R66 (with A/C) Cockpit Camera Installation Kit Instructions

Eligible for installation on R66 S/N 1006 & prior, with air conditioning. Kit replaces existing air conditioning duct assembly with new air conditioning duct assembly containing camera & antenna.

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 Support if parts are missing or damaged.

ITEM	PART NUMBER	KIT CONTENTS	QTY
1	KI-275-5Instr.	Kit Instructions	1
2	B158-2-1FT	Heat Shrink – Black, 1/8-inch diameter (1 foot length)	1
3	B158-3-1FT	Heat Shrink – Black, 3/16-inch diameter (1 foot length)	1
4	B260-3	Terminal – Ring	1
5	B261-2	Butt Splice	1
6	D844-1	Harness Assembly (includes D262-10 fuse holder)	1
7	F040-3B	R66 Cockpit Camera Sub-Assembly Includes: [1] F039-3 Enclosure Assembly [1] F712-4 Cover [1] G796-2 A/C Duct Assembly [1] MS3367-4-9 Ty-rap [4] MS21042L08 Nut [4] MS27039C0809 Screw [4] NAS1149FN816P Washer	1
8	F714-4	Flash Drive Assembly	1
9	MS3367-4-9+	Ty-Rap (Note: “+” in part number indicates 20-qty pack)	1
10	MS3367-5-9+	Ty-Rap (Note: “+” in part number indicates 20-qty pack)	1
11	MS3367-7-9+	Ty-Rap (Note: “+” in part number indicates 10-qty pack)	1

Consumables

Refer to R66 Maintenance Manual (MM) § 20-70 for approved materials list.

- Solder (Sn60 or Sn63)

Special Tools:

- Soldering iron
- Wire stripping and crimping tools
- Heat gun

Kit Instructions

1. Ensure battery and avionics switches are off. Disconnect lead-acid battery per MM § 96-11 or lithium-ion battery per § 96-12, as applicable.

2. Remove aft left and right back rest assemblies per MM § 25-22.

3. Refer to R66 Illustrated Parts Catalog (IPC) Figure 21-21. Remove G796 duct assembly by removing screw immediately aft of rotor brake knob assembly and sliding duct forward. Disconnect map light and air conditioning switch connectors. Thread rotor brake knob through bead-chain slot and remove duct assembly.

4. Refer to IPC Figures 97-57 & 97-59. Remove and retain screws securing LH (copilot) C710 cover to C710-3 spacers. Remove and retain screws securing TJ-120 standard headset jack to cover.

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

5. Refer to Figures 1 and 1A. Trim two 1/2-inch lengths of B158-3 heat shrink, and one 1-inch length of B158-2 heat shrink. Strip end of ORG, WHT, and BLU (-3081) wires.
   a. Desolder wire(s) from terminal #2 of TJ-120 jack; pigtail WHT wire (-3081) with desoldered wire(s). Slide one 1/2-inch piece of B158-3 heat shrink onto wires and resolder wire(s) to terminal #2.
   b. Desolder wire(s) from terminal #4 of TJ-120 jack; pigtail BLU wire (-3081) with desoldered wire(s). Slide one 1/2-inch piece of B158-3 heat shrink onto wires and resolder wire(s) to terminal #4.
   c. Solder splice ORG wire (-3081) to existing ORG wire (-1795) and if Bose jack is installed, solder all three ORG wires together. Slide the 1-inch piece of B158-2 heat shrink onto solder spliced ORG wires.
   d. Slide heat shrink over soldered areas and apply heat using heat gun. Verify security.

6. Install TJ-120 jack to LH (copilot) C710 cover using retained screws. Install cover to C710-3 spacers using retained hardware.

7. Refer to R66 IPC Figure 96-45. If required, carefully connect RV-BATT-LIPO500 Battery connector to RV-10251C Battery Extension Harness.

8. Refer to Figure 2. Connect D844-1 harness assembly to camera plug in F039-2 enclosure assembly; secure connector using MS3367-4-9 ty-rap. Connect map light and air conditioning switch connectors to new duct assembly. Secure switch connectors together, under D797-9 strap (as shown in Figure 1), using appropriately-sized ty-raps. Cinch ty-raps until snug without over-tightening, and trim tips flush with head.

