CHAPTER 25

FURNISHINGS

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CHAPTER 25

FURNISHINGS

25-00 Description

The seats are not adjustable but the pilot-side pedals are adjustable. Each helicopter is supplied with a removable back cushion to position the pilot farther forward. This allows shorter pilots to reach the pedals, the cyclic grip in its most forward position, and the controls on the center console.

Refer to § 25-24 for description of optional heated seats.

Each seat is equipped with a combined lap belt and inertia reel shoulder strap. The inertia reel is normally free but will lock if there is sudden movement as would occur in an accident.

Five-point harnesses are optional for the front seats. The lap belts on these harnesses should be adjusted to eliminate slack. The lower strap should be adjusted as necessary to ensure that the buckle does not interfere with the cyclic grip at aft cyclic. The harness is equipped with a webbing stop located above the inertia reel. The stop limits shoulder strap retraction and should be adjusted so the straps are comfortable without excessive slack.

Optional anchor loops located in the cabin ceiling above the door posts provide attachment points for a safety tether for equipment or occupants during doors-off operation.

Refer to § 25-90 for description of optional cyclic guard.

The main baggage compartment is located between the cabin and the engine compartment. It is accessed via a large door on the aircraft right side. The cowl door annunciator illuminates to warn the pilot when the door is not latched. A light illuminates the compartment when the battery switch is ON. Tie down anchors are provided for securing items in the baggage compartment. Observe placarded weight limits. Placard locations and illustrations are given in Chapter 11.

Additional compartments are located under each seat except the center rear seat. Seat cushions hinge forward for access to these compartments. Do not load these compartments above the maximum fill lines. The lines indicate required crush space for the seats in an accident. Baggage compartment dimensions are given in Chapter 6.

WARNING

Never repair or modify seat assemblies, including seat assembly fabric, seat pans, or hook and loop tape (Velcro) securing fabric to seat pans. Seat assembly energy-absorption design is critical to occupant safety. To preserve crashworthiness, maintenance is limited to seat assembly replacement.

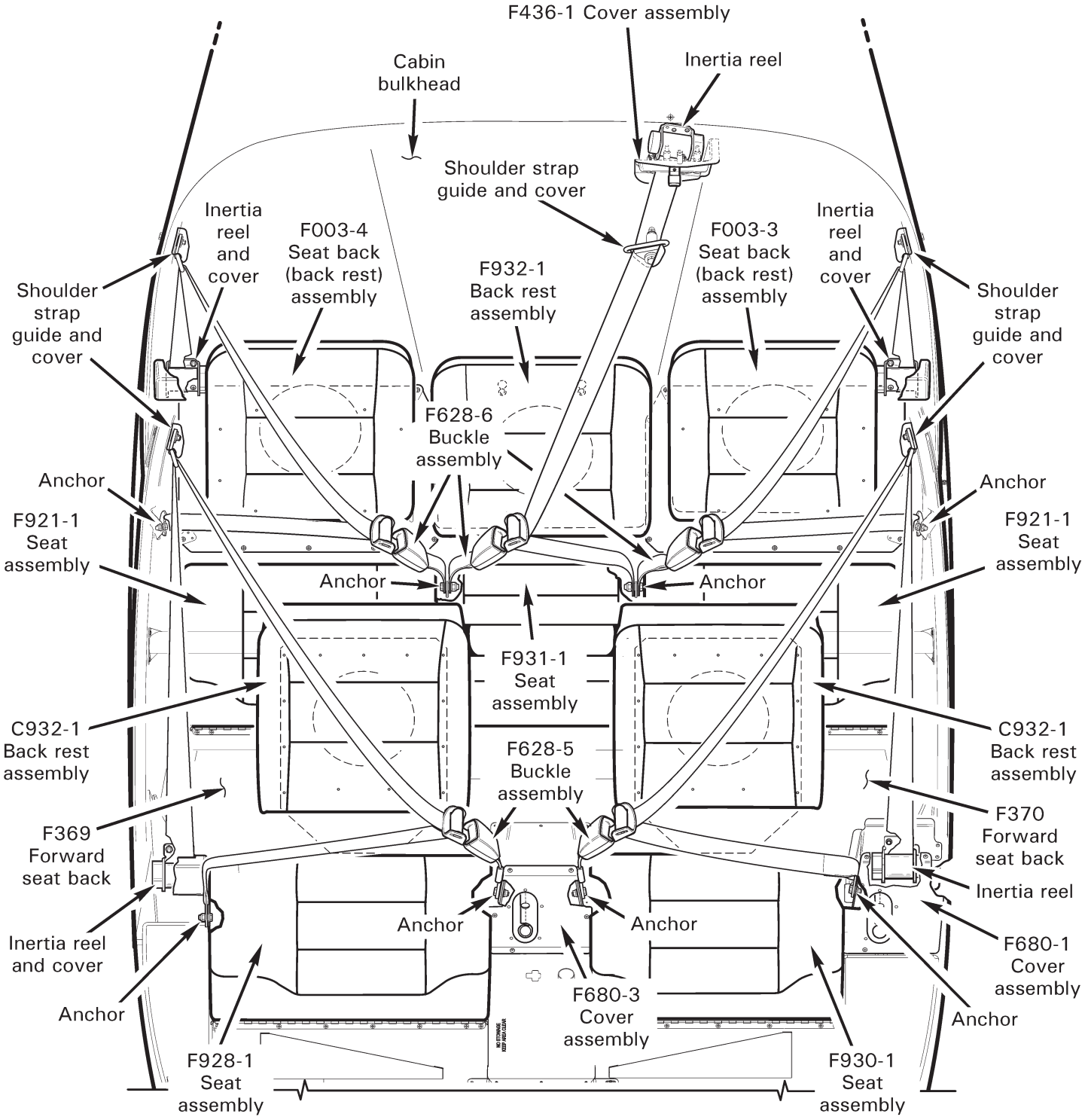


FIGURE 25-1 SEAT HARNESSES, SEAT ASSEMBLIES, AND BACK RESTS

25-10 Seat Harnesses

Refer to R66 Illustrated Parts Catalog (IPC) Figures 25-3 and 25-5. Refer to Figures 25-9, 25-11, and 25-13 for optional Five-Point Harness Installation.

25-11 Seat Harness Removal

A. Forward Seat Harness (Standard)

1. Refer to Figure 25-1. Remove F680-1 and F680-3 collective cover assemblies; hinge seat assemblies forward.
2. Remove hardware securing each F628-5 buckle assembly to inboard anchor, and hardware securing each lap belt fitting to outboard anchor.
3. Remove shoulder strap guide covers and hardware securing guides to door frames.
4. Remove right side inertia reel cover and hardware securing reels to F369 and F370 forward seat backs. Remove seat harnesses.

