

SERVICE BULLETIN

Original Issue Date: 10/14
Model: 20-200 kW with Fast-Response X Alternator
Market: Industrial, Residential/Commercial, and Marine
Subject: FRX LED Optic Board Dust Seal Kit GM94809-KP1

Introduction

Kohler Co. has released a new option for the FRX series alternator. The GM94809-KP1 dust seal kit is designed to reduce maintenance of the LED/photo transistor boards when generator sets are used in dusty conditions. The kit provides a flexible tube to seal the space between the LED board and photo transistor board reducing the formation of dirt and/or dust on the optical devices thereby increasing maintenance intervals. See Figure 1 for the components of the kit.

Refer to the Fast-Response™ X Service Manual TP-6783 as needed for additional disassembly information.

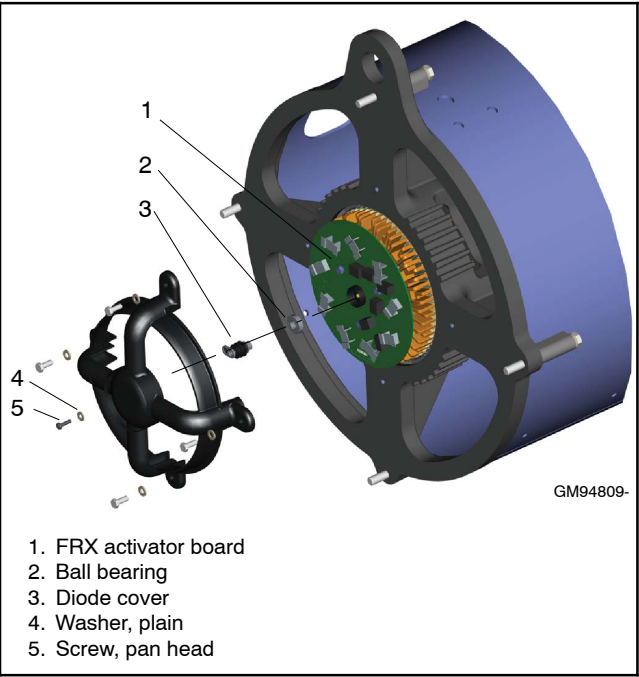


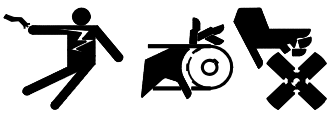
Figure 1 FRX Diode Circuit Board Dust Seal Kit

Special Tools Needed

- Drill, 1/4 in. chuck
- 11/64 in. drill bit

Safety Precautions

⚠ 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.

(Decision-Maker® 3+ and 550 Controllers)

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.

(Decision-Maker® 3000, 3500, and 6000 Controllers)

Routing	Service Manager	Sales Manager	Parts Manager	Technician No. 1	Technician No. 2	Technician No. 3	Return This to
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Installation Procedure

1. Remove the generator set from service.

- 1.1 Press the generator set master control OFF/RESET button.
- 1.2 Disconnect the power to the battery charger, if equipped.
- 1.3 Disconnect the generator set engine starting battery(ies), negative (-) lead first.

2. Access the alternator end of the generator set.

- 2.1 Open the enclosure panels as needed.
- 2.2 Remove the junction box rear cover.
- 2.3 Remove the alternator (rodent) guard, if used.

3. Remove the existing components.

- 3.1 Remove four screws and the LED optic board holder. See Figure 2.
- 3.2 Remove screw and LED optic board from LED optic board holder. See Figure 3.
- 3.3 Place the LED optic board holder in a vise or on a stable surface and drill an 11/64 in. hole through the mounting boss shown in Figure 4 and Figure 5.

