**R44-series Lead-Acid Battery To Lithium-Ion Battery (Underseat) Upgrade Kit Instructions**

*Kit replaces lead-acid battery installation with True Blue Power® TB17 (RHC P/N D237-2) lithium-ion battery installation; battery is not included. Kit is eligible for installation on R44 S/N 2624 thru 2421, Cadet S/N 30070 & prior, and R44 II S/N 14411 & prior. Helicopter must be equipped with 28V system and have an unused instrument hole. KI-265-4 is required to be installed concurrently.*

NOTE

Visit https://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 |
|---|---|---|---|
| 1 | KI-265-3Instr. | Kit Instructions | 1 |
| 2 | A372-1 | Tube | 1 |
| 3 | A701-3-1FT | Tape – Urethane, 5/16 inch wide (1 foot length) | 1 |
| 4 | A701-5-6IN | Tape – Urethane, 2 inch wide (6 inch length) | 1 |
| 5 | A701-16-6IN | Tape – Black Neoprene, 1 inch wide (6 inch length) | 1 |
| 6 | A785-7 | Hose | 1 |
| 7 | B196-21 | Lamp | 2 |
| 8 | B198-1 | Light – Amber | 1 |
| 9 | B198-4 | Light Assembly – Clear | 1 |
| 10 | B261-2 | Splice | 1 |
| 11 | B277-12 | Clamp | 2 |
| 12 | D144-9 | Support | 1 |
| 13 | D144-10 | Hold-Down Assembly | 1 |
| 14 | F693-4 | Relay Assembly – Warning Lights | 1 |
| 15 | F693-7 | Harness Assembly – Lithium-ion Battery (FWD) | 1 |
| 16 | F693-10 | Harness Assembly – Relay | 1 |
| 17 | G468-6 | Cover | 1 |
| 18 | G598-4 | Cover | 1 |
| 19 | MS21042L04 | Nut | 2 |
| 20 | MS3367-4-9+ | Ty-rap (Note: “+” in contents part number indicates 20-qty pack) | 2 |
| 21 | MS3367-5-9+ | Ty-rap (Note: “+” in contents part number indicates 20-qty pack) | 2 |
| 22 | MS20470AD3-3.5+ | Rivet (Note: "+" in part number indicates 50-qty pack) | 1 |
| 23 | MS35206-213 | Screw | 2 |
| 24 | NAS1149FN416P+ | Washer (Note: “+” in contents part number indicates 20-qty pack) | 1 |

## Consumables

Refer to R44 Maintenance Manual (MM) § 23-70 for approved materials list.

- B270-1 Sealant

**Special Tools**

- Wire stripping and crimping tools
- Step drill, 1/2 inch – 1 inch size range
- Drilling & deburring tools
- Cleco® (sheet metal fastener) in size #40 (silver)

**Kit Instructions**

1. Turn battery and avionic switches OFF.

2. Refer to Figure 1. Remove lead-acid battery per R44 Maintenance Manual (MM) § 37-10. Remove D144-5 support; retain hardware.

3. Refer to MM Figure 2-4. Remove access and inspection panels 3A thru 3C.

4. Using masking tape (or similar product) temporarily mark location of avionics on C359 panel. Remove lower console anchor screws, avionics face, and avionics from lower console.

5. Access inside of upper console per MM § 13-80.

6. Refer to Figure 2. Route F693-10 harness assembly wires (fault, heater, and push-to-test switch) forward along main harness through lower console compartment to upper console. Carefully remove ty-raps from airframe harness and secure wires to airframe harness using appropriately sized ty-raps. Cinch ty-rap until snug without over tightening, and trim tip flush with head.

7. Refer to Figure 2 & IPC Figure 95-23. Select available instrument hole location on console panel. Remove console face and B190-6 panel covering unused instrument hole location; retain hardware.

