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## INSTALLATION INSTRUCTIONS

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Original Issue Date: 1/01

Model: **20-2000 kW Generator Sets with the 550 Controller**

Market: **Industrial**

Subject: **Program Loader Kit, GM17732 and GM17733**

### Introduction

The Program Loader software included in this kit allows an authorized service distributor to update the controller's application program or load generator set personality profile files into the controller. The Program Loader loads files from a computer to the target controller's nonvolatile memory, overwriting the controller's original programs.

This kit includes a standard CD-ROM disk, the Monitor II Software Operation and Installation Manual, and these instructions. The CD-ROM contains the Program Loader software and the Monitor II Generator System Monitoring and Control software.

The generator set personality profile and controller application files are provided on the disk shipped with the generator set. Generator set personality profile files contain information about the generator set that is required by the controller. The controller application files contain the software necessary for controller operation. Use the disk shipped with the generator set or obtain a new disk for your system directly from the manufacturer. Make a back-up copy of the disk and store the disks in a safe place.

**Note:** Load only files provided with the controller or obtained directly from the manufacturer. Carefully follow these instructions and any additional instructions. Loading incorrect or incomplete files can cause permanent damage to the controller's main logic board.

Use the Monitor II Generator System Monitoring and Control software to save the user parameter settings to a backup file before uploading new files to the controller. See the Monitor II Software Operation and Installation Manual for instructions.

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

### System Requirements

Minimum computer system requirements

- 100% IBM® PC compatible, 133 MHz or higher Pentium®-compatible CPU.
- Microsoft® Windows® 95 with Internet Explorer 4.0 or higher, Windows® 98, Windows NT® Workstation Version 4.0, or Windows® 2000 Professional operating system.
- CD-ROM drive and 4 MB hard drive space for installation.
- One 57.6k baud RS-232 serial port, COM1 through COM16.
- Stable power supply. A laptop system with a fully charged battery or desktop system running with a battery backup system is recommended.
- Null modem RS-232 cable with a 9-pin male plug on the controller end.

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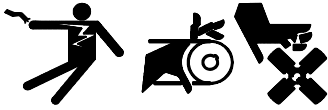
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## Safety Precautions

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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.

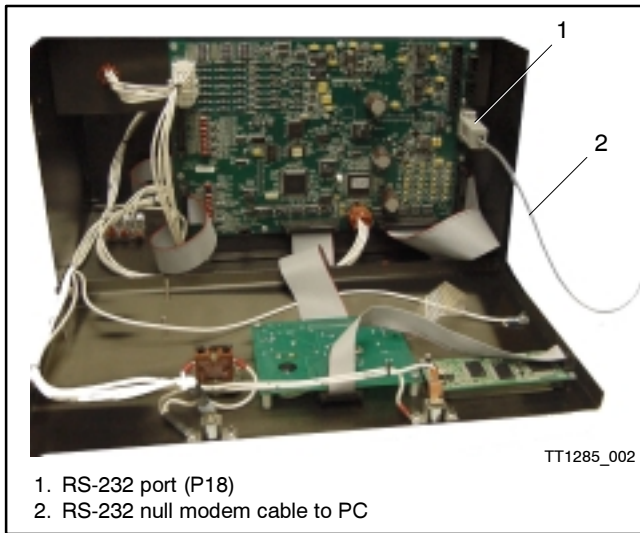
## Software Installation Procedure

1. Close all applications.
2. Place the Program Loader software disk into the computer's CD-ROM drive.
3. Choose Start>Run>D:\setup.exe. or use the computer's Explorer to select the setup.exe file on the CD-ROM drive.
4. The setup procedure will install the program loader in C:\Program Files\Program Loader. Follow the instructions on the screen to change the directory if you would like the software to be installed in a different directory.
5. Follow the instructions on the screen to install the program loader software.
6. If an error occurs, follow the recommendations on the screen to troubleshoot the installation.

7. Follow the installation instructions in the Monitor II Software Operation and Installation Manual to install the Monitor II software. The program files are located in the the Monitor directory on the CD-ROM.

## Preparation and Hardware Connection

1. Save or record the controller's user-defined settings.
  - a. Use the Monitor II Generator System Monitoring and Control Software to save the user configuration settings to a backup file before uploading new files to the controller. See the Monitor II Software Operation and Installation Manual for instructions; or
  - b. Write the controller's user-defined settings in the chart provided in the controller operation manual. See the controller operation manual for instructions.
2. Place the generator set master switch in the OFF/RESET position.
3. Disconnect the power to the generator set battery charger, if equipped.
4. Disconnect the generator set engine starting battery(ies), negative (-) lead first.
5. Remove the screws from the controller's top cover and remove the cover.
6. Remove the top screws on the front side of the controller. Loosen the bottom screws to allow the front panel to swing open.
7. Connect one end of the serial cable to the controller at the RS-232 connector P18. Tighten the thumb screws on the connector to hold it securely in place. See Figure 1.
8. Connect the other end of the controller cable to the computer's RS-232 communication (comm) port. Tighten the thumbscrews on the connector to hold it securely in place.



