

## INSTALLATION INSTRUCTIONS

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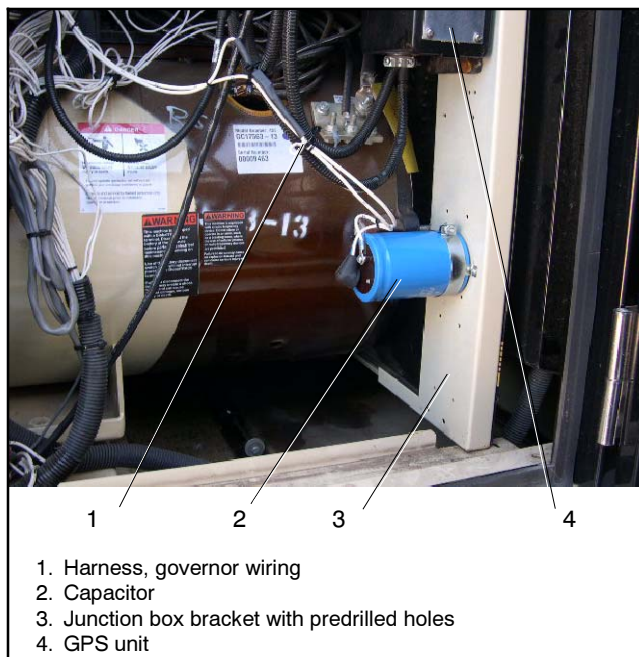
Model: 60KRP with Woodward Governor GM17644-5

Market: Industrial

Subject: Capacitor Service Kit GM61389

### Introduction

These instructions detail the installation of the capacitor service kit. See Figure 1. The capacitor provides continuous power to the governor controller while the engine is cranking. During cold weather, the cranking voltage may drop below 8 volts preventing the governor actuator from opening without the capacitor installed.



**Figure 1** Capacitor Service Kit Location

### Tools and Supplies Required

- Drill with 7/64 in. drill bit
- Phillips® head bit
- Phillips® head and slotted screwdrivers
- Nutdriver, 1/4 in.
- Nutdriver, 5/16 in.
- Metric wrenches and/or socket wrench
- Electrical tape
- Wheel chocks

Phillips® is a registered trademark of Phillips Screw Company.

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

### Safety Precautions

Observe the following safety precautions while installing the kit.

#### 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.

**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.

## Installation Procedure

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

- 1.1 Open the enclosure door(s) to access the generator set starting batteries.
- 1.2 Place the generator set master switch in the OFF/ RESET position.
- 1.3 Disconnect the power to the battery charger, if equipped.
- 1.4 Disconnect the generator set engine starting battery(ies), negative (-) lead first.

### 2. Secure the trailer.

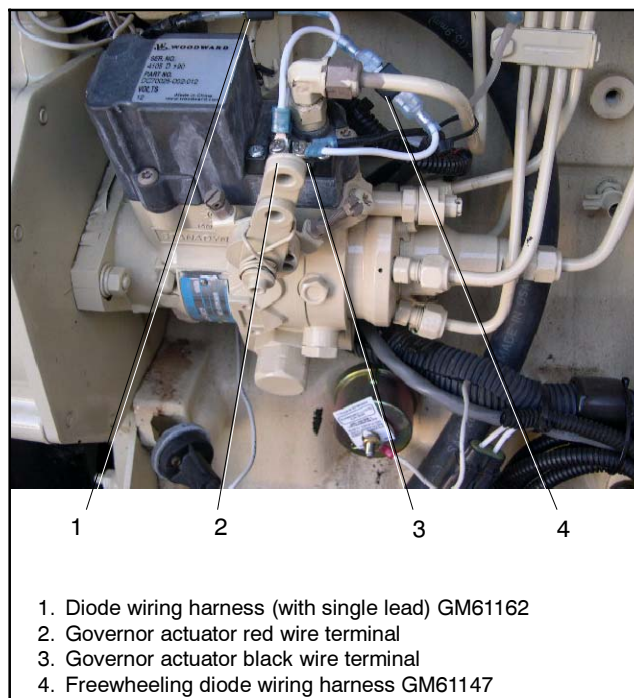
- 2.1 Park the enclosure on a level and solid surface. The towing vehicle can remain attached.
- 2.2 Use the jack stand to level and stabilize the trailer, as needed, if the towing vehicle is removed.
- 2.3 Install wheel chocks as needed.

