MERCURY MerCruiser

Service Bulletin

Bulletin No. 2012-04
OEM No. 2012-03

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

Field Campaign on 8.2 Inboard ECT Engines

Scope

Worldwide.

Models Affected

Inboard Models	Serial Number
8.2 Horizon DTS ECT	1A350802–1A353889
8.2 H.O. DTS ECT	

Situation

Mercury Marine has determined that some 8.2 Inboard Emission Control engine models within the Models Affected serial number range may experience a hydraulic lock after hard running conditions and keying off. This situation may prevent the engine from restarting and could damage internal engine components.

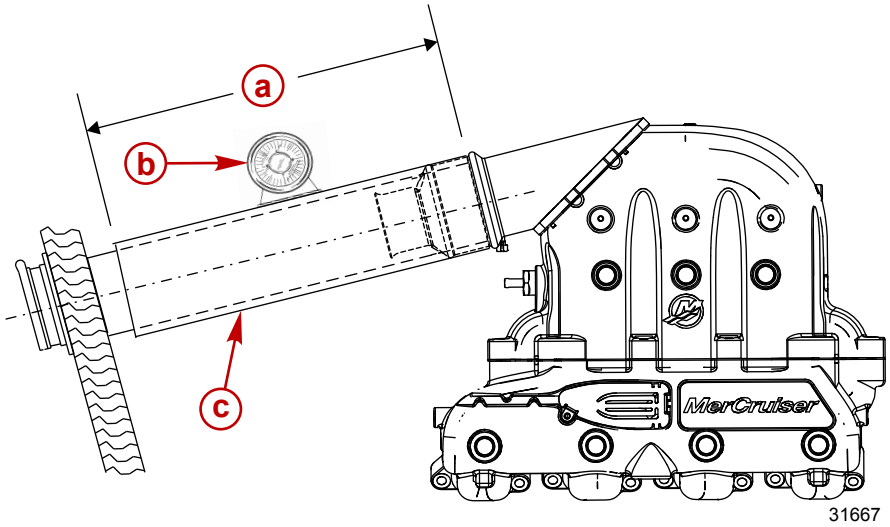
Mercury Marine is also taking this opportunity to address potential fault codes that may occur due to corrosion in the oxygen sensor connection and, a propulsion control module (PCM) replacement to address injector driver issues that may cause injectors to stick open or closed.

Mercury Marine has also determined that the flame arrestor clamp may be incorrectly positioned. The flame arrestor clamp must be positioned correctly and tightened to specification.

Correction

Exhaust elbow replacements, diverter tube, and vent valve installations must be performed to prevent hydraulic lock.

NOTE: *Measure the marine grade exhaust tubing aft of the elbow to ensure the minimum distance of 457 mm (18 in.). If this dimension is below the specification contact your boatbuilder.*



31667

a - Minimum 457 mm (18 in.)
b - Inclinometer
c - Exhaust hose or tube

Inspection of the oxygen sensor, oxygen sensor connections, including replacement of these components when required, is necessary to correct the potential fault code issues.

Replace the PCM when indicated. If PCM replacement is not indicated, update the calibration and software to the latest version using the CDS G3 tool.

Inspecting, repositioning, and tightening the flame arrestor's clamp to specification eliminates possible differences in the torque value applied to the clamp.

Follow the procedures in this bulletin and complete each action for the affected engine.

Inboard Models	Serial Number	Action
8.2 Horizon DTS ECT 8.2 H.O. DTS ECT	1A350802–1A353889	Replace elbow
	1A350802–1A353889	Diverter tube install
	1A350802–1A352732	Install vent valve assembly
	1A350802–1A352424	Inspect and replace oxygen sensor connection as necessary
	1A350802–1A351493	Reposition and torque flame arrestor clamp (DTS only)
	1A350802–1A351701	Inspect and replace PCM as necessary
	1A351702–1A352732	Reflash the PCM using the CDS G3

IMPORTANT: Replace the propulsion control module (PCM) in this serial number range and modules with serial numbers starting in 902 and 903.

Replacing the Exhaust Elbows

Inboard Models	Serial Number
8.2 Horizon DTS ECT	1A350802–1A353889
8.2 H.O. DTS ECT	

Qty.	Description	Part Number
1 per engine	Exhaust elbow, 0 mm (0 in.) riser	8M0062050
	Exhaust elbow, 51 mm (2 in.) riser	8M0062051
	Exhaust elbow, 108 mm (4 in.) riser	8M0062052
	Exhaust elbow, 161 mm (6 in.) riser	8M0062053
	Exhaust elbow, 215 mm (8 in.) riser	8M0062054

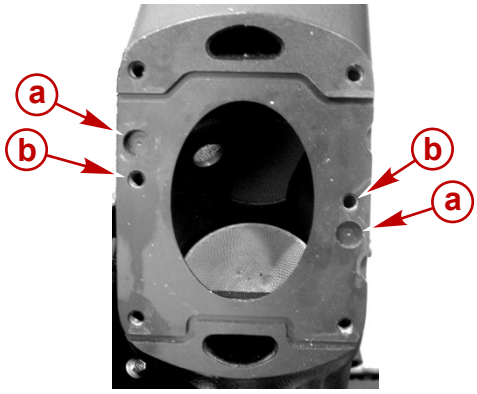
⚠ WARNING

Performing service or maintenance without first disconnecting the battery can cause product damage, personal injury, or death due to fire, explosion, electrical shock, or unexpected engine starting. Always disconnect the battery cables from the battery before maintaining, servicing, installing, or removing engine or drive components.

1. Remove the battery cables from the battery.
2. If the boat is in the water, close the seacock or remove the seawater hose and plug it. Refer to the **Operations, Maintenance, and Warranty Manual.**
   IMPORTANT: Some water may remain in the exhaust manifold. Drain the exhaust elbows prior to removing the components.
3. Use the air drain system to remove the water from inside the cooling system.
4. Remove the drain hose from the bib on the exhaust elbow. Retain the hose clamp.
5. Remove the hose from the poppet valve, note the routing and location. Remove and retain the hose clamp.
6. Remove and retain the six fasteners securing the exhaust elbow.
7. Remove and return the exhaust elbow to the MerCruiser warranty department.
8. Remove and discard the gasket.
9. Repeat for the other exhaust elbow.

IMPORTANT: Foreign material on hot catalysts can damage the catalysts and their ability to work properly. Prevent material from falling into the exhaust collector. If material does fall into the exhaust collector, use care when removing the material to prevent damaging the catalysts.

10. Inspect the mating surfaces before installing the new exhaust elbow riser. Clean the mating surface of the exhaust collector, if necessary.

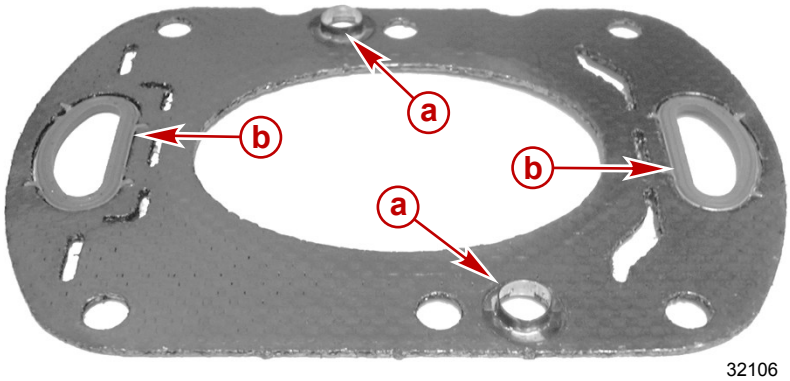


32108

ECT exhaust collector mating surface

a - Dowel holes
b - Fastener holes

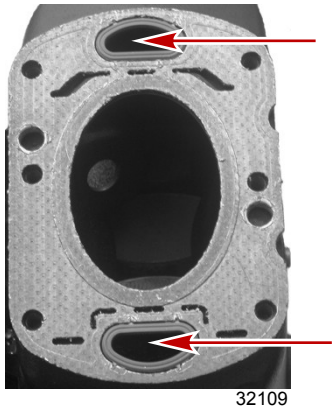
11. Insert the exhaust gasket dowels into the dowel holes on the exhaust collector mating surface.



32106

a - Dowels
b - Water port gaskets

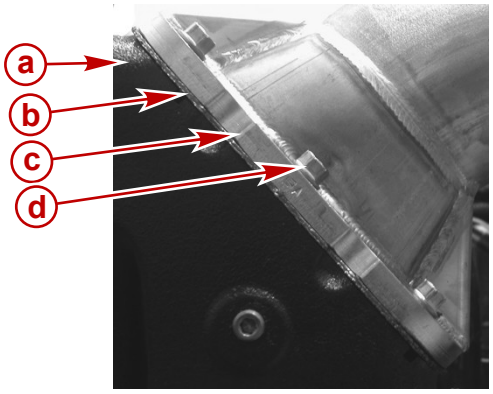
12. With the dowels fully seated in the dowel holes, the water ports on the exhaust collector should align with the water port gaskets. If misaligned, rotate the gasket 180°.



32109

Water ports aligned

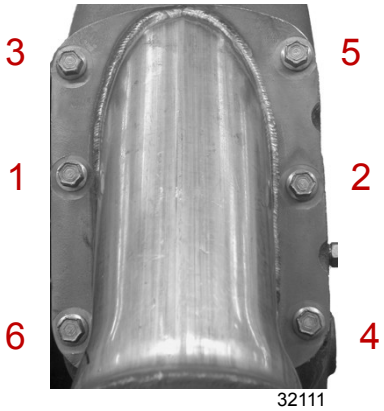
13. Align the new exhaust elbow with the screw holes. Install the six screws.



32110

a - Exhaust collector
b - Exhaust gasket
c - Exhaust elbow
d - Screw

14. Tighten the screws to specifications in the following sequence.



32111

Description	Nm	lb-in.	lb-ft
Screws	30	–	22

15. On exhaust systems with waterlift or through-the-hull exhaust, reconnect the exhaust system. Tighten both hose clamps on each joint to specification.

Description	Nm	lb-in.	lb-ft
Hose clamp	4–4.7	35–42	–

16. Repeat the steps for the other side.
17. Do not install the drain hose to the bib on the exhaust elbow riser at this time. A vent valve assembly will be installed with this drain hose in the following procedure.

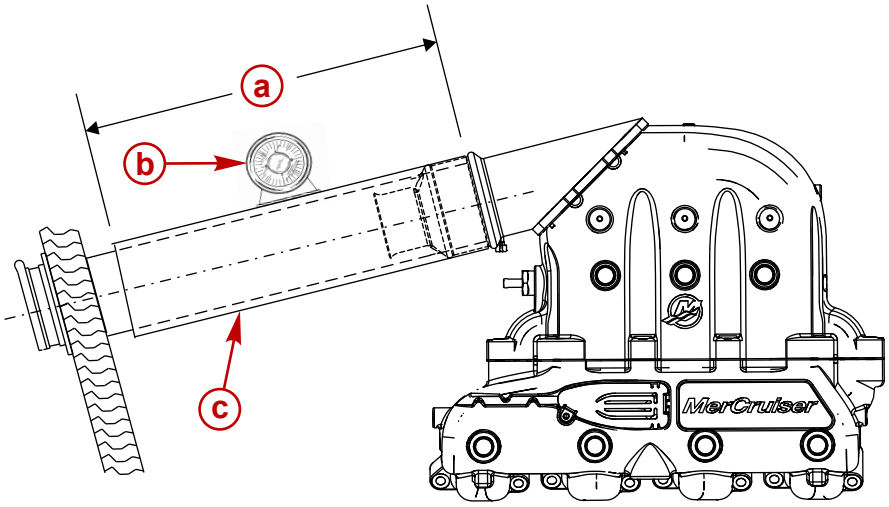
Installing the Exhaust Diverter Tube

Serial Number	Action
1A350802–1A353889	Diverter tube

Qty.	Description	Part Number
1	Exhaust diverter tube	8M0062056

IMPORTANT: MerCruiser specifies a minimum distance of 457 mm (18 in.) from the exhaust elbow to the exhaust hose.

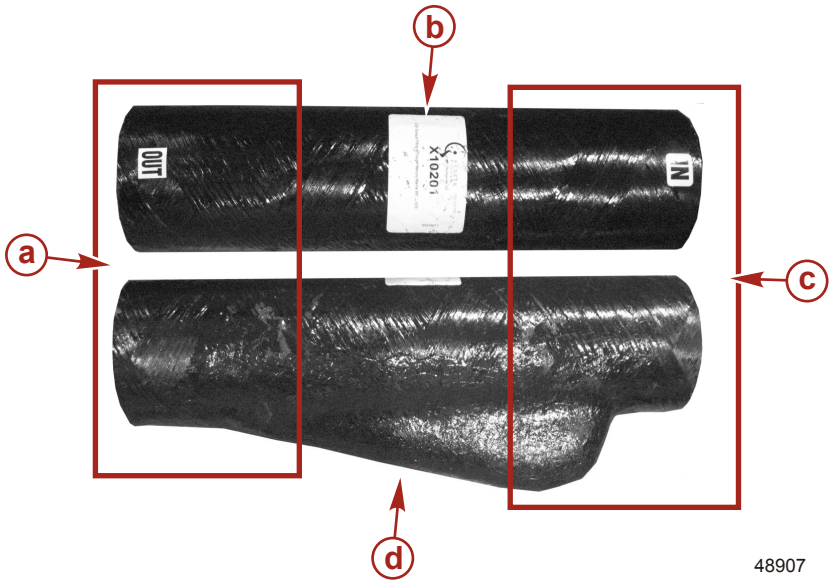
NOTE: *Measure the marine grade exhaust tubing aft of the elbow to ensure the minimum distance of 457 mm (18 in.). If this dimension is below the specification contact your boatbuilder.*



31667

- **a -** Minimum 457 mm (18 in.)
- **b -** Inclinometer
- **c -** Exhaust hose or tube

IMPORTANT: To function properly, the end of the tube marked "IN" is positioned toward the engine exhaust elbow with the deepest portion of the diverter tube facing straight down. Do not cut or modify the diverter tube.