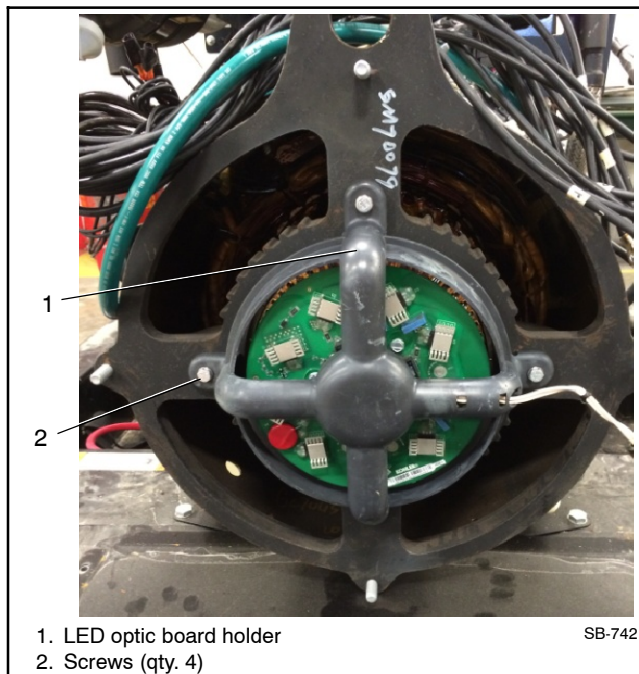


Figure 2 Removing LED Optic Board Holder

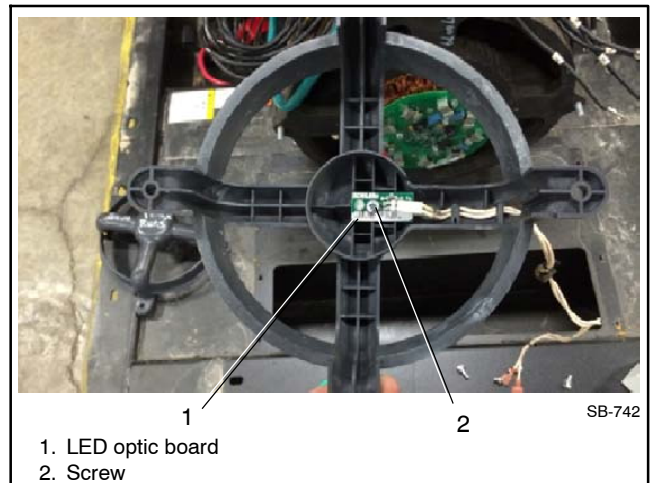


Figure 3 LED Optic Board and Holder



Figure 4 Drill Hole Through Mounting Boss

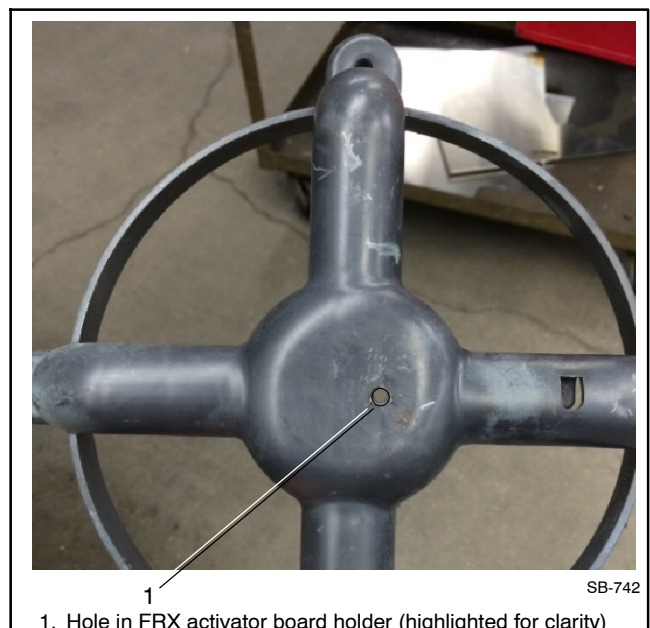


Figure 5 Hole in FRX Activator Board Holder

- 3.4 Remove the three screws and the existing FRX activator board from the exciter armature. See Figure 6. The existing FRX activator board will not be reused.

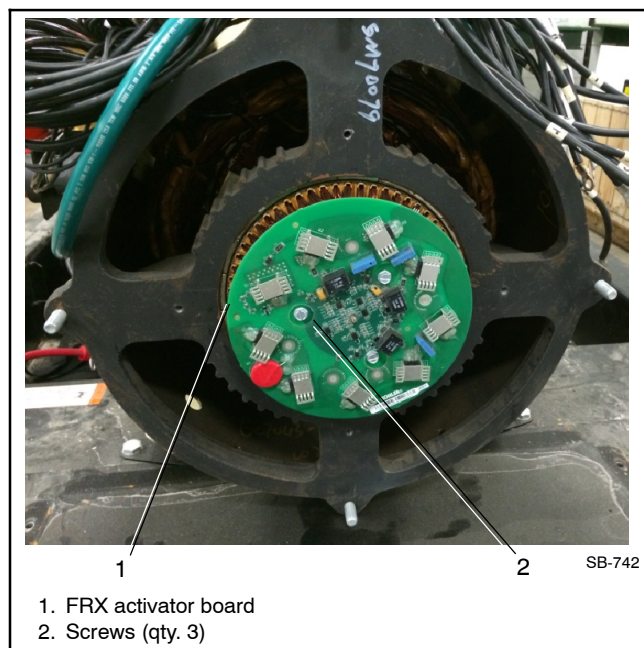


Figure 6 Removing the FRX Activator Board

- 3.5 Access the back of the FRX activator board and remove the exciter armature leads (AC1, AC2, and AC3) by removing the three elastic stop nuts. Note the lead terminals and their positioning on the FRX activator board silkscreen boxes for assembly. See Figure 7.

