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Instructions for Continued Airworthiness

Cargo Hook Suspension System
For the
Bell 206L & 407 Series

With
Talon LC Keeperless
Cargo Hook

System Part Numbers
200-258-00, W/O Load Weigh
200-259-00, W/ Load Weigh
200-259-01, W/Load Weigh and 5V Lighting

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Record of Revisions

Revision	*Date*	*Page(s)*	*Reason for Revision*
7	11/03/09	05-00-00 Page 3 05-00-00 Page 6 25-00-00 Page 2 25-00-00 Page 11	Updated manual figure to reflect new load weigh harness configuration. Changed overhaul frequency criteria. Changed cargo hook re-installation instructions.
8	03/11/10	00-00-00 Page 1 05-00-00 Page 1	Listed Onboard Systems kit P/N 200-328-00 as an eligible fixed provisions kit. Clarified when daily check is to be done.
9	07/22/13	Pages i-viii 00-00-00 Page 2 05-00-00 Pages 1 thru 3 & 6 25-00-00 Page 1 25-00-00 Pages 10-13	Changed P/N 290-371-01 to 290-371-02. Added penetrant inspection to pillow blocks and main beam. Updated precautions section. Reformatted precautions through manual to match new standard. Updated definition of "external load operations" and clarified 100 hour/annual requirement.
10	02/21/14	05-00-00 Pages 3, 4	Simplified part descriptions.
11	08/27/15	Section 5 Section 25 page 11	Added Load Cell P/N 210-179-01. Removed daily check, expanded annual/100 hour inspection. Updated tightening instructions for nut on cargo hook attach bolt.
12	02/23/18	Section 5 Pages 2, 4 and 5	Removed NDT requirement for parts. Added instruction to return load cell to factory for inspection/calibration. Updated inspection criteria for threaded fasteners in Table 5-2. Updated language in Section 4.

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Section 0
Introduction

0.4 Scope

The following information is necessary to carry out the service, maintenance, and inspection of the Cargo Hook Suspension System P/N 200-258-00, P/N 200-259-00 and P/N 200-259-01.

0.5 Purpose

The purpose of this Instructions for Continued Airworthiness (ICA) manual is to provide the information necessary to inspect, service and maintain the P/N 200-258-00, P/N 200-259-00 and P/N 200-259-01 Cargo Hook Suspension Systems in an airworthy condition.

0.6 Arrangement

This manual contains instructions for the maintenance, inspection, and operation of the Cargo Hook Suspension System P/N 200-258-00, P/N 200-259-00 and P/N 200-259-01 on Bell Model 206L and 407 series helicopters.

The manual is arranged in the general order that maintenance personnel would use to maintain and operate the Cargo Hook Kit 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 12 Servicing
Section 25 Equipment and Furnishings

0.7 Applicability

These Instructions for Continued Airworthiness are applicable to Cargo Hook Suspension Systems P/N 200-258-00, 200-259-00 and 200-259-01 on the following Bell helicopters:

Model	Serial Numbers
206L	45001-45153
206L-1	45154 and on
206L-3	51001 and on
206L-4	52001 and on
407	All

The system replaces the Bell 206-706-341-101, -105, and -109 Auxiliary Equipment Kit- Cargo Hook. It must be installed with the Bell part number 206-706-341-7, -9, -103, -111, -113, -117, -123, or -125 Auxiliary Equipment Kit- Cargo Hook Provisions or Onboard Systems P/N 200-328-00 Fixed Provisions Kit.

0.9 Abbreviations

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

0.12 Precautions

The following definitions apply to precaution flags used in this manual.

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. Current revision levels of all manuals are available from the factory.

Section 4
Airworthiness Limitations

4.2 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 Suspension Inspection

The scheduled inspection intervals noted below are maximums and are not to be exceeded. If the cargo hook suspension 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 and suspension per the following.

NOTICE

*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.*

1. Activate the helicopter electrical system and press the cargo release button to ensure the cargo hook electrical release is operating correctly. With no load, 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 corrected.

CAUTION

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

2. Activate the manual release system by pulling the release handle in the cockpit. With no load, 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 corrected.
3. Move the cargo hook and the suspension system throughout their full ranges of motion to ensure the manual and electrical release cables have enough slack. The cables must not be the stops that prevent the cargo hook or suspension from moving freely in all directions.
4. Move the cargo hook back and forth on the beam to ensure that it rolls freely and that there are no obstructions within the beam.

5.1 Cargo Hook Suspension System Inspection continued

5. Visually check for presence and security of fasteners and electrical connections.
6. Visually inspect for corrosion on the exterior of cargo hook and suspension system components (refer to Table 5.2 for limits for suspension components). Corrosion on the cargo hook side plates is cause for immediate overhaul. Additionally, any exfoliation corrosion in the upper attach lug area of the cargo hook is cause for immediate replacement of the side plate. Refer to Onboard Systems web site for the latest revision of the cargo hook component maintenance manual (manual no. 122-005-00).
7. Move the cargo hook and the suspension system throughout their full ranges of motion and observe the manual and electrical release cables to ensure that they have enough slack. The cables must not be the stops that prevent the cargo hook or suspension from moving freely in all directions.
8. Move the cargo hook carriage back and forth on the beam to ensure that it rolls freely and that there are no obstructions within the beam.
9. Move all suspension system components at their pivot points to verify that they rotate freely.
10. Visually inspect for presence and security of fasteners and electrical connections.
11. Visually inspect the manual release cable for damage and security.
12. Visually inspect the external electrical release harness and load weigh harness (if installed) for damage and security.

Every 5 years or 1000 hours of external load operations, whichever comes first, remove the suspension system from the helicopter per section 25.16, and disassemble per the following instructions and inspect. Refer to section 5.3 for the overhaul schedule for the cargo hook. Refer to Figure 5.1 for part identification.

