R44-series Battery Installation Upgrade Kit Instructions

(To comply with R44 Service Bulletin SB-99. Positions under-seat battery upright.)

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
1	KI-264-2Instr.	Kit Instructions	1
2	A780-22	Battery Cable Assembly – Ground	1
3	A780-79	Battery Cable Assembly – Power	1
4	C748-5	Cover Assembly – LH	1
5	D144-1	Strip	1
6	D144-4	Stop	2
7	D144-5	Support Assembly	1
8	D144-6	Hold-Down Assembly	1
9	F654-24	Decal – “BATTERY LOC...”	1
10	MS20470AD4-3.5+	Rivet (Note: “+” in part number indicates 20-qty pack)	1
11	MS20470AD4-4+	Rivet (Note: “+” in part number indicates 50-qty pack)	1
12	MS20470AD4-5.5+	Rivet (Note: “+” in part number indicates 50-qty pack)	1
13	MS21069L3	Nutplate	1
14	MS25171-2S	Nipple	2
15	NAS1097AD3-4+	Rivet (Note: “+” in part number indicates 50-qty pack)	1
16	NAS1149F0332P+	Washer (Note: “+” in part number indicates 20-qty pack)	1
17	NAS6603-2	Bolt	1

Consumables

Refer to R44 Maintenance Manual (MM) § 1.400.

- Bonderite M-CR 1201 Aero (Alodine 1201).
- Epoxy primer.
- B270-8 Adhesive.
- R8260 Touch-up paint kit (refer to helicopter Maintenance Record for paint codes).

Special Tools

- Clecos (sheet metal fastener) size #30 (copper) and #40 (silver).
- Drilling, deburring, and countersinking tools.

Kit Instructions

1. Refer to Figure 1. Turn BATTERY switch OFF. Pivot front left seat forward and remove C003-8 insulation (ref. R44 Illustrated Parts Catalog [IPC] Figure 25-23). Remove and discard C748-5 (battery) cover assembly. Release D693-2 strap assembly.

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

2. Remove and retain hardware securing A780-43 negative (ground) cable to battery negative terminal. Remove cable from terminal.

3. Remove and retain hardware securing A780-41 positive (power) cable to battery positive terminal. Remove cable from terminal. Carefully remove battery and visually inspect for obvious damage; replace battery as required.

4. Inspect battery compartment for evidence of a battery leak. Sprinkle baking soda on any clear liquid seen in compartment; if effervescence occurs, liquid is electrolyte which has leaked from battery. If a battery leak is detected, wear appropriate personal protective equipment (ref. FAA-H-8083-30A Chapter 1) and neutralize acidic electrolyte using a solution of baking soda and water. Clean up residue. Properly dispose of leaking battery in accordance with local regulations. Assess damage and contact RHC Technical Support for assistance with repairs.

5. Remove and retain hardware securing negative (ground) cable to C293-3 LH keel panel (gain access as required). Remove and discard cable.

6. Disconnect positive (power) cable from B415-2 relay and retain hardware. Remove and discard cable and nipples.

7. Remove and discard D693-2 strap. Drill out (12) rivets securing D129-2 tray. Remove and discard tray.

8. Refer to IPC Figure 25-19. Carefully remove C469-38 (or -3) LH carpet assembly per MM § 25-30. Open circuit breaker panel.

9. Refer to Figure 2. Layout dimensions on aft-side of C352-3 LH forward canted floor panel for two top holes as shown. Drill (2) 0.127–0.133 inch diameter holes. Deburr holes. Install D144-4 stops using appropriately-sized clecos. Using lower pilot holes in D144-4 stop as drill guide, drill (2) 0.127–0.133 inch diameter holes into vertical panel. Remove stops and deburr holes.

> NOTE
>
> Proper rivet length is determined by installer during installation. Application of Bonderite (alodine) and/or prime/paint to drilled hole(s) edges is at installer's discretion.

