

**CUMMINS MERCRUISER DIESEL**

Charleston, SC 29405

**Marine Performance Curve**

Basic Engine Model:

**6BTA5.9-M**

Curve Number:

**M-91260**

Marine

Pg. No.

**6B****271**

Engine Configuration:

**D403041MX02**

CPL Code:

**8457**

Date:

**04Aug03**

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

Advertised Power: **265 [355, 370] @ 3000** kW [bhp, mhp] @ rpm

Aspiration: **Turbocharged/Aftercooled**  
Rating Type: **High Output**

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**

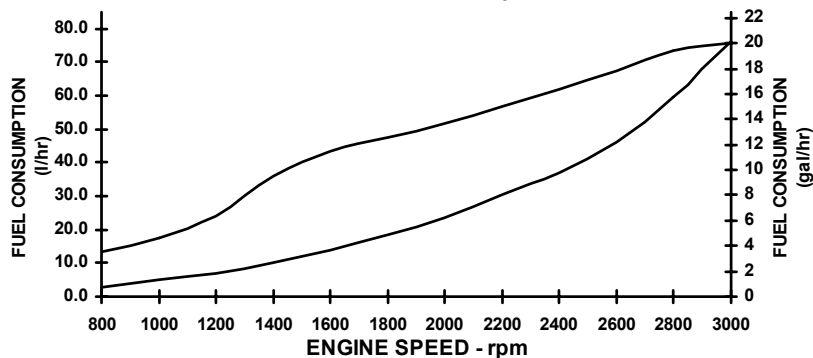
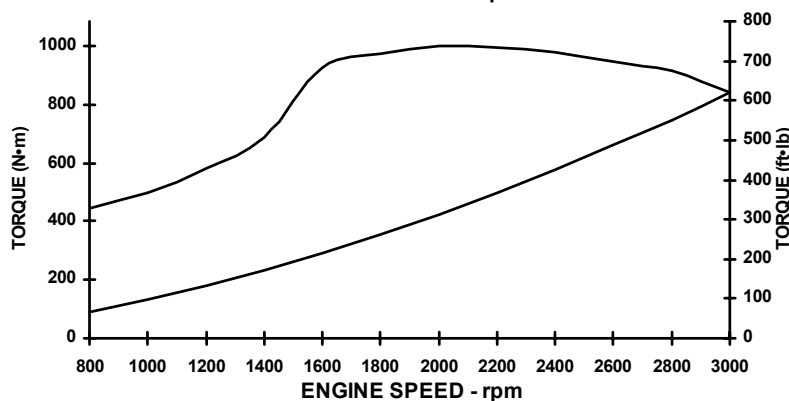
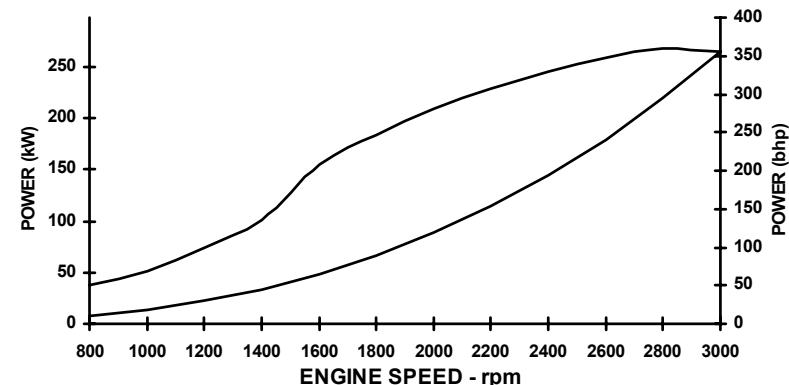
| rpm  | kW  | bhp |
|------|-----|-----|
| 3000 | 265 | 355 |
| 2800 | 268 | 359 |
| 2600 | 259 | 347 |
| 2400 | 246 | 330 |
| 2200 | 229 | 307 |
| 2000 | 209 | 281 |
| 1800 | 184 | 246 |
| 1600 | 155 | 208 |
| 1400 | 101 | 135 |
| 1200 | 73  | 98  |
| 1000 | 52  | 69  |
| 800  | 37  | 50  |

**FULL LOAD TORQUE CURVE**

| rpm  | N•m | ft•lb |
|------|-----|-------|
| 3000 | 842 | 621   |
| 2800 | 914 | 674   |
| 2600 | 949 | 700   |
| 2400 | 979 | 722   |
| 2200 | 993 | 732   |
| 2000 | 999 | 737   |
| 1800 | 975 | 719   |
| 1600 | 925 | 682   |
| 1400 | 686 | 506   |
| 1200 | 582 | 429   |
| 1000 | 495 | 365   |
| 800  | 445 | 328   |

**FUEL CONSUMPTION - PROP CURVE**

| rpm  | l/hr | gal/hr |
|------|------|--------|
| 3000 | 76.1 | 20.1   |
| 2800 | 59.6 | 15.7   |
| 2600 | 46.1 | 12.2   |
| 2400 | 37.0 | 9.8    |
| 2200 | 30.3 | 8.0    |
| 2000 | 23.8 | 6.3    |
| 1800 | 18.4 | 4.9    |
| 1600 | 14.1 | 3.7    |
| 1400 | 10.3 | 2.7    |
| 1200 | 7.0  | 1.9    |
| 1000 | 4.9  | 1.3    |
| 800  | 3.0  | 0.8    |



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 [18390 Btu/lb] and weighing 838.9 g/liter [7.001 lb/U.S. gal].