B. Five-Point Harness (Optional, not shown; for forward seats only)

1. Remove screws securing F424-1 bumper assembly to F423-4 tube assembly and remove bumper.
2. Refer to Figure 25-1. Remove F680-1 and F680-3 collective cover assemblies; hinge seat assemblies forward.
3. Remove hardware securing lap belts to inboard and outboard anchors. Remove hardware securing fifth-point belts to seat boxes.
4. Remove hole plugs, then remove inertia reel covers and hardware securing reels to F369 and F370 forward seat backs. Remove five-point harnesses.

C. Aft Left and Right Seat Harness

1. Refer to Figure 25-1. Remove F931-1 seat assembly; hinge left and right seat assemblies forward.
2. Remove hardware securing each F628-6 buckle assembly to inboard anchor, and hardware securing each lap belt fitting to outboard anchor.
3. Remove shoulder strap guide covers and hardware securing guides to door frames.
4. Remove inertia reel covers and hardware securing reels to cabin bulkhead.

D. Center Seat Harness

1. Remove tailcone cowling per Section 53-23.
2. Refer to Figure 25-1. Remove F931-1 seat assembly; hinge left and right seat assemblies forward.
3. Remove hardware securing F628-6 buckle assembly to inboard right side anchor and hardware securing lap belt fitting to inboard left side anchor.
4. Remove shoulder strap guide cover and hardware securing guide to cabin bulkhead and upper frame.
5. Remove F436-1 (headset jack) cover assembly and hardware securing inertia reel to cabin bulkhead.

25-12 Seat Harness Installation

A. Forward Seat Harness (Standard)

1. Refer to Figure 25-1. Install hardware securing inertia reels to F369 and F370 forward seat backs. Install right side reel cover.

2. Install hardware securing shoulder strap guides to door frames. Standard torque bolts per Section 20-32. Install guide covers.

3. Install hardware securing F628-5 buckle assemblies to inboard anchors, and lap belt fittings to outboard anchors. Position buckle swage between two forward rivets. Standard torque bolts per Section 20-32.

4. Install F680-1 and F680-3 collective cover assemblies.

B. Five-Point Harness (Optional, not shown; for forward seats only)

1. Attach inertia reels to F369 and F370 forward seat backs. Install covers and hole plugs. Verify security.

2. Attach lap belt fittings to inboard and outboard anchors. Standard torque bolts per Section 20-32.

3. Attach fifth point belts to seat boxes.

4. Refer to Figure 25-1. Install F680-1 and F680-3 collective cover assemblies; hinge seat assemblies forward.

5. Position F424-1 bumper assembly on F423-4 tube assembly and install screws. Verify security.

C. Aft Left and Right Seat Harness

1. Refer to Figure 25-1. Install hardware securing inertia reels to cabin bulkhead. Install reel covers.

2. Install hardware securing shoulder strap guides to door frames. Standard torque bolts per Section 20-32. Install guide covers.

3. Install hardware securing F628-6 buckle assemblies to inboard anchors, and lap belt fittings to outboard anchors. Standard torque bolts per Section 20-32.

4. Install F931-1 seat assembly.

D. Center Seat Harness

1. Refer to Figure 25-1. Install hardware securing inertia reel to cabin bulkhead. Install F436-1 (headset jack) cover assembly. Verify security.

2. Install hardware securing shoulder strap guide to cabin bulkhead and upper frame. Standard torque bolt per Section 20-32. Install guide cover.

3. Install hardware securing F628-6 buckle assembly to inboard right side anchor, and lap belt fitting to outboard left side anchor. Standard torque bolts per Section 20-32.

4. Install F931-1 seat assembly.

5. Install tailcone cowling per Section 53-23.

25-20 Seat Assemblies and Back Rests

25-21 Seat Assembly Removal and Installation

WARNING

Never modify seat assemblies, including seat assembly fabric, seat pans, or hook and loop tape (Velcro) securing fabric to seat pans. Seat assembly energy-absorption design is critical to occupant safety.

A. Left and Right Seat Assembly Removal

1. If heated seats are installed, turn battery switch off and pull out SEAT HEATERS circuit breaker (20 amp) on circuit breaker panel. Disconnect F940-3 (forward seats) or F940-4 (aft seats) wire harness from F940-1 module assembly wiring at connector.
2. Refer to Figure 25-1. Remove hardware securing seat assembly hinge to seat box and remove seat assembly.

B. Left and Right Seat Assembly Installation

1. If heated seats are installed, turn battery switch off and pull out SEAT HEATERS circuit breaker (20 amp) on circuit breaker panel.
2. Refer to Figure 25-1. Position seat assembly on seat box and install hardware securing hinge to box. Verify security.
3. If heated seats are installed, connect F940-3 (forward seats) or F940-4 (aft seats) wire harness to F940-1 module assembly wiring at connector. Verify security. Push in circuit breaker on circuit breaker panel and turn battery switch on. Verify proper function of switches at control panel. Verify temperature setting system functionality by toggling between high/low/off heat positions.

C. Center Seat Assembly

Refer to Figure 25-1. Attach or detach center seat assembly to or from the seat box via hook and loop tape (Velcro).

25-22 Back Rest Assembly Removal and Installation

A. Aft Left and Right Back Rest Assembly Removal

1. If heated seats are installed, turn battery switch off and pull out SEAT HEATERS circuit breaker (20 amp) on circuit breaker panel.
2. Refer to Figure 25-1. Remove hardware securing back rest assembly to cabin bulkhead.
3. If heated seats are installed, disconnect F940-3 (forward seats) or F940-4 (aft seats) wire harness from F939-2 pad assembly wiring at connector.
4. Remove back rest assembly.

B. Aft Left and Right Back Rest Assembly Installation

1. If heated seats are installed, turn battery switch off and pull out SEAT HEATERS circuit breaker (20 amp) on circuit breaker panel. Connect F940-3 (forward seats) or F940-4 (aft seats) wire harness to F939-2 pad assembly wiring at connector. Verify security.
2. Refer to Figure 25-1. Install hardware securing back rest assembly to cabin bulkhead. Verify security.
3. If heated seats are installed, push in circuit breaker on circuit breaker panel and turn battery switch on. Verify proper function of switches at control panel. Verify temperature setting system functionality by toggling between high/low/off heat positions.

C. Center Back Rest Assembly Removal

Refer to Figure 25-1. Detach back rest assembly hook and loop tape (Velcro) at bottom; slide back rest assembly up and out of keyhole slots.

D. Center Back Rest Assembly Installation

Refer to Figure 25-1. Install back rest assembly in keyhole slots and slide down. Press firmly on back rest assembly hook and loop tape (Velcro) at bottom. Verify security.

25-23 Back Rest Cushion Replacement

A. Forward Back Rest

1. If heated seats are installed, turn battery switch off and pull out SEAT HEATERS circuit breaker (20 amp) on circuit breaker panel. Disconnect F940-3 wire harness from F939-2 pad assembly wiring at connector.
2. Refer to Figure 25-1. Drill out rivets securing back rest cushion to seat back panel and deburr holes. Remove cushion.
3. Remove old adhesive residue from back rest support tube with plastic wedge. Wipe surface with clean cloth, wet with acetone.
4. Center and straighten new cushion on seat back panel. Match drill seat back panel #30 holes through cushion panel and deburr. Clean up debris.
5. Attach back rest cushion to seat back panel with B204-2 rivets.
6. Apply B270-18 adhesive to underside of back rest cushion flap and to mating portion of support tube. Pull flap around tube, smooth wrinkles, and trim excess flap. Remove excess adhesive prior to curing.
7. If heated seats are installed, push in circuit breaker on circuit breaker panel and turn battery switch on. Verify proper function of switches at control panel. Verify temperature setting system functionality by toggling between high/low/off heat positions.

B. Aft Left and Right Back Rest

1. Remove back rest assembly per § 25-22.
2. Drill out rivets securing back rest cushion to seat back panel and deburr holes. Remove cushion.
3. Center and straighten new cushion on seat back panel. Match drill seat back panel #30 holes through cushion panel and deburr. Clean up debris.
4. Attach back rest cushion to seat back panel with B204-2 rivets.
5. Install back rest assembly per § 25-22.

25-24 Heated Seats

A. Description

Heated seat bottoms and backrests for the forward seats and outboard rear seats are an option. Switches to control low and high heat settings for all four heated seats are located on the panel above the right-side collective boot.

The seat heaters operate only when the generator switch is in the ON position to reduce the likelihood of inadvertently draining the battery before the engine is started.

B. Schematics

Refer to Figure 98-28 for heated seats installation electrical schematic.

C. Removal and Installation

Seat Assemblies

Remove and install seat assemblies per § 25-21 Part A.

(Circuit Board) Module Assembly Replacement

1. Remove seat assembly per § 25-21 Part A.
2. Disconnect F940 harness from F941-1 module assembly at connector.
3. Drill out rivets securing module to seat assembly pan and remove module. Clean up debris.
4. Cleco (sheet metal fastener) new module to seat assembly pan. Progressively remove clecos and install B204-1 rivets securing module to pan. Verify security.
5. Connect F940 harness to module at connector. Verify security.
6. Install seat assembly per § 25-21 Part A.

D. Scheduled Maintenance and Inspections

Refer to § 5-45 100-Hour/Annual Inspection.

F. Special Maintenance and Inspections

1. Open circuit breaker panel and applicable access panels.
2. Verify correct fuses are installed in circuits: F940-2 harness assembly requires (4) AGC-5 fuses, one for each heated seat.
3. Inspect condition of and verify no obvious damage to F941-1 module assemblies, F940-1 switch assembly, wire harnesses, copper bus bars, circuit breaker, or circuit breaker wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify installed equipment security.
4. Secure circuit breaker panel and removed access panels.
5. Verify proper function of switches at control panel. Verify temperature setting system functionality by toggling between high/low/off heat positions.

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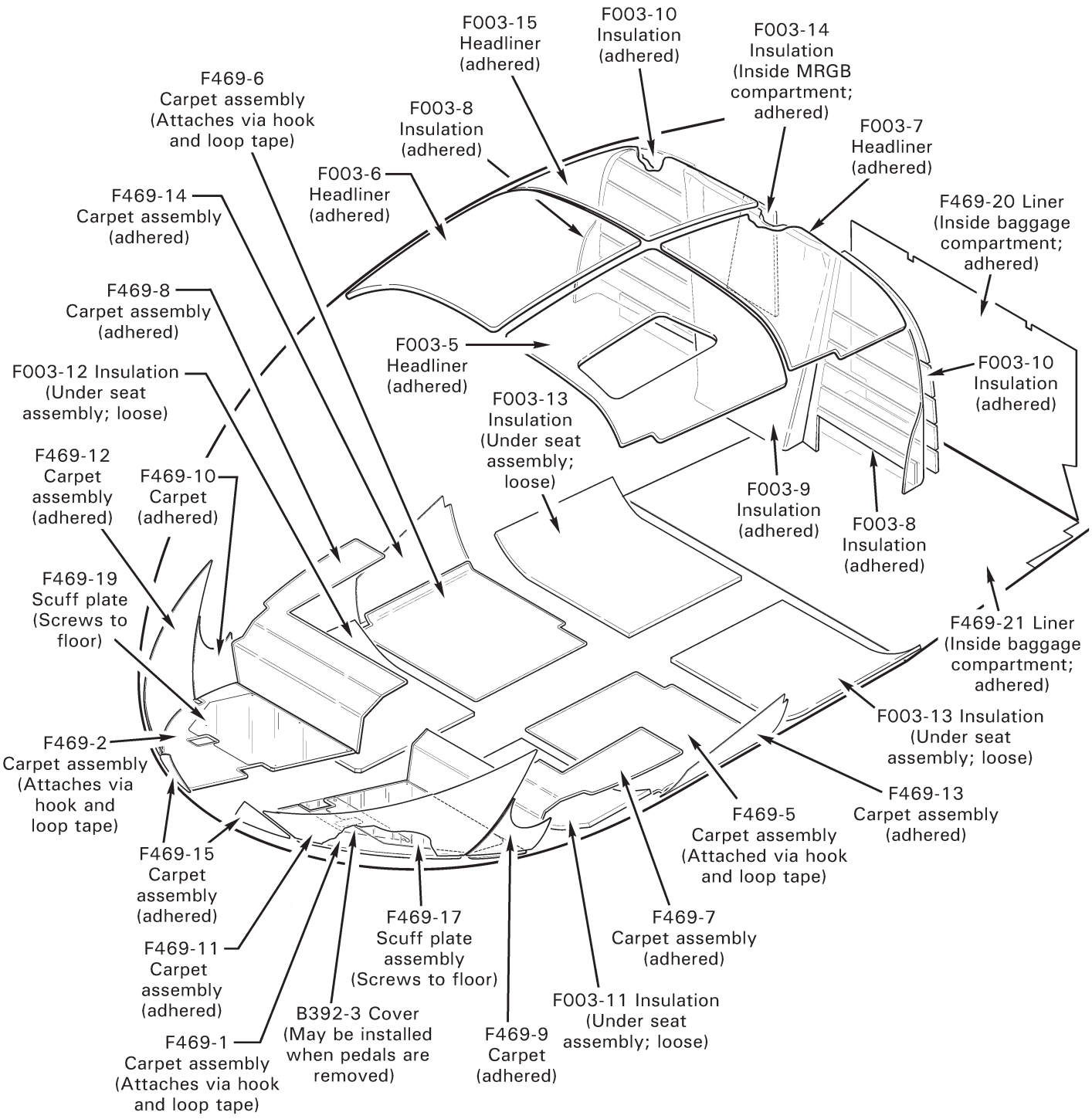


FIGURE 25-2 CARPET AND INSULATION

25-30 Carpet

A. Forward (Floor) Carpet Assembly Removal

1. Refer to Figure 25-2. Remove adjustable and/or removable pedals, as required.
2. Remove hardware securing scuff plates (and carpet) to cabin floor. Detach carpet from floor via hook and loop tape (Velcro).

B. Forward (Floor) Carpet Assembly Installation

1. Refer to Figure 25-2. Attach carpet to floor via hook and loop tape (Velcro).
2. Install scuff plates; install B392-3 left-side cover (may be installed when pedals are removed), as required.
3. Install adjustable and/or removable pedals, as required.

C. Aft (Floor) Carpet Assembly Removal and Installation

1. Refer to Figure 25-2. Attach or detach carpet to and from floor via hook and loop tape (Velcro).

D. Carpet and Liner

CAUTION

Use caution when removing adhered carpet if carpet is intended for reuse.

1. Removal
   a. Starting at corners, gently peel back carpet by hand, or with plastic wedge or putty knife.
   b. Dampen old adhesive with Dupont Prep-Sol (or equivalent) to facilitate removal.
2. Installation
   a. Verify proper carpet fit. Trim as required (do not trim carpet welt).
   b. Apply B270-8 adhesive to bonding surface and carpet backing. Press carpet to surface, smooth wrinkles, and remove excess adhesive prior to curing.

25-40 Insulation (Foam and Headliner)

A. Removal

NOTE
Use caution not to damage surface underneath insulation when removing insulation with tools.

NOTE
Insulation is installed using adhesive, except under seat assemblies. Order new insulation as required; reuse of removed insulation is not recommended.

1. Peel off insulation by hand.
2. Using plastic wedge or putty knife, carefully remove residual insulation and old adhesive.
3. Wipe bonding surface with clean cloth, wet with acetone.

B. Installation

1. Verify proper insulation fit. Trim as required.
2. Apply B270-8 adhesive to bonding surface and insulation backing. Press insulation to surface, smooth wrinkles, and remove excess adhesive prior to curing.

25-50 General Maintenance

25-51 Pilot's Operating Handbook (POH) Strap Replacement

A. Removal

1. Remove POH.
2. Drill out rivets securing POH retaining strap to cabin right side and remove strap. Deburr holes and clean up debris.

B. Installation

1. Cleco POH retaining strap to cabin right side holes. Remove clecos and install rivets. Verify security.
2. Install POH.

25-52 License Holder Replacement

A. Removal

1. Remove aircraft documents from license holder.
2. Drill out rivets securing license holder to cabin under left side windshield frame and remove license holder. Deburr holes and clean up debris.

B. Installation

1. Cleco license holder to cabin holes under left side windshield frame. Remove clecos and install rivets. Verify security.
2. Insert aircraft documents into holder and tuck upper flap into frame.

25-53 Map Pocket Replacement

A. Removal

1. Drill out rivets securing map pocket to front wall of forward seat box. Remove pocket, washers, and retaining strips. Deburr holes and clean up debris.

B. Installation

1. Fold (long) outboard pocket edge around (long) A913-1 strip, align holes, and align holes with front of forward seat box. Cleco in place.
2. Pull material taut, fold (short) inboard pocket edge around (short) A913-2 strip, align holes, and align holes with front of forward seat box. Cleco in place. Trim excess material.
3. Remove clecos and install washers and rivets.

25-60 Emergency Equipment

25-61 Emergency Locator Transmitter (ELT)

A. Description

The ELT activates when subjected to a significant change in velocity (as in a crash), by remote control switch located on the cyclic control panel, or by a switch on the ELT transmitter. Refer to § 96-90 for system description.

Refer to Kannad Aviation AF Integra / AF-H Integra or 406 AF-Compact/406 AF-Compact (ER) ELT Installation and Operation Manual for maintenance requirements and procedures. Refer to § 1-90 for scheduled maintenance.

Register an ELT when first purchased, when contact information changes, or when aircraft ownership, or tail number changes. Registration information is available online at: www.cospas-sarsat.org.

Dongles contain a memory chip that must be programmed with aircraft-specific information prior to installation for the ELT to function. The dongle may be removed and shipped to RHC or a Kannad Service Center for reprogramming. Kannad Aviation's Programming Data Sheet is available online at: www.robinsonheli.com.

B. Transmitter

Removal

1. Release D693-4 strap assembly or B359-2 (reusable) ty-rap.
2. Release Velcro strap; disconnect dongle and antenna wiring from transmitter at connectors and remove transmitter.

Installation

1. Connect dongle and antenna wiring to transmitter at connectors. Verify security.
2. Position transmitter on mounting bracket and secure with Velcro strap. Secure D693-4 strap assembly or install B359-2 (reusable) ty-rap around transmitter and bracket. Verify security.

C. Dongle

Removal

Cut and discard ty-raps as required, disconnect dongle from transmitter and airframe harness at connectors, and remove dongle.

Installation

1. Connect programmed dongle to transmitter and airframe harness at connectors.
2. Install ty-raps as required. Cinch ty-raps until snug without over-tightening, and trim tips flush with heads. Verify security.

25-62 Fire Extinguisher

CAUTION

Fire extinguisher operating and storage temperature range is -40°F to 120°F (-40°C to 49°C). If conditions expose extinguisher to temperatures outside this range (e.g. long-term parking in direct sunlight in hot climates), remove extinguisher from helicopter and store it within the specified temperature range.

A. Inspection

1. Remove B381-1 or B381-4 fire extinguisher from helicopter.
2. Visually inspect extinguisher for damage or corrosion and ensure nozzle is unobstructed and tamper seal is intact.
3. Ensure G654-15 or G654-23 decal (maintenance log) is legible; replace decal if required.
4. Measure extinguisher weight using a 1-gram resolution (or better) scale and record weight on maintenance log; remove extinguisher from service if total weight falls below minimum allowable weight specified on decal.
5. Remove B381-1 fire extinguisher from service at end of 12th year from date of manufacture (labeled on bottom), as required.

B. Bracket Removal

1. Unlatch fire extinguisher bracket and remove extinguisher.
2. Remove hardware securing bracket to cabin and remove bracket.

C. Bracket Installation

1. Install hardware securing fire extinguisher bracket to cabin. If installing bracket to chin, select screw length as required to provide 0.00–0.06 inch thread exposure. Verify security.
2. Position fire extinguisher on mounting bracket and latch bracket.

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25-70 Cargo Hook Installation

25-71 Description

See R66 Pilot's Operating Handbook Cargo Hook Supplement (Section 9) for complete system description.

The cargo hook installation includes a cargo hook, electric release buttons on left and right side cyclic, mechanical release knobs at left and right front seat, hydraulic and radio buttons and switches on left side cyclic, a start button on left side collective, a load meter, gas temperature gauge, and torque meter at left front seat, and provisions for remote control of external load equipment on left and right side cyclic. Optional equipment includes forward doors with large bubble windows and skid-mounted mirrors.