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1. With the Cargo Hook Suspension System removed from the aircraft separate the Cargo Hook from the Beam Assembly at the Carriage.
2. Separate the two Beam Halves (6) by removing the fasteners (16, 17, and 18)
3. Remove the Carriage Assembly from the Beam and separate the bearings (22), shafts (19), and the thrust buttons (23) from the carriage (20) or Load Cell Assembly (25) if load weigh system is present.
4. Remove the bearings (7) from the pillow blocks (9) by conventional means.
5. Carefully inspect the detail parts in accordance with the instructions in Table 5.2. Inspect the parts in a clean, well-lighted room. Inspect bearings and the shafts they run on for wear and corrosion.
6. Return the Load Cell Assembly (P/N 210-179-00 or 210-179-01) 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.

5.1 Cargo Hook Suspension System Inspection continued

Figure 5.1 Cargo Hook Suspension System Parts

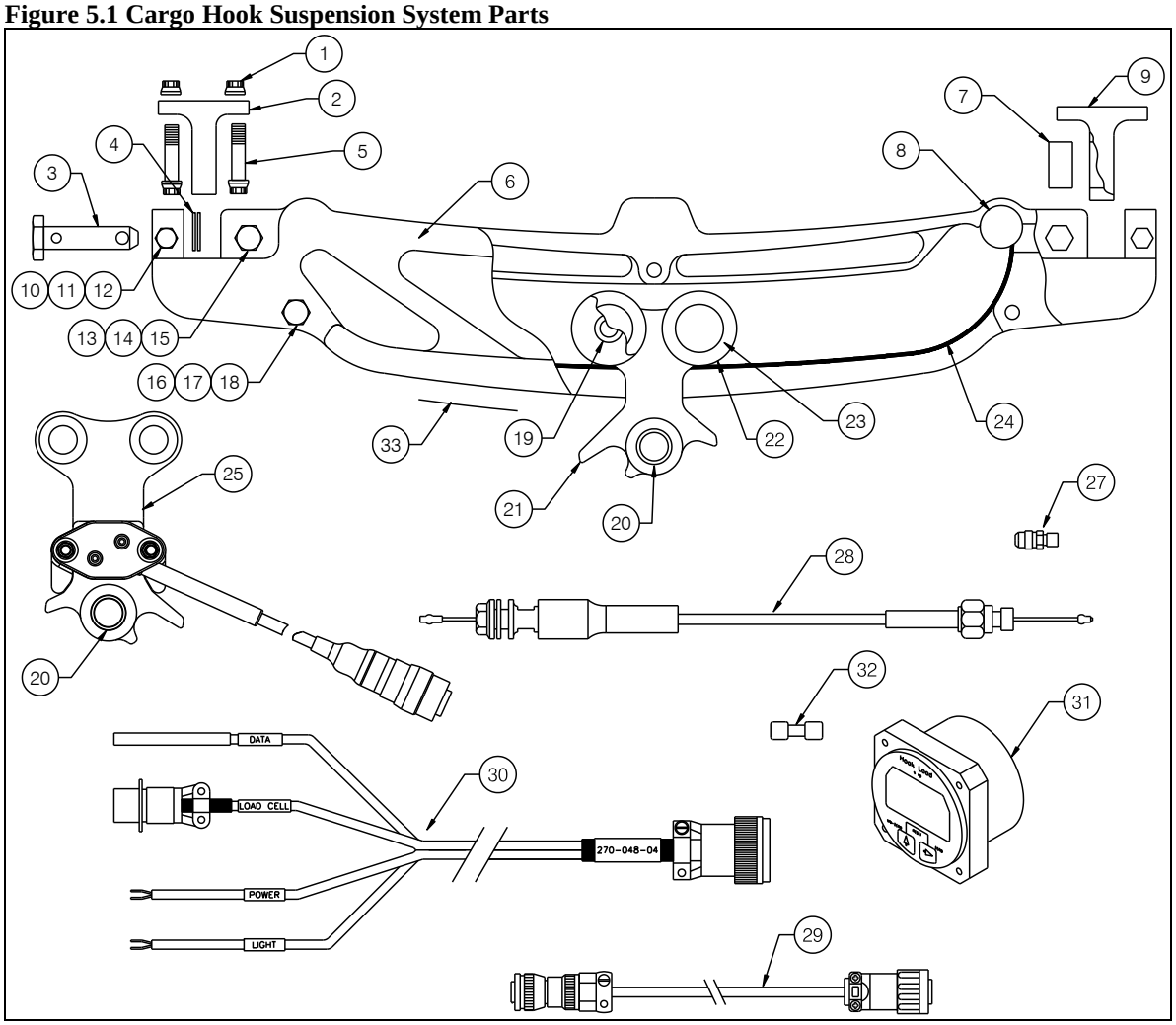

Table 5.1 Cargo Hook Suspension System Parts

ITEM	PART NO.	DESCRIPTION	QTY
1	510-234-00	Nut	4
2	232-030-02	Pillow Block Assembly, with bearing	2
3	290-370-00	Trunnion Pin	2
4	290-374-00	Thrust Spacers	10
5	510-235-00	Bolt	4
6	290-368-01	Beam Half	2
7	517-012-00	Bearing	2
8	290-372-00	Bumper	4
9	290-371-02	Pillow Block, W/O bearing	2
10	510-229-00	Bolt	2
11	510-095-00	Washer	2
12	510-102-00	Nut	2
13	510-114-00	Nut	2
14	510-100-00	Washer	2
15	510-230-00	Bolt	2

5.1 Cargo Hook Suspension System Inspection continued

Table 5.1 Cargo Hook Suspension System Parts continued

ITEM	PART NO.	DESCRIPTION	QTY
16	510-231-00	Bolt	3
17	510-100-00	Washer	3
18	510-114-00	Nut	3
19	290-366-00	Shaft	2
20***	290-364-00	Carriage Bushing	1
21	290-369-00	Carriage	1
22	517-011-00	Bearing	4
23	290-367-00	Thrust Button	4
24	290-373-00	Wear Plate	2
25	210-179-01*	Load Cell Assembly	1
26	528-023-01	Cargo Hook	1
27	290-331-00	Release Fitting	1
28	268-004-01	Manual Release Cable	1
29	270-074-00	Electrical Release Cable	1
30	270-048-04	Load Weigh Harness Assembly	1
31**	210-095-02	C-39 Indicator with 5V Light	1
	210-095-00	C-39 Indicator with 28V Light	opt
32	600-006-00	Release Cable Disconnect	1
33	215-105-00	External Load Limit Placard	1

* Supersedes and is interchangeable with P/N 210-179-00. It features a more robust structural link for improved resistance to torsional loads.

