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***Instructions for
Continued Airworthiness***

***Cargo Hook Swing
Suspension System
for the
Airbus Helicopters
AS355 Series***

***Kit Part Number
200-292-02***

STC SR01424SE



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Record of Revisions

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| 0 | 04/09/14 | All | Initial Release |
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| 2 | 02/23/18 | Section 5 pages 12, 16, 17, 19 Section 25 page 15 | Removed magnetic particle inspection requirement for load cell assembly, inserted instructions to return load cell to factory for inspection/calibration. Revised attach bolt diameter limit to .495” to standardize with cargo hook CMMs. Added load cell assembly P/N 210-249-05. |
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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 Swing Suspension System P/N 200-292-02.

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 200-292-02 Cargo Hook Swing Suspension System.

0.6 Arrangement

This manual contains instructions for the service, maintenance, inspection and operation of the Cargo Hook Swing Suspension System P/N 200-292-02 on Airbus Helicopters Model AS355 series helicopters. The manual is arranged in the general order that maintenance personnel would use to maintain and operate the Cargo Hook Swing 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 12 Servicing
- Section 25 Equipment and Furnishings

0.7 Applicability

These Instructions for Continued Airworthiness are applicable to Cargo Hook Swing Suspension System P/N 200-292-02 (with Cargo Hook P/N 528-029-00) for the Airbus Helicopters AS355 Series Helicopters. Refer to the appropriate Airbus Helicopters maintenance documents for instructions regarding parts of the aircraft that interface with the P/N 200-292-02 system.

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.

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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 Swing 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 swing suspension system per the following. Refer to the Component Maintenance Manual (CMM) 122-017-00 for the Cargo Hook for additional inspection instructions.

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.

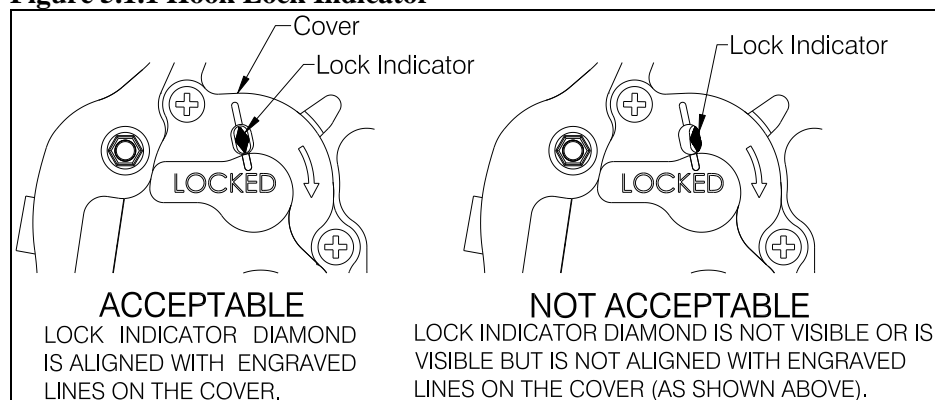
2. Activate the manual release system by pulling the release lever on the collective in the cockpit. The mechanism should operate smoothly and the cargo hook must release. Reset the hook by hand after release. Verify that the hook lock indicator on the side of the hook returns to the fully locked position. 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 Swing Suspension Inspection continued