Doors with large bubble windows are designed such that pilots may lean their head into the bubble in order to look straight down at an external load. The left door contains a second, lower window that allows the pilot to look back inside at the load meter, gas temperature gauge, and torque meter. Each door contains an electric fan to aid with defogging.

A padded elbow rest is provided above the left side collective. This allows the left-side pilot to brace against the elbow rest for stability while leaning out to see external loads. The elbow rest is adjustable up and down via a friction knob.

A cabin interior hardpoint installation is for use with safety harnesses.

The cargo hook is suspended from a hard point on the helicopter belly. For overhaul requirements for the cargo hook itself, refer to Onboard Systems overhaul manual (refer to § 25-73 Part D).

The load weigh system consists of a load cell incorporated in the hook attaching hardware and a load meter installed at left front seat.

25-72 Configurations

See R66 Pilot's Operating Handbook Cargo Hook Supplement (Section 9) for approved flight configurations.

25-73 Cargo Hook

A. Schematic

Refer to Figure 98-29 for cargo hook wiring schematic.

B. Removal

1. Turn battery switch off and pull out (10 amp) HOOK RELEASE and (10 amp) EXT LOAD (if installed) circuit breaker(s) on circuit breaker panel.
2. Disconnect G140-6 (installations without load cell) or G140-7 (installations with load cell) harness assembly from 528-029-00 cargo hook at hook connectors.
3. Remove cotter pin, castellated nut, washers, and bolt (G132-1) or load cell (G132-2 or G132-4) securing hook to hard point's D136-2 support. Remove hook.
4. Remove screws securing (mechanical release) cover to hook and remove cover. Disconnect D676-3 (control) cable assembly's ball from mechanical release's fork.
5. Loosen jam nut and unthread hook from cable assembly.
6. Configure helicopter for flight with hook removed per Part F as required.

C. Installation

1. Turn battery switch off and pull out (10 amp) HOOK RELEASE and (10 amp) EXT LOAD (if installed) circuit breaker(s) on circuit breaker panel.
2. Configure helicopter for flight with hook installed per Part F as required.
3. Loosen jam nut and thread 528-029-00 cargo hook onto D676-3 cable assembly. Verify threads protrude beyond plate flange.
4. Insert bolt and washer (G132-1) or load cell (G132-2 or G132-4) securing hook to hard point's D136-2 support. Install washers and castellated nut, and tighten nut finger tight (back off as required to align cotter pin holes, but do not install cotter pin). Verify security.

CAUTION

Overtightening castellated nut can damage load cell.

5. Rig mechanical release control per § 25-75.
6. Install cotter pin at hook-to-hard point fastener.
7. Connect G140-6 (installations without load cell) or G140-7 (installations with load cell) harness assembly to hook at hook connectors. Verify security.

25-73 Cargo Hook (continued)

C. Installation (continued)

CAUTION

The cargo hook must be able to swing freely in all directions. Incorrect restraining of the mechanical release control cable could cause uncommanded cargo hook release if hook were to strain against cable's inner wire.

8. Maneuver cargo hook and verify wire harness and control cable have sufficient slack through full range of travel.
9. Refer to Figure 25-3. Push-in (10 amp) HOOK RELEASE and (10 amp) EXT LOAD (if installed) circuit breaker(s) on circuit breaker panel. Turn battery switch on. Verify proper function of electrical release. Reset load beam by hand. Verify lock indicator returns to locked position. Turn battery switch off.
10. Verify proper function of mechanical release control. Reset load beam by hand. Verify lock indicator returns to locked position.

D. Scheduled Inspections

NOTE

Track time of external load operations when anything is attached to the cargo hook and the helicopter is flying.

Every 100 hours of external load operations or annually, whichever occurs first:

1. Push-in (10 amp) HOOK RELEASE and (10 amp) EXT LOAD (if installed) circuit breaker(s) on circuit breaker panel. Turn battery switch on. Refer to Figure 25-3. Verify proper function of electrical hook release. Reset load beam by hand. Verify lock indicator returns to locked position. Turn battery switch off.
2. Verify proper function of mechanical release control. Reset load beam by hand. Verify lock indicator returns to locked position.
3. Maneuver cargo hook and verify wire harness and control cable have sufficient slack through full range of travel.
4. Verify proper routing and security of mechanical release control cable; verify smooth actuation without binding.
5. Remove screws securing (mechanical release) cover to 528-029-00 cargo hook and remove cover. Refer to Figure 25-4. Rotate release lever clockwise to remove free play (lock indicator will begin to move) and measure gap between fork and ball as shown. Adjust gap per § 25-75 as required to obtain measurement between 0.15–0.25 inch.
6. Inspect condition of cargo hook equipment for damage. Verify equipment security.

25-73 Cargo Hook (continued)

D. Scheduled Inspections (continued)

Every 1000 hours of external load operations or 5 years, whichever occurs first:

1. Overhaul cargo hook per Onboard Systems Component Maintenance Manual Document No. 122-017-00. Contact Onboard Systems for assistance locating authorized overhaul facilities.

E. Special Inspections

For troubleshooting of the cargo hook only, refer to Onboard Systems Troubleshooting Guide Document No. 125-004-00 available for download on their website at www.onboardsystems.com.

F. Configurations for Flight

1. Configuration for Flight with Cargo Hook Removed

   a. Remove cargo hook per Part B.

   b. Disconnect G140-6 (installations without load cell) or G140-7 (installations with load cell) harness assembly at connector on belly. Install FTC-4 caps (labeled "FC-4") over open belly receptacle(s); verify cap security. Cut and discard ty-raps as required and remove harness assembly (leave D676-3 [control] cable assembly looped to A215-149 o-ring).

   c. Remove hardware securing D136-3 bumpers and D136-2 support to G137-1 hardpoint installation rod ends and remove bumpers and support.

   d. Remove (2) B526-6 (or MS27039C0806) screws (select two fasteners spaced apart to provide best cable security) securing F794-2 (access) panel to belly; install (2) MS27039C0816 screws, (2) AN742-4 clamps, and (2) A130-38 spacers to secure control cable assembly to belly. Verify cable and hardware security.

   e. Revise Weight and Balance Record in R66 Pilot's Operating Handbook (POH) Section 6 to incorporate the following data:

Subtract:

Weight	Long. Arm	Long. Moment	Lat. Arm	Lat. Moment
3.90 lb	90.84 in.	354.28 in.-lb	–4.10 in.	–15.99 in.-lb

25-73 Cargo Hook (continued)

F. Configurations for Flight (continued)

2. Configuration for Flight with Cargo Hook Installed

a. Remove (2) MS27039C0816 screws, (2) AN742-4 clamps, and (2) A130-38 spacers securing D676-3 (control) cable assembly to F794-2 (access) panel and belly; install (2) B526-6 (or MS27039C0806) screws. Verify security.

b. Install hardware securing D136-3 bumpers and D136-2 support to G137-1 hardpoint installation rod ends. Standard torque fastener per § 20-32 and torque stripe per Figure 5-1.

c. Remove FTC-4 cap (labeled "FC-4") from hook harness assembly receptacle on belly. Connect G140-6 (installations without load cell) or G140-7 (installations with load cell) harness assembly to receptacle; verify security. Loop A215-149 o-ring around harness and control cable assembly. Install ty-raps as required; cinch ty-raps until snug without over-tightening, and trim tips flush with heads.

d. Install cargo hook per Part C steps 3 thru 10.

e. Revise Weight and Balance Record in R66 Pilot's Operating Handbook (POH) Section 6 to incorporate the following data:

Add:

Weight	Long. Arm	Long. Moment	Lat. Arm	Lat. Moment
3.90 lb	90.84 in.	354.28 in.-lb	–4.10 in.	–15.99 in.-lb

25-74 Cyclic Grips, Electric Cargo Hook Release, Remote Equipment Provisions, and Left-Seat Collective

A. Schematics

Refer to Figure 98-29 for cargo hook wiring schematic.

