

R44-series Lead-Acid Battery To Lithium-Ion Battery (Aft) 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, C046-26 frame, and have an unused instrument hole. KI-265-5A includes new C046-26 frame assembly. 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 PER KI-265- 5A	QTY PER KI-265- 5B
1	KI-265-5Instr.	Kit Instructions	1	1
2	A372-1	Tube	1	1
3	A785-42	Hose	1	1
4	B158-6-2	Heat Shrink - Black, 3/8-inch diameter (2 inch length)	1	1
5	B196-21	Lamp	2	2
6	B198-1	Light – Amber	1	1
7	B198-4	Light Assembly – Clear	1	1
8	B277-12	Clamp	2	2
9	B261-2	Splice	1	1
10	B330-16	Palnut	3	0
11	C046-26	Frame Assembly – LH	1	0
12	D210-4	Nut	14	0
13	D210-5	Nut	2	0
14	D131-3	Retainer	2	2
15	F693-4	Relay Assembly – Warning Lights	1	1
16	F693-6	Harness Assembly – Lithium-ion Battery (Aft)	1	1
17	F693-9	Harness Assembly – Relay	1	1
18	G405-2	Bumper	4	4
19	G468-6	Plate	1	1
20	G598-4	Cover	1	1
21	MS3367-4-9+	Ty-rap (Note: “+” in part number indicates 20-qty pack)	2	2
22	MS3367-5-9+	Ty-rap (Note: “+” in part number indicates 20-qty pack)	2	2
23	MS20470AD3-2.5+	Rivet (Note: “+” in part number indicates 50-qty pack)	1	1
24	MS35206-213	Screw	2	2

Consumables

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

- B270-5 Sealant

Special Tools

- Wire stripping tool
- Crimping tool (AMP – TE Connectivity P/N 601966-1, or equivalent)
- Crimp Die F/ 22D pin (DCM tool P/N M22520/2-06, or equivalent)

Kit Instructions

1. Turn battery switch OFF and remove key.
2. Refer to Illustrated Parts Catalog (IPC) Figure 96-12A. If helicopter equipped with C046-26 frame assembly, remove D131-2 retainers and retain hardware. Remove lead-acid battery per MM § 37-10.
3. If helicopter is not equipped with C046-26 frame assembly:
 - a. Remove LH lower frame assembly per MM § 4.211. Scrap frame, nuts & palnuts; retain remaining hardware.
 - b. Install C046-26 LH frame assembly per R44 MM § 4.212, using supplied & retained hardware.
4. Refer to MM Figure 2-4. Remove access and inspection panels 3A thru 3D, 4C thru 4G.
5. 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.
6. Remove upper console anchor screws and open upper console.
7. Remove RH aft seat back assembly per MM § 15.220.
8. Refer to IPC Figures 6-13, 53-1, & 53-5. Remove D041-1, D040-1, C377 (LH), and C378 (RH) cowling assemblies. **RII only:** Remove D057-2 airbox assembly per R44 MM § 6.470.
9. Refer to Figure 1. Route F693-9 harness assembly wires (fault, heater, and push-to-test switch) forward along main harness through lower console compartment to console. Carefully remove ty-raps from airframe harness and secure wires to airframe harness using appropriately sized ty-raps. Cinch ty-raps until snug without over tightening, and trim tips flush with heads.
10. Refer to Figure 1 & 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.
11. Refer to Figures 1 & 2. 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 G693-9 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 retainer 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).