### 3. Access the mounting location.

- 3.1 Open the trailer left side doors, if not already done.
- 3.2 Remove the junction box screws on the left side of the junction box and remove the cover.
- 3.3 Remove the governor controller cover and screws.

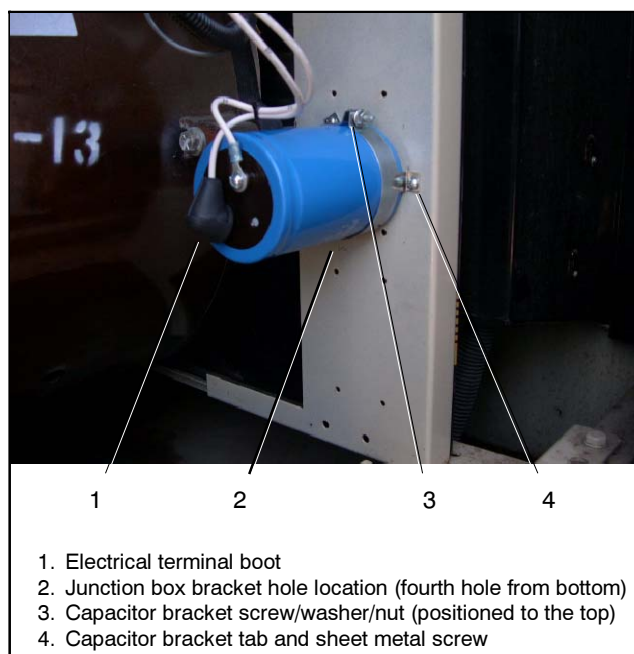
### 4. Install the capacitor.

- 4.1 Locate the white wire connected to the governor controller that is attached to the third terminal from the left on the terminal strip identified as ACT+. Disconnect this wire and tape to insulate the white wire terminal. Tighten the terminal strip screw. See Figure 7.
- 4.2 Locate the other end of the white wire (from step 4.1) connected with the red wire at the governor actuator terminal. See Figure 2. Loosen the screw and remove the white wire. Tape to insulate the white wire terminal.
- 4.3 Attach the mounting bracket with screw/washer/nut to the base of the capacitor and tighten. The three bracket tabs should be flush with the capacitor base.
- 4.4 With the left side junction box cover already removed, locate the holes in the junction box bracket on back support bracket.



**Figure 2** Governor Actuator and Diodes

- 4.5 Select the fourth hole from the bottom on the left set of holes and use the supplied sheet metal screw to attach the capacitor and bracket. The bracket clamping screw/washer/nut should be to the top. See Figure 3. Position capacitor and bracket with remaining bracket tabs equally spaced from the edges of the junction box bracket and tighten screw in the predrilled hole.

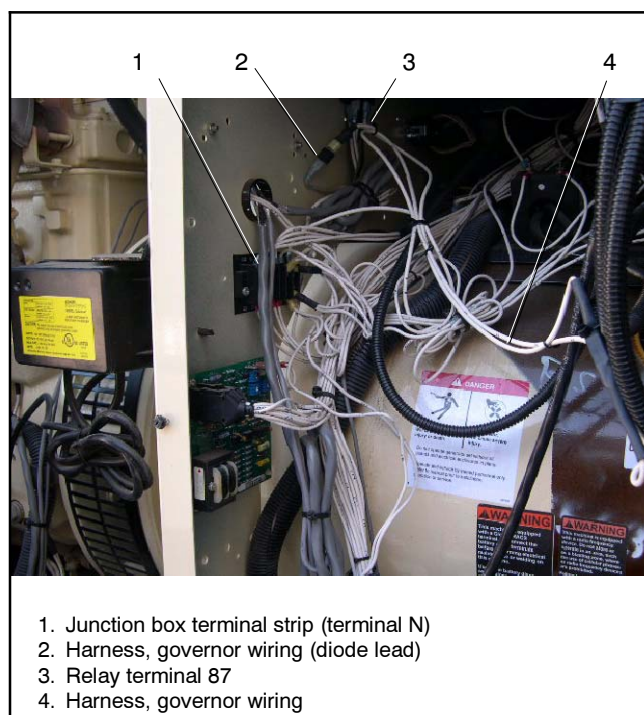


**Figure 3** Capacitor and Bracket

- 4.6 Use the drill with the 7/64 in. drill bit to make pilot holes for the remaining tabs. Install the remaining two sheet metal screws securing the capacitor mounting bracket to the junction box bracket.
- 4.7 Loosen the screw/washer/nut securing the capacitor to the bracket and rotate the capacitor so that the (+) terminal is toward the engine. Tighten the screw/washer/nut securing the capacitor to the bracket.
- 4.8 Clean up metal chips from the work area.