8. Refer to Figures 2 & 3. Assemble B196-21 lamp (one each) into B198-1 light & B198-4 light assembly. Install B198-1 (fault) light and B198-4 (heater) light assembly onto G468-6 cover. Route F693-10 harness assembly to cover and connect fault & heater wires as labeled. Install push-to-test switch to G468-6 cover as shown. Install G468-6 cover using retained hardware.

| NOTE |
| --- |
| Parenthetic dash numbers, such as (-2886), indicate number marked on wiring insulation (if single conductor), or jacket (if multi-conductor and/or shielded). |

9. Select available location on terminal block (warning lights). Attach wire (-2835) using existing hardware.

10. Refer to Figure 3. Connect F693-4 relay assembly to F693-10 harness assembly (D269-11 receptacle). Secure plugs using MS3367-4-9 ty-rap. Secure relay and harness assembly along aiframe harness using appropriately sized ty-raps. Cinch ty-rap until snug without over tightening, and trim tip flush with head.

11. Refer to Figure 2. Attach ring terminal on wire (-2838) to a ground stud.

12. Route F693-10 harness assembly wires WHT (-2819), BLU (-2819) & (-2882) along main harness from lower console compartment to battery compartment. Follow main harness and A780-66 cable assembly (ref. Figure 1) to under seat battery compartment location.

