# INSTALLATION INSTRUCTIONS

Original Issue Date: **4/11**
Model: **14RES, 14RESL, 20RES, and 20RESL**
Market: **Residential/Commercial**
Subject: **OnCue™ Ethernet Option Board Kit GM62465-KP1**

## Introduction

The Ethernet option board allows connection of model 14RES/RESL and 20RES/RESL generator sets equipped with the RDC or DC controller to a network. The Ethernet option board allows the use of Kohler® OnCue™ Software for the RDC/DC Controller to monitor your generator set with a personal computer.

Have a Kohler authorized distributor or dealer perform the kit installation and setup described in this instruction sheet. Install one Ethernet option board on each RDC or DC controller that will connect to the network. Also use Kohler® SiteTech™ or OnCue™ software to update the controller firmware.

Read the entire installation procedure and compare the kit parts with the parts list at the end of this publication before beginning installation. Perform the steps in the order shown.

See Figure 1 for the Ethernet option board.



1. P45 network connection
2. P44 board-to-board connector (back side)
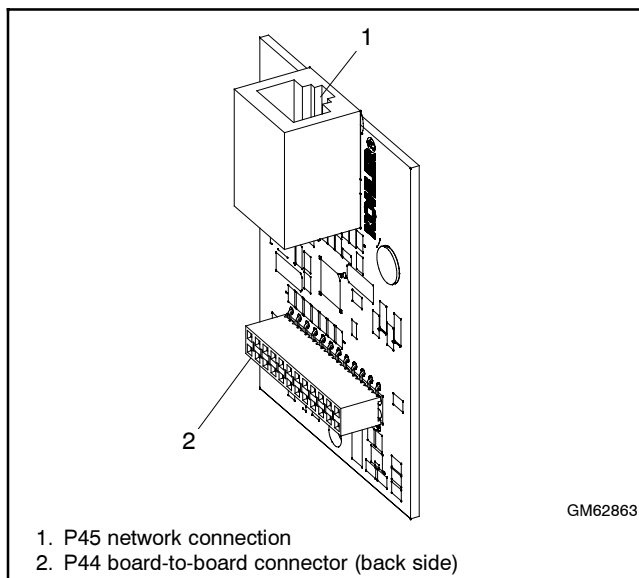
**Figure 1**   Ethernet Board GM60385

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## Customer-Supplied Equipment

The following equipment must be supplied by the customer:

- Personal computer (PC) with the following:
  - Microsoft® Windows® 7, Windows Vista®, or Windows® XP
  - Kohler® OnCue™ software (version 2.0 or higher)
  - 1 GB of RAM
  - Up to 500 MB of available hard disk space may be required

- Always-on Internet access (for example, cable or DSL Internet service)

- One available Ethernet port on the customer's switch, router, or modem (UPS backup recommended)

- Category 5E network cable to connect the generator set to the customer's Internet switch, router, or modem. If the network cable is longer than 100 meters (328 ft.), use a repeater or switch.

- USB cable with a mini-B connector for controller firmware upgrade

### OnCue™ Software

Kohler® OnCue™ software version 2.0 or higher is required for updating the controller firmware during the kit installation procedure. Download and install the OnCue™ software onto your PC. Distributors and dealers can download the software from Kohlernet or the Kohler dealer portal. End users can download the software from www.kohlerpower.com/oncue. See TP-6796, OnCue™ Software Operation Manual (provided with this kit), for software installation and operation instructions.

### RDC/DC Controller Firmware

RDC/DC controller firmware version 3.0 or higher is required for network communication. Follow the instructions in this document to download the latest version of firmware and install it onto the controller.
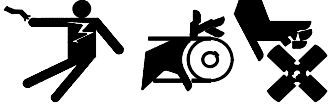
### Firewalls

When the OnCue Ethernet Option Board is connected to an intranet network behind a firewall, for example in a commercial or industrial setting, it may be necessary to configure the firewall to open port 5253 to permit an outbound connection. Contact your network administrator for assistance if necessary.

