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**Cargo Hook  
Suspension System  
For the  
Robinson R44 Series With  
Talon LC Keeperless 12Volt  
Cargo Hook**

**Kit Part Number  
200-265-00**

**Owner's Manual**

*Owner's Manual Number 120-097-00  
Revision 12  
March 18, 2011*



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## Record of Revisions

<i>Revision</i>	<i>Date</i>	<i>Page(s)</i>	<i>Reason for Revision</i>
5	10/20/05	1-1, 1-2, 2-1, 2-2, 4-1	Incorporated new configurations for Gimbal Assembly (P/N 232-049-01 was 232-049-00) and Pillow Block (P/N 290-492-01 was 290-492-00). Updated hardware (new grip length bolt) for this configuration within Figure 2-1 and within Table 1-1. Added tightening instructions for Gimbal Assembly hardware (step 7, page 2-1). Corrected p/n of cargo hook in Figure 2-2.
6	02/15/06	2-13, Section 5	Updated maintenance information in Section 5 including removing cargo hook maintenance information and replacing with reference to Service Manual 122-012-00. Added additional description for locating manual release cable handle (page 2-13).
7	03/15/06	Section 5	Removed suspension system maintenance information and replaced with reference to ICA 123-005-00.
8	09/07/06	1-1	Updated manual to allow installation of wire harness 270-048-04.
9	05/31/07	4-1  Section 1, 2-13, 2-17, 3-7 to 3-9, 3-12, 4-1 & 4-2	Added warning of specific maintenance requirements when system used for operations with rotational loads. Updated Warnings, Cautions and Notes to new format. Added Warning, Cautions and Notes explanation in introduction.
10	02/26/08	TOC, 1-2, 1-3 & 2-9 thru 2-18	Updates to allow use of switch assembly P/N 232-114-01.
11	11/09/10	1-1, 2-12, 2-16, 3-8, 3-9, 3-12, 4-1 & 4-2	Replaced service manual 122-012-00 with 122-005-00. Replaced Warnings, Cautions and Notes section with Safety Labels section. Removed kit p/n 200-266-00 and associated instructions including Section 3.
12	03/18/11	1-2 & 4-1	Added External Load Limit 800 Decal P/N 215-119-00 to Bill Of Materials. Updated RMA information.

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# *Section 1*

## **General Information**

### **Introduction**

The 200-265-00 Cargo Hook Kit is approved for the Robinson R44 Series Helicopters with 12 volt electrical systems.

### **Safety Labels**

The following definitions apply to the symbols used throughout this manual to draw the reader's attention to safety instructions as well as other important messages.



Indicates a hazardous situation which, if not avoided, will result in death or serious injury.



Indicates a hazardous situation which, if not avoided, could result in death or serious injury.



Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



Draws the reader's attention to important or unusual information not directly related to safety.



Used to address practices not related to personal injury.

## Bill of Materials

The following items are included with the Cargo Hook Suspension System. If shortages are found contact the company from whom the system was purchased.

**Table 1-1 Suspension System Bill of Materials**

<b>Part No.</b>	<b>Description</b>	<b>Qty</b>
120-097-00	System Owner's Manual	1
121-007-00	RFM Supplement	1
122-005-00	Cargo Hook Service Manual	1
123-005-00	ICA Maintenance Manual	1
215-118-00	R22/44 Multiple Decal Sheet	1
215-119-00	External Load Limit 800 Decal	1
232-049-01	Gimbal Assembly	1
232-050-00	Link Assembly	1
232-063-00	Cyclic Switch Housing Assembly	1
232-114-01	Switch Housing Assembly	1
268-014-01	Release Cable Assembly	1
270-089-00	Wire Assembly – Circuit Breaker	1
270-090-00	Wire Bundle	1
290-440-00	Roller Pin	1
290-478-01	Switch Guard	1
290-492-01	Pillow Block	1
290-505-00	Drilled Cap Head Screw	2
400-053-00	Switch	1
400-054-00	Cap	1
400-059-00	Switch	1
410-162-00	Ring Terminal	2
440-006-00	Circuit Breaker	1



## Bill of Materials, continued

**Table 1-1 Suspension System Bill of Materials** continued

<b>Part No.</b>	<b>Description</b>	<b>Qty</b>
445-002-00	Relay	1
500-065-00	Grommet	1
500-066-00	Spacer	1
505-011-00	Grommet	1
510-100-00	Washer	1
510-115-00	Cotter Pin	1
510-209-00	Washer	1
510-273-00	Nut	1
510-277-00	Screw	2
510-278-00	Washer	2
510-279-00	Nut	2
510-286-00	Nut	1
510-297-00	Screw	1
510-301-00	Screw	2
510-528-00	Bolt	1
512-010-00	Clamp	2
512-018-00	Adel Clamp	2
528-023-03	3,500 Lb. Cargo Hook	1

## Inspection

Inspect the kit items for evidence of damage, corrosion and security of lock wire and fasteners. If damage is evident, do not use the items until they are repaired.

# Specifications

**Table 1-2 P/N 528-023-03 Cargo Hook Specifications**

Design load	3,500 lb. (1,580 kg.)
Design ultimate strength	15,750 lb. (7,140 kg.)
Electrical release capacity	8,750 lb. (3,970 kg.)
Mechanical release capacity	8,750 lb. (3,970 kg.)
Force required for mechanical release at 3,500 lb.	8 lb. Max.(.600" travel)
Electrical requirements	10-15 VDC 7.7-11.5 amps
Minimum release load	0 pounds
Unit weight	3.0 pounds (1.35 kg.)
Mating electrical connector	PC06A8-2S SR

These specifications are for the hook only, not the installed system.

## Theory of Operation

The primary elements of the Cargo Hook are the load beam, the internal mechanism, and a DC solenoid. The load beam supports the load and is latched through the internal mechanism. The DC solenoid, an external manual release cable and a manual release lever provide the means for unlatching the load beam.

The load is attached to the load beam by passing the cargo sling ring into the throat of the load beam and pushing the ring against the upper portion of the load beam throat, which will initiate the hook to close. In the closed position, a latch engages the load beam and latches it in this position.

To release the load, the latch is disengaged from the load beam. With the latch disengaged, the weight of the load causes the load beam to swing to its open position, and the cargo sling slides off the load beam. The load beam then remains in the open position awaiting the next load.

A load release can be initiated by three different methods. Normal release is achieved by pilot actuation of the push-button switch in the cockpit. When the push-button switch is pressed, it energizes the DC solenoid in the Cargo Hook, and the solenoid opens the latch in the internal mechanism. A secondary release button is also provided on the left seat lower outboard support. In an emergency, release can be achieved by operating a mechanical release cable. The release cable operates the internal mechanism of the Cargo Hook to unlatch the load beam. The load can also be released by the actuation of a lever located on the side of the Cargo Hook

## ***Section 2***

### **Installation Instructions**

These procedures are provided for the benefit of experienced aircraft maintenance facilities capable of carrying out the procedures. They must not be attempted by those lacking the necessary expertise.

The R44 maintenance and parts manuals should be available throughout the installation as various R44 components will be referred to by name and part number. The part numbers for Robinson components are provided for reference and may be changed at a later time by Robinson.

All equipment removed and replaced shall be done in accordance with the R44 maintenance manual. All installed hardware shall be torque in accordance with standard torque's of AC43.13 unless noted otherwise. Apply torque stripe where applicable.

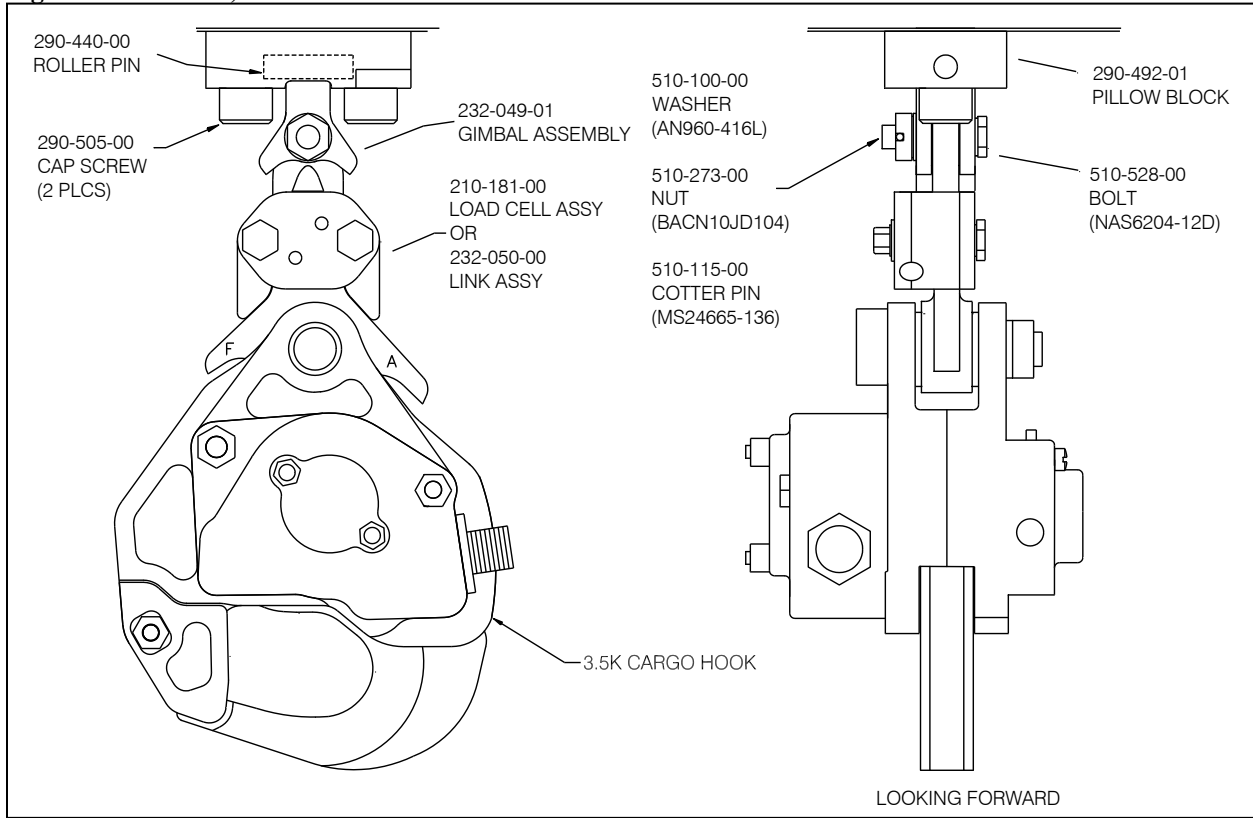
1. Disconnect the battery.

### **Pillow Block, Gimbal and Link Installation**

1. Insert the 290-505-00 cap screws into the two holes in the Robinson hard point block and screw in to ensure thread integrity. Some rework of access holes in skin may be required to allow bolt installation.
2. Remove the two cap screws.
3. Place the Pillow Block, P/N 290-492-01, against the lower skin and install one of the cap screws as shown in Figure 2-1.
4. Partially insert the Roller Pin, P/N 290-440-00, into the Pillow Block, P/N 290-492-01. Hold the Gimbal Assembly, P/N 232-049-01, in position and slide the Roller Pin through the Gimbal Assembly and into the other side of the Pillow Block. Grease the roller pin with Aeroshell 7, MIL-G-23827 or equivalent before assembly.
5. Install the second cap screw and torque both screws to 26 ft-lbs.
6. Safety wire the cap screws to the safety wire ears on the Pillow Block.
7. Grease the bushings with Aeroshell 7, MIL-G-23827, or equivalent before assembly. Install the Load Cell Assembly, P/N 210-181-00, or the Link Assembly, P/N 232-050-00, to the Gimbal Assembly using the hardware shown in Figure 2-1. Install the load cell or link so that the travel limiter identified with the F is facing forward and the travel limiter identified with the A is facing aft. Tighten nut finger tight and then tighten to next available slot for cotter pin. Install new cotter pin.

# Pillow Block, Gimbal and Link Installation, continued

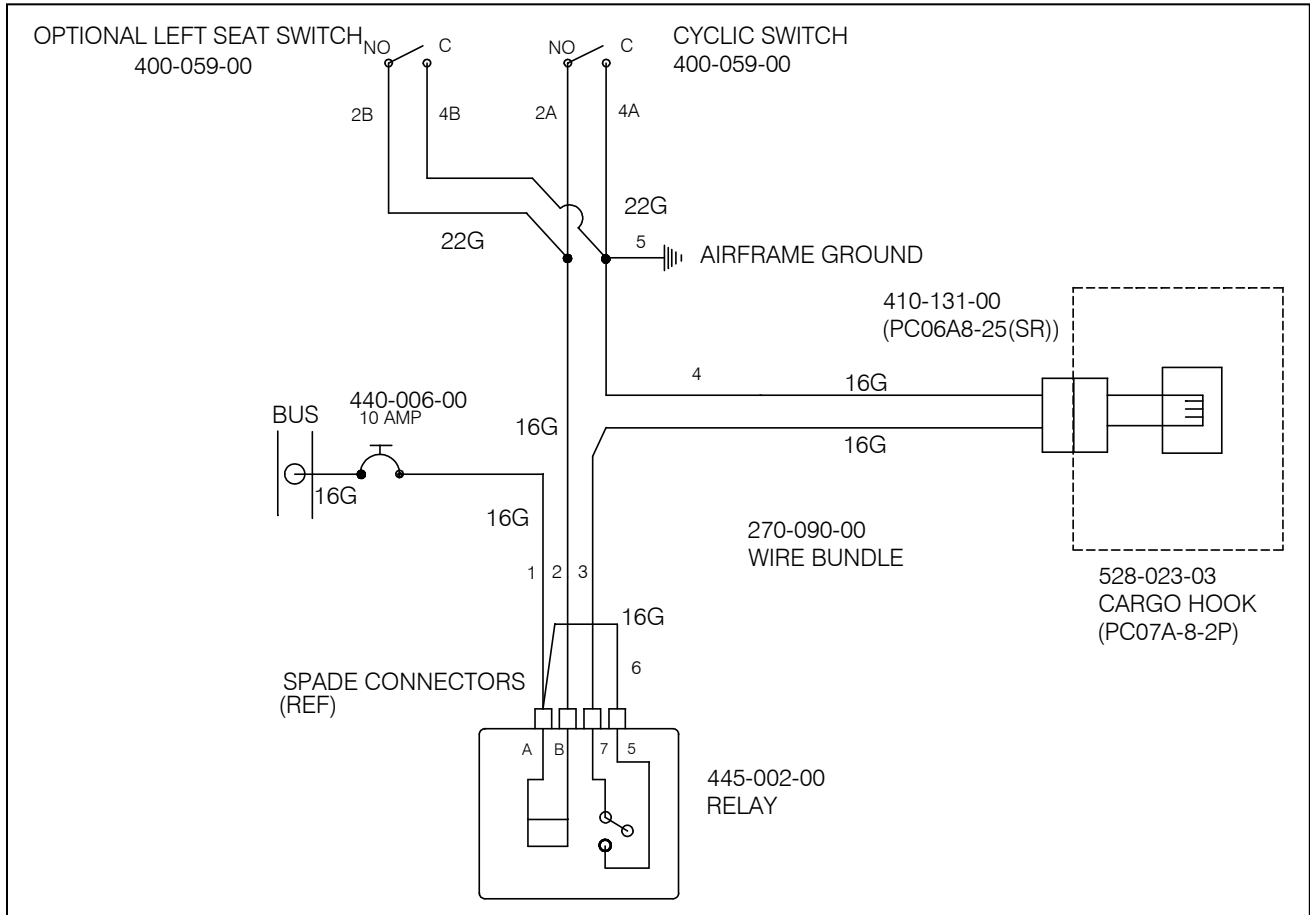
Figure 2-1 Gimbal, Load Cell and Hook Hardware



# Electrical Schematic

The electrical release system is powered from the bus through a 10 amp circuit breaker to a relay in the center tunnel. Switches on the cyclic and copilots seat support control the relay and energize the DC solenoid in the Cargo Hook, opening the hook and releasing the cargo. A schematic for the electrical system is shown below in Figure 2-2.

**Figure 2-2 Electrical Schematic**

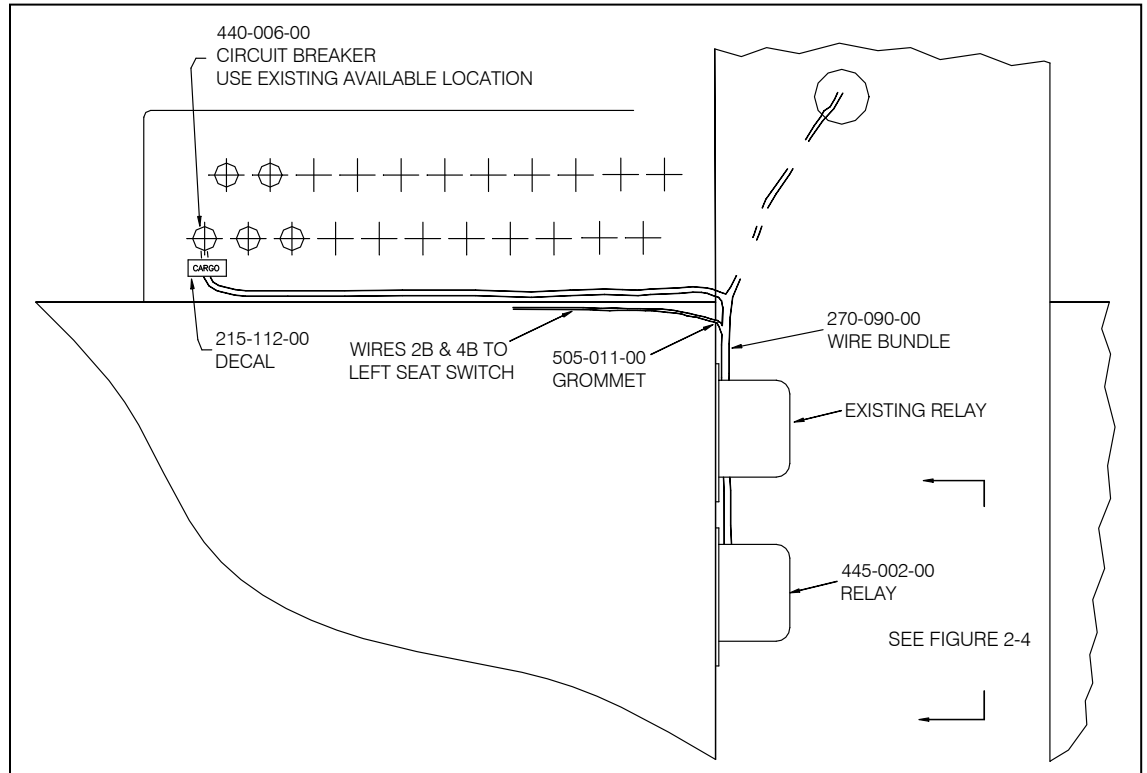


# Wire Harness and Relay

Install the P/N 445-002-00 relay on the keel panel below the existing relay installation using the correct hardware as shown in Figure 2-3 and 2-4.

Place the P/N 270-090-00 main wire bundle into the tunnel on top of the existing wire bundle.

**Figure 2-3 Wire Harness and Relay Installation**



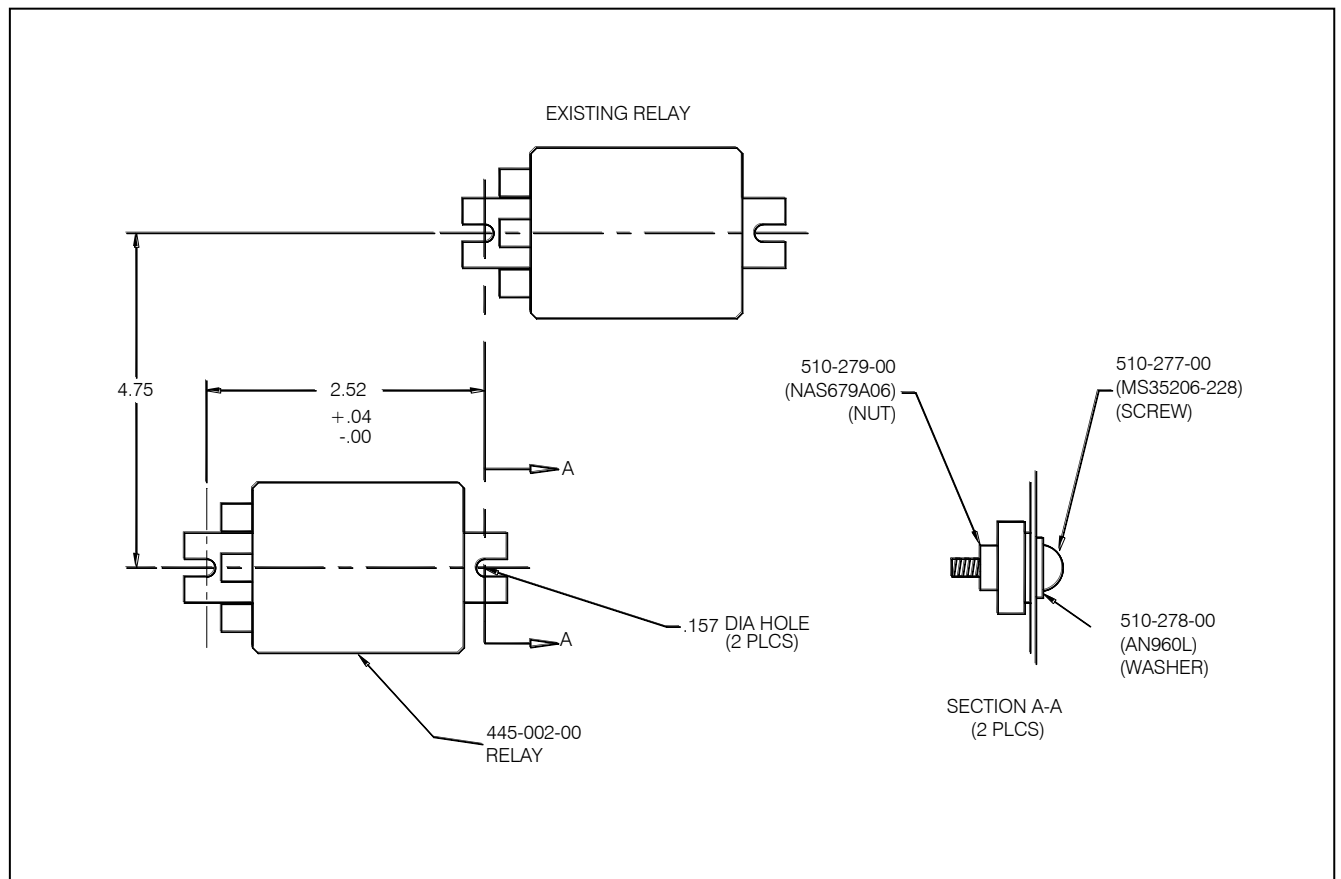
## Wire Harness and Relay, continued

Connect wire numbers 1, 2 and 3 from the main bundle to the relay terminals A, B and 7 as shown in the Figure 2-2 electrical system schematic. Connect jumper wire 6 to relay terminal 5.

Connect the ground lead of wire number 5 to any convenient existing ground location in the tunnel.

Secure the wire bundle with wire ties as required.

**Figure 2-4 Relay Installation**



## Wiring to Circuit Breaker Panel and Circuit Breaker Installation

1. Remove the circuit breaker cover panel and install the P/N 440-006-00 10 amp circuit breaker in an available location. On some early models, it may be necessary to remove the panel and make a hole for the additional circuit breaker.
2. Open the circuit breaker to disarm the cargo hook release circuit.
3. Use the P/N 270-089-00 wire assembly and a P/N 410-162-00 ring terminal as a jumper to power the input side of the circuit breaker in compliance with AC 43.13.
4. Feed the number 1 wire of the main wire bundle from the tunnel into the circuit breaker bay using the existing wire bundle access hole. Connect the wire to the output side of the P/N 440-006-00 circuit breaker using the other P/N 410-162-00 ring terminal provided. Secure the power wire to the existing wire bundles with tie wraps.

## Release Switches Installation

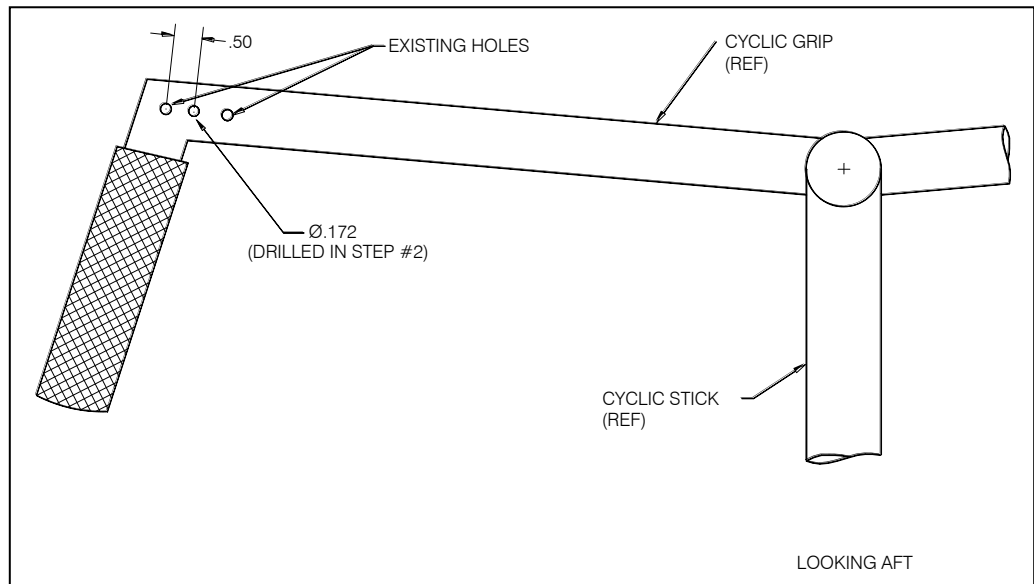
### Cyclic Release Switch Installation

1. Remove the cover to the cyclic switch housing and ensure its wires are clear of the areas to be drilled on the horizontal cyclic control handle.
2. Drill a .172 inch diameter hole on the forward side of the cyclic grip as shown in Figure 2-5.
3. Use a lead wire and route the number 2A and 4A wires up through the cyclic stick and out the existing wire routing hole. Place a length of heat shrink over the wires that will cover the exposed portion similar to the existing com wires.
4. Using a lead wire again, pull the number 2A and 4A wires up through the cyclic grip and out the .172 hole on the front of the cyclic grip.
5. Place a 1 inch length of heat shrink over each wire to the cyclic switch. Prepare each wire end and solder them to the normally open and closed switch terminals as shown in the Figure 2-2 wiring schematic. Using a heat gun, shrink the covering material to final size.



## Release Switches Installation, continued

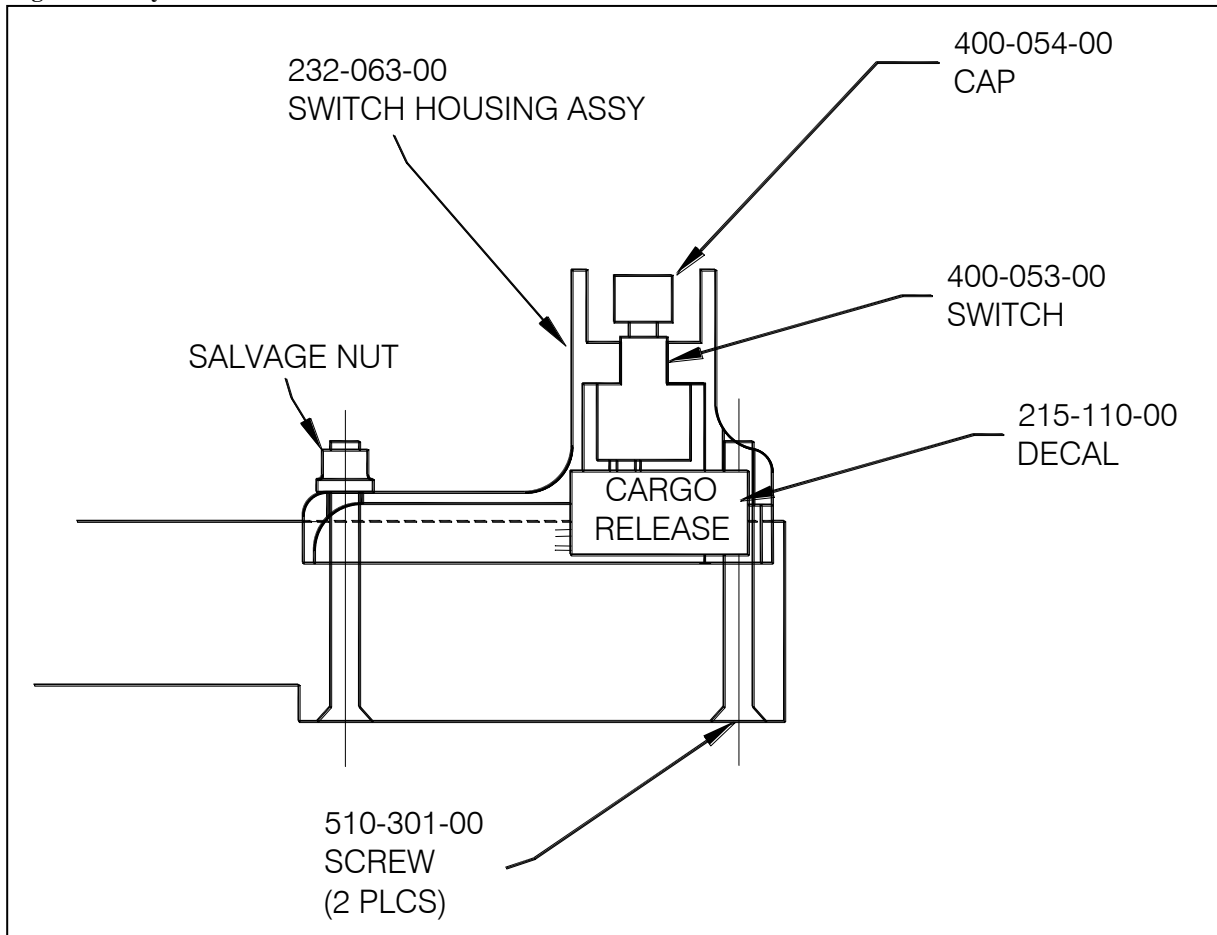
Figure 2-5 Cyclic Switch Wire Routing



6. Install the 400-053-00 switch in the 232-063-00 cyclic switch housing assembly using needle nose pliers to hold the switch. Install the completed switch housing assembly with the correct hardware as shown in Figure 2-6. Remove the existing switch housing screws and replace them with the longer 510-301-00 screws and salvage one of the removed nuts as shown in Figure 2-6.
7. Re-install the com switch housing and wires.
8. Check the cyclic for freedom of motion throughout its complete travel range and ensure the wires are not chafing on any components.

## Release Switches Installation, continued

Figure 2-6 Cyclic Release Switch Installation

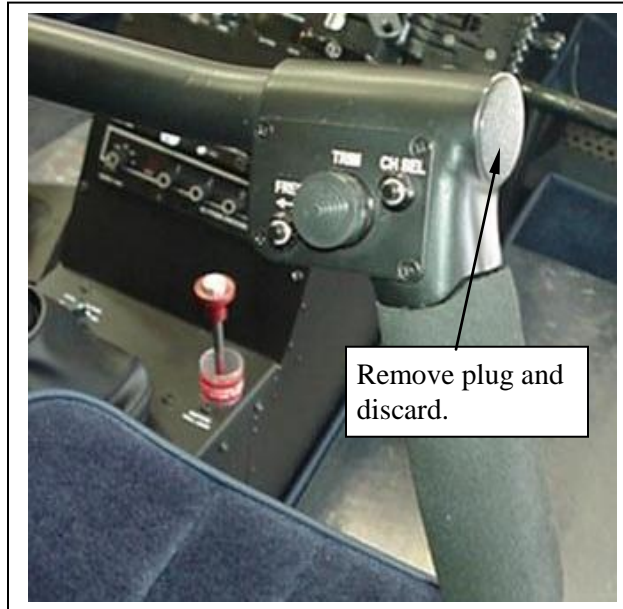


## Release Switches Installation, continued

### Grip Assembly Switch Installation (for use with Robinson Grip Assembly C058)

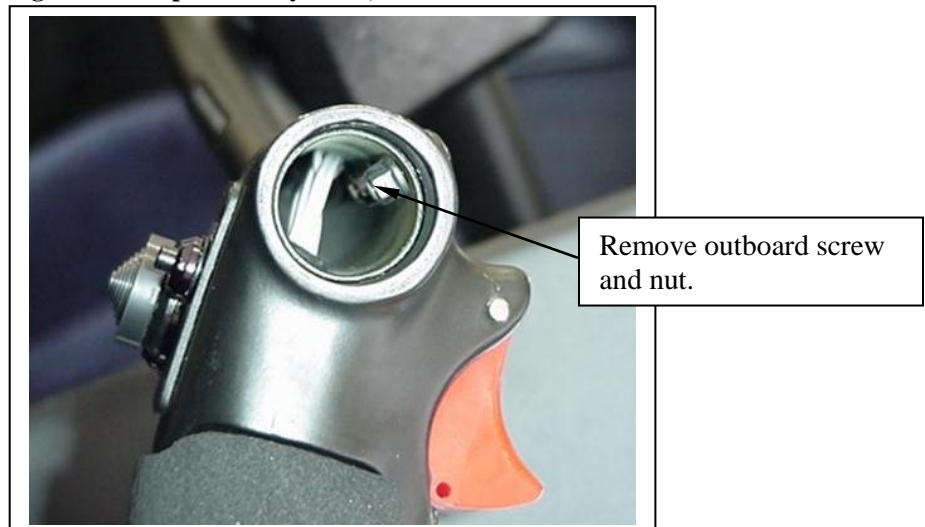
1. Remove Plug (Robinson P/N DP-875) and discard as shown in Figure 2-7.

**Figure 2-7 Grip Assembly C058, Plug Removal**



2. Remove outboard screw (MS27039C0806) and nut (MS21042L08) as shown in Figure 2-8.

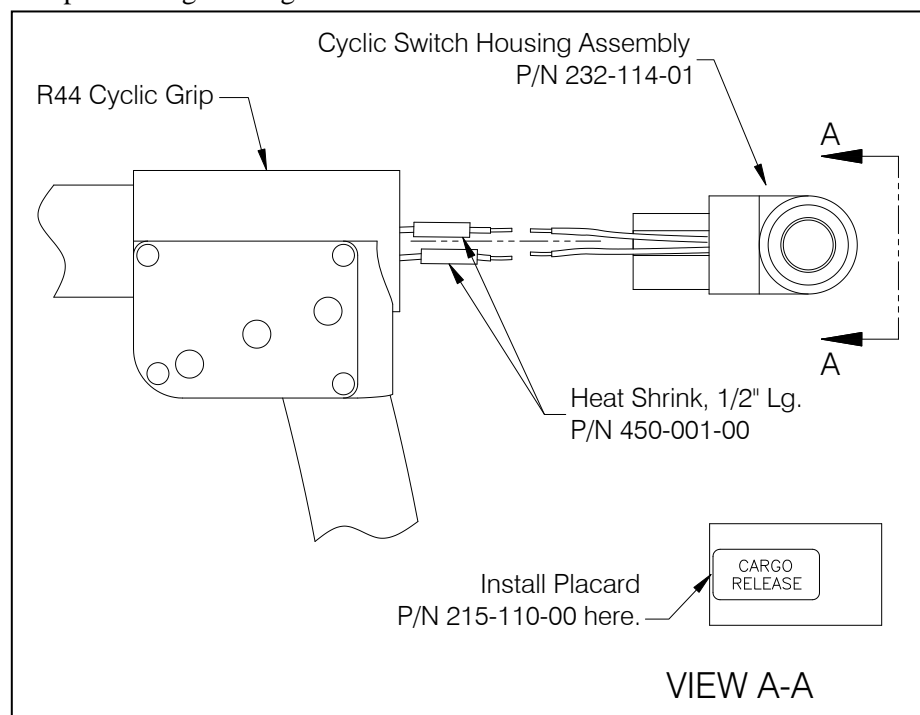
**Figure 2-8 Grip Assembly C058, Screw and Nut Removal**



## Release Switches Installation, continued

### Grip Assembly Switch Installation, continued

- Using a lead wire, pull the number 2A and 4A wires from wire harness P/N 270-090-00 up through the horizontal tube and out the end of the grip assembly.
- Slide a piece of heat shrink (P/N 450-001-00) over the 2A and 4A wires (ref. Figure 2-9).
- Prep and solder, using a lap splice, the 2A wire from up through the cyclic to one of the wires from the switch and the 4A wire from the cyclic to the other wire from the switch.
- Slide the heat shrink over the respective solder joints and shrink in place using a heat gun.



- Install the Switch Housing Assembly into the end of the grip assembly and secure with the Screw (P/N MS27039C0806) removed earlier. The Nut (P/N MS21042L08) removed earlier will not be re-used for this installation and can be discarded.
- Check the cyclic for freedom of motion throughout its complete travel range and ensure the wires are not chafing on any components.

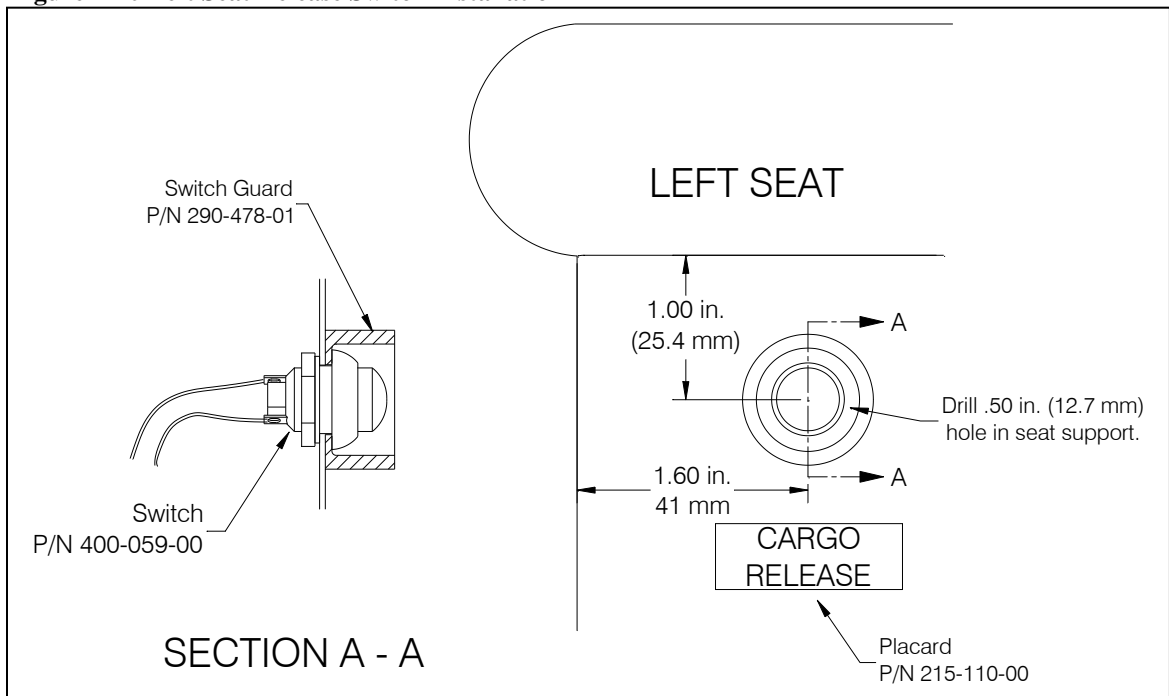
## Release Switches Installation, continued

### Optional Left Seat Release Switch Installation

If the left seat release switch installation is not desired, cap and stow wires 2B and 4B per AC 43.13 and skip this section.

1. Drill a .250 inch hole in the left side of the tunnel wall above the main wire bundle in a convenient location or use an existing unused hole in the tunnel wall. Install Grommet (P/N 505-011-00).
2. Drill a .50 inch hole in the outboard side of the left seat support as shown in Figure 2-10.
3. Route the number 2B and 4B wires through the grommetted hole and through the left baggage area to the .50 inch hole on the outboard seat support. Secure the wires to the forward seat hinge fasteners with two clamps (P/N 512-018-00).
4. Slide the nut (provided with the switch P/N 400-059-00) over the wires from inside the seat support and feed the wires through the .50 inch hole and through the switch guard (P/N 290-478-01).
5. Place a .50 inch length of heat shrink over each wire to the switch. Solder the wires to the switch as shown in the Figure 2-2 wiring schematic. Use a heat gun and shrink the covering material to final size. Place the switch (P/N 400-059-00) into the switch guard and through the seat as shown in Figure 2.10 and secure with nut.

**Figure 2-10 Left Seat Release Switch Installation**



## Mechanical Release Cable Installation

### NOTICE

*Install the mechanical release cable T-handle on the cyclic control cover in the location shown in Figure 2-11. If, due to configuration changes by Robinson Helicopters, this location is not available, locate it as near as possible, or locate on opposite side (in lower right corner) of cyclic control cover.*

**Important:** *Before proceeding with drilling hole for T-handle, verify there is clearance beneath the cyclic control cover for the release cable to extend down.*

1. Drill a .38 inch diameter hole through the left aft corner of the cyclic control cover and box assembly as shown in Figure 2-11. Locate and drill the hole for the cable clamp in the tunnel keel panel as shown in Figure 2-11.
2. Place the 268-014-01 mechanical release cable inside the tunnel and route the output end of the cable out the bottom of the helicopter. Insert the forward end of the cable into the cyclic control cover plate and install the face nut and T-handle as shown in Figure 2-11. Install the cable clamp as shown in Figure 2-11 (install on same side as T-handle) and secure the release cable to it.

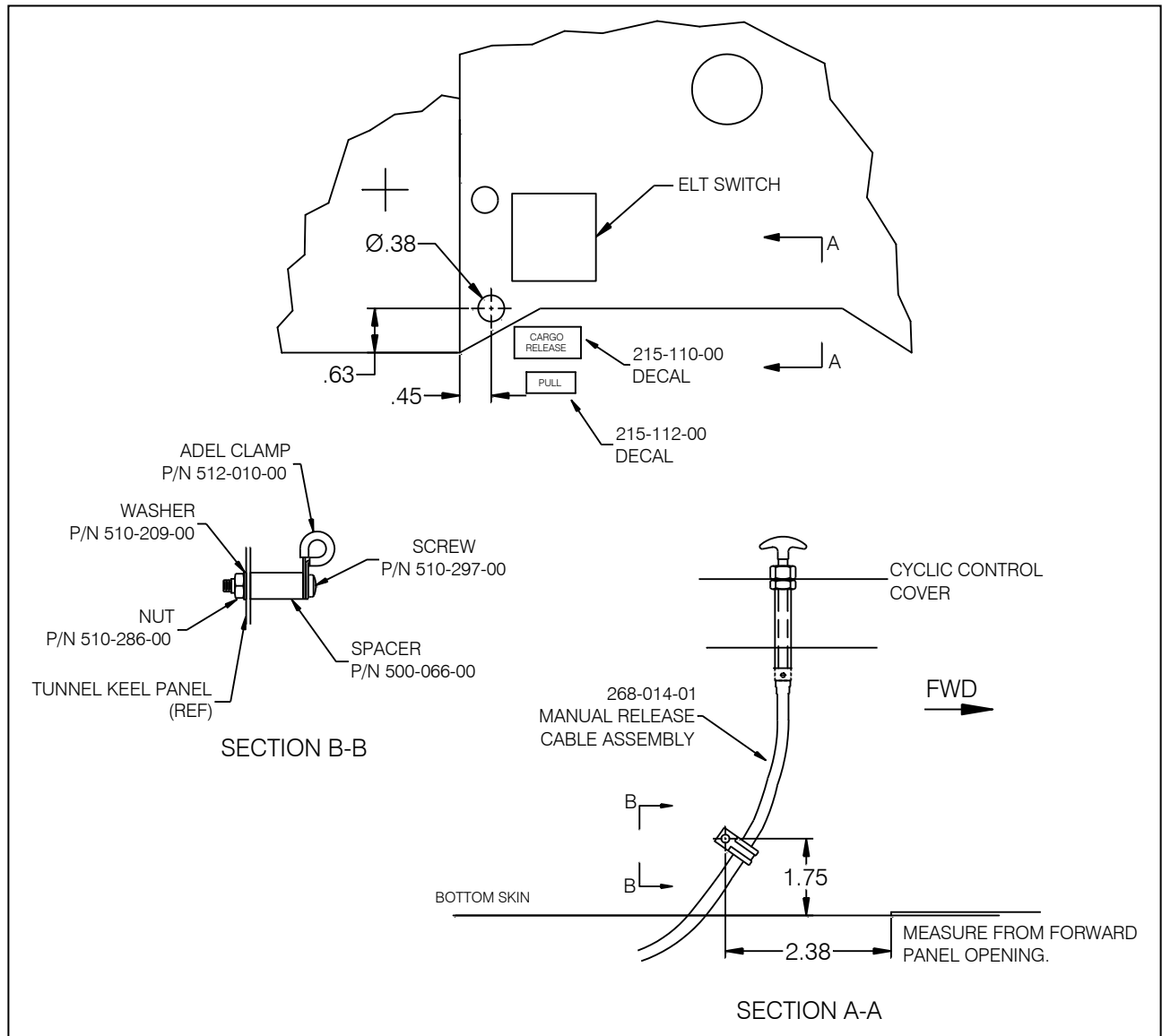
### CAUTION

*Verify that the mechanical release cable does not interfere with push/pull control rods and electrical components in the tunnel and that there is sufficient clearance between these items to allow for motion and account for any slack.*

3. Make a cutout in the forward belly panel as shown in Figure 2-12 and install the 500-065-00 edge grommet.
4. Route the mechanical release cable as shown in Figure 2-12 and secure.

# Mechanical Release Cable Installation, continued

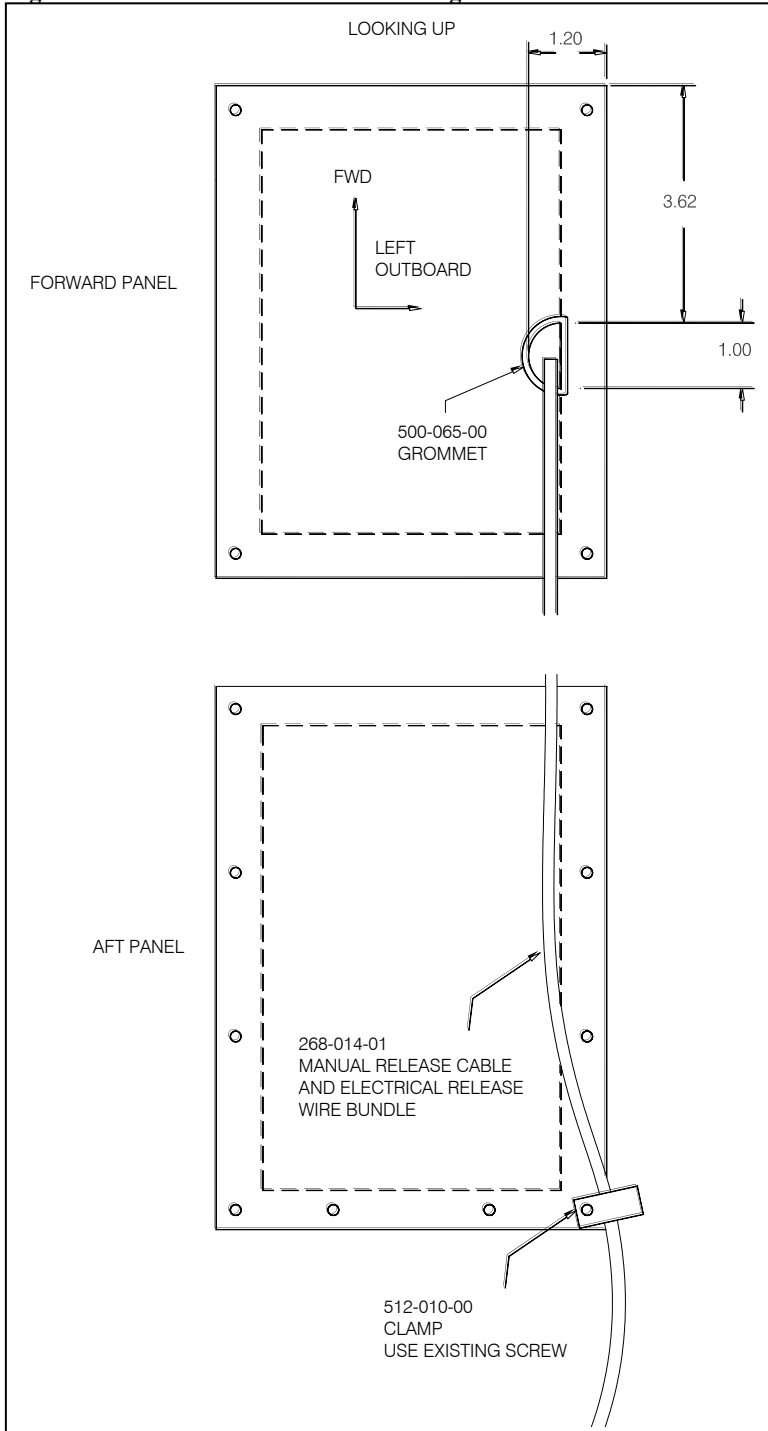
Figure 2-11 Manual Release Cable Installation



# Electrical Release Wire Routing to the Hook

Route the #3 and #4 electrical release wires out the same hole in the forward panel as the mechanical release cable as shown in Figure 2-12. Secure the two release wires to the mechanical release cable with wire ties as necessary and route as shown in Figure 2-12.

**Figure 2-12 Manual Release Cable Routing**

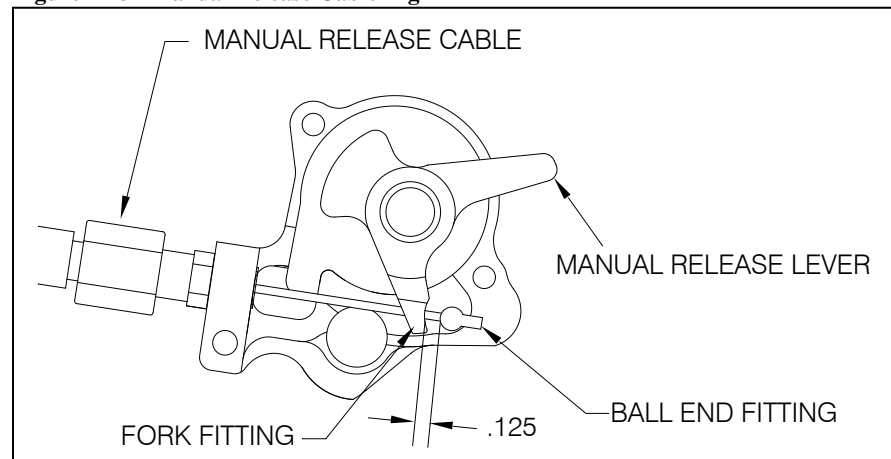




## Attaching the Mechanical Release Cable to Cargo Hook

1. Remove the manual release cover from the 528-023-03 Cargo Hook.
2. Screw the manual release cable into the hook by holding the cable and turning the hook assembly.
3. Place the cable ball end fitting into the hook manual release fork fitting as illustrated in Figure 2-13. Move the manual release lever in the clockwise direction until it is against the cam stop. Measure the cable ball end free play with the manual release handle in the cockpit in the non-release position. Adjust the manual release cable system to allow .125" of free play at the fork fitting as shown in Figure 2-13.
4. Replace the manual release cover. Tighten the jam nut against the hook and safety wire the jam nut to the nearest cover screw. Safety wire the remaining cover screws.

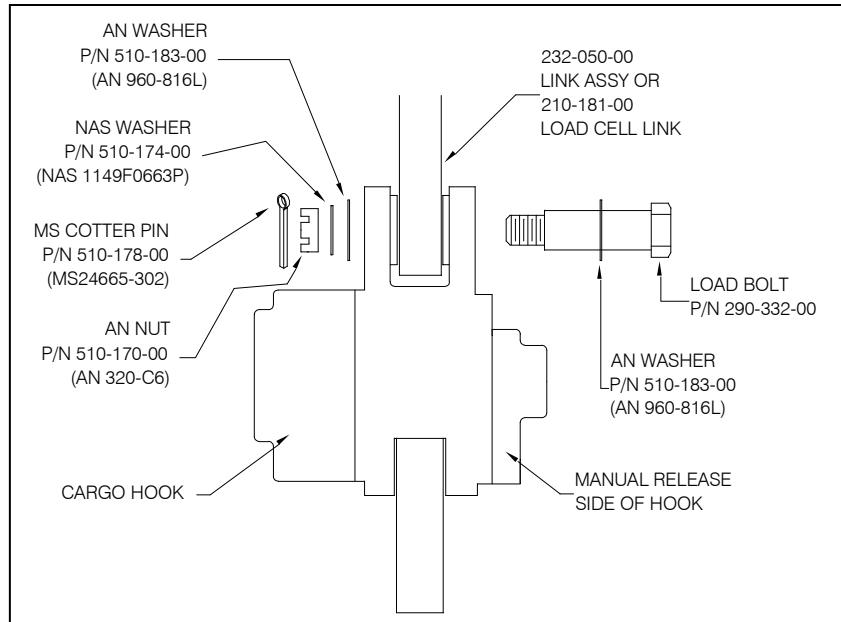
**Figure 2-13 Manual Release Cable Rig**



## Cargo Hook Installation

Install the P/N 528-023-03 Cargo Hook assembly to the link using the correct hardware as shown in Figure 2-14. The cargo hook load beam should point forward.

**Figure 2-14 Cargo Hook Installation**



Tighten nut P/N 510-170-00 on bolt P/N 290-332-00 to finger tight, then rotate to next castellation to install and secure cotter pin P/N 510-178-00

## Wiring Connector

Connect the cargo hook electrical release cable connector to the Cargo Hook. Listed below is the pin out for the cargo hook connector. Safety wire the connector.

**Table 2-1 Cargo Hook Connector**

Pin	Function
A	Ground
B	Power

**CAUTION**

*The Cargo Hook is equipped with a suppression diode that will be damaged if the Cargo Hook electrical connections are reversed. Do not attach the electrical connector until the polarity of the aircraft connector is determined to be compatible with the Cargo Hook connector listed in Table 2-1.*

## Decals and Placards

Install the following decals:

**Table 2-2 Decals**

<b>DECAL NUMBER (DECAL DESCRIPTION)</b>	<b>LOCATION</b>
P/N 215-110-00 (CARGO RELEASE)	Mounted adjacent to the cyclic release switch in clear view of the pilot.
P/N 215-110-00 (CARGO RELEASE)	Mounted adjacent to the left seat release switch in clear view of the pilot. (See Figure 2-10)
P/N 215-110-00 (CARGO RELEASE)	Mounted adjacent to the mechanical release in clear view of the pilot. (See Figure 2-11)
P/N 215-111-00 (PULL)	Mounted adjacent to the mechanical release in clear view of the pilot. (See Figure 2-11)
P/N 215-112-00 (CARGO)	Mounted adjacent to the cargo hook circuit breaker in clear view of the pilot
P/N 215-114-00 (CLASS B ROTORCRAFT..)	Mounted on the instrument panel in clear view of the pilot.
P/N 215-115-00 (FAR PART 133.35(A) OPERATIONS ...)	Mounted on the instrument panel in clear view of the pilot.
P/N 215-119-00 (EXTERNAL LOAD LIMIT = 800 LBS (363 KGS))	Mounted on the belly of the aircraft adjacent to the cargo hook attachment point in clear view of the ground support personnel.

## Installation Check-Out

After installation of the Cargo Hook Suspension System, perform the following functional checks.

1. Swing the installed Cargo Hook to ensure that the manual release cable assembly and the electrical release cable have enough slack to allow full swing of the suspension assembly without straining or damaging the cables. The cables must not be the stops that prevent the Cargo Hook from swinging freely in all directions.
2. With no load on the cargo hook load beam, pull the handle operated cargo hook mechanical release, the Cargo Hook should release. Reset the cargo hook load beam.
3. Close the cargo hook release circuit breaker and position the battery switch to the ON position. With no load on the cargo hook load beam, depress the cargo hook electrical release button, the Cargo Hook should release. using the cyclic and left seat electrical release switches. Reset the cargo hook load beam.

## Component Weights

The weight of the system is listed in Table 2-3.

**Table 2-3 Component Weights**

<b>Item</b>	<b>Weight lbs (kgs)</b>
P/N 200-265-00	5.0 (2.3)

## Cargo Hook Location

**Table 2-4 Cargo Hook Location**

Fuselage Station	92.2
------------------	------

## Paper Work

In the US, fill in FAA form 337 for the initial installation. This procedure may vary in different countries. Make the appropriate aircraft log book entry. Insert the Rotorcraft Flight Manual Supplement 121-007-00 into the Rotorcraft Flight Manual.

# Section 3

## Operation Instructions



*Specific maintenance restrictions apply to the Cargo Suspension System when used to transport fertilizer spreaders or loads with similar rotating tendency. See the Instructions for Continued Airworthiness (ICA) manual 123-005-00 maintenance section for specific time-between-overhaul requirements.*

### Operating Procedures

Prior to each cargo hook use perform the following:

1. Ensure that the Cargo Hook Kit has been properly installed and that the manual and electrical release cables do not limit the movement of the hook.
2. Be completely familiar with this Owners Manual, the ICA Maintenance Manual 123-005-00 and the RFM Supplement 121-007-00.
3. Activate the electrical system and press the cargo hook release button to ensure the cargo hook electrical release is operating correctly. The Cargo Hook should relatch after release. If the hook does not relatch do not use the unit until the difficulty is resolved.



*The release solenoid is intended to be energized only intermittently. Depressing the electrical release button continuously in excess of 20 seconds may cause the release solenoid to overheat, possibly causing permanent damage.*

4. Activate the manual release lever to test the cargo hook manual release mechanism. The mechanism should operate smoothly and the Cargo Hook must release. Reset the hook by hand after release. If the hook does not release or re-latch do not use the unit until the difficulty is resolved.

## Optional Flight Configuration

The aircraft can be operated with the Cargo Hook and gimbal assembly removed. This may be accomplished by removing the Cargo Hook from the 232-050-00 Link Assembly. Then remove the 232-049-01 Gimbal Assembly and 290-492-01 Pillow Block together by removing the two Pillow Block mounting fasteners (290-505-00 See Figure 2-1). Secure the manual release cable and electrical wire bundle to any convenient location on the frame structure using tie wraps.

## Cargo Hook Rigging

Extreme care must be exercised when rigging a load to the Cargo Hook. Steel load rings are recommended to provide consistent release performance and resistance to fouling. The following illustration shows the recommended rigging, but is not intended to represent all rigging possibilities.



*Some combinations of small primary rings and large secondary rings could cause fouling during release.*

It is the responsibility of the operator to assure the cargo hook will function properly with each rigging.

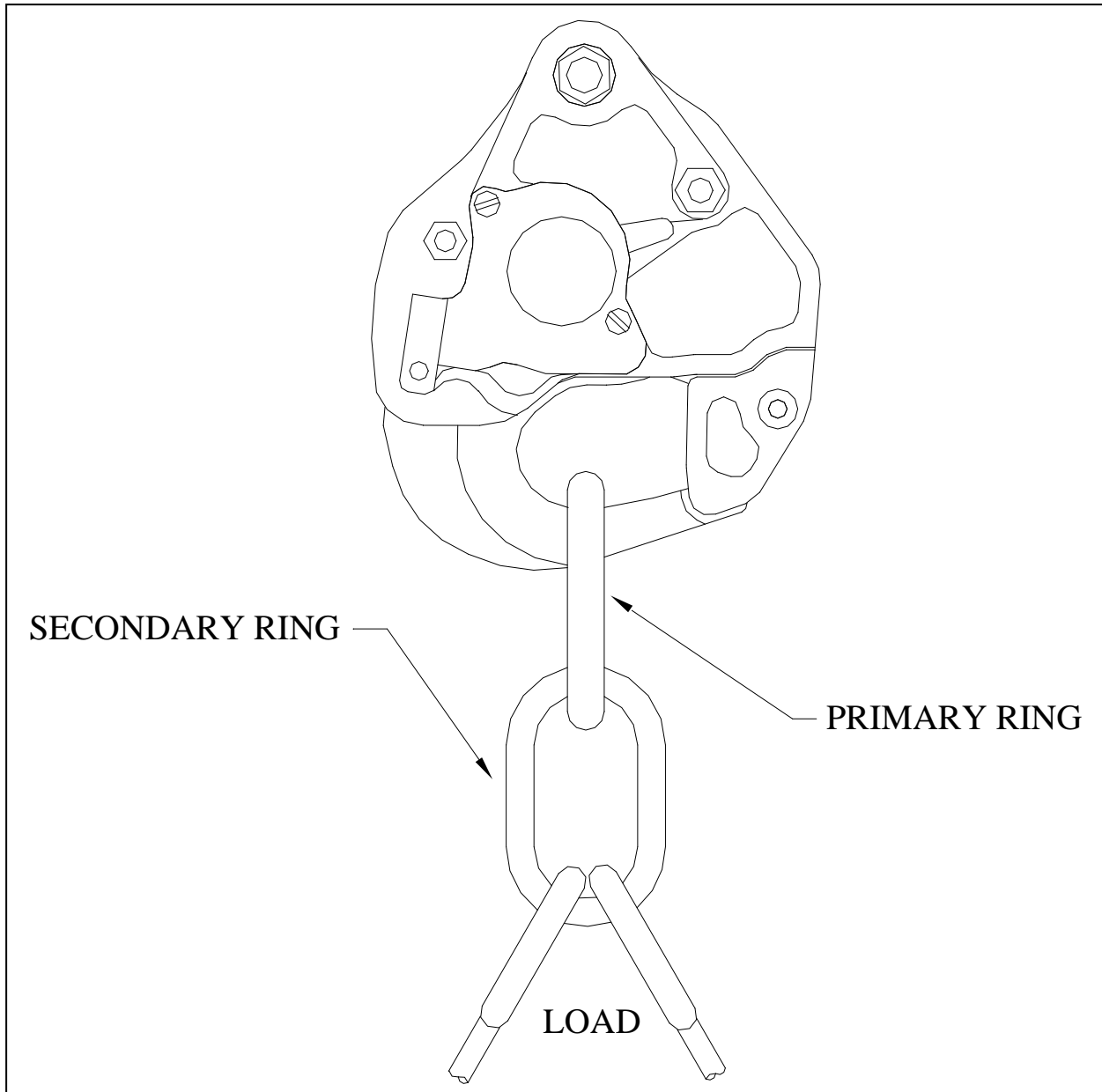
### Nylon Type Straps and Rope



*Nylon type straps (or similar material) or rope must not be used directly on the cargo hook load beam. If nylon straps or rope must be used they should be first attached to a steel primary ring. Verify that the ring will freely slide off the load beam when it is opened. Only the primary ring should be in contact with the cargo hook load beam.*

## Cargo Hook Rigging, continued

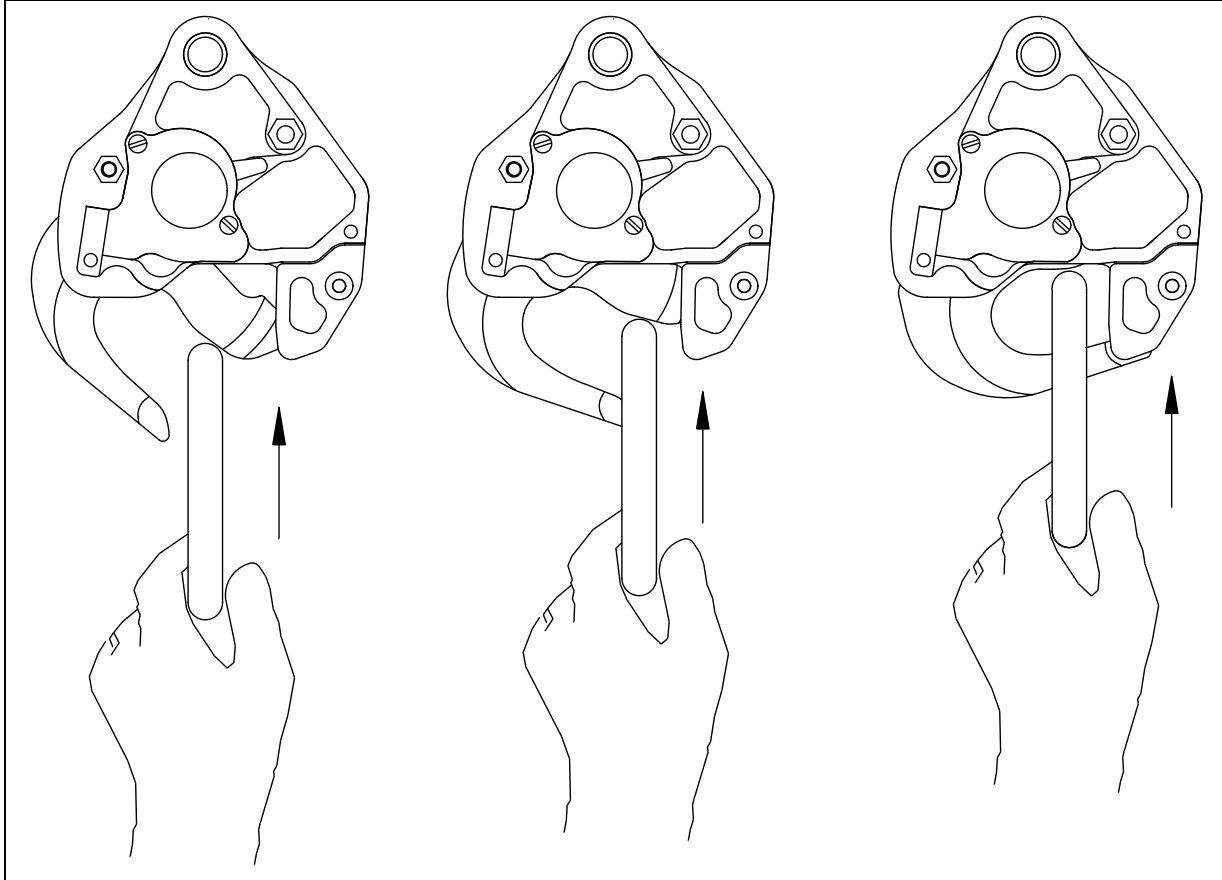
Figure 3-1 Example of Recommended Cargo Hook Rigging



## Cargo Hook Loading

The cargo hook can easily be loaded with one hand. A load is attached to the hook by pushing the ring upward against the upper portion of the load beam throat, as illustrated in Figure 4-2, until an internal latch engages the load beam and latches it in the closed position.

Figure 3-2 Cargo Hook Loading





# Section 4

## Maintenance

Refer to the Instructions for Continued Airworthiness (ICA) manual 123- - 005-00 for maintenance of the cargo hook suspension system, for maintenance of the cargo hook refer to Component Maintenance Manual 122-005-00.

### Instructions for Returning Equipment to the Factory

If an Onboard Systems product must be returned to the factory for any reason (including returns, service, repairs, overhaul, etc) obtain an RMA number before shipping your return.



*An RMA number is required for all equipment returns.*

- To obtain an RMA, please use one of the listed methods.
  - Contact Technical Support by phone or e-mail ([Techhelp@OnboardSystems.com](mailto:Techhelp@OnboardSystems.com)).
  - Generate an RMA number at our website: <http://www.onboardsystems.com/rma.php>
- After you have obtained the RMA number, please be sure to:
  - Package the component carefully to ensure safe transit.
  - Write the RMA number on the outside of the box or on the mailing label.
  - Include the RMA number and reason for the return on your purchase or work order.
  - Include your name, address, phone and fax number and email (as applicable).
  - Return the components freight, cartage, insurance and customs prepaid to:

Onboard Systems  
13915 NW 3rd Court  
Vancouver, Washington 98685  
USA  
Phone: 360-546-3072

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# Section 5

## Certification

### FAA STC

United States of America  
 Department of Transportation—Federal Aviation Administration

## Supplemental Type Certificate

*Number* SR01064SE

*This certificate issued to:* Onboard Systems  
 13915 NW 3<sup>rd</sup> Court  
 Vancouver, WA 98685

*certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part 27 of the Federal Aviation Regulations*

*Original Product—Type Certificate Number:* H11NM  
*Make:* Robinson  
*Model:* R44, R44 II

*Description of the Type Design Change:* Fabrication of Onboard Systems Model 200-265-00 12 Volt Talon LC Keeperless cargo hook kit, Model 200-288-00 28 Volt Talon LC Keeperless cargo hook kit without load weigh, and 200-289-00 28 Volt Talon LC Keeperless cargo hook kit with load weigh, in accordance with FAA Approved Onboard Systems Master Drawing List No. 155-062-00, Revision 15, dated November 24, 2010, or later FAA approved revision.


*Installation of the Onboard Systems cargo hook kit part number 200-265-00 in accordance with FAA approved Onboard Systems Owner's Manual 120-097-00, Revision 11, dated November 9, 2010, or later FAA approved revision. This modification must be inspected and maintained in accordance with section ATA 5 of FAA approved Onboard Systems Instructions for Continued Airworthiness Document 123-005-00, Revision 9, dated February 15, 2011, or later FAA approved revision, and Cargo Hook Component Maintenance Manual, 122-005-00, Revision 20, dated November 23, 2010, or later FAA approved revision.*

*Installation of the Onboard Systems cargo hook kit part numbers 200-288-00 or 200-289-00 in accordance with FAA approved Onboard Systems Owners Manual 120-111-00, Revision 10, dated February 26, 2008, or later FAA approved revision. This modification must be inspected and maintained in accordance with section ATA 5 of FAA approved Onboard Systems Instructions for Continued Airworthiness Document 123-016-00, Revision 5, dated June 01, 2007, or later FAA approved revision, Suspension System Owner's Manual 120-111-00, Revision 10, dated February 26, 2008, or later FAA approved revision, and Cargo Hook Component Maintenance Manual, 122-005-00, Revision 20, dated November 23, 2010, or later FAA approved revision.*


(See Page 3 for Limitations and Conditions)

*This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.*

*Date of application:* September 22, 2000      *Date reissued:*  
*Date of issuance:* March 13, 2002      *Date amended:* 10/17/2003, 8/10/2004, March 15, 2011



*By direction of the Administrator*



(Signature)  
 Acting Manager, Seattle Aircraft  
 Certification Office  
 (Title)

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*Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.*

*This certificate may be transferred in accordance with FAR 21.47.*

FAA Form 8110-2(10-88)

# FAA STC continued

United States of America  
Department of Transportation—Federal Aviation Administration

## Supplemental Type Certificate (Continuation Sheet)

*Number* SR01064SE

**Onboard Systems**  
Reissued:  
Amended: 10/17/2003, 8/10/2004, March 15 2011

*Limitations and Conditions:* Approval of this change in type design applies to only the Robinson R44 and R44 II rotorcraft equipped with Robinson hard point/tiedown block P/N D134-1. This approval should not be extended to rotorcraft of these models on which other previously approved modifications are incorporated unless it is determined by the installer that the relationship between this change and any of those other previously approved modifications, including changes in type design, will introduce no adverse effect upon the airworthiness of that rotorcraft. This modification has been approved by the FAA for Class B and C Rotorcraft-Load Combinations, Non-human External Cargo only. Modified rotorcraft must be operated in accordance with an FAA approved copy of Onboard Systems Rotorcraft Flight Manual Supplement (RFMS) No. 121-007-00, Revision 3, dated February 22, 2011, or later FAA approved revision for the Robinson R44 rotorcraft and Onboard Systems Rotorcraft Flight Manual Supplement (RFMS) No. 121-017-00, Revision 2, dated April 22, 2005, or later FAA approved revision, for the Robinson R44 II rotorcraft. A copy of this Certificate, Owner's Manual, Service Manual and the FAA approved RFMS must be maintained as a part of the permanent records of the modified rotorcraft.

If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

- END -

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Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

FAA Form 3110-2-1 (10-09) This certificate may be transferred in accordance with FAR 21.47.

PAGE 3 OF 3 PAGES

# Canadian Approval



Transport  
Canada

Aviation

Transports  
Canada

Aviation

Aircraft Certification Branch  
620 - 800 Burrard Street  
Vancouver, BC V6Z 2J8

Your file    Votre référence  
190S-03-500  
Our file    Notre référence

July 28, 2003

Onboard Systems  
13915 NW 3<sup>rd</sup> Court  
Vancouver, WA 98685  
USA

Attention: Mr. Ron Pirtle

Subject: Type design examination of FAA STC SR01064SE on Robinson R-44

Dear Sir:

This is in response to your letter, dated 2003/05/29, requesting Transport Canada approval of the subject STC.

In accordance with our current policy associated with the review of foreign STCs, FAA STCs applicable to Normal Category Rotorcraft which were type certified on the basis of FAR 27 or equivalent standards, for which the U.S. is the State of Design are exempt from a type design examination except where the FAA STC requires compliance with snow ingestion requirements set out in AWM 527.1093(b).

The subject STC is exempted from a type design examination in Canada. If you have any questions with regards to this matter please do not hesitate to contact the undersigned at 604-666-5597.

Yours truly,

H. W. Wong

for  
Minister of Transport

c.c. Mr. Jeffrey E. Duven  
Acting Manager, Seattle ACO

Canada

1/1



**European Aviation Safety Agency**

## **SUPPLEMENTAL TYPE CERTIFICATE**

**EASA.IM.R.S.01171**

This certificate, established in accordance with Regulations (EC) No 1592/2002 and (EC) No 1702/2003 and issued to:

**Onboard Systems International**  
13915 NW 3rd Court  
Vancouver Washington 98685  
USA

certifies that the change in the type design for the product listed below with the limitations and conditions specified meets the applicable type certification basis and environmental protection requirements when operated within the conditions and limitations specified below:

**Original Product Type Certificate number:** *FAA TCDS H11NM*

**Manufacturer:** *Robinson*

**Model:** *R44, R44 II*

**Original STC number:** *FAA STC SR001064SE*

**Description of Design Change:**

Cargo hook suspension system i.a.w. US STC SR001064SE

**Associated Technical Documentation:**

- FAA approved Onboard Systems Rotorcraft Flight Manual Supplement No. 121-007-00, dated April 22, 2005 or later approved revision for the Robinson R44 rotorcraft



**European Aviation Safety Agency**

- FAA approved Onboard Systems Rotorcraft Flight Manual Supplement No. 121-017-00, dated April 22, 2005 or later approved revision for the Robinson R44 II rotorcraft
- FAA approved Onboard Systems Owner's Manual 120-097-00, dated October 10, 2003 or later approved revision for kit P/N 200-265-00 and 200-266-00
- FAA approved Onboard Systems Owner's Manual 120-111-00, dated October 10, 2003 or later approved revision for kit P/N 200-288-00 and 200-289-00
- FAA approved Onboard Systems Instructions for Continued Airworthiness 123-005-00, dated August 3, 2000 or later approved revision for kit P/N 200-265-00 and 200-266-00
- FAA approved Onboard Systems Instructions for Continued Airworthiness 123-016-00, dated April 17, 2003 or later approved revision for kit P/N 200-288-00 and 200-289-00
- Cargo Hook Service Manual 120-005-00, dated November 9, 2000 or later approved revision

**Limitations and Conditions:**

This STC is approved only for the product configuration as defined in the approved design data referred to in the paragraph "Description". Compatibility with other aircraft/engine configurations shall be determined by the installer.

This certificate shall remain valid unless otherwise surrendered or revoked.

For the European Aviation Safety Agency,  
Date of Issue: 4 January 2006

**M. Mazzoletti**  
**Certification Manager**  
Rotorcraft, Balloons, Airships