

KI-197 R22 & R44 Battery Relay Bypass Circuit Kit Instructions
(for compliance with R22 Service Bulletin SB-102 & R44 Service Bulletin SB-73)

KI-197 KIT CONTENTS

1 ea	KI-197 INSTR	Kit Instructions
1 in.	B158-3	Heat Shrink, 1-inch length (B158-3-1)
1 in.	B158-103	Heat Shrink, 1-inch length (B158-103-1)
1 ea	B260-4	Terminal, ring, for #10 stud
1 ea	B261-2	Splice
1 ea	B262-2	Receptacle
1 ea	B304-8	Diode Assembly (with attached fuse block; uses -4 [#10] ring)
1 ea	MS25171-1S	Nipple
10 ea	MS3367-5-9	Ty-raps

Required Special Tools

- Wire insulation stripping tool
- AMP 59824-1 ratchet-type crimping tool, or equivalent, for pre-insulated terminal, splice, & receptacle
- Heat gun, for heat shrink

Preliminary Instructions

1. Verify kit contents match above list. Contact RHC Customer Service if parts are missing or damaged.
2. Review instructions before installation. Contact RHC Technical Support if you have questions.

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.

Part A. R22 & R44 Clock Fuse Removal Instructions

1. Turn MASTER switch OFF and disconnect battery.
2. Open upper console. As required, cut and discard ty-raps securing -137 wire to bundle, from clock to clutch switch, to free the in-line fuse holder. Cut -137 wire as close as possible to each side of fuse holder and discard holder.

Part A. R22 & R44 Clock Fuse Removal Instructions (continued)

3. Strip 0.25-inch insulation from -137 wire ends, then join them by crimping on supplied B261-2 splice. Verify security. As required, install supplied MS3367-5-9 ty-raps to secure wiring. Cinch ty-raps until snug without overtightening and trim ty-rape tips flush with heads.
4. Proceed with Part B (engine-compartment aft battery) or Part C (nose battery), as applicable.

Part B. R22 & R44 Aft Battery Fuse (Diode Assembly) Installation Instructions

1. Close and secure upper console.
2. Remove left (aft) seat back and left engine-cowling. If not previously accomplished, turn MASTER switch OFF and disconnect battery.
3. As applicable, refer to R22 Illustrated Parts Catalog (IPC) Figure 14-31 or R44 IPC Figures 8-53 or 8-57. Examine battery relay. If relay is p/n 70-906 or 6041H202:
 - i. On supplied B304-8 diode assembly, cut ring terminal from diode as close to terminal as possible.
 - ii. Strip 0.25 inch of clear heat shrink from cut diode lead; avoid nicking lead.
 - iii. Slide 1-inch length of clear B158-103 heat shrink over cut diode lead then crimp on supplied B260-4 ring terminal. Verify security. Position heat shrink to cover both ring terminal insulation & diode lead then activate with heat gun.
 - iv. Install supplied MS25171-1S nipple small-end first over diode's ring terminal.
4. Refer to Figure 1 or Figure 2, as applicable. Lay out hole location on vertical stainless steel firewall. Using suitable (cobalt) bit, drill small diameter pilot hole, then increase hole diameter to 0.144-inch final size and deburr. Clean up debris.
5. Remove AGC-3 fuse from supplied B304 diode assembly. At newly drilled hole, attach fuse block vertically to firewall aft face using fuse block hardware. Verify security.
6. Disconnect -66 wire from battery relay coil positive terminal and retain hardware. Connect B304 diode assembly ring terminal to battery relay coil positive terminal using retained hardware and torque to 9-11 in.-lb. If installed, secure nipple over ring and stud terminals.
7. Cut ring terminal and attached diode (if installed) from -66 wire leaving as much wire as possible. Discard terminal and insulating nipple (if installed). Slide supplied B158-3 heat shrink over -66 wire. Strip 0.25-inch insulation from -66 wire end, then crimp on supplied B262-2 receptacle; verify security.
8. As required, unwind existing spirap from -66 wire and connect -66 wire's new receptacle to bare tab on fuse block. Slide heat shrink over receptacle/tab connection and activate with heat gun. Reinstall AGC-3 fuse.

