

Cummins Engine Company, Inc.

Marine Engine General Data Sheet

Marine
Pg. No.

4B

3

Engine Model: 4B/4BT/4BTA-M

Data Sheet: DS-4959

Date: 12Aug04

General Engine Data

Metric [U.S. Customary]

Type	4 cycle, Inline, 4 cylinder
Bore & Stroke	102 [4.02] x 119 [4.72]
Displacement	litre [in. ³] 3.9 [239]
C.G. Distance from Front Flywheel Housing Mounting Face (Engine Only)	mm [in.] 269 [10.6]
C.G. Distance above Crankshaft Centerline (Engine Only)	mm [in.] 168 [6.6]

Engine Mounting

Maximum Allowable Bending Moment at Rear Face of Block	N•m [lb-ft] 1356 [1000]
Minimum/Maximum Static Installation Angle for In-line Drives (Front Up)	Degrees 0 / 12
Minimum/Maximum Static Installation Angle for V drives (Front Up)	Degrees 3 / 12

Note: Front up refers to front of engines. In V-Drives it faces the back of the boat.

Fuel System

Maximum Allowable Restriction to Fuel Pump - With Clean Filter	mm Hg [in. Hg] 63.5 [2.5]
Maximum Allowable Restriction to Fuel Pump - With Dirty Filter	mm Hg [in. Hg] 100 [4]
Maximum Allowable Return Line Pressure 4B/BT	mm Hg [in. Hg] 259 [10.2]
Maximum Allowable Return Line Pressure 4BTA	mm Hg [in. Hg] 517 [20.4]

Exhaust System

Maximum Allowable Back Pressure	mm Hg [in. Hg] 75 [3]
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Air Induction System

Maximum Allowable Intake Restriction	
4 B Clean/Dirty Element	mm H ₂ O [in. H ₂ O] 254 / 508 [10 / 20]
BT, BTA Clean/Dirty Element	mm H ₂ O [in. H ₂ O] 380 / 635 [15 / 25]
Maximum Allowable Engine Intake ΔT	
Engine Intake Air-Ambient Air At Rated Condition	°C [°F] 17 [30]

Lubrication System

Oil Pressure	
At Idle Speed-Minimum	kPa [PSI] 69 [10]
Normal Operating Range	kPa [PSI] 207 - 448 [30 - 65]
Maximum Allowable Oil Temperature (Sump).....	°C [°F] 120 [250]
Oil Pan Capacity High/Low	litre [U.S. qts] 9.5 / 8.5 [10 / 9]
Total System Capacity	litre [U.S. qts] 10.4 [11]
Maximum Operational Angularity of Oil Pan (See Engine Mounting)	
Front Down	Degrees 20
Front Up	Degrees 45
Side-to-Side	Degrees 45

Cooling System

Coolant Capacity - Engine Only	litre [U.S. qts] 8.3 [8.8]
Coolant Capacity - Engine with Heat Exchanger - 4B/BT	litre [U.S. qts] 13.2 [14.0]
Coolant Capacity - Engine with Heat Exchanger- 4BTA	litre [U.S. qts] 17.4 [18.4]
Maximum External Pressure Loss in Cooling System	kPa [PSI] 35 [5]
Maximum Static Pressure of Coolant (exclusive of Pressure Cap).....	kPa [PSI] 103 [15]
Standard Thermostat (modulating) Range	°C [°F] 83 - 95 [181 - 203]
Maximum Coolant Temperature	°C [°F] 96 [205]
Minimum Allowable Coolant Expansion Space	% of System Capacity 5
Minimum Coolant Makeup Capacity	litre [U.S. qts] 1.7 [1.8]
Maximum Sea Water Pressure	kPa [PSI] 103 [15]

Sea Water Pump Specifications..... Refer to MAB 0.08.17-07/16/2001

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Electrical System

	<u>12V</u>	<u>24V</u>
Minimum Recommended Battery Capacity		
4B/4BT Cold Soak at -18°C (0°F) Cold Cranking Amperes (CCA)	800	400
Cold Soak at 0°C (32°F) Marine Cranking Amperes (MCA)	1000	500
4BTA Cold Soak at -18°C (0°F) Cold Cranking Amperes (CCA)	1100	500
Cold Soak at 0°C (32°F) Marine Cranking Amperes (MCA)	1375	625
Reserve Capacity..... minutes	160	160
Voltage Drop..... Volt s	02	0.2
Maximum Allowable Resistance of Starting Circuit Ohms	0.0012	0.004
Wiring Diagram Number 4B/BT	3920181	
Wiring Diagram Number 4BTA	TBD	

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