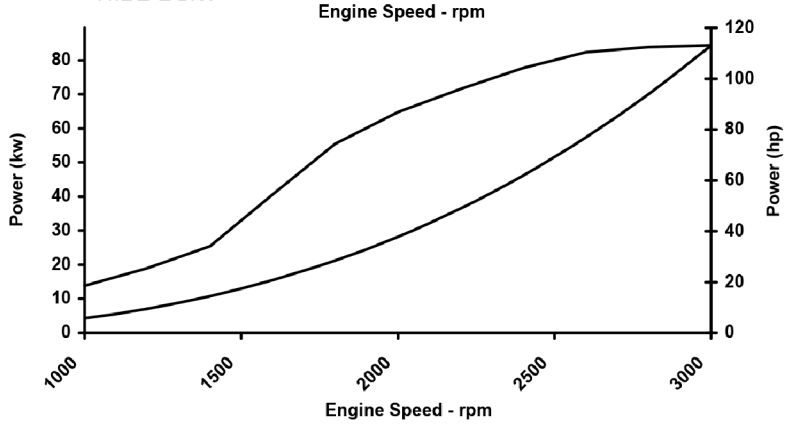
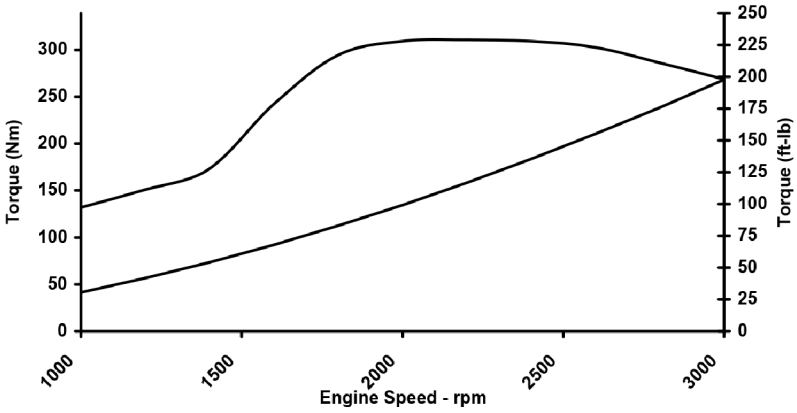
MERCURY Diesel Marine Performance Curves	Basic Engine Model	Curve Number:	
	QSD2.0-115 HO	BC9158	
	Engine Configuration	CPL Code:	Date:
	D0D3003MX03		9-Jul-09

Displacement:	**2.0 liter**	**122 in³**	kW [bhp, mhp] @ rpm	
Bore:	**83 mm**	**3.27 in**	Advertised Power:	**84[113, 115] @ 3000**
Stroke:	**92 mm**	**3.62 in**		
Fuel System:	**Bosch Common Rail (CRS 2.0)**		Aspiration:	**Turbocharged/Sea Water Aftercooled**
Cylinders:	**4**		Rating Type:	**High Output**

CERTIFIED: This marine diesel engine complies with or is certified to the:
IMO - NOx requirements of the International Maritime Organization (IMO), MARPOL 73/78 Annex VI, Regulation 13
EPA Tier 2 - Model year requirements of the EPA marine regulation (40CFR94)

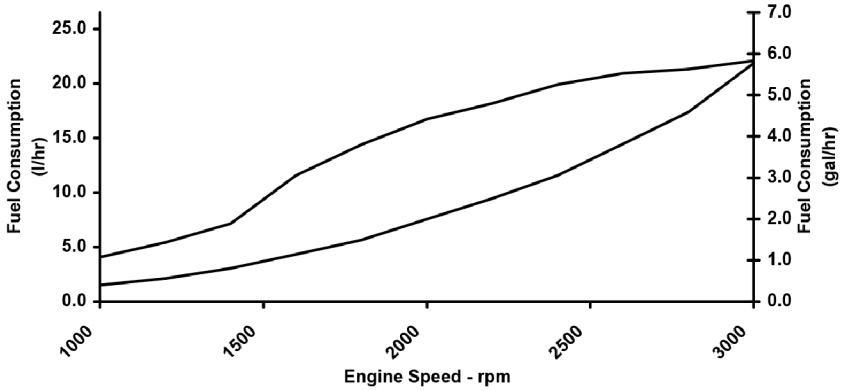


rpm	kw	bhp
3000	84	113
2800	84	112
2600	82	110
2400	78	104
2200	72	96
2000	65	87
1800	55	74
1600	41	54
1400	25	34
1200	19	34
1000	14	19



FULL LOAD TORQUE CURVE

rpm	N-m	ft-lb
3000	268	198
2800	286	211
2600	302	223
2400	309	228
2200	310	229
2000	309	228
1800	294	217
1600	242	179
1400	173	128
1200	151	111
1000	132	97



FUEL CONSUMPTION - PROP CURVE

rpm	l/hr	gal/hr
3000	21.8	5.8
2800	17.4	4.6
2600	14.4	3.8
2400	11.6	3.1
2200	9.5	2.5
2000	7.6	2.0
1800	5.6	1.5
1600	4.3	1.1
1400	3.0	0.8
1200	2.1	0.6
1000	1.5	0.4

Rated Conditions: Ratings are based upon ISO 15550 reference conditions; air pressure of 100 kPa [29.612 in Hg], air temperature 25deg. C [77 deg. F] and 30% relative humidy. Power is in accordance with IMCI procedure. Member NMMA.