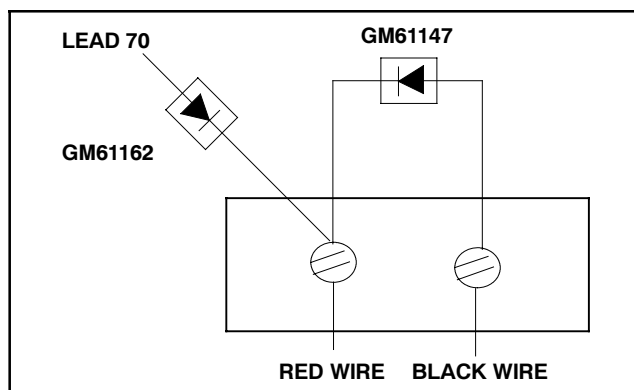
## 5. Attach the wiring harnesses (refer to Figure 6 and Figure 7 wiring diagrams).

- 5.1 Install governor wiring harness GM61132 by attaching lead P with boot to capacitor (+) terminal using a supplied 4 mm screw and internal tooth lock washer. See Figure 3.
- 5.2 Attach lead N without boot to the remaining capacitor terminal using a supplied 4 mm screw and internal tooth lock washer.
- 5.3 Remove lead P from relay terminal 30 and attach to wiring harness P1 and P2 (with diode terminal). See Figure 4 for location of relay in junction box.



**Figure 4** Junction Box Terminal Strip and Relay

- 5.4 Attach wiring harness lead P2 (with female pushon terminal) to relay terminal 30.
- 5.5 Attach wiring harness lead N (with ring terminal) to terminal strip terminal N. See Figure 4 for location of terminal strip in junction box.
- 5.6 Use cable ties X-468-1 as needed to secure wiring harness in the junction box.
- 5.7 Remove lead 70 from governor actuator terminal strip (terminal with red wire). Cut the ring terminal from the dual 70 leads, strip wires, and crimp on a single female 1/4 in. pushon terminal X-431-30 to both 70 leads.
- 5.8 Attach lead 70 with pushon terminal to diode wiring harness (single lead) GM61162.
- 5.9 Attach diode wiring harness (single lead) GM61162 with ring terminal to governor actuator terminal where lead 70 was located.
- 5.10 Attach freewheeling diode wiring harness GM61147 to the red and black terminals of the governor actuator. See Figure 2 for location of the governor actuator terminals. Attach the diode as shown in Figure 5.
- 5.11 Check that the fuel pump terminal strip screws are tightened. Check that the terminals are not contacting each other or a ground connection. Use electrical tape and/or cable ties X-468-1 to secure terminals and wires as needed.



**Figure 5** Governor Actuator Terminal Strip

## 6. Reinstall the generator set panels.

- 6.1 Reinstall the governor controller cover and screws.
- 6.2 Reinstall the left side junction box cover and screws.

## 7. Restore the generator set to service.

- 7.1 Check that the generator set master switch is in the OFF position.
- 7.2 Reconnect the generator set engine starting battery, negative (-) lead last.
- 7.3 Reconnect power to battery charger, if equipped.
- 7.4 Close and secure the enclosure door(s).
- 7.5 Test start the generator set to verify that the capacitor service kit was correctly installed. Refer to the operation manual as needed for starting/stopping procedures.
- 7.6 Stop the generator set.
- 7.7 Remove the wheel chocks.
- 7.8 Raise the jack stand as required for transport.

