

NOTICE
This bulletin is no longer active and has been superseded by Mercury Outboard Service Bulletin 2016-11R3.
This bulletin supersedes Mercury Outboard Service Bulletin 2015-16R1 November 2015 and OEM Service Bulletin 2015-12R1.
Revision change: software version.

Models Affected

All Joystick Piloting for Outboard models

Scope

Worldwide

Situation

Joystick Piloting for Outboard software system performance and feature upgrades for the command control module (CCM) and thrust vector module (TVM) was updated in October 2015.

This reflash should be performed at the next customer service interval. Software Supersession

Module	Software superseded from:	То:
CCM	CCM13ZAXXPAAA	
COM	CCM13ZAXXPAAC	
	TVM13XXXOPAAC	
	TVM13XXXOPAAD	TVINTSAAAOFAAL

The new CCM and TVM software requires CDS G3 V1.6.4 or newer. To verify your current version of CDS G3, click on the word **Help** at the top of the G3 screen and select **About**. The current version will be displayed. Previous versions of the CDS G3 software can be upgraded by connecting your laptop PC to the Internet and opening CDS G3. CDS G3 will attempt to contact the Mercury server to look for updates.

NOTE: After verifying CDS G3 is operating with the current version software, connect CDS G3 to the product and open the eBOM screen. Module software shown in red requires the software to be updated.

Checklist

Use the following checklist to guide you through the process.

Hull ID number

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Engine serial numbers:
Starboard
Port
Starboard inner
— Port inner
Current personality name:
Requested and received new vessel personality file from Mercury Technical Service
Record:
Starboard mechanical drive alignment:
Port mechanical drive alignment:
Starboard inner mechanical drive alignment:
Port inner mechanical drive alignment:
Reflash:
Helm 1 starboard CCM
Helm 1 port CCM
Helm 1 starboard inner CCM
Helm 1 port inner CCM
Helm 2 starboard CCM
Helm 2 port CCM
Helm 2 starboard inner CCM
Helm 2 port inner CCM
Starboard TVM
Assign city ID
Lever adapt
Port TVM
Lever adapt
Starboard inner TVM
Port inner TVM
Import new personality Deform staaring wheel configuration
Cat machanical drive effect for TVMs that were replaced an encountered a reflack error.
Set mechanical drive offset for 1 VMs that were replaced or encountered a reflash error:
Port TVM
☐ Starboard inner TVM
Port inner TVM
Perform compass configuration
Set the running drive alignment

Record Information

If a TVM or CCM requires replacement:

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- 1. Select the proper eBOM for your application.
- 2. In CDS G3, record the vessel personality name:
 - a. Go to the Configuration screen, and select Personality.



Configuration screen

b. Select Vessel Personality.



Personality screen

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c. Record a screenshot of the configuration name. Go to File and select Print Screen or press CTRL + F12 on the keyboard.

File Tools Help Outboard - Joystick Piloting - LEG12p0AAAD V0 - Helms 1 Engines 4 File Tools Help Vessel Personality Covery Selected File Information Vessel Personality Information File Name: Name: CIG 42H_P1_JP05C25v1_QESH_300HP_20REV4_100029 Product ID: 08 Joystick Gen1 Gas Mainum Revision: 0.00	\mathbf{x}
File Tools Help Forme V Selected File Information Vessel Personality Information File Name: Name: CIG_42H_P1_JPOSC25v1_QESH_300HP_20REV4_10002H Product ID: DB Joystick Gen1 Gas Revision: Maximum Revision: 0.00 Select File Select File	
Vessel Personality Selected File Information Vessel Personality Information Vessel Personality Information Name: Name: CIG_42H_P1_IPOSC25v1_QESH_300HP_20REV4_100024 Product 10: Maximum Revision: Select File	
Selected File Information Vessel Personality Information File Name: Name: Name: CIG_42H_P1_JP09C25v1_QESH_300HP_20REV4_100029 Product ID: OB Joystick Gen1 Gas Maximum Revision: 0.00 Select File Select File	
File Name: Name: CIG_42H_P1_JPOSC25v1_QE5H_300HP_20REV4_100024 Product ID: OB Joystick Gen1 Gas Minimum Revision: 0.00 Maximum Revision: Select File	
Select File	в
	\uparrow
	-
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Configuration name