Rated Curves (upper) represents rated power at the crankshaft for mature gross engine performance capabilities obtained and corrected in accordance with ISO 15550. 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 deg. API gravity at 16 deg C [60 deg. 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 (HO) Intended 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 must be at or below 300 rpm of the maximum rated rpm.

CHIEF ENGINEER

Propulsion Marine Engine Performance Data

Curve No.	**BC9158**
DS :	**D0D-MX-1**
CPL :	
DATE:	**9-Jul-09**

General Engine Data

Engine Model		QSD2.0-115 HO
Rating Type		High Output
Rated Engine Power	kW [hp]	84 [113]
Rated Engine Speed	rpm	3000
Rated Power Production Tolerance	±%	5
Rated Engine Torque	N·m [lb·ft]	268 [198]
Peak Engine Torque @ 2400 rpm	N·m [lb·ft]	310 [229]
Brake Mean Effective Pressure	kPa [psi]	1693 [246]
Indicated Mean Effective Pressure	kPa [psi]	2755 [400]
Minimum Idle Speed Setting	rpm	700
Normal Idle Speed Variation	rpm	25
High Idle Speed Range Minimum	rpm	3080
Maximum	rpm	3120
Maximum Allowable Engine Speed	rpm	3100
Compression Ratio		17.5:1
Piston Speed	m/sec [ft/min]	9.2 [1811]
Firing Order		1-3-4-2
Weight (Dry) - Engine With Heat Exchanger System - Average	kg [lb]	250 [551]

Fuel System[1]

Avg. Fuel Consumption - ISO 8178 E5 Standard Test Cycle	l/hr [gal/hr]	4.5 [1.2]
Fuel Consumption at Rated Speed	l/hr [gal/hr]	22.1 [5.8]
Maximum Allowable Fuel Supply to Pump Temperature	°C [°F]	60.0 [140]
Approximate Fuel Return to Tank Temperature Without Cooler	°C [°F]	78.4 [173]
With Cooler	°C [°F]	41.7 [107]

Air System[1]

Intake Air Flow	l/sec [cfm]	97 [205]

TBD= To Be Determined

N/A = Not Applicable

N.A. = Not Available

1 Unless otherwise specified, all data is at rated power conditions and can vary ± 5%.
2 No rear loads can be applied when the FPTO is fully loaded. Max PTO torque is contingent on torsional analysis results for the specific drive system. Consult Installation Direction Booklet for Limitations.
3 Heat rejection to coolant 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.
4 Consult option notes for flow specifications of optional Cummins seawater pumps, if applicable.
5 May not be at rated load and speed. Maximum heat rejection may occur at other than rated conditions.

MERCURY Diesel

Propulsion Marine Engine Performance Data

Curve No.	**BC9158**
DS :	**D0D-MX-1**
CPL :	
DATE:	**9-Jul-09**

Exhaust System[1]		
Exhaust Gas Flow ……l/sec [cfm]	204	[433]
Exhaust Gas Temperature (Turbine Out) ……°C [°F]	443	[829]
Exhaust Gas Temperature (Manifold) ……°C [°F]	564	[1047]
Emissions (ISO 8178 Cycle E5 - for Traditional Propulsion Applications)		
NOx (Oxides of Nitrogen) ……g/kw·hr [g/hp·hr]	6.35	[4.74]
HC (Hydrocarbons) ……g/kw·hr [g/hp·hr]	0.41	[0.30]
CO (Carbon Monoxide) ……g/kw·hr [g/hp·hr]	0.66	[0.49]
PM (Particulate Matter) ……g/kw·hr [g/hp·hr]	0.11	[0.08]
Cooling System[1]		
Sea Water Pump Specifications ……MAB 0.08.17-07/16/2001		
Pressure Cap Rating (With Heat Exchanger Option) ……kPa [psi]	103	[15]
Engines without Low Temperature Aftercooling (LTA)		
Sea Water Aftercooled Engine (SWAC)		
Standard Thermostat Operating Range (Start to Open) ……°C [°F]	70	[158]
Standard Thermostat Operating Range (Full Open) ……°C [°F]	90	[194]

TBD= To Be Determined **N/A = Not Applicable** **N.A. = Not Available**

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MERCURY Diesel