



CUMMINS ENGINE COMPANY, INC
Columbus, Indiana 47201

Marine Performance Curve

Basic Engine Model:
4BT3.9-M

Engine Configuration:
D382013MX02

CPL Code:
0741

Curve Number:
M-90196

Date:
12May99

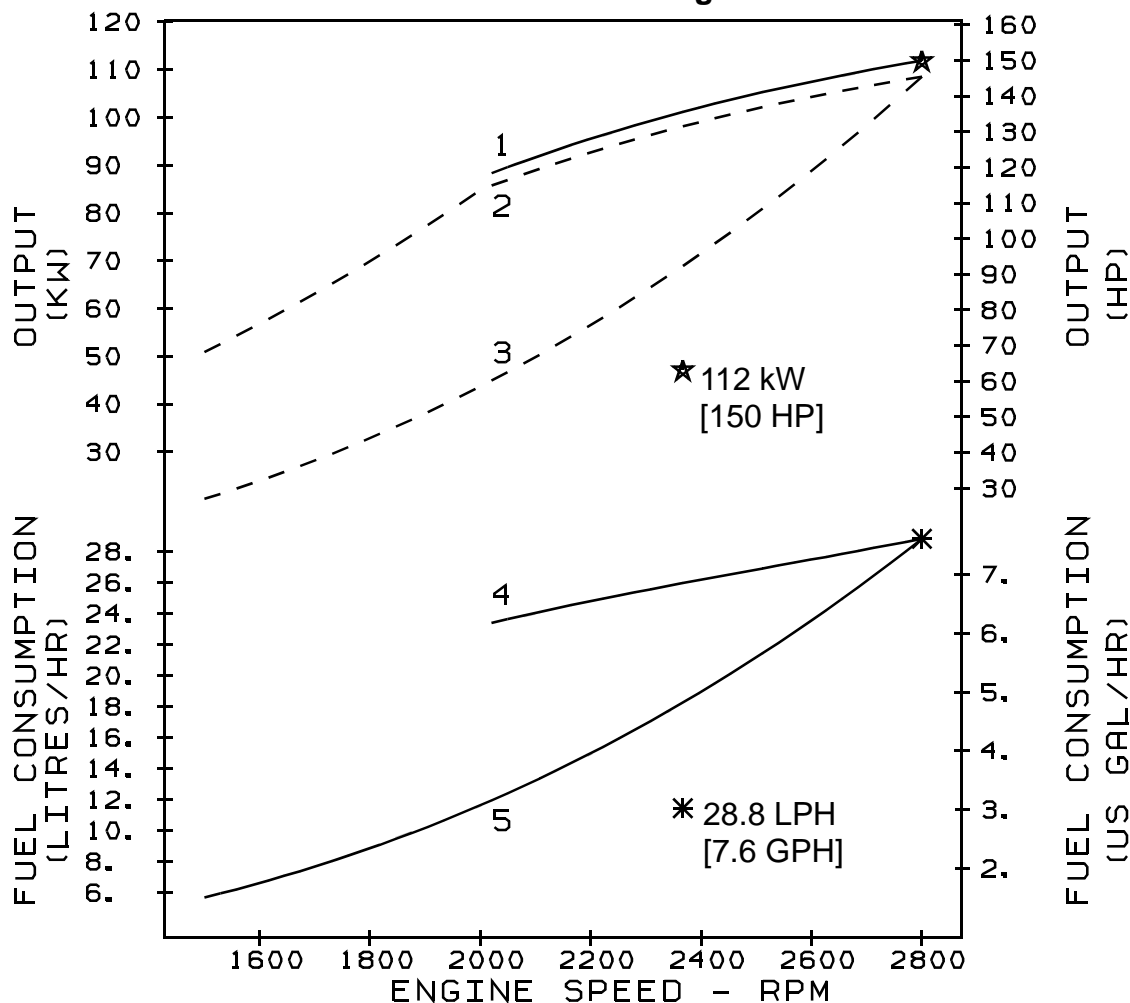
Marine
Pg. No.
B
13

Displacement: **3.9 litre [239 in.³]**
Bore: **102 mm [4.02 in.]**
Stroke: **119 mm [4.72]**
Fuel System: **Rotary, CAV- DPA**
Cylinders: **4**

Aspiration: **Turbocharged**

Advertised Power kW [HP] @ RPM
112 [150] @ 2800

Intermittent Rating



Rating Conditions: Ratings are based upon ISO 8665 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.

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).

Propeller Shaft Power represents the net power available after typical reverse/reduction gear losses and is 97% of rated power.

- 1. Rated Power kW / (HP)
- 2. Shaft power kW / (HP) with Reverse / Reduction Gear
- 3. Typical Propeller Power Curve (2.7 exponent)
- 4. Fuel Consumption for Brake and Shaft power.
- 5. Fuel Consumption for Typical Propeller.

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.

D.R. Bond
CHIEF ENGINEER

Marine Engine Performance Data

Curve No. M-90196

DS-4959

CPL: 0741

DATE: 12May99

General Engine Data*

Engine Model.....	4BT3.9-M
Rating Type	Intermittent
Rated Engine Power..... kW [HP]	112 [150]
Rated Engine Speed	RPM 2800
High Idle Speed Range	RPM 2968-3080
Idle Speed Range.....	RPM 700-900
Engine Torque	Nm [ft/lb] 381 [281]
Brake Mean Effective Pressure	kPa [PSI] 1222 [177]
Compression Ratio.....	16.5:1
Piston Speed	m/sec [ft/min] 11.2 [2205]
Maximum Torque Capacity from Front of Crank**	
Firing Order	1-3-4-2

Fuel System*

Fuel Consumption	litre/hr [GPH] 28.8 [7.6]
Approximate Fuel Flow to Pump	litre/hr [GPH] 37 [10]
Fuel Transfer Pump Pressure Range.....	kPa [PSI] 3.5-69 [5-10]

Weight (Dry)

Engine Only	kg [lb] 390 [860]
With Heat Exchanger Cooling System	kg [lb] +33 [72]

Air System*

Intake Manifold Pressure.....	mm Hg [in Hg] 711 [28]
Intake Air Flow	litre/sec [CFM] 130 [270]
Heat Rejection to Ambient.....	kW [BTU/min] 14 [800]
Minimum Ambient Temperature for Cold Start (No Aids)	°C[°F] 0 [32]

Exhaust System*

Exhaust Gas Flow (after turbine)	litre/sec [CFM] 320 [700]
Exhaust Gas Temperature (after turbine)	°C [°F] 482 [900]

Cooling System*

Heat Rejection to Coolant.....	kW [BTU/min] 95 [5400]
Engine Water Flow	litre/min [GPM] 189 [50]
Raw Water Flow	litre/min [GPM] 87 [23]
Pressure Cap Rating w/Heat Exchanger.....	kPa [PSI] 103 [15]

INSTALLATION DIAGRAMS:

With Borg Warner 71C Marine Gear	3884427-A
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*All Data at Rated Conditions

**Consult Installation Direction Booklet for Limitations

CUMMINS ENGINE COMPANY, INC.
COLUMBUS, INDIANA