**Figure 1** RS-232 Connection to the 550 Controller

## Program Upload Procedure

1. Start Program Loader by clicking on the icon on the computer desktop or selecting the Program Loader (PI2000\_.exe) file from the computer's list of program files.

2. The program will ask you to select the comm port. Choose the comm port (number 1 through 16) that was connected to the controller in step 8, above.

**Note:** While the program supports comm ports 1 through 16, most computers use only ports 1 through 4. Contact your computer equipment supplier for help determining which port is available.

3. Insert the disk containing the application files or personality parameter files into the computer's disk drive.

4. Select the application file for your system's engine and alternator. Application files have a ".s37" file extension. Use only application files on disks obtained directly from the manufacturer. There are different ways to select the file:

- Select File>Open or click on the Browse button to open the standard Windows file open dialog box to select a file; or
- Type the path and filename directly into the Application Data File text box.

**Note:** Do not use spaces or periods in the path name of the directory where the files are stored.

**Note:** Two separate files are needed for all uploads: an application file with a ".s37" file extension and a command file with a ".cmd" file extension. Both files must exist in the same directory, even though the user will not see the command file. Do not move the application files to a different directory.

5. Click the Run button on the computer screen. The program performs its memory initialization.

**Note:** If the wrong comm port was selected in step 2, an error message will appear during the initialization. Click RESET, select a different comm port, and click RUN to begin again.

6. The program will prompt you to reset the target controller. Reset it by reconnecting the engine start battery cable, negative (-) lead last.

7. A warning dialog box appears providing one last chance to abort the upload. Click the OK button when ready to start the upload.

**Note:** Do not interrupt the upload process for any reason. An interruption of the upload process could cause permanent damage to the controller's programming, requiring replacement of the controller's main logic board and additional reprogramming.

8. The program indicates whether the file transfer was successful. "Upload complete" indicates that the file transfer was successful.

9. Close the program by selecting File>Exit, or by clicking the close window button in the upper right corner of the computer screen.

**Note:** The controller must be reset to begin normal operation after an upload. Reset the controller by disconnecting and then reconnecting the generator set engine starting battery(ies) when instructed in the following steps.

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

11. Disconnect the serial cable from the computer and the controller.

12. Close the enclosure's front panel. Install and tighten the screws.

13. Replace the enclosure's top cover. Install and tighten the screws.
14. Reconnect the generator set engine starting battery, negative (-) lead last.
15. Reconnect power to the battery charger, if equipped.
16. Check the settings on the controller. If you used the Monitor II software to retrieve the controller's user settings before uploading the new files, you may now use Monitor II to restore those settings to the controller. Follow the instructions in the Software Operation and Installation Manual. Otherwise, follow the instructions in the controller operation manual to enter user settings using the controller keypad and display.
17. Test the generator set operation. Refer to the generator set operation manual for instructions to start and run the generator set.
18. Place the generator set master switch in the AUTO position.

## Online Help

Use the program's online help system to help you diagnose error messages or problems encountered while running the program. Figure 2 lists the error codes. Refer to the online help system for more information about error codes and suggestions for correcting the errors. If you cannot diagnose and correct a problem using the online system, contact the Kohler Co. Service Department.

Error Code	Description
2000	Unable to open application file
2001	Unable to open command file
2002	Unable to determine command file name
2003	Unable to get target ID
2004	Unable to establish communication with target
2005	Application not designed for this target board
2006	Maximum number of resends requested
2007	Flash chip programming error

**Figure 2** Error Codes

## Optional File Storage

It is possible, but not necessary, to store the generator set personality profile and controller application files on your computer's hard drive or network. The personality profile files are named p\_params.s37 and p\_params.cmd. The controller application files are named D550vxxx.s37 and D550Vxxx.cmd, where xxx is a number indicating the software version.

Set up a separate directory or folder on the computer's hard drive or network for each generator set. Give each directory a name that uniquely identifies the generator set. Use Windows® Explorer to copy the files for each generator set from the disk supplied with the generator set into one directory or folder. *Both the .cmd and .s37 files are required and must be stored in the same directory.*

**Note:** Do not modify the files. Loading modified files can cause permanent damage to the controller's main logic board.