9. Thread rotor brake knob assembly through bead-chain slot for installation. Ensure ty-raps and wiring are clear of rotor brake bead-chain and cable. Install duct by simultaneously hooking forward end onto windshield frame and aft end into evaporator box then sliding duct aft to align screw hole. Install MS27039C0807 screw; verify security.

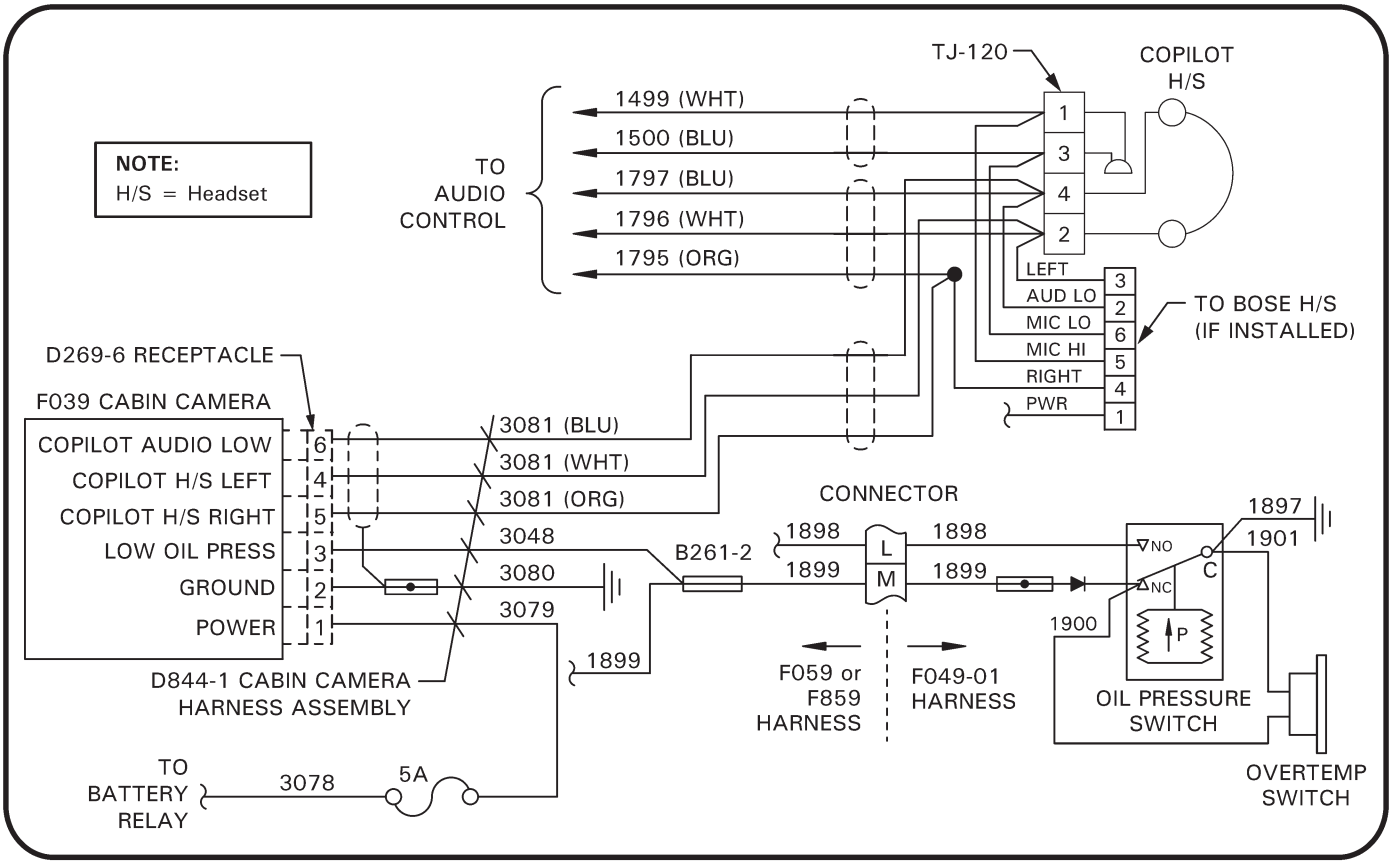


FIGURE 1 Wiring schematic
(typical; see MM Chapter 98 for additional wiring diagrams)

