

Cummins Inc.

Marine Engine General Data Sheet

Engine Model: QSM11-M / D(M)

Data Sheet:

DS3021

Date:

15-Dec-14

GENERAL ENGINE DATA

Metric [U.S. Customary]

Type		4 Cycle, Inline, 6 Cylinder
Bore	mm [in]	125 [4.92]
Stroke	mm [in]	147 [5.79]
Displacement	liter [in ³]	10.8 [661]

ENGINE MOUNTING & ACCESSORY DRIVES

Max. Allowable Bending Moment at Rear Face of Block	N·m [ft·lb]	1356 [1000]
Max. Allowable Axial Thrust Load on Crankshaft	N [lb]	4670 [1050]
Min. Axial Clearance at Front Face of Crankshaft for Thermal Expansion	mm [in]	1.59 [0.063]
Max. Allowable Radial Load on Crankshaft		
At 0°	N [lb]	854 [192]
At 90°	N [lb]	2180 [490]
At 180°	N [lb]	4919 [1106]
At 270°	N [lb]	854 [192]

Installation/Operating Angles - OP 2120 (Additional Options Available)

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

Engine Front Up From Horizontal	Min.	3°
Engine Front Up From Horizontal	Max.	12°

All Drives: Static Installed Engine Roll Angle

From vertical "Right/Left" Viewed from Flywheel End of Engine	Max. Right	45°
From vertical "Right/Left" Viewed from Flywheel End of Engine	Max. Left	37°

Engine Angles - Vessel Operating

Steady-State Operation - Engine Pitch Angle

Engine Front Up From Horizontal	Min.	-15°
Engine Front Up From Horizontal	Max.	31°

All Drives: Intermittent Operation - Eng. Roll Angle

From Vertical "Right/Left" viewed from Flywheel End of Engine	Max. Right	45°
From Vertical "Right/Left" viewed from Flywheel End of Engine	Max. Left	37°

All Drives: Intermittent Operation - Engine Pitch Angle

Engine Front Up From Horizontal	Min.	N.A.
Engine Front Up From Horizontal	Max.	N.A.

FUEL SYSTEM

Maximum Allowable Restriction to Fuel Pump

Clean Filter	kPa [in Hg]	20 [6.0]
Dirty Filter	kPa [in Hg]	34 [10.0]
Maximum Allowable Return Line Pressure	kPa [in Hg]	22 [6.5]
Maximum Static Pressure at Fuel Pump	kPa [in Hg]	20 [6]
Maximum Height of Fuel In Tank Above Fuel Pump	m [ft]	2.47 [8.1]

EXHAUST SYSTEM

Maximum Allowable Back Pressure	kPa [in Hg]	10 [3]
Maximum Bending Moment at Turbine Outlet Mounting Flange	N·m [ft·lb]	19 [14]
Maximum Incremental Direct Load at Turbine Outlet Mounting Flange	kg [lb]	9 [20]

AIR INDUCTION SYSTEM

Max. Allowable Intake Restriction - Turbocharged

Clean Filter	mm H ₂ O [in H ₂ O]	254 [10]
Dirty Filter	mm H ₂ O [in H ₂ O]	635 [25]
Maximum Air Cleaner Inlet Temperature Rise Over Ambient	°C [°F]	17 [30]

TBD= To Be Determined

N/A = Not Applicable

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COLUMBUS, INDIANA

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<http://marine.cummins.com>

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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 Filter Head Upstream of Filter	kPa [psi]	69 [10]
Idle Speed - Minimum in Main Oil Gallery	kPa [psi]	69 [10]
Rated Speed - Measured in Filter Head Upstream of Filter (Low)	kPa [psi]	207 [30]
Rated Speed - Measured in Filter Head Upstream of Filter (High)	kPa [psi]	448 [65]
Rated Speed - Measured in Main Oil Gallery (Low)	kPa [psi]	207 [30]
Rated Speed - Measured in Main Oil Gallery (High)	kPa [psi]	448 [65]
Max. Allowable Oil Temperature (Sump)	°C [°F]	121 [250]
Oil Pan Capacity (Shallow)		
Low	liter [gal]	26.5 [7.0]
High	liter [gal]	30.3 [8.0]
Total System Capacity (Max. Sump + Filter)	liter [gal]	32.9 [8.7]
Oil Pan Capacity (Deep)		
Low	liter [gal]	30.3 [8.0]
High	liter [gal]	34.1 [9.0]
Total System Capacity (Max. Sump + Filter)	liter [gal]	36.7 [9.7]

COOLING SYSTEM

Coolant Capacity		
Engine Only	liter [gal]	28 [7.4]
Engine Including Heat Exchanger and Integral Expansion Tank	liter [gal]	36 [9.4]
Min. Coolant Makeup Capacity	liter [gal]	15 [4]
Max. Pressure Drop Across Any External Cooling System Circuit	kPa [psi]	34 [5]
Max. Allowable Block Coolant System Pressure	kPa [psi]	276 [40]
Max. Coolant Head From Crankshaft Centerline With 15 psi Pressure Cap	m [ft]	16 [51]
Max. Coolant Temperature at Engine Outlet	°C [°F]	96 [205]
Min. Block Coolant Temperature (Warm Engine)	°C [°F]	71 [160]
Min. Allowable Coolant Expansion Space	% of System Capacity	5
Sea Water Pump Specifications.....	Refer to MAB 0.08.17 - 07/16/2001	

ELECTRICAL AND STARTER SYSTEM

Electrical		12V	24V
Min. Recommended Battery Capacity			
Cold Cranking Amperes Rating (CCA)		1800	900
Marine Cranking Amperes Rating (MCA)		2250	1125
Reserve Capacity (Discharging 25 Amps @ 80 °F)	minutes	320	320
Min. Allowable System Voltage (@ Battery While Running)	Volts	12	24
Min. Allowable System Voltage (@ Battery While Cranking)	Volts	9	15
Max. Allowable System Voltage (@ Battery While Running)	Volts	15.5	31.0
Max. Allowable Voltage Drop of Starting Circuit (While Cranking)	Volts	0.7	1.0
Min. Engine Cranking Torque	ft·lb	1150	600
Min. Break-away Engine Cranking Torque	ft·lb	N.A.	N.A.
Min. Engine Cranking Speed	rpm	150	150
Max. Engine (Running) Current Draw	Amps	25	15
Min. Ambient Temperature for Cold Start (No Aids)	°C [°F]	-7 [20]	-7 [20]
Air Starter			
Regulated Pressure for Air Starter System	kPa [psi]	N.A.	N.A.
Min. Air-Flow for Air Starter System	l/sec [cfm]	N.A.	N.A.
Min. Recommended Tank Volume	liter [gal]	N.A.	N.A.

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