Part B. R22 & R44 Aft Battery Fuse (Diode Assembly) Installation Instructions (continued)

9. If installed, wind existing spirap around -66 wire to secure wiring; trim excess spirap. Install supplied MS3367-5-9 ty-raps to secure nipple (if installed) and wiring. Cinch ty-raps until snug without overtightening and trim ty-rap tips flush with heads.
10. Verify MASTER switch is OFF and reconnect battery. Verify proper battery relay function.
11. Close and secure battery box (if installed), install left (aft) seat back, & install left engine cowling.
12. Reset clock and verify clock operates with MASTER switch OFF and clutch switch disengaged.
13. Have qualified person run-up helicopter per Pilot's Operating Handbook. Verify engine and rotor tachometers function when both MASTER and ALT switches are turned OFF with clutch switch engaged. Shutdown helicopter per Pilot's Operating Handbook.
14. Make appropriate maintenance record entries (no change to weight and balance).

Part C. R22 & R44 Nose Battery Fuse (Diode Assembly) Installation Instructions

1. If not previously accomplished, turn MASTER switch OFF and disconnect battery. Open upper console.
2. As applicable, refer to R22 Illustrated Parts Catalog (IPC) Figure 14-25 or 14-29 or R44 IPC Figures 8-61, 8-65, or 8-67. Examine battery relay. If relay is p/n 70-906 or 6041H202:
 - i. On supplied B304-8 diode assembly, cut ring terminal from diode as close to terminal as possible.
 - ii. Strip 0.25 inch of clear heat shrink from cut diode lead; avoid nicking lead.
 - iii. Slide 1-inch length of clear B158-103 heat shrink over cut diode lead then crimp on supplied B260-4 ring terminal. Verify security. Position heat shrink to cover both ring terminal insulation & diode lead then activate with heat gun.
 - iv. Install supplied MS25171-1S nipple small-end first over diode's ring terminal.
3. Refer to Figure 3. Lay out hole location on right-side console panel angle. Drill 0.144-inch diameter hole and deburr. Clean up debris.
4. Remove AGC-3 fuse from supplied B304 diode assembly. At newly drilled hole, attach fuse block to angle using fuse block hardware. Verify security.
5. Disconnect -142 wire from battery relay coil positive terminal and retain hardware. Connect B304 diode assembly ring terminal to battery relay coil positive terminal using retained hardware and torque 9-11 in.-lb. If installed, secure nipple over ring and stud terminals.

Part C. R22 & R44 Nose Battery Fuse (Diode Assembly) Installation Instructions (continued)

6. Cut and discard ty-raps securing nipple (if installed) to -142 wire, and ty-raps securing -142 wire to bundle near battery relay. Cut ring terminal and attached diode (if installed) from -142 wire leaving as much wire as possible. Discard terminal and nipple (if installed). Slide supplied B158-3 heat shrink over -142 wire. Strip 0.25-inch insulation from -142 wire end, then crimp on supplied B262-2 receptacle; verify security.
7. As required, unwind existing spirap from -142 wire and connect -142 wire's new receptacle to bare tab on fuse block. Slide heat shrink over receptacle/tab connection and activate with heat gun. Reinstall AGC-3 fuse.
8. If installed, wind existing spirap around -142 wire to secure wiring; trim excess spirap. Install supplied MS3367-5-9 ty-raps to secure nipple (if installed) and wiring. Cinch ty-raps until snug without overtightening and trim ty-rap tips flush with heads. Secure installed nipples over terminals.
9. Verify MASTER switch is OFF and reconnect battery. Verify proper battery relay function.
10. Close and secure battery box. Close and secure upper console, ensuring there is no chafing of battery cables.
11. Reset clock and verify clock operates with MASTER switch OFF and clutch switch disengaged.
12. Have qualified person run-up helicopter per Pilot's Operating Handbook. Verify engine and rotor tachometers function when both MASTER and ALT switches are turned OFF with clutch switch engaged. Shutdown helicopter per Pilot's Operating Handbook.
13. Make appropriate maintenance record entries (no change to weight and balance).