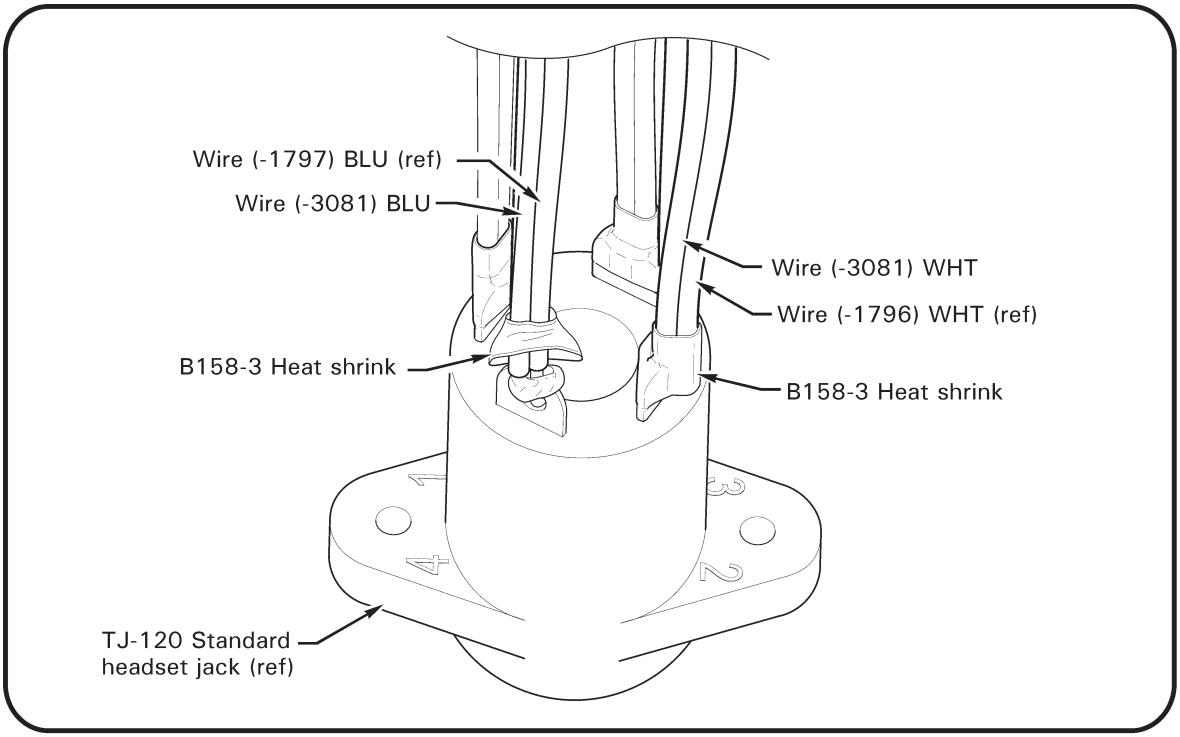


FIGURE 1A Solder splice at TJ-120 jack
(ORG wire splice not shown)

