

R66-series Lithium-Ion Battery to Lead-Acid Battery Conversion Kit Instructions

(Converts lithium-ion battery installation to lead-acid battery installation; lead-acid battery not included. Instructions for reinstalling lithium-ion battery are included.)

NOTE

Visit www.robinsonheli.com to verify kit instructions are current revision. Review instructions before installation; contact RHC Technical Support with questions. Verify kit contents match list; contact RHC Customer Service if parts are missing or damaged.

| ITEM | PART NUMBER | KIT CONTENTS | QTY PER KI-247- 2A | QTY PER KI-247- 2B |
|------|-----------------|---|--------------------------|--------------------------|
| 1 | KI-247-2 Instr. | Kit Instructions | 1 | 1 |
| 2 | G123-1 | Battery Tray (use with B237-8 battery) | 1 | 0 |
| | G123-2 | Battery Tray (use with B237-7 battery) | 0 | 1 |
| 3 | G131-1 | Shim | 1 | 1 |
| 4 | G131-2 | Plate | 1 | 1 |
| 5 | D819-9 | Decal – “Li-ION...” | 1 | 1 |
| 6 | MS21042L08 | Nut | 2 | 2 |
| 7 | MS27039C0809 | Screw | 2 | 2 |
| 8 | MS27039C0815 | Screw | 2 | 2 |
| 9 | MS3367-7-9+ | Ty-rap (Note: “+” in contents part number indicates 10-qty pack) .. | 1 | 1 |
| 10 | NAS1149FN832P | Washer | 2 | 2 |

Kit Instructions

CAUTION

To minimize risk of electrical discharge: when disconnecting battery, disconnect negative (ground) cable from battery first, then the positive cable. When connecting battery, connect positive cable to battery first, then the negative (ground) cable.

1. Remove lithium-ion battery per R66 Maintenance Manual (MM) § 96-12 B. Remove and retain B277-12 clamp from vent hose. Cover battery terminals, vent, and interface connector with non-metallic tape. If G468-5 plate & G468-4 guard are installed, they may remain on battery (see Figure 1).
2. Refer to Figure 1. Remove hardware securing G131-3 plate and remove plate.
3. Refer to R66 Illustrated Parts Catalog (IPC) Figure 96-11. Remove two 9-volt batteries mounted under the (LH forward) co-pilot’s seat.

NOTE

Removal of 9-volt batteries is optional.

Kit Instructions (continued)

4. Refer to IPC Figure 96-31. Access G598-3 (Battery Minder) faceplate thru engine RH cowling door. Remove hardware securing G598-4 cover (marked “Li-ION BATT”, not shown) and remove cover; retain hardware and cover for future use (suggest storing with maintenance records). Locate adjacent stowed B263-68 (4-contact cap) connector which includes wires -2573 & -2575. Cut ty-raps and remove black protective heat shrink from connector. Push connector into G598-3 faceplate until locking tabs snap securely in place.
5. Refer to Figure 2A and 2B. Stow A785-40 hose as shown.

If installing B237-7 battery: Install G131-1 shim on G249-1 tray using two MS27039C0815 screws, two NAS1149FN832P washers, and two MS21042L08 nuts. Verify security.

If installing B237-8 battery: Install G131-1 shim on G131-2 plate using two MS27039C0815 screws, two NAS1149FN832P washers, and two MS21042L08 nuts. Verify security.
6. Install G131-2 plate using two MS27039C0809 screws, leaving screws loose enough to slide plate (holes are slotted). Carefully install B237-7 battery & G123-2 plastic tray, or B237-8 battery & G123-1 plastic tray. Position plate until it just contacts top of battery. Tighten screws to secure plate. Verify security.
7. Connect battery per MM § 96-11 B. 4 & 5.
8. Refer to Figure 2A. Secure airframe wiring plug using two MS3367-7-9 ty-raps as shown.
9. Install G248-1 (battery compartment) cover and secure with retained hardware.
10. Install auxiliary fuel tank per MM § 28-51, if removed and required. Close baggage compartment door.
11. Refer to Figure 3. Install D819-9 decal as shown.
12. Perform functional check of battery by switching battery and strobe switches on and verifying strobe function. Turn battery switch off.
13. Revise helicopter’s Weight and Balance Record in R66 Pilot’s Operating Handbook (POH) Section 6 to reflect this installation by incorporating the following data:

Remove:

| Item | Weight | Long. Arm | Long. Moment | Lat. Arm | Lat. Moment |
|---------------------|-----------|-----------|-----------------|------------|---------------|
| Lithium-Ion Battery | -15.60 lb | 96.88 in. | -1511.33 in.-lb | -21.00 in. | 377.60 in.-lb |

Install:

(if B237-7 battery installed)

| Item | Weight | Long. Arm | Long. Moment | Lat. Arm | Lat. Moment |
|----------------|-----------|-----------|----------------|------------|----------------|
| B237-7 Battery | +42.00 lb | 96.88 in. | 4068.96 in.-lb | -20.87 in. | -876.54 in.-lb |

OR

(if B237-8 battery installed)

| Item | Weight | Long. Arm | Long. Moment | Lat. Arm | Lat. Moment |
|----------------|-----------|-----------|----------------|------------|-----------------|
| B237-8 Battery | +52.00 lb | 96.88 in. | 5037.76 in.-lb | -21.73 in. | -1129.96 in.-lb |

Kit Instructions (continued)

14. Insert enclosed R66 Pilot's Operating Handbook Page (page 9 of kit instructions) in front of Lithium-Ion Battery Supplement in Section 9 of the R66 Pilot's Operating Handbook.
15. Make appropriate maintenance record entries.

To reinstall D237-2 lithium-ion battery, perform steps 16 thru 33.

CAUTION

To minimize risk of electrical discharge: when disconnecting battery, disconnect negative (ground) cable from battery first, then the positive cable. When connecting battery, connect positive cable to battery first, then the negative (ground) cable.

16. Remove auxiliary fuel tank per MM § 28-51, if installed.
17. Verify battery switch is off and external electrical power is disconnected.
18. Open baggage compartment door. Refer to IPC Figure 96-9. Remove and retain hardware securing G248-1 (battery compartment) cover and remove cover.
19. Remove hardware securing negative (ground) cable to battery negative terminal. Slide nipple away from battery positive terminal and remove hardware securing positive cable to battery positive terminal.
20. Refer to Figure 2.
If removing B237-7 battery: Remove G131-2 plate. Carefully remove battery & G123-2 plastic tray. Remove G131-1 shim from G249-1 tray.
If removing B237-8 battery: Remove G131-2 plate and G131-1 shim. Carefully remove battery & G123-1 plastic tray.
21. Ensure D237-2 lithium-ion battery is ready for installation per MM § 96-12 C 2.
22. Refer to Figure 1. Install G468-4 guard and G468-5 plate using (1) MS35206-277 screw onto D237-2 lithium-ion battery, if not previously installed. Carefully install battery. Connect battery per MM § 96-12 C 6 & 7.
23. Refer to Figure 2. Locate stowed A785-40 (vent) hose and connect to battery using (1) B277-12 clamp. Verify security (both ends) of hose.
24. Cut ty-raps securing (stowed) airframe wiring plug to battery positive cable and connect plug to battery. Verify security.
25. Install G131-3 plate using (2) MS27039C0809 screws, leaving screws loose enough to slide plate (holes are slotted). Position plate until it just contacts top of battery. Tighten screws to secure plate. Verify security.

Kit Instructions (continued)

- 26. Install G248-1 (battery compartment) cover and secure with retained hardware.
- 27. Install auxiliary fuel tank per MM § 28-51, if removed and required. Close baggage compartment door.
- 28. Refer to IPC Figure 96-31. Access G598-3 (Battery Minder) faceplate thru engine RH cowling door. Detach B263-68 (4-contact cap) connector from post assembly. Slide B158-16-2.4 heat shrink (provided) over connector and apply heat. Verify connector is insulated and heat shrink is secure. Stow connector by securing to adjacent wire bundle using appropriately-sized ty-raps. Install G598-4 cover (marked "Li-ION BATT") using (2) MS35206-214 screws.
- 29. Refer to IPC Figure 96-11. Install two 9-volt batteries as shown, as required.
- 30. Perform functional check of lithium-ion battery by switching battery and strobe switches on and verifying strobe function. Turn battery switch off.
- 31. Revise helicopter's Weight and Balance Record in R66 Pilot's Operating Handbook (POH) Section 6 to reflect this installation by incorporating the following data:

Remove:

(if B237-7 battery removed)

| Item | Weight | Long. Arm | Long. Moment | Lat. Arm | Lat. Moment |
|----------------|-----------|-----------|-----------------|------------|----------------|
| B237-7 Battery | -42.00 lb | 96.88 in. | -4068.96 in.-lb | -20.87 in. | +876.54 in.-lb |

OR

(if B237-8 battery removed)

| Item | Weight | Long. Arm | Long. Moment | Lat. Arm | Lat. Moment |
|----------------|-----------|-----------|-----------------|------------|-----------------|
| B237-8 Battery | -52.00 lb | 96.88 in. | -5037.76 in.-lb | -21.73 in. | +1129.96 in.-lb |

Install:

| Item | Weight | Long. Arm | Long. Moment | Lat. Arm | Lat. Moment |
|----------------------------|-----------|-----------|-----------------|------------|----------------|
| D237-2 Lithium-Ion Battery | +15.60 lb | 96.88 in. | +1511.33 in.-lb | -21.00 in. | -377.60 in.-lb |

- 32. Remove R66 Pilot's Operating Handbook Page (see page 9 of kit instructions) in front of Lithium-Ion Battery Supplement in Section 9 of the R66 Pilot's Operating Handbook. Remove D819-9 decal from console (refer to Figure 3).
- 33. Make appropriate maintenance record entries.

