Service Bulletin

Bulletin No. 2009-63R1
CMD 2009-03R1

Circulate to: ☐ Sales Manager ☐ Accounting ☑ Service Manager ☑ Technician ☑ Parts Manager

QSD Hard Start Complaint

Models Covered	Serial Number Or Year
QSD 2.0 115 HP ECM	All models
QSD 2.0 130 HP ECM	88205122 and below
QSD 2.0 150 HP ECM	88220586 and below

Situation

Some engines have been difficult to start, predominantly in colder climates, requiring multiple cranking cycles before starting.

Correction

The fueling tables in the ECM have been calibrated to address this situation. The ECM will be replaced with a new ECM ordered from CMD. You must read and record the existing engine hours and existing injector metering adjustment (IMA) data before removing the original ECM. Mercury must confirm that the engine serial number (ESN) is within the specified range, and the date the engine was put into service is within two years of the current date. Then Mercury will verify the warrantee and replace the ECM using the following procedure.

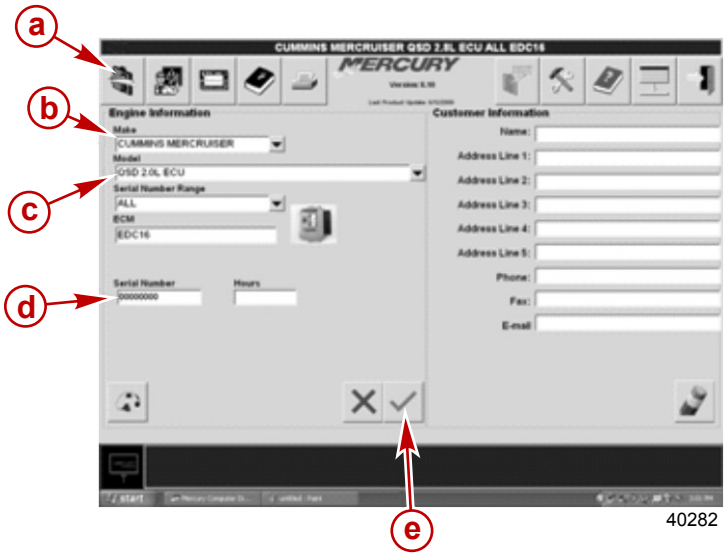
1. Verify that the engine is within the engine serial number (ESN) range and still covered under warranty (2 years from date in service).
2. Record the current engine hours.
3. Connect the CDS tool to the engine and record the injector metering adjustment (IMA) codes before removing the ECM.

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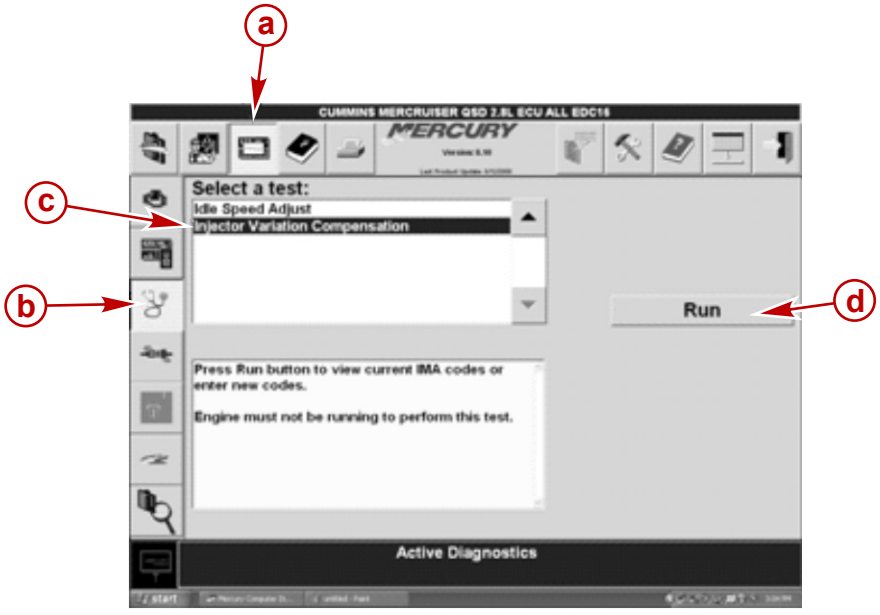
4. Choose **Engine Select** to display the screen.



