating (With Heat Exchanger Option) .....	103 [15] kPa [PSI]

## INSTALLATION DRAWING

3884673

TBD = To Be Decided

N/A = Not Applicable

N.A. = Not Available

<sup>1</sup>All Data at Rated Conditions<sup>2</sup>Consult Installation Direction Booklet for Limitations<sup>3</sup>Heat 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.<sup>4</sup>Consult option notes for flow specifications of optional Cummins seawater pumps, if applicable.<sup>5</sup>May 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> downloaded from the Boatdiesel.com PDF Library by dmfeelingroovy@gmail.com on 01-Jul-13