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Instructions for Continued Airworthiness

Cargo Hook Sling Suspension System Retrofit Kit
for the
Airbus Helicopters AS350 Series Helicopter

Part Number 200-287-01

STC SR01394SE

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Record of Revisions

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0	02/17/14	All	First Issue
1	02/21/18	Section 5 page 7	Removed magnetic particle inspection requirement for load cell assembly, inserted instructions to return load cell to factory for inspection/calibration.

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List of Effective Pages

Title	Pages	Revision	Date
Cover	*i, ii* Blank	1	02/21/18
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Section 5 Inspection and Overhaul Schedule 05-00-00	7	1	02/21/18
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Tables

Section 0
Introduction

0.4 Scope

The following information is necessary to carry out the service, maintenance, and inspection of the Cargo Hook Sling Suspension System Retrofit Kit P/N 200-287-01.

0.5 Purpose

The purpose of this Instructions for Continued Airworthiness (ICA) manual is to provide the information necessary to inspect, service, and maintain in an airworthy condition the P/N 200-287-01 Cargo Hook Sling Suspension System Retrofit Kit.

0.6 Arrangement

This manual contains instructions for the service, maintenance, inspection and operation of the Cargo Hook Sling Suspension System Retrofit Kit P/N 200-287-01 on Airbus Helicopters AS350 series helicopters. The manual is arranged in the general order that maintenance personnel would use to maintain and operate the Cargo Hook Sling Suspension System in service.

The arrangement is:

Section 0 Introduction
Section 4 Airworthiness limitations (None apply to this System.)
Section 5 Inspection and overhaul schedule
Section 11 Placards and Markings
Section 25 Equipment and Furnishings

0.7 Applicability

These Instructions for Continued Airworthiness are applicable to Cargo Hook Sling Suspension System Retrofit Kit P/N 200-287-01 for the Airbus Helicopters AS350 Series Helicopters. Refer to the appropriate Airbus Helicopters maintenance documentation for instructions regarding parts of the aircraft that interface with these kits.

0.9 Abbreviations

FAA Federal Aviation Administration
FAR Federal Aviation Regulation
ICA Instructions for Continued Airworthiness

0.12 Precautions

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.

0.19 Distribution of Instructions for Continued Airworthiness

Before performing maintenance ensure that the Instructions for Continued Airworthiness (ICA) in your possession is the most recent revision. Current revision levels of all manuals are posted on Onboard Systems Int'l web site at www.onboardsystems.com.

Onboard Systems offers a free notification service via fax or e-mail for product alerts and documentation updates. By registering Onboard Systems products on the web site, we will be able to contact you if a service bulletin is issued, or if the documentation is updated.

Notices can be chosen to be received on an immediate, weekly, or monthly schedule via fax, email or both methods. There is no charge for this service. Please visit the Onboard Systems web site at www.onboardsystems.com/notify.php to get started.

Section 4
Airworthiness Limitations

The Airworthiness Limitations section is FAA approved and specifies inspections and other maintenance required under Secs. 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

No airworthiness limitations are associated with this type design change.

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Section 5
Inspection and Overhaul Schedule

5.1 Cargo Hook Sling Suspension Inspection

The scheduled inspection intervals noted below are maximums and are not to be exceeded. If the system is subjected to unusual circumstances, extreme environmental conditions, etc., it is the responsibility of the operator to perform the inspections more frequently to ensure proper operation.

Annually or 100 hours of external load operations, whichever comes first, inspect the cargo hook sling suspension system per the following. Refer also to the Component Maintenance Manual (CMM) for the cargo hook for additional inspections.

1. Activate the electrical system and press the Cargo Release button to ensure the cargo hook electrical release system is operating correctly. 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 problem is fixed.

CAUTION

Depressing the electrical release button continuously in excess of 20 seconds will cause the cargo hook release solenoid to overheat, possibly causing permanent damage.

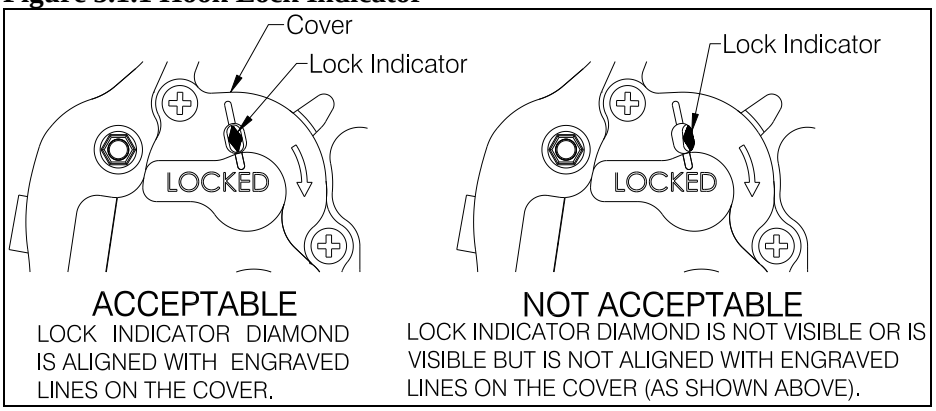
2. Activate the manual release system by pulling the release lever on the collective in the cockpit. The mechanism should operate smoothly and the cargo hook must release. Reset the hook by hand after release. Verify that the hook lock indicator on the side of the hook returns to the fully locked position. If the hook does not release or re-latch, do not use the unit until the problem is resolved.

⚠ CAUTION

In the fully locked position the hook lock indicator must align with the lines on the manual release cover (see Figure 5.1.1).

5.1 Cargo Hook Sling Suspension Inspection continued

Figure 5.1.1 Hook Lock Indicator

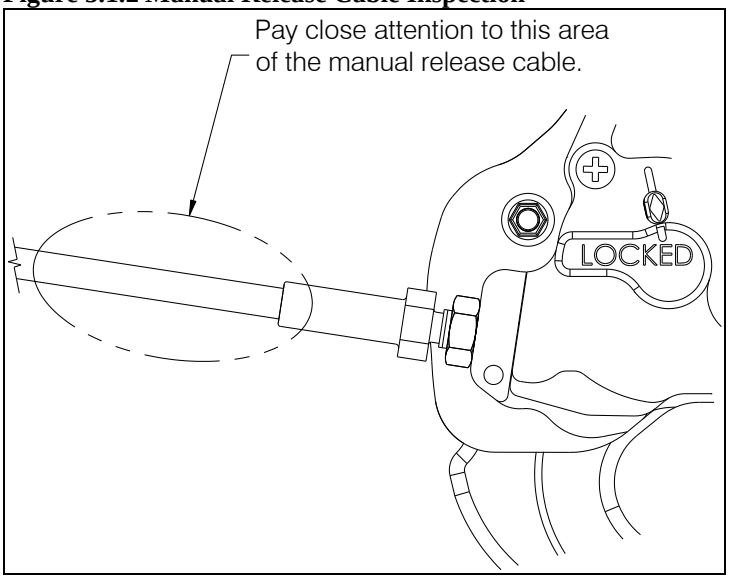


3. Visually inspect for corrosion on the exterior of cargo hook, load cell and sling suspension components.
4. Move the cargo hook and the sling suspension throughout their full ranges of motion and observe the manual release cable and electrical harnesses to ensure that they have enough slack. The release cable and electrical harnesses must not be the stops that prevent the cargo hook or sling suspension from moving freely in all directions.
5. Swing the cargo hook and the sling suspension and ensure all pivot points rotate freely without binding.
6. Visually inspect for presence and security of fasteners and electrical connections.
7. Visually inspect the external electrical wire harnesses for damage, chafing and security.

5.1 Cargo Hook Sling Suspension System Inspection continued

8. Visually inspect the manual release cable for damage, paying close attention to the flexible conduit at the area of transition to the cargo hook end fitting (refer to Figure 5.1.2). Inspect for splitting of the outer black conduit in this area and separation of the conduit from the steel end fitting.

Figure 5.1.2 Manual Release Cable Inspection

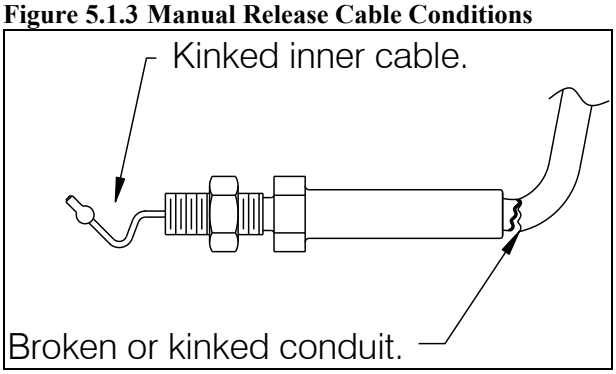


9. Remove the manual release cover from the cargo hook and inspect the visible section of the inner cable for kinks or frays.

⚠ CAUTION

Manual release cables are wearable items and must be replaced as condition requires. Broken or kinked conduit, inner cable kinks (ref Figure 5.1.3), frays, or sticky operation are each cause for immediate replacement.