## Safety Precautions

Observe the following safety precautions while installing the kit.

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**⚠ WARNING**



**Accidental starting.**
**Can cause severe injury or death.**

Disconnect the battery cables before working on the generator set. Remove the negative (–) lead first when disconnecting the battery. Reconnect the negative (–) lead last when reconnecting the battery.

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**Disabling the generator set. Accidental starting can cause severe injury or death.** Before working on the generator set or connected equipment, disable the generator set as follows: (1) Move the generator set master switch to the OFF position. (2) Disconnect the power to the battery charger. (3) Remove the battery cables, negative (–) lead first. Reconnect the negative (–) lead last when reconnecting the battery. Follow these precautions to prevent starting of the generator set by an automatic transfer switch, remote start/stop switch, or engine start command from a remote computer.

**NOTICE**

**Electrostatic discharge damage.** Electrostatic discharge (ESD) damages electronic circuit boards. Prevent electrostatic discharge damage by wearing an approved grounding wrist strap when handling electronic circuit boards or integrated circuits. An approved grounding wrist strap provides a high resistance (about 1 megohm), *not a direct short*, to ground.

### Circuit Board Handling

Improper removal, installation, transportation, storage, or service can damage sensitive electronic components. Observe the following guidelines to prevent damage when working with circuit boards or electronic components.

### Circuit Board and Electronic Component Handling

● Keep circuit boards or electronic components inside the antistatic, cushioned factory packaging until installation.

● Store circuit boards or electronic components in a clean environment away from moisture, vibration, static electricity, corrosive chemicals, and solvents.

● Disconnect all power sources before removing or installing circuit boards or electronic components.

● Wear an approved, grounded, antistatic wrist strap when handling circuit boards or electronic components.

● Carefully hold the circuit board by its edges and not by any of its components or electrical contacts.

● Do not drop the circuit board or electronic components.

● Do not bend the circuit board, electronic components, or electronic component leads.

● Do not strike the circuit board or electronic components using or against a hard object.

● Clean dusty or dirty circuit boards with a vacuum cleaner or soft, dry brush.

● Never attempt circuit board repairs, adjustments, or modifications other than replacing plug-in service parts or performing manufacturer-approved installation or service procedures.
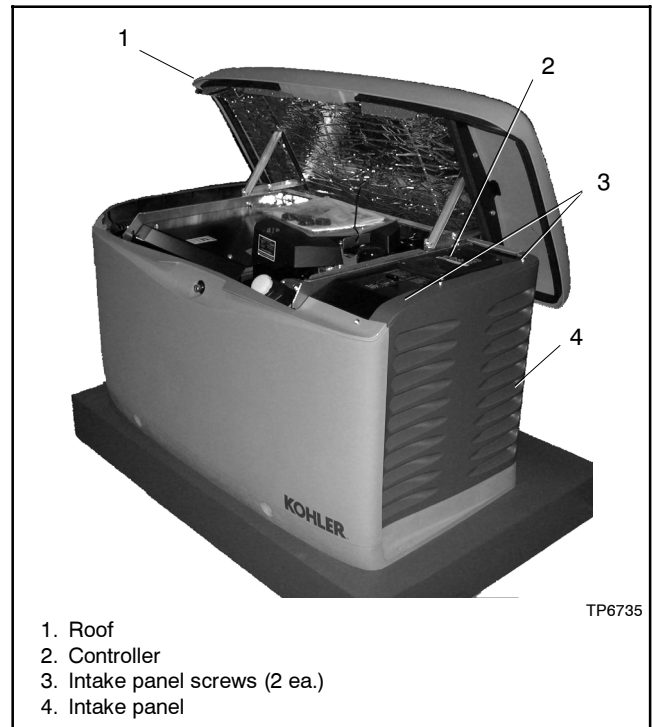
t:ta:001:001:a

# Installation Procedure

1. Open the enclosure roof. See Figure 2.

2. Update the controller firmware. Use a USB cable to connect the controller directly to a computer and use OnCue software to update the controller firmware. See Figure 3. See Controller Firmware Update in this document and TP-6796, OnCue Software Operation Manual, provided with this kit, for instructions.

