

Cummins Marine and Cummins MerCruiser Diesel

Marine Engine General Data Sheet

Engine Model: QSD2.0

Data Sheet: D0D-MX-1

PRELIMINARY

Date: 20 July 2009

GENERAL ENGINE DATA

Metric [U.S. Customary]

Type	4 Cycle - Inline	
Cylinders.....		4
Bore	mm [in]	83 [3.27]
Stroke	mm [in]	92 [3.62]
Displacement	liter [in ³]	2.0 [121.50]

ENGINE MOUNTING & ACCESSORY DRIVES

Max. Allowable Bending Moment at Rear Face of Block	N·m [ft·lb]	407 [300]
Max. Allowable Axial Thrust Load on Crankshaft	N [lb]	0 [0]
Crankshaft Radial Load Limit.....MAB 0.01.09-12/02/2005		
Max. Allowable Radial Load on Front of Crankshaft		
At All Angles	N [lb]	0 [0]
Installation/Operating Angles - Engine Installation Angles		
In-Line drive Installation: Static Installed Engine Pitch Angle		
Engine Front Up From Horizontal	Min.	0°
Engine Front Up From Horizontal	Max.	12°
Vee Drive Installation: Static Installed Engine Pitch Angle		
Engine Front Up From Horizontal	Min.	2°
Engine Front Up From Horizontal	Max.	12°
Maximum Operating Angles (see MAB No. 0.16.00-03/27/2007 for definitions and options to gain greater capability)		
Continuous Pitch Angle		
Engine Front Up From Horizontal	Deg.	20°
Engine Front Down From Horizontal	Deg.	15°
Continuous Roll Angle		
"Right" from vertical viewed from flywheel end of engine.....	Deg.	23°
"Left" from vertical viewed from flywheel end of engine.....	Deg.	23°
Intermittent Pitch Angle (intermittent operation less than 1 minute)		
Engine Front Up From Horizontal	Deg.	30°
Engine Front Down From Horizontal	Deg.	30°
Intermittent Roll Angle (intermittent operation less than 1 minute)		
"Right" from vertical viewed from flywheel end of engine.....	Deg.	45°
"Left" from vertical viewed from flywheel end of engine.....	Deg.	45°

FUEL SYSTEM

Maximum Allowable Restriction to Fuel Pump		
Clean Filter	kPa [in Hg]	8 [2.5]
Dirty Filter	kPa [in Hg]	14 [4.0]
Maximum Allowable Return Line Pressure	kPa [in Hg]	34 [10.0]
Maximum Static Pressure at Fuel Pump	kPa [in Hg]	34 [10.0]
Maximum Height of Fuel In Tank Above Fuel Pump	m [ft]	4.12 [13.5]

EXHAUST SYSTEM

Maximum Allowable Back Pressure	kPa [in Hg]	17 [5]
Maximum Bending Moment at Turbine Outlet Mounting Flange	N·m [ft·lb]	9 [7]
Maximum Incremental Direct Load at Turbine Outlet Mounting Flange	kg [lb]	5 [10]

AIR INDUCTION SYSTEM

Max. Allowable Intake Restriction - Turbocharged		
Clean Filter	kPa [in H ₂ O]	2 [8]
Dirty Filter	kPa [in H ₂ O]	4 [16]
Maximum Air Cleaner Inlet Temperature Rise Over Ambient	°C [°F]	17 [30]

TBD= To Be Determined

N/A = Not Applicable

N.A. = Not Available

CUMMINS ENGINE COMPANY, INC
COLUMBUS, INDIANA

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LUBRICATION SYSTEM

Oil Consumption Rate (Volume Percent of Fuel Consumption Rate)	%	0.08
Oil Pressure at Normal Operating Temperature		
Idle Speed - Minimum in Main Oil Gallery	kPa [psi]	80 [12]
Rated Speed - Measured in Main Oil Gallery (Low)	kPa [psi]	276 [40]
Rated Speed - Measured in Main Oil Gallery (High)	kPa [psi]	689 [100]
Max. Allowable Oil Temperature (Sump)	°C [°F]	120 [248]
Oil Pan Capacity		
Low	liter [gal]	3.3 [0.9]
High	liter [gal]	4.3 [1.1]
Total System Capacity (Max. Sump + Filter(s))	liter [gal]	4.8 [1.3]

COOLING SYSTEM

Coolant Capacity		
Engine Including Heat Exchanger and Integral Expansion Tank.....	liter [gal]	7.7 [2.0]
Min. Coolant Makeup Capacity	liter [gal]	0.5 [0.1]
Max. Pressure Drop Across Any External Cooling System Circuit	kPa [psi]	34.5 [5.0]
Max. Allowable Block Coolant System Pressure	kPa [psi]	344.7 [50.0]
Max. Coolant Temperature at Engine Outlet	°C [°F]	96 [205.0]
Min. Block Coolant Temperature (Warm Engine)	°C [°F]	71 [160.0]
Min. Allowable Coolant Expansion Space	% of System Capacity	5%
Maximum Sea Water Pressure	kPa [psi]	137.9 [20.0]
Maximum Sea Water Pressure Drop Across Heat Exchanger	kPa [psi]	20.7 [3.0]
Maximum Sea Water Inlet Restriction	kPa [in Hg]	16.9 [5.0]

ELECTRICAL AND STARTER SYSTEM

Electrical		<u>12V</u>	<u>24V</u>
Min. Recommended Battery Capacity			
Cold Cranking Amperes Rating (CCA)		650	N/A
Marine Cranking Amperes Rating (MCA)		813	N/A
Reserve Capacity (Discharging 25 Amps @ 80°F)	minutes	120	N/A
Min. Allowable System Voltage (@ Battery While Running)	Volts	12.0	N/A
Min. Allowable System Voltage (@ Battery While Cranking)	Volts	10	N/A
Max. Allowable System Voltage (@ Battery While Running)	Volts	15.5	N/A
Max. Allowable Voltage Drop of Starting Circuit (While Cranking)	Volts	1.0	N/A
Min. Engine Cranking Torque	ft-lb	N.A.	N/A
Min. Break-away Engine Cranking Torque	ft-lb	N.A.	N/A
Min. Engine Cranking Speed	rpm	150	N/A
Max. Engine (Running) Current Draw	Amps	N.A.	N/A
Min. Ambient Temperature for Cold Start (No Aids)	°C [°F]	-10 [14]	-10 [14]

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