R66 Cockpit Camera Installation Kit Instructions

Eligible for installation on R66 S/N 1006 & prior, without air conditioning.

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.

NOTE

Kit requires separating cabin interior pieces from roof, which may result in deterioration of the foam insulation. Kit does not contain replacement interior parts.

ITEM	PART NUMBER	KIT CONTENTS	QTY
1	KI-275-3Instr.	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	F039-2	Enclosure Assembly – Cabin Camera	1
8	F714-2	Antenna Assembly	1
9	F714-4	Flash Drive Assembly	1
10	AN526C832R6	Screw	1
11	MS3367-4-9+	Ty-Rap (Note: “+” in part number indicates 20-qty pack)	1
12	MS3367-5-9+	Ty-Rap (Note: “+” in part number indicates 20-qty pack)	1
13	MS3367-7-9+	Ty-Rap (Note: “+” in part number indicates 10-qty pack)	1
14	MS21042L08	Nut	1
15	MS27039C0806	Screw	2
16	MS35206-232	Screw	1
17	NAS1149FN816P+	Washer (Note: “+” in part number indicates 20-qty pack)	1

Consumables

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

- B270-8 Adhesive
- 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 Figure 1. Remove and discard screw securing C039 cover assembly to D118-1 (rotor brake) bracket assembly; remove and retain screws securing cover to C710 spacers. Lower cover and disconnect cover wiring from airframe harness. Remove cover.

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.

4. Refer to Figure 1, Detail B. Layout dimension on exterior roof for drilling new hole as shown, using straight edge to maintain lateral alignment with existing holes. Using a drill stop, drill .169–.175 inch diameter hole. Deburr hole and clean up debris. Using a pick or similar tool, pierce headliner at newly drilled hole. Install new AN526C832R6 screw (provided).

5. Refer to Figure 1, Detail A. Remove C710-3 spacer from center screw and secure screw to roof using NAS1149FN816P washer and MS21042L08 nut as shown. Install spacer to newly installed AN526C832R6 screw.

NOTE

Parenthetic dash numbers, such as (-2690), indicate number marked on wiring.

6. Refer to Figures 2 and 3. Carefully separate headliner from roof only as necessary to access antenna installation location. Connect D269-6 receptacle of D844-1 harness assembly to camera plug in F039-2 enclosure assembly; secure connector using MS3367-4-9 ty-rap. Connect F714-2 antenna assembly to fitting in enclosure assembly and route antenna forward. Position antenna with metal side down, opposite of roof surface. Remove backing from tape on antenna and press in place on roof.

7. As required, install headliner to roof using B270-8 adhesive, tucking antenna wire inside headliner. Install enclosure assembly to C710-3 spacers using (2) MS27039C0806 screws, and to D118-1 bracket assembly using MS35206-232 screw.