- d. Prior to beginning the software reflash, obtain the correct vessel personality. Contact Mercury Technical Service and supply them with the current configuration name.
- If a TVM is being replaced, record the mechanical drive offset value. This value must be entered into the new module: IMPORTANT: If replacing a TVM or if an error occurs during the reflash process, the Mechanical Drive Offset values will need to be entered. If they are not recorded, the procedure to set the values must be performed. NOTE: To view the screen images of the following screens, refer to Set the Mechanical Drive Offset (If Replacing a TVM).
 - a. Go to the **Configuration** screen.
 - b. Select Drive Configuration.
 - c. Select Manual Drive Alignment.

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d. Select Joystick Piloting Outboard.

STEP	1	2	3	4	
Select ST	ART, to	o begi	n.		
					START C
				-0.2° 0.8° Port Starboard	
		NEIGI	IDATE	ON .	

e. Record the port and starboard values from the screen. After recording the values, select the **Cancel Configuration** button.

IMPORTANT: If either of these values equal 2.0, contact Mercury Technical Service.

Module Reflash

- 1. Connect the laptop PC to an AC power source to ensure that the power is not interrupted during the reflash procedure.
- 2. With the key switches on, the engines off, the handles in neutral, and CDS G3 connected and running, select **Reflash**; then select **Module Reflash** to begin the reflash process.



Module Reflash screen a - Module Reflash button

b - Reflash tab

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3. From the **Reflash Package** screen, select the appropriate package for your application; then select the drop-down arrow.



- 4. Press Next to continue.
- 5. A **Reflash Prerequisites** screen will show if all prerequisites have been met. Ensure that your system meets the prerequisites. Address any errors that appear.

NOTE: During module reflash, the system may launch the prerequisite screen again prior to letting you proceed with a particular module to ensure that all items are still showing passed checks.

e Tools Help	Outboard - Joystick Piloting - LEG12p0AAAD V0	- Helms 1 Engines 4
🕴 Reflash Prerequisite	s	Close X
lected Package: Joystick Piloting	Outboard.pkg	
Laptop		
Battery		
Status:	NoSystemBattery	•
Capacity:	100%(Min. Req. 50 %)	*
Performance		
Current CPU Speed:	1595 MHz(Min. Reg. 750MHz)	N
CPU Load:	12.50% (Max. Allowed 60%)	×
Vessel		
System Voltage:	12.705 V(Min. Reg. 11V)	•
Engine RPM:	0(must be 0 RPM)	•
CAN Bus		
CAN P Load:	24.07 (Max. Allowed 80%)	N
CAN H Load:	44.93 (Max. Allowed 80%)	N
No other tools on Bus?		N 1
Icon Key Prerequisite passed check	Prerequisite failed check A Prerequisite has caution status	
		Next
4		
		560

Reflash Prerequisites screen

- 6. Select **Next** to begin the reflash process. You will be required to enter the hull I.D. and engine serial numbers before proceeding.
- 7. The **Reflash** screen will list the modules to be reflashed. The on-screen instructions will list the correct order to reflash the modules. Reflash the command control modules (CCMs) first, then the thrust vector modules (TVMs).
 - Reflash the starboard CCM before the other CCMs. After reflashing, each CCM is assigned a Helm 1 STBD city ID 145.

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• Reflash the starboard TVM before the other TVMs. After reflashing, each TVM is assigned a starboard city ID 43.



After reflashing a module

8. After the CCMs and the starboard TVM have been reflashed, CDS G3 will take you to the **Helm Configuration** screen, where it is necessary to assign a city ID, and then perform a lever adapt.

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IMPORTANT: If the helm configuration screen is closed before the City ID and Lever Adapt procedures are complete, additional steps will be required. Refer to the procedure: If an Error Occurs During Lever Adapt.