## Parts List

### Capacitor Service Kit

Kit: GM61389		
Qty.	Description	Part Number
1	Capacitor/bracket with hardware	GM61117
3	Screw, sheet metal	X-794-3
1	Harness, governor wiring	GM61132
1	Harness, freewheeling diode wiring	GM61147
1	Harness, diode wiring (single lead)	GM61162
6	Ties, cable	X-468-1
1	Terminal, 1/4 in. female pushon	X-431-30

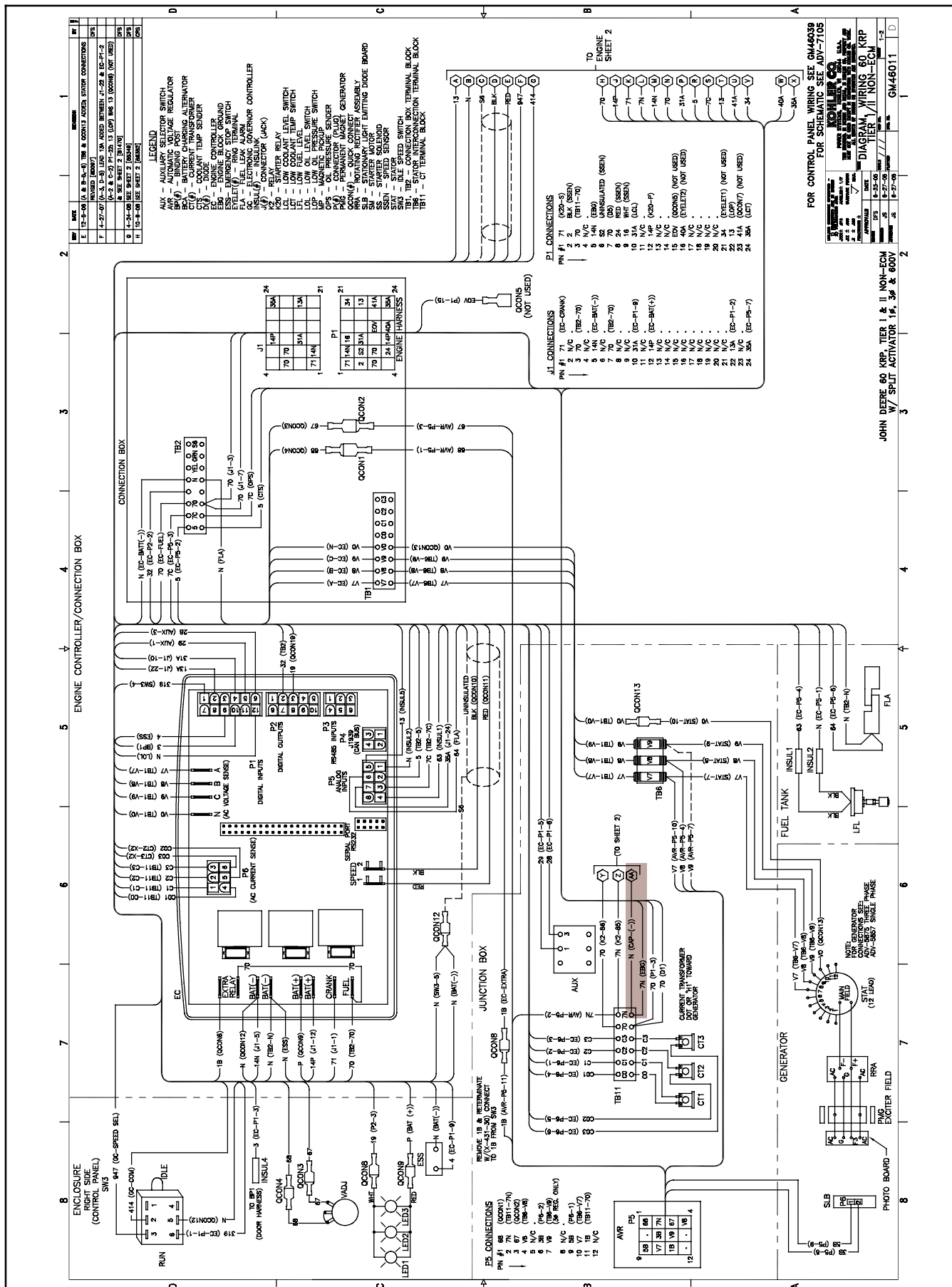


Figure 6 Wiring Diagram, GM46011, Page 1