8. Refer to R66 Illustrated Parts Catalog (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.

9. Refer to Figures 2 and 2A. Trim two 1/2-inch lengths of B158-3 heat shrink, and one 1-inch length of

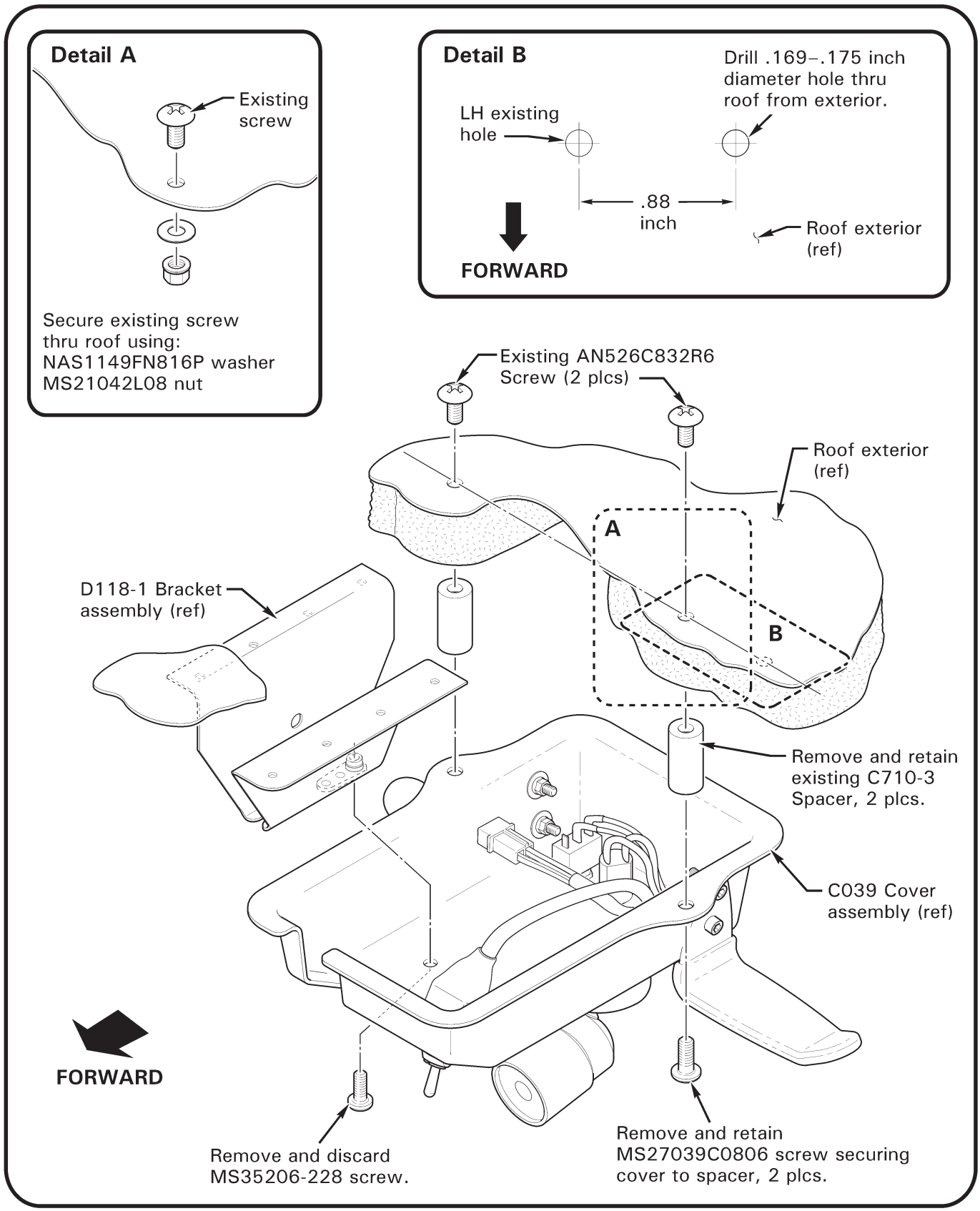


FIGURE 1 Existing C039 cover assembly installation
(includes new installation hole location)