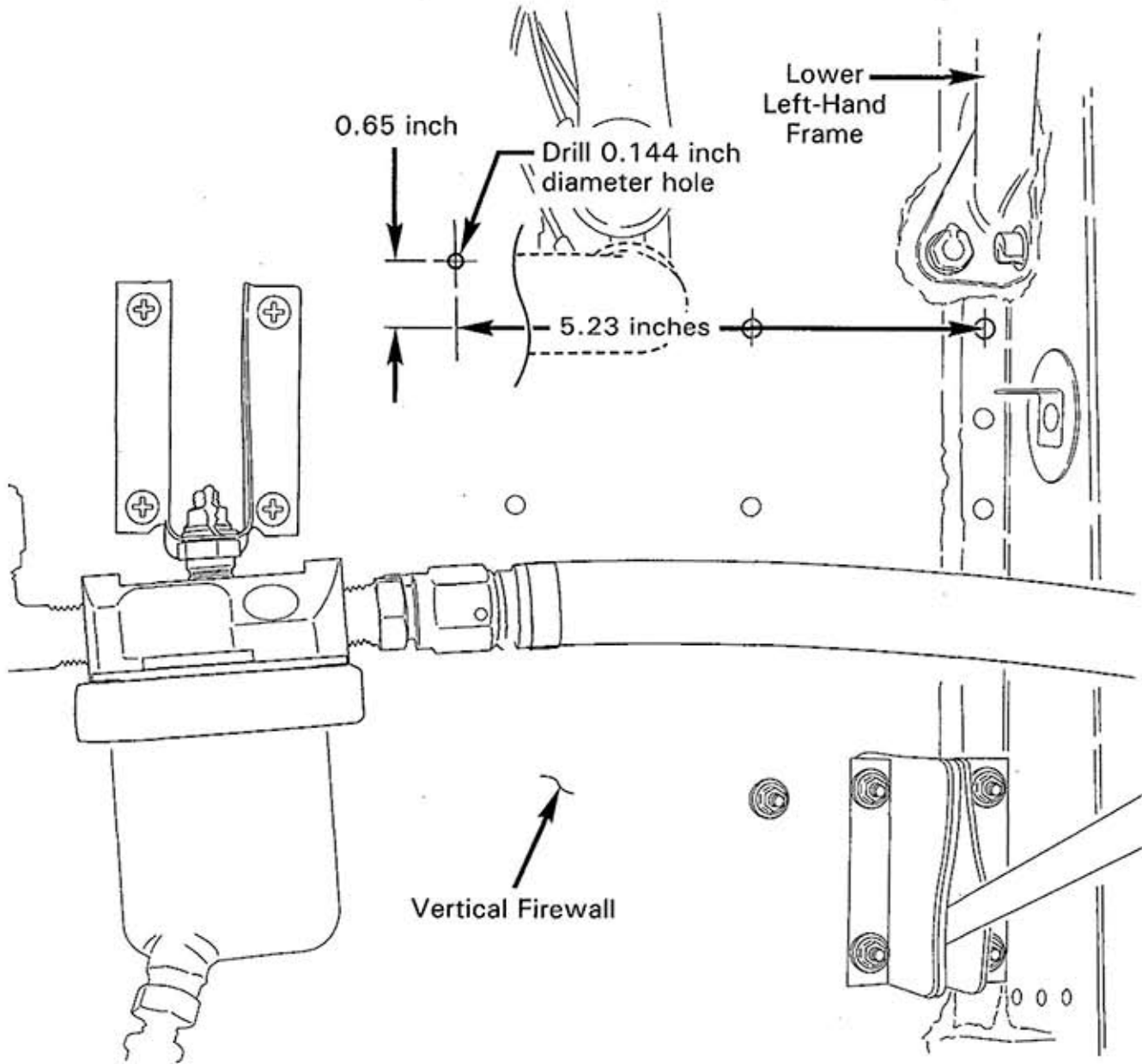


FIGURE 1 FUSE BLOCK HOLE LOCATION FOR R22 WITH AFT BATTERY
(View looking forward)