** Use of C-39 indicator P/N depends on aircraft's instrument panel light circuit voltage.

*** Included with Load Cell Assembly.

5.1 Cargo Hook Suspension System Inspection continued

Table 5.2 Cargo Hook Suspension System Inspection

Part	Visually Inspect for	Remedy
Threaded parts	Wear, corrosion or deterioration	Recommend replacement at 5 year/1000 hour inspection.
Pillow Blocks (9)	Dents, nicks, cracks, gouges, corrosion or scratches	Repair dents, gouges, nicks, scratches and corrosion if less than .030" deep, blend out at a ratio of 50:1, length to depth, and apply Alodine and zinc chromate primer. Replace if otherwise damaged.
Beam Half (6)	Dents, nicks, cracks, gouges, corrosion or scratches	Repair dents, gouges, nicks, scratches and corrosion if less than .030" deep, blend out at a ratio of 50:1, length to depth, replace if otherwise damaged.
Wear Plate (24)	Dents, nicks, cracks, gouges, corrosion or scratches	Repair dents, gouges, nicks, scratches and corrosion if less than .030" deep, blend out at a ratio of 50:1, length to depth, replace if otherwise damaged.
Trunnion Pin (3)	Dents, nicks, cracks, gouges, corrosion or scratches	Dents, nicks, cracks, gouges, corrosion or scratches are cause for rejection. Max permissible bushing clearances are .015" on diameter.
Carriage (21)	Dents, nicks, cracks, gouges, corrosion or scratches	Repair dents, gouges, nicks, scratches and corrosion if less than .030" deep, blend out at a ratio of 50:1, length to depth, replace if otherwise damaged.
Shafts (19)	Dents, nicks, cracks, gouges, corrosion or scratches	Dents, nicks, cracks, gouges, corrosion or scratches are cause for rejection.
Thrust Buttons (23)	Nicks, cracks, scratches or wear	Replace if flange thickness is less than .050".
Thrust Spacers (4)	Nicks, cracks, scratches or wear	Replace
Manual Release Cable (28)	Roughness, binding, looseness, or corrosion	Replace
Electrical Cable (29)	Damaged cable. Connectors for loose, missing, or mutilated contact pins, cracked case, or worn insulator.	Replace
Bearings (7) (22)	Roughness, binding, looseness, or corrosion	Replace
Bushings (20)	Roughness, binding, looseness, or corrosion	Replace
Electrical wires (30)	Deterioration	Replace

Upon completion of the inspection, re-assemble the suspension system per the following:

1. Replace all fasteners that have been removed at disassembly.
2. Pack the bearings (22) with grease (Mobilgrease 28 (MIL-G-81322) is recommended) and assemble the two shafts (19), and bearings to the carriage (21) or load cell (25).
3. Insert a thrust button (23) into each end of each shaft.
4. Install the wear plate (24) within the bottom groove of the beam half (6) with Loctite 392 structural adhesive. Follow manufacturer instructions for the adhesive.
5. Install the two bumpers (8) within a beam half (6).
6. Place beam halves together and secure with fasteners, use standard torque values (per AC43.13).

Re-install the suspension system on the helicopter per section 25.17.

5.2 Cargo Hook Overhaul Schedule

Time Between Overhaul (TBO): 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.*

Refer to Component Maintenance Manual (CMM) 122-005-00 for overhaul instructions for the cargo hook.

Section 11
Placards and Markings

11.1 Placards

The Cargo Hook Suspension System include the following placards shown in Table 11-1.

Table 11-1 Cargo Hook Suspension System Placards

Placard part number and appearance	Location
P/N 215-010-00 ELECTRONIC WEIGHING SYSTEM	Located next to the power switch and circuit breaker. **Note:** This placard is included only with the 200-259-00 and 200-259-01 kits.
P/N 215-012-00 TURN THE WEIGHING SYSTEM OFF WHEN NAVIGATION EQUIPMENT IN USE. NO AIRCRAFT OPERATION SHOULD BE PREDICATED ON THE READING OF THE ONBOARD WEIGHING SYSTEM	Located next to the load weigh indicator. **Note:** This placard is included only with the 200-259-00 and 200-259-01 kits.
P/N 215-105-00 EXTERNAL LOAD LIMIT 407 2650 LBS 206L 2000 LBS	Located on underside of the cargo hook suspension beam.

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Section 12
Servicing
12.2 Lubrication Information

Lubrication of cargo hook suspension system is required every 500 hours of operation. To obtain maximum life under severe duty conditions such as logging or seismic work, it is recommended to lubricate the suspension system more frequently as described below in Table 12.1.