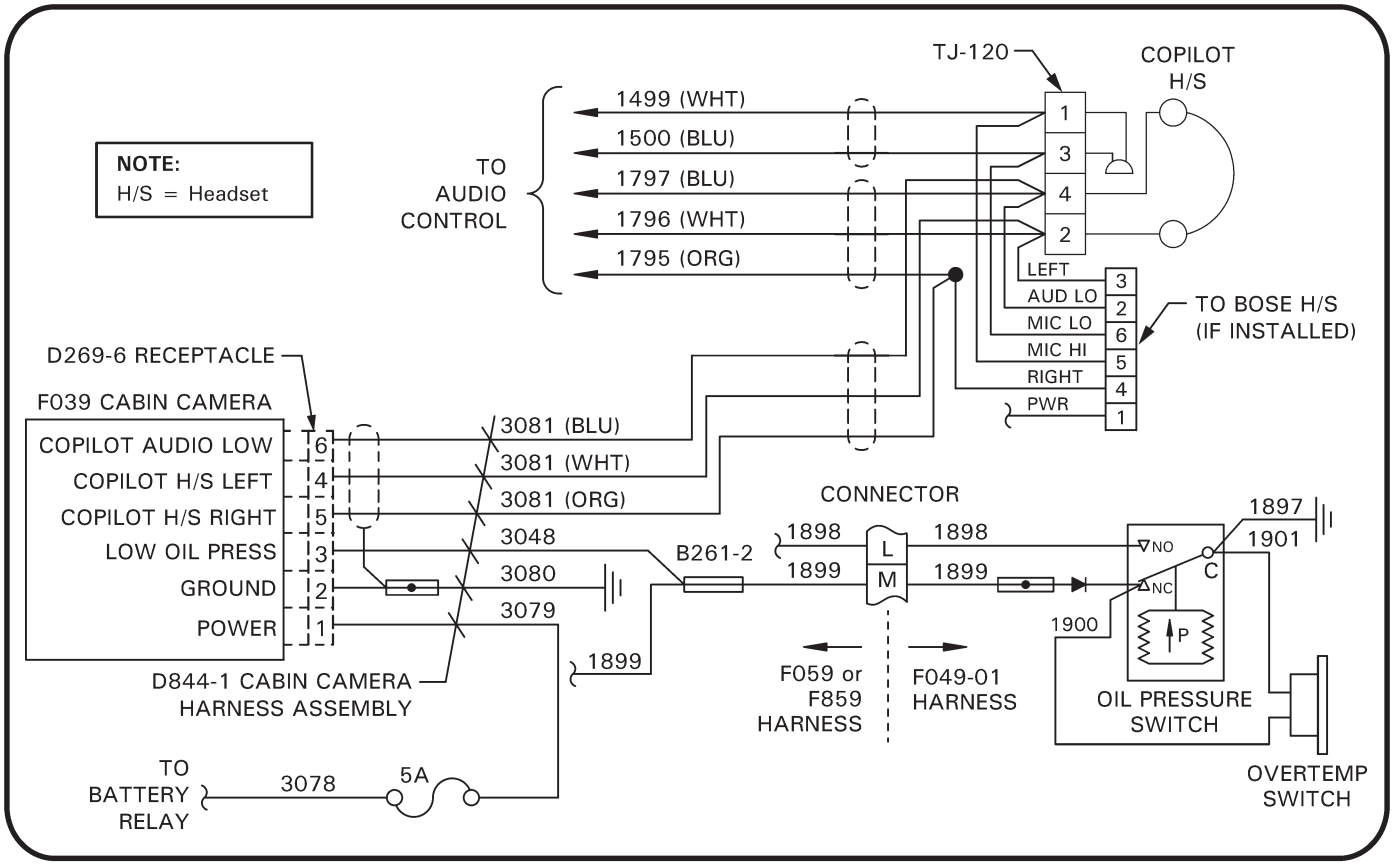


FIGURE 2 Wiring schematic
(typical; see MM Chapter 98 for additional wiring diagrams)