Figure 5.1.3 Manual Release Cable Conditions

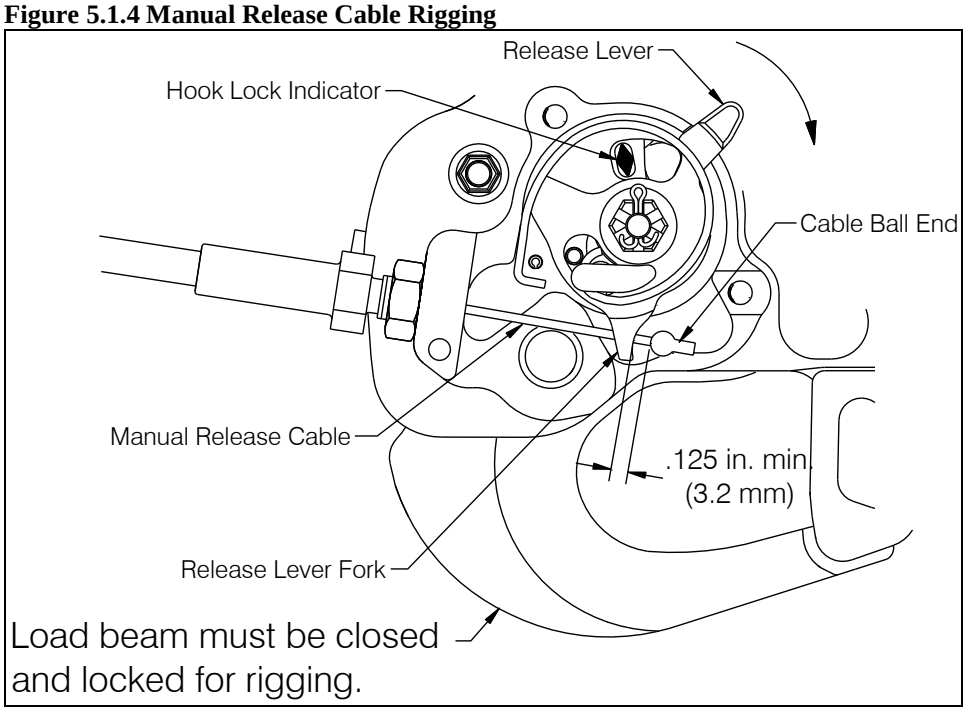


5.1 Cargo Hook Sling Suspension Inspection continued

10. Check the rigging of the manual release cable. With the manual release cover removed from the cargo hook and with the cargo hook closed and locked, rotate the release lever in the clockwise direction to remove free play (this is felt as the lever rotates relatively easily for several degrees as the free play is taken up) and measure the gap between the cable ball end and the release lever fork with the manual release lever in the cockpit in the non-release position. This gap should be a minimum of .125 inches (3.2 mm) as shown in Figure 5.1.4.

    If the gap does not measure at least .125", make adjustments at the cargo hook or at the manual release lever on the collective. Adjustments at the hook are done by disconnecting the manual release cable at the interface with the fixed manual release cable, loosening the jam nut, and rotating the manual release cable in the required direction.

Figure 5.1.4 Manual Release Cable Rigging



11. Verify calibration of the load cell by lifting a load of known weight (see applicable Owner's Manual for instructions).

5.1 Cargo Hook Sling Suspension Inspection continued

Every 5 years or 1000 hours of external load operations, perform the following.

Remove the suspension assembly from the helicopter (see section 25.17) and remove cotter pins and nuts at each pivot point to separate components as shown below.

Figure 5.1.5 Sling Suspension Assembly Parts (P/N 232-435-00)

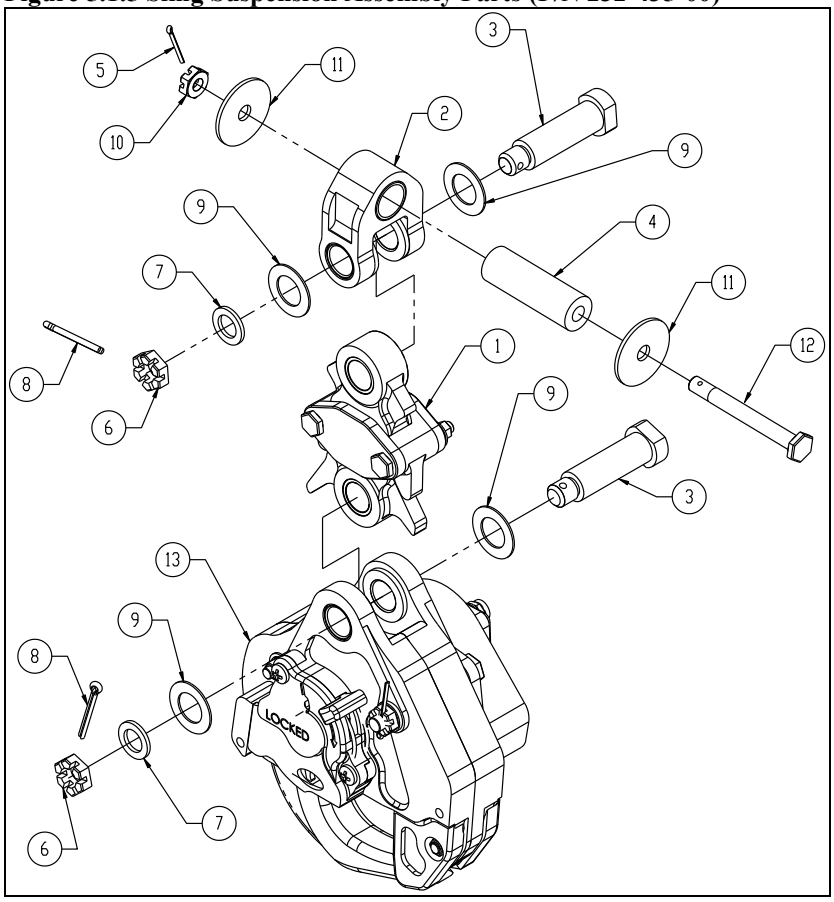


Table 5.1.1 Sling Suspension Assembly Parts

Item	Part No.	Description	Qty
1	210-203-03	Sling Load Cell Assembly	1
2	232-144-00	Sling Gimbal Assembly	1
3	290-332-00	Attach Bolt	2
4	290-766-00	Gimbal Pin	1
5	510-081-00	Cotter Pin	1
6	510-170-00	Nut	2
7	510-174-00	Washer	2
8	510-178-00	Cotter Pin	2
9	510-183-00	Washer	4
10	510-259-00	Nut	1
11	510-336-00	Washer	2
12	510-451-00	Bolt	1
13	528-029-00	Cargo Hook	1

5.1 Cargo Hook Sling Suspension Inspection continued

The Sling Gimbal Assembly parts are shown below.

Figure 5.1.6 Sling Gimbal Assembly (P/N 232-144-00)

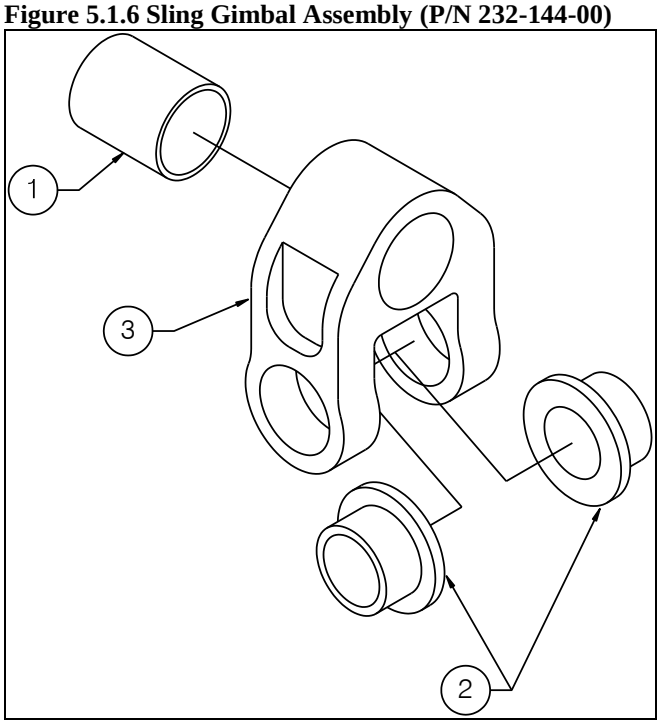


Table 5.1.2 Sling Gimbal Assembly Parts

Item	Part No.	Description	Qty
1	517-051-00	Bushing	1
2	290-294-00	Bushing	2
3	290-767-00	Gimbal	1

5.1 Cargo Hook Sling Suspension System Inspection continued

Return the Load Cell Assembly (P/N 210-203-00 or 210-203-03) to the factory for inspection and calibration. The factory will inspect the condition of the load cell and perform acceptance test procedures including calibration and zero balance, repairing as necessary.

Carefully inspect, and if necessary repair or replace, the detail parts in accordance with the instructions in Table 5.1.3. Inspect the parts in a clean, well-lit room.