Figure 12.1 Overview of Lubrication Points

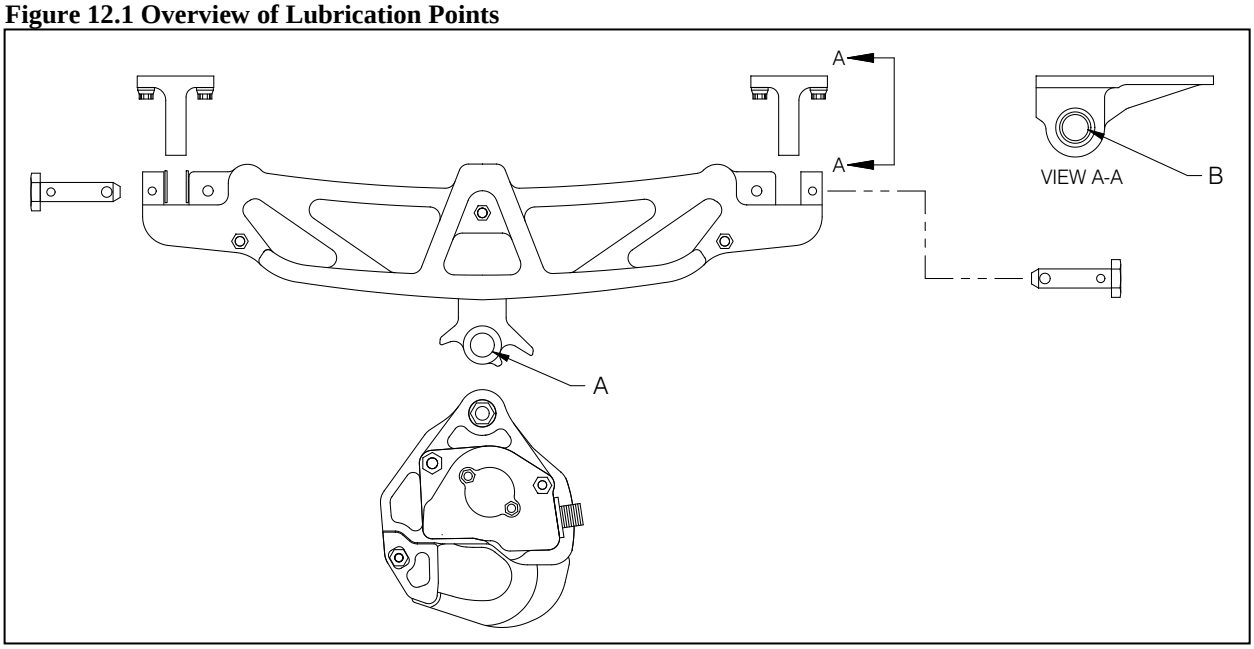

Table 12.1 Lubrication Location and Frequency

Location – Refer to Fig. 12.1	**Description**	**Frequency**	**Types of Lubricant**
A	Lubricate ID of bushing.	250 hours	AeroShell 17, MIL-G-21164 or Mobilgrease 28, MIL-G-81322
B	Lubricate ID of spherical bearings, 2 places.	250 hours	

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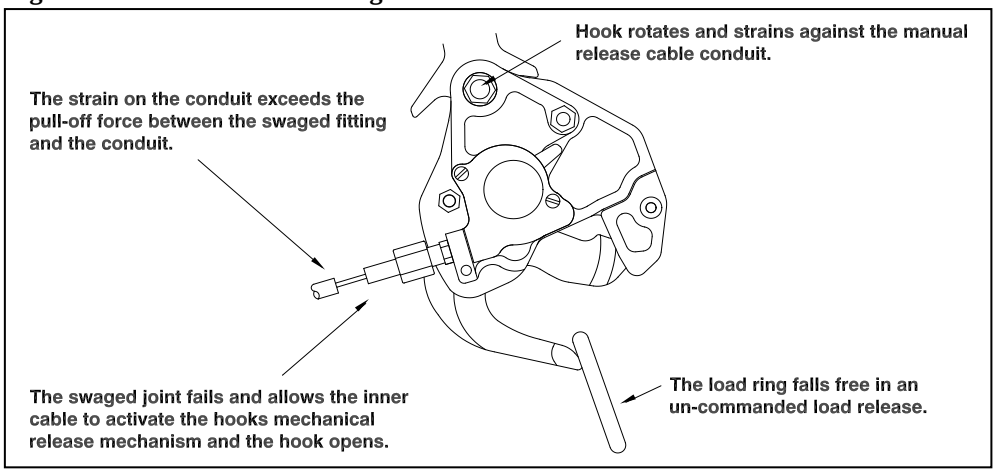
Section 25
Equipment and Furnishings

CAUTION

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 type design change consists of the installation of the following elements.

Figure 25-2 System Overview

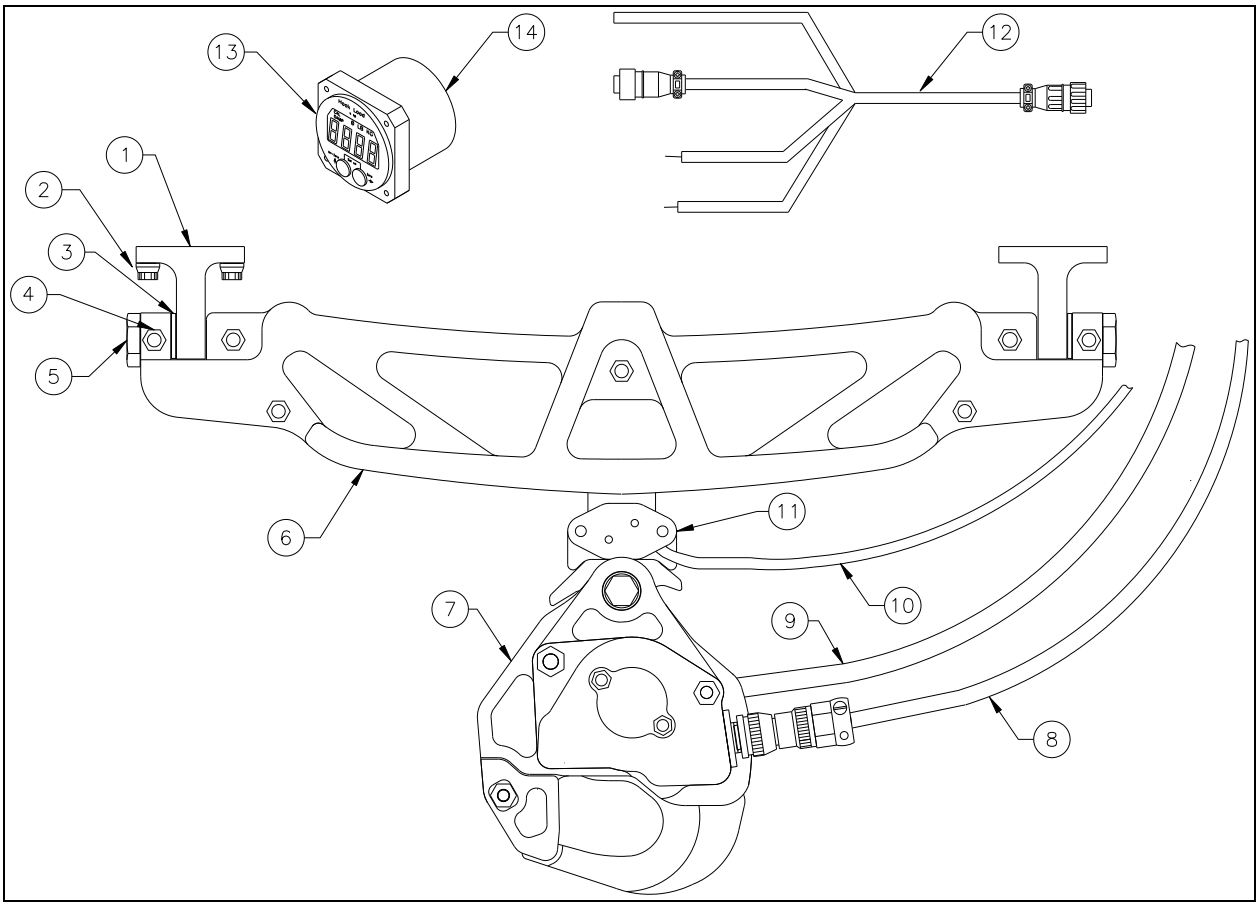


Table 25-2 System Overview Item Numbers

Item	Description	200-258-00 Quantity	200-259-00 Quantity	200-259-01 Quantity
1	Pillow Block Assembly	2	2	2
2	Pillow Block Attach Bolts	4	4	4
3	Thrust Spacers	10	10	10
4	Beam Attach Bolts	4	4	4
5	Trunnion Pin	1	1	1
6	Beam Assembly	1	1	1
7	Cargo Hook	1	1	1
8	Electrical Release Cable	1	1	1
9	Manual Release Cable	1	1	1
10	Load Cell Cable	-	1	1
11	Load Cell	-	1	1
12	Harness Assembly	-	1	1
13	C-39 Indicator	-	1	-
14	5 volt C-39 Indicator	-	-	1

25.2 Description continued

The Cargo Hook Suspension System consists of the following primary sub-systems: suspension system, cargo hook, and a load weigh system for the 200-259-00 and 200-259-01 kits.

The suspension system consists of the beam assembly, pillow block assemblies, and associated hardware. The pillow block assemblies are bolted to hard points at the belly of the helicopter and support and provide a pivot point for the beam assembly. The beam assembly supports the cargo hook and load cell and provides a carriage to allow these components to move in the side to side direction in response to a swinging load.

The cargo hook is attached to the beam assembly and interfaces with the existing fixed provisions on the helicopter through an electrical harness and a mechanical release cable. A load is attached to the cargo hook by passing a 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. A load release can be initiated by three different methods. Normal release is achieved by pilot actuation of a 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. In the event of an electrical failure, load release can be achieved by operating the manual release cable. The release cable actuates the internal mechanism of the cargo hook to unlatch the load beam. Ground personnel can also release the load by actuating a lever located on the side of the cargo hook.

The load weigh system is comprised of a C-39 Indicator mounted within the cockpit connected by an electrical harness (item 12 in Figure 25-2) to the load cell between the cargo hook and beam assembly. The C-39 Indicator provides the pilot with an indication of the magnitude of the load being lifted.

25.5 Component Weights

The weights and locations of the Cargo Hook Kit components are listed below.

Table 25-3 Component Weights

Item	Weight	Location (applicable to all models)
Suspension system with hook, without Load Cell	12.0 lbs (5.4 kgs)	FS 121.0 (3073 mm)
Suspension system with hook, with Load Cell	12.5 lbs (5.7 kgs)	FS 121.0 (3073 mm)
C-39 Indicator	0.43 lbs (0.2 kgs)	FS 44.0 (1118 mm)
Wiring Harness	1.10 lbs (0.5 kgs)	FS 82.0 (2083 mm)

25.12 Storage Instructions

Refer to the CMM 122-005-00 for storage instructions for the cargo hook. Clean the exterior suspension 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 Trouble Shooting

Table 25-4 Trouble Shooting

MALFUNCTION	PROBABLE CAUSE	CORRECTIVE ACTION
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).
Cargo hook does not operate electrically or manually.	Defective internal mechanism	Remove and replace with serviceable unit.
Load beam fails to relatch after being reset.	Defective latch mechanism	Remove hook and replace with serviceable unit.
Cargo hook manual release cable pull-off force exceeds 8 Lbs. (at the hook).	Friction in internal mechanism.	Remove hook and replace with serviceable unit.
Visibly loose fasteners or missing locking pins	Visibly loose fasteners or missing locking pins	Re-torque and re-install locking pins per reinstallation instructions
Visibly loose electrical connector	Visibly loose electrical connector	Re-tighten connector
Failure to open or re-lock properly	Defective internal mechanism	Remove hook and replace with serviceable unit.
Circuit breaker opens when Cargo Hook is energized.	Short in the system, faulty wiring, circuit breaker or solenoid	Check for shorts to ground. Check solenoid resistance, repair or replace defective parts.
The cargo hook will not roll back and forth on the beam.	Obstructions in the beam, bad bearings in the beam	Remove beam assembly and replace with serviceable unit.
The beam will not pivot on pillow block bearings	Obstructions or bad bearings in the beam	Remove pillow block assembly and replace with serviceable unit.
Circuit breaker opens when the circuit to Load Weigh System is energized.	Short in the system, faulty wiring, circuit breaker or switch.	Repair or replace defective wiring, circuit breaker or switch.
Load Weigh Indicator does not light up.	Faulty wiring, circuit breaker or switch.	Check the power switch, circuit breaker and wiring. If this doesn't help, remove and replace C-39 indicator

25.15 Trouble Shooting continued

Table 25-4 Troubleshooting continued

DIFFICULTY	PROBABLE CAUSE	CORRECTIVE ACTION
Indicator displayed load is incorrect.	Incorrect Calibration Code.	Ensure the correct Calibration Code has been entered (see Note 2).
Indicator displayed load is not stable.	Dampening level is too low.	Adjust the dampening level to a higher number (see Note 3).
Indicator displayed load takes too long to change the reading when the load is changed.	Dampening level is too high.	Adjust the dampening level to a lower number (see Note 3).
Indicator does not change with changing hook loads.	Defective load cell, indicator failure or damaged internal harness.	Check for damaged internal wire harness, remove and replace harness assembly or load cell.