Refer to Figure 98-30 for external load controls wiring schematic.

Refer to Figure 98-31 for copilot instrument installation wiring schematic.

B. Removal and Installation

Refer to § 67-12 for cyclic grip assembly removal and installation procedures.

For removable cyclic grip, disconnect the electrical connectors located near the quick release pin before removing the left cyclic grip. Reconnect the connectors when installing the left cyclic grip.

For removable collective stick:

a. Removal: Unplug push-to-start button cable from jack. Unbutton boot and depress locking pins to disengage and remove collective stick.

b. Installation: Depress locking pins and insert collective stick in control. Verify both locking pins engage holes to secure stick; re-button boot. Plug in push-to-start button cable to jack.

C. Scheduled Inspections

Refer to § 5-45 100-Hour/Annual inspection.

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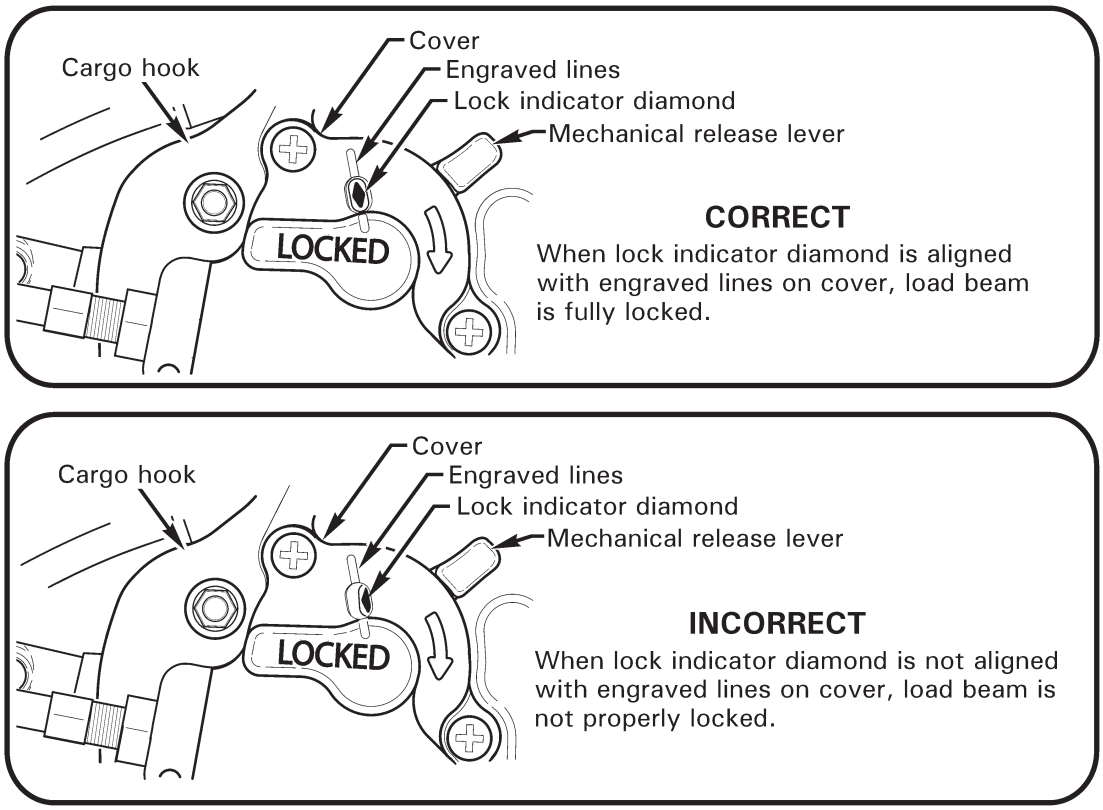


FIGURE 25-3 LOCK INDICATOR

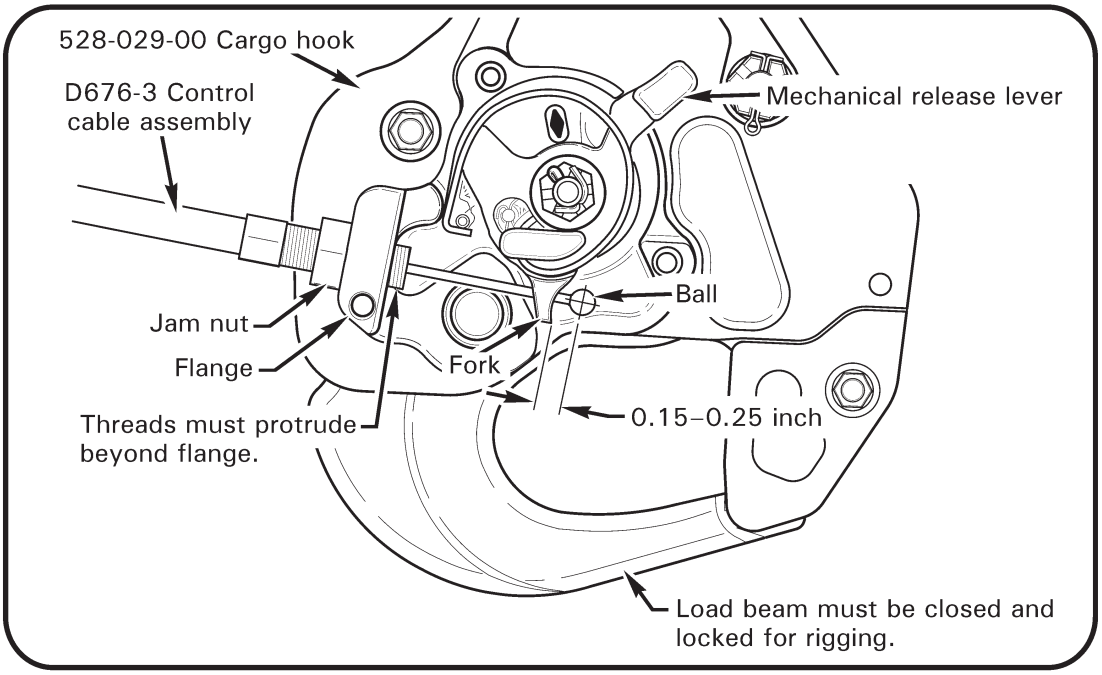


FIGURE 25-4 MECHANICAL RELEASE CONTROL RIGGING
(Shown with cover removed)

25-75 Mechanical Cargo Hook Release Control Rigging

CAUTION

Cargo hook load beam must be closed and locked when rigging mechanical release control.

1. Verify HOOK RELEASE knob adjacent to collective stick is positioned full down. Verify cargo hook load beam is closed and locked.
2. If not previously accomplished, remove screws securing (mechanical release) cover to 528-029-00 cargo hook and remove cover.
3. Refer to Figure 25-4. If not previously accomplished, connect D676-3 (control) cable assembly's ball to mechanical release's fork. Rotate release lever clockwise to remove free play (lock indicator will begin to move) and measure gap between fork and ball as shown.
4. Adjust gap as required to obtain measurement between 0.15–0.25 inch. To adjust gap:
   a. Disconnect cable assembly's ball from release lever assembly's fork.
   b. Remove cotter pin (if installed), castellated nut, washers, and bolt (G132-1) or load cell (G132-2 or G132-4) securing hook to hard point's D136-2 support. Remove hook.
   c. Thread or unthread hook onto cable as required to meet gap dimensions. Verify threads protrude beyond plate flange.
   d. Reassemble hook to hardpoint per § 25-73 Part C step 3.
   e. Repeat steps 3 and 4.
5. Special torque jam nut to 80 in.-lb. Install screws securing release lever assembly's cover to hook. Verify security.
6. Finish hook installation per § 25-73 Part C steps 6 thru 10.

25-76 Load Cell and Meter

A. Schematic

Refer to Figure 98-29 for cargo hook wiring schematic.

B. Removal

Load Cell

Remove load cell per § 25-73 Part B steps 1 thru 3. Insert thru bolt temporarily to support cargo hook while load cell is removed. Remove G140-7 harness assembly as required; do not adjust control cable.

Load Meter

1. Turn battery switch off & pull out (10 amp) HOOK RELEASE circuit breaker on circuit breaker panel.
2. Remove hardware securing G135-5 cover (copilot installation only) and G138 face to F353 panel and remove face with attached 210-095-00 load meter.
3. Disconnect G140-2 (RH or LH Solo PIC) or G140-8 (RH Solo PIC) harness assembly from load meter. Remove hardware securing load meter to face and remove load meter.

C. Installation

Load Cell

1. Install G140-7 harness assembly if removed; loop A215-149 o-ring around harness and D676-3 (control) cable assembly. Install ty-raps as required; cinch ty-raps until snug without over-tightening, and trim tips flush with heads.
2. Remove temporary thru bolt & install load cell per § 25-73 Part C steps 4 thru 10.

Load Meter

1. Turn battery switch off & pull out (10 amp) HOOK RELEASE circuit breaker on circuit breaker panel.
2. Install hardware securing 210-095-00 load meter to G138 face. Connect G140-2 (RH or LH Solo PIC) or G140-8 (RH Solo PIC) harness assembly to load meter. Verify security.
3. Install hardware securing face with attached load meter to F353 panel; install hardware securing G135-5 cover (copilot installation only) to face and panel. Verify security.

D. Scheduled Inspections

Refer to § 25-73 Part D for scheduled inspections.

E. Special Inspections

Refer to Onboard Systems Owners Manual C-39 Indicator Document No. 120-095-00 available for download on their website at www.onboardsystems.com.

25-77 Left-Seat Instruments

A. Schematic

Refer to Figure 98-30 for copilot instruments installation wiring schematic.

B. Removal

1. Turn battery switch off and pull out (10 amp) HOOK RELEASE circuit breaker on circuit breaker panel.
2. Remove hardware securing G135-5 cover and G138-4 face to F353-1 panel and remove face with attached F600-2 torquemeter and T1221MK900C010 MGT gage (and 210-095-00 load meter).
3. Disconnect G140 harness assembly from torquemeter and/or MGT gage, as required. Remove hardware securing torquemeter and/or MGT gage to face, as required, and remove torquemeter and/or MGT gage.

C. Installation

1. Turn battery switch off and pull out (10 amp) HOOK RELEASE circuit breaker on circuit breaker panel.
2. Install hardware securing F600-2 torquemeter and T1221MK900C010 MGT gage to G138-4 face. Connect G140 harness assembly to torquemeter and/or MGT gage, as required. Verify security.
3. Install hardware securing face with attached torquemeter and MGT gage (and 210-095-00 load meter) to F353-1 panel; install hardware securing G135-5 cover to face and panel. Verify security.

D. Scheduled Inspections

Refer to § 5-45 100-Hour/Annual inspection.

E. Special Inspections

Refer to § 95-45 Part F for torquemeter and § 95-48 Part F for MGT gage special inspections.

25-78 Doors with Bubble Windows and Fans

A. Schematic

Refer to Figure 98-31 for bubble door fans installation wiring schematic.

B. Removal

Bubble Door

1. Turn battery switch off and pull out AUX PWR (10 amp) circuit breaker on circuit breaker panel.
2. Disconnect D580 fan assembly wiring from G140-9 harness assembly at connectors.
3. Refer to § 52-10. Pull D573-4 rod up and off of arm assembly ball joint.
4. Remove rings from door hinge pins, lift pins up from door frame hinge assemblies, and remove door.
5. Perform weight and balance for doors off operation per Part E as required.

Fan Assembly

1. Turn battery switch off and pull out AUX PWR (10 amp) circuit breaker on circuit breaker panel.
2. Disconnect D580 fan assembly wiring from G140-9 harness assembly at connectors.
3. Remove hardware securing fan assembly to door stiffener and remove fan.

C. Installation

Bubble Door

WARNING

Failure to install a ring in each door's two hinge pins may allow door to depart aircraft in flight.

1. Turn battery switch off and pull out AUX PWR (10 amp) circuit breaker on circuit breaker panel.
2. Refer to § 52-10. Align and insert door hinge pins in door frame hinge assemblies.
3. Align D573-4 rod with arm assembly ball joint and push down to lock.
4. Install rings in door hinge pins.
5. Connect D580 fan assembly wiring to G140-9 harness assembly at connectors; verify security.
6. Push in AUX PWR (10 amp) circuit breaker on circuit breaker panel and turn battery switch on. Verify proper operation of fan. Turn battery switch off.
7. Perform weight and balance for doors on operation per Part E as required.