Table 5.1.3 Suspension System Inspection Criteria

Component	Damage Permitted without Repair	Repair	Maximum Damage which Causes Replacement
Load Cell Assembly P/N 210-203-00 or P/N 210-203-03 (item 1, Figure 5.1.5)	Dents, gouges, and scratches less than .010" deep in the load link.	Blend at 20:1 ratio, length to depth, to provide smooth transitions. Part is 15-5 stainless steel, no touch up paint required.	Dents, gouges, and scratches greater than .020" deep in the load link. Cracks.
	Wear on inside diameter of bushings (P/N 290-364-00), diameter less than .520".	None.	Wear on inside diameter of bushings, diameter equal to or greater than .520".
	Dents, gouges, and scratches less than .030" deep in the covers.	Blend at 20:1 ratio, length to depth, to provide smooth transitions. Protect affected surfaces with MIL-PRF-23377 Type 1 epoxy primer or equivalent.	Dents, gouges, and scratches greater than .060" deep in the covers.
Attach Bolt (2) P/N 290-332-00 (item 3, Figure 5.1.5)	Wear on outside diameter, diameter equal to or greater than .495".	None.	Wear on outside diameter, diameter less than .495".
Gimbal Pin P/N 290-766-00 (item 4, Figure 5.1.5)	Wear on outside diameter, diameter equal to or greater than .580".	None.	Wear on outside diameter, diameter less than .580".

5.1 Cargo Hook Sling Suspension System Inspection continued

Table 5.1.3 Suspension System Inspection Criteria continued

Component	Damage Permitted without Repair	Repair	Maximum Damage which Causes Replacement
Bushing P/N 517-051-00 (item 1, Figure 5.1.6)	These bushings have a Teflon type film overlaid on a layer of sintered copper. Teflon film still covers more than 50% of the bushing wear area.	None.	If copper is visible over more than 50% of the bushing wear area, remove and replace the bushing.
Bushing (2) P/N 290-332-00 (item 2, Figure 5.1.6)	Wear on inside diameter, diameter less than .520”.	None.	Wear on inside diameter, diameter equal to or greater than .520”.
Gimbal P/N 290-767-00 (item 3, Figure 5.1.6)	Dents, gouges, and scratches less than .010” deep.	Blend at 20:1 ratio, length to depth, to provide smooth transitions.	Dents, gouges, and scratches greater than .020” deep. Cracks.

5.1 Cargo Hook Sling Suspension System Inspection continued

Sling Suspension Re-assembly

1. If bushings were removed, press in with zinc chromate primer (TT-P-1757 or
2. Apply grease (Mobilgrease 28 or equivalent) to the outside diameter of attach bolts and gimbal pin.
3. Re-assemble parts, referring to Figure 5.1.5.
4. Tighten nuts until fully seated, finger tight only. Then back off to previous castellation to install cotter pins.

5.2 Cargo Hook Overhaul Schedule

Time Between Overhaul (TBO) for the cargo hook: 1000 hours of external load operations or 5 years, whichever comes first.

*Hours of external load operations should be interpreted to be **(1)** anything is attached to the primary cargo hook (whether or not a useful load is being transported) and **(2)** the aircraft is flying. If these conditions are **NOT** met, time does **NOT** need to be tracked.*

Overhaul instructions for the cargo hook are contained in Component Maintenance Manual 122-017-00. Contact Onboard Systems for guidance to locate authorized overhaul facilities.

Section 11
Placards and Markings

11.1 Placards

The 200-287-01 Cargo Hook Sling Suspension Retrofit Kit utilizes the existing placards from the Airbus Helicopters system it is intended to upgrade. Consult the Airbus Helicopters ICA (or equivalent) for placarding.

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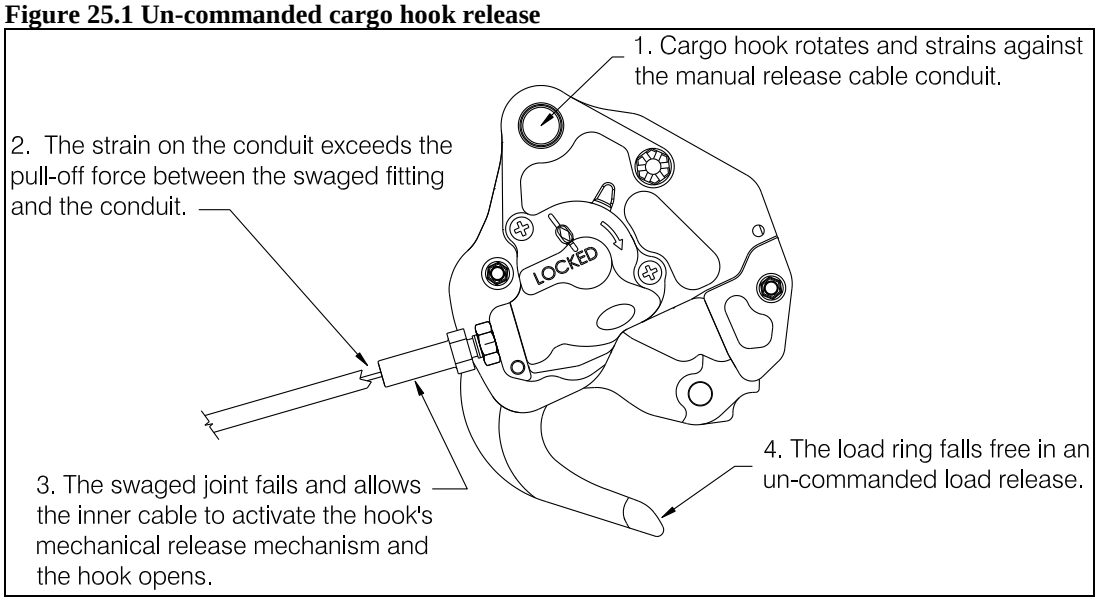
Section 25
Equipment and Furnishings

WARNING

Un-commanded cargo hook release will happen if the manual release cable is improperly restrained. The cables must not be the stops that prevent the Cargo Hook from swinging freely in all directions. If the Cargo Hook loads cause the hook to strain against the manual release cable the swaged end of the cable may separate allowing the inner cable to activate the cargo hook manual release mechanism. The result is an un-commanded release. Ensure that no combination of cyclic stick or Cargo Hook position is restrained by the manual release cable.

Figure 25.1 Un-commanded cargo hook release



25.1 Cargo Hook Connector

Listed below is the pin out for the cargo hook connector.

Table 25-1 Cargo Hook Connector

Pin	*Function*
A	Ground
B	Positive

25.2 Description

The P/N 200-287-01 Cargo Hook Sling Suspension System Retrofit Kit is a conversion kit for AS350 operators with an existing Airbus Helicopters cargo hook fixed provisions kit. This kit utilizes some of the existing systems fixed components that are compatible with it. These components include the fixed manual release cable, miscellaneous supporting brackets and miscellaneous hardware.

The Cargo Hook Sling Suspension System consists of four primary subsystems: Sling Suspension Assembly, Electrical Release System, Manual Release System, and the Load Weigh System.

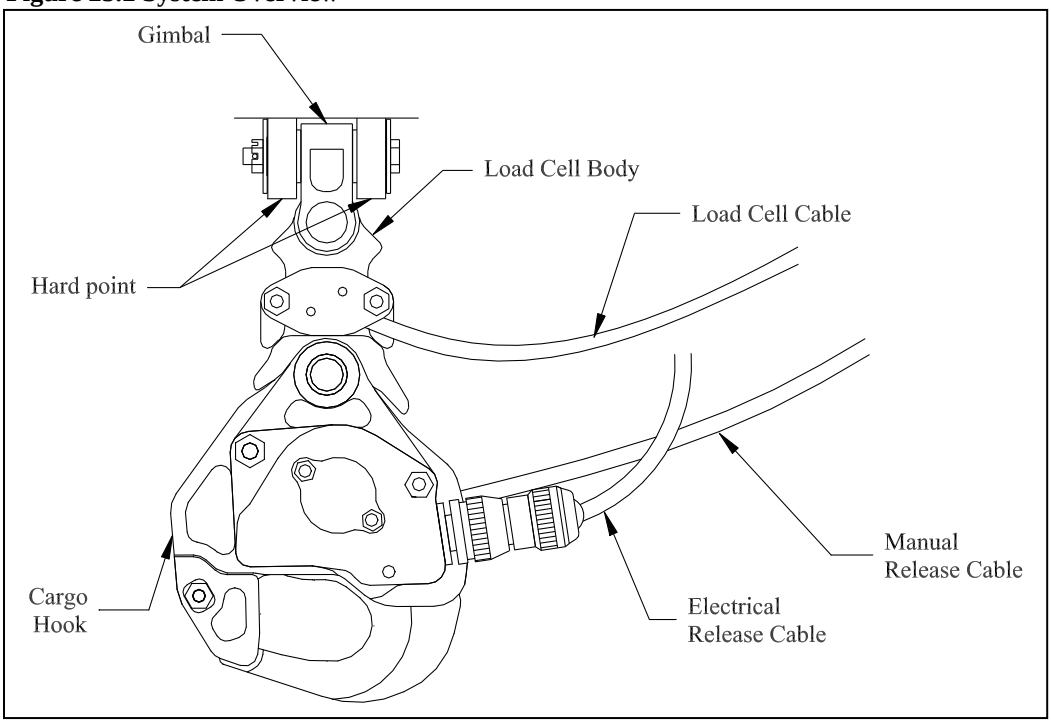
The Sling Suspension Assembly includes the cargo hook, the load cell body, and the gimbal. It is attached to the hard point located on the belly of the helicopter at the forward fuel tank support frame through the gimbal as illustrated below.