Figure 5.1.1 Hook Lock Indicator

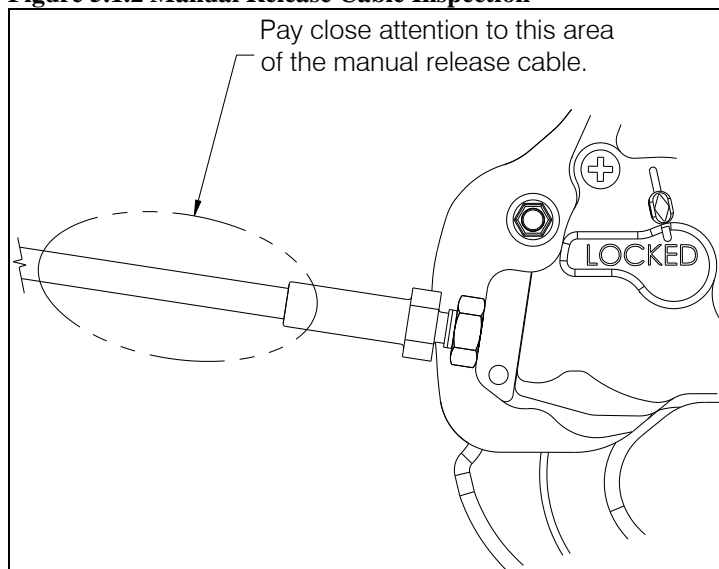


3. Visually inspect for corrosion on the exterior of cargo hook, load cell and swing suspension components.
4. Move the cargo hook and the swing suspension throughout their full ranges of motion and observe the manual release cable, electrical harnesses, and ground strap to ensure that they have enough slack. The release cable, harnesses, and ground strap must not be the stops that prevent the cargo hook or swing suspension from moving freely in all directions.
5. Swing the cargo hook and the swing 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 Swing 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

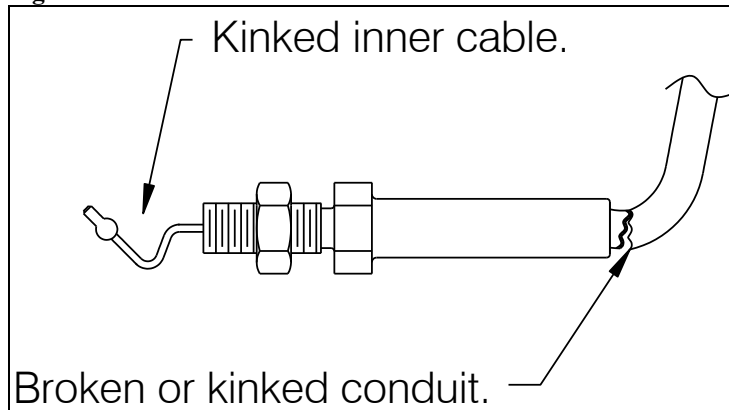


9. Remove the manual release cover from the cargo hook and inspect the visible section of the inner cable for kinks or frays.



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

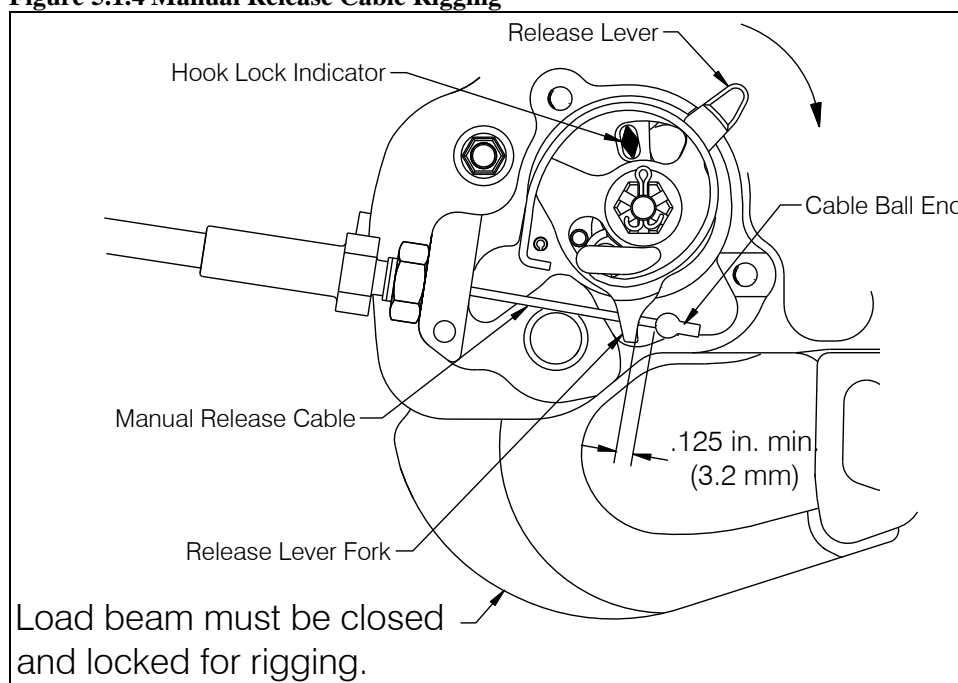


5.1 Cargo Hook Swing Suspension Inspection continued

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



5.1 Cargo Hook Swing Suspension Inspection continued

11. Verify calibration of the load cell by lifting a load of known weight (see applicable Owner's Manual for instructions).
12. Visually inspect the cargo hook and swing frame assembly bumpers for damage and security.
13. Visually inspect for cracks in suspension frame. Pay special attention to the areas around the welds. The frame tubes contain a corrosion preventative compound, which may leak out through a crack and provide an indication. At any sign of cracking, remove and replace discrepant part.
14. Inspect suspension cables for broken strands. Pass a cloth over the cables. This will clean the cables for a visual inspection and detect broken wires if the cloth snags on the cable. Ten randomly distributed broken strands in one cable lay (one complete rotation around the wire) or five broken strands in one strand in cable rope lay are considered unacceptable.