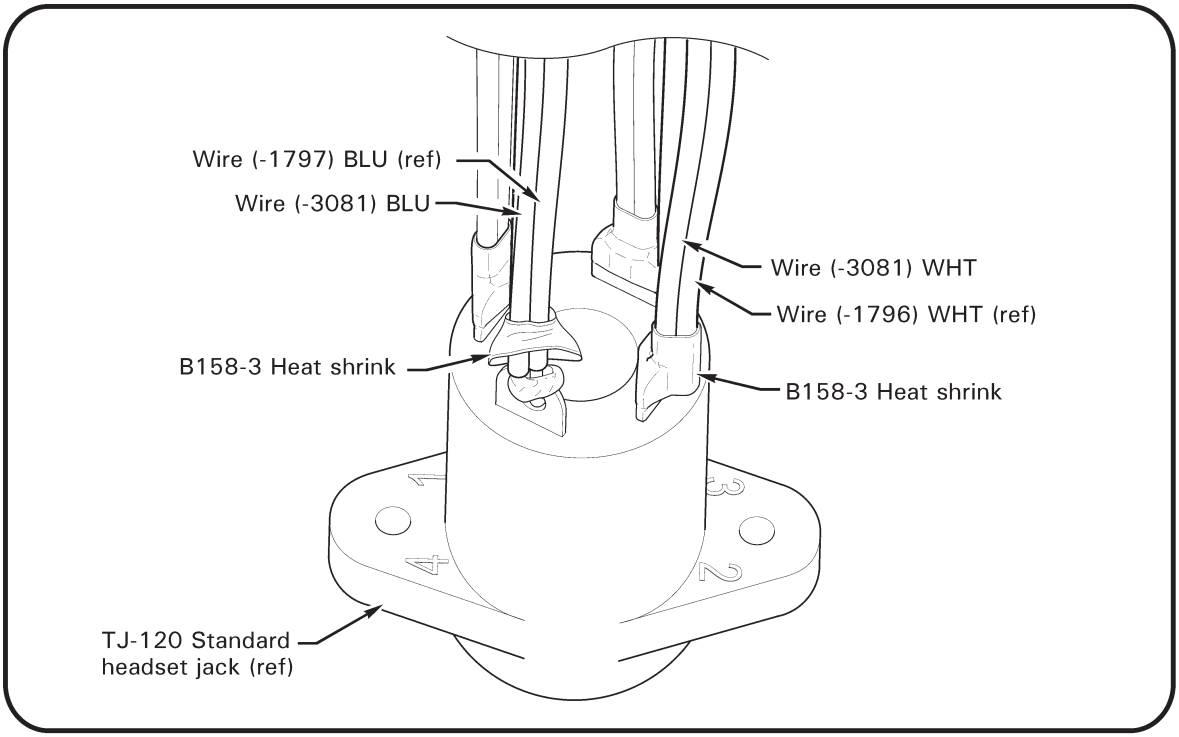


FIGURE 2A Solder splice at TJ-120 jack
(ORG wire splice not shown)

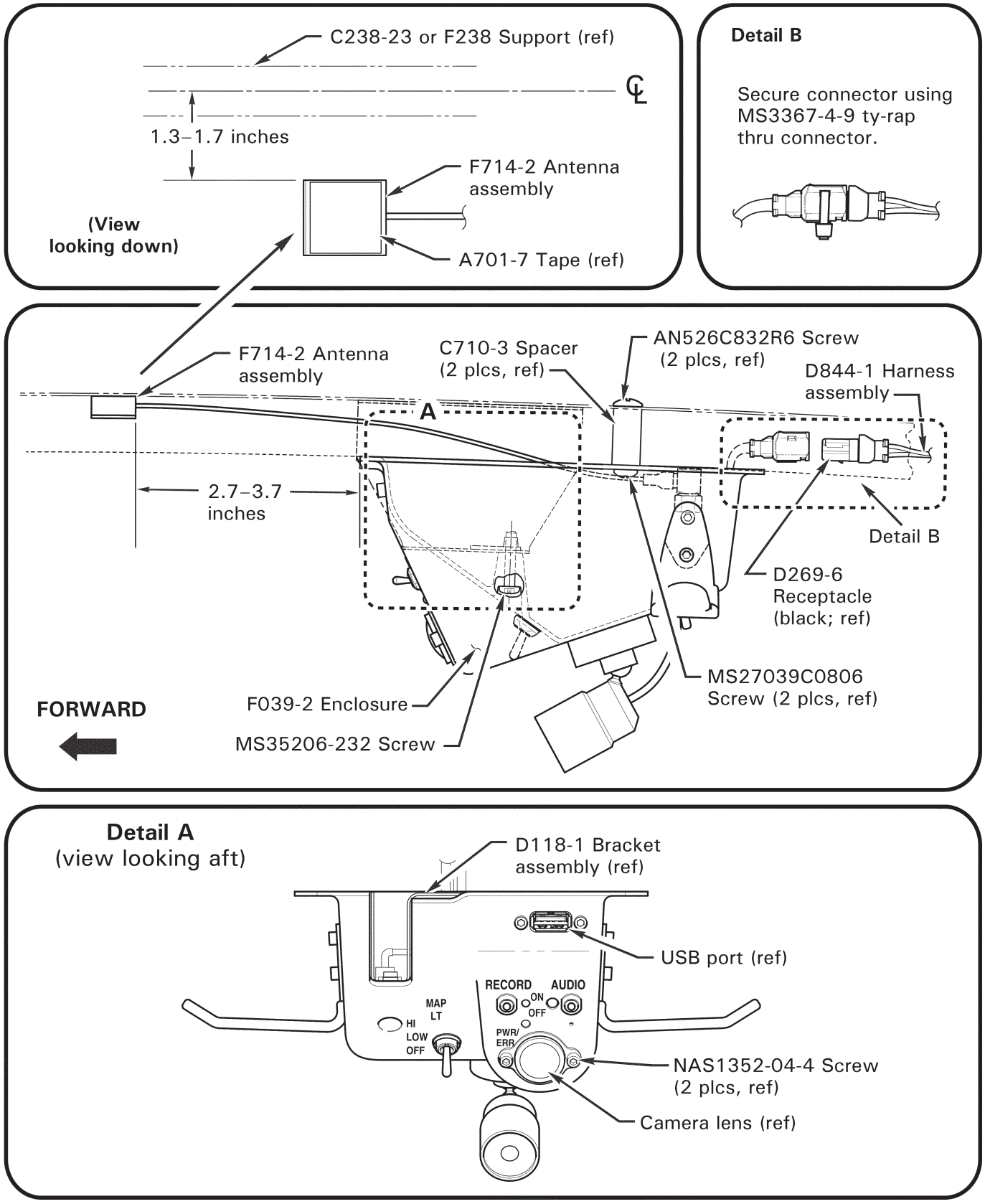


FIGURE 3 Enclosure and antenna installation

Kit Instructions (continued)

B158-2 heat shrink. Strip end of ORG, WHT & 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.

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

11. Refer to R66 IPC Figure 96-49. Carefully connect RV-BATT-LIPO500 Battery connector to circuit board.

12. Route D844-1 harness assembly aft along existing wires, left of helicopter centerline. Secure harness assembly to existing wires using appropriately-sized ty-raps. Cinch ty-raps until snug without over-tightening, and trim tips flush with head.

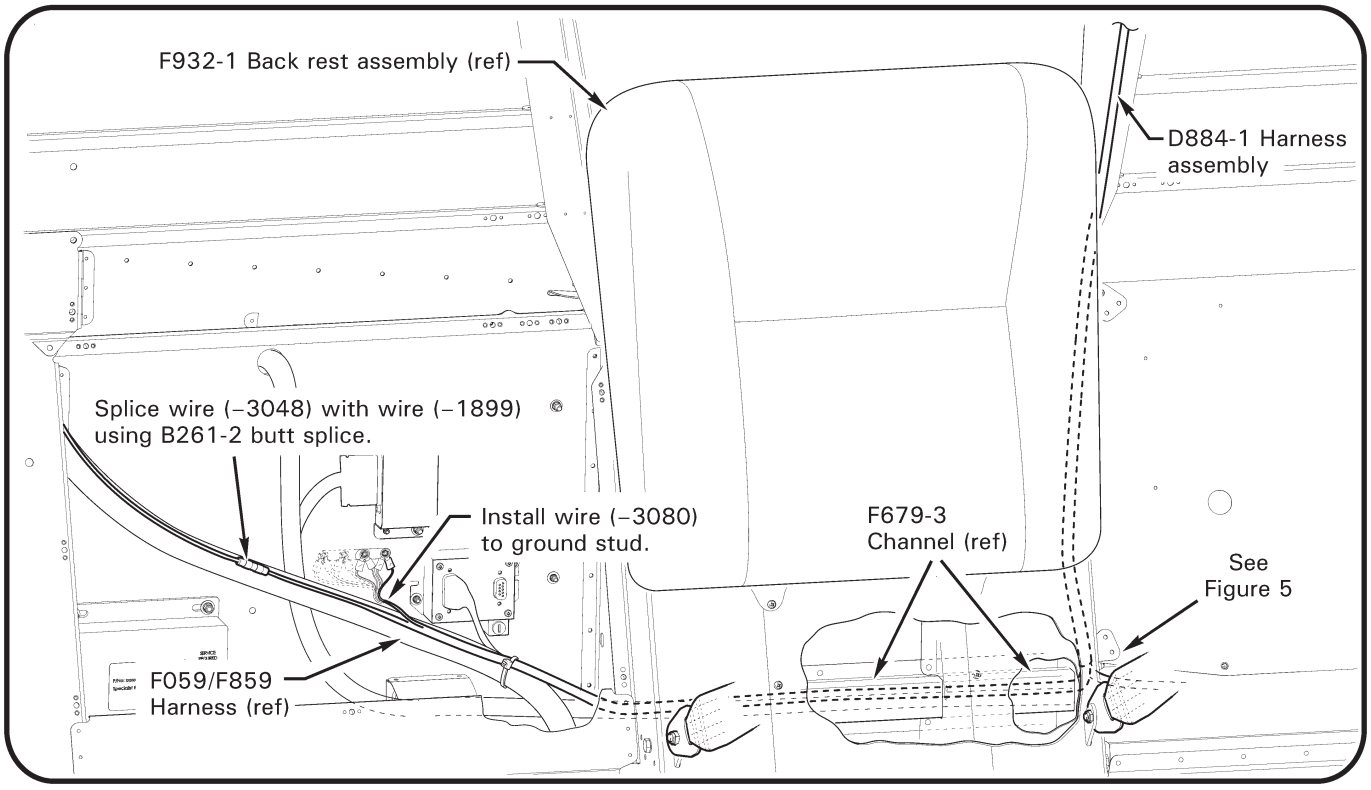


FIGURE 4 D844-1 harness assembly terminating locations
(behind RH & LH aft back rests; view looking aft)

Kit Instructions (continued)

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.

13. Refer to Figures 4, 5, and 5A. 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 and strip end. Install B260-3 ring terminal to wire. Verify security of terminal. Install ring terminal to ground stud.

    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 5A. 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.

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

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

16. 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 3. 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 6), adjust angle by loosening two NAS1352-04-4 screws holding lens (see Figure 3) and rotate lens counterclockwise while facing lens; if horizon slants to the left, rotate lens clockwise. Tighten screws. Repeat steps b & c.

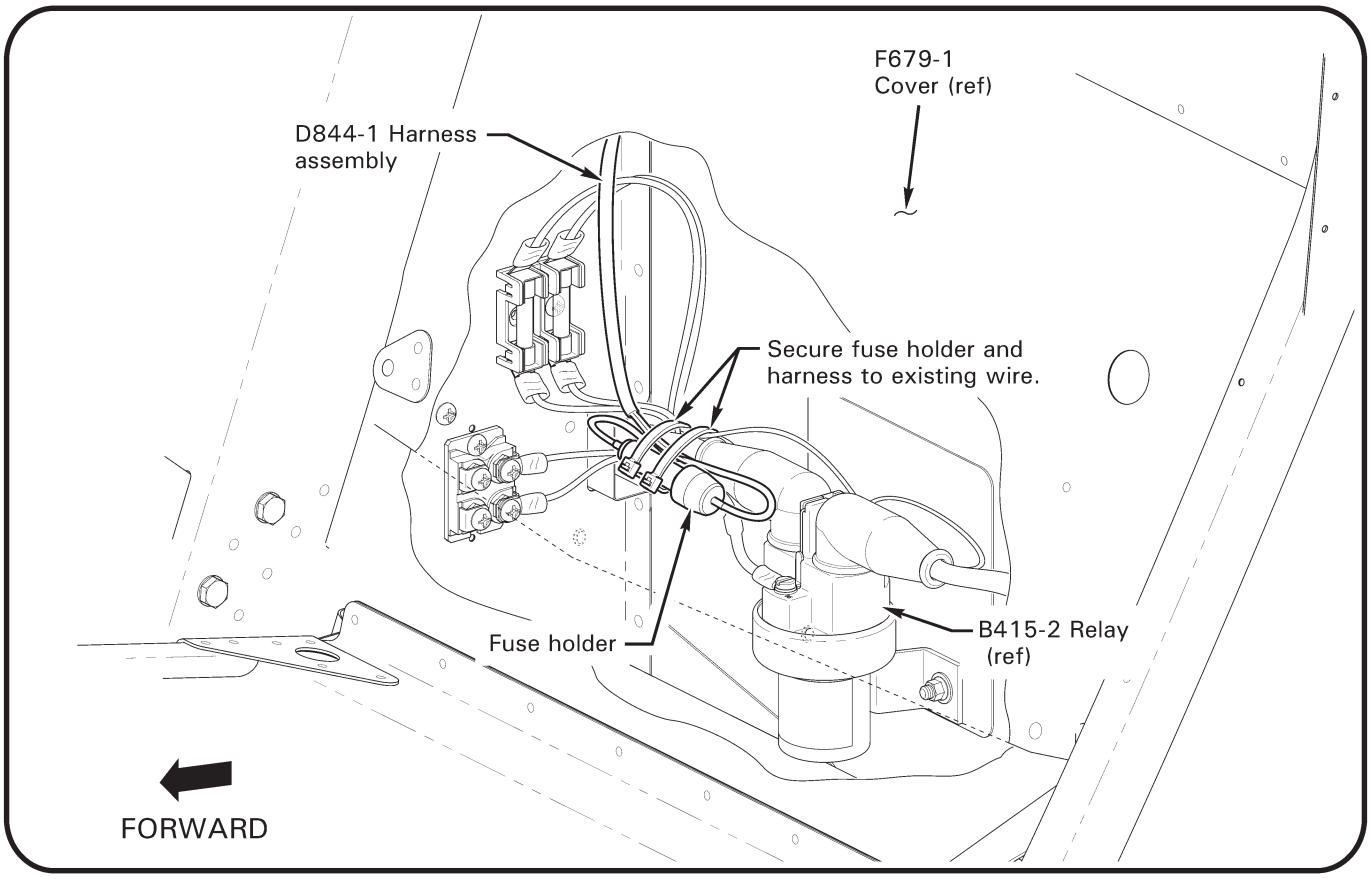


FIGURE 5 D844-1 harness assembly terminating locations
(Battery relay; view looking inboard from helicopter LH side)

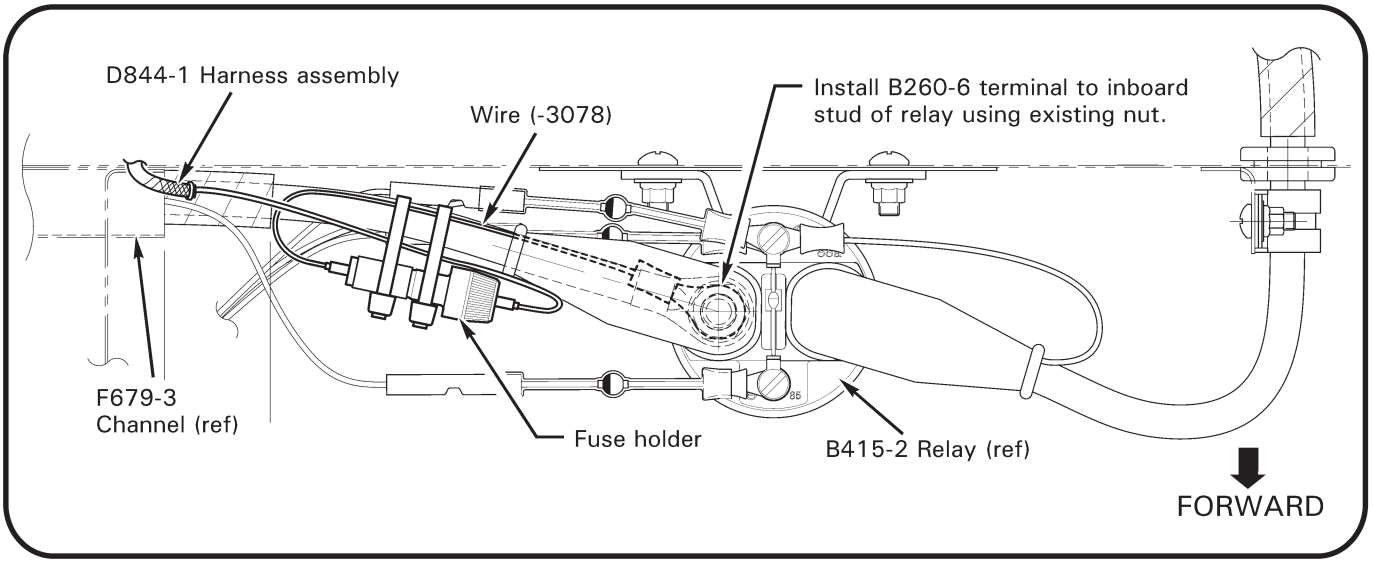


FIGURE 5A Installing & securing fuse holder
(Battery relay; view looking down)

