

## INSTALLATION INSTRUCTIONS

Original Issue Date: 1/15

Model: 30-175 kW Generator Sets

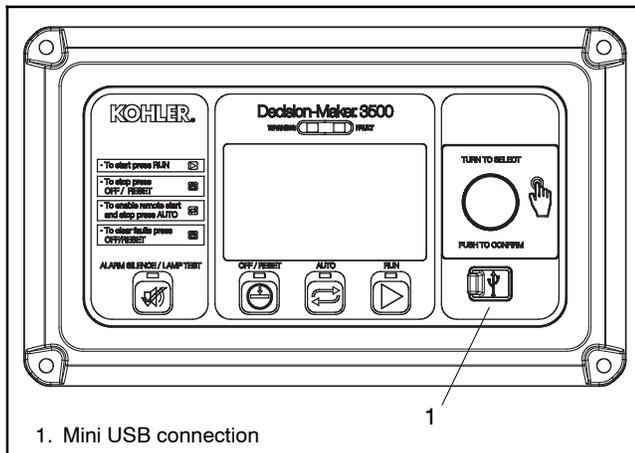
Market: Industrial and Towable

Subject: Decision-Maker® 3500 Controller Service Replacement Kit GM92087

### Introduction

The controller service replacement kit is available to replace a non-functional controller. Use the following procedure to install the replacement controller. See Figure 1 for controller identification. For features and operation of the controller, see the respective controller operation manual.

- TP-6914 REOZK4/REOZJ4 models
- TP-6935 REZGT models
- TP-6895 REOZT4 models



**Figure 1** Decision-Maker® 3500 Controller

**Note:** Do not use this controller replacement installation instruction for upgrading software.

When replacing the controller, the following data must be resident for the controller to function. Controller service replacement kits do not include the three files installed at the factory. The service technician *must* install the following three files into the replacement controller.

- **Application program** contains the software that controls system operation. The application file was preprogrammed in the *original* controller at the factory.

Obtain the latest version of the application firmware from the Kohler Power Resource Center website using the TechTools button to download on your PC hard drive or disk if not already installed on your PC.

- **Personality profile** is specific to the engine and alternator and was preprogrammed in the *original* controller at the factory.

A backup disk of the personality profile and application program is supplied with the literature packet shipped with the generator set. Typically, the distributor stores this disk for possible future use such as controller replacement or other circumstances requiring a backup.

**Note:** If the personality disk is NOT available, request a replacement from Kohler Co. using the generator set serial number or order number.

- **User parameters** unique to an installation include timer values, setpoints, generator set data such as voltage and input/output selections. These parameters are typically set up for or by the installer at the time of installation. User parameters are typically recorded on the personality profile disk, a separate backup disk/drive, or written on a paper form.

**Note:** If the user parameters are included on the personality disk, the disk label should indicate Site Program—Yes.

Read the entire installation procedure before beginning the installation. Perform the steps in the order shown.

Always observe applicable local and national electrical codes.

**Note:** The following service kit procedure is only for replacement of the controller. If the generator set requires voltage reconnection and/or frequency adjustment, see the respective operation manual.

## Installation Requirements

The following items are necessary PC requirements for installing the controller service replacement kits.

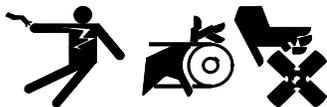
- **SiteTech™ Software Version 4.1 or higher** from the Kohler Power Resource Center website using the TechTools button to download on your PC hard drive or disk if not already installed on your PC.
- **TP-6701 SiteTech™ Software Operation Manual** available from the Kohler Power Resource Center website using the TechTools button.
- **USB Cable** with male USB-A and mini-B connectors. See TP-6701 for more information.

## 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 equipment connected to the set, disable the generator set as follows: (1) Press the generator set off/reset button to shut down the generator set. (2) Disconnect the power to the battery charger, if equipped. (3) Remove the battery cables, negative (-) lead first. Reconnect the negative (-) lead last when reconnecting the battery. Follow these precautions to prevent the starting of the generator set by the remote start/stop switch.

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### WARNING



#### **Hazardous voltage. Moving parts. Can cause severe injury or death.**

Operate the generator set only when all guards and electrical enclosures are in place.

**Grounding electrical equipment. Hazardous voltage can cause severe injury or death.** Electrocutation is possible whenever electricity is present. Ensure you comply with all applicable codes and standards. Electrically ground the generator set and related equipment and electrical circuits. Turn off the main circuit breakers of all power sources before servicing the equipment. Never contact electrical leads or appliances when standing in water or on wet ground because these conditions increase the risk of electrocution.

**Connecting the battery and the battery charger. Hazardous voltage can cause severe injury or death.** Reconnect the battery correctly, positive to positive and negative to negative, to avoid electrical shock and damage to the battery charger and battery(ies). Have a qualified electrician install the battery(ies).

**Short circuits. Hazardous voltage/current can cause severe injury or death.** Short circuits can cause bodily injury and/or equipment damage. Do not contact electrical connections with tools or jewelry while making adjustments or repairs. Remove all jewelry before servicing the equipment.