5.1 Cargo Hook Swing Suspension Inspection continued

Every 5 years or 1000 hours of external load operations, whichever comes first, inspect the cargo hook swing suspension system per the following.

Remove the suspension assembly from the helicopter (see section 25.17).

Remove the Shackle Assemblies (P/N 232-137-01) from the forward helicopter hard points. Bushings do not need to be pressed out unless they need to be replaced, see Table 5.1.6 for replacement criteria.

Figure 5.1.5 Shackle Assembly Parts

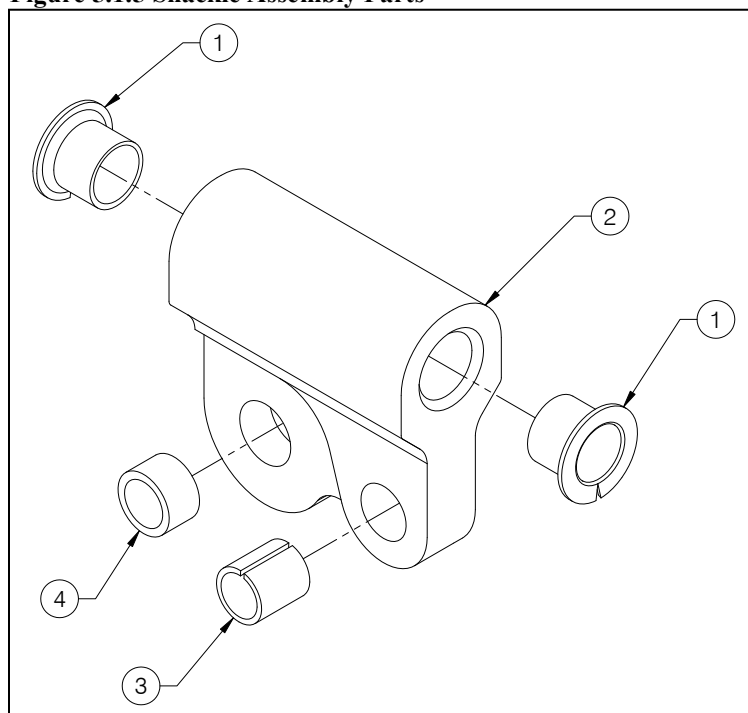


Table 5.1.1 Shackle Assembly Parts

| Item | Part No. | Description | Qty |
|------|------------|-------------|-----|
| 1 | 517-047-00 | Bushing | 2 |
| 2 | 290-850-00 | Shackle | 1 |
| 3 | 517-016-00 | Bushing | 1 |
| 4 | 290-750-00 | Bushing | 1 |

5.1 Cargo Hook Swing Suspension System Inspection continued

Disassemble and inspect the swing suspension component parts per the following instructions.

1. Remove the suspension cable assemblies from the swing frame (not shown in figure below) by removing the cotter pin (item 6), nut (item 5) washer (item 4) and sliding out the bolt (item 7). Remove the remaining washer and the Standoff Bushings (item 9).
2. Separate the Gimbal Assembly (item 8) from the Fork Fitting (item 1A) by removing the cotter pin (item 6), nut (item 5), washer (item 4) and bolt (item 3).
3. On the aft attach cable assembly (see Figure 5.1.7) separate the Suspension Cable Adapter from the Fork Fitting by removing the cotter pin (item 6), nut (item 5) washer (item 4) and sliding out the bolt (item 7).