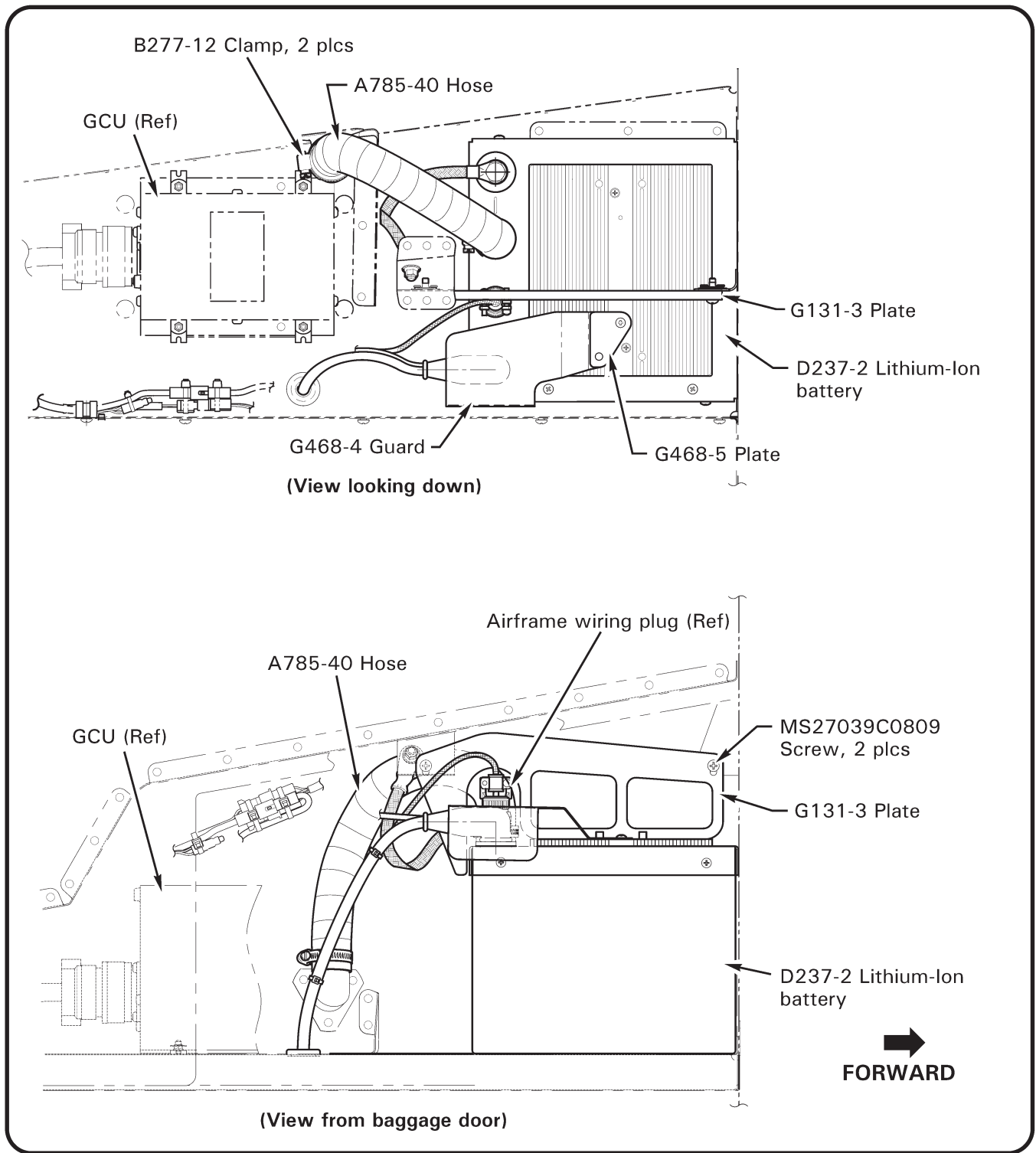


FIGURE 1

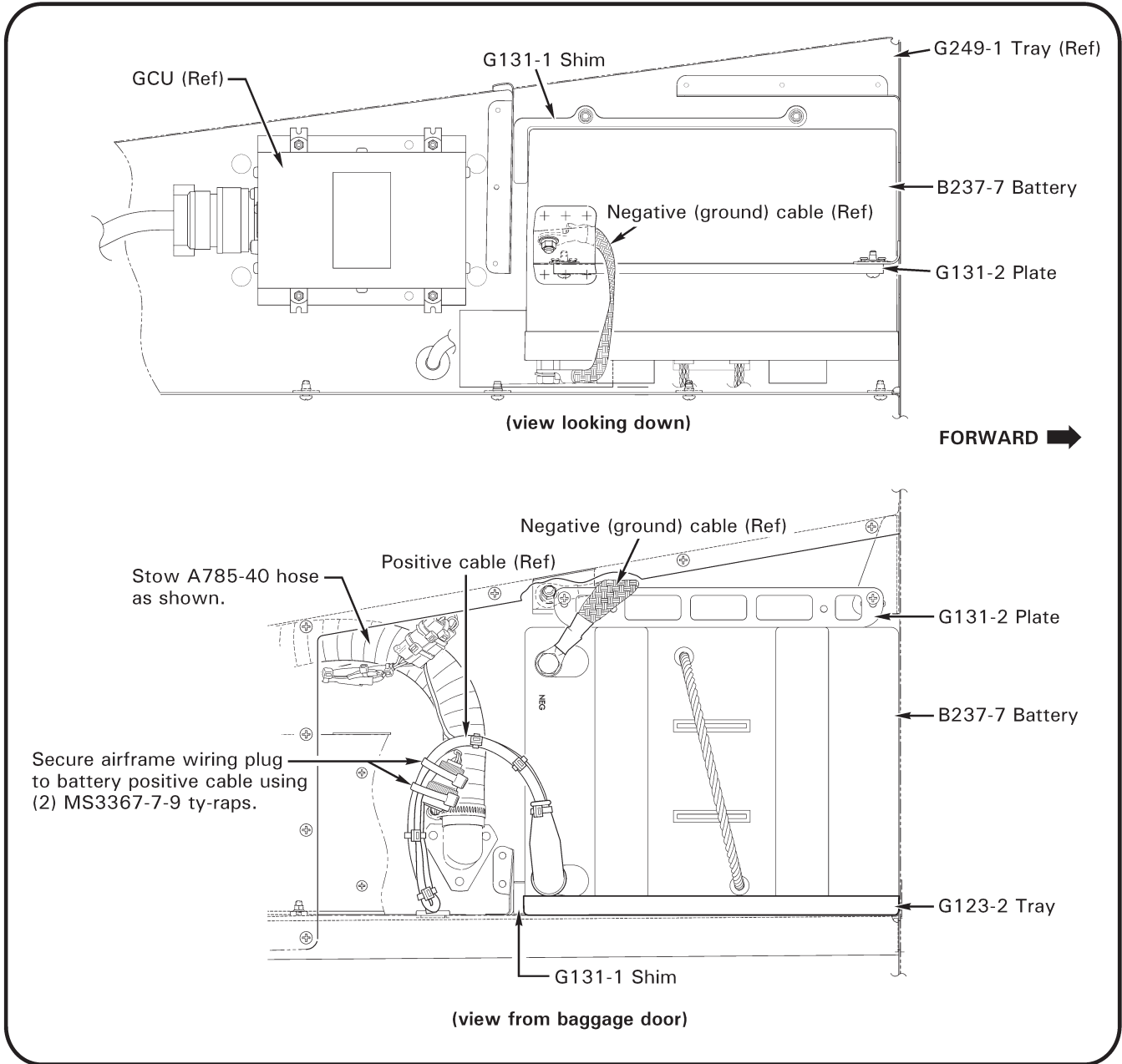


FIGURE 2A
(B237-7 battery installation)