**High Output Rating:** This Rating is for use in variable load applications where full power is limited to one (1) hour out of every eight (8) hours of operation. Also, reduced power operations must be at or below 200 RPM of the maximum rated RPM. This rating is for pleasure/non-revenue generating applications that operate 300 hours per year or less.

**CHIEF ENGINEER**

**General Engine Data**

|  |             |
|--|-------------|
| Engine Model.....  | 6BTA5.9-M   |
| Rating Type .....  | High Output |
| Rated Engine Power..... kW [bhp]   | 265 [355]   |
| Rated Engine Speed..... rpm  | 3000        |
| Rated HP Production Tolerance..... ±%                                      | 5           |
| Rated Engine Torque..... N•m [ft•lb]                                       | 842 [621]   |
| Peak Engine Torque @ 2200 rpm..... N•m [ft•lb]                             | 992 [732]   |
| Brake Mean Effective Pressure..... kPa [psi]                               | 1796 [261]  |
| Indicated Mean Effective Pressure..... kPa [psi]                           | N.A.        |
| Idle Speed Setting..... rpm  | 600         |
| Normal Idle Speed Variation..... ±rpm                                      | 50          |
| High Idle Speed Range Minimum..... rpm                                     | 3275        |
| Maximum..... rpm   | 3325        |
| Maximum Allowable Engine Speed..... rpm                                    | 3350        |
| Maximum Torque Capacity from Front of Crank <sup>2</sup> ..... N•m [ft•lb] | N.A.        |
| Compression Ratio .....  | 16.5:1      |
| Piston Speed..... m/sec [ft/min]   | 12 [2360]   |
| Firing Order.....  | 1-5-3-6-2-4 |
| Weight (Dry) Engine Only - Average..... kg [lb]                            | 533 [1175]  |
| Weight (Dry) Engine With Heat Exchanger System - Average..... kg [lb]      | 581 [1280]  |
| Weight Tolerance (Dry) Engine Only..... ±%                                 | N.A.        |

**Noise and Vibration**

|                                  |                       |      |
|----------------------------------|-----------------------|------|
| Average Noise Level - Top        | (Idle)..... dBA @ 1m  | N.A. |
|                                  | (Rated)..... dBA @ 1m | N.A. |
| Average Noise Level - Right Side | (Idle)..... dBA @ 1m  | N.A. |
|                                  | (Rated)..... dBA @ 1m | N.A. |
| Average Noise Level - Left Side  | (Idle)..... dBA @ 1m  | N.A. |
|                                  | (Rated)..... dBA @ 1m | N.A. |
| Average Noise Level - Front      | (Idle)..... dBA @ 1m  | N.A. |
|                                  | (Rated)..... dBA @ 1m | N.A. |

**Fuel System<sup>1</sup>**

|  |                 |
|--|-----------------|
| Fuel Consumption @ Rated Speed..... l/hr [gal/hr]                    | 76 [20]         |
| Approximate Fuel Flow to Pump..... l/hr [gal/hr]                     | 277 [73]        |
| Maximum Allowable Fuel Supply to Pump Temperature..... °C [°F]       | 60 [140]        |
| Approximate Fuel Flow Return to Tank..... l/hr [gal/hr]              | 201 [53]        |
| Approximate Fuel Return to Tank Temperature..... °C [°F]             | 46 [115]        |
| Maximum Heat Rejection to Drain Fuel <sup>4</sup> ..... kW [Btu/min] | 1 [36]          |
| Fuel Transfer Pump Pressure Range..... kPa [psi]                     | 165-331 [24-48] |
| Fuel Rail Pressure Gauge..... kPaG [psig]                            | N/A             |
| INSITE..... kPaA [psia]  | N/A             |

**Air System<sup>1</sup>**

|   |           |
|---|-----------|
| Intake Manifold Pressure..... kPa [in Hg]   | 210 [62]  |
| Intake Air Flow..... l/sec [cfm]            | 361 [765] |
| Heat Rejection to Ambient..... kW [Btu/min] | 35 [2012] |

**Exhaust System<sup>1</sup>**

|  |            |
|--|------------|
| Exhaust Gas Flow..... l/sec [cfm]                | 845 [1790] |
| Exhaust Gas Temperature Turbine Out..... °C [°F] | 477 [890]  |
| Manifold..... °C [°F]                            | 666 [1230] |

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>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>

<http://www.cummins.com>

## Marine Engine Performance Data

**THIS PAGE INTENTIONALLY LEFT BLANK.**