Figure 5.1.6 Forward Cable Assembly Parts

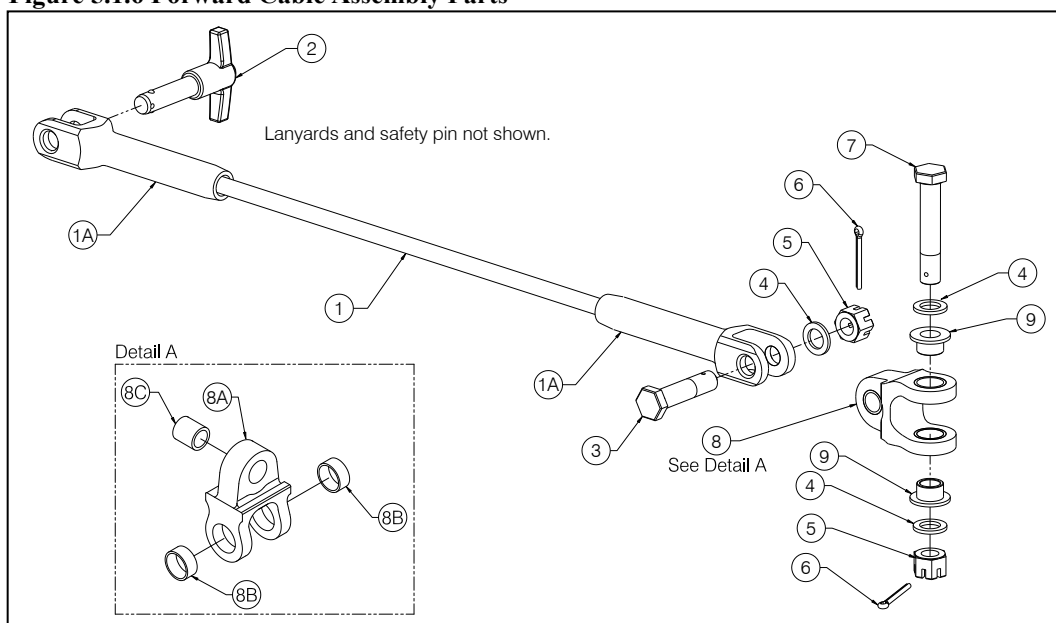


Table 5.1.2 Forward Cable Assembly Parts

| Item | Part No. | Description | Qty |
|------|------------|------------------------------|-----|
| 1 | 232-177-00 | Fwd Attach Cable Assembly | 1 |
| 1A | 290-849-00 | Fork Fitting | 2 |
| 2 | 290-851-00 | Quick Release Pin | 1 |
| 3 | 510-438-00 | Bolt | 1 |
| 4 | 510-221-00 | Washer | 3 |
| 5 | 510-440-00 | 3/8" Castellated Nut | 2 |
| 6 | 510-178-00 | Cotter Pin | 2 |
| 7 | 510-439-00 | Bolt | 1 |
| 8 | 232-142-00 | Lower Attach Gimbal Assembly | 1 |
| 8A | 290-746-00 | Gimbal | 1 |
| 8B | 517-048-00 | Bushing | 2 |
| 8C | 517-016-00 | Bushing | 1 |
| 9 | 290-749-00 | Standoff Bushing | 2 |