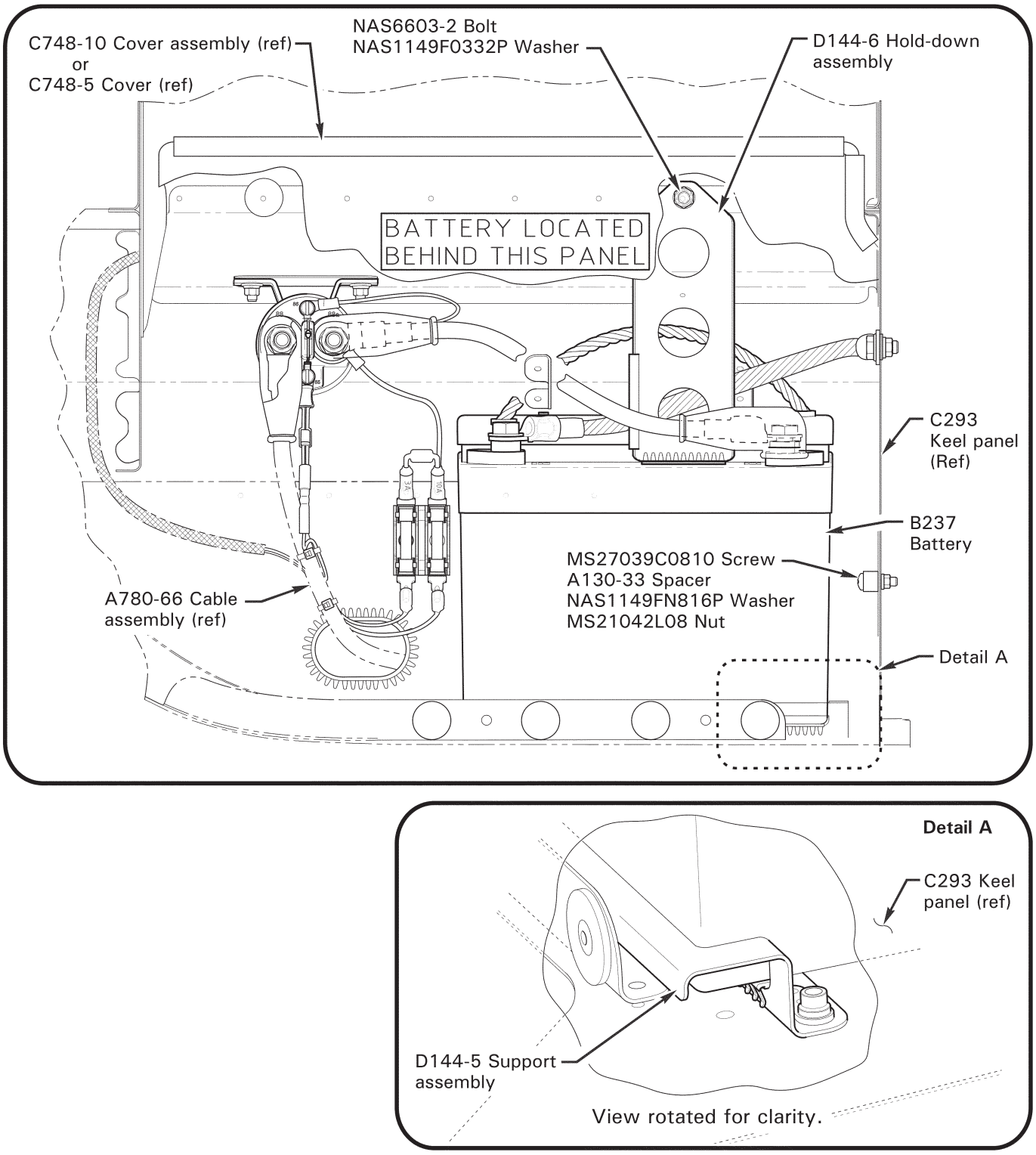



**FIGURE 1 Lead-acid battery installation**

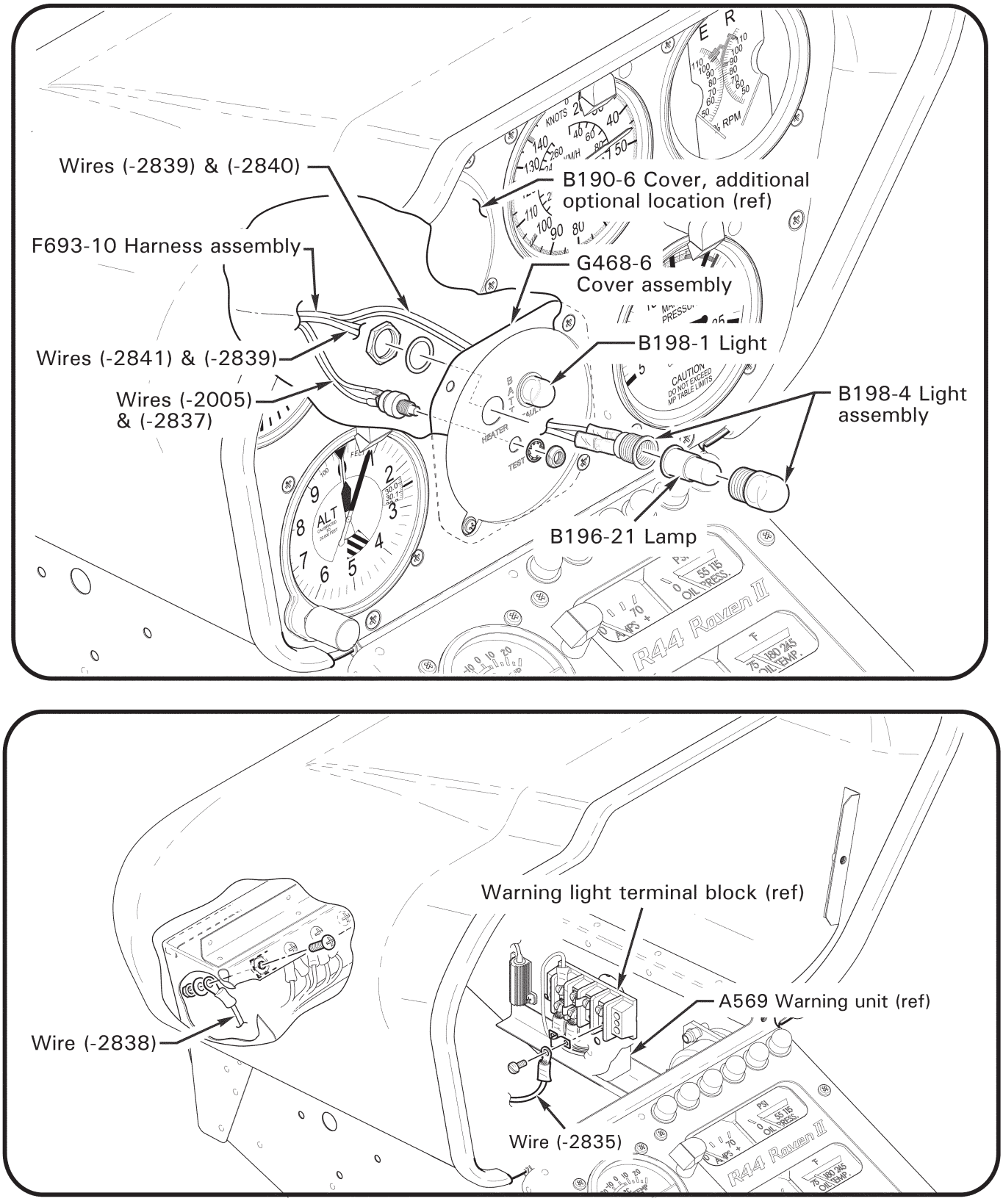



**FIGURE 2 F693-10 Harness assembly installation**
(Seven-Instrument console panel shown; locations typical)

**Kit Instructions (continued)**

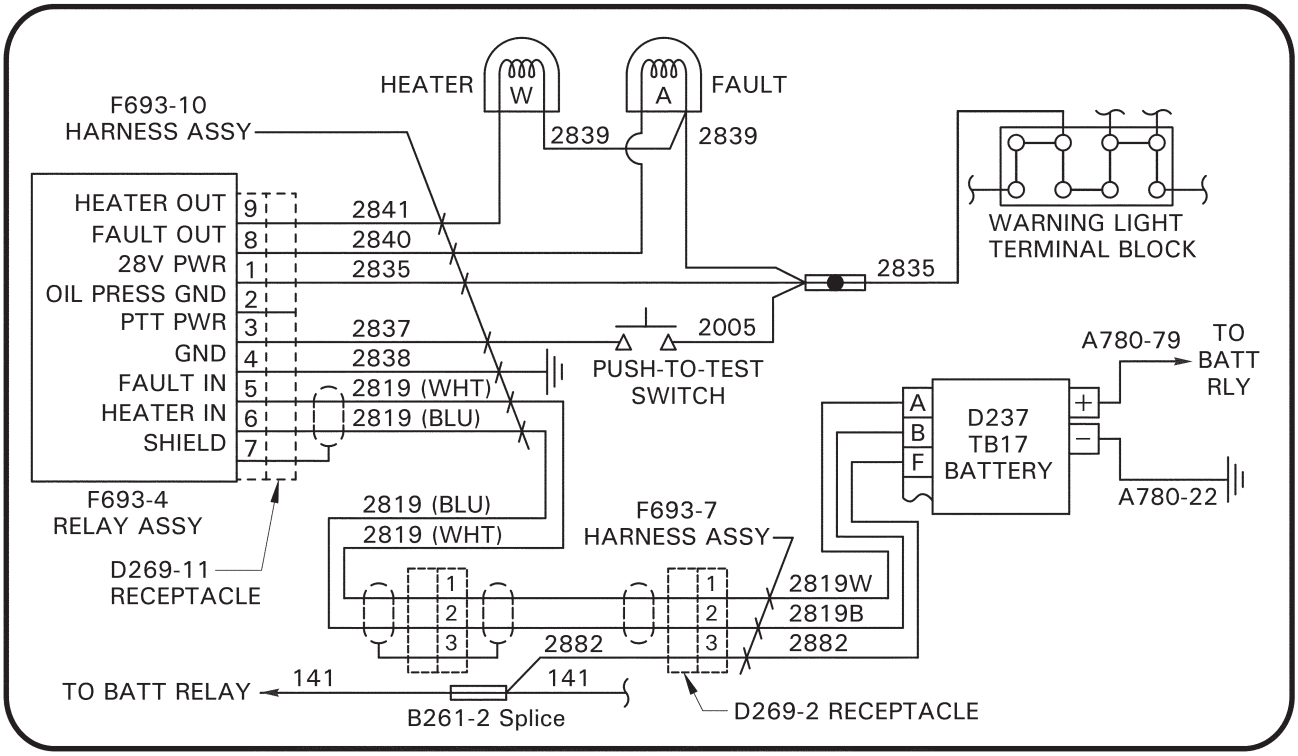



**FIGURE 3**

**WARNING**

**Review appropriate Safety Data Sheet (SDS) when working in proximity to hazardous materials. Specific recommendations for use of personal protective equipment are located in the SDS.**

13. Refer to Figure 4. Using tube as drill guide, Remove existing rivet and progressively drill (5) 0.097–0.102 inch diameter holes and install clecos. Mark 0.86 inch diameter hole of A372-1 tube installation as shown. Remove clecos and tube.