40282

a - Engine Select button
b - Make drop-down box
c - Engine Model drop-down box
d - Serial Number box
e - Check Mark button

5. Select Cummins MerCruiser from the Make drop-down box.
6. Select the current engine from the Model drop-down box.
7. Enter the engine serial number.
8. Press the mark button.
9. Select the Tool Box icon.



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a - Tool Box icon
b - Active Test button
c - Test selection
d - Run button

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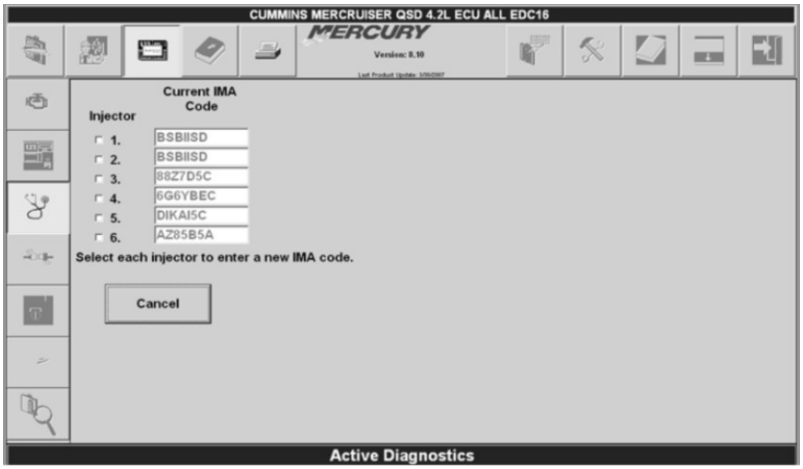
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10. Select the "DataStream" icon and verify that the Engine Run Time is displayed in the data list.
11. Print the run time data to an electronic file using the CDS "Print" Icon (located in the main menu).
12. Select "Print List" and when prompted and name the file with the following format "ESN_MMDDYYYY_RunTime" (example 88205122_03132009_RunTime).

NOTE: *The CDS automatically stores the file in the "Saved Reports" folder. Refer to the CDS Help File if you are not familiar with the CDS Print function.*

13. Print a paper copy of this saved report and attach to the warranty claim.
14. Using the CDS, select the Active Test button.
15. Select **Injector Variation Compensation** from the test list.
16. Press the Run button.
17. Print the IMA values to an electronic file using the CDS "Print" Icon. When prompted, name the file in the following format "ESN_MMDDYYYY_IMA Values" (example 88205122_03132009_IMA Values).

NOTE: *The CDS automatically stores the file in the "Saved Reports" folder. 8. Print a paper copy of this Saved Report to attach to the warranty claim.*



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Removing the ECM

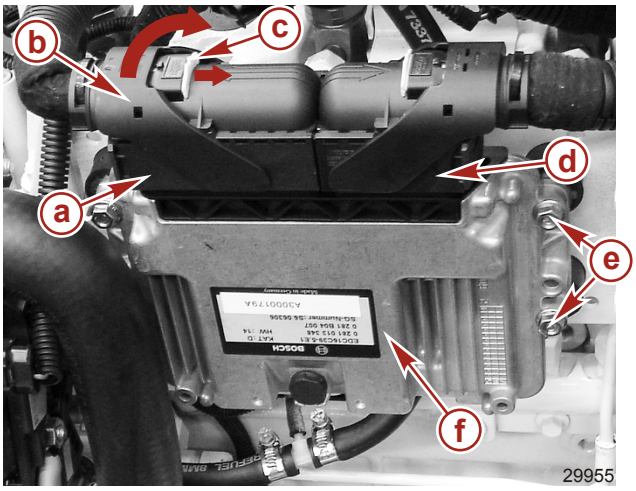
1. Slide the lock in the direction shown.
2. Rotate the connector handle in the direction shown and lift to disconnect the 94-pin electrical connector K from the ECM.
3. Repeat steps 1 and 2 and disconnect the 60-pin electrical connector A from the ECM.
4. Remove the ECM mounting nuts. Retain the hardware.