3. With the USB cable still connected, find and record the generator set serial number displayed by OnCue. Refer to TP-6796, OnCue Software Operation Manual for more detailed instructions, if necessary.

   a. Go to the Devices view.

   b. Open the Genset Info group.

   c. Find and record the Genset Serial number. Figure 4 provides a place to record information required for OnCue communication.

4. Compare the genset serial number shown in OnCue with the serial number found on the generator set nameplate. The serial numbers should be the same.
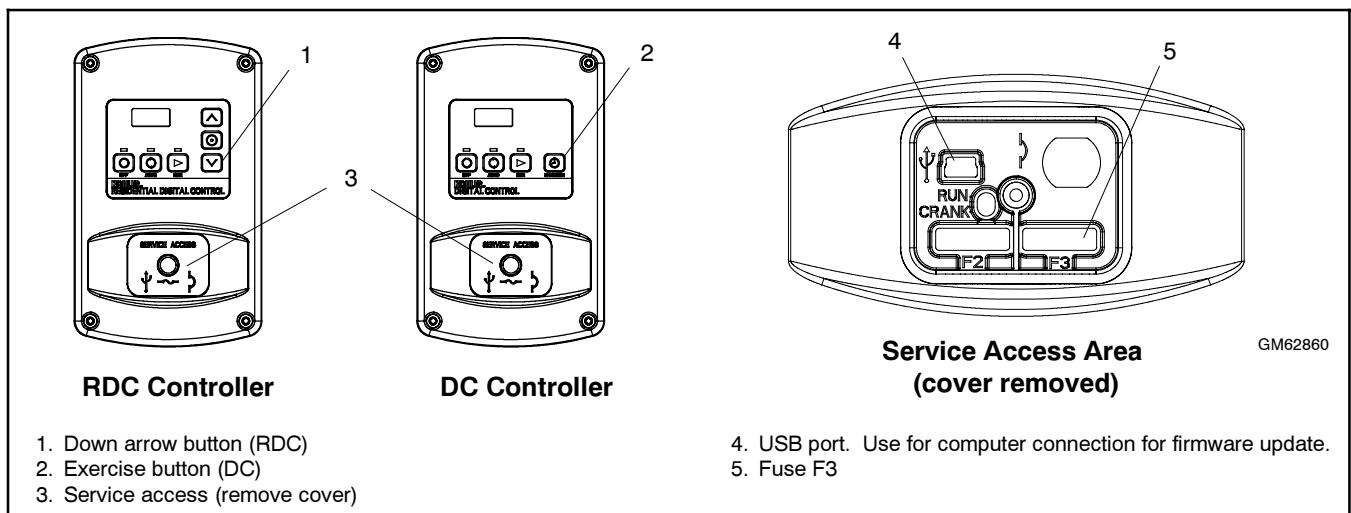
   If the serial number on the nameplate does *not* match the serial number displayed in OnCue, use Kohler® SiteTech™ software to change the serial number programmed into the controller to match the generator set nameplate.

**Note:** SiteTech software is only available to Kohler-authorized distributors and dealers. Contact an authorized distributor/dealer, if necessary.

5. Disconnect the USB cable from the controller.

6. Remove fuse F3, located in the controller's service access area, to remove power from the RDC controller.



1. Roof
2. Controller
3. Intake panel screws (2 ea.)
4. Intake panel

**Figure 2** Enclosure Roof and Air Intake Panel



**RDC Controller**  **DC Controller**  **Service Access Area (cover removed)**

1. Down arrow button (RDC)
2. Exercise button (DC)
3. Service access (remove cover)
4. USB port. Use for computer connection for firmware update.
5. Fuse F3

**Figure 3** RDC and DC Controllers

| Record generator set information below: | |
| --- | --- |
| Generator set serial number (OnCue) * | |
| Generator set serial number (nameplate) * | |
| Controller password (step 30) | |
| * Serial numbers should match.  Use Kohler® SiteTech™ software to enter the serial number from the nameplate into the controller, if necessary.  Contact a Kohler-authorized distributor/dealer. | |

**Figure 4**   Record Information for OnCue

7.  Go to the electrical sub--panel and locate the circuit breaker that supplies power to the generator set accessories.   Open the circuit breaker to disconnect the utility power to the generator set. Verify that the power to the generator set is disconnected before proceeding.