Kit Instructions (continued)

17. 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-275-3 Cockpit Camera Installation Kit	+0.46 lb	67.14 in.	+30.88 in-lb	-2.12 in.	-0.98 in-lb

18. Make appropriate maintenance record entries.

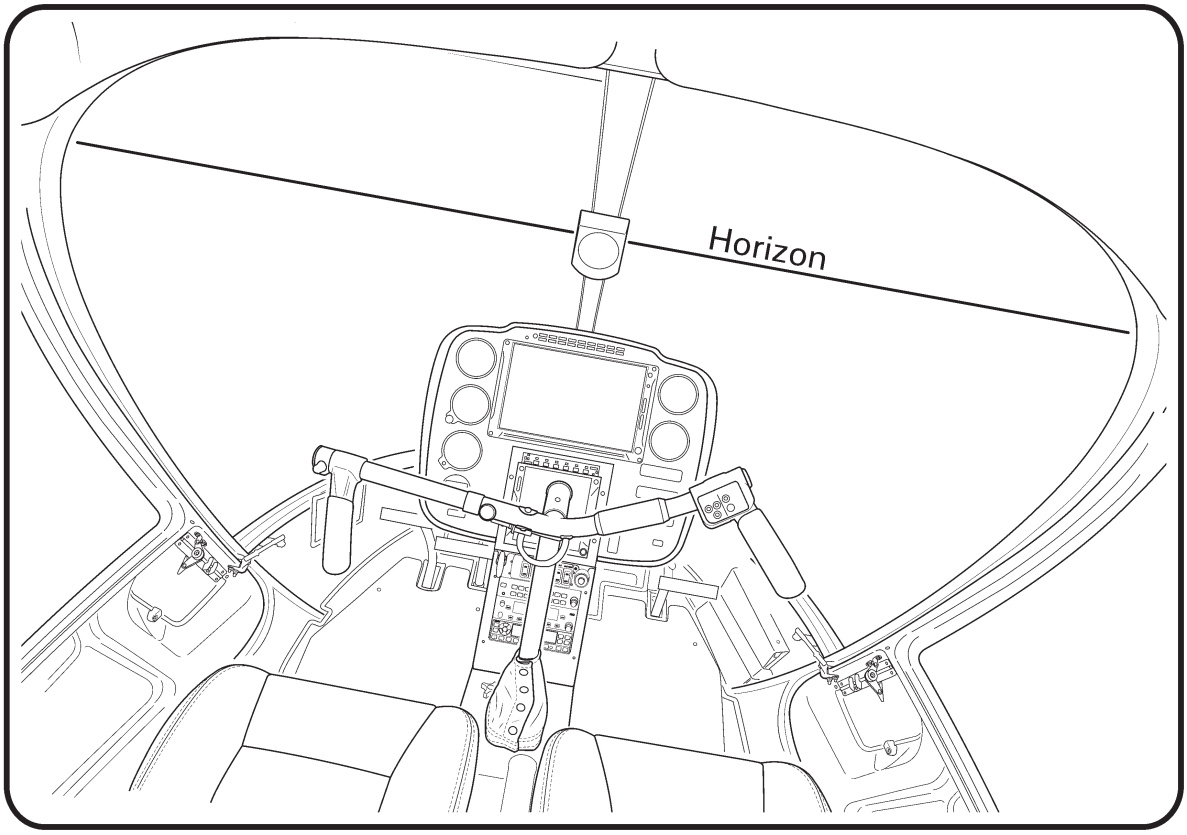


FIGURE 6 Camera view angle
(angle shown requires adjustment)