CDS G3 INTERFACE KIT

IMPORTANT: This document guides our dealers, boatbuilders, and company service personnel in the proper installation or service of our products. If you have not been trained in the recommended servicing or installation procedures for these or similar Mercury Marine products, have the work performed by an authorized Mercury Marine dealer technician. Improper installation or servicing of the Mercury product could result in damage to the product or personal injury to those installing or operating the product. Always refer to the appropriate Mercury Marine service manual for component removal and installation instructions.

NOTE: After completing installation, place these instructions with the product for the owner’s future use.

Components Contained in Kit

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mercury Marine CDS G3 license key</td>
<td>8M0117374</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Ref.</th>
<th>Qty.</th>
<th>Description</th>
<th>Part Number</th>
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<tbody>
<tr>
<td>a</td>
<td>1</td>
<td>G3 engine harness adapter (with resistor)</td>
<td>8M0046081</td>
</tr>
<tr>
<td>b</td>
<td>1</td>
<td>CAN P/CAN H adapter harness</td>
<td>898289T83</td>
</tr>
<tr>
<td>c</td>
<td>1</td>
<td>CDS G3 SmartCraft diagnostic interface</td>
<td>898289T81</td>
</tr>
</tbody>
</table>

What is CDS G3?

CDS G3 is a standalone PC-based program that complements the original Mercury Computer Diagnostic System (CDS) by providing diagnostic support for select engines and Mercury Joystick Piloting systems. Additionally, all configuration functions necessary for preparing these systems for delivery are supported. CDS G3 allows for CAN-based multiple-processor communication through a clean, easy-to-navigate interface.

Installation

Any new installation of CDS G3 may be installed without a previous version of the software installed. Before proceeding with installation, complete all High Priority Updates as provided by Microsoft through Windows Update.

If updating CDS G3 from version 1.0, uninstall the software prior to installing the current version. If updating from CDS G3 version 1.1 or later, uninstallation is not required.
To install CDS G3, double-click the executable (.exe) that you downloaded from the service.mercurymarine.com website. During installation, the following programs may be installed:

- Microsoft® ReportViewer 2010
- Microsoft Visual C++ 2010 SP1 Redistributable Package (x86)
- Microsoft .NET Framework 4.5.2 Web
- Windows Installer 4.5
- Kvaser® 4.9 CAN Adapter Driver

These additional programs are required for CDS G3 to deliver a rich, interactive user experience. When the Literature feature is installed, the following applications and libraries may also be installed:

- IIS Express 8.0
- Microsoft .NET Framework 4.5.1
- Microsoft Internet Explorer 11

Administrative Rights

The user performing the CDS G3 program installation must have administrative rights. If the computer has an MCDS user account, that user account was given administrative rights when it was created by an earlier CDS installation.

**NOTE:** Some information technology (IT) departments may restrict user rights for these accounts. If this has occurred, either the IT department must perform the installation, or they must grant administrative rights to the user accounts performing the installation.

Computer Requirements

The following specifications are established to support both CDS and CDS G3. Minimum and recommended specifications are listed below. Please adhere to the minimum specifications when upgrading CDS G3 on an existing computer. The recommended specifications have been established to provide a guideline for both best experiences and what we suggest when purchasing a new computer.

**PC Minimum Hardware Specifications**

- 1.2 GHz multi-core processor (two cores or more)
- 1024 x 768 screen resolution
- 10.1 in. screen size
- 2 GB RAM
- 120 GB hard drive
- 802.11 b/g/n wireless or 10/100 Ethernet
- DVD ROM optical drive (an external USB DVD drive is acceptable)
- Three USB 2.0 or 3.0 ports to accommodate CDS USB components. Alternatively, a single USB port and a USB port hub may be used.
- Optional 9-pin serial port (The serial port is no longer required, but is still preferred. The use for a serial port is for CDS only.)

**Recommended Computer Specifications (Where Different from Above)**

- Intel® i5 processor, 2.4 GHz or higher
- 8 GB RAM
- 128 GB solid-state drive
- 802.11n+ wireless connection

Operating System Requirements

Microsoft Windows® 7 Professional with Service Pack 1, Windows® 8.1 Professional, and Windows® 10 Pro are the only operating systems that have been tested to work with the CDS G3 product. For best performance, Windows® 10 Pro is strongly recommended. CDS G3 1.7 and greater versions will not support and will not operate on Windows® XP Professional or Windows® 8 Professional.

License Key

A license key is a 25-character alphanumeric key (for example X1X1X-X2X2X-X3X3X-X4X4X-X5X5X) that is used to unlock the CDS G3 application and that ties a PC to a license.
Mercury Marine is the provider of the CDS G3 license key, which permits the purchaser to access diagnostic content, configuration tools, and features via the CDS G3 product for business use only. License keys are NOT transferable. Hardware is not provided with the purchase of a license and must be purchased separately. The CDS G3 licensing agreement is presented for review and acceptance during installation. This document can also be accessed after installation in the start menu. The location is: Start->Mercury Marine->End User License Agreement. Review this document for further details.

**NOTE:** A CDS G3 license can be removed from a machine by pressing the "Deactivate Machine" button from the Help->About menu. This will free up a license and allow the license key to be reused on a new or different PC. This option is only available when the licenses are operated under an active subscription.

**License Activation**

Version 1.7 no longer offers the trial option to use the software before it's activated. When a CDS G3 license has been activated, account revalidation is still required every 45 days. CDS G3 may only be used by contracted Mercury Marine accounts, so the 45-day revalidation requirement is partially intended to ensure that only active accounts may use the software. The other purpose for revalidation is to ensure the software stays up to date. To license and validate CDS G3, internet access is required. The software installation may be revalidated at any time to restart the 45-day validation period. If the PC is connected to the internet when CDS G3 is started, revalidation will automatically occur. Manual revalidation can be done from the Help->About window by pressing the Validate Account button. Once the 45-day validation period has expired, the software will be disabled until revalidation is completed. If the 45-day validation expires in error, revalidation requirement may be extended for five (5) days to get the current job completed. However, by the end of the 5-day extension, account revalidation must occur before the software will work again.