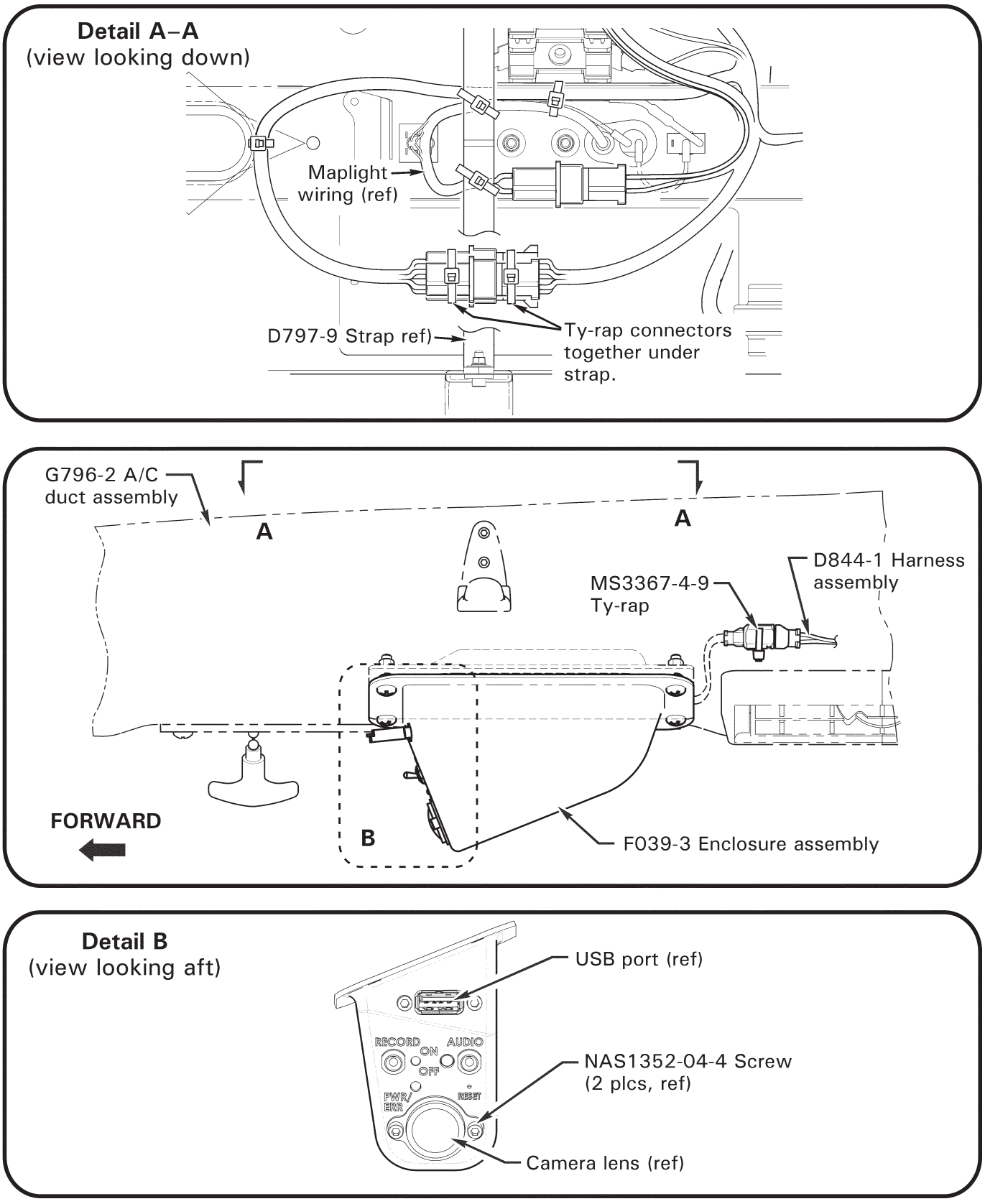


FIGURE 2 A/C duct & camera enclosure

Kit Instructions (continued)

10. Route D844-1 harness assembly aft and diagonally to RH side of helicopter, tucking wires in space between roof insulation sections. Secure harness assembly to existing wires, as required, using appropriately-sized ty-raps. Cinch ty-raps until snug without over-tightening, and trim tips flush with head.

> NOTE
>
> F003-25 or F003-8 LH insulation (refer to IPC Figure 25-17) is installed with hook & loop tape and may be removed to ease access to wire harness along LH side of bulkhead. It is not recommended to remove insulation installed with adhesive, used on earlier helicopters.