10. Install D144-4 stops using (4) MS20470AD4-3.5 rivets.

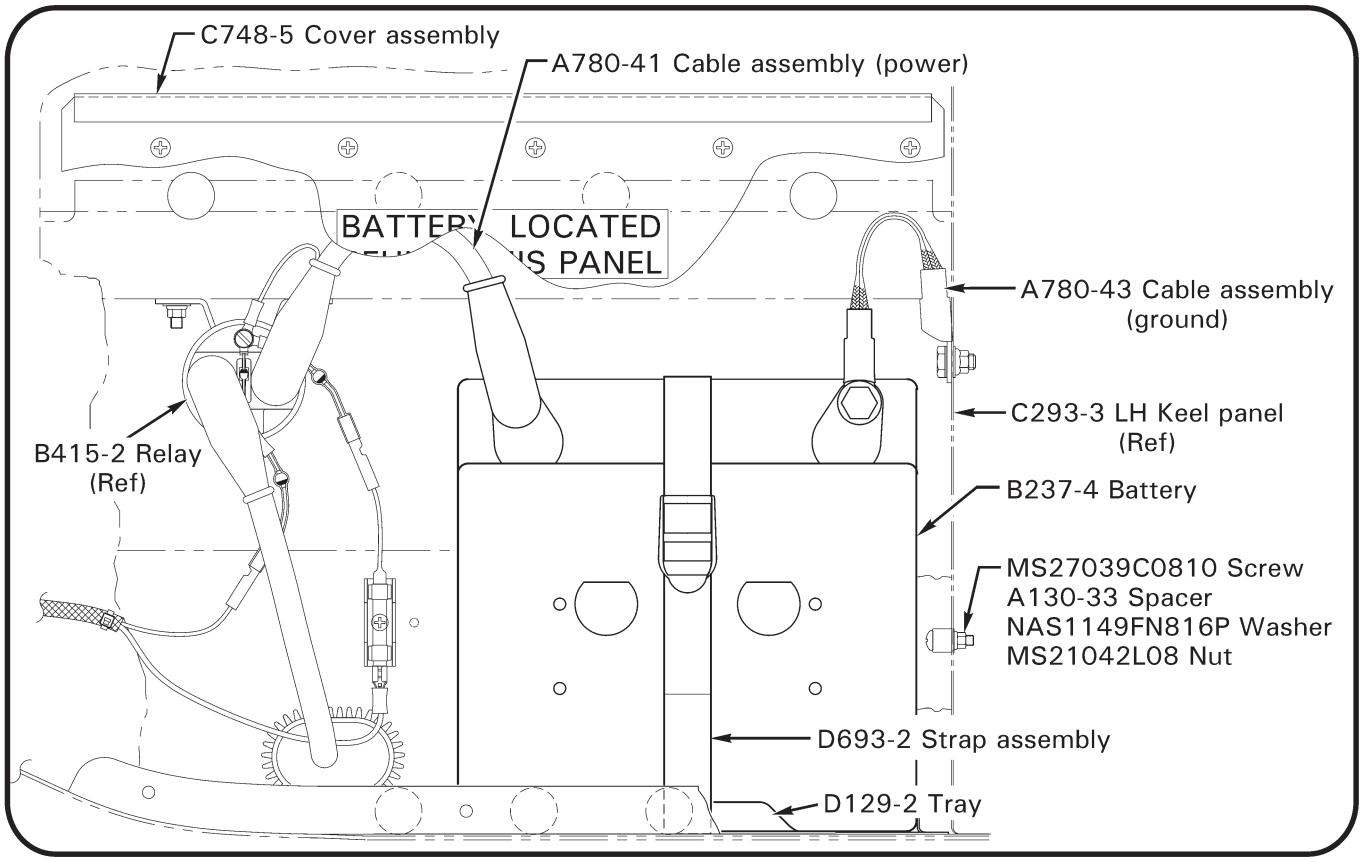

FIGURE 1 Existing B237-4 (24V) battery installation
(view looking forward)