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

Kit Instructions (continued)

13. Refer to Figure 2. Connect F693-4 relay assembly to F693-9 harness assembly's D269-11 receptacle. Secure plugs using MS3367-4-9 ty-raps. Secure relay and harness assembly along airframe harness using appropriately sized ty-raps. Cinch ty-raps until snug without over tightening, and trim tips flush with heads.
14. Refer to Figure 1. Attach ring terminal on wire (-2838) to a ground stud. Close upper console.
15. Refer to Figure 2. Route F693-9 harness assembly wires WHT (-2819), BLU (-2819) & (-2882) along main harness from lower console compartment to battery compartment. Follow main harness aft thru firewall, moving B270-5 sealant as required. Strip wires WHT (-2819), BLU (-2819) & (-2882). Install MS39029/58-360 pin (supplied with F693-9 harness assembly) on each wire. Verify security of pin. Slide B158-6 heat shrink over crimp wires. Insert pin into D269-2 receptacle (supplied with F693-9 harness assembly); verify security. Apply heat to B158-6 heat shrink over wires and receptacle using heat gun.
16. Ensure seal around wire bundle and firewall is restored, adding B270-5 sealant as required.
17. Refer to IPC Figure 96-13A. Connect newly installed D269-2 plug to F693-6 harness assembly. Secure plugs using MS3367-4-9 ty-rap.
18. Refer to Figure 3. Locate wire (-65) along aft battery relay wire installation, cutting ty-raps as required. Splice wire (-2882) from F693-9 harness assembly to wire (-65) using B261-2 butt splice as shown; verify security.
19. Refer to Figure 4. Lay out location for 0.86 inch diameter hole and (2) 0.097-0.102 inch diameter holes on D041-1 cowling assembly as shown.
20. Refer to IPC Figures 96-13A & 6-13. Center A372-1 tube over newly drilled hole on D041-1 cowling assembly and cleco in place. Using tube as guide, progressively drill (4) remaining 0.097–0.102 inch diameter holes and install clecos. Remove clecos and tube.
21. Deburr holes and clean up debris. At installer's discretion, alodine and/or prime/paint holes as described in NOTE below.

NOTE

After trimming or filing aluminum, finish edges as follows: Deburr trimmed edges with 220-grit or finer wet-or-dry aluminum oxide abrasive paper. Solvent-clean deburred edge and apply Bonderite M-CR 1132, or Bonderite M-CR 1201 Aero in accordance with manufacturer's instructions. Apply epoxy primer to dry edge. Touch up with helicopter paint color, where applicable, is optional.

22. Cleco A372-1 tube in position. Progressively remove clecos and install tube using (6) MS20470AD3-2.5 rivets. Install D041-1 cowling.
23. Refer to IPC Figure 96-13A. Install D131-3 retainers (provided in kit) using retained hardware. Install (4) G405-2 bumpers. Install A785-42 hose to A372-1 tube using B277-12 clamp. Install G598-4 cover to D809-3 cover assembly using (2) MS35206-213 screws.

Kit Instructions (continued)

24. 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.
25. Refer to IPC Figure 96-13A. Carefully install battery and connect F693-6 harness assembly to battery.
26. 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 F693-6 & F693-9 harness assembly to battery positive cable using appropriately sized ty-raps. Cinch ty-raps until snug without over tightening, and trim tips flush with heads.
27. 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.
28. Connect A785-42 (vent) hose to battery using B277-12 clamp. Verify security of hose.
29. Install D809-3 cover assembly per MM § 37-12 C 7.
30. Perform functional check of lithium-ion battery by switching battery and strobe switches on and verifying strobe function. Turn battery switch off.
31. Install upper console anchor screws and secure console in closed position.
32. Install avionics as marked in step 5 and face on lower console and install lower console anchor screws.
33. Install RH aft backrest per MM § 15.220
34. **RII only:** Install D057-2 airbox assembly per R44 MM § 6.470.
35. Install D040-1, C377 (LH), and C378 (RH) engine cowling assemblies.
36. 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-265-5 R44-series Lead-Acid to Lithium-Ion Battery (Aft) Upgrade	+16.04 lb	101.05 in.	1620.84 in-lb	-16.36 in.	-262.46 in-lb

Remove:

Item	Weight	Long. Arm	Long. Moment	Lat. Arm	Lat. Moment
B237-4 Battery	-29.50 lb	101.54 in.	-2995.43 in-lb	-16.67 in.	491.77 in-lb