11. Refer to Figures 3, 4, and 4A. Route and secure D844-1 harness assembly to existing wire harness along LH side of vertical bulkhead using appropriately-sized ty-raps. Cinch ty-raps until snug without over-tightening, and trim tips flush with head. Route wires (-3080) & (-3048) thru F679-3 channel. Secure harness assembly wires as follows:

    a. Route wire (-3080) to ground stud on RH side bulkhead. Cut wire to length, ensuring wire has sufficient slack to stud without pre-loading wire; strip wire end. Install B260-3 ring terminal to wire. Verify security of terminal. Install ring terminal to ground stud.

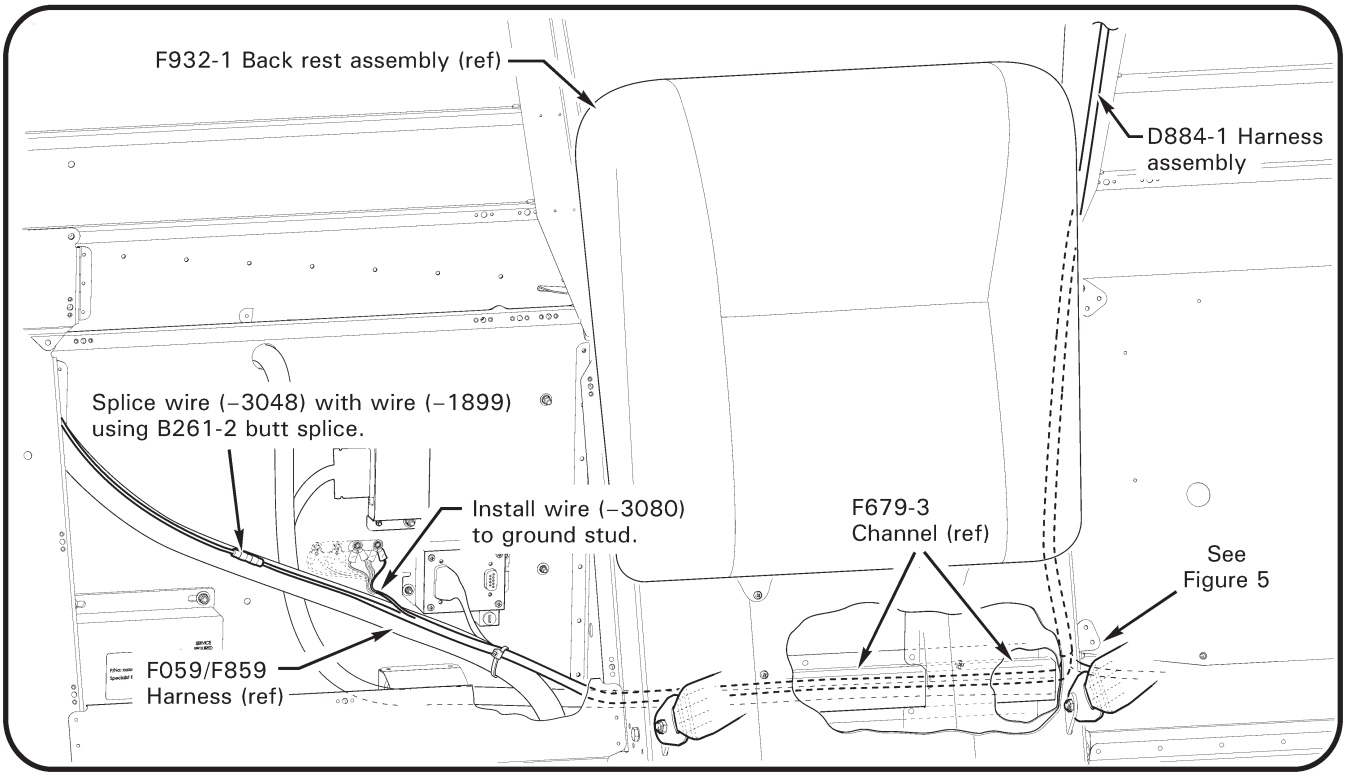


FIGURE 3 D844-1 harness assembly terminating locations
(behind RH & LH aft back rests; view looking aft)