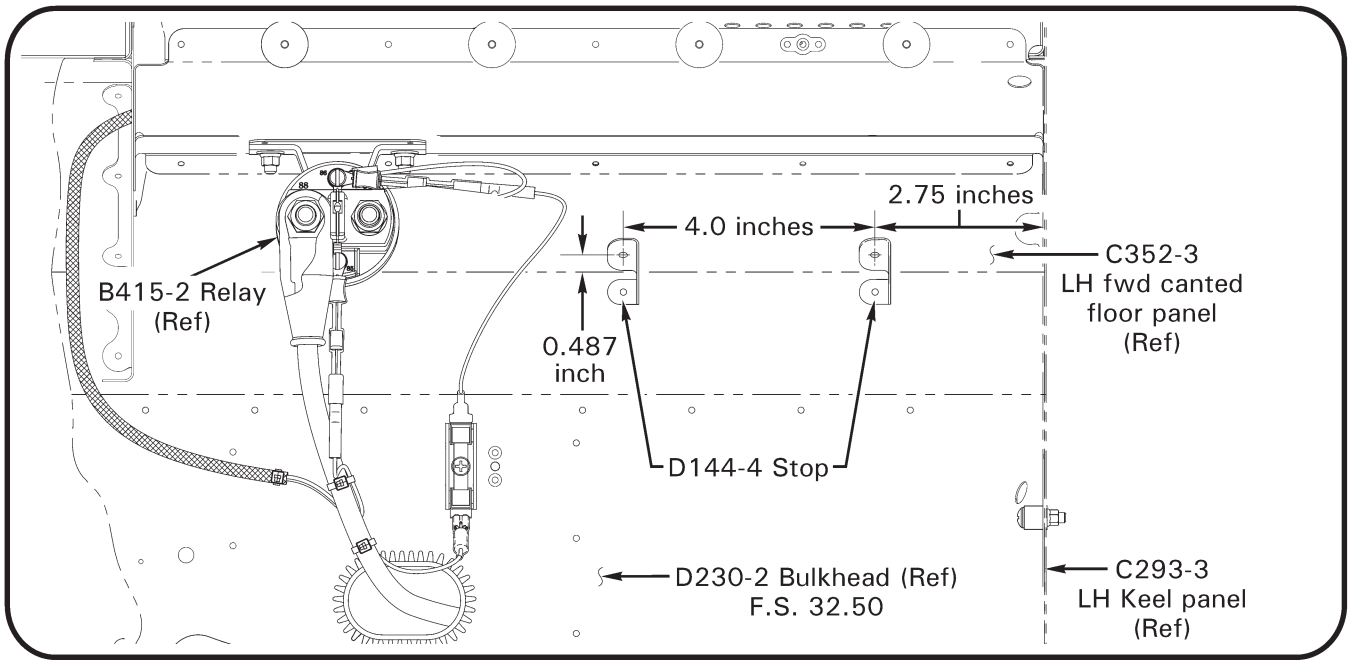

FIGURE 2 D144-4 installation dimensions
(view looking forward)

Kit Instructions (continued)

11. Refer to Figure 3. Drill out third rivet outboard (approximately 3.90 inches) from C293-3 LH keel panel on C492-5 guard. Position MS21069L3 nutplate over drilled-out hole and install appropriately-sized cleco. Using nutplate as template, drill (2) 0.097–0.102 inch diameter installation holes. Remove nutplate. Enlarge center hole to 0.195-0.201 inch diameter. Create (2) 0.135–0.155 inch diameter, 100º countersinks in installation holes. Install nutplate on forward-side of C492-5 guard using (2) NAS1097AD3-4 rivets. Clean up debris in battery & circuit breaker compartments.