File	G3 - Registered has 17 Tools Help Current Conf urrent Configuration	a b drys 1 C igural 1 Assign City ID Lev Heim 1	rer Adapt Engine	1	Close X	Before performing city ID assignment a - Assign City ID tab b - Lever Adapt tab
	Helm 1 Helm 2	Port Outside	Port Inside	Starboard Inside	Starboard Outside Gry(0: 51 (148) Bevver 0 Lever Cotacle Polanty, Normal Gty: 2	
P	Helm 3 Helm 4		2 6	<u>م</u>		
n		HONE WOODLONG	CONFICUENTION	AMERICANUS REFUGA	56152	

- a. Assign city IDs using the tab marked **Assign City ID**.
- b. Follow the on-screen directions to complete the city ID assignment.
- c. After completion, each CCM is assigned a unique city ID. Each module city ID corresponds to its helm and engine location.

en coningination		Engine	1	V
	Port Outside	Port Inside	Starboard Inside	Starboard Outsi
Helm 1	City(D, 52 (146) Swyler 0 Lever Binacle Polarity: Reverse Oty: 1			Citylo: 31 (148) SwVer: 0 Lever: Console Polarity: Normal City: 1
Helm 2				
Helm 3				
Heim 4				
Heim 4				

After city IDs have been assigned

9. Perform lever adapt.

IMPORTANT: After the correct city ID is assigned, CDS G3 will write the mechanical drive offset values to the module. Failure to perform the lever adapt process will require the numbers to be entered manually.

a. Select the Lever Adapt tab, select the correct remote control type, and follow the on-screen directions to complete the process.

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IMPORTANT: Triple and quad shadow ERCs require that the Shadow Mode box be checked.



Shadow Mode box

- b. Perform the lever adapt process for each helm separately.
- c. After completion, the TVM that was just reflashed will have its city ID assigned. Go to the **Current Configuration** tab in **Helm Setup** and ensure that all CCMs report their location correctly and show white statuses instead of red.

	4			
Halm 1	Port Outside Caylo: 82 (146) Beller: 8 Lever: Console Petanty Rennel Cayl 1	Port Inside	Sitarboard Inside	Starboard Outsid Onylit: 51 (146) Baller: 0 Laner: Console Peaker: Normal Oly: 1
Meim 2				
Helm 3				
Halm 4				

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After assigning city IDs

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10. Select **Close** to be taken back to the **Reflash** screen. After the city ID is set in the TVM, CDS G3 will write the **Mechanical Drive Offset** and **Drive Offset** data to the module.



Showing successful reflash

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11. If an error occurs during the lever adapt, an error screen will be displayed. Select Next to continue.



TVM reflash error screen

After the reflash of the next TVM, you will be taken back to the **Helm Configuration** screen. Repeat the **Lever Adapt** process (steps 9–10). Note that it is only necessary to lever adapt helm 1.

- 12. After all TVMs are reflashed, select **Finish**.
- 13. Select the new eBOM and proceed to Import Vessel Personality.

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If an Error Occurs During Lever Adapt

If the **Helm Configuration** page is closed before the lever adapt is completed or if an error occurs during the process, the reflash page will appear with a 60-second countdown display during which time CDS G3 will not accept any input.

CDS G3 - Registered he	s 39 days left.	
File Tools Help	Outboard - Joystick Piloting - LEG12p0AAA	D V0 - Helms 1 Engines 4
🕴 Reflash Pro	gress	
Selected Package: 30	ystick Piloting Outboard.pkg	
Reflash in pr	ogress. Do not interrupt battery power.	
Module Info:	PORT TVM 44(2C)	
Current Step:	Waiting for Module	
Status Message:	Walting for module, aborting in 54 seconds.	
Progress:		
P H		4. Hereine
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Countdown screen

When the countdown has expired, the following reflash error message will appear. After the reflash process has been completed, it will be necessary to manually enter the **Mechanical Drive Offset** and **Drive Offset** values recorded in step 3 under **Record Information**.