The Electrical Release System provides a means to release a cargo hook load by activating an existing switch in the cockpit.

The Manual Release System provides an additional means to release a hook load by actuating a handle mounted to the collective. The Retrofit Kit includes an adapter cable that interfaces with the existing fixed manual release cable and handle as supplied by Airbus Helicopters.

The Load Weigh System consists of the load cell on the suspension, an Indicator within the cockpit, and associated electrical wiring.

Figure 25.2 System Overview



25.5 Component Weights

The weight of the system is listed in Table 25.2.

Table 25.2 Component Weights and CGs

Item	Weight	Station
Fixed Provisions	2.4 lbs (1.1 kg.)	92 in. (2337 mm)
Removable Provisions*	4.8 lbs (2.2 kg.)	130.2 in. (3300 mm)
Complete Install	7.2 lbs (3.3 kg.)	117.5 in. (2984 mm)

***** The removable provisions include the hook and suspension, manual release cable, and electrical release cable. These items are easily removed if they are not needed on the helicopter's mission. Refer to Suspension System Removal in Section 25.16 for removal instructions.

25.12 Storage Instructions

Clean the exterior Cargo Hook components thoroughly of excess dirt and grease with a rag before packaging. Pack the unit in a heat-sealable package. If the unit is to be stored for long periods in a tropical climate it should be packed in a reliable manner to suit local conditions. Refer to MIL-PRF-23199 and MIL-STD-2073-1 for additional guidance.

Package the unit in a suitable fiberboard box and cushion the unit to prevent shifting. Seal the fiberboard box with tape and mark the box with the contents and date of packaging.

25.15 Troubleshooting

Table 25.3 is provided with the intention of isolating the cause of malfunctions within the system. Sections 25.16 and 25.17 include instructions for removing and replacing defective components. Refer to the appropriate Airbus Helicopters maintenance manual for guidance on procedures relating to Airbus Helicopters parts that interface with this suspension system.

Table 25.3 Troubleshooting

MALFUNCTION	PROBABLE CAUSE	CORRECTIVE ACTION
Cargo hook does not operate electrically or manually.	Defective internal mechanism.	Remove and replace cargo hook (see sections 25.16 and 25.17) or repair per Component Maintenance Manual (CMM) 122-017-00.
Cargo hook does not operate electrically, manual cable release operates normally.	Open electrical circuit, faulty wiring, fuse, switch or solenoid.	Disconnect cable from electrical connector on cargo hook. Using multi-meter, check for 3.0 to 4.0 ohms between pins A and B of electrical connector (see note 1 below). If open indication is obtained, remove and replace cargo hook (see sections 25.16 and 25.17) or repair per CMM 122-017-00. Check wiring per note 2.
Cargo hook operates electrically, but not manually.	Defective manual release cable. Defective manual release system.	Inspect manual release cable and cable connection to Cargo Hook. Remove and replace cargo hook (see Sections 25.16 and 25.17). Refer to Airbus Helicopters maintenance documentation for fixed manual release cable.
Load beam fails to re-latch after being reset.	Defective latch mechanism.	Remove and replace cargo hook (see sections 25.16 and 25.17) or repair per CMM 122-017-00.
Force required to release hook with lever on collective exceeds 14 lbs.	High cable friction or friction in internal mechanism of hook.	Remove cable from hook and check cable and hook independently (see below) to determine cause. Refer to Airbus Helicopters maintenance documentation for fixed section of release cable.
With release cable disconnected at hook, the force required to move manual release lever on collective exceeds 6 lbs.	Kinks or wear in cable, frozen water in cable, debris or damage to cable quick disconnect fitting or lever mechanism on cyclic	Inspect individual components to isolate problem. Remove and replace defective parts (see Sections 25.16 and 25.17 for removal and replace instructions for manual release cable). Refer to Airbus Helicopters maintenance documentation for fixed section of release cable.
Cargo hook manual release cable pull-off force exceeds 8 Lbs. (at the hook).	Friction in internal mechanism.	Remove and replace cargo hook (see Section 25.16 and 25.17) repair per CMM 122-017-00.

Table 25.3 Troubleshooting continued

Cargo hook fails to open or re-lock properly.	Failure to open or re-lock properly.	Remove and replace cargo hook (see Sections 25.16 and 25.17) repair per CMM 122-017-00.
Fuse or circuit breaker opens when cargo hook is energized.	Short in the system, faulty wiring, fuse or solenoid.	Check for shorts to ground along length of wire harness (see note 2). Check solenoid resistance (see note 1), repair or replace defective parts.
Load Weigh Indicator does not light up.	Faulty wiring or fuse.	Check the fuse (refer to Airbus Helicopters maintenance documentation) and wiring (see Note 2). If this doesn't help, remove and replace indicator per sections 25.16 and 25.17.
The displayed load on the Load Weigh Indicator is incorrect.	Incorrect calibration code.	Ensure the correct calibration code has been entered (see Note 3).
Indicator displayed load is not stable.	Dampening level is too small.	Adjust the dampening level to a larger number (see Note 4).
Indicator displayed load takes too long to change the reading when the load is changed.	Dampening level is too large.	Adjust the dampening level to a smaller number (see Note 4).
Indicator does not change with changing hook loads.	Defective load cell, indicator failure or damaged wire harness.	Check for damaged wire harness (see note 2), remove and replace wire harness assembly or load cell (see sections 25.16 and 25.17).

Notes:

1. Checking resistance at pins A and B.

Check for 3.0 to 4.0 ohms between pins A and B of electrical connector located on the cargo hook (see below).

Figure 25.3 Cargo Hook Electrical Connector

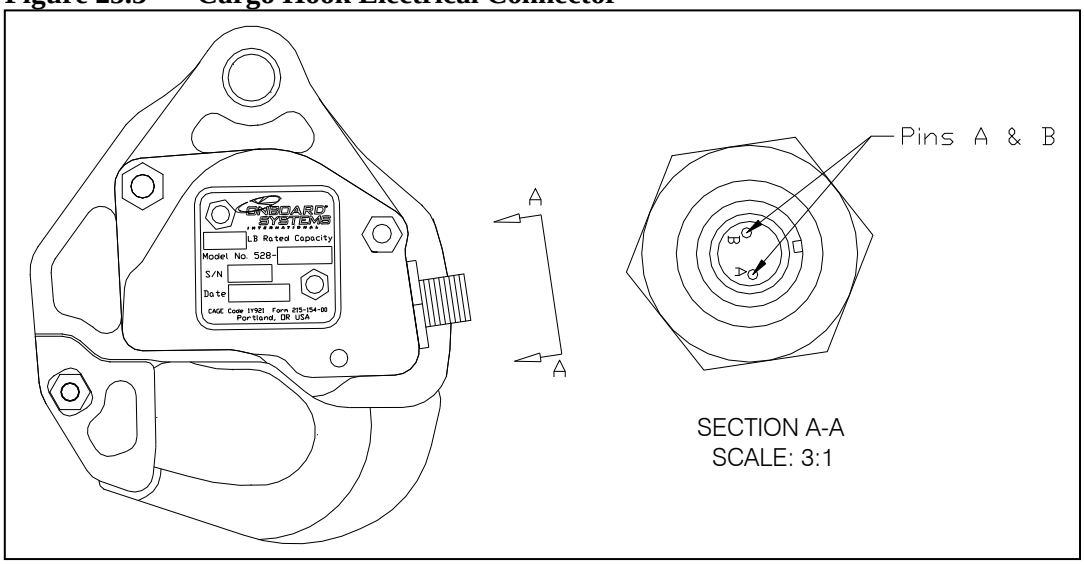


Table 25.3 Notes continued:

2. Checking Wire Harnesses.

The wire harnesses are routed with existing wire bundles and are located approximately as shown below. Remove lower fairings to inspect wiring underneath the cabin floor. Inspect for general condition and chafing along length of wire runs. See Figure 25.5 for electrical schematic.

Figure 25.4 Wire Harness Routing

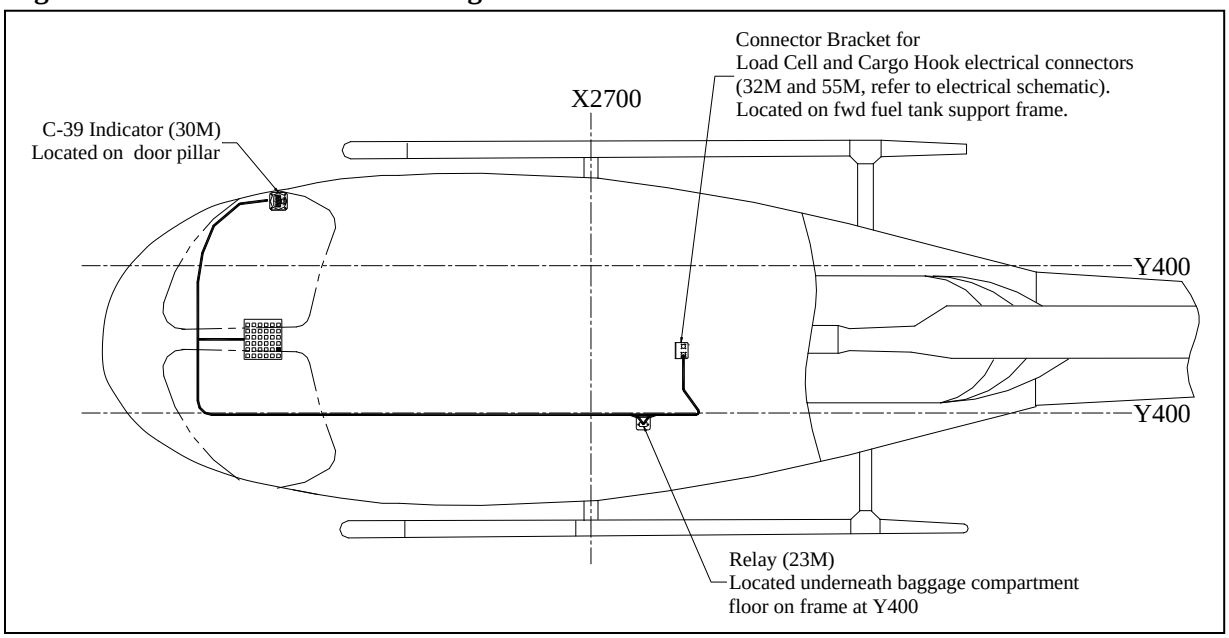


Table 25.3 Notes continued:

The electrical schematic for the electrical release system and the load weigh system is shown below along with the aircraft's interface points. Airbus Helicopters modification #'s 07-4280 and 07-3450 are reflected below. Earlier Airbus Helicopters configurations which affected how and where wire numbers ME1E, ME2E and ME10E of the electrical release harness and load weigh harness interface with the helicopter are shown on the following page. Refer to the applicable Airbus Helicopters Wiring Diagrams Manual for additional information and for other cargo hook aircraft side wiring configurations that may not be shown.

Figure 25.5 Electrical Schematic

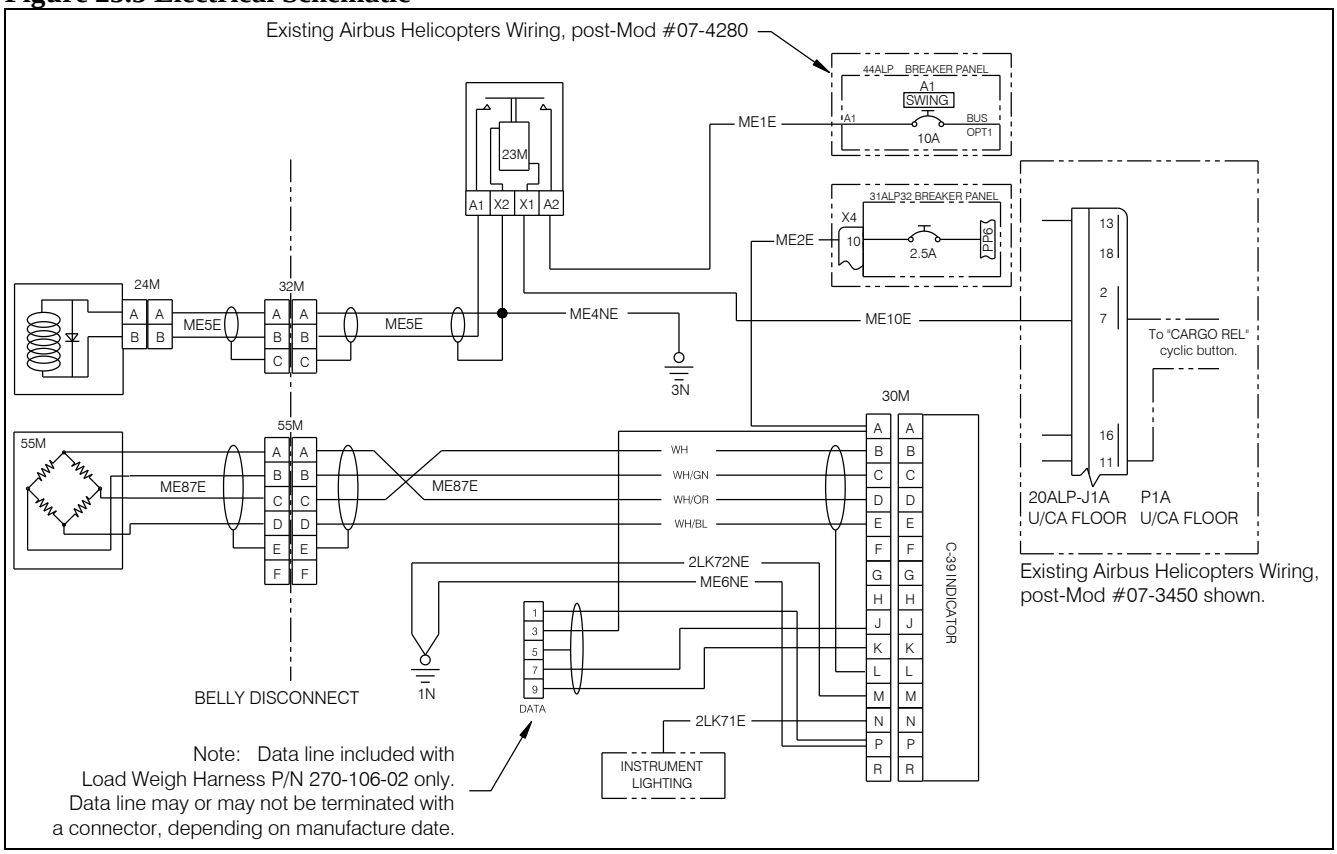


Table 25.3 Notes continued:

Figure 25.5 Electrical Schematic, continued

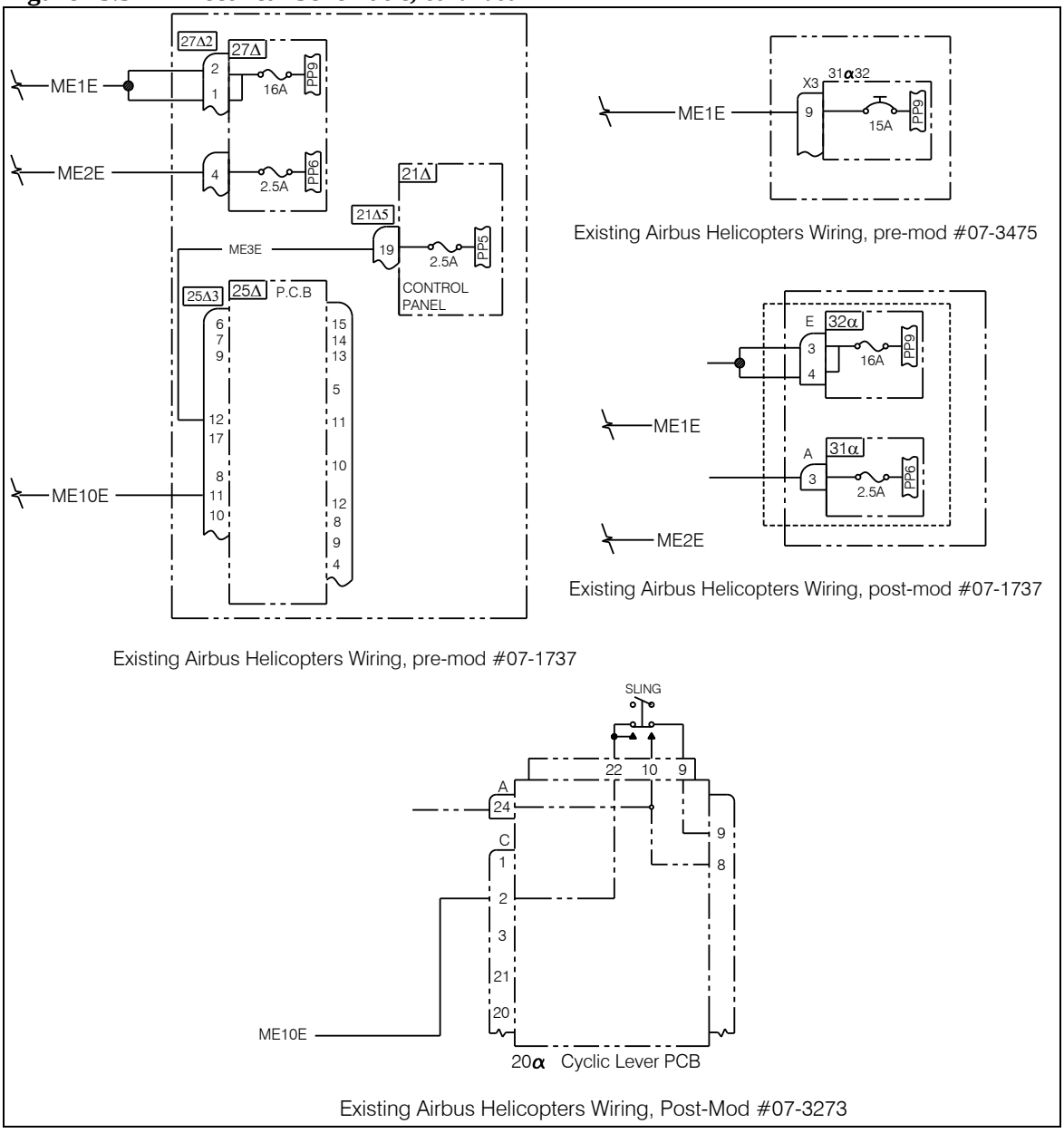
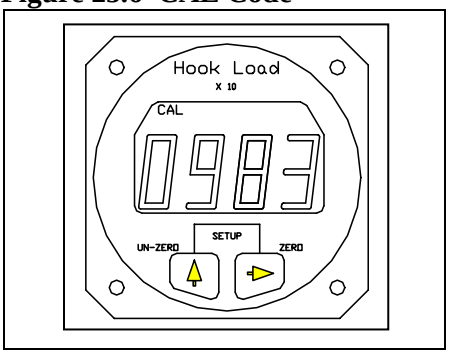