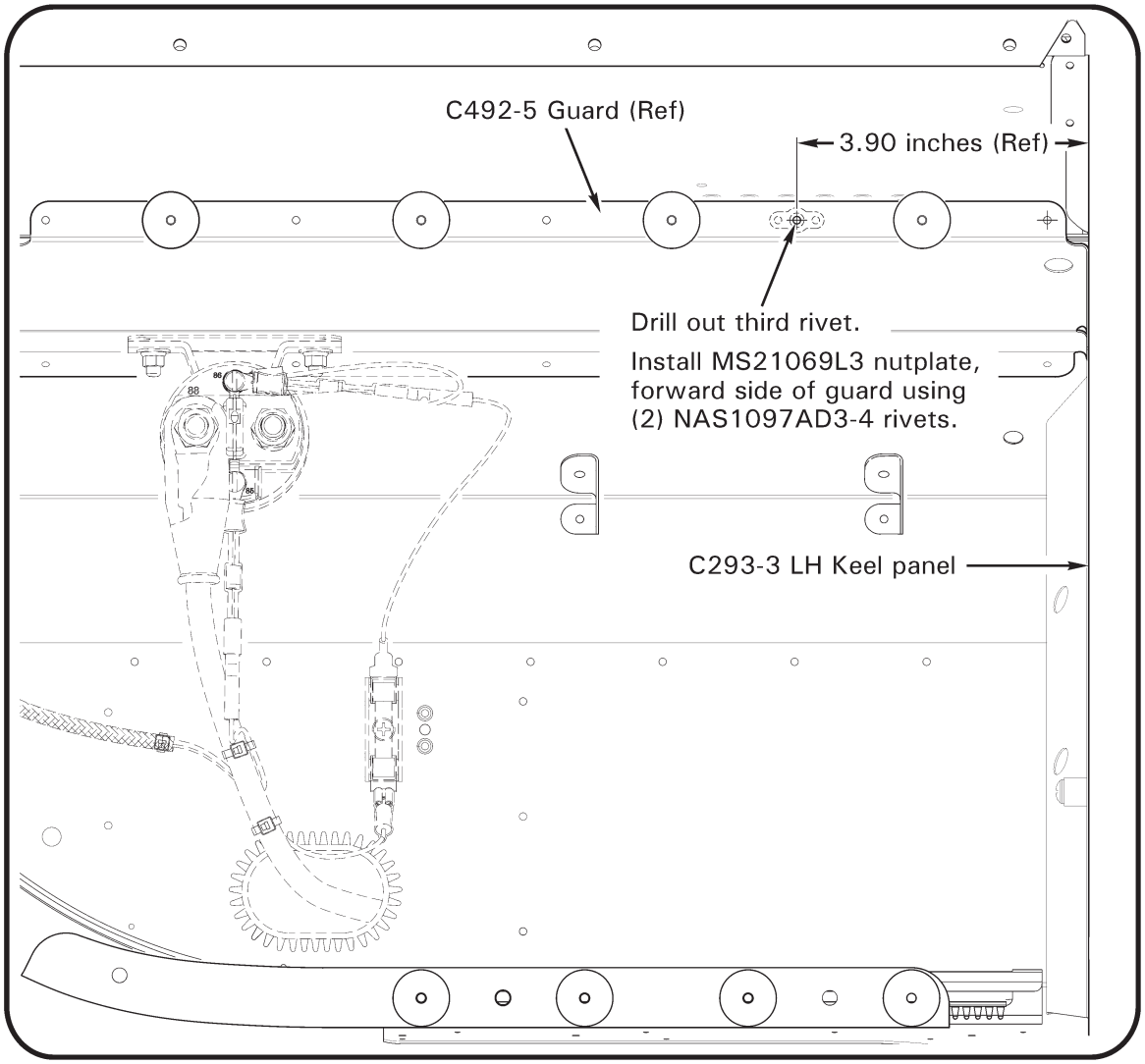

FIGURE 3 Nutplate installation using existing rivet hole
(view looking forward)

Kit Instructions (continued)

12. Refer to Figure 4. Position D144-1 strip with installation holes aligned over drilled-out rivet holes (ref step 7) and install appropriately-sized cleco (in center holes) from exterior. Install (2) MS20470AD4-5.5 rivets (each end of strip) from exterior side, ensuring rivet bucked end is 0.150-inch (minimum) diameter and is flush to countersunk hole (of strip) within 0.010 inch. Remove clecos and install remaining (2) MS20470AD4-5.5 rivets as previously described.

13. Install (8) MS20470AD4-4 rivets from exterior side in drilled-out rivet holes (removed D129-2 tray).

14. Refer to Figure 4. Position D144-5 support assembly 0.870 inch inboard from C293-3 LH keel panel and flush to D130-3 angle assembly. Trace with scribe inboard rivet hole. Remove support and drill (1) 0.127–0.133 inch diameter hole. Position support assembly over newly-drilled hole and install appropriately-sized cleco. Using support assembly as template, progressively drill remaining (3) 0.127–0.133 inch diameter holes and install clecos. Remove support assembly. Deburr holes and clean up debris.

15. Cleco D144-5 support assembly in place. Progressively remove clecos and install (4) MS20470AD4-4.5 rivets from exterior side.