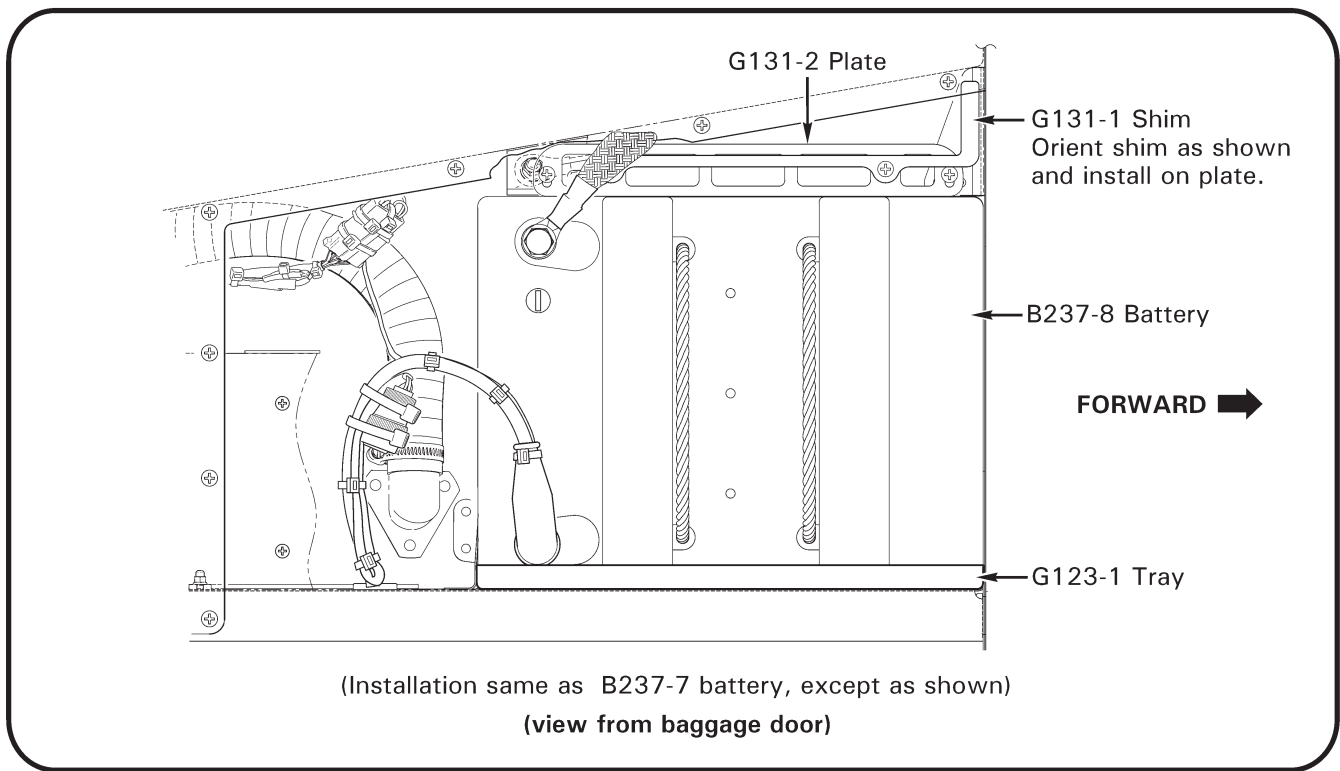


FIGURE 2B
(B237-8 battery installation)