## Installation Procedure

### 1. Acquire the user parameters.

- 1.1 Choose one of the following methods to retrieve the user parameters:
  - Backup disk/file. If a backup disk/file was previously made, obtain the parameters from this disk/file. If a disk/file was not previously made, create a backup if possible using the SiteTech™ software. The existing controller must function enough to connect to SiteTech™ in order to create the file.
  - Paper form. Parameters may have been previously recorded on a User-Defined Settings form or other similar form. If the parameters have not been saved to a backup disk/file, and if SiteTech™ is not available, record the pertinent parameter values for manual entry (below) into the replacement controller.
  - Controller menu. Manually review the controller menu displays if possible and enter the parameter information in the respective controller operation manual.

1.2 Save the user parameter data for step 6.3.

### 2. Remove the generator set from service.

2.1 Press the generator set master control OFF/RESET button.

2.2 Disconnect the power to the battery charger, if equipped.

2.3 Use the battery disconnect switch (if equipped) to disconnect the battery or disconnect the generator set engine starting battery(ies), negative (-) lead first.

2.4 Disconnect the generator set from the load by opening the line circuit breaker.

### 3. Remove the existing controller and disconnect the electrical connections.

3.1 Remove the junction box panels as needed to access the wiring.

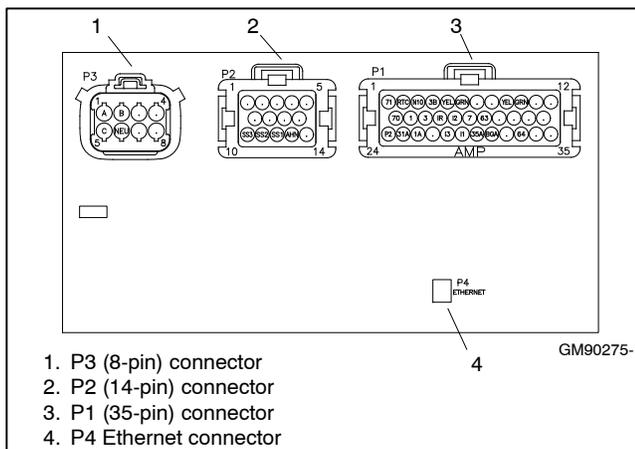
3.2 Remove the four controller panel screws.

**Note:** Clearly mark all disconnected leads from the controller with tape to simplify reconnection.

3.3 Disconnect the controller harness connectors, see Figure 2:

- **P1 (35-Pin) Connector** for engine/generator wiring harness.
- **P2 (14-Pin) Connector** for sensor input connections and relay driver output connections.
- **P3 (8-Pin) Connector** for generator set output voltage sensing and paralleling bus voltage sensing connections.
- **P4 (Ethernet) Connector** connects to a network communication line.

**Note:** These connections are typical and may not apply to all applications. See the corresponding wiring diagram found in the respective wiring diagrams manual.



**Figure 2** Controller Harness Connectors

### 4. Reconnect the electrical connections and install the replacement controller.

4.1 Reconnect all of the electrical connections disconnected in step 3.3.

4.2 Align the controller panel with the mounting holes and install four screws.

4.3 Replace the junction box panels if previously removed.

### 5. Restore power to the generator set.

5.1 Use the battery disconnect switch (if equipped) to reconnect the battery or reconnect the generator set engine starting battery, negative (-) lead last.

5.2 Reconnect power to the battery charger, if equipped.

### 6. Set the device profile.

6.1 Connect the PC to the Decision-Maker® 3500 controller using a USB cable. See Figure 1 for the location of the USB connection port.

6.2 Start the SiteTech application. Insert the personality profile backup disk/drive and load the data. Refer to Tech Tools— Software and TP-6701 SiteTech™ Software Operation Manual for details.

6.3 Choose one of the following methods to load the user parameters.

- Backup disk/drive. Use a PC with SiteTech™ software to load the data from the user parameter backup disk/drive.
- Paper form. Use a PC with SiteTech™ to enter the user parameter data from a filled-out form.

6.4 If any changes are made using SiteTech™, create a new user parameter data backup disk/drive. Refer to TP-6701 SiteTech™ Software Operation Manual for details.

6.5 Disconnect the USB cable.

6.6 Power down the unit by using the battery disconnect switch (if equipped) or by disconnecting the battery negative (-) terminal.

6.7 Wait at least 15 seconds and then power up the unit by using the battery disconnect switch (if equipped) or by reconnecting the battery negative (-) terminal.

- 6.8 Refer to the respective controller operation manual. Calibrate the generator set as instructed in the Calibration submenu.
- 6.9 Press the RUN button to start the generator set.
- 6.10 Test the functionality of the controller by reviewing the menus and observing the system status lamps. Use the respective operation manual as needed.
- 6.11 Press the OFF button to stop the generator set after completing the test.
- 6.12 Reconnect the generator set to load by closing the line circuit breaker.
- 6.13 Press the generator set master control AUTO button for startup by remote transfer switch or remote start/stop switch. Test the system operation by performing a test according to the procedure detailed in the respective ATS operation manual.

## Parts List

### Controller Service Replacement Kit

Kit: GM92087		
Qty.	Description	Part Number
1	Controller assembly	GM86809-2

Availability is subject to change without notice. Kohler Co. reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. Contact your local Kohler® generator set distributor for availability.

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