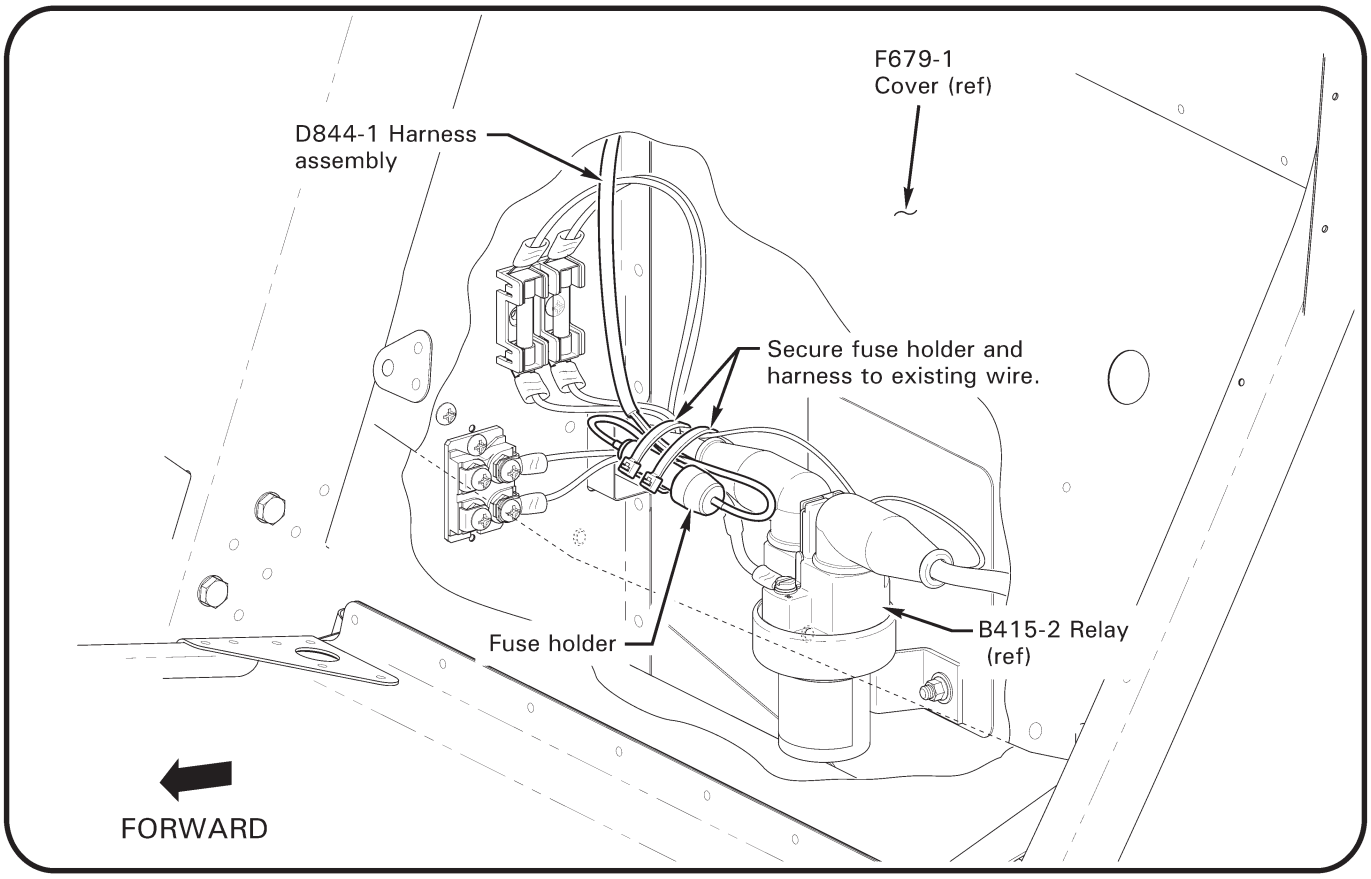


FIGURE 4 D844-1 harness assembly terminating locations
(Battery relay; view looking inboard from helicopter LH side)