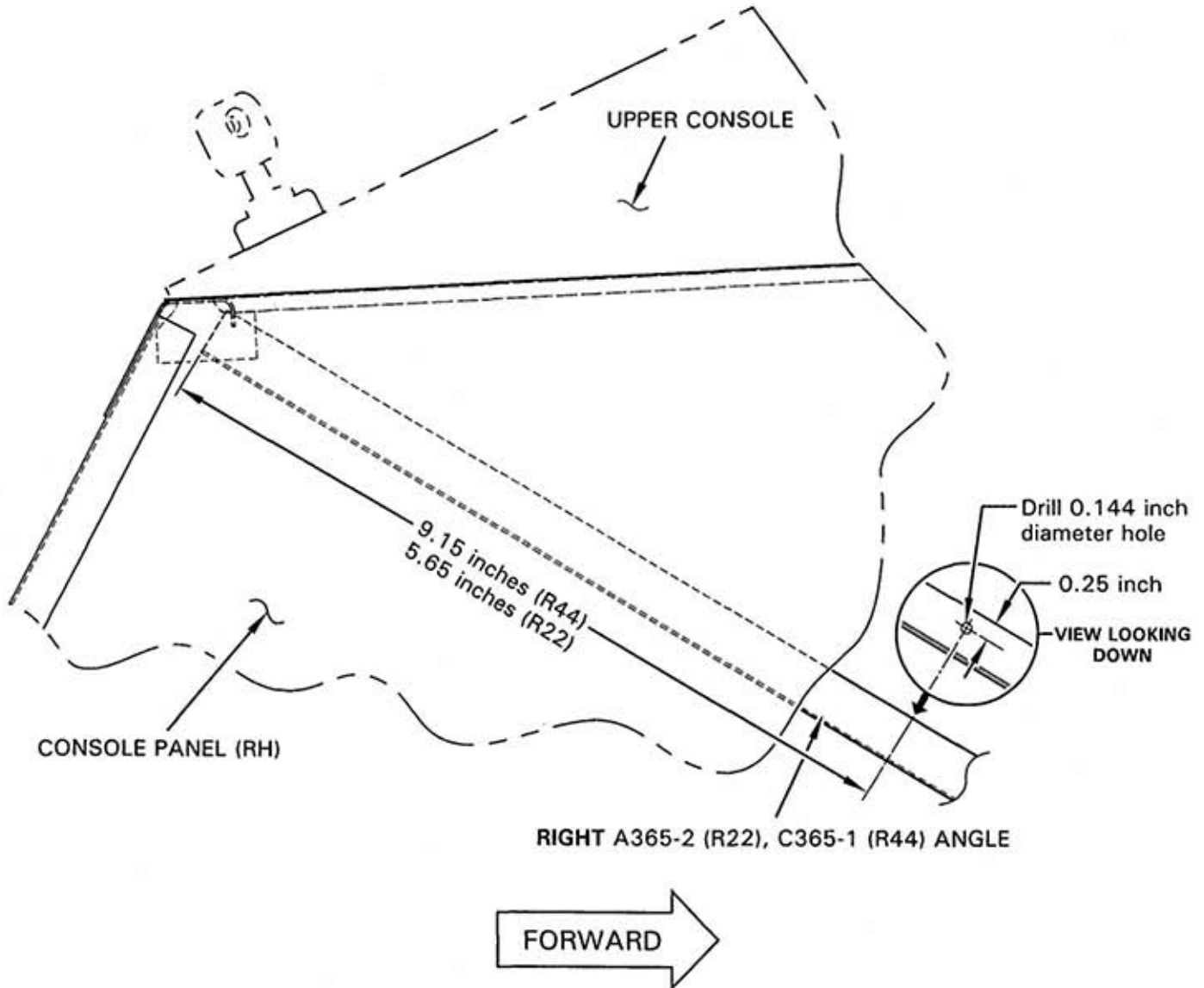


FIGURE 2 FUSE BLOCK HOLE LOCATION FOR R22/R44 WITH NOSE BATTERY
(View looking inboard)