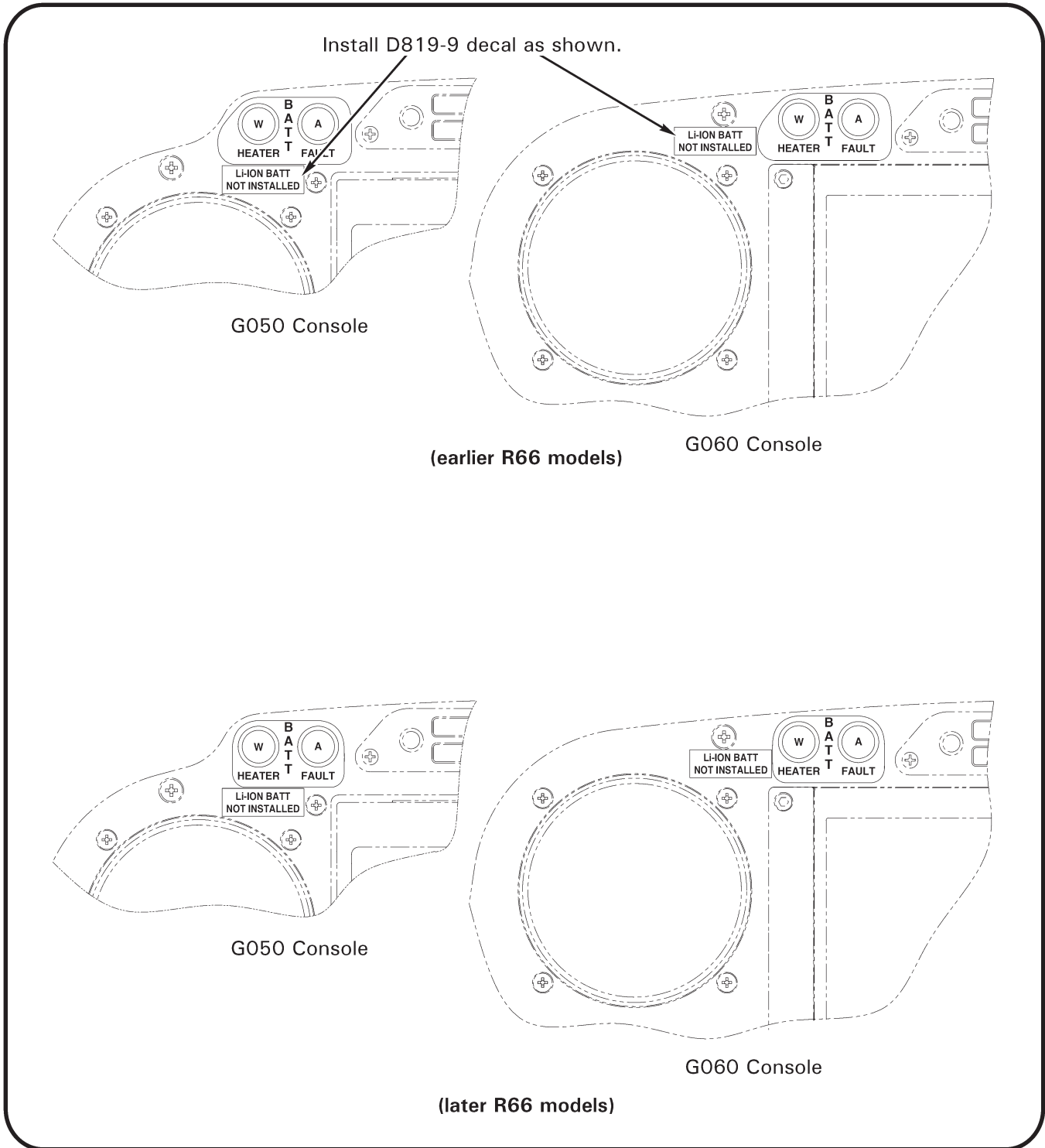


FIGURE 3

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**R66 PILOT'S OPERATING HANDBOOK PAGE
FOR KI-247-2 LEAD-ACID BATTERY INSTALLATION**

This page to be inserted in front of the Lithium-Ion Battery Supplement in Section 9 of the R66 Pilot's Operating Handbook if a lead-acid battery is installed in accordance with KI-247-2.

A lead-acid main battery is installed. The Lithium-Ion Battery Supplement is not applicable.

The BATT FAULT and BATT HEATER lights will illuminate when the annunciator panel test button is depressed. However, the lights are not connected to the battery and do not indicate battery status.

The following placard (p/n D819-9) shall be installed adjacent to the BATT FAULT and BATT HEATER lights:



Remove this page if a lithium-ion battery is reinstalled.



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