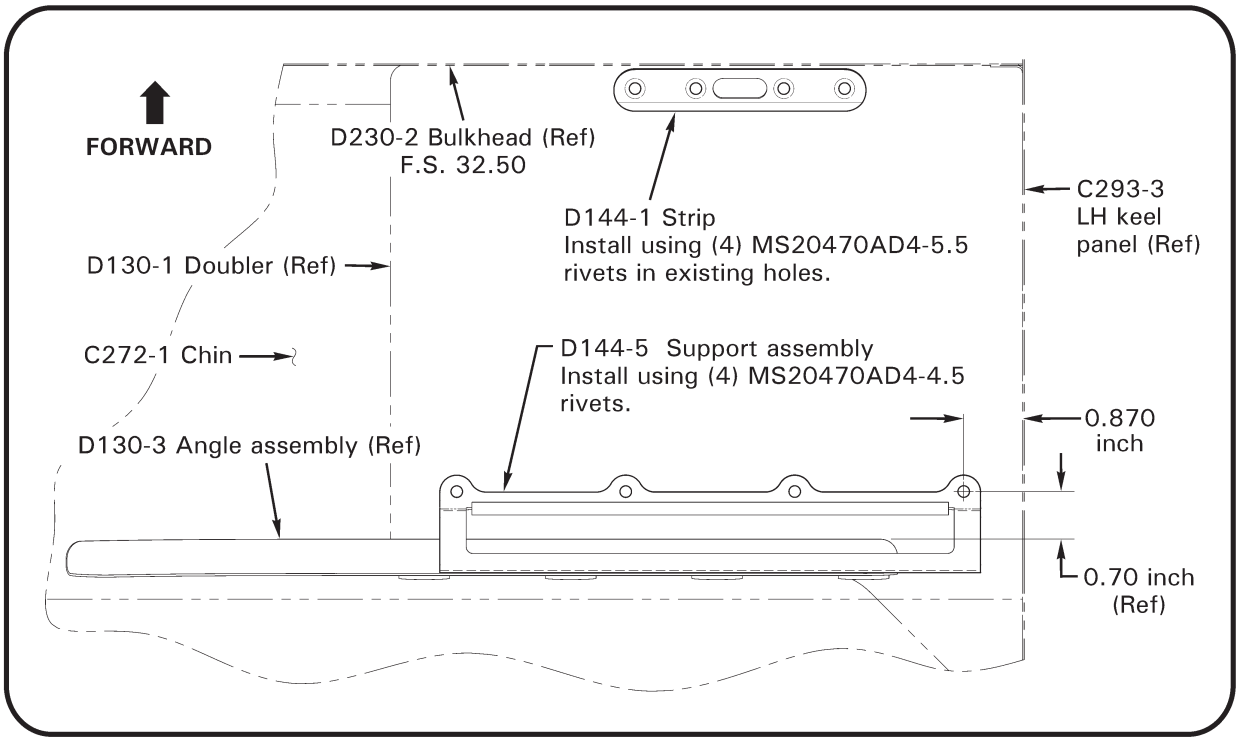

FIGURE 4 Installation dimensions for D144-1 strip & D144-5 support assembly
(view looking down)

Kit Instructions (continued)

16. Refer to Figure 5. Secure A780-22 cable assembly (ground) to C293-3 LH keel panel using retained hardware.

NOTE
Parenthetic dash numbers, such as (-64), indicate number marked on wiring.

17. Slide one MS25171-2S nipple on each end of A780-79 cable assembly. Secure cable assembly to B415-2 relay using retained hardware and special torque to 80 in.-lb. Position nipple over terminal. Secure (-64) wire relay to (“86”, “+”) terminal and special torque screw to 10 in.-lb. Verify security.

18. Refer to Figure 5. Ensure BATTERY switch is OFF. Carefully install B237-4 battery, positioned as shown. Connect positive cable to battery positive terminal using retained hardware. Special torque terminal bolt as noted on battery label and torque stripe per MM Figure 2-1; position nipple over positive terminal. Connect negative (ground) cable to battery negative terminal using retained hardware. Special torque terminal bolt per battery label and torque stripe per MM Figure 2-1.

19. Install D144-6 hold-down assembly using (1) NAS6603-2 bolt & NAS1149F0332P washer, 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 § 1.300 and torque stripe per MM Figure 2-1. Verify security of battery installation.

20. Refer to Figure 5. Affix F654-24 decal on C748-5 (battery) cover at dimensions shown, then install cover. Install C008-3 insulation.