8.  Remove two (2) screws on the intake panel and remove the panel.  See Figure 2.

9.  Unplug the battery charger's power cord.

10.  Disconnect the generator set engine starting battery, negative (--) lead first.

11.  Remove the four (4) screws securing the controller and *carefully* lift the controller.  See Figure 5.
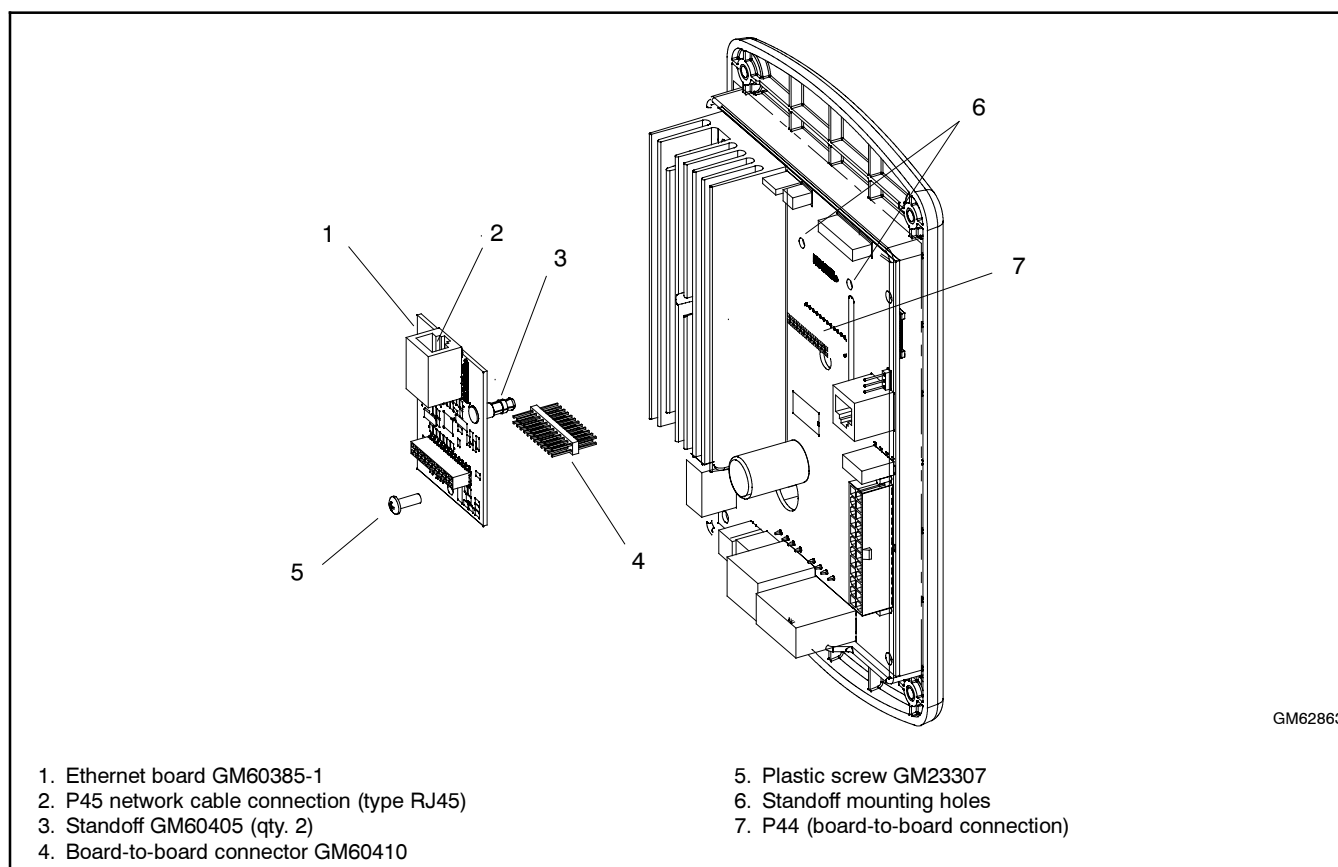
    **Note:** Be careful of the leads and harness connected to the controller.

