



Product Support Bulletin

Date: 4/25/97

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Bulletin No. 637

Subject: Low Voltage Output

Effective: Immediately

Model(s) or Series: All Marquis Spec B and Later and
Emerald Family Single Phase Gensets
With Electronic Voltage Regulators

Testing has shown that, under certain conditions (high humidity or highly corrosive environments) a limited number of these models display the following symptoms.

In the Marquis, about 90 volts AC is all the generator produces. In the Emerald series, the set only develops 60-90 volts AC and dies when the start switch is released.

First confirm the voltage regulator, control board and stator test OK, and that the rotor resistance is to service specs: about 20 to 25 ohms at 77^o F. If these check OK and the problem exists only during wet or high humidity conditions, install transformer kit 300-5049.

Before proceeding, review and perform the steps required in PSB 633a, if not previously completed. This must be accomplished first to provide space for the transformer in some models.

Standard warranty applies.

Michael Fair
Technical Service Representative
Power Generation Americas

Voltage Buildup Kit 300-5049 for Emerald (BGE/NHE) and Marquis (BGM/NHM) Series Gensets

This kit consists of an isolation transformer for installation in the output voltage regulator sensing circuit. Note that the battery charging components will have to be removed according to PSB No. 633, unless already removed.

Referring to Figure 1, install the transformer kit as follows:

1. Shut down the genset and disconnect the battery cable at the negative (-) terminal of the battery to prevent accidental starting while working on the genset.

⚠WARNING *Accidental starting of the genset can lead to severe personal injury or death. Prevent accidental starting by disconnecting the battery cable at the negative (-) terminal of the battery.*

2. Remove the control panel from the control box. Unless they have already been removed, remove the battery charging components according to PSB No. 633.
3. Separate the two parts of AVR connector P4/J4 for better access to the wiring terminals inside the control box. On BGE/NHE series gensets remove the screw and nut that secure the AVR to the floor of the control box and pull out the AVR (automatic voltage regulator). Discard the mounting screw and nut. (On BGM/NHM series gensets the AVR is mounted outside the control box.)
4. Disconnect AVR connector lead J4-3—TB1-L0 from terminal TB1-L0 and lead J4-2—TB1-L1 from terminal TB1-L1. Cut off the uninsulated connectors on the ends of the leads and crimp on the insulated faston connectors in the kit. Cut off as little wire as possible (cutting through the connector just ahead of the insulation crimp) so that the lead markings will show and

strip the insulation 1/8-3/16 inch (3-5 mm). Use the proper crimping tool for the connectors supplied.

5. Connect the two black transformer leads, H1 and H2, to TB1-L0 and TB1-L1 respectively.
6. Connect the two red transformer leads, X1 and X2, to J4-3 and J4-2 respectively.
7. Secure the transformer assembly to the floor of the control box with the nut and screw provided in the kit. On BGE/NHE series gensets remount the AVR on top of the transformer bracket. Push the assembly as far back into the box as it will go. (The slot for the mounting ear on control panel must be clear in order to remount the panel.)
8. Identify jumper J4-4/5 in AVR connector (P4/J4) and cut it in the middle. Strip the insulation approximately 1/4 inch (6 mm) from the ends of the two leads and crimp them together in the large end of the step-down butt-splice connector in the kit. Crimp the kit lead marked TB1-L0 in the other end of the butt-splice connector. Use the proper crimping tool for each end of the connector supplied. Connect the lead to TB1-L0.
9. Reassemble AVR connector P4/J4, remount the control panel, reconnect the battery (negative [-] terminal last) and operate the genset, observing all the instructions and precautions in the Operator's Manual. If the genset does not function properly, recheck all wiring connections against Figure 1 and/or see *Troubleshooting* in the appropriate Service Manual.
10. Secure the kit label near the genset nameplate, making sure the surface is clean so that the label sticks, and staple these instructions inside the Operator's Manual.