Kit Instructions (continued)

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

38. Make appropriate maintenance record entries.

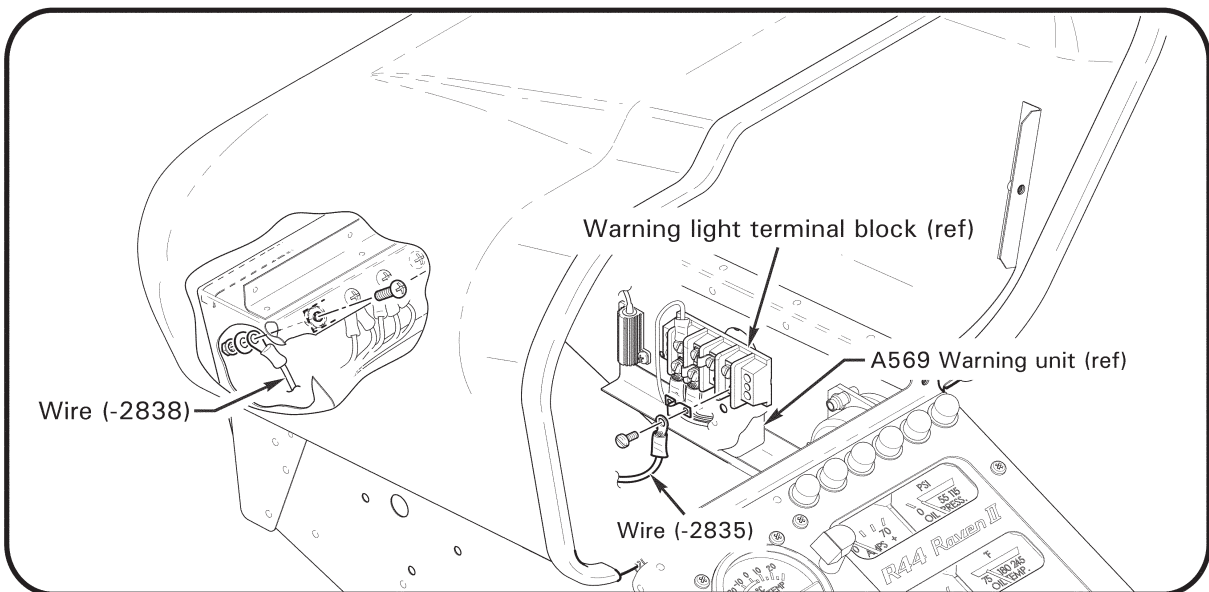
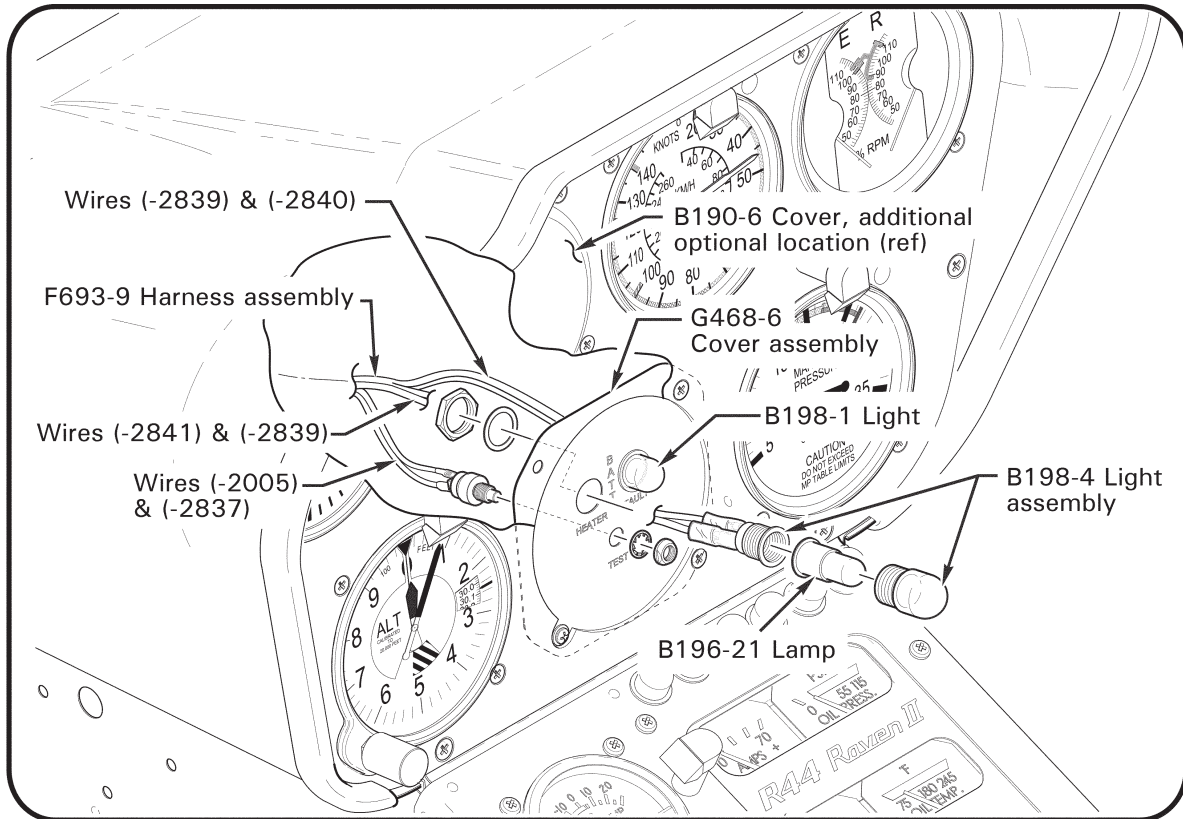