5.1 Cargo Hook Swing Suspension System Inspection continued

Figure 5.1.7 Aft Attach Cable Assembly Parts

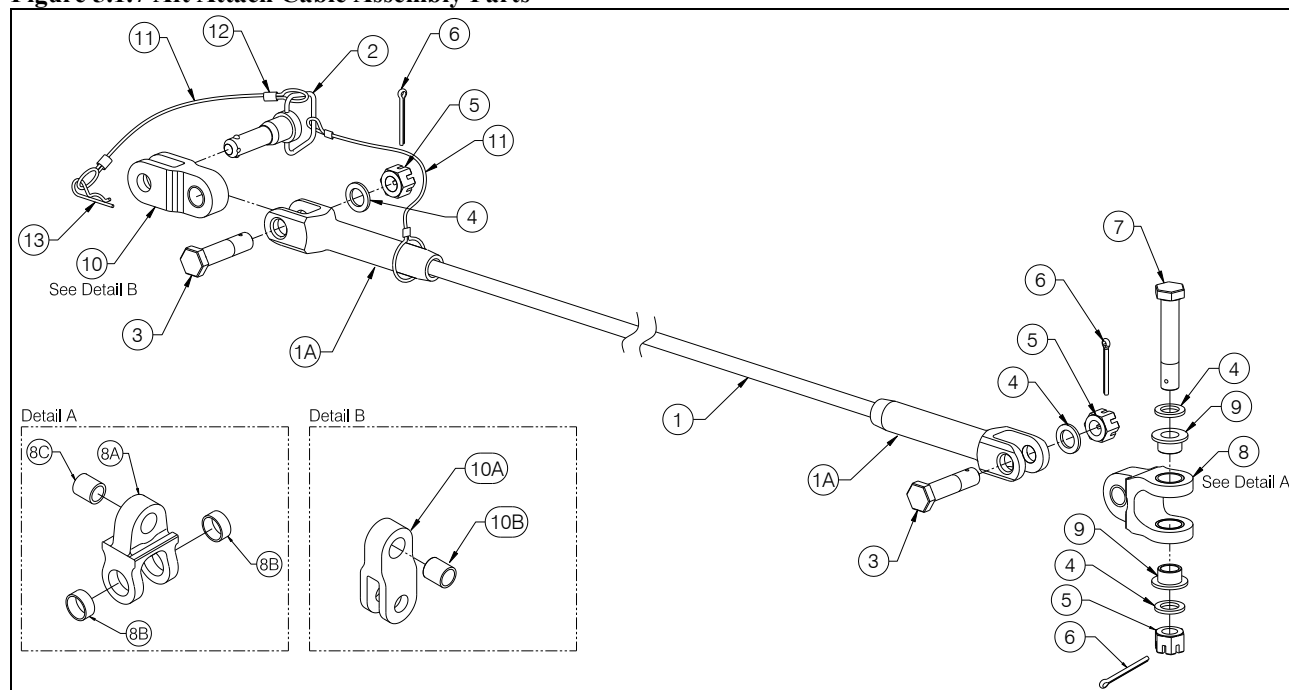


Table 5.1.3 Aft Cable Assembly Parts

| Item | Part No. | Description | Qty |
|------|------------|-----------------------------------|-----|
| 1 | 232-178-00 | Aft Attach Cable Assembly | 1 |
| 1A | 290-849-00 | Fork Fitting | 2 |
| 2 | 290-784-00 | Quick Release Pin | 1 |
| 3 | 510-438-00 | Bolt | 1 |
| 4 | 510-221-00 | Washer | 3 |
| 5 | 510-440-00 | 3/8" Castellated Nut | 2 |
| 6 | 510-178-00 | Cotter Pin | 2 |
| 7 | 510-439-00 | Bolt | 1 |
| 8 | 232-142-00 | Lower Attach Gimbal Assembly | 1 |
| 8A | 290-746-00 | Gimbal | 1 |
| 8B | 517-048-00 | Bushing | 2 |
| 8C | 517-016-00 | Bushing | 1 |
| 9 | 290-749-00 | Standoff Bushing | 2 |
| 10 | 232-180-00 | Suspension Cable Adapter Assembly | 1 |
| 10A | 290-864-00 | Suspension Cable Adapter | 1 |
| 10B | 517-016-00 | Bushing | 1 |
| 11 | 531-015-00 | 1/16" 7X7 Stainless Steel Cable | AR |
| 12 | 531-016-00 | Crimp Sleeve | 4 |
| 13 | 510-464-00 | Hitch Pin | 1 |

5.1 Cargo Hook Swing Suspension System Inspection continued

1. At each foot of the swing frame remove the nut (item 4) and the bolt (item 3) that secure the rod end fittings.

Figure 5.1.8 Strut/Frame Disassembly

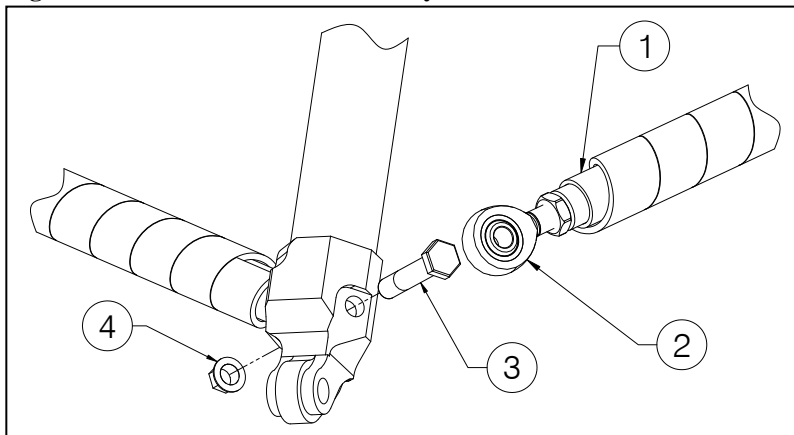


Table 5.1.4 Strut/Frame Assembly Parts

| Item | Part No. | Description | Qty (total) |
|------|------------|-----------------|-------------|
| 1 | 235-116-00 | Frame Strut | 2 |
| 2 | 517-055-00 | Rod End Fitting | 4 |
| 3 | 510-762-00 | Bolt | 4 |
| 4 | 510-104-00 | Nut | 4 |