File Outboard - Joystick Piloting - LEG12p0AAAD V1 - Helms 1 Engin Reflash Progress Selected Package: Joystick Piloting Outboard.pkg Module Info: PORT Inner TVM 46(2E) Current Step: Complete Status Message: Reflash failed to complete - (CDS G3 is unable to communicate with this module) Progress: View Report View Report Post Reflash Comments Page Status Mays off Sep 1: Tum kays off Sep 2: Reconnect batteries Sep 4: Tum kays on * Sep 4: Tum kays on *		rys left.	CDS G3 - Registered has 39 days
Reflash Progress Selected Package: Joystick Piloting Outboard.pkg Module Info: PORT Inner TVM 46(2E) Current Step: Complete Status Message: Reflash failed to complete - (CDS G3 is unable to communicate with this module) Progress: View Report Post Reflash Comments An error occured during the reflash process. Please follow the steps below and retry: Step 1: Turn keys of Step 3: Reconnect batteries Step 4: Turn keys of Step 4: Turn keys of Step 4: Turn keys of Turnet the steps are contact technical support *	Engines 4	Outboard - Joystick Piloting - LEG12p0AAAD V1 - Helms 1 B	File Tools Help
Selected Package: Joystick Plioting Outboard.pkg Module Info: PORT Inner TVM 46(2E) Current Step: Complete Status Message: Reflash failed to complete - (CDS G3 is unable to communicate with this module) Progress: View Report View Report Post Reflash Comments An error occured during the reflash process. Please follow the steps below and retry: Step 1: Turn krys off Step 2: Disconnect batteries Step 4: Turn krys of Step 3: Reconnect thatteries Step 4: Turn krys of ** If this issue persists in lease contact technical support *		65	F Reflash Progress
Module Info: PORT Inner TVM 46(2E) Current Step: Complete Status Message: Reflash failed to complete - (CD5 G3 is unable to communicate with this module) Progress: Image: Complete View Report View Report Post Reflash Comments An error occured during the reflash process. Please follow the steps below and retry: Step 1: Turn keys off Step 3: Roomnet batteries Step 4: Turn keys off Step 4: Turn keys off *	. Α	Piloting Outboard.pkg	Selected Package: Joystick Pl
Module Info: PORT Inner TVM 46(2E) Current Step: Complete Status Message: Reflash failed to complete - (CDS G3 is unable to communicate with this module) Progress: Image: Complete - (CDS G3 is unable to communicate with this module) View Report Image: Complete - (CDS G3 is unable to communicate with this module) Post Reflash Comments An error occured during the reflash process. Please follow the steps below and retry: Step 1: Turn krys off Step 2: Roomeet thatteries Step 4: Turn krys off Step 4: Turn krys off * If this issue persists: nlease contact technical support * *			
Current Step: Complete Status Message: Reflash failed to complete - (CDS G3 is unable to communicate with this module) Progress: View Report View Report Post Reflash Comments An error occured during the reflash process. Please follow the steps below and retry: Step 1: Turn keys off Step 3: Disconnect batteries Step 4: Turn keys on * If this issue nersists inlease rontart technical surnort *		NRT Inner TVM 46(2E)	Module Info: POR
Status Message: Reflash failed to complete - (CDS G3 is unable to communicate with this module) Progress: View Report Post Reflash Comments An error occured during the reflash process. Please follow the steps below and retry: Sep 1: Turn keys off Sep 3: Rommet batteries Sep 4: Turn keys on * If this issue peedids: please contact technical support *		mplete	Current Step: Com
View Report View Report Post Reflash Comments An error occured during the reflash process. Please follow the steps below and retry: Sep 1: Turk keys off Sep 3: Econnect batteries Step 4: Turk keys on * If this issue persists inlease rontact technical support *		flash failed to complete - (CDS G3 is unable to communicate with this module)	itatus Message: Refla
View Report Post Reflash Comments An error occured during the reflash process. Please follow the steps below and retry: Sop 1: Turn keys off Sop 2: Disconnect batteries Step 3: Reconnect batteries Step 4: Turn keys on * If this issue persists nease contact technical summert *			rogress:
Post Reflash Comments An error occured during the reflash process. Please follow the steps below and retry: Step 1: Turn knys off Step 3: Reconnect batteries Step 4: Turn knys on * If this issue peridds: please contect technical support *			View Report
An error occured during the reflash process, Please follow the steps below and retry: Step 1: Turn keys off Step 3: Disconnect batteries Step 4: Turn keys on * If this losue neededs inlease contact technical summert *		ts	Post Reflash Comments
Step 2: Disconnect batteriles Step 4: Tournect batteriles Step 4: Tourn keys on * If this issue nersists: niesse contact technical sunnert *		e reflash process. Please follow the steps below and retry:	An error occured during the Step 1: Turn keys off
Step 4: Tum keys on * If this loose nersists inlease rontart terhnical sunnert *		es es	Step 2: Disconnect batteries Step 3: Reconnect batteries
	V	ase contact technical sunnert *	Step 4: Turn keys on * If this issue nersists misses
	Next		
		f	P
H HOME HOUSELENES BOOM COMMENSATION ON ADDRESS		NERS NOULDER BOR CONTENTER DAGADERS INTAR	H

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Resulting reflash error screen

Import Vessel Personality

- After a CCM is reflashed, all vessel personality information for that application is lost.
- The personality information must be restored using the Import function in CDS G3. Go to **Configuration>Personality>Vessel Personality**, and select **Import**.

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- Use Select File to query the memory stick or file folder that contains the vessel personality that was provided by Mercury Technical Service.
- Select the personality. Then select **Start Import** to complete the personality file import process.



When the process is complete, select **Close**.



Close button

Perform Steering Wheel Configuration

After a CCM is reflashed, the programmed position of the steering wheel at center is lost and must be set using CDS G3. To program the steering wheel at center, go to **Configuration>Helm Configuration** and select **Steering Wheel Configuration**. Follow the on-screen directions in the CDS G3 to program the center position of the steering wheel.

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NOTE: This configuration procedure must be completed for each helm separately.



Set the Mechanical Drive Offset (if Replacing a TVM)

If an error occurred during the TVM reflash process, perform the following.

If the MechanicalDriveOffset value could not be recorded as described in **Record Information**, refer to the **Joystick Piloting** for **Outboards** service manual, **Section 5 - Initial Out-of-Water Engine Alignment**.

If the MechanicalDriveOffset value was recorded:

1. Go to Configuration and select Drive Configuration.



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2. Select Manual Drive Alignment.



3. Select Joystick Piloting Outboard.



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4. Follow the on-screen instructions until the following screen appears. Then, select Start.

STEP	1	2	3	4	
Select ST	ART, to	o begi	n.		
					START C
				-0.2° 0.8° Port Starboard	
	EL CO	NFIGL	JRATI	DN	FINISH C

5. Select the gauge that corresponds to the TVM for which you are entering the value. Press the right or left arrow until the value matches the information recorded earlier. Refer to **Record Information**.

SIEP	1	2	3	4	
Select th	e arrov	ws belo	ow eac	drive gauge to command the drive to the desired position.	
			ſ	2 2 2 2	
				-0.2	
				Port Starboard	
	EL CO	NFIGU	RATIO	N	

- 6. Select Finish.
- 7. Select Exit Configuration.

Perform a Water Test

The vessel must be water tested prior to returning to the customer for use. During the water test, you must:

- Perform a drive alignment using CDS G3.
- Test Skyhook (if equipped).
- Test autoheading (if equipped).
- Test track waypoint (if equipped).

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• Test the joystick functionality in all directions. Usually it is better to test the joystick while close to a stationary object to use as a point of reference.

Set the Running Drive Alignment

NOTE: This step is not necessary unless a TVM reflash procedure encountered an error.

IMPORTANT: Before setting the running drive alignment, the existing drive offset values must be set to zero.

Before setting the running drive alignment, the existing drive offset values must to be set to zero so that all modules are starting at a common vector direction. To accomplish this:

- 1. With the boat at rest and the engines idling in neutral, use CDS G3 and go to Drive Alignment>Configuration>Drive Configuration and select Drive Alignment.
- 2. Select **Start** to activate the drive alignment. Select either the green or red arrow buttons to get the boat icon to either its left or right maximum value (± 3°). To ensure that the maximum value is achieved, press the arrow button at least 12 times.



First, set the value to its maximum, either port or starboard



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Zero the setting before performing alignment

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- 3. Perform running drive alignment, following the on-screen prompts.
- 4. Select **Finish**. The reflash process is complete.

Warranty

If the engine is within the warranty period, submit a warranty claim through your normal warranty processing channel.

- Engine serial number
- Labor: 0.3 hour per module
- On the water test labor: 1.0 per starboard engine
- Flat rate code: SB03, SB10
- Part code: 536 (CCM), 566 (TVM)
- Fail code: 79

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

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