Table 25-3 Notes continued:

3. Checking Load Weigh Indicator calibration code:

With the Indicator powered up and in the Run Mode, press both buttons at the same time to go to Setup. Scroll through the menu until the word CODE is displayed, then press the Right button. The display should look like this:

Figure 25.6 CAL Code

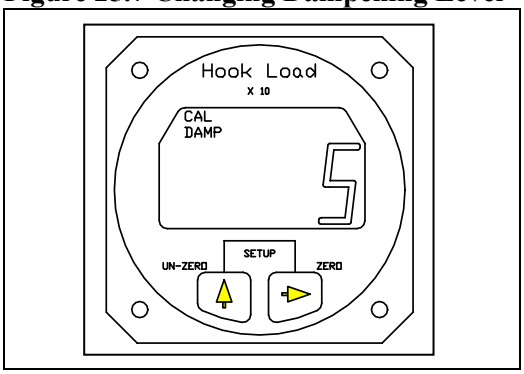


This code should match the code on the tag attached to the load cell cable. If this code does not match, contact Onboard Systems for further guidance.

4. Adjusting dampening level:

With the Indicator powered up and in the Run Mode, press both buttons at the same time to go to Setup. Scroll through the menu, using the Left button, until the word DAMP is displayed. To look at or change the Dampening Level press the Right button. The display should look like this:

Figure 25.7 Changing Dampening Level



The CAL and the DAMP legend is turned on and the previously set dampening level is displayed. To return to Run without changing the current dampening level press both the Right and Left buttons at the same time. To change the dampening number, use the Left button to scroll the blinking digit to the desired number. Ten dampening levels are available, from 0 through 9. At level 0 the display responds to the slightest change in weight. However, if the load bounced even slightly, the display digits would respond instantly, making the display look unstable. With a dampening level of 9, the display would be stable under the most turbulent conditions, however, it would take several seconds for the display to respond to a change in weight. The ideal dampening level will depend on the flying conditions. A mid range setting of 5 or 6 is usually adequate. After the selection has been made press both the Right and Left buttons at the same time to return to Run.

25.16 Component Removal

Cargo Hook Removal

1. Disconnect the electrical release harness connector at the cargo hook.
2. Remove manual release cover by removing two screws.
3. Loosen the jam nut and unthread the manual release cable from the Cargo Hook.
4. Remove the cotter pin (P/N 510-178-00) from the Attach Bolt (P/N 290-332-00).
5. Remove the castellated nut (P/N 510-170-00) from the Attach Bolt.
6. Remove Attach Bolt and all washers.
7. Remove the Cargo Hook from suspension system.

Suspension System Removal

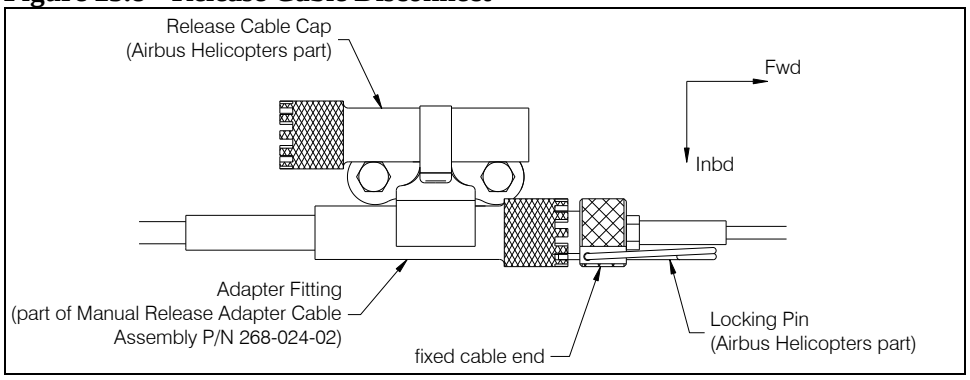
1. Disconnect the load cell harness at the bulkhead connector on the belly of the aircraft.
2. Remove the cotter pin (P/N 510-178-00) from the bolt (P/N 510-451-00).
3. Remove the castellated nut (P/N 510-170-00) from the attach bolt.
4. Remove the bolt and all washers.
5. Remove Gimbal Pin (P/N 290-766-00) and remove suspension from aircraft.

25.16 Component Removal continued

Manual Release Adapter Cable Removal

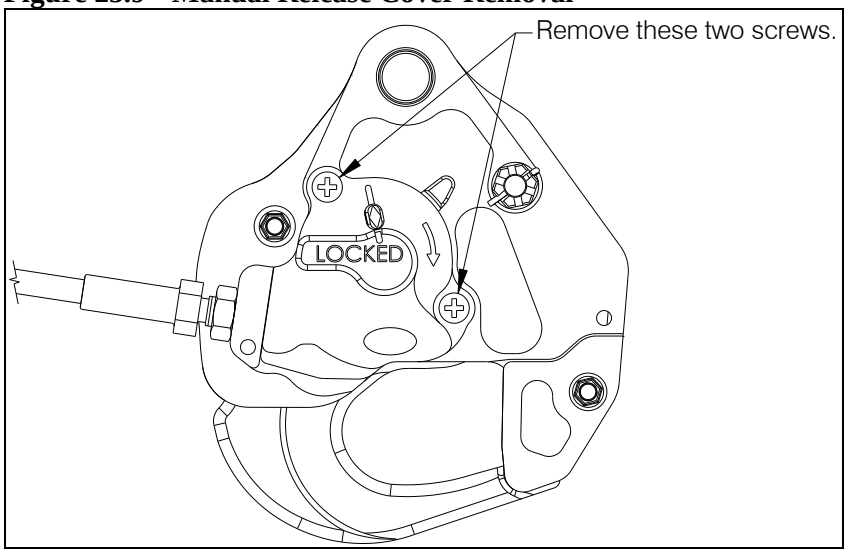
1. Remove the forward end from the bracket on the belly of the helicopter.
2. Retract the locking pin and unthread the Adapter Fitting to expose and disengage the handshake fittings.
3. Unclip the Release Cable Cap (see below) from the bracket and thread it over the open end of the fixed cable and clip it into the inboard spring clip on the bracket.

Figure 25.8 Release Cable Disconnect



4. At the other end of the cable (at the cargo hook) remove the two screws that secure the manual release cover to the hook (see below) and unhook the cable ball end from the fork fitting.

Figure 25.9 Manual Release Cover Removal



5. Loosen the jam nut and unthread the release cable from the hook.

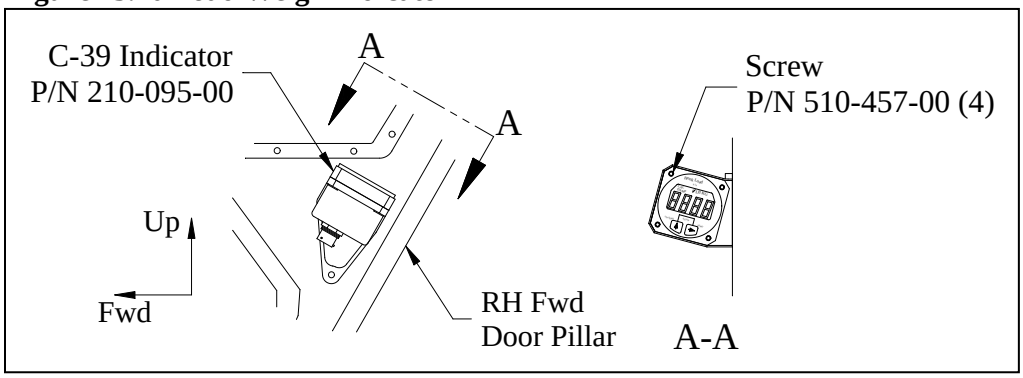
25.16 Component Removal continued

Load Weigh Indicator Removal

The C-39 Load Weigh Indicator is located on the RH forward door pillar.