5.1 Cargo Hook Swing Suspension System Inspection continued

1. Remove the cotter pin (item 10) and the nut (item 7) from the frame assembly.
2. Remove the Shaft Cap (item 3).
3. Slide the frame weldment (item 1) off of the Pivot Shaft (item 2).
4. Remove the Pivot Shaft from the opposite frame weldment and remove the Thrust Washers (item 6), Bumper (item 9), Shaft Cap (item 3), and Bolt (item 8). Be sure to support the Cargo Hook/Load Cell assembly during this step.
5. Remove the loop clamps (not shown) securing the electrical harnesses to the swing frame weldment.

Figure 5.1.9 Upper Gimbal Disassembly

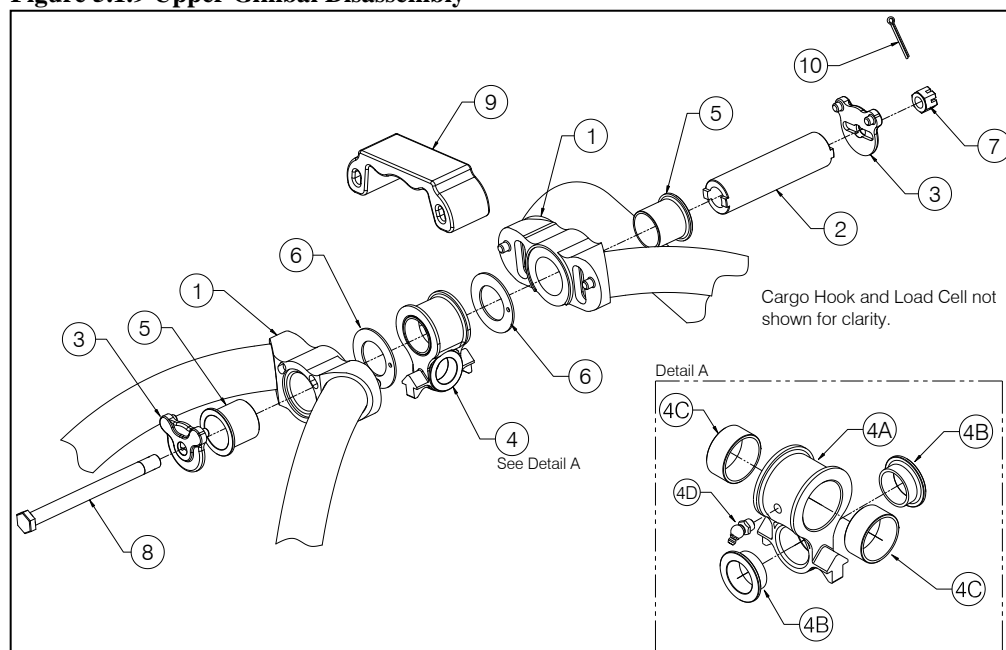


Table 5.1.5 Upper Gimbal Assembly Parts

| Item | Part No. | Description | Qty |
|------|------------|----------------------|-----|
| 1 | 235-117-00 | Swing Frame Weldment | 2 |
| 2 | 290-842-00 | Pivot Shaft | 1 |
| 3 | 290-843-00 | Shaft Cap | 2 |
| 4 | 232-143-01 | Gimbal Assembly | 1 |
| 4A | 290-841-00 | Gimbal | 1 |
| 4B | 517-046-00 | Flange Bushing | 2 |
| 4C | 517-056-00 | Bushing | 2 |
| 4D | 518-003-00 | Grease Fitting | 1 |
| 5 | 517-057-00 | Flange Bushing | 2 |
| 6 | 517-058-00 | Thrust Washer | 2 |
| 7 | 510-440-00 | Nut | 1 |
| 8 | 510-506-00 | Bolt | 1 |
| 9 | 290-862-00 | Bumper | 1 |
| 10 | 510-178-00 | Cotter Pin | 1 |