14. Refer to Figure 4. Drill marked 0.86 inch diameter hole using step drill. Simultaneous use of vacuum cleaner is recommended to minimize debris accumulation. Clean edge of hole using 320-grit sand paper.

15. Cleco A372-1 tube in position. Progressively remove clecos and install tube using (6) MS20470AD3-3.5 rivets.

16. Refer to Figure 4. Trim A701-5 tape to 0.6 inch width x 3.5 inch length and A701-3 tape to 6.5 inch length. Install A701-5 tape & A701-3 tape as shown.

17. Connect D269-2 plug of F693-10 harness assembly to F693-7 harness assembly. Secure plugs using MS3367-4-9 ty-rap.

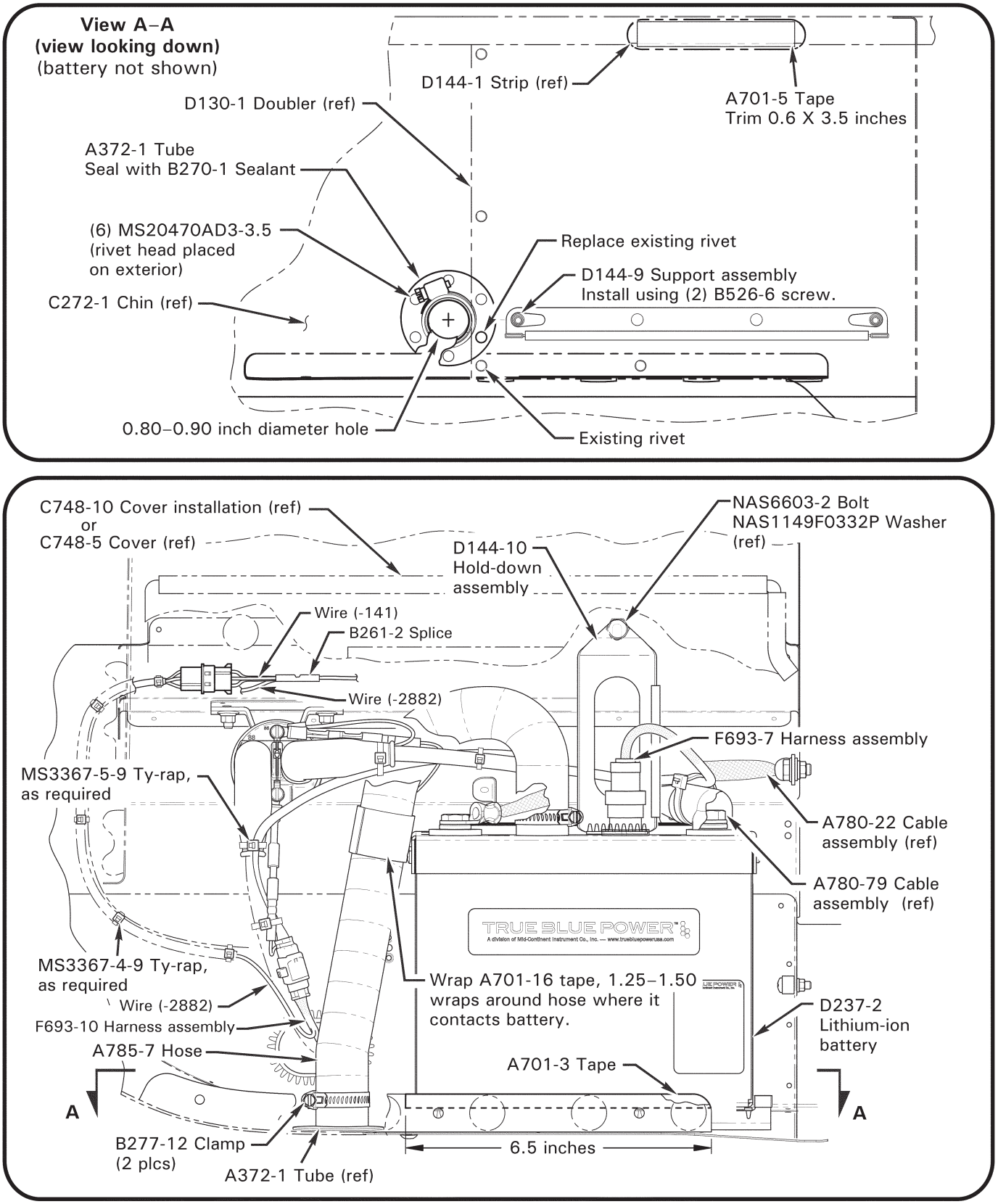



**FIGURE 4 Lithium-Ion battery installation**

**Kit Instructions (continued)**

18. Refer to Figures 3 & 4. Open circuit breaker compartment and locate wire (-141), cutting ty-raps as required. Splice wire (-2882) from F693-10 harness assembly to wire (-141) using B261-2 splice as shown; verify security. Close circuit breaker panel.

19. Install D144-9 support assembly using retained hardware. Install A785-7 hose to A372-1 tube using (1) B277-12 clamp.

20. Perform pre-installation inspection and completely charge D237-2 lithium-ion battery per True Blue Power Installation Manual and Operating Instructions. If battery is new, also perform visual inspection, charging, capacity check, and return to service per True Blue Power® Installation Manual and Operating Instructions.

21. Refer to Figure 4. Carefully install battery and connect F693-7 harness assembly to battery.

22. Verify battery switch is OFF. Verify battery terminal surfaces are clean. Install positive cable on battery positive terminal and install battery hardware. Special torque terminal bolt as noted on battery label, and torque stripe per MM Figure 2-1. Slide nipple over terminal. Secure F693-7 & F693-10 harness assembly to battery positive cable using appropriately sized ty-raps. Cinch ty-raps until snug without over tightening, and trim tip flush with head.

23. Install negative (ground) cable to battery negative terminal and install battery hardware. Special torque terminal bolt as noted on battery label, and torque stripe per MM Figure 2-1.

24. Connect A785-7 (vent) hose to battery using B277-12 clamp. Wrap A701-16-6IN tape around hose where it contacts battery, trimming tape as required. Verify security of hose.

25. Refer to Figure 4. Install D144-10 hold-down assembly using retained hardware, leaving bolt loose enough to slide hold-down assembly (hole is slotted). Position hold-down assembly until it just contacts top of battery. Standard torque bolt per MM § 23-32 and torque stripe per MM Figure 2-1. Verify security of battery installation.

26. Refer to Figure 5. Verify adequate clearance on reverse side; using a drill stop, match drill G598-4 cover to C748-10 or C748-5 cover assembly as shown. Deburr holes and clean up debris.

27. Install G598-4 cover to C748 cover assembly using hardware at location shown. Install cover assembly using retained hardware.

28. Perform functional check of lithium-ion battery by switching battery and strobe switches on and verifying strobe function. Turn battery switch OFF.

29. Install upper console per MM § 13-80 as required.

30. Install avionics as marked in step 4. Install face on lower console and install lower console anchor screws.

**Kit Instructions (continued)**

31. Refer to MM Figure 2-4. Install access and inspection panels 3A thru 3C.

32. Revise helicopter's Weight and Balance Record in Pilot's Operating Handbook (POH) Section 6 to reflect this installation by incorporating the following data:

**Install:**

| Item | Weight | Long. Arm | Long. Moment | Lat. Arm | Lat. Moment |
|---|---|---|---|---|---|
| KI-265-3 Lead-Acid to Lithium-Ion Battery (Underseat) Upgrade Kit | +16.12 lb | 36.91 in. | 595.05 in-lb | -8.27 in. | -113.24 in-lb |

**Remove:**

| Item | Weight | Long. Arm | Long. Moment | Lat. Arm | Lat. Moment |
|---|---|---|---|---|---|
| B237-4 Battery | -29.50 lb | 36.34 in. | -1072.03 in-lb | -8.36 in. | 246.62 in-lb |

33. Update Pilot's Operating Handbook (POH) Section 9 with Lithium-Ion Battery Supplement, available at https://robinsonheli.com/ under the Publications tab.

34. Make appropriate maintenance record entries.

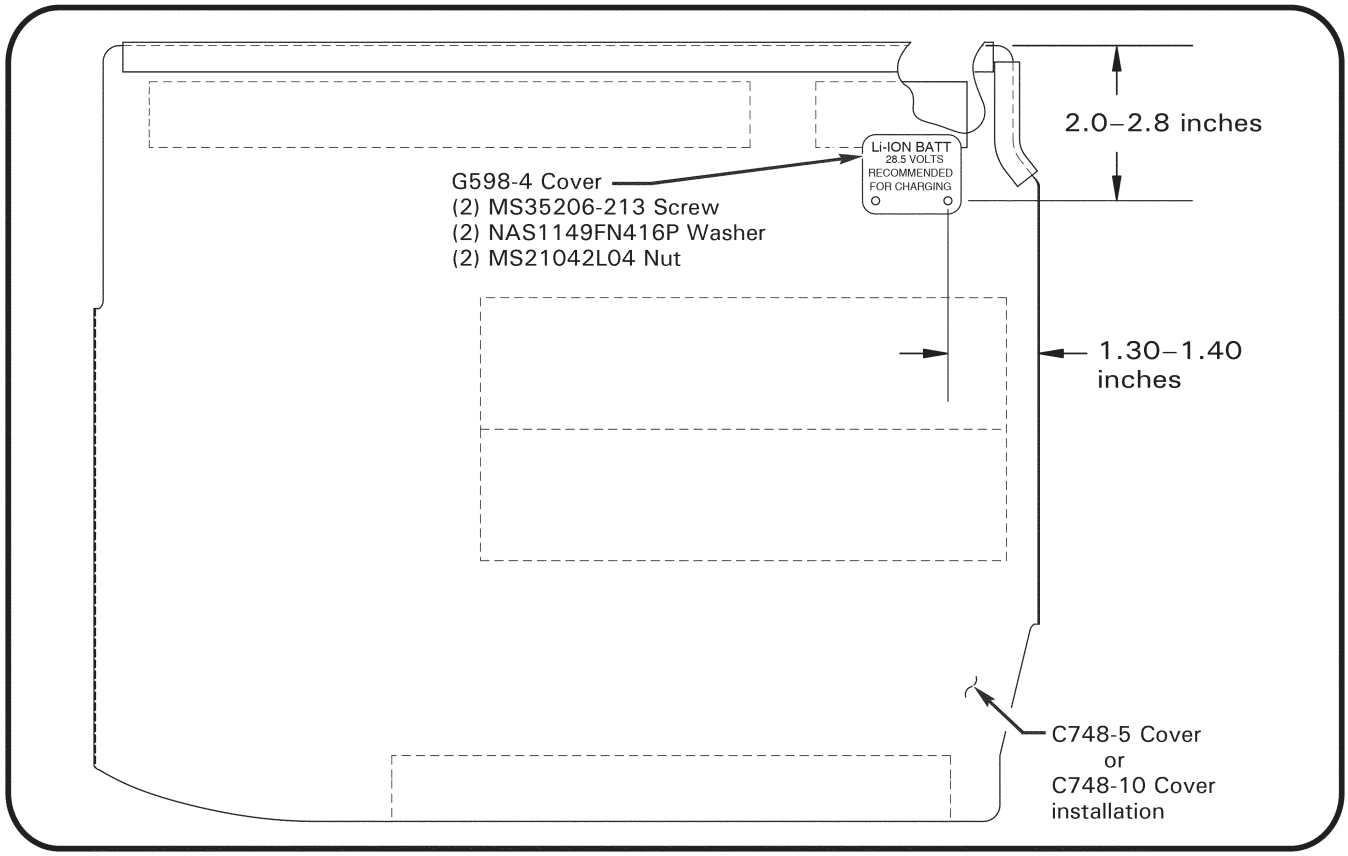



**FIGURE 5 G598-4 Cover installation**