12.  Note the connections on the back of the controller, and then disconnect, if necessary.



1. Controller screws (qty. 4)                    GM66569
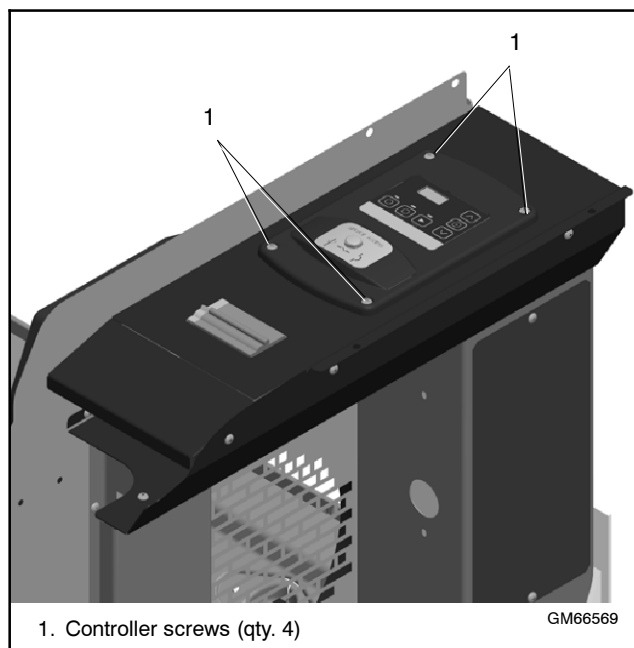
**Figure 5**   Controller Mounting Screws

13. Insert board-to-board connector GM60410 into P44 of Ethernet option board GM60385-1. See Figure 6.

14. Orient the Ethernet option board with the network connector P45 pointing toward the top of the controller as shown in Figure 6.

15. Align board-to-board connector GM60410 with P7 on the controller circuit board.

16. Align the two standoffs GM60405 with the corresponding mounting holes on the controller circuit board.

17. Press the Ethernet board firmly until the standoffs click into place and connector GM60410 is seated.

18. Secure the Ethernet board with plastic screw GM23307.

19. Connect the customer-supplied network cable to the router and route the cable to the generator set location. If the network cable is longer than 100 meters (328 ft.), install a repeater or switch.

20. Recommended: Use a laptop computer to verify the network connection.

   a. Check for and turn OFF any wireless connections to the laptop.

   b. Connect the network cable to the laptop.

   c. Verify the Internet connection by opening your web browser and going to www.kohlerpower.com or another website.

   d. After verifying the connection through the network cable, disconnect the network cable from the laptop and turn the laptop wireless connections back on.

21. Connect the network cable to P45 on the Ethernet board. See Figure 6.

22. Reconnect any plugs or leads that were disconnected from the controller.

23. Mount the controller assembly onto the junction box using the four (4) screws removed in step 11.



GM62863

1. Ethernet board GM60385-1
2. P45 network cable connection (type RJ45)
3. Standoff GM60405 (qty. 2)
4. Board-to-board connector GM60410
5. Plastic screw GM23307
6. Standoff mounting holes
7. P44 (board-to-board connection)

**Figure 6** Ethernet Option Board Installation

24. Reconnect the engine starting battery, negative (–) lead last.

25. Reconnect the utility power to the generator set by closing the circuit breaker in the subpanel.

26. Plug the battery charger cord into the receptacle on the generator set.

27. Replace the air intake end panel and secure with two screws.

28. Reinstall controller fuse F3.

29. Check the controller display to verify connection to the Kohler OnCue server. A dot in the lower right corner of the controller display lights up when the controller is connected to the Kohler server.