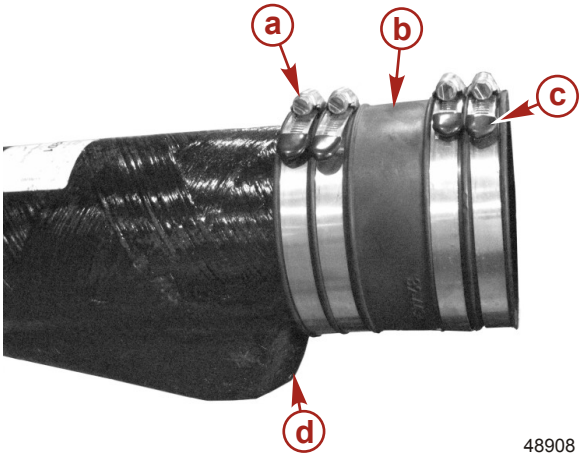


48907

- **a -** End of diverter tube marked "OUT"
- **b -** Top view of diverter tube
- **c -** End of diverter tube marked "IN"
- **d -** Side view of diverter tube

1. Place four hose clamps on the exhaust tube with the screw heads facing the same direction.
2. Install a hose clamp cover on the hose clamps.

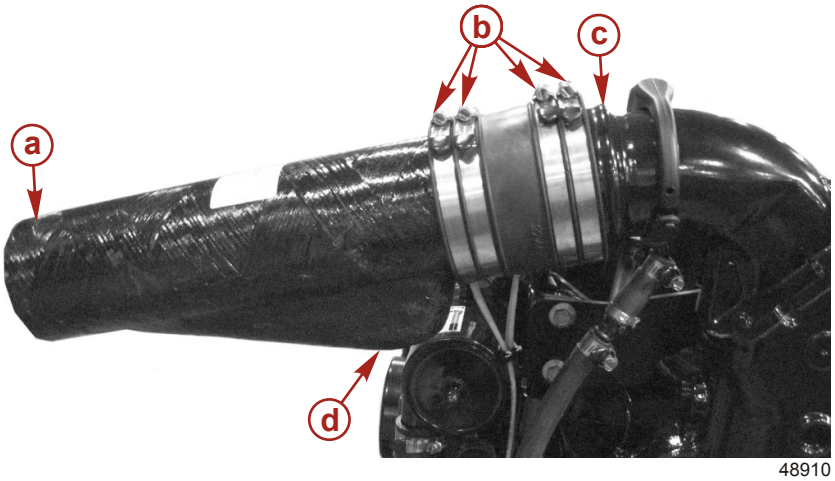
3. Install the exhaust tube with four hose clamps on the end of the diverter tube marked "IN."



48908

a - Hose clamp (4)
b - Exhaust tube
c - Rubber tips
d - End of diverter tube marked "IN"

4. Install the exhaust tube and diverter tube assembly on the exhaust elbow on the engine. Position the deepest portion of the tube facing straight down.
5. Ensure that the screw head on the hose clamps are facing toward the outside of the engine and the exhaust tube is against the ridge on the exhaust elbow.
6. Tighten the hose clamps to specification.



48910

Side view
a - End of diverter tube marked "OUT"
b - Hose clamp (4)
c - Ridge
d - Correct straight down position of deepest portion

Description	Nm	lb-in.	lb-ft
Hose clamp	5	40	–

Ordering and Installing the Vent Valve

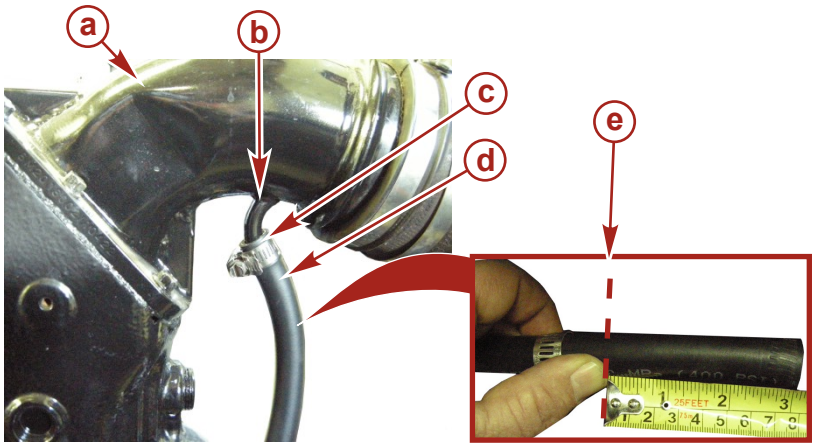
Inboard Models	Serial Number
8.2 Horizon DTS ECT	1A350802–1A352732
8.2 H.O. DTS ECT	

Install a vent valve assembly on the port and starboard exhaust elbows of the engine. The vent valve assemblies will prevent a vacuum from occurring in the exhaust system when the key is turned to the off position.

NOTE: *One vent valve assembly is required for each exhaust elbow.*

Qty.	Description	Part Number
Two per engine	Vent valve kit	8M0054663

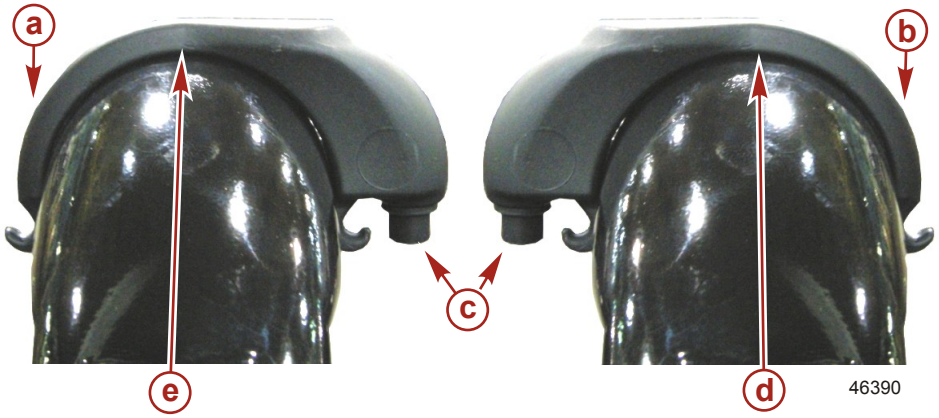
1. If not already removed, loosen the hose clamp and remove the bypass hose from the water fitting on the exhaust elbow. Allow the hose clamp to slide down the hose and out of the way.
2. Cut 76 mm (3 in.) off the bypass hose open end.



45494

- **a -** Exhaust elbow
- **b -** Water fitting
- **c -** Hose clamp
- **d -** Bypass hose
- **e -** Cut line

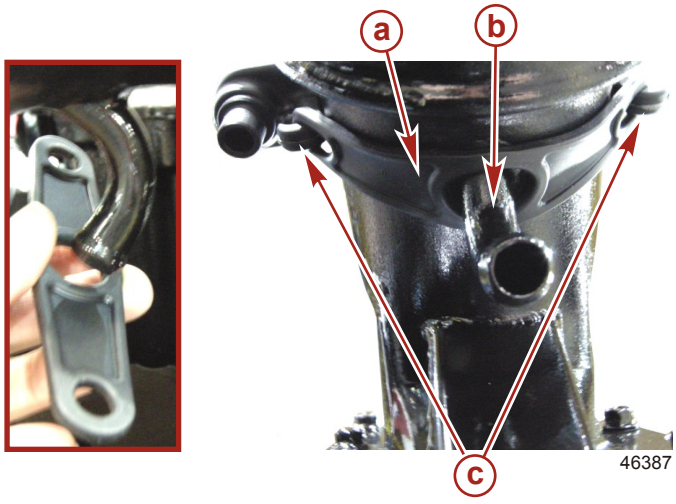
3. Push the reservoir on the exhaust elbow with the weep hole toward the outside of the engine. Position the reservoir above the water fitting on the exhaust elbow.



46390

- **a -** Weep hole starboard
- **b -** Weep hole port
- **c -** Grommet
- **d -** Reservoir port
- **e -** Reservoir starboard

4. Place the center hole of the rubber strap over the water fitting on the exhaust elbow and stretch the strap around the bottom side of the exhaust elbow and attach it to the reservoir hooks.

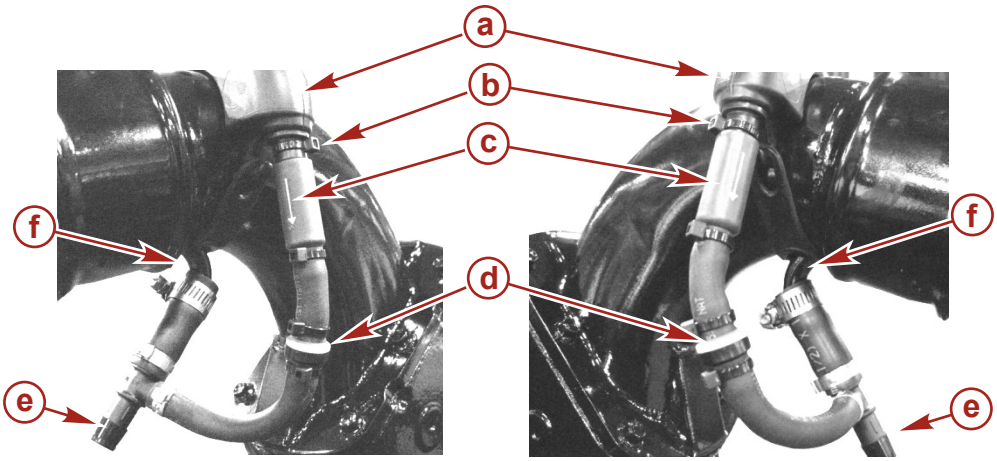


46387

- **a -** Rubber strap
- **b -** Water fitting
- **c -** Reservoir hook

5. Insert the duckbill valve fitting into the grommet until the valve is seated against the grommet.

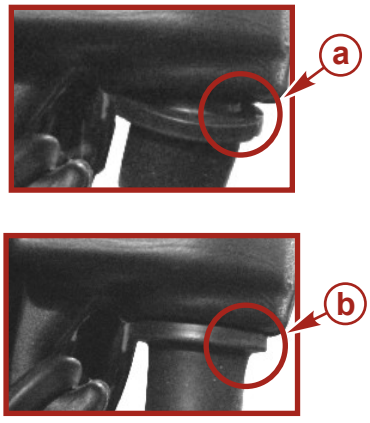
6. With a hose clamp on the hose assembly, push the hose end of the vent assembly over the water fitting on the exhaust elbow. Position the T-fitting to face inboard at 45° toward the base of the elbow.
7. Install the cable tie over the grommet at the duckbill valve fitting.



46386

a - Reservoir
b - Cable tie
c - Duckbill valve
d - Check valve
e - T-fitting
f - Water fitting on exhaust elbow

8. Inspect the grommet-to-reservoir area to assure there is no side-load pulling on the grommet. The grommet should be relaxed and fully seated against the reservoir. The hose should not be bent or kinked. Position the T-fitting portion of the assembly as necessary to ensure proper assembly.