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

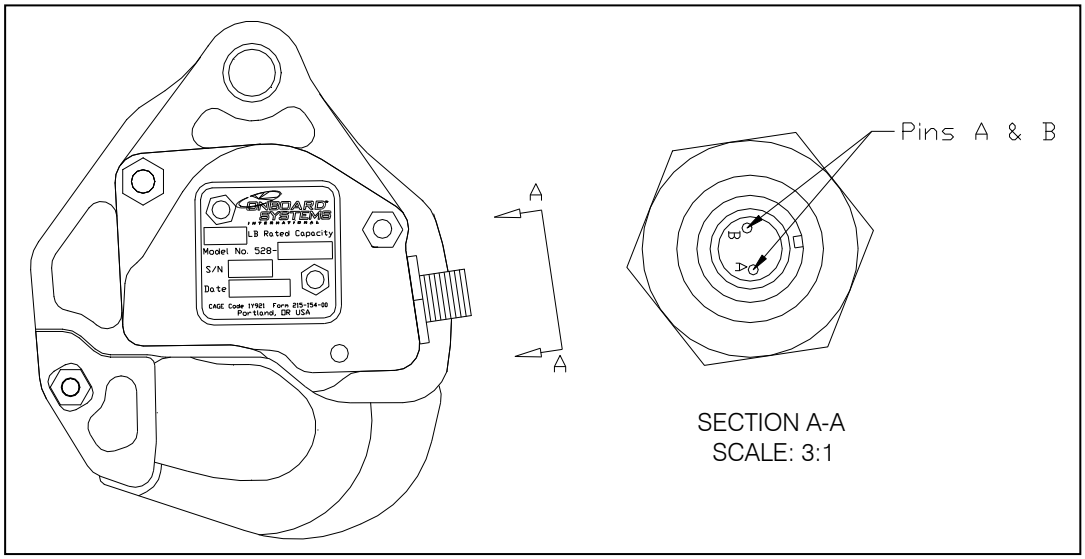
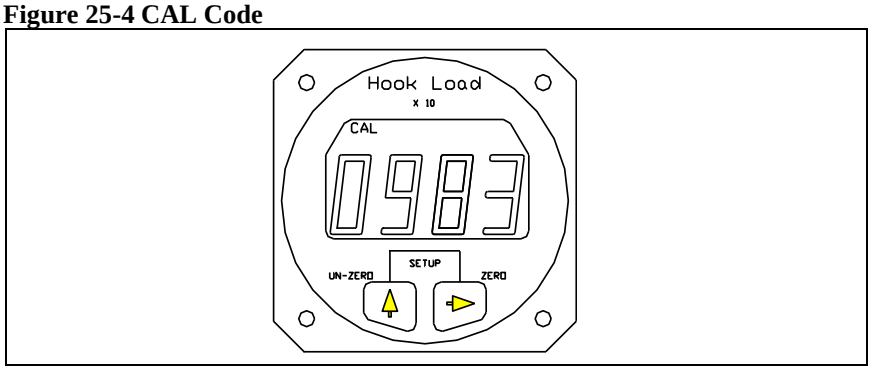


Table 25-4 Notes continued:

2. 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 25-4 CAL Code

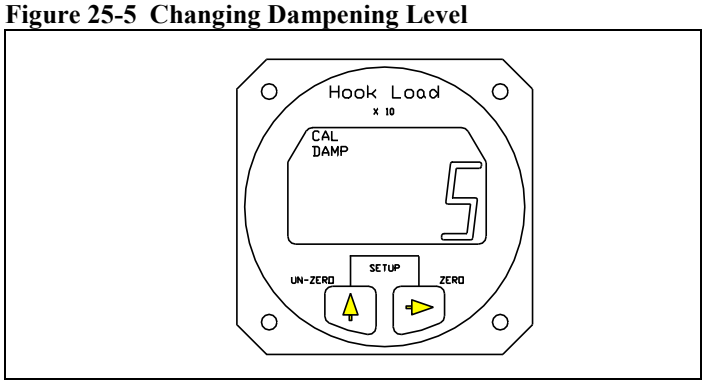


This code should match the code printed on the tag attached to the load cell cable. If this code does not match, contact Onboard Systems for further guidance.

3. 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 25-5 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. Cut and remove all lockwire.
2. Remove manual release cover by removing the two screws.
3. Remove the manual and electrical release cables 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 cargo hook from suspension system.

Beam Removal

1. Note the number and position of the thrust spacers.
2. Disconnect the load cell cable from the Harness assembly.
3. Remove the beam attach bolts.
4. Remove the trunnion pins.
5. Remove the system from the aircraft