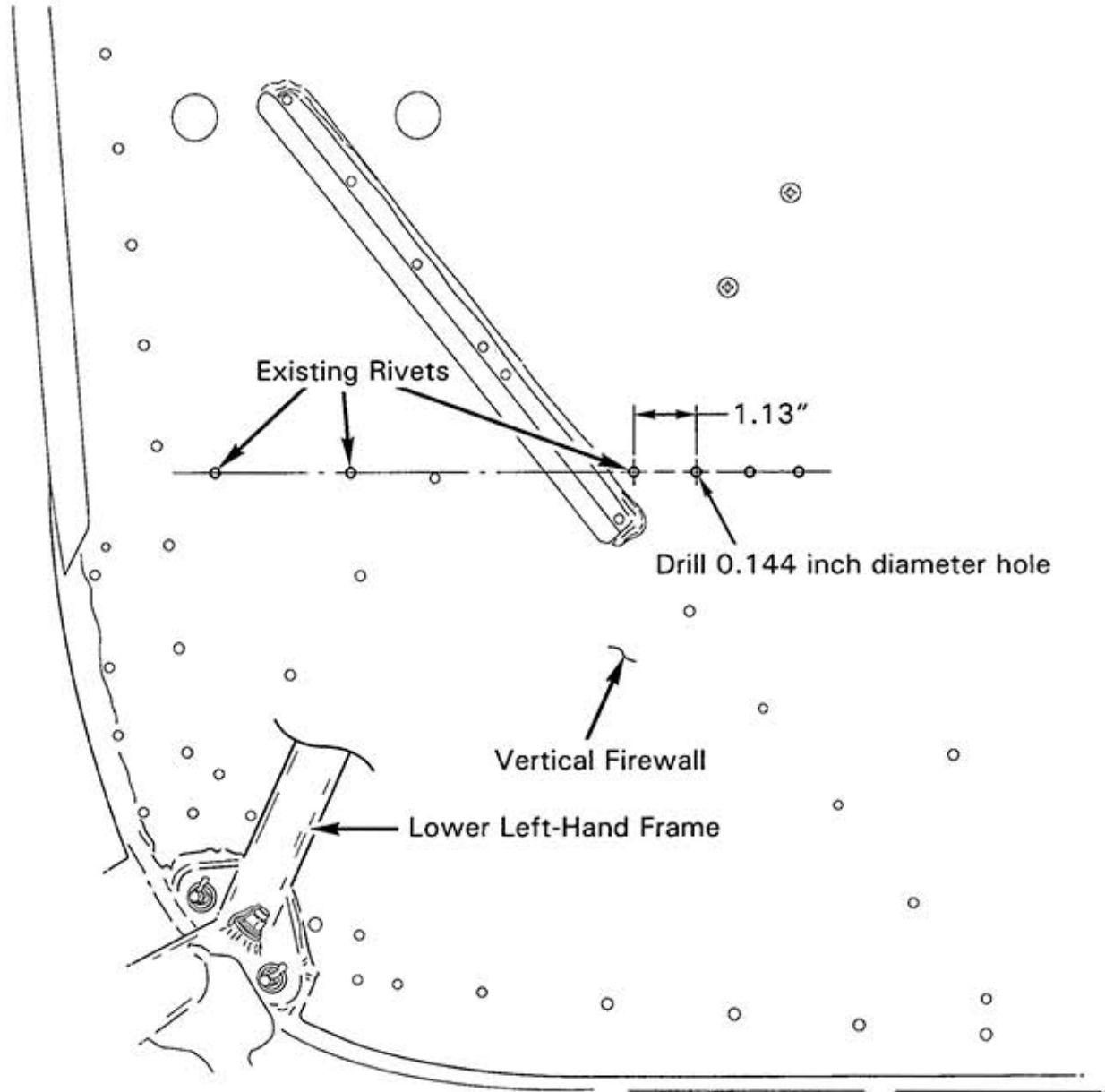


FIGURE 3 FUSE BLOCK HOLE LOCATION FOR R44 WITH AFT BATTERY
(View looking forward)