25-78 Doors with Bubble Windows and Fans (continued)

C. Installation (continued)

Fan Assembly

1. Turn battery switch off and pull out AUX PWR (10 amp) circuit breaker on circuit breaker panel.
2. Install hardware securing fan assembly to door stiffener; verify security.
3. Connect D580 fan assembly wiring to G140-9 harness assembly at connectors; verify security.
4. Push in AUX PWR (10 amp) circuit breaker on circuit breaker panel and turn battery switch on. Verify proper operation of fan. Turn battery switch off.

D. Scheduled Inspections

Refer to § 5-45 100-Hour/Annual inspection.

E. Configurations for Flight

1. Door(s) Off Operation

   a. Remove bubble door(s) per Part B.

   b. Revise Weight and Balance Record in R66 Pilot's Operating Handbook (POH) Section 6 to incorporate the following data:

Right Door Subtract:

Weight	Long. Arm	Long. Moment	Lat. Arm	Lat. Moment
Weigh door (lb)	49.50 in.	(Weight x Long. Arm)	26.80 in.	(Weight x Lat. Arm)

Left Door Subtract:

Weight	Long. Arm	Long. Moment	Lat. Arm	Lat. Moment
Weigh door (lb)	49.50 in.	(Weight x Long. Arm)	–26.80 in.	(Weight x Lat. Arm)

2. Door(s) On Operation

   a. Install bubble door(s) per Part C.

   b. Revise Weight and Balance Record in R66 Pilot's Operating Handbook (POH) Section 6 to incorporate the following data:

Right Door Add:

Weight	Long. Arm	Long. Moment	Lat. Arm	Lat. Moment
Weigh door (lb)	49.50 in.	(Weight x Long. Arm)	26.80 in.	(Weight x Lat. Arm)

Left Door Add:

Weight	Long. Arm	Long. Moment	Lat. Arm	Lat. Moment
Weigh door (lb)	49.50 in.	(Weight x Long. Arm)	–26.80 in.	(Weight x Lat. Arm)

25-79 Skid-Mounted Mirrors

A. Removal

1. Remove bolt and lock washer securing 97819 mirror to G138 strap & remove mirror.
2. As required, remove screws securing G138 support to skid tube & remove support.
3. Configure helicopter for flight with skid-mounted mirrors removed per Part D as required.

B. Installation

1. If removed, install screws securing G138 support to skid tube. Verify security.
2. Install bolt and (new) lock washer securing 97819 mirror to G138 strap. Special torque bolt to 150 in.-lb and torque stripe per Figure 5-1.
3. Configure helicopter for flight with skid-mounted mirrors installed per Part D as required.

C. Scheduled Inspections

Every 100 hour/annual inspection: Inspect straps for security and any evidence of cracking or corrosion. Inspect mirrors for cracks, cleanliness, and clarity.

D. Configurations for Flight

1. Configuration for flight with skid-mounted mirror(s) removed

   a. Remove skid-mounted mirror(s), including G138 support(s) per Part A.

   b. Reinstall screws in skid tube(s) to prevent debris and moisture from entering tube(s).

   c. Revise Weight and Balance Record in R66 Pilot's Operating Handbook (POH) Section 6 to incorporate the following data:

Right Skid-Mounted Mirror Subtract:

Weight	Long. Arm	Long. Moment	Lat. Arm	Lat. Moment
0.80 lb	32.00 in.	25.60 in.-lb	41.00 in.	32.80 in.-lb

Left Skid-Mounted Mirror Subtract:

Weight	Long. Arm	Long. Moment	Lat. Arm	Lat. Moment
0.80 lb	32.00 in.	25.60 in.-lb	–41.00 in.	–32.80 in.-lb

25-79 Skid-Mounted Mirrors (continued)

D. Configurations for Flight (continued)

2. Configuration for Flight with Skid-Mounted Mirror(s) Installed

a. Remove screws from skid tube(s) and install skid-mounted mirror(s) per Part B.

b. Revise Weight and Balance Record in R66 Pilot's Operating Handbook (POH) Section 6 to incorporate the following data:

Right Skid-Mounted Mirror Add:

Weight	Long. Arm	Long. Moment	Lat. Arm	Lat. Moment
0.80 lb	32.00 in.	25.60 in.-lb	41.00 in.	32.80 in.-lb

Left Skid-Mounted Mirror Add:

Weight	Long. Arm	Long. Moment	Lat. Arm	Lat. Moment
0.80 lb	32.00 in.	25.60 in.-lb	–41.00 in.	–32.80 in.-lb

25-80 Cabin Interior Hardpoint Installation

A. Removal

Peel back headliner and remove hardware securing G949-2 ring to F087-1 frame; remove ring.

B. Installation

Peel back headliner and install hardware securing G949-2 ring to F087-1 frame. Standard torque fasteners per § 20-32 and torque stripe per Figure 5-1. Position seam of grommet at top of hole, in-line with middle fastener.

25-81 Arm Rest

NOTE

Flight with G135-7 support assembly & 2454K71KNOB removed is permissible. No change to helicopter weight and balance.

A. Removal

Remove 2454K71KNOB knob. Remove hardware securing G135-7 support assembly to G135-8 cover assembly and remove support.

B. Installation

Position G135-7 support assembly on G135-8 cover assembly and install hardware; verify security. Install 2454K71KNOB knob. Verify proper operation; position support as desired and tighten knob.

25-90 Cyclic Guard

NOTE

Flight with handle assembly & mounting hardware removed or with handle in either position is permissible.

A. Description

The optional cyclic guard is a bar that extends from the inboard corner of the left front seat to the instrument console. It is intended to act as a barrier to help prevent inadvertent interference with the cyclic control. The guard also provides a hand grip for a passenger's right hand.

In order to access the under seat compartment with the guard installed, pull the silver spring knob at the forward end of the guard and allow the aft end to rotate down away from the seat hinge. To re-secure the guard, lift the aft end and allow the spring knob to lock back in place.

It is recommended that the guard be installed whenever a non-pilot passenger occupies the left front seat. A pilot flying from the left seat may find that the guard contacts the right leg when feet are on the pedals. The guard should be removed prior to flight if the pilot finds it objectionable.

B. Removal

1. Extend G721-1 guard assembly into upper position and remove hardware securing guard to left hand forward seat. Pull plunger and slide guard forward out of G722-6 plate.
2. Open console assembly (ref. § 95-10). Remove hardware securing plate to lower console and remove plate.

C. Installation

1. Open console assembly (ref. § 95-10). Position G722-6 plate on lower console and install hardware; verify security. Close and secure console.
2. As required, install 56-99-196-20 plunger in G721-1 guard assembly; install supplied sleeve wet with B270-11 adhesive and special torque to 25 in.-lb.
3. Pull plunger, insert guard assembly in plate and slide aft. Extend guard assembly into upper position and install hardware securing G722-5 mounts to left hand forward seat. Verify security.
4. Actuate guard assembly and verify proper operation. As required, adjust set screw in plate to reduce forward/aft play (plunger must fully engage).

D. Scheduled Inspections

Refer to § 5-45 100-Hour/Annual Inspection.