Pillow Block Removal

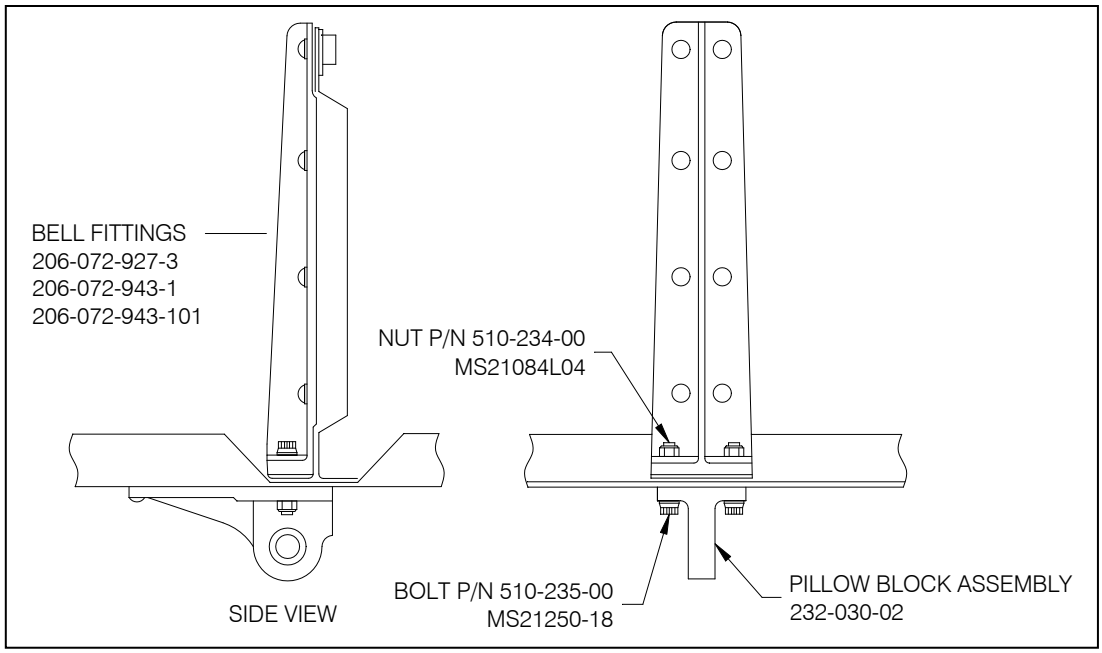
1. Remove the pillow block assembly attach bolts
2. Remove the pillow blocks from the aircraft

25.17 Component Re-installation

Pillow Block Re-installation

Attach the two 232-030-02 Pillow Block Assemblies as illustrated below. Torque the 510-234-00 nuts and 510-235-00 bolts to 100-130 in-lbs. Note that the 232-030-02 Pillow Blocks install exactly as the Bell pillow blocks with the exception of the P/N 510-235-00 bolts. These bolts have a shorter grip length than those used with the Bell pillow blocks and they are installed with the heads down to give clearance for the beam when it rotates. Use sealant on the faying surfaces.

Figure 25-6 Pillow Block Re-installation



25.17 Component Re-installation continued

Beam Re-installation

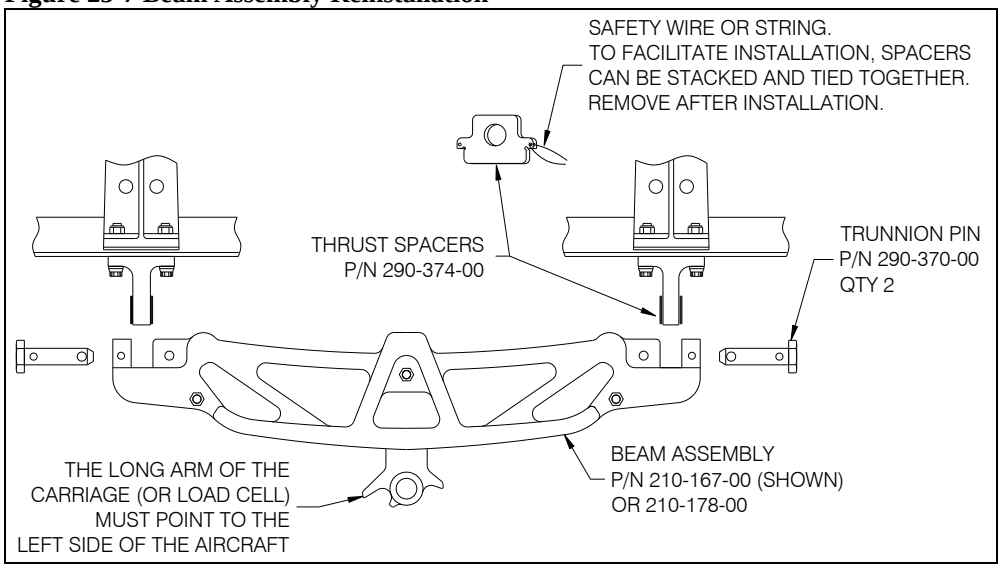
Attach the Beam Assembly, P/N 210-167-00 or 210-178-00, to the Pillow Blocks as illustrated.

NOTICE

The long end of the Carriage must point to the left side of the aircraft as illustrated below.

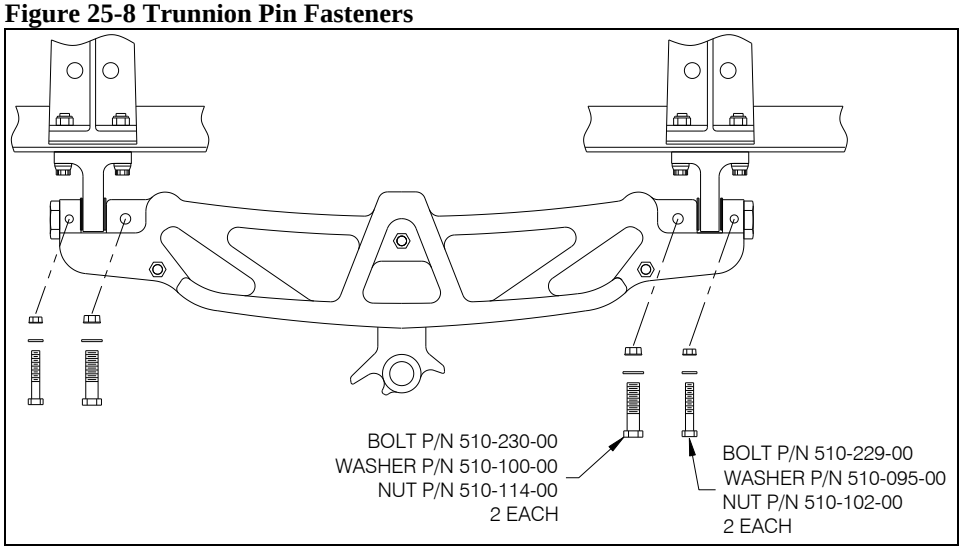
Position the Thrust Spacers, P/N 290-374-00, on both sides of the Pillow Blocks in the same position as they were when removed.