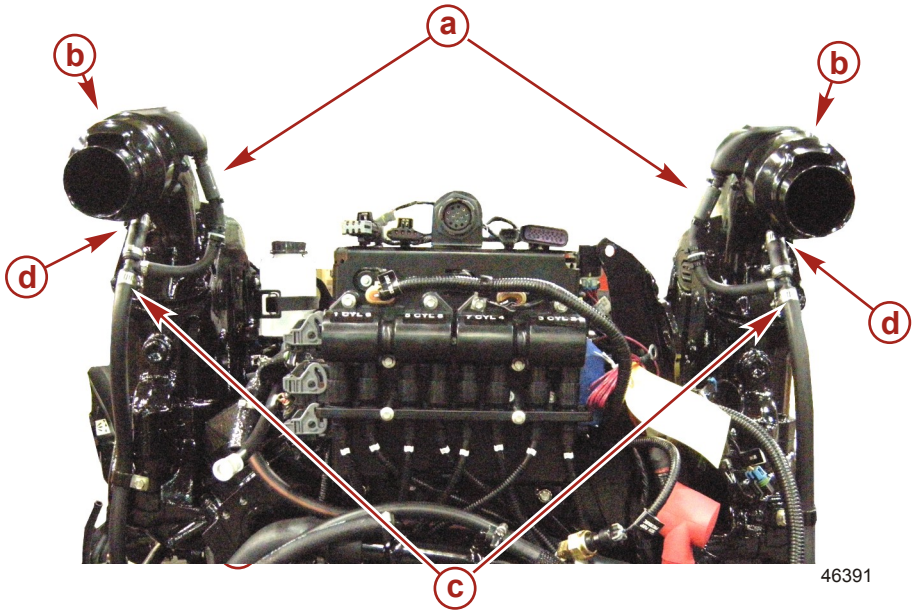


46444

a - Incorrect assembly
b - Correct assembly

9. With the hose clamp on the bypass hose, insert the T-fitting into the bypass hose.

10. Tighten the worm-gear hose clamp to specification at the T-fitting and the water fitting on the exhaust elbow.



a - Duckbill valve
b - Reservoir weep hole
c - Worm-gear hose clamp at T-fitting
d - Worm-gear hose clamp at the water fitting

Description	Nm	lb-in.	lb-ft
Worm-gear hose clamp	4	35	–

11. Install the cover on the end of the hose clamp.

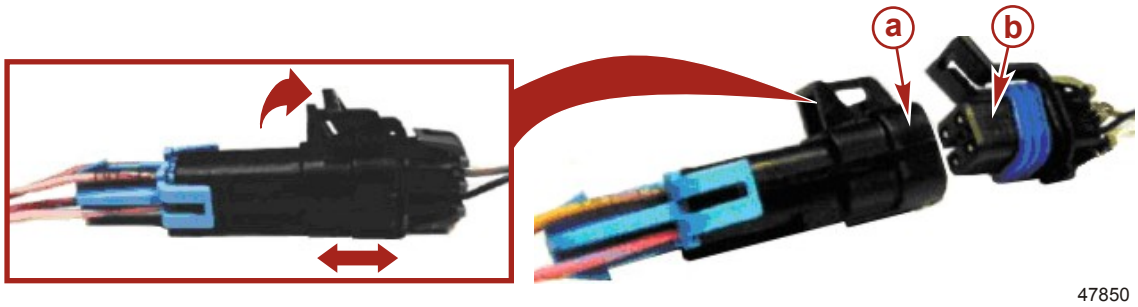
Inspecting the Oxygen Sensor Connectors

Inboard Models	Serial Number
8.2 Horizon DTS ECT	1A350802–1A352424
8.2 H.O. DTS ECT	

IMPORTANT: If light to moderate corrosion is present on any engine harness connector or sensor, and cannot be removed with the cleaning process, replace the sensor or wiring harness as needed.

1. Disconnect the two post and two pre-exhaust oxygen sensors from the engine wiring harness, being careful not to damage the locking tabs.

   NOTE: *Inspect 02 sensor wiring connections for any signs of black paint, if found replace 02 sensor.*



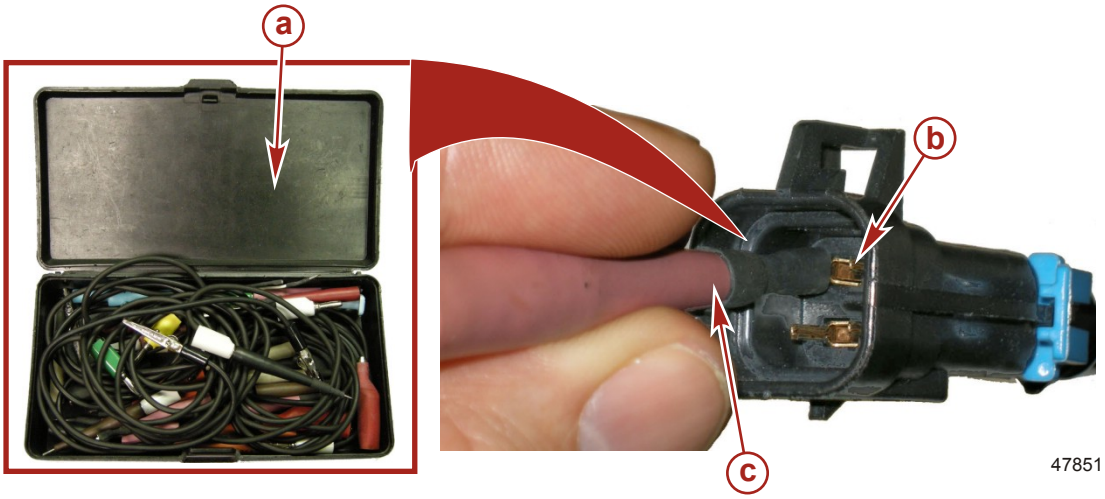
Pre-exhaust and post-exhaust oxygen sensor
a - Engine harness connector (male)
b - Oxygen sensor connector (female)

2. Inspect each sensor and engine harness connector for evidence of condensation (moisture), corrosion, or damaged terminals and sockets. See image below.

3. If condensation is present, carefully use low-pressure compressed air to dry out both the male and female connectors.
4. Clean the pins and sockets using rubbing alcohol and a standard swab (obtained locally) and then air dry.
5. Carefully inspect each pin and socket for corrosion or damage.
6. If damage is present, replace the sensor or harness as necessary.
7. If corrosion is present on any sensor pin, replace that oxygen sensor.
8. If light to moderate corrosion is present on any oxygen sensor connector, it can be removed as follows:
   a. Locate the pink female terminal adapter (J-35616-5) from the CDS terminal adapter kit (SPX P/N MM-46523).

Terminal Test Probe Kit	SPX P/N MM- 46523
 7915	Test probes adapt test meter leads to harness connections without damaging harness terminals. May be used with Computer Diagnostic System (CDS).

   b. Using rubbing alcohol, slide the adapter on and off of each male pin until the corrosion has been removed. See image below.
   c. When finished cleaning all four pins, dry the connector with low-pressure compressed air.



a - CDS terminal adapter kit
b - Pink female terminal adapter
c - Male pin (4)

9. Reconnect each oxygen sensor to the engine harness as you complete the inspection/cleaning process.
10. If the corrosion was not removed during the cleaning process, replace the sensor or wiring harness as needed.
11. Use the CDS G3 service tool to clear any faults after one of the following procedures; replacing the propulsion control module (PCM) or reflashing the propulsion control module (PCM).

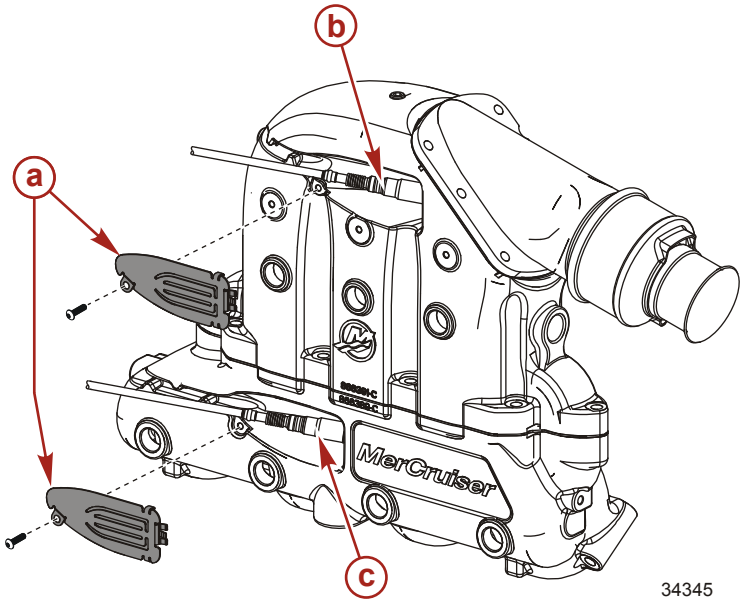
Qty.	Description	Part Number
As needed	Oxygen sensor	8M2003959
One per engine	Mechanical engine harness	8M0045252
One per engine	DTS engine harness	8M0045253

Replacing the Oxygen Sensor

⚠ CAUTION

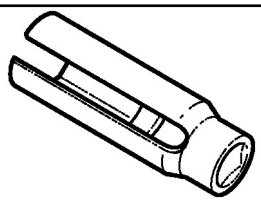
A hot oxygen sensor can cause burns. Do not touch the sensor without first allowing it to cool. Always allow engine components time to reach a safe temperature before installing or servicing engine or drive components.

1. Disconnect the oxygen sensor from the engine harness.
2. Loosen the screw securing the oxygen sensor cover to the collector and remove the cover.



a - Oxygen sensor cover
b - Post-catalyst oxygen sensor
c - Pre-catalyst oxygen sensor

3. Remove the oxygen sensors, as needed.

Kent-Moore Oxygen Sensor Socket	KN-46577
 32314	Kent-Moore socket (or equivalent 7/8 in. automotive oxygen sensor socket) Aids in the removal and installation of oxygen sensors on products equipped with Emissions Control.

4. Use the oxygen sensor tool to install the oxygen sensor. Tighten the sensor to specification.

Description	Nm	lb-in.	lb-ft
Oxygen sensor	50	–	37

5. Install the oxygen sensor cover so it is flush against the collector. Tighten the screw to specification.

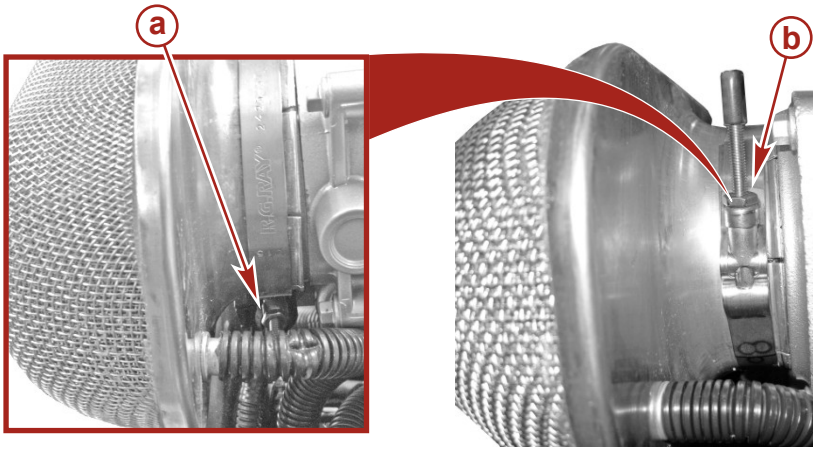
Description	Nm	lb-in.	lb-ft
Oxygen sensor cover screw	3.5	31	–

6. Connect the oxygen sensor connector to the engine harness.

Reposition and Torque the Flame Arrestor Clamp

Inboard Models	Serial Number
8.2 Horizon DTS ECT	1A350802–1A351493
8.2 H.O. DTS ECT	

1. Loosen the hose clamp on the flame arrestor.
2. Move the hose clamp to an easily accessible position as shown.
3. Hold the flame arrestor in position on the throttle body with the hose clamp completely around the flame arrestor and throttle body.
4. Tighten the hose clamp to specification.



47854

a - Hose clamp positioned incorrectly
b - Hose clamp positioned correctly

Description	Nm	lb-in.	lb-ft
Flame arrestor hose clamp	6	55	–

Replacing the Propulsion Control Module (PCM)

IMPORTANT: Replace the propulsion control module (PCM) in this serial number range and modules with serial numbers starting in 902 and 903.

Inboard Models	Serial Number
8.2 Horizon DTS ECT	1A350802–1A351701
8.2 H.O. DTS ECT	

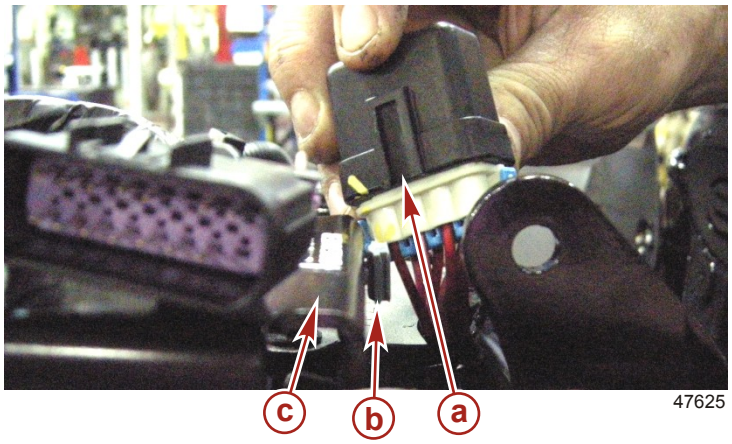
Qty.	Description	Part Number
One per engine	PCM for 8.2 Horizon DTS ECT	8M0059120
	PCM for 8.2 H.O. DTS ECT	8M0059121

IMPORTANT: The PCM is a sensitive electrical device, subject to electrostatic damage. Do not touch the connector pins when removing or installing the module.

NOTE: *Return any PCM removed from the engine to the Mercury MerCruiser warranty department.*

Removal

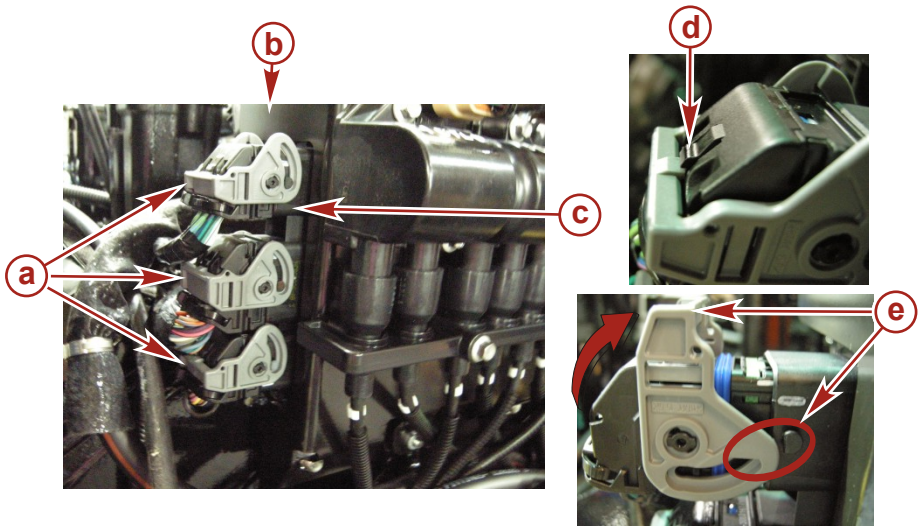
1. Slide the fuse connector up and remove it from its mount on the electrical bracket.



47625

a - Fuse connector
b - Fuse connector mount
c - Electrical bracket

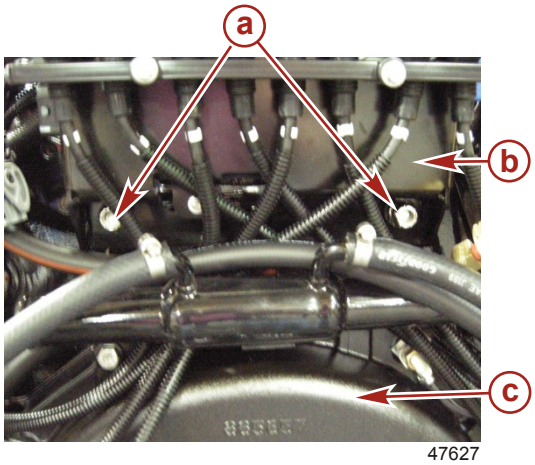
2. Remove the top electrical connector from the PCM. Depress the locking tab and rotate the grey locking lever upward until the electrical connector is disconnected from the PCM. Repeat steps to remove the middle, then the bottom electrical connector.



47626

a - Electrical connectors in locked position
b - Electrical bracket
c - PCM
d - Locking tab
e - Electrical connector unlocked

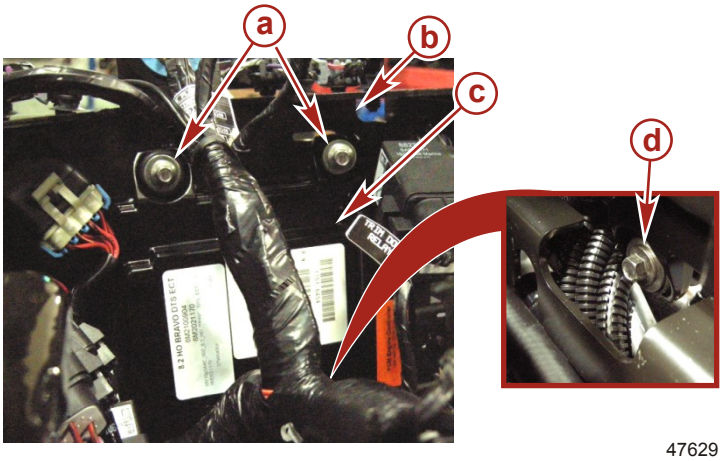
3. Remove and retain the nuts and washers from the electrical bracket (on the flywheel side of the engine).



47627

a - Nut and washer
b - Electrical bracket
c - Engine flywheel housing

4. Slide the electrical bracket away from the engine to gain access to the PCM fasteners.
5. Remove and retain the top screws with washers and slightly loosen the bottom screw holding the PCM to the bracket. The PCM screw holes are slotted for easy removal.



47629

a - Top screw and washer
b - Electrical bracket
c - PCM
d - Bottom screw and washer

6. Lift the PCM from the bracket.
7. Return the PCM to Mercury MerCruiser warranty department.

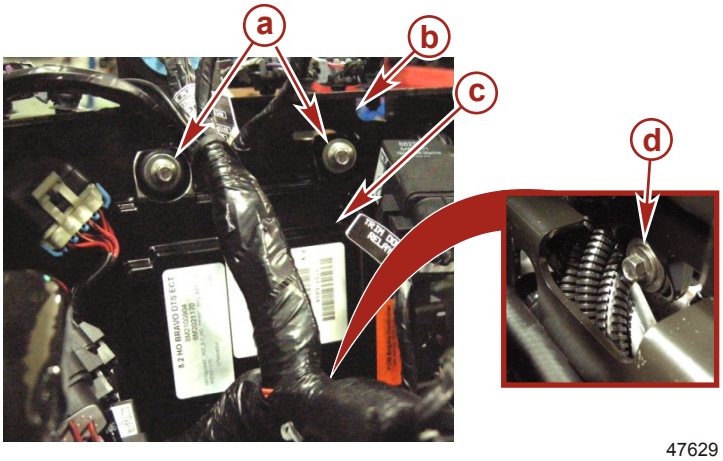
Cleaning and Inspection

1. Clean the exterior of the PCM with a dry cloth, being careful to avoid contact with connector pins.
2. Inspect the outer surfaces for any obvious damage.
3. Visually inspect the electrical pins on the PCM for straightness and corrosion.
4. Visually inspect the connectors on the wiring harness for corrosion and terminals that may have loose connections.

NOTE: *The PCM is a sealed electrical component. Do not use a damaged PCM.*

Installation

1. Lower the PCM onto the bracket bottom screw and secure it to the bracket using the screws previously removed.
2. Tighten the PCM screws to specification.



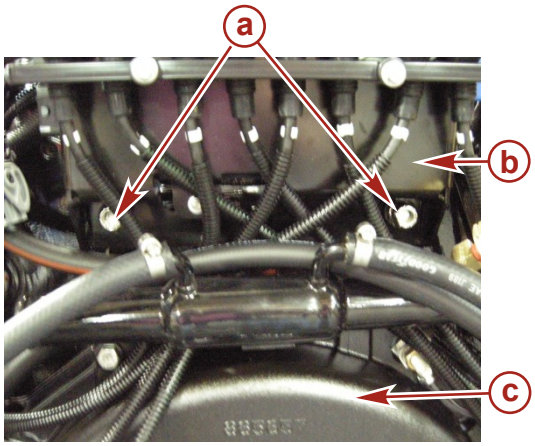
47629

a - Top screw
b - Electrical bracket
c - PCM
d - Bottom screw

Description	Nm	lb-in.	lb-ft
Screws, PCM to electrical bracket	6	40	–

3. Push the electrical bracket all the way back on the studs and secure it with the washers and nuts previously removed.

4. Tighten the nuts to specification.

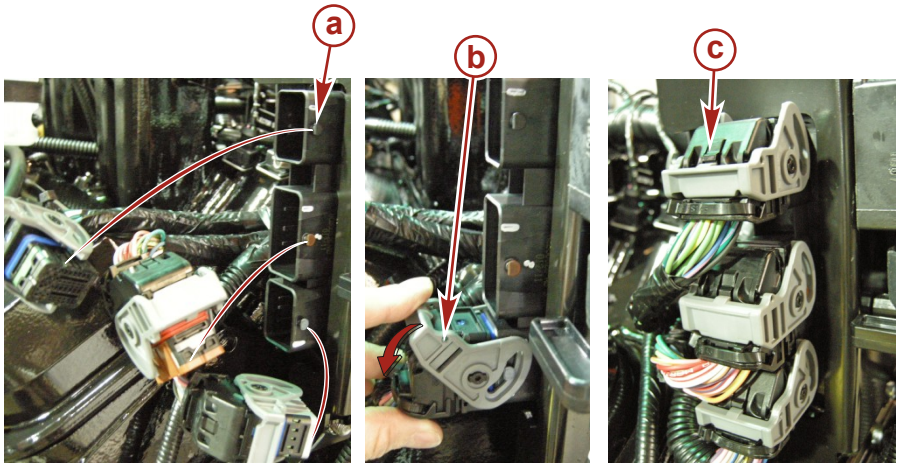


47627

a - Nut and washer
b - Electrical bracket
c - Engine flywheel housing

Description	Nm	lb-in.	lb-ft
Nut, electrical bracket to engine	54	–	40

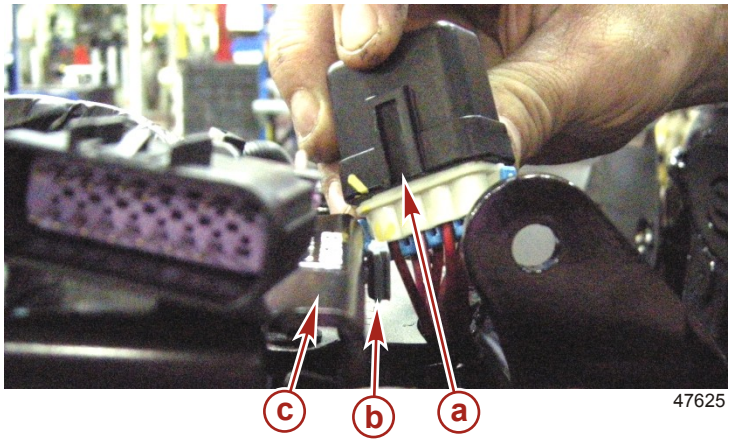
5. Install the electrical connectors to the PCM in the opposite order as removed. Use the color codes to match the connections and ensure the grey locking levers are completely locked with the locking tabs up.



47906

a - Matching color codes
b - Locking lever
c - Locking tabs up

6. Slide the fuse connector in its mount on the electrical bracket.



47625

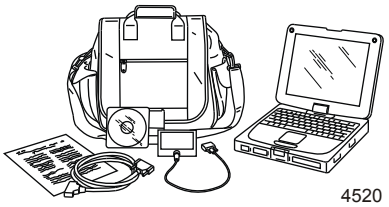
a - Fuse connector
b - Fuse connector mount
c - Electrical bracket

Reflashing the Propulsion Control Module (PCM)

Inboard Models	Serial Number
8.2 Horizon DTS ECT	1A350802–1A352732
8.2 H.O. DTS ECT	

Connecting the Computer Diagnostic System (CDS G3) Service Tool

NOTE: *The computer diagnostic system (CDS G3) procedural information is available in the help menu. If you have the CDS hardware, order the software and cable 8M0046124 from Mercury.*

Computer Diagnostic System (CDS)	Order through SPX
 4520	Monitors all electrical systems for proper function, diagnostics, and calibration purposes. For additional information, pricing, or to order the Computer Diagnostic System contact: SPX Corporation 28635 Mound Rd. Warren, MI 48092 or call: USA - 1-800-345-2233 Canada - 800-345-2233 Europe - 49 6182 959 149 Australia - (03) 9544-6222
CDS G3 Diagnostic Interface Tool With Harness	8M0046124
 41993	Provides diagnostic support for the Computer Diagnostic System.

Models Equipped With a SmartCraft Diagnostic Port

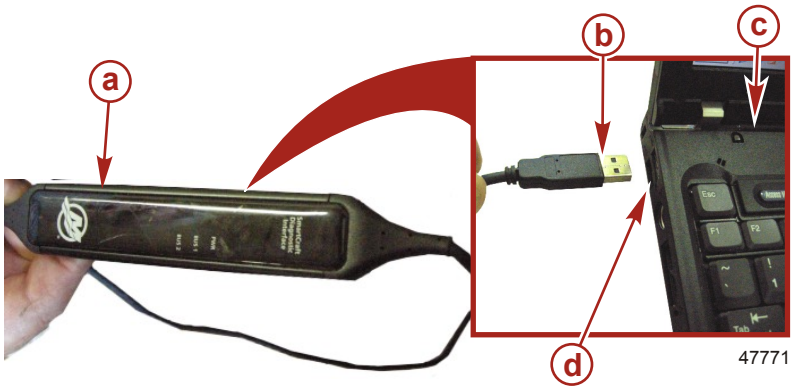
1. Ensure all engine key switches and engines are off.
2. Locate the SmartCraft diagnostic port at the boat helm.

   NOTE: *The diagnostic port may not be mounted on the dashboard if space is limited, but may be mounted under the dashboard, or in the cabin at an inconspicuous, but accessible location.*
3. Remove the cover and insert the CDS G3 interface harness connection.

47772

SmartCraft diagnostic port

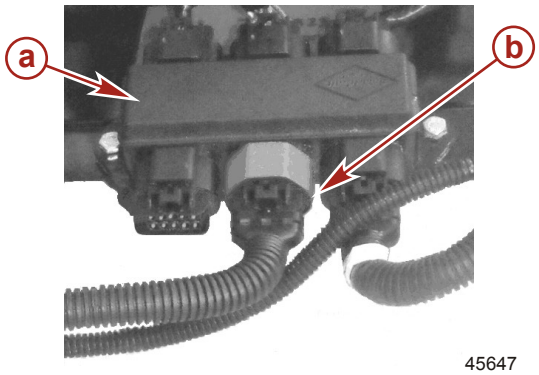
4. Connect the CDS G3 interface USB port connector to the USB port on the G3 service tool.



a - CDS G3 interface tool
b - CDS G3 interface USB port connector
c - CDS G3 service tool
d - USB port on the CDS G3 service tool

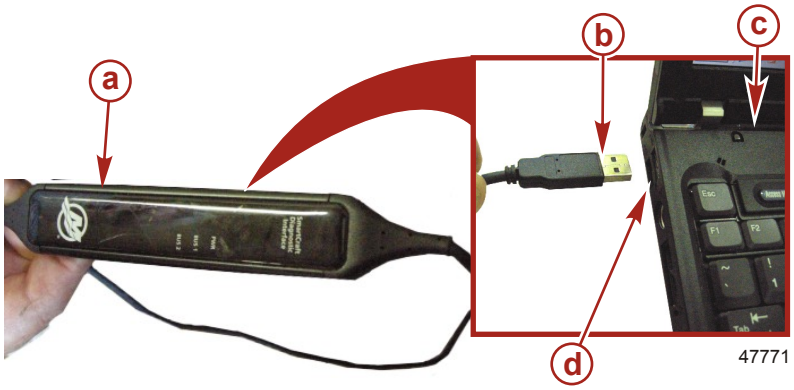
Models Equipped With a SmartCraft Junction Box

1. Ensure all engine key switches and engines are off.
2. Locate the standard junction box under the boat helm and connect the CDS G3 interface harness.



a - Junction box
b - CDS G3 interface harness connector

3. Connect the CDS G3 interface USB port connector to the USB port on the CDS G3 service tool.



a - CDS G3 interface tool
b - CDS G3 interface USB port connector
c - CDS G3 service tool
d - USB port on the CDS G3 service tool

Models Not Equipped With a SmartCraft Diagnostic Port or Junction Box

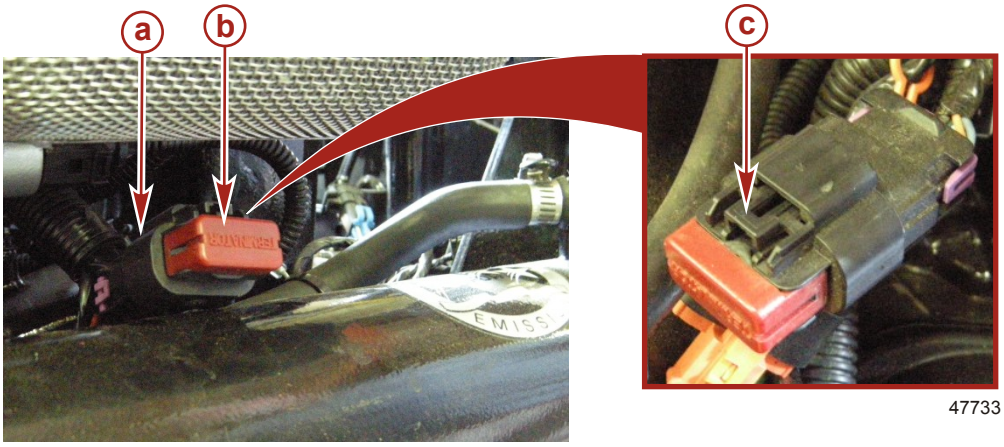
IMPORTANT: The CDS G3 termination harness is a terminal resistor. Only use it when connecting to the engine harness terminator connection. Do not connect the termination harness to the junction box or diagnostic port at the helm.

47754

CDS G3 termination harness

CDS G3 Termination Harness	84-8M0045065
 43351	Contains termination resistors to allow communication when G3 is connected to the engine's diagnostic connector.

1. Ensure all engine key switches and engines are off.
2. Locate the yellow or red terminator resistor on the engine harness and remove it by pushing the tab in while pulling the connections apart. Retain the yellow or red terminator resistor to reinstall after using the service tool.

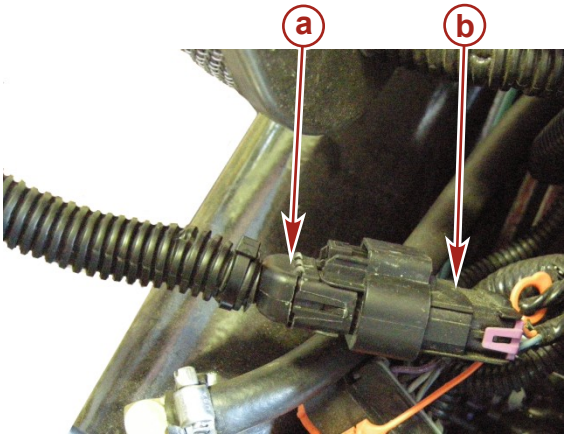


47733

Terminator resistor (red or yellow)

- **a -** Terminator connection
- **b -** Terminator resistor (red or yellow)
- **c -** Tab

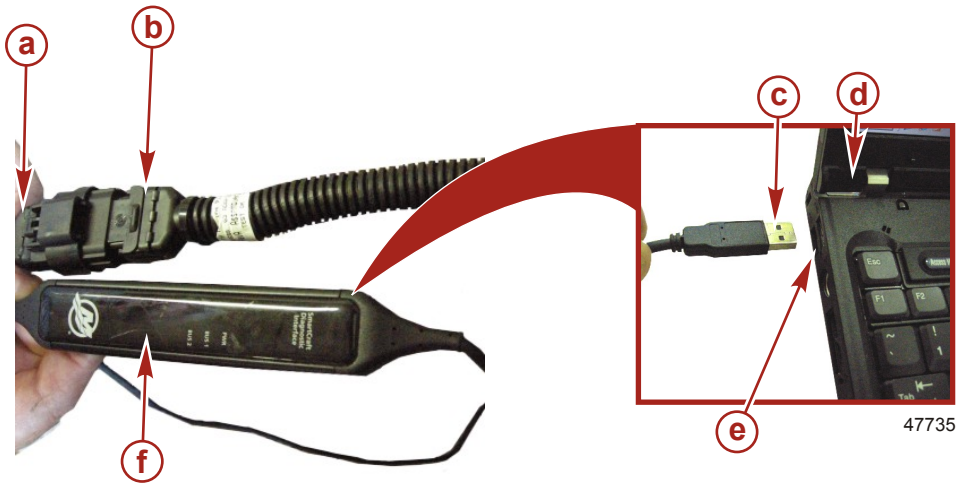
3. Connect the CDS G3 termination harness to the terminator connection on the engine.



47734

- **a -** CDS G3 termination harness
- **b -** Terminator connection

4. Connect the CDS G3 termination harness connector to the CDS G3 interface harness connector.
5. Connect the CDS G3 interface USB connector to the USB port on the CDS G3 service tool.



a - CDS G3 interface harness connector
b - CDS G3 termination harness connector
c - CDS G3 interface USB connector
d - CDS G3 service tool
e - USB port on the CDS G3 service tool
f - CDS G3 interface tool

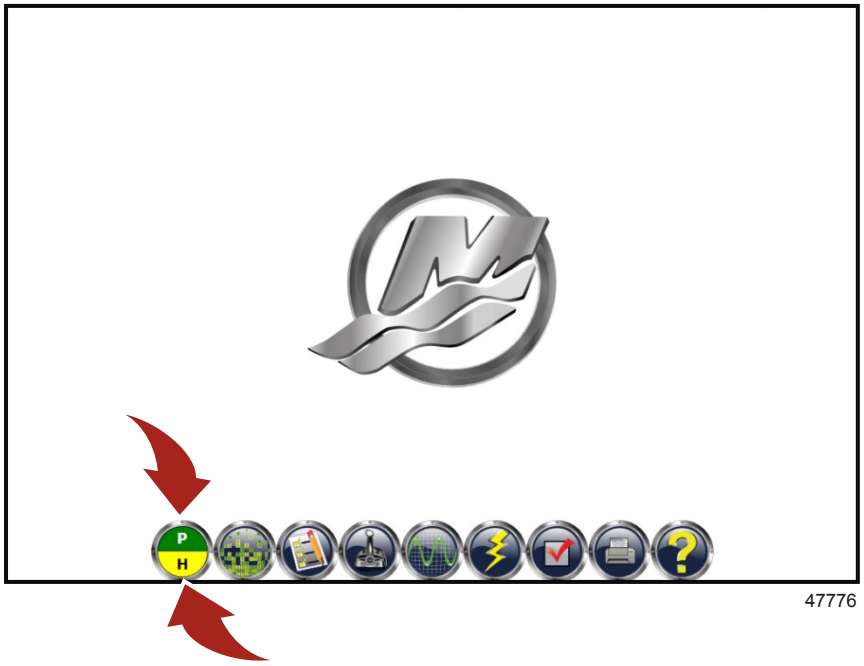
Reflashing

IMPORTANT: The hull ID and engine serial numbers are required for updating the PCM software—have them available before reflashing begins.
IMPORTANT: The VesselView must be disconnected from the Smart J-box Starboard SmartCraft Display 10-pin connection and the Smart J-box multi-ignition 8-pin connection before starting the PCM reflash.
IMPORTANT: If this is a twin or multiple engine application, reflash each engine separately. Keep other engine key switches in the off position.

NOTE: *Reflashing the starboard outer city ID 11 engine first is preferred on twin or multiple engine applications.*

1. Locate and write down the hull ID and engine serial number to enter when requested.
2. Disconnect the SmartCraft gauges or VesselView.
3. Turn the key switch (of the engine you are reflashing) to the on position.
4. Turn on the CDS G3.
   a. Verify the software for CDS G3 is at level 1.2.33 and above.
   b. Verify the CAN P icon is green, indicating communications with the PCM controller.

c. If CAN P and CAN H are both yellow, the PCM controller is not communicating. Find and correct the connection problem.

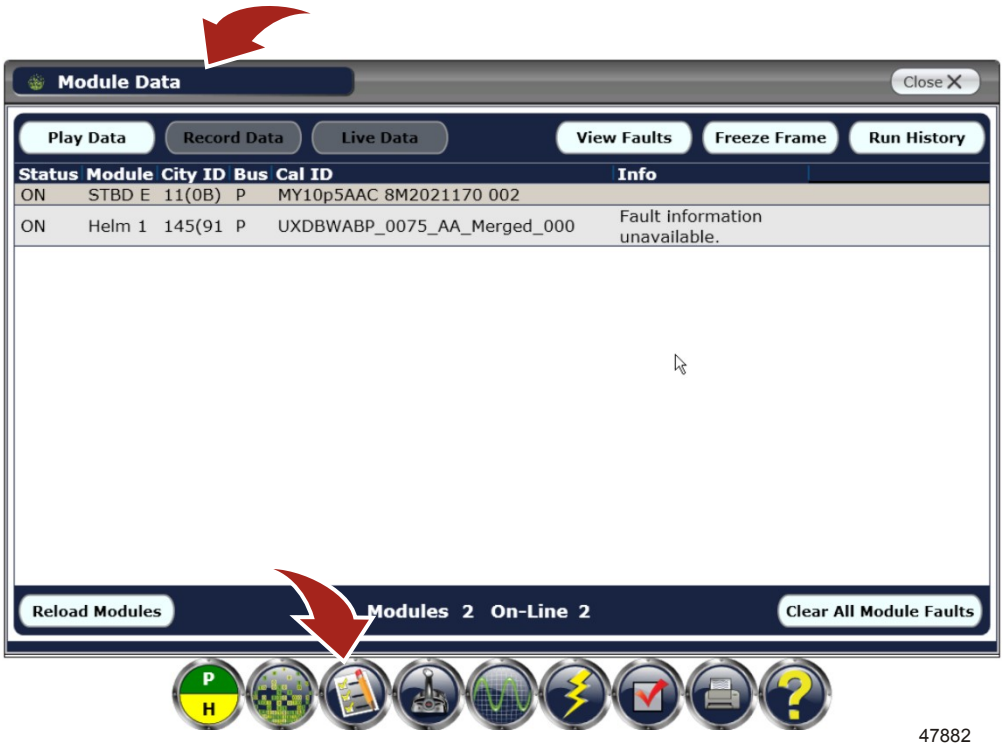


47776

5. Wait for the Module Data screen to appear.

   NOTE: *The selections in the Module Data screen are greyed-out because the eBOM has not been selected.*

6. Select the eBOM icon.

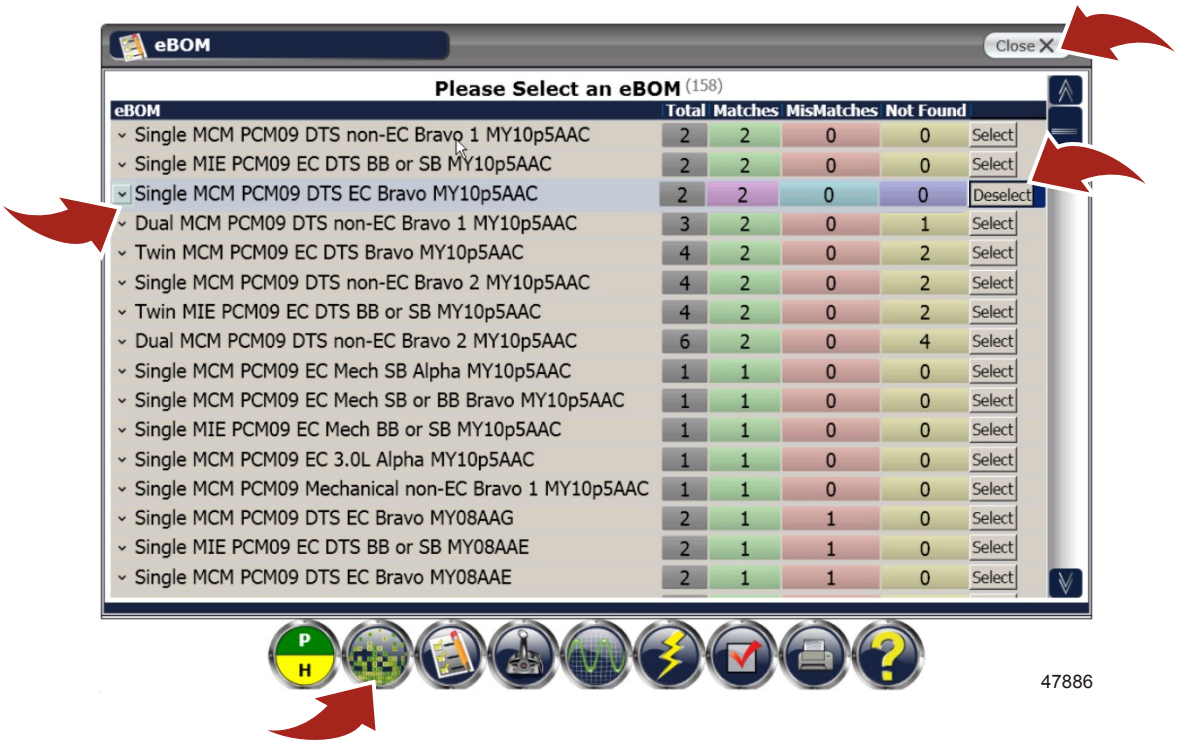


47882

7. Locate the engine package listed on this screen and click on its Select button.
   a. Click on the Close X button.

b. Select Module Data icon.

c. Click on the Live Data button.



47886

IMPORTANT: Reflashing a PCM with serial numbers starting in 904 updates the mechanical and DTS engine packages. Reflashing a PCM with serial numbers starting in 905 updates the mechanical engine packages only.

NOTE: *If you find a PCM with serial numbers starting in 902 or 903 listed in the City ID. Do not attempt to reflash. Replace the PCM.*

8. Locate the PCM serial number and Cal ID.

Calibration and PCM09 controller information

8.2 MIE DTS PCM09 Calibrations and part numbers listed below (**Do not need replacement)** and are the latest **OBDM MIL light only calibrations**

8.2 Base MIE DTS ECT OBDM Mil Light only.

Calibration number **8M2022576**

Part number **8M0059264**

8.2 HO MIE DTS ECT OBDM Mil Light only.

Calibration number **8M2022577**

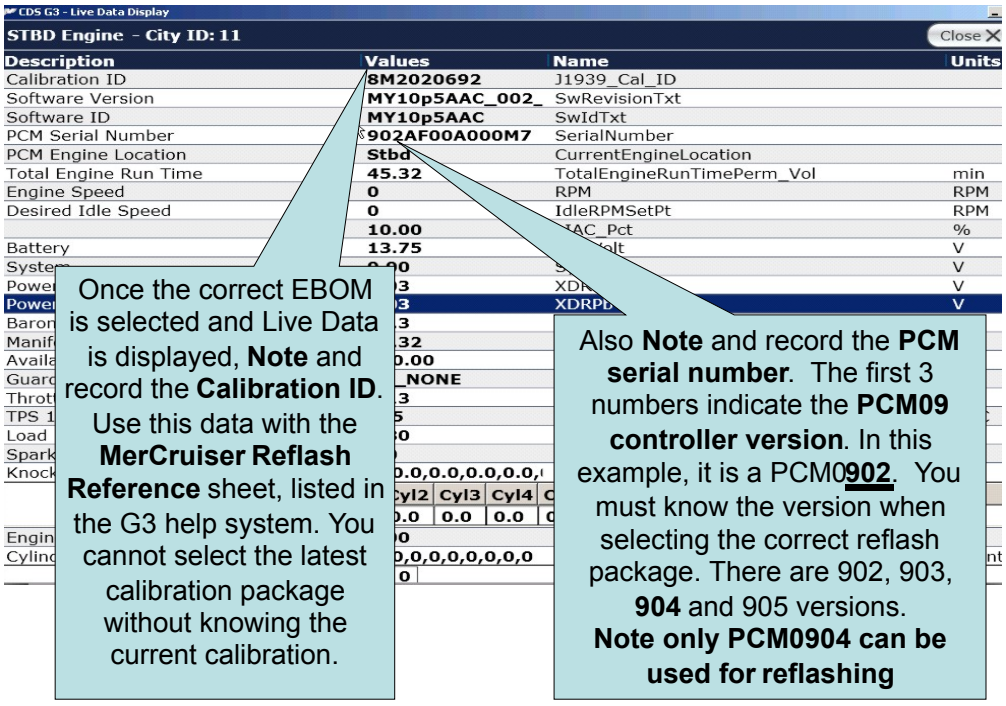
Part Number **8M0059265**

50956

a. Under the Values column write down the Cal ID and serial number for later use.

b. Click on the Close X button.

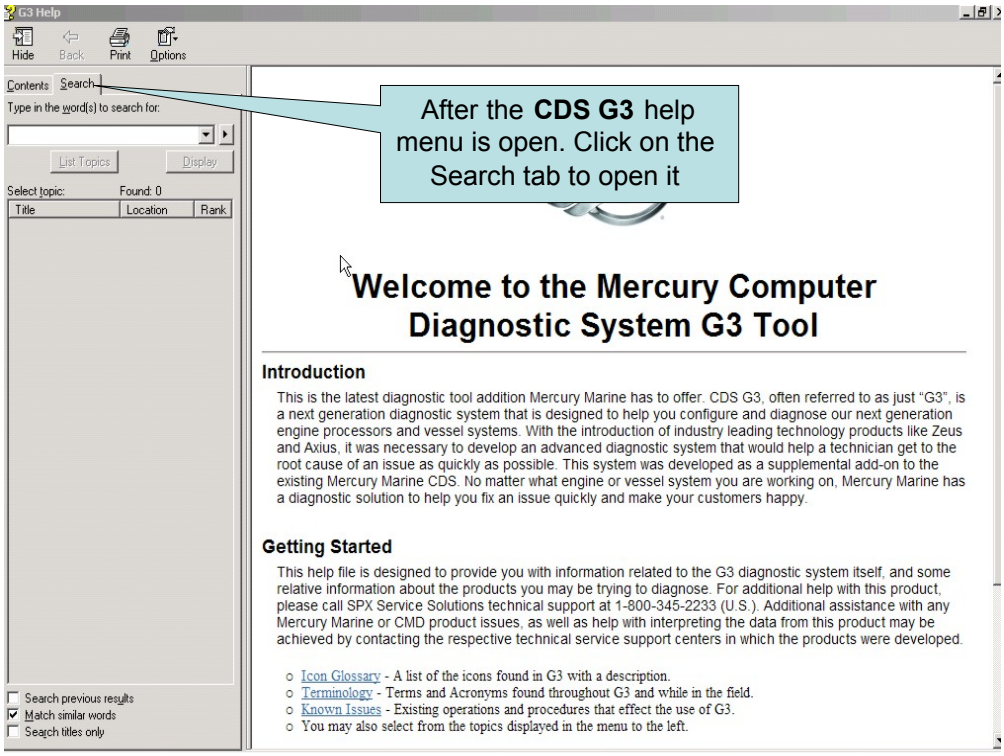
Calibration ID and PCM09 controller version



Replace any PCM with serial number starting in 902 and 903

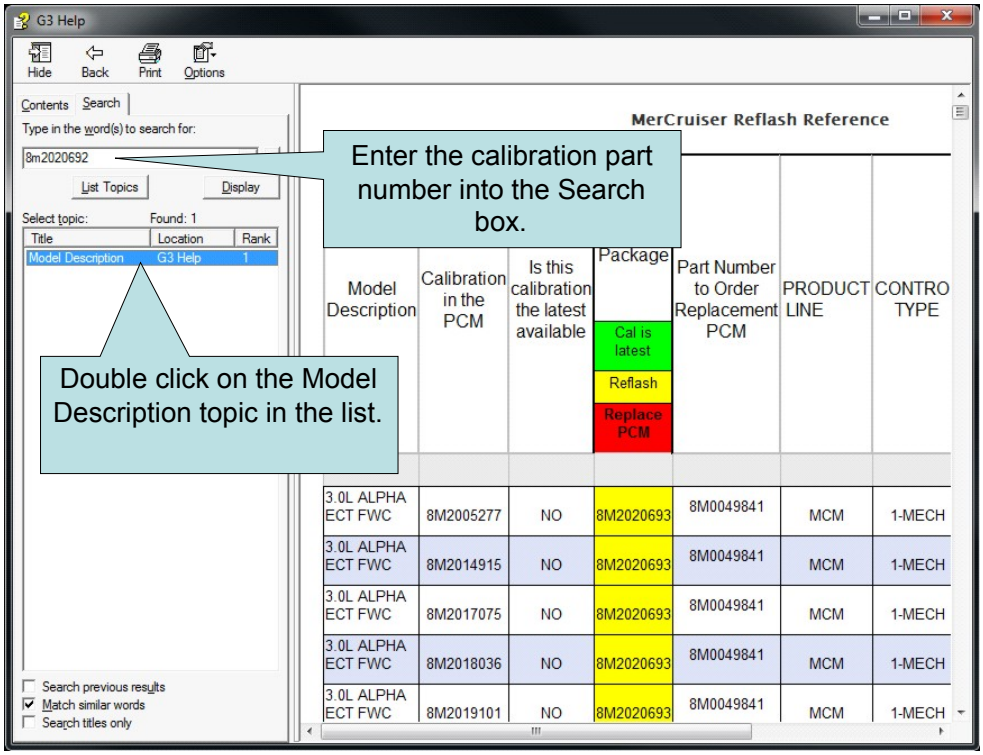
9. Select the Help (question mark) icon.
   a. In the bookmark on the left, click + next to Reflash to get the drop down menu.

b. Select the MerCruiser Reflash Reference.

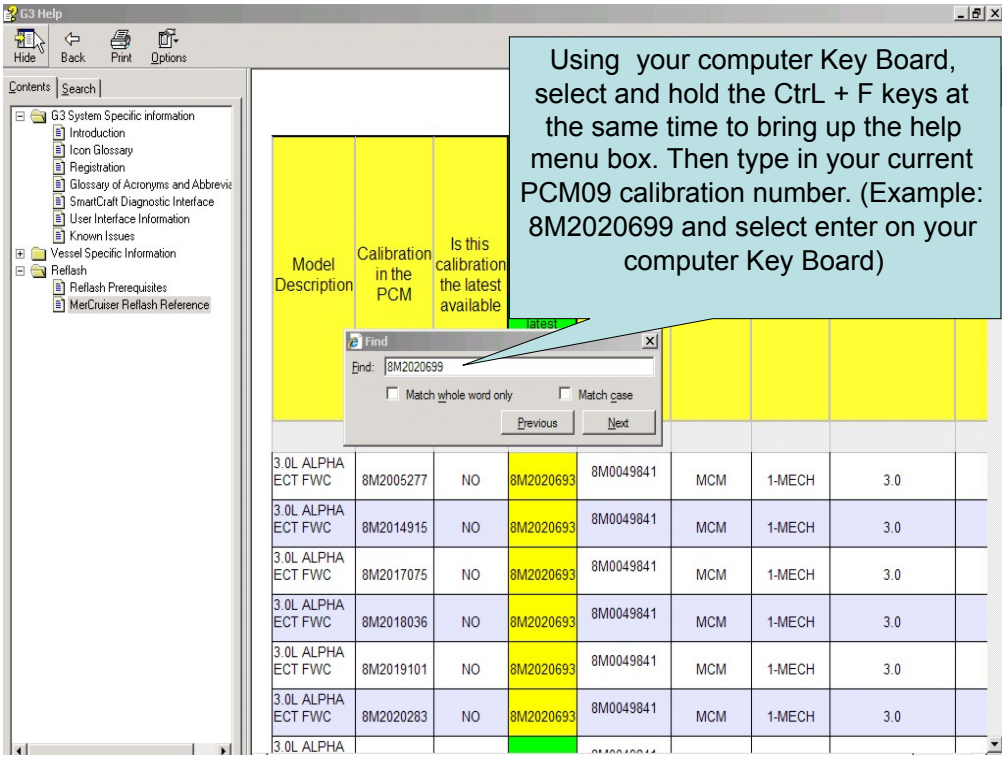


50959

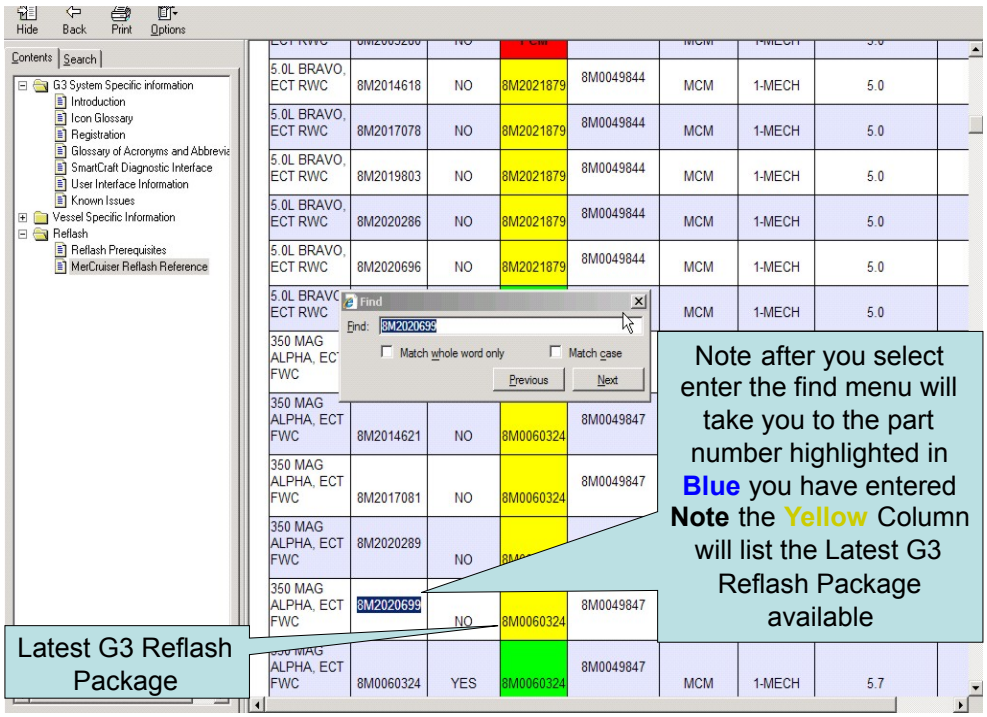
10. In this spreadsheet select the package Cal ID number you previously recorded.



50960



50961



50962

8.2 MIE DTS PCM09 calibrations and PCM09 controller. Replacement information listed below.

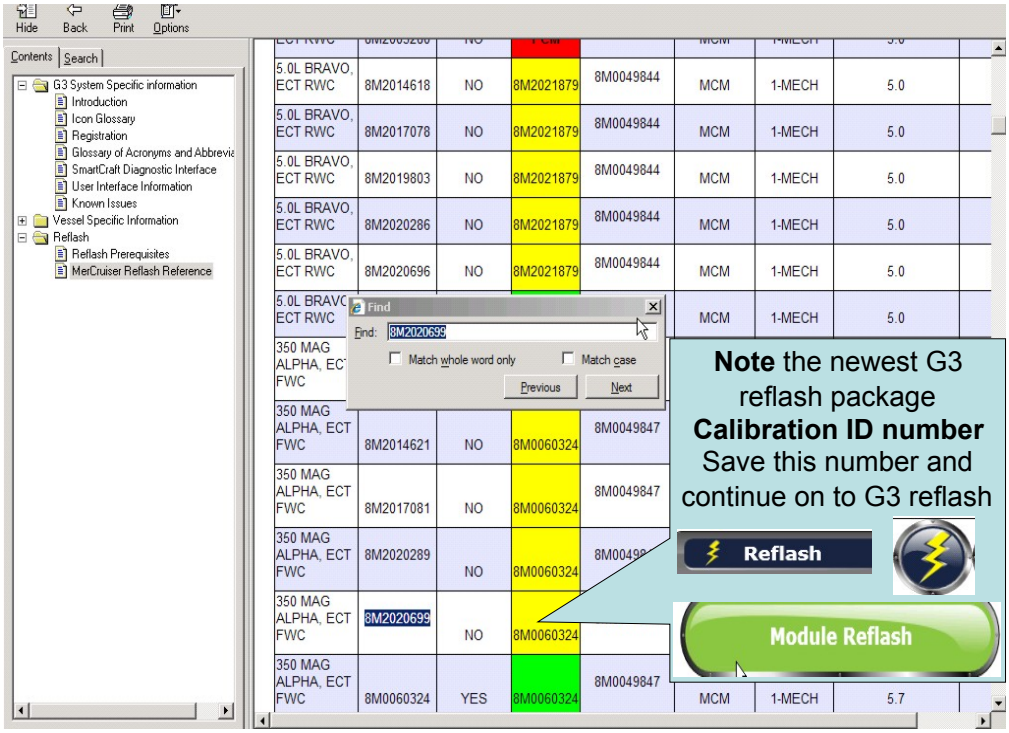
Model Description	CALIBRATION IN PCM Click the arrow below and select the calibration currently in PCM	Is this calibration the latest available	Select Update G3 Reflash Calibration Package Listed Below Cal is latest Reflash Replace PCM	Part Number to Order Replacement PCM
8.2 BS MIE DTS ECT	8M2017804	NO	REPLACE PCM	8M0059120
8.2 BS MIE DTS ECT	8M2020331	NO	REPLACE PCM	8M0059120
8.2 BS MIE DTS ECT	8M2020741	NO	REPLACE PCM	8M0059120
8.2 BS MIE DTS ECT	8M2020993	NO	REPLACE PCM	8M0059120
8.2 BS MIE DTS ECT	8M2021167	NO	8M2022585	8M0059120
8.2 BS MIE DTS ECT	8M2022347	NO	8M2022585	8M0059120
8.2 BS MIE DTS ECT	8M2022530	NO	8M2022585	8M0059120
8.2 BS MIE DTS ECT	8M2022585	YES	8M2022585	8M0059120
8.2 HO MIE DTS ECT	8M2017805	NO	REPLACE PCM	8M0059121
8.2 HO MIE DTS ECT	8M2020332	NO	REPLACE PCM	8M0059121
8.2 HO MIE DTS ECT	8M2020742	NO	REPLACE PCM	8M0059121
8.2 HO MIE DTS ECT	8M2020994	NO	REPLACE PCM	8M0059121
8.2 HO MIE DTS ECT	8M2021168	NO	8M2022586	8M0059121
8.2 HO MIE DTS ECT	8M2022348	NO	8M2022586	8M0059121
8.2 HO MIE DTS ECT	8M2022531	NO	8M2022586	8M0059121
8.2 HO MIE DTS ECT	[illegible]022586	YES	8M2022586	8M0059121

All 8.2 MIE calibrations numbers listed in Green are latest and do not need replacing

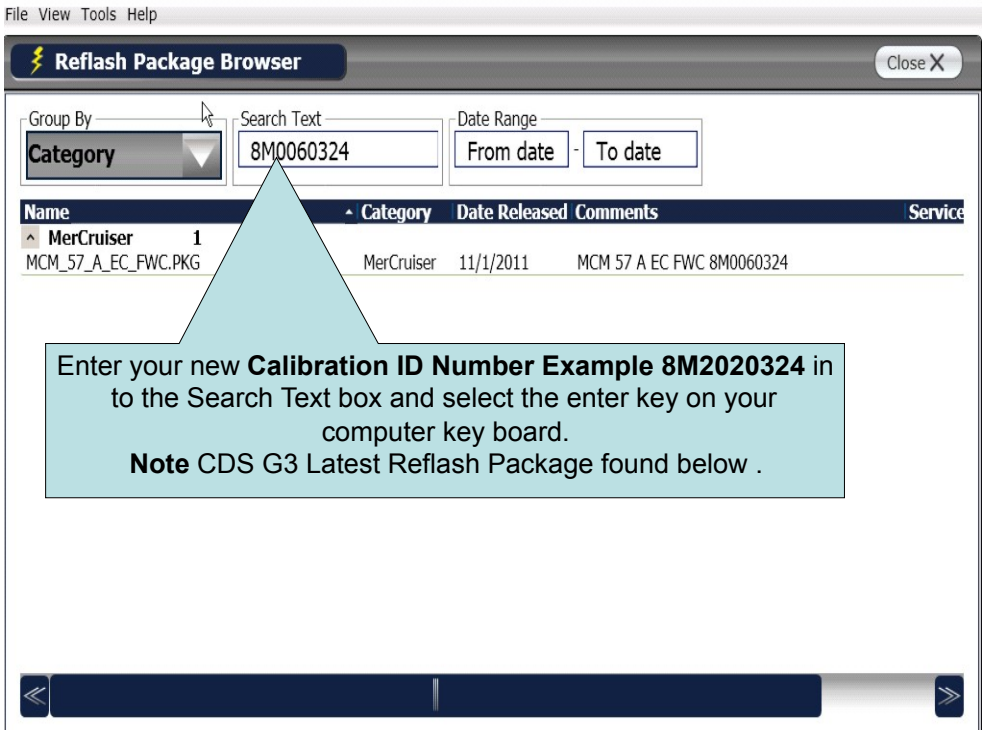
All 8.2 calibration numbers shown in Blue Can be update using CDS-G3 Diagnostic Tool **Note** Engine must have a PCM0904 controller version. Example on next page

All 8.2 calibration numbers in yellow are the latest Reflash packages available in CDS-G3

50963



50964



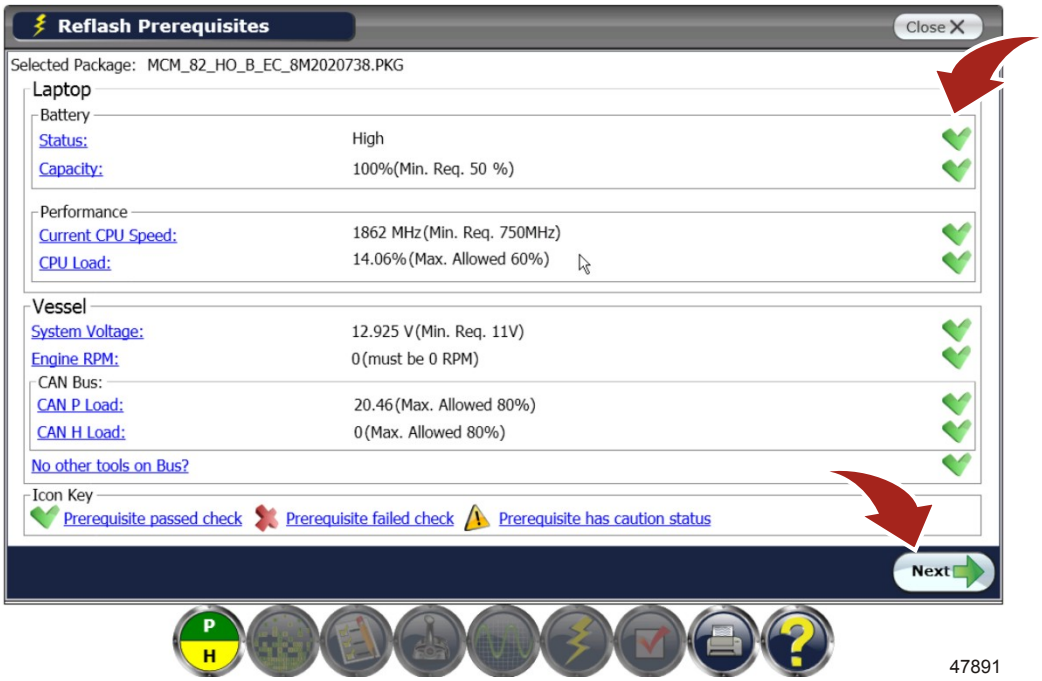
50967

11. The Prerequisite Screen will appear, verify all items have green check marks.
IMPORTANT: You must have all green check marks on the Prerequisite Screen to continue.

NOTE: *If this is a twin or multiple engine application, only turn the key switch of the engine you are reflashing to the on position. Keep other engine key switches in the off position.*

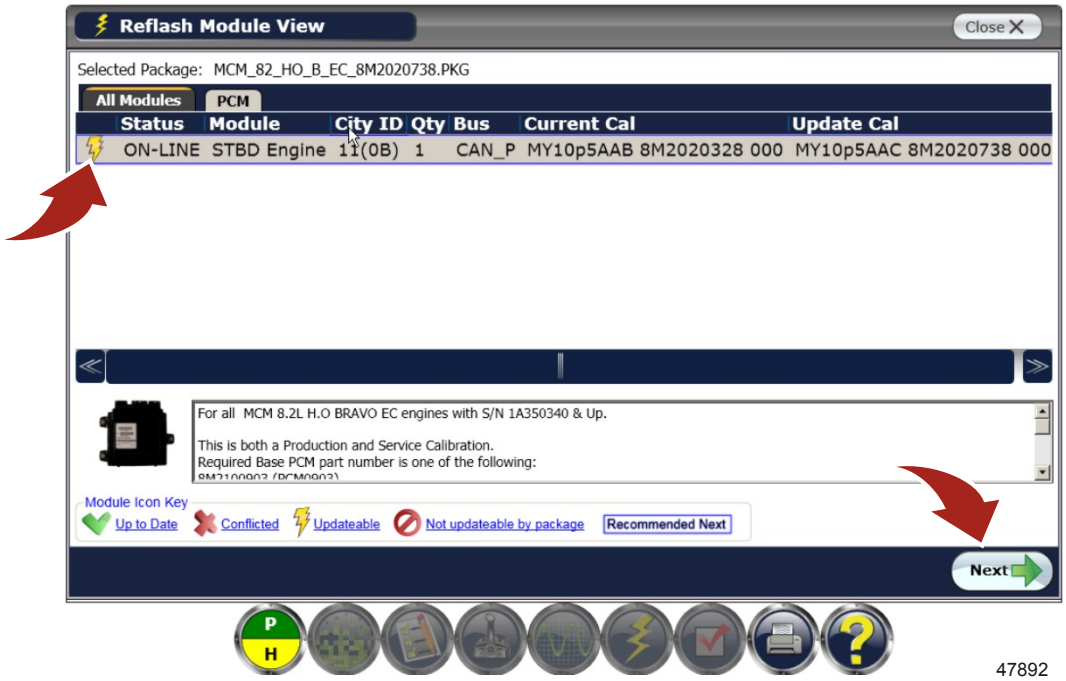
a. If all items do not have green check marks, locate and fix the issues. Verify computer settings and battery power if necessary to get all green check marks on Prerequisite Screen.

b. When all items have the green check marks, click on the Next button.