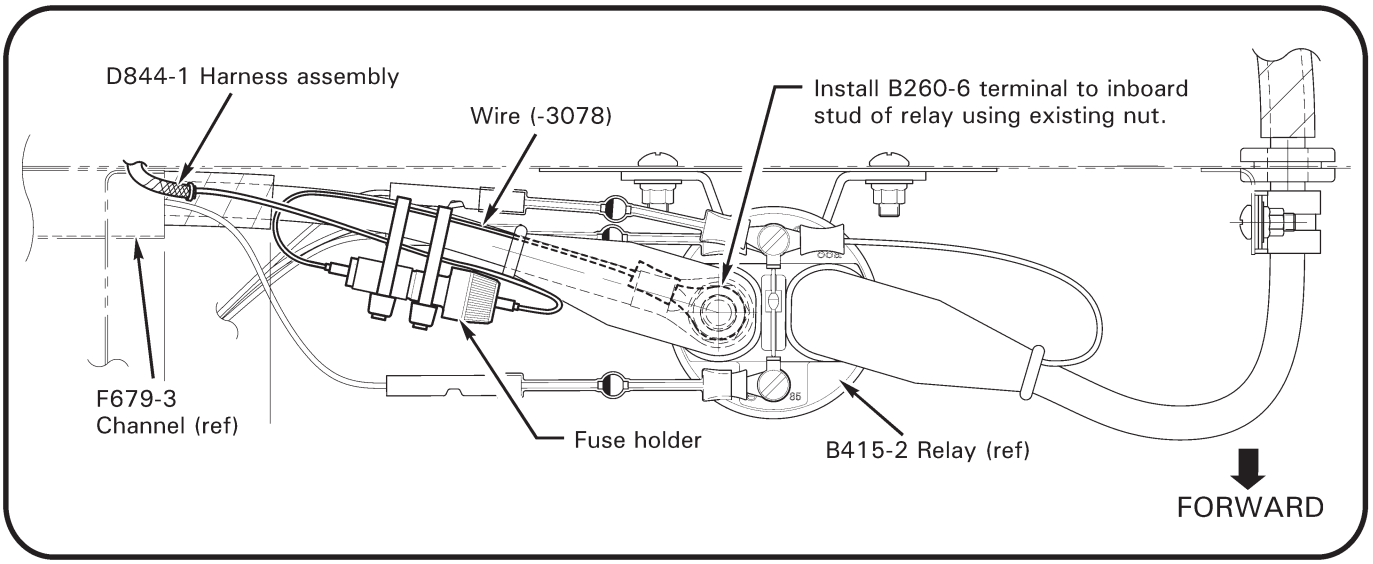


FIGURE 4A Installing & securing fuse holder
(Battery relay; view looking down)

Kit Instructions (continued)

11. b. Route wire (-3048) to wire bundle on RH side bulkhead. Locate wire (-1899) in wire bundle, cutting ty-raps as required. Splice wire (-3048) to wire (-1899) using B261-2 butt splice; verify security. Secure wires using appropriately-sized ty-raps. Cinch ty-raps until snug without over-tightening, and trim tips flush with head.

    c. Route wire (-3078) to B415-2 battery relay. Remove nipple from relay's inboard stud. Insert wire (-3078) B260-6 terminal thru nipple and install to relay as shown in Figure 4A. Special torque nut per MM § 20-33 and torque stripe per MM Figure 5-1. Position nipple over stud.

    d. Secure fuse holder to existing wires using appropriately-sized ty-raps. Cinch ty-raps until snug without over-tightening, and trim tips flush with head.

12. Install F003-25 or F003-8 LH insulation, if removed. Install aft left and aft right back rest assemblies per MM § 25-22.

