

Circulate to: Sales Manager Accounting Service Manager Technician Parts Manager

PCM Calibration for Improved Guardian Behavior

Models Covered

Models Covered	Serial Number or Year
565	0M967821-0M969516
1100 and 1350	0M965309-0M969516

Situation

Updates are available for all Mercury Racing products equipped with the PCM 09 controller. These updates improve engine guardian operations and add other calibration corrections. Changes include:

- Adding oil temperature warning to Guardian for engines not brought up to a minimum operating temperature
- Provide warning for low drive lube (565 products)
- Provide warning for transmission overheat for the 1100 and 1350 engines
- Adjustments to the default value for fuel pressure in the event of an open circuit between the sender and the PCM
- Improved throttle feel
- Improved parameters of Guardian limits to better protect the engine and eliminate nuisance faults
- Corrected trim-out and trim-range problems (565 products)
- Correction to add the option for fuel pressure display with an Analog Gauge Interface (AGI)
- Correction to K-Plane (Tab) display. Previous calibrations had the values inverted. When the tab went up, the display would show it going down (dealers and boat builders had to rotate the sender 180° to get the proper display).

Correction

If the engine serial number is in the range for this service bulletin, dealers are to update the calibration of the PCM to the latest version for the engine serial number they are working with using the G3 diagnostic tool updated with version 1.4.2 or newer. After updating a PCM calibration, take a permanent black ink marker and draw a line through the PCM part number on the PCM label, indicating that it was changed.

All 565, 1100, and 1350 products: Inform the customer that Engine Guardian has been added for low oil temperature. Running the engine at high RPM or full throttle prior to the engine oil reaching a minimum of 40.6 °C (105 °F) will put the engine in Guardian/power reduction.

All 565, 1100, and 1350 products: If the boat is rigged with K-Planes, the senders will need to be adjusted back the original position (turned 180°).

1100 and 1350 products: The oil temperature sender is reading the oil temperature after the oil cooler, and will need to be relocated to read the oil temperature before the oil cooler. Without making this change, it will take longer for the PCM to recognize that the oil is at a temperature that allows full operating power. Instructions for relocating the oil temperature sender are included in the temperature sender relocation kit (P/N 8M0079762).

Description	Part Number
Temperature Sender Relocation Kit	8M0079762

On multiple-engine applications, after recalibrating the PCM's, the dealers are to configure the throttle and shift levers using the G3 diagnostic tool, which will set the proper engine locations in the PCM's.

THE INFORMATION IN THIS DOCUMENT IS CONFIDENTIAL AND PROTECTED BY COPYRIGHT AND IS THE PROPERTY OF MERCURY MARINE.

This document is provided for the sole and exclusive use of the original recipient as prescribed by Mercury Marine and may not be distributed or copied, digitally or otherwise, without the prior written consent of Mercury Marine.

To move the K-Plane trim sender back to its original position:

1. Lower the tab down to a specific setting on the VesselView display that is greater than zero (example 1.0).
2. Completely remove the two adjustment screws holding the sender on the K-Plane.
3. Remove the sender without turning it. Turn the hex of the sender 180° and put the sender back on the K-Plane.
4. Install the two adjustment screws, but do not fully tighten the screws.
5. While looking at the VesselView display, rotate the sender as needed to obtain the prior reading (example 1.0).
6. Tighten the two adjustment screws.

Warranty

United States and Canada: Mercury Marine will credit the dealer for the labor.

Submit a warranty claim through your normal warranty-processing channel listing:

International: Follow the instructions issued by Marine Power International office or by an authorized Marine Power Distributor.

Recalibrating the PCM

- Engine serial number
- 0.3 hour labor
- Flat Rate Code: SB03
- Part Code: 731
- Failure Code: 00

Adjusting Trim Senders

- Engine serial number
- 0.5 hour labor
- Flat Rate Code: SB05
- Part Code: 731
- Failure Code: 79

Relocating Oil Temp Sender

- Engine serial number
- 0.5 hour labor
- Flat Rate Code: SB05
- Part Code: 731
- Failure Code: 03

THE INFORMATION IN THIS DOCUMENT IS CONFIDENTIAL AND PROTECTED BY COPYRIGHT AND IS THE PROPERTY OF MERCURY MARINE.

This document is provided for the sole and exclusive use of the original recipient as prescribed by Mercury Marine and may not be distributed or copied, digitally or otherwise, without the prior written consent of Mercury Marine.