Figure 25-7 Beam Assembly Reinstallation



Secure the two Trunnion Pins, P/N 290-370-00, with fasteners as illustrated. Torque the 510-230-00 bolt and 510-114-00 nuts to 56-79 in-lbs. Torque the 510-229-00 bolts and 510-102-00 nuts to 20-25 in-lbs.

Figure 25-8 Trunnion Pin Fasteners

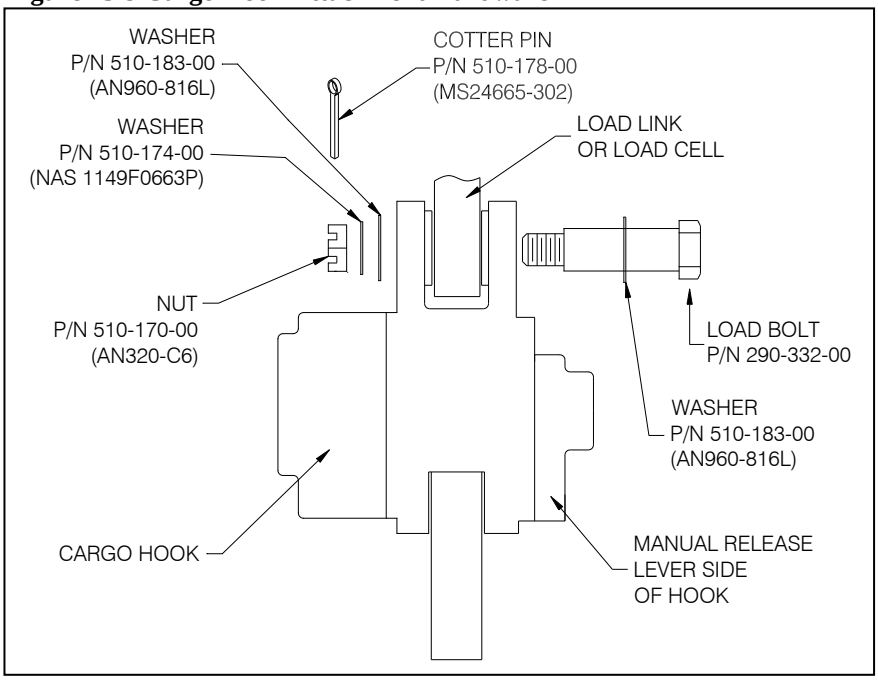


25.17 Component Re-installation continued

Cargo Hook Re-installation

1. Verify that the part number of the cargo hook removed matches one of the numbers on the list in the Applicability section of this manual. If it does not, do not attempt to use the cargo hook, contact the factory for clarification.
2. Attach the Cargo Hook, P/N 528-023-01, to the suspension system by installing the bolt P/N 290-332-00 and washer P/N 510-183-00 as illustrated in Figure 25-9.
3. Install washer P/N 510-183-00 and washer P/N 510-174-00 over bolt end.
4. Tighten nut P/N 510-170-00 on bolt P/N 290-332-00 to finger tight until fully seated, rotate nut to previous castellation if necessary to insert cotter pin P/N 510-178-00.

Figure 25-9 Cargo Hook Attachment Hardware



NOTICE

The Cargo Hook Load Beam must point to the right side of the helicopter when looking from the rear.

25.17 Component Re-installation continued

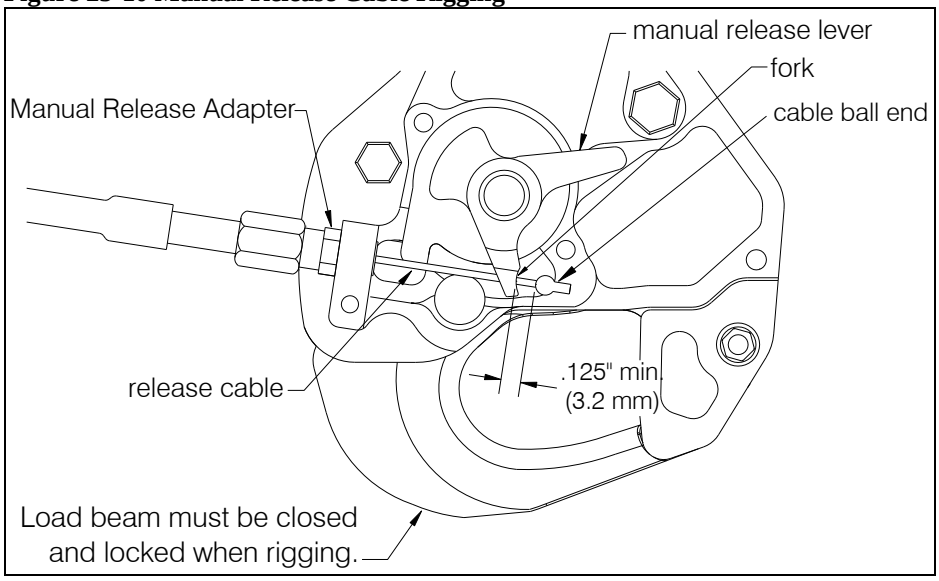
Connection of Manual release cable

1. Remove the manual release cover from the cargo hook.
2. Thread the manual release adapter, P/N 290-331-00 into the cargo hook manual release boss on the hook sideplate.
3. Connect the manual release cable to the adapter.
4. Place the cable ball end fitting into the hook manual release fork fitting as illustrated in Figure 25-10.
5. Move the manual release lever in the clockwise direction until it is against the cam stop.
6. Measure the cable ball end free play with the manual release handle in the cockpit in the non-release position and the cargo hook load beam in the closed position.
7. Verify that the manual release cable system has a minimum of .125" of free-play at the fork fitting as shown in Figure 25-10.
8. Re-install the manual release cover with the two screws and lockwire.

⚠ CAUTION

Manual release cable rigging must be done with the cargo hook in the closed and locked position.

Figure 25-10 Manual Release Cable Rigging



25.18 General Procedural Instructions-Check

After re-installation perform the following:

1. Swing the installed Cargo Hook on the beam to its full extremes 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 release button to ensure the cargo hook electrical release is operating correctly. 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.

CAUTION

The 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.

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