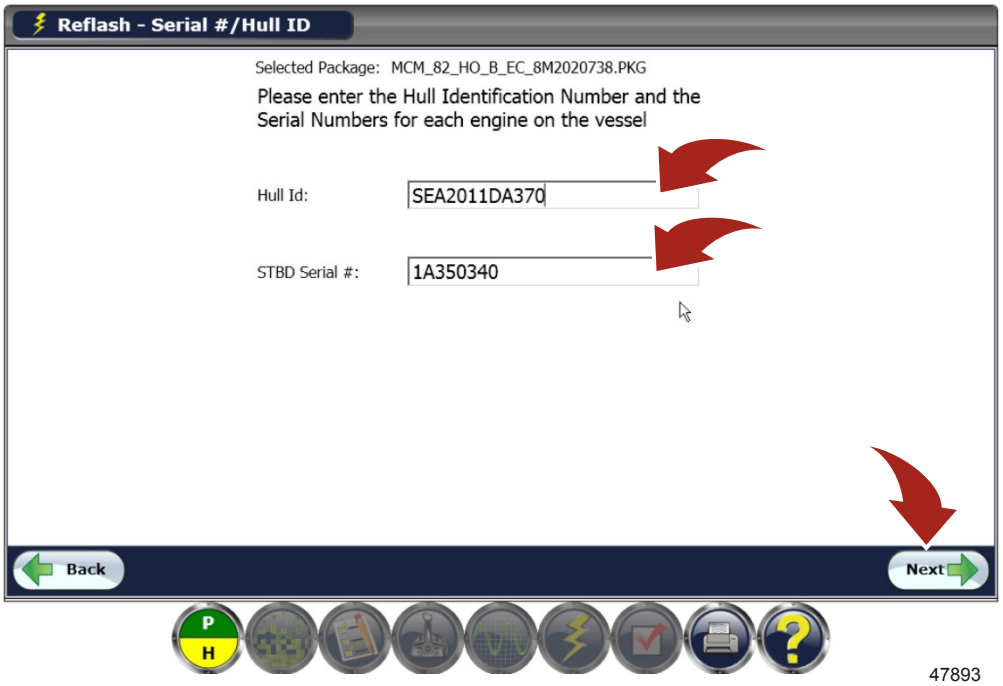
47891

12. Reflash Module View screen shows if an update is available for the engine package. Click on the Next button.



47892

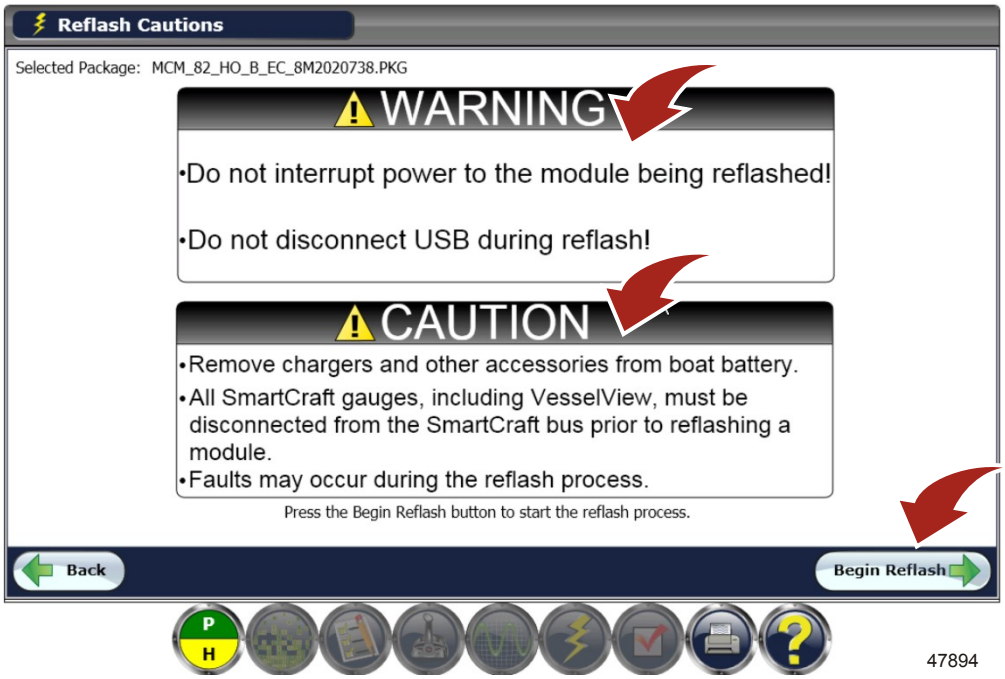
13. Enter the Hull ID number and the engine serial number. Click on the Next button.



47893

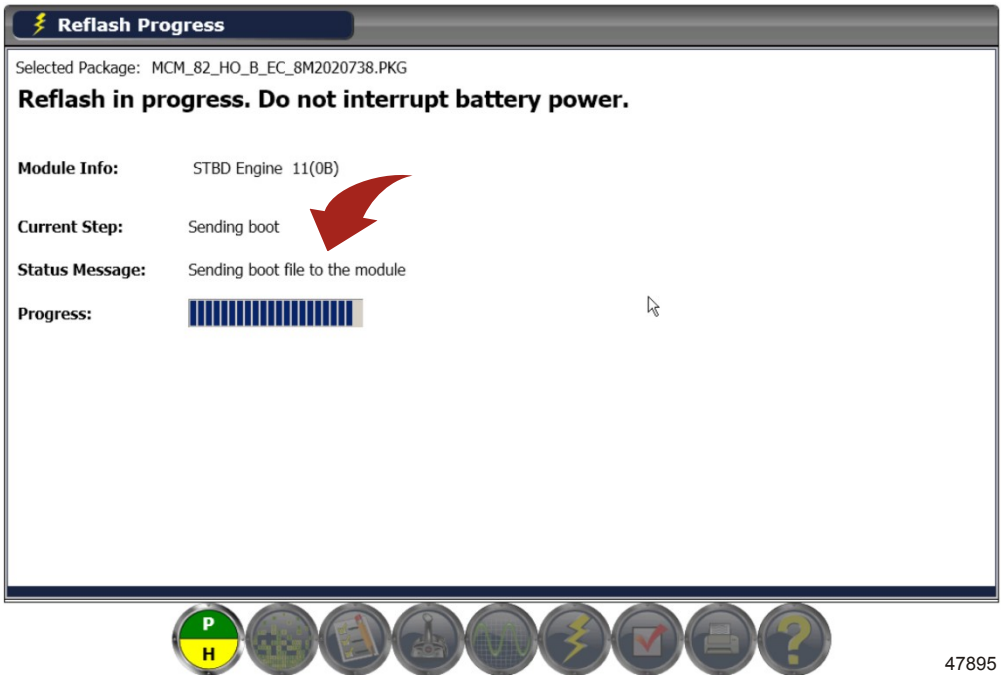
14. Read and follow the instructions on the Reflash Cautions screen.
IMPORTANT: Failure to abide by the reflash warnings and cautions will result in the PCM being unable to communicate and it will be locked. Contact Customer Service if this occurs.
    a. Check all connections listed.

b. Click on Begin Reflash button.



47894

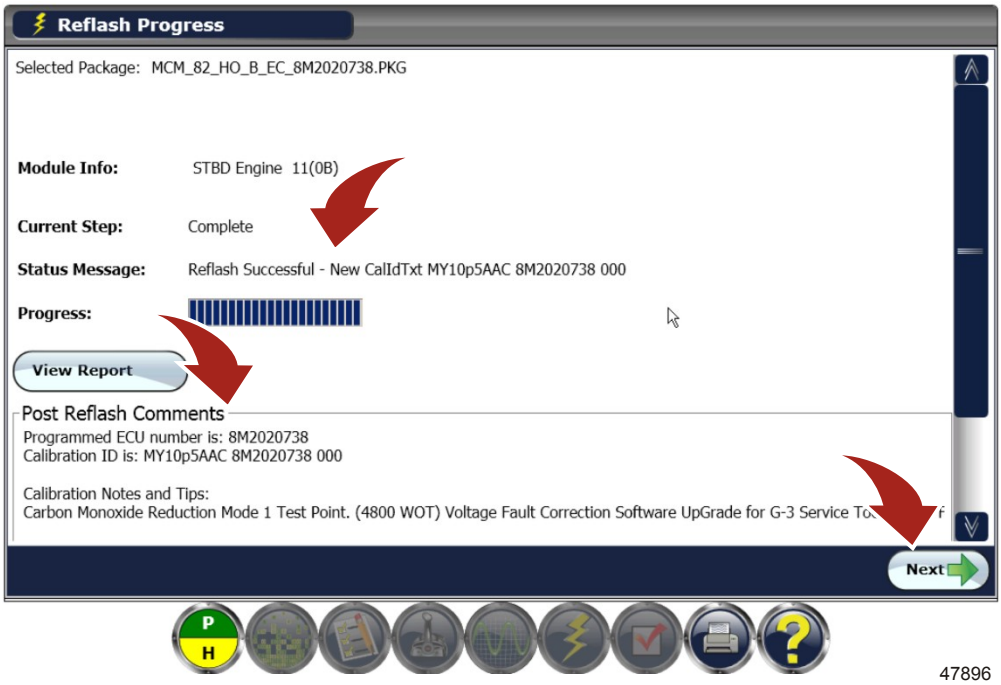
15. Allow the reflash to run without interruption.



47895

16. Watch the Status Message: when it reads Reflash Successful - New Cal ID.....
    a. Follow the steps in the Post Reflash Comments.

b. Click on the Next button.



17. Follow steps to completion and click the Finish button.
18. As an option, you may click the History button to view what you did.
19. If this is a twin or multiple-engine application, reset the port engine location.

Starting the Power Package

1. Ensure that all exhaust and electrical connections are connected properly and secure.

⚠ CAUTION

Disconnecting or connecting the battery cables in the incorrect order can cause injury from electrical shock or can damage the electrical system. Always disconnect the negative (-) battery cable first and connect it last.

2. Connect the battery cables to a fully charged battery. Clean the battery cable clamps and terminals and reconnect cables. Tighten each cable clamp securely.
3. Ensure that all cooling system hoses are connected properly and hose clamps are tight.

NOTICE

Without sufficient cooling water, the engine, the water pump, and other components will overheat and suffer damage. Provide a sufficient supply of water to the water inlets during operation.

4. Provide a sufficient supply of water to the water inlets before starting the engine.
5. Start the engine and closely observe instrumentation to ensure that all systems are functioning correctly.
6. Carefully inspect the engine for fuel, oil, fluid, water, and exhaust leaks.
7. Check for fault codes on the CDS G3 tool.

Owner Notification

A letter will be sent to every registered owner of an affected 8.2 Inboard Emission Control–powered boat. The letter will advise the owner to take the boat to any Mercury MerCruiser authorized dealer for certain upgrades to the engine. Some affected power packages will have been updated before shipment. Visit MercNET or contact MerCruiser Customer Service or your regional service center to determine if repairs have already been completed on a specific package. As a Mercury MerCruiser dealer, you should also contact affected customers to make them aware of this recall and to schedule an appointment for the repair. A copy of the customer letter is attached.

Warranty

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

- MerCruiser engine serial number
- Flat rate code and labor

Task	Flat Rate Code	Labor (h)
Vent valve installation (per side)	SB10	1.0
Elbow removal and replacement (per side)	MX14	1.0
Install exhaust diverter tube	SB02	0.2
O2 sensor connector inspection	SB02	0.2
O2 sensor connector engine harness side cleaning	SB02	0.2
O2 sensor removal and replacement	ME88	0.5
PCM removal and replacement	MJ23	1.8
Reposition and torque flame arrestor	MJ17	0.2
PCM reflash	SB05	0.5

- Part code – 599
- Failure code – 00

Outside the United States and Canada: Follow instructions issued by your local office or by your distributor.

Old Part

- **In the United States and Canada:** Return any exhaust elbow and PCM if removed from the engine, to the Mercury MerCruiser warranty department.
- **Outside the United States and Canada:** Follow instructions issued by your Marine Power International office or by your distributor.

Dear Mercury Marine Customer:

Thank you for your purchase of a new boat powered by a Mercury MerCruiser 8.2 Emission Control Inboard engine package. We appreciate your business and hope you are enjoying your new boat. We are contacting you, because we believe that certain upgrades to your engine package will enhance your ownership experience. The upgrades will be performed at Mercury's expense.

SITUATION

We have determined that some 8.2 Inboard Emission Control engines (which according to our records, is the engine that powers your boat) may experience hydraulic lock if the engine is run hard and then keyed off quickly. If hydraulic lock occurs, the engine may be prevented from restarting, and could damage internal components. Although these occurrences have been rare, we believe it is prudent to address the potential issue with system upgrades to help ensure that you have nothing but a positive boating experience in the future. Work with your dealer to have these upgrades performed, but you should make repair arrangements as soon as possible. In addition to installing a vent valve to address the hydraulic lock possibility, some engines will benefit from other engine upgrades that we will also make at our expense. You will also be receiving an additional notification letter which Mercury MerCruiser has timed to arrive on similar dates of delivery. We apologize for the repetition, but in an effort to coordinate the activity this should minimize your overall downtime while at the dealer.

WHAT YOU SHOULD DO

Contact your authorized Mercury MerCruiser dealer and make arrangements for having this vent valve installed. The dealer will refer to Mercury MerCruiser Service Bulletin 2012-04 for instructions. You must deliver your boat to the dealer and present this letter to the dealer. If you are having difficulty obtaining repairs, please contact our Customer Contact Center at 920 929 5040 for assistance or use the dealer locator feature at www.mercurymarine.com.

If you have sold the engine or boat please contact our Registration department at 920 929 5054 or e-mail us at registration_support@mercmarine.com to provide information on the new owner. Please refer to Mercury MerCruiser Service Bulletin 2012-04 with your information.

WHAT WE WILL DO

We will reimburse the dealer for performing the upgrades in accordance with the instructions outlined in the service bulletin. There will be no cost to you to have this work performed.

We apologize for any inconvenience this recall may cause you; however, we have taken this action to ensure that your boating experience will be enjoyable and trouble-free.

Sincerely,

Mercury MerCruiser Service Department