13. Connect lead-acid battery per MM § 96-11 or lithium-ion battery per § 96-12, as applicable.

14. Ensure battery and avionics switches are on. Function check camera installation:

    a. Refer to Cockpit Camera Quick Start Guide available at https://robinsonheli.com.

    b. Refer to Figure 2. Insert F714-4 flash drive assembly into USB port of F039-2 enclosure. Toggle helicopter battery switch ON for minimum 30 seconds; video will record automatically. While video is recording, activate & route an audio source (such as ATIS) to copilot headset. Toggle helicopter battery switch OFF.

    c. Transfer flash drive to a computer and view video. If video is level with cockpit, camera lens is properly adjusted. If no audio is heard, check newly installed wiring.

    d. If horizon slants to the right (as shown in Figure 5), adjust angle by loosening two NAS1352-04-4 screws holding lens (see Figure 2) and rotate lens counterclockwise while facing lens; if horizon slants to the left, rotate lens clockwise. Tighten screws. Repeat steps b & c.

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

    Add:

Item	Weight	Long. Arm	Long. Moment	Lat. Arm	Lat. Moment
KI-275-5 Cockpit Camera Installation Kit	+0.42 lb	63.68 in.	+26.61 in-lb	-3.41 in.	-1.42 in-lb

16. Make appropriate maintenance record entries.

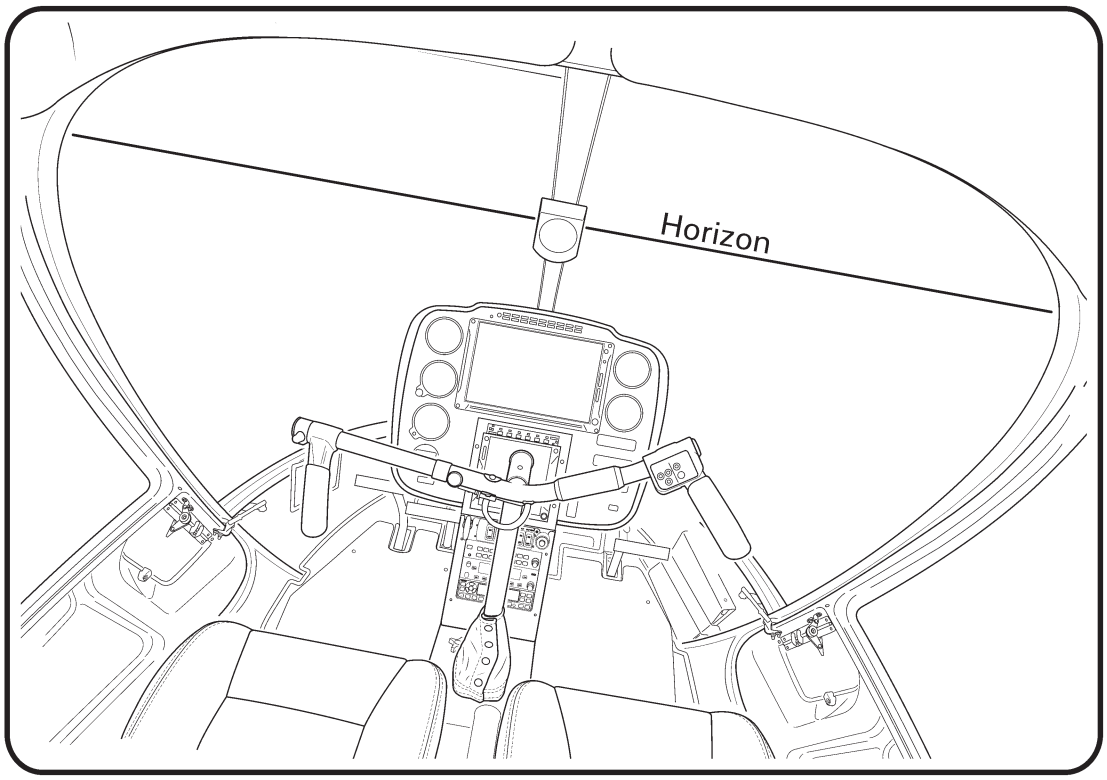


FIGURE 5 Camera view angle
(angle shown requires adjustment)