1. Disconnect electrical connector from the back of indicator.
2. Remove the four screws (P/N 510-457-00) that secure the indicator to the mounting bracket and remove the indicator.

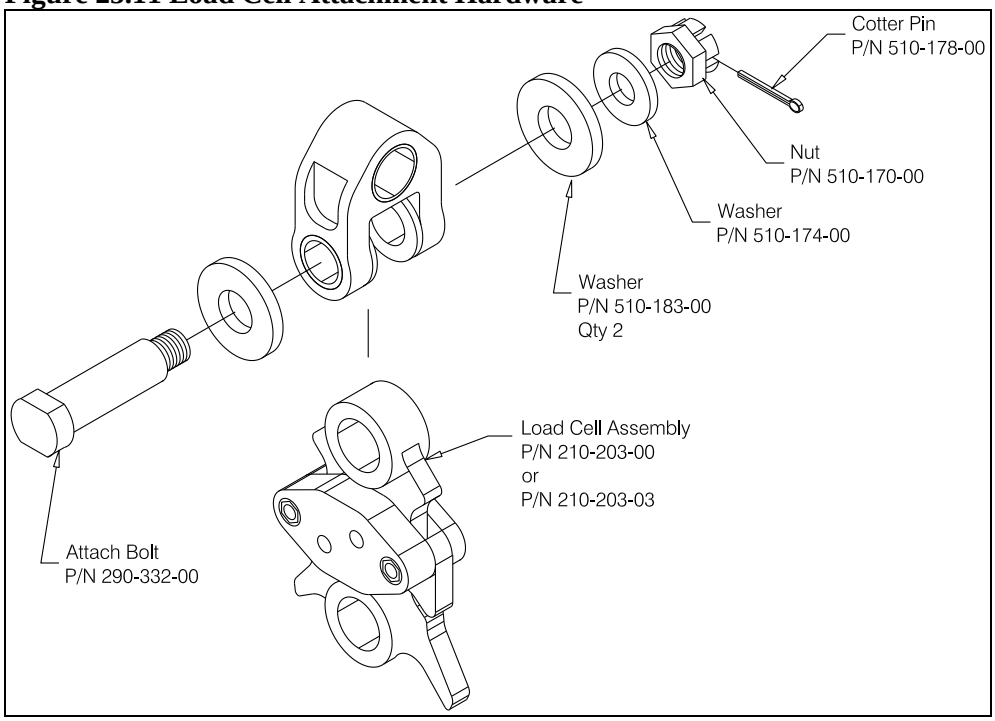
Figure 25.10 Load Weigh Indicator



Load Cell Removal

1. Disconnect the electrical connector on the belly of the helicopter.
2. Remove the Cargo Hook per the above instructions.
3. Remove the Load Cell Assembly from the gimbal on the helicopter hard point (not shown) by removing the hardware as illustrated below.

Figure 25.11 Load Cell Attachment Hardware

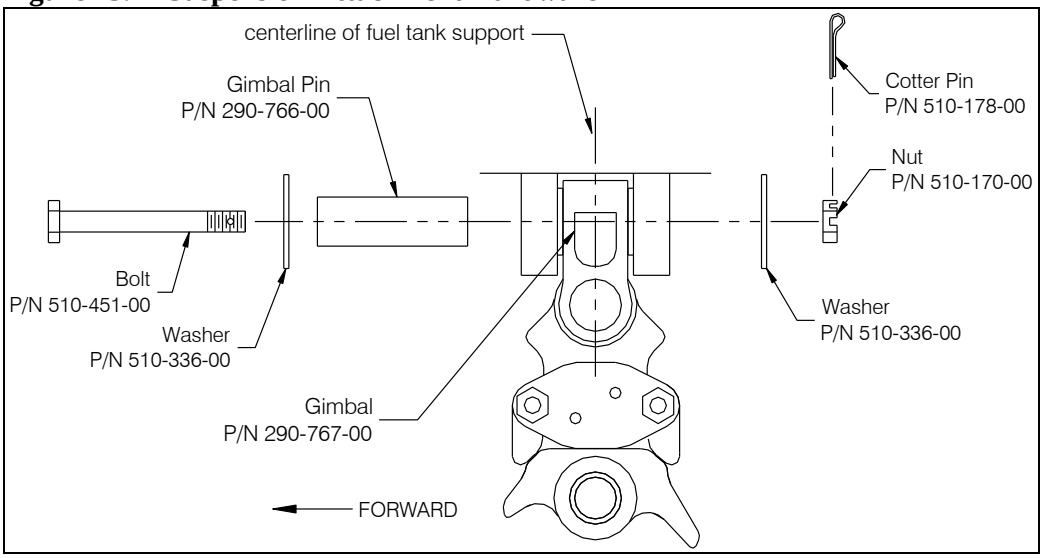


25.17 Component Re-installation

Suspension Re-installation

1. Inspect the Suspension for evidence of damage, corrosion and security of fasteners. If damage is evident, do not use the items until they are repaired.
2. Attach the suspension Gimbal (P/N 290-767-00) to the hard point by installing the Gimbal Pin (P/N 290-766-00), washer (P/N 510-336-00), and bolt P/N 510-451-00.
3. Install washer (P/N 510-336-00) and castellated nut (P/N 510-170-00) over bolt end.
4. Tighten nut until fully seated, finger tight only. Back off nut to previous castellation, if needed, when aligning cotter pin for installation. Install and secure cotter pin P/N 510-178-00.
5. Connect the load cell cable connector at the bulkhead connector at the belly of the aircraft.
6. Connect the electrical release harness connector at the bulkhead connector at the belly of the aircraft.
7. Connect the manual release cable at the quick release fitting and route through quick disconnect clamps on the belly of the aircraft.

Figure 25.12 Suspension Attachment Hardware

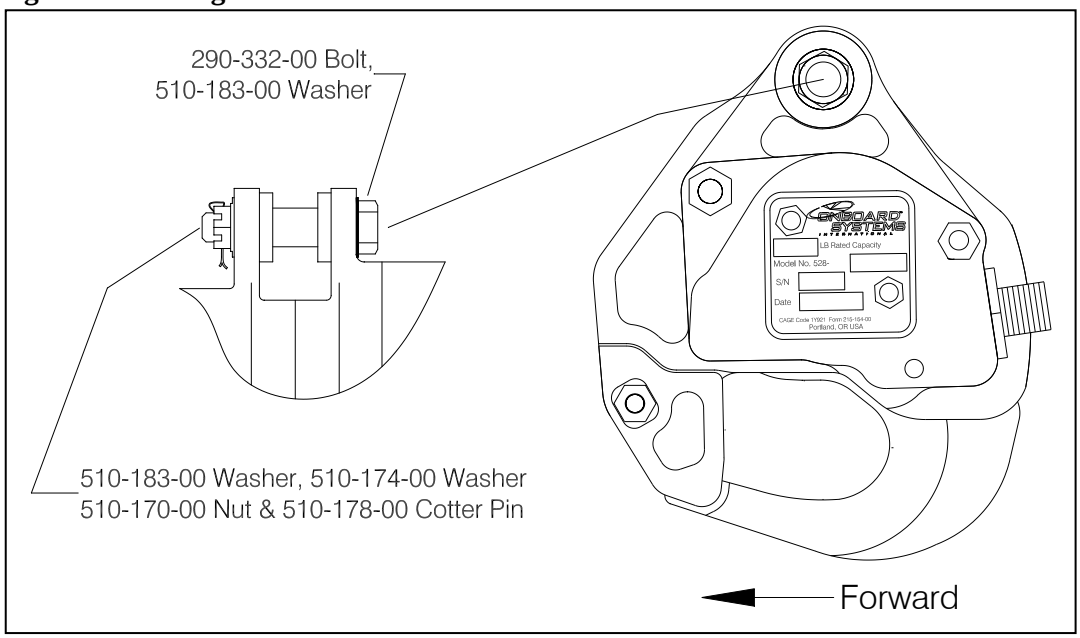


25.17 Component Re-installation continued

Cargo Hook Re-installation

1. Attach the Cargo Hook, P/N 528-029-00 to the suspension system by installing the bolt P/N 290-332-00 and washer P/N 510-183-00 as illustrated below.
2. Install washer P/N 510-183-00 and washer P/N 510-174-00 over bolt end.
3. Tighten nut on cargo hook attach bolt until fully seated, finger tight only. Back off nut to previous castellation, if needed, when aligning cotter pin for installation. Install and secure cotter pin P/N 510-178-00.
4. Connect the electrical release cable to the bulkhead connector at the belly of the aircraft.
5. Connect the cargo hook electrical release cable connector to the Cargo Hook.
6. Re-install the manual release cable per this section (see Manual Release Adapter Cable Re-installation).

Figure 25.13 Cargo Hook Attachment Hardware



NOTICE

The Cargo Hook load beam must point forward when installed.