1. Dot here indicates server connection

tt1566
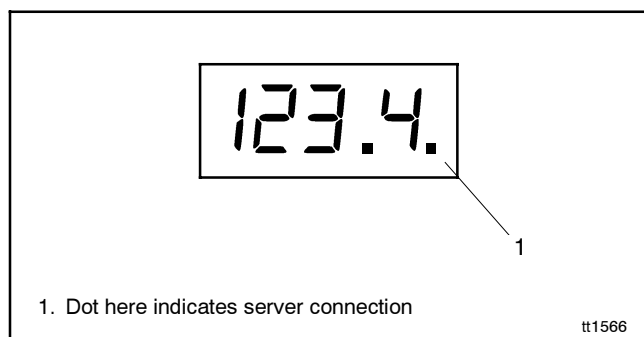
**Figure 7** Controller Display with Server Connection

30. Follow these steps to find and record the controller password, which is required for communication using the OnCue™ software.

   **Note:** The password changes each time this procedure is performed.

   a. Press the OFF button to place the controller into OFF mode.

   b. Press the down arrow button (RDC) or exercise button (DC) 5 times. See Figure 3.

   c. Write down the the four-digit code displayed on the controller. This is the controller password, which is required for OnCue™. Figure 4 provides a place to record information required for OnCue communication.

   d. Press OFF to clear the display.

31. Press the AUTO button on the RDC or DC controller. Verify that the AUTO LED is on.

32. Set the exerciser on the day and time that the generator set should run its weekly exercise. See TP-6734, Operation Manual, for instructions.

## Controller Password

The controller password is required for OnCue™ software operation. Follow the instructions in step 30 of the installation procedure to find the controller password. Record the password for entry into the OnCue program later.

**Note:** The password changes each time the procedure in step 30 is performed. If the controller is connected to OnCue and the procedure is performed again, the connection will be lost.

Pressing the down arrow or exercise button with the controller OFF does not change the exercise setting.

After OnCue™ has connected to the controller, the software allows you to change the password to any alphanumeric code of your choice. See TP-6796, OnCue Software Operation Manual, for instructions to change the password using your PC.

# Controller Firmware

Controller firmware version 3.0 or higher is required. Use Kohler® OnCue™ (version 2.0 or higher) or SiteTech™ software to update the controller firmware. Download software and the latest version of the RDC/DC controller firmware from Kohlernet, the Kohler dealer portal, or www.kohlerpower.com/oncue.

Connect the controller to the PC or laptop computer using a USB cable connected to the USB port on the controller. See Figure 3. See TP-6796, OnCue Software Operation Manual (provided), for instructions to load the new firmware.

The firmware version number is displayed by OnCue in the Devices view, Identity group. To check the firmware version number using the controller display (optional):

**RDC controllers:** Press and hold the Select and UP arrow buttons simultaneously for about 5 seconds, until the firmware version number (for example, v3.00) appears on the controller display.

**DC Controllers:** The firmware version number is displayed during the first 2 seconds of the engine crank cycle.

# Parts List

### Ethernet Option Kit

| Kit: GM62465-KP1 | | |
|---|---|---|
| Qty. | Description | Part Number |
| 1 | Screw, Plastic Tapping, 6-19 x 0.375 | GM23307 |
| 1 | PCB Assy, Ethernet Option | GM60385-1 |
| 1 | Header, PCB Pin | GM60410 |
| 1 | Installation Instructions | TT-1566 |
| 1 | OnCue Software Operation Manual | TP-6796 |

# Notes