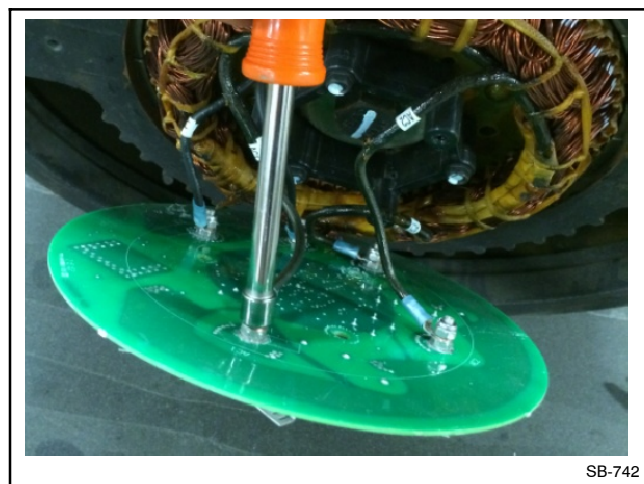


Figure 7 Removing Leads from the FRX Activator Board

4. Install the kit components.

- 4.1 Attach exciter armature leads (AC1, AC2, and AC3) to the new FRX activator board GM94400 using elastic stop nuts. Position leads as shown on silkscreen box and torque to 1.3 Nm (12 in. lb.). See Figure 8.

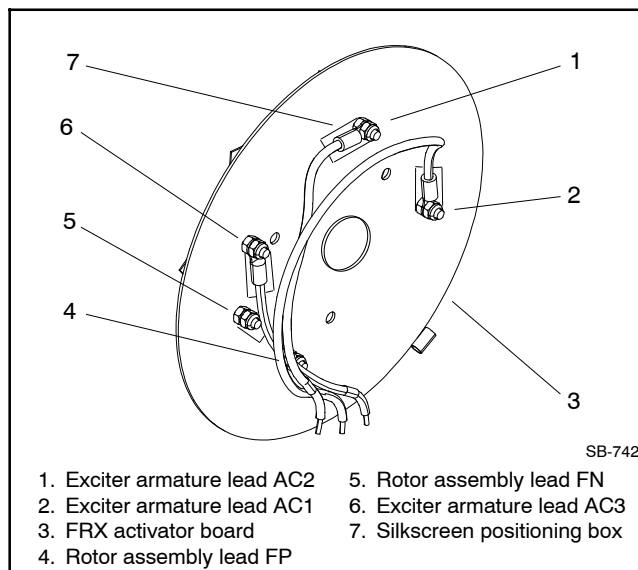


Figure 8 FRX Activator Board

- 4.2 Position the FRX activator leads around the FRX spacer to prevent pinching and push the FRX activator board against the FRX spacer while aligning the mounting holes. Mount the FRX activator board to the FRX spacer using three screws and torque to 1.3 Nm (12 in. lb.). See Figure 9. Install ball bearing X-758-19 to center retainer cup of the FRX activator board.

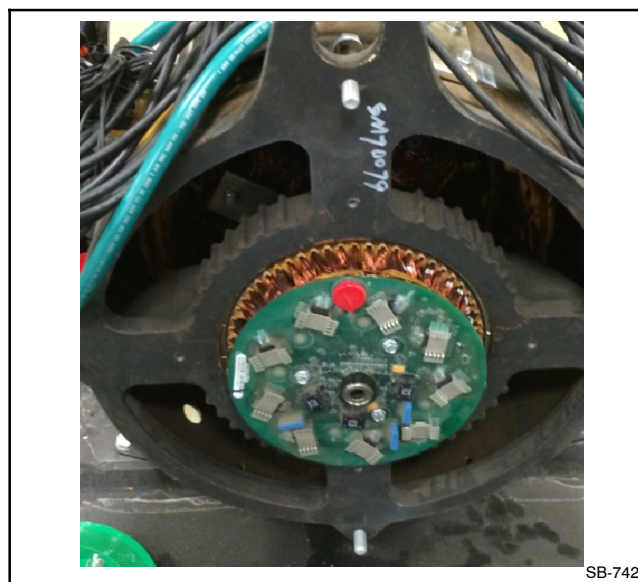


Figure 9 Mounting FRX Activator Board

- 4.3 Install FRX diode cover GC94111 in the inner race of the ball bearing. See Figure 10.
 - 4.4 Reconnect the two-lead P6 connector at the LED optic board (if previously disconnected).
 - 4.5 Mount the LED optic board to the LED optic board holder using one screw.
 - 4.6 Attach the LED optic board holder to the end bracket using four screws. Do not tighten at this time.
 - 4.7 Rotate the threaded tang of the FRX diode cover as necessary to align the threaded hole with the drilled hole in the FRX activator board bracket. Install the pan head screw M7985A-04016-20 and plain washer X-25-48 and torque to 1.3 Nm (12 in. lb.). See Figure 10 and Figure 11.
 - 4.8 Final tighten the four screws attaching the LED optic board holder to the end bracket and torque to 6.2 Nm (4.6 ft. lb.).
 - 4.9 Install the fan guard to the alternator adapter.
 - 4.10 Install the alternator (rodent) guard to the end bracket (if equipped).
 - 4.11 Replace the junction box panels.
- 5. Restore the generator set to service.**
- 5.1 Check that the generator set OFF.
 - 5.2 Reconnect the generator set engine starting battery, negative (-) lead last.
 - 5.3 Reconnect power to the battery charger, if equipped.

Parts List

FRX LED Optic Board Dust Seal Kit GM94809-KP1

Kit: GM94809-KP1		
Qty.	Description	Part Number
1	FRX activator board	GM94400
1	FRX diode cover	GC94111
1	Ball bearing	X-758-19
1	Screw, pan head	M7985A-04016-20
1	Washer, plain	X-25-48

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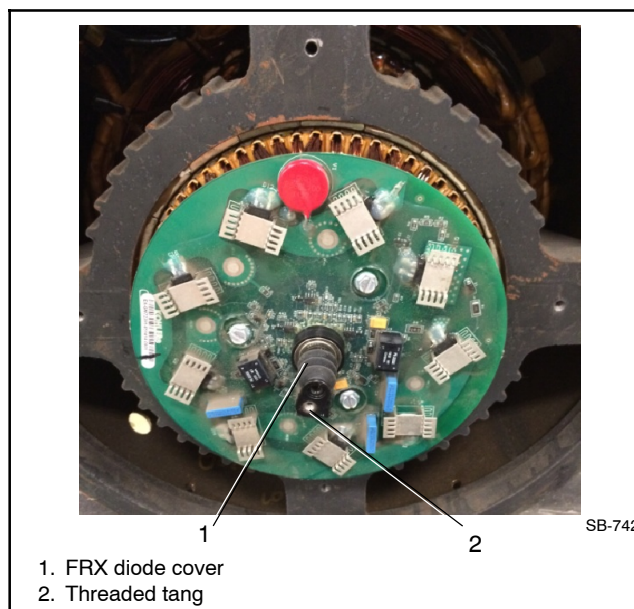


Figure 10 Installing the FRX Diode Cover

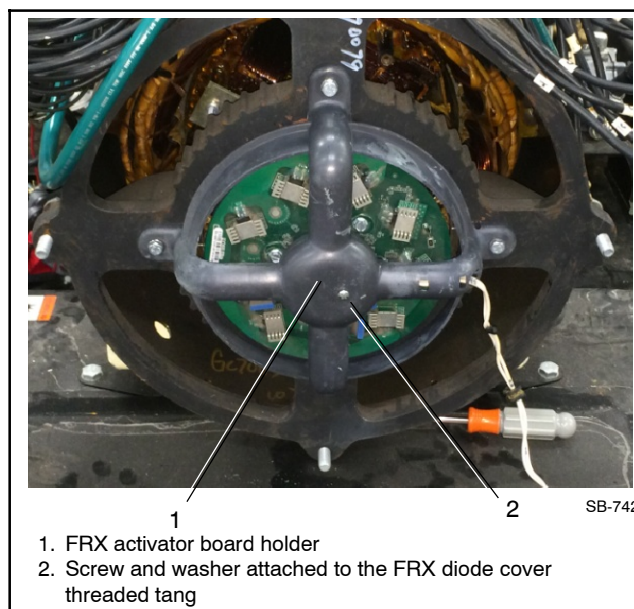


Figure 11 Installing the FRX Activator Board Holder