When the CDS G3 software is started for the first time, the license activation screen will launch and will prompt the user for a dealer number and the 25-character license key that was purchased from Mercury Marine.

Enter the dealer number and license key. Click "Activate."
Once you click on "Activate," the following screens will appear:

CDS G3 Version Number

CDS G3 versions are defined by a version number. The example below shows version 1.7.0. The version number will define three parts of the version: a major version, a minor version, and a build number. The image below is from the CDS G3 startup splash screen, along with a description of the version number.
The complete version number can be noted from the splash screen, as shown above, or by selecting Help->About from the menu at the top of the screen. The following screen will display.

The major version number will designate drastic changes to the software. This number has not changed since the introduction of the CDS G3 software. The minor version number designates considerable changes in the software, usually requiring the release a new executable. Typically this update will introduce new functionality and address major issues.

The build release number designates small changes in the software. Typically this includes new eBOM’s (electronic bill of material), minor bug fixes, and provide slight product improvements. These updates are downloaded from within the CDS G3 program.

**CDS G3 Updates**

Only build releases are provided at no charge during the active support period. Mercury Marine will make every effort possible to make each of these releases available directly through the CDS G3 application from the Home screen. As long as the computer has internet access when the CDS G3 software is started, it will automatically check for available updates. When updates are available, there will be a notification on the Home screen or on a pop-up at the bottom of the screen. The update process can also be manually initiated by selecting "Check for Updates" from the gear menu on the Home screen. In the event that updates cannot be provided directly from CDS G3, they will be made available through the service.mercurymarine.com website. When an executable (.exe) is provided as an update, it will contain everything needed to install and run the software. There is no need to have a previous version of the software installed. Also, if a previous version is installed, an executable update can be installed without uninstalling the previous version.

The CDS G3 kit no longer includes an installation disc; it will only contain the hardware required to use the software and a license key. If you don't have a high-speed internet connection available to download the executable in an acceptable amount of time, a backup disc which contains the latest installation of CDS G3 is available for purchase. The purchase of a backup disc does not include a license to use the software.

**CDS G3 Harness Connections**

**Vessels with a Junction Box**

1. Insert the SmartCraft Diagnostic Interface USB connector into a powered USB port.
2. Connect the SmartCraft Diagnostic Interface DB9 connector to the CAN P/CAN H adapter harness DB9 connector.
3. Connect the CAN P/CAN H adapter harness to the junction box to communicate with the power package.
IMPORTANT: Ensure that the correct termination resistor is installed on the CAN P bus. The CAN P bus must be properly terminated for the tool to communicate reliably. Improper termination will result in communication errors or complete loss of communication.

- **a** - SmartCraft interface cable
- **b** - CAN P and H adapter
- **c** - Harness adapter with resistor
- **d** - Connect to engine or J-box connection
- **e** - Connect to key f of CAN P and H adapter
- **f** - Connects to e
- **g** - Connects to h
- **h** - Connects to g
- **i** - Connects to computer USB port

### Vessels without a Junction Box

1. Insert the SmartCraft Diagnostic Interface USB connector into a powered USB port.
2. Connect the SmartCraft Diagnostic Interface DB9 connector to the CAN P/CAN H adapter harness DB9 connector.
3. Remove the CAN P termination resistor from the engine harness.

**IMPORTANT:** Ensure that the correct termination resistor is installed on the CAN P bus. The CAN P bus must be properly terminated for the tool to communicate reliably. Improper termination will result in communication errors or complete loss of communication.
4. Connect the CDS G3 harness adapter (84-8M0046081) to the CAN P/CAN H adapter harness, and connect the adapter harness to the engine harness connector.

CDS G3 typical engine connection (4.5L shown)

IMPORTANT: The CDS G3 harness adapter (84-8M0046081) contains the correct termination resistor for the SmartCraft Diagnostic Interface to communicate with the control module.

Driver Troubleshooting

When installing CDS G3, the software will check for a previous installation of the SmartCraft diagnostic interface cable, also known as a Kvaser cable. If CDS G3 does not recognize the SmartCraft diagnostic interface cable, the CAN P and CAN H status indicators will be shown in red on the CDS G3 screen, and the green power (PWR) light on the CDS G3 SmartCraft diagnostic interface will flash. Follow these instructions to install the driver.

1. Close all running computer programs, including CDS G3.
2. Unplug the SmartCraft diagnostic interface cable from the computer if it is plugged in.
3. Wait a few moments, then plug the SmartCraft diagnostic interface cable into the computer.
4. When the Found New Hardware indicator opens in the lower right-hand corner of the screen, click on the indicator.
5. The Found New Hardware Wizard window will open, and it will ask if Windows can connect to Windows Update to search for software. Select No, not this time. Click Next to continue.
6. On the next screen, select **Install the software automatically (Recommended)**. Click **Next** to continue.

![Found New Hardware Wizard](image)

7. When the wizard has finished installing the software, click **Finish** to close the window. Once the installation is completed, the green power (PWR) light on the CDS G3 SmartCraft diagnostic interface will illuminate solid green.

8. Repeat steps 1–7 for all USB ports on your PC.

9. Open CDS G3. The CAN P and CAN H status indicators should be yellow or green, depending on if the engine is connected and powered up. The software will also detect the SmartCraft diagnostic interface cable.

![Lower left corner of CDS G3 home screen](image)

- **a** - CAN status
- **b** - Interface cable detected