FIGURE 1 F693-9 Harness assembly installation
(Seven-Instrument console panel shown; locations typical)

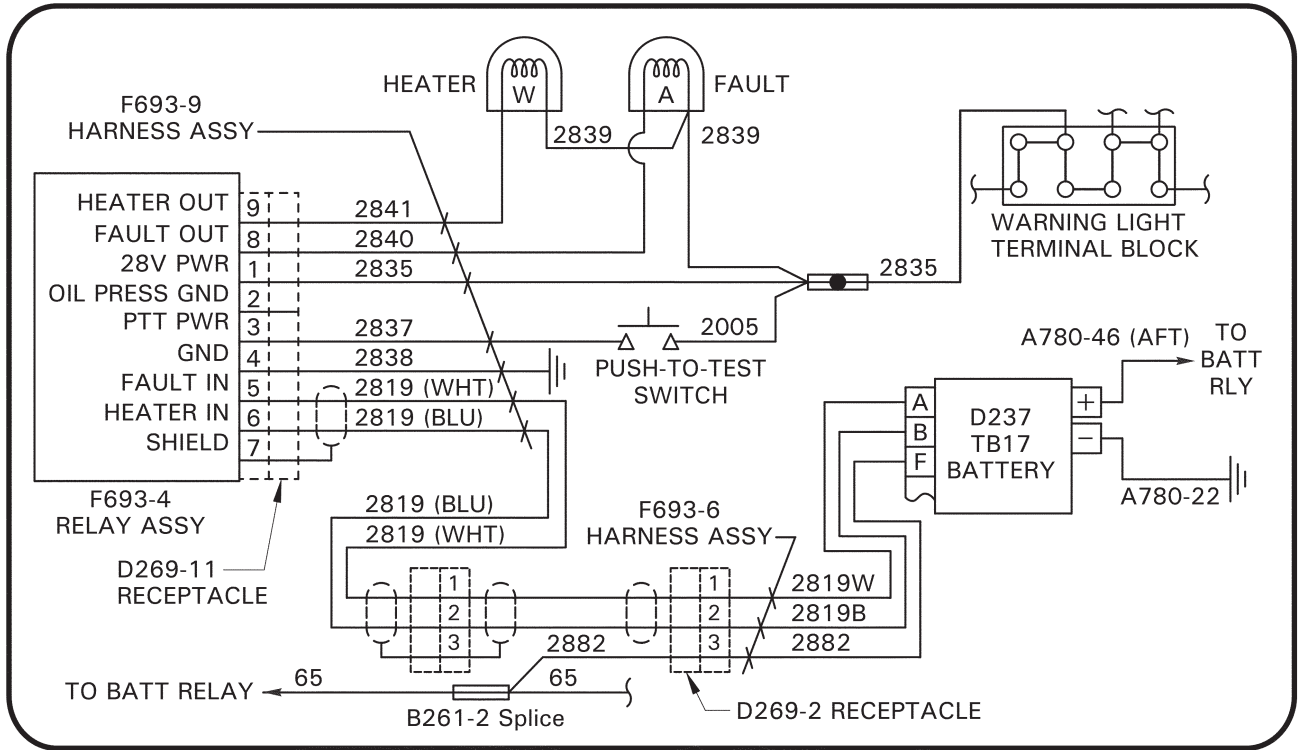
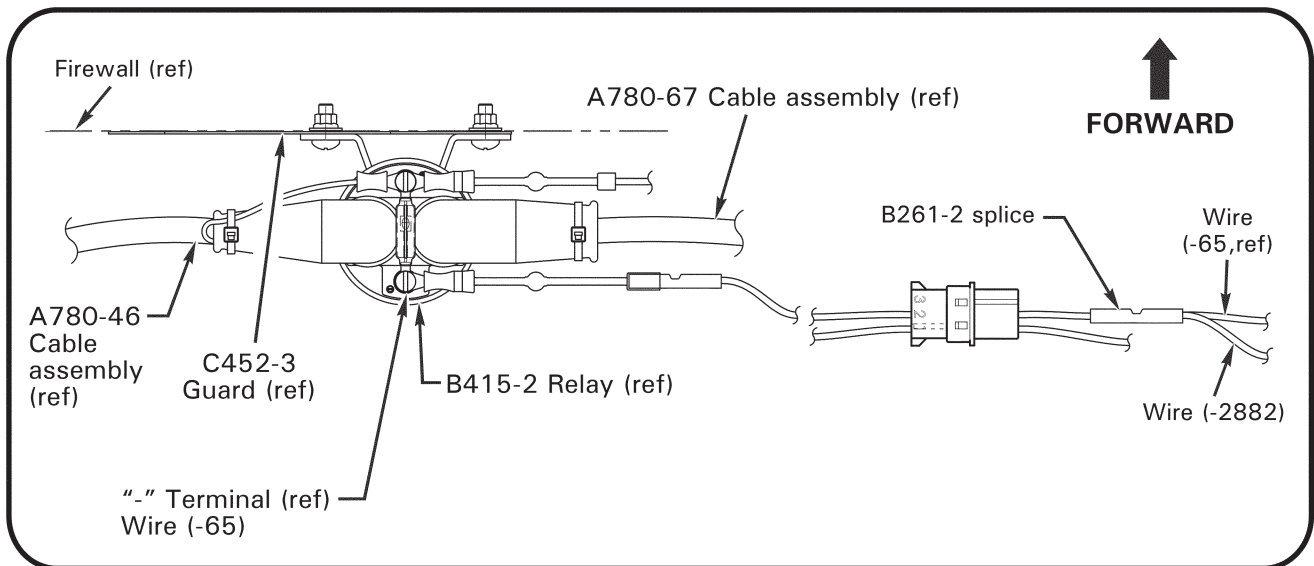