21. Ensure BATTERY switch is OFF. Verify circuit breaker compartment is free of debris. Close circuit breaker panel.

22. Install C649-38 (or -3) LH carpet assembly using B270-8 adhesive.

23. Make appropriate maintenance record entries. No change to Weight and Balance Record is required.

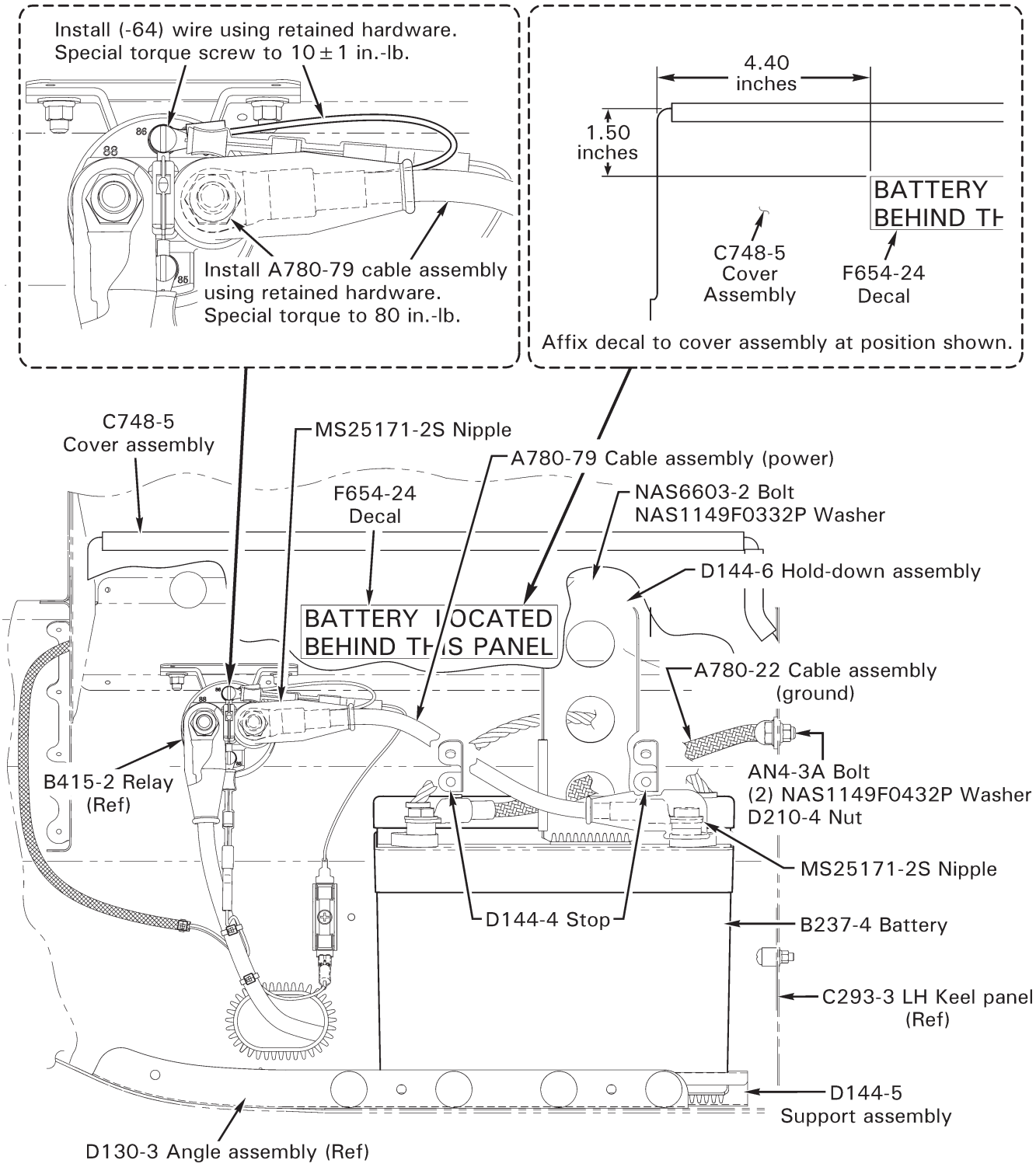

FIGURE 5 Completed Installation
(view looking forward with KI-264-2 kit installed)