25.17 Component Re-installation continued

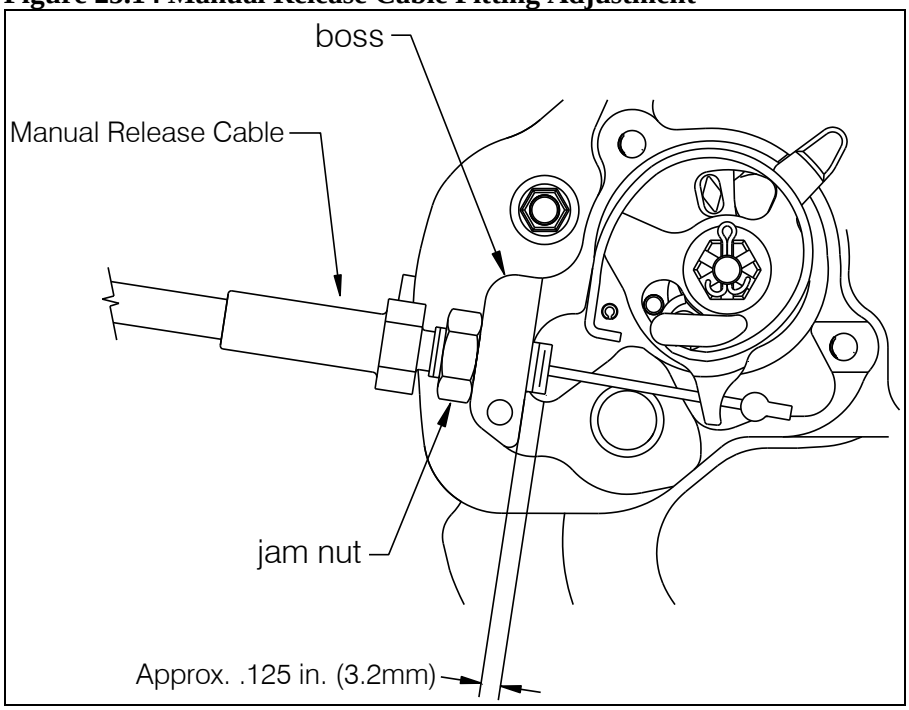
Manual Release Cable Re-installation

Connect the Manual Release Adapter Cable (P/N 268-024-02) to the cargo hook first, per the following instructions:

Remove the manual release cover from the cargo hook. Thread the fitting at the end of the manual release cable into the manual release boss on the hook side plate until the threads protrude approximately .125" inch beyond the boss and secure with jam nut (as shown in Figure 25.14).

Leave the cover off of the cargo hook until the other end of the release cable is connected, in order to verify proper setting.

Figure 25.14 Manual Release Cable Fitting Adjustment



25.17 Component Reinstallation continued

Manual Release Cable Re-installation continued

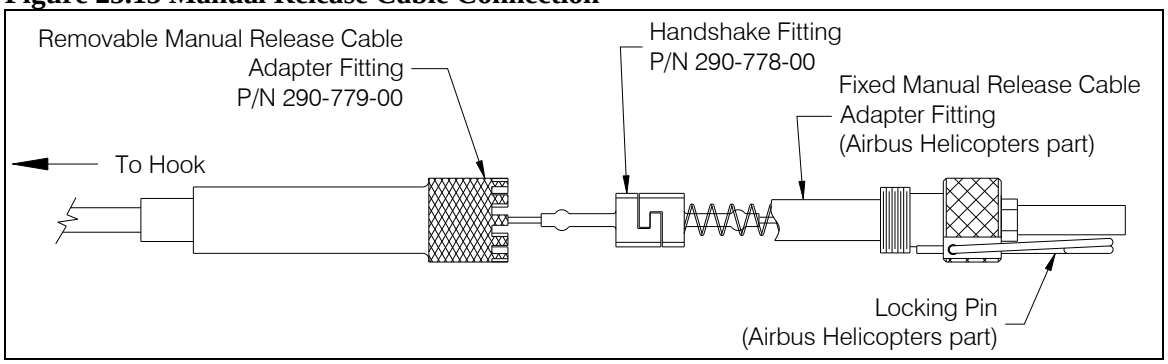
Route the cable through the two fittings on the RH rear lower fairing.

Connect the other end of the adapter cable to the end of the fixed cable by sliding the Adapter Fitting back to expose the Handshake Fitting and connecting this fitting to the Handshake Fitting on the fixed cable as shown below.

Thread the Adapter Fitting on the adapter cable onto the fixed cable adapter fitting and lock in position by engaging a castellation with the Locking Pin.

Snap the adapter cable Adapter Fitting into the inboard spring clip on the bracket on the RH rear lower fairing.

Figure 25.15 Manual Release Cable Connection



25.17 Component Re-installation continued

Manual Release Cable Re-installation continued

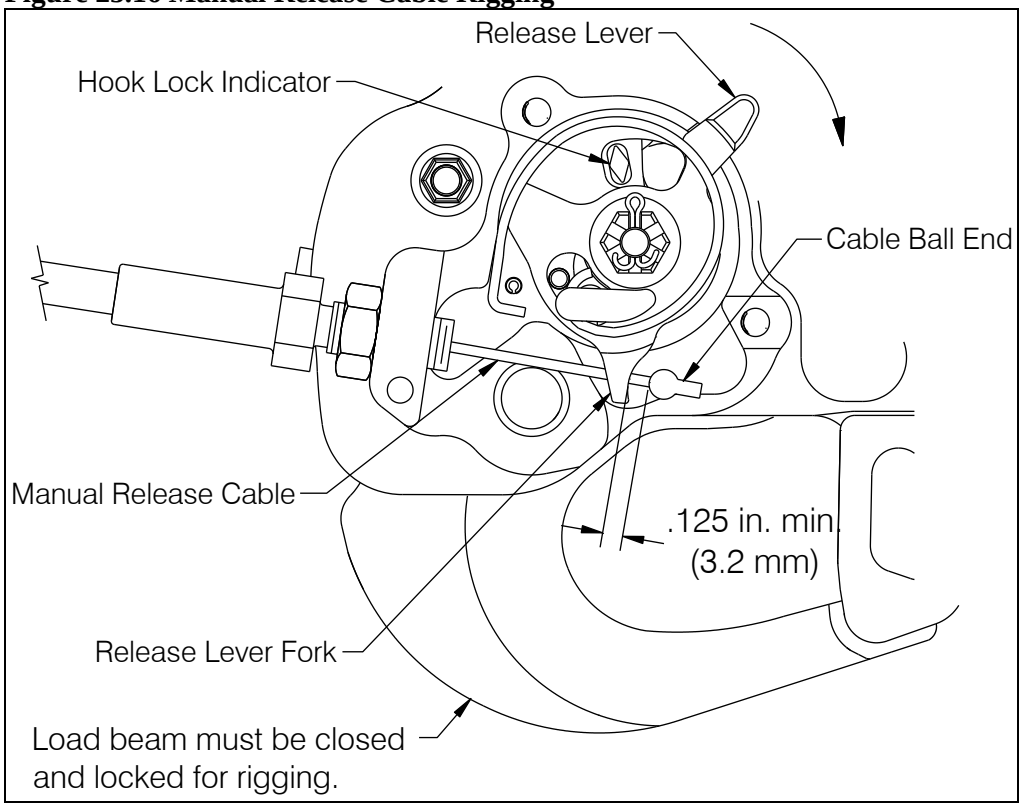
Verify proper setting at the hook:

Place the cable ball end fitting into the hook manual release fork fitting as illustrated in Figure 25.16. 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. The gap should measure a minimum of .125" (see below).

⚠ CAUTION

The cargo hook load beam must be closed and locked when verifying and adjusting the manual release cable rigging.

Figure 25.16 Manual Release Cable Rigging



If the gap does not measure .125" minimum, make adjustments at the hook only. This is done by disconnecting the cable at the interface with the fixed manual release cable (ref. Figure 25.15), loosening the jam nut, and rotating the cable in the required direction. Re-tighten the jam nut after adjustment is complete.

25.17 Component Reinstallation continued

Load Weigh Indicator Re-installation

1. Place the Load Weigh Indicator into the mounting bracket on the RH door pillar and secure with four screws (P/N 510-457-00).
2. Connect the electrical connector on the wiring harness to the connector on the back of the indicator.

Load Cell Re-installation

1. Attach the load cell assembly (P/N 210-203-00 or 210-203-03) to the gimbal fitting on the aircraft hard point with hardware as illustrated in Figure 25.11.
2. Connect the load cell electrical cable connector on the load cell cable to the connector on the belly of the helicopter.

25.18 General Procedural Instructions-Testing

After re-installation of the cargo hook, perform the following:

1. Activate the electrical system and press the Cargo Hook release button to ensure the cargo hook electrical release is operating correctly. The mechanism should operate smoothly and the Cargo Hook must release. Reset the hook by hand after the release. If the hook does not release or re-latch, do not use the unit until the difficulty is resolved.

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

2. Activate the release lever located on the collective 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.

3. Swing the installed Cargo Hook and the suspension to ensure that the manual release cable assembly and the electrical release cable have enough slack to allow full swing of each component without straining or damaging the cables. The cables must not be the stops that prevent the Cargo Hook or the suspension from swinging freely in all directions.

4. Visually check for presence and security of fasteners, and condition of cables. Swing the Cargo Hook and the suspension in fore and aft and side to side directions to check for freedom of rotation at all joints.