FIGURE 2 Schematic



**FIGURE 3 B261-2 Splice location
view looking down**

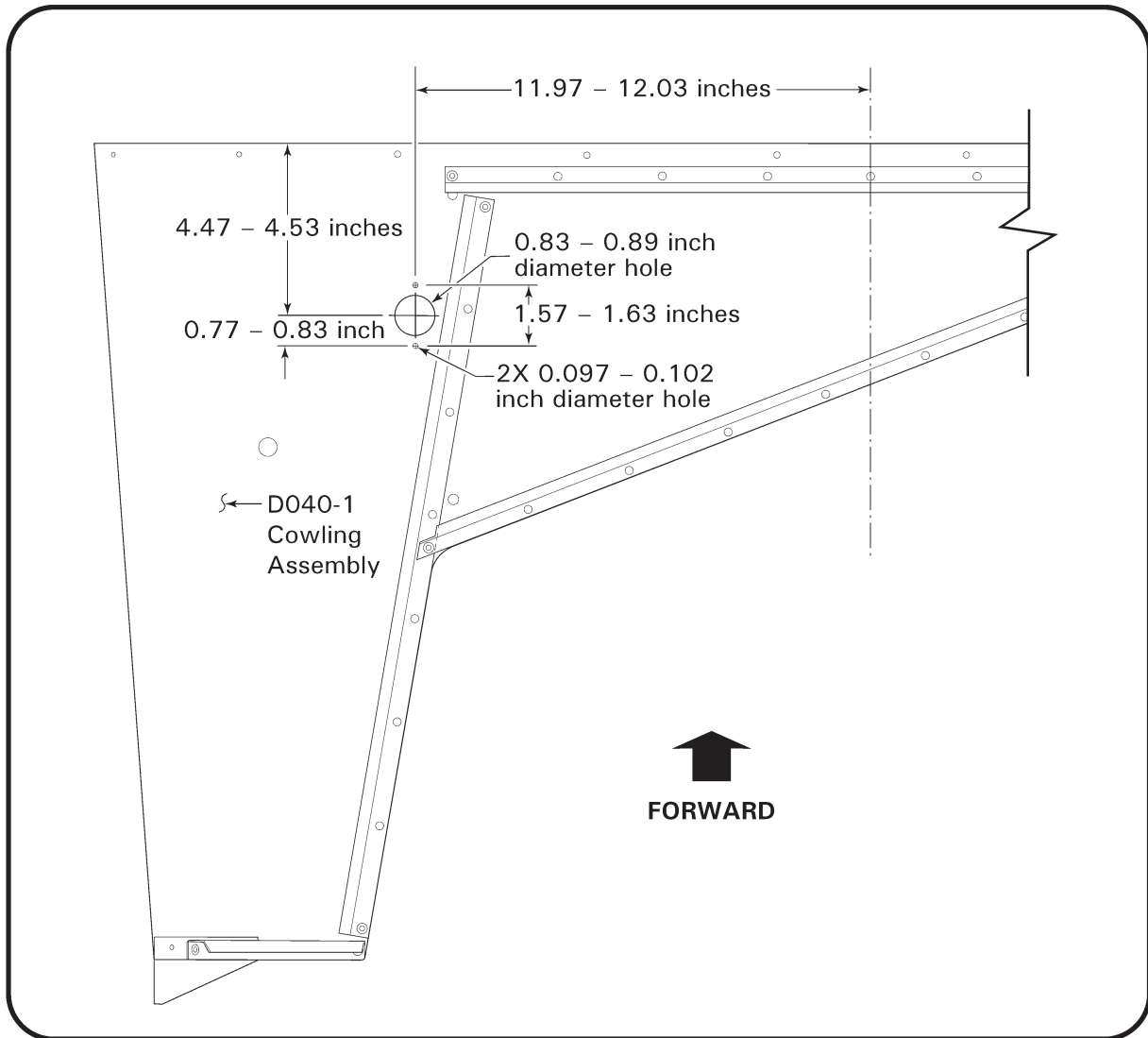


FIGURE 4 Lithium-Ion vent hole drill location