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5. Remove the ECM from the electrical bracket.



a - 94-pin ECM connector K
b - Connector handle
c - Sliding lock
d - 60-pin ECM connector A
e - Mounting nuts (two not shown)
f - ECM

6. Permanently inscribe the engine serial number onto the body of the new ECM.
7. On the body of the new ECM, inscribe a correction to the engine hours, for example, "Add 150 hours to the ECM reading for the actual number of engine hours."

Cleaning

1. Clean the exterior of the ECM with a dry cloth. Avoid contact with the connector pins.
2. Clean the ECM mounting bracket to ensure a good ground contact.

Inspection

NOTE: *The ECM is a sealed electrical component. If a scan check has shown it to be defective, replace the unit with another ECM of the same part number and service number as the original.*

1. Inspect the outer surfaces for any obvious damage.
2. Inspect the electrical pins of the ECM for straightness and corrosion.
3. Inspect the connectors on the wiring harness for corrosion and terminals that may have dislodged from the harness.

Installation

1. Mount the new ECM to the electrical bracket using the retained hardware.
2. Tighten the mounting nuts to specification.

Description	Nm	lb-in.	lb-ft
ECM mounting nut	10.8	95	–

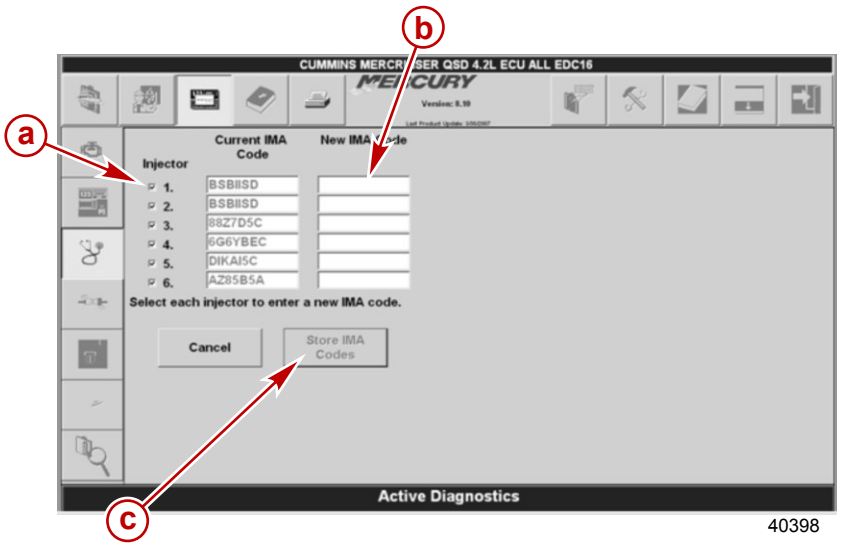
3. Connect and lock the 60-pin and 94-pin electrical connectors to the ECM.
4. Reconnect the CDS tool to the engine.

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5. Referring to the IMA codes stored in the saved report, upload these values (from the original ECM) into the new ECM.
6. Select each injector at the Injector check box.



a - Injector check box
b - Space for IMA codes
c - Store IMA Codes button

7. Enter the IMA codes for the correct injector.
8. Select the Store IMA Codes button after entering all the IMA code.
9. To store the new IMA codes, select OK when prompted with "Are you sure you want to change the IMA codes stored in the ECU?".

Parts Required

Order a new ECM according to the list below.

Description	Part Number
QSD 2.0 115 HP ECM	879148007
QSD 2.0 130 HP ECM	879148008
QSD 2.0 150 HP ECM	879148009

Warranty

Mercury Marine will credit the dealer for the cost of labor, parts and travel. Submit a warranty claim through your normal warranty-processing channel with the following:

- MerCruiser serial number
- Flat Rate Code and Labor: MJ23 0.5
- Part Code: 731
- Failure Code: 76

Return old ECMs to the following with a copy of the work order:

- **USA and Canada:** Return to

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CMD
Dock #70 Attn: Service Engineering
4500 Leeds Ave
Charleston, SC 29405

- **International:** Return to CMD at the same address as above.

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