5.1 Cargo Hook Swing Suspension System Inspection continued

1. Remove the cotter pin (item 6), nut (item 5), washer (item 4), thrust washer (item 2) and remove the bolt (item 1) and other thrust washer.
2. Slide the Shaft (item 3) out to separate the Load Cell Assembly (item 9) from the Gimbal.
3. Cut ty-wraps that secure the electrical harnesses to the Bumper (item 13) and separate the Cargo Hook (item 14) and Bumper from the Load Cell Assembly by removing the Cotter Pin (item 12), nut (item 11), washers (items 8 and 10) and Attach Bolt (item 7).

Figure 5.1.10 Load Cell/Gimbal Disassembly Instructions

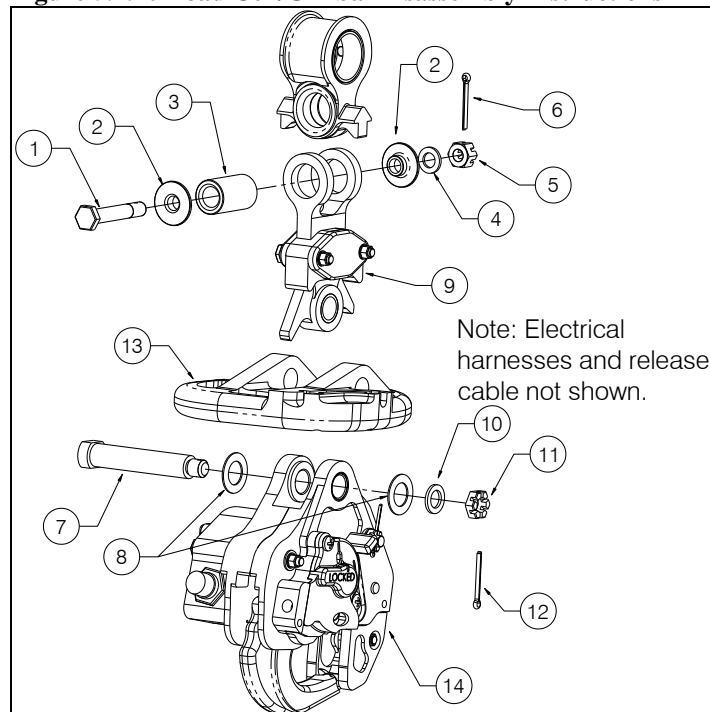


Table 5.1.6 Load Cell/Gimbal Assembly Parts

| Item | Part No. | Description | Qty |
|------|-------------|--------------------|-----|
| 1 | 510-443-00 | Bolt | 1 |
| 2 | 290-740-00 | Thrust Washer | 2 |
| 3 | 290-739-00 | Gimbal Shaft | 1 |
| 4 | 510-220-00 | Washer | 1 |
| 5 | 510-320-00 | Nut | 1 |
| 6 | 510-115-00 | Cotter Pin | 1 |
| 7 | 290-775-00 | Attach Bolt | 1 |
| 8 | 510-183-00 | Washer | 2 |
| 9 | 210-249-05* | Load Cell Assembly | 1 |
| 10 | 510-174-00 | Washer | 1 |
| 11 | 510-170-00 | Nut | 1 |
| 12 | 510-178-00 | Cotter Pin | 1 |
| 13 | 290-774-00 | Bumper | 1 |
| 14 | 528-029-00 | Cargo Hook | 1 |

* Supersedes P/N 210-214-00. These P/Ns are interchangeable.

5.1 Cargo Hook Swing Suspension System Inspection continued

Return the Load Cell Assembly (P/N 210-214-00, 210-249-02, or 210-249-05) 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.

In addition, carefully inspect, and if necessary repair or replace, the detail parts in accordance with the instructions in Table 5.1.7. Inspect the parts in a clean, well-lit room.

Table 5.1.7 Suspension System Inspection Criteria

| Component | Damage Permitted without Repair | Repair | Maximum Damage which Causes Replacement |
|---|---|---|---|
| Bushing P/N 517-047-00 (item 1, Figure 5.1.5) | 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. |
| Shackle P/N 290-850-00 (item 2, Figure 5.1.5) | Dents, gouges, scratches, and corrosion less than .010" deep. | 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 and MIