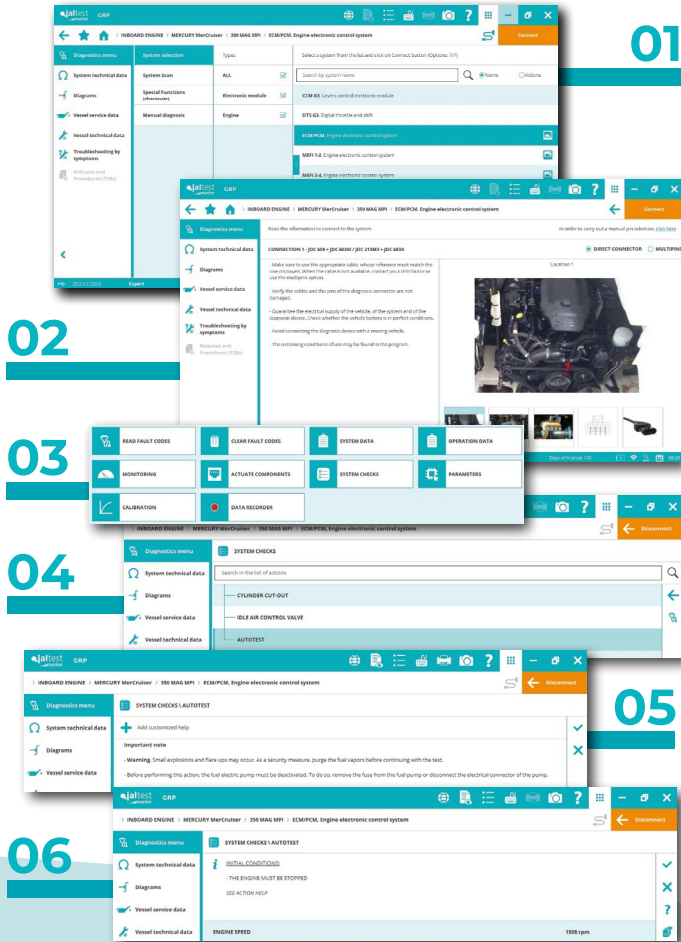


# Jaltest Marine: Mercury Autotest on a 350 MAG MPI



In some situations, we have an active alarm coming from the display on Mercury systems, and when performing fault code diagnostics, none are related to the problem. Jaltest Marine provides dealer level diagnostics solutions, and in this case study we are going to show how to perform an Autotest system check in order to force those hidden fault codes.

Let's access the initial scan point, accessing the inboard brand menu, and then selecting the appropriate system; in this case a 350 MAG MPI. As you can see Jaltest Marine is an all system diagnostics tool and we can communicate to the Smartcraft Technology (pic 1). We select into ECM/PCM and then by clicking into the connector help symbol, we can easily follow the connection process: images, pin outs and the part numbers (pic 2). Then click connect.

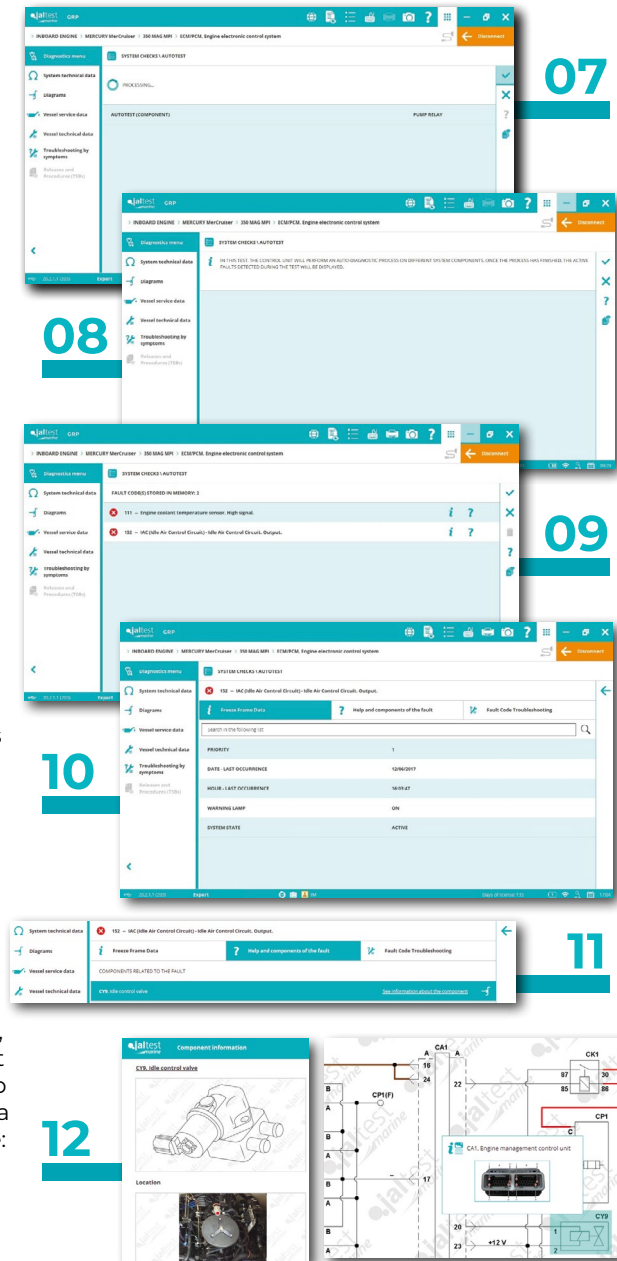
Once you are in, select the system checks menu (pic 3), and finally, Autotest (pic 4).

With Jaltest Marine you will follow 3 steps: initial information (pic 5), initial conditions (pic 6), and the diagnostics functionality (pic 7). This system check will automatically activate every engine actuator during approximately 4 minutes (ignition coil, injector, warning alarm, idle air control valve, fuel pump relay).

Doing this process (pic 8) the software will force the appearance of those hidden fault codes that were causing the alarm activation (pic 9). As you can see, we obtain 2 new error, being the second one (idle air control circuit) related to the case study.

As usual Jaltest Marine offers guided diagnostics, with the freeze frame data (pic 10), we obtain last occurrence information. And by clicking into help and components of the fault (pic 11), detailed data from the specific component related to the code: images, location, operational values and wiring diagrams (pic 12).

Cover all your maintenance needs, diagnostics and technical information, with the leading all makes and all systems diagnostics tool, Jaltest Marine!



For more information visit:  
[cojaliusa.com](http://cojaliusa.com)

click on images to enlarge



01

**jaltest** marine GRP

← ★ 🏠 > INBOARD ENGINE > MERCURY MerCruiser > 350 MAG MPI > ECM/PCM, Engine electronic control system

Connect

Diagnostics menu	System selection	Types	Select a system from the list and click on Connect button (Options: 7/7)
System technical data	System Scan	ALL <input checked="" type="checkbox"/>	Search by system name <input type="text"/> 🔍 <input checked="" type="radio"/> Name <input type="radio"/> Actions
Diagrams	Special Functions (shortcuts)	Electronic module <input checked="" type="checkbox"/>	CCM G3, Levers control electronic module
Vessel service data	Manual diagnosis	Engine <input checked="" type="checkbox"/>	DTS G3, Digital throttle and shift
Vessel technical data			<b>ECM/PCM, Engine electronic control system</b> 🖼️
Troubleshooting by symptoms			MEFI 1-2, Engine electronic control system 🖼️
Releases and Procedures (TSBs)			MEFI 3-4, Engine electronic control system 🖼️
			PCM G3, Fuel injection system, Multipoint Injection (MPI) 🖼️
			TVM G3, Course control system

20.3.1.1 Expert JorgeVB Days of license: 157 100% 19:08

For more information visit: [cojaliusa.com](http://cojaliusa.com)



02

**jaltest marine** GRP

← ★ 🏠 > INBOARD ENGINE > MERCURY MerCruiser > 350 MAG MPI > ECM/PCM, Engine electronic control system

Connect

**Diagnostics menu** Read the information to connect to the system In order to carry out a manual pin selection, [click here](#)

**System technical data** CONNECTION 1 - JDC 213.9 + JDC 603A  DIRECT CONNECTOR  MULTIPINS

**Diagrams**

**Vessel service data**

**Vessel technical data**

**Troubleshooting by symptoms**

**Releases and Procedures (TSBs)**

- Make sure to use the appropriate cable, whose reference must match the one displayed. When the cable is not available, contact your distributor or use the multipins option.





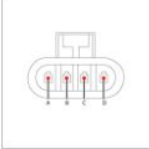
- Verify the cables and the pins of the diagnosis connector are not damaged.

- Guarantee the electrical supply of the vehicle, of the system and of the diagnosis device. Check whether the vehicle battery is in perfect conditions.

- Avoid connecting the diagnosis device with a moving vehicle.

- The remaining conditions of use may be found in the program.

Location 1

20.3.1.1 Expert JorgeVB Days of license: 157 19:09

For more information visit: [cojaliusa.com](http://cojaliusa.com)



03

jaltest marine GRP

> INBOARD ENGINE > MERCURY MerCruiser > 350 MAG MPI > ECM/PCM, Engine electronic control system

Disconnect

Diagnostics menu

Select the desired action

System technical data

Search in the list of actions

Diagrams

Vessel service data

Vessel technical data

Troubleshooting by symptoms

Releases and Procedures (TSBs)

READ FAULT CODES

CLEAR FAULT CODES

SYSTEM DATA

OPERATION DATA

MONITORING

ACTUATE COMPONENTS

SYSTEM CHECKS

PARAMETERS

CALIBRATION

DATA RECORDER

20.3.1.1 Expert JorgeVB Days of license: 157 100% 19:10

For more information visit:  
[cojaliusa.com](http://cojaliusa.com)



04

jaltest marine GRP

> INBOARD ENGINE > MERCURY MerCruiser > 350 MAG MPI > ECM/PCM, Engine electronic control system

Disconnect

Diagnostics menu

SYSTEM CHECKS

System technical data

Search in the list of actions

- CYLINDER CUT-OUT
- IDLE AIR CONTROL VALVE
- AUTOTEST

Diagrams

Vessel service data

Vessel technical data

Troubleshooting by symptoms

Releases and Procedures (TSBs)

20.3.1.1 Expert JorgeVB Days of license: 157 19:10

For more information visit:  
[cojaliusa.com](http://cojaliusa.com)



05

The screenshot displays the jaltest marine software interface. At the top, the breadcrumb navigation path is: INBOARD ENGINE > MERCURY MerCruiser > 350 MAG MPI > ECM/PCM, Engine electronic control system. The left sidebar contains a 'Diagnostics menu' with options: System technical data (selected), Diagrams, Vessel service data, Vessel technical data, Troubleshooting by symptoms, and Releases and Procedures (TSBs). The main content area is titled 'SYSTEM CHECKS \ AUTOTEST' and includes an 'Add customized help' button and an 'Important note' section. The note contains two warning messages: '- Warning. Small explosions and flare ups may occur. As a security measure, purge the fuel vapors before continuing with the test.' and '- Before performing this action, the fuel electric pump must be deactivated. To do so, remove the fuse from the fuel pump or disconnect the electrical connector of the pump.' The bottom status bar shows version 20.3.1.1, user 'Expert', 'JorgeVB', 'Days of license: 157', and system icons for battery, Wi-Fi, search, and calendar.

For more information visit:  
[cojaliusa.com](http://cojaliusa.com)



06

jaltest marine GRP

> INBOARD ENGINE > MERCURY MerCruiser > 350 MAG MPI > ECM/PCM, Engine electronic control system

Disconnect

Diagnostics menu

- System technical data
- Diagrams
- Vessel service data
- Vessel technical data
- Troubleshooting by symptoms
- Releases and Procedures (TSBs)

SYSTEM CHECKS \ AUTOTEST

**i** INITIAL CONDITIONS:  
- THE ENGINE MUST BE STOPPED  
SEE ACTION HELP

**ENGINE SPEED** 2518 rpm

20.3.1.1 Expert JorgeVB Days of license: 157 19:11

For more information visit:  
[cojaliusa.com](http://cojaliusa.com)



07

The screenshot displays the jaltest marine software interface. At the top, the breadcrumb navigation reads: > INBOARD ENGINE > MERCURY MerCruiser > 350 MAG MPI > ECM/PCM, Engine electronic control system. A 'Disconnect' button is visible in the top right corner. On the left, a 'Diagnostics menu' is open, listing options: System technical data (selected), Diagrams, Vessel service data, Vessel technical data, Troubleshooting by symptoms, and Releases and Procedures (TSBs). The main area shows 'SYSTEM CHECKS \ AUTOTEST' with an information icon and the text: 'IN THIS TEST, THE CONTROL UNIT WILL PERFORM AN AUTO-DIAGNOSTIC PROCESS ON DIFFERENT SYSTEM COMPONENTS. ONCE THE PROCESS HAS FINISHED, THE ACTIVE FAULTS DETECTED DURING THE TEST WILL BE DISPLAYED.' To the right of this text are three icons: a checkmark, an 'X', and a question mark. The bottom status bar shows version 20.3.1.1, user 'Expert', 'JorgeVB', 'Days of license: 157', and system icons for battery, Wi-Fi, and search, along with the time 19:12.

For more information visit:  
[cojaliusa.com](http://cojaliusa.com)





08

**jaltest** marine GRP

INBOARD ENGINE > MERCURY MerCruiser > 350 MAG MPI > ECM/PCM, Engine electronic control system

Disconnect

**Diagnostics menu**

- System technical data
- Diagrams
- Vessel service data
- Vessel technical data
- Troubleshooting by symptoms
- Releases and Procedures (TSBs)

**SYSTEM CHECKS \ AUTOTEST**

FAULT CODE(S) STORED IN MEMORY: 2

	111 -- Engine coolant temperature sensor. High signal.			
	152 -- IAC (Idle Air Control Circuit) - Idle Air Control Circuit. Output.			

20.3.1.1 Expert JorgeVB Days of license: 157 19:14

For more information visit:  
cojaliusa.com



09

jaltest marine GRP

INBOARD ENGINE > MERCURY MerCruiser > 350 MAG MPI > ECM/PCM, Engine electronic control system

Disconnect

Diagnostics menu

SYSTEM CHECKS \ AUTOTEST

111 -- Engine coolant temperature sensor. High signal.

Freeze Frame Data | Help and components of the fault | Fault Code Troubleshooting

Search in the following list

PRIORITY	1
DATE - LAST OCCURRENCE	12/06/2017
HOUR - LAST OCCURRENCE	16:03:47
WARNING LAMP	ON
SYSTEM STATE	ACTIVE

20.3.1.1 Expert JorgeVB Days of license: 157 19:16

For more information visit:  
cojaliusa.com



10

The screenshot displays the jaltest marine diagnostic software interface. At the top, the breadcrumb navigation path is: INBOARD ENGINE > MERCURY MerCruiser > 350 MAG MPI > ECM/PCM, Engine electronic control system. A 'Disconnect' button is visible in the top right corner. The left sidebar contains a 'Diagnostics menu' with options: System technical data, Diagrams, Vessel service data, Vessel technical data, Troubleshooting by symptoms, and Releases and Procedures (TSBs). The main content area shows 'SYSTEM CHECKS \ AUTOTEST' with a red 'X' icon and the fault code '111 -- Engine coolant temperature sensor. High signal.'. Below this, there are tabs for 'Freeze Frame Data', 'Help and components of the fault' (which is active), and 'Fault Code Troubleshooting'. A section titled 'COMPONENTS RELATED TO THE FAULT' lists two items: 'CB3, Coolant temperature sensor' and 'CB3B, Coolant temperature sensor', each with a link to 'See information about the component' and a right-pointing arrow icon. The bottom status bar shows the version '20.3.1.1', the user 'Expert' (JorgeVB), 'Days of license: 157', and the time '19:17'.

For more information visit:  
cojaliusa.com



11

**jaltest marine GRP**

> INBOARD ENGINE > MERCURY MerCruiser > 350 MAG MPI > ECM/PCM, Engine electronic control system

Disconnect

**ECM 555 Inboard (... - 2004) with instrumentation 10-pin connector**

Hide components list

Select another configuration

Diagnostics menu

System technical data

**Diagrams**

Vessel service data

Vessel technical data

Troubleshooting by symptoms

Releases and Procedures (TSBs)

Search in the component list

Show full list

- CA1, Engine management control unit
- CB1, Oil pressure sensor
- CB13, Knock Sensor
- CB16, Throttle valve position sensor
- CB19, Transmission oil temperature sensor
- CB21, Combined sensor for the water temperature in the aquatic environme...
- CB3, Coolant temperature sensor

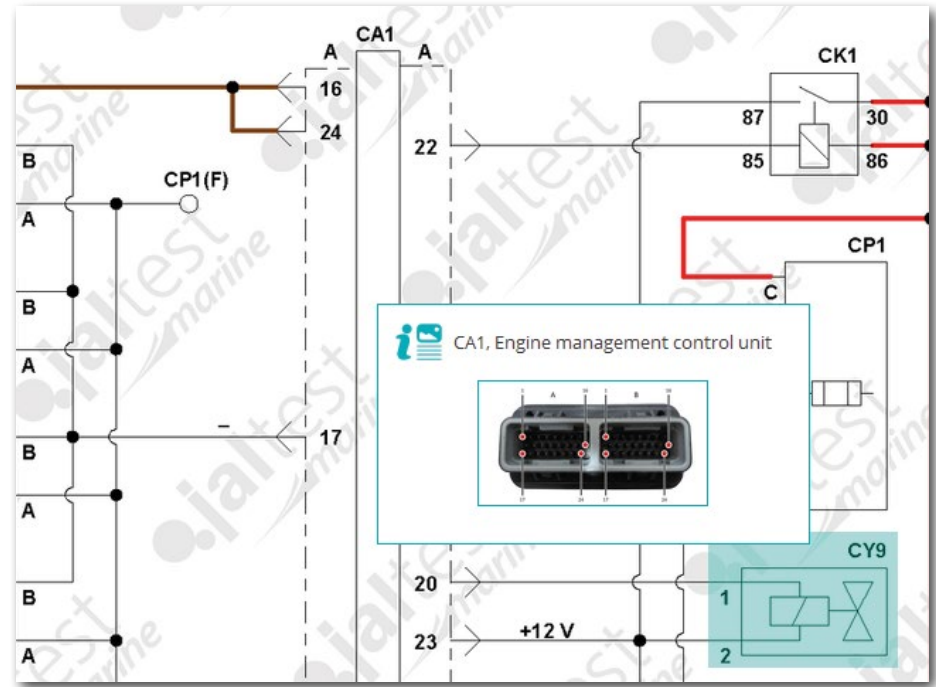
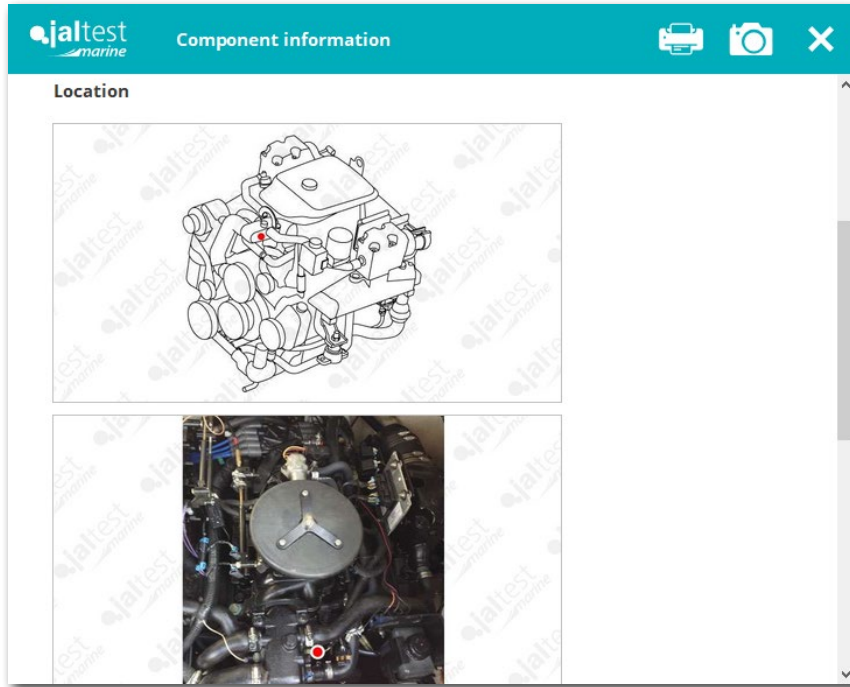
CA1, Engine management control unit

CB8, CB1, CB16, CB19, CB21(A), CB3, CS7, CK4(30), CAN H, CAN L, CG2(B), +12 V, CX3, CH1, CI2, KL30, KL31

This document was written by Cojali USA Inc. Transferring, copying, using or communicating the contents of this document is not allowed

20.3.1.1 Expert JorgeVB Days of license: 157 19:20

For more information visit: [cojaliusa.com](http://cojaliusa.com)



For more information visit:  
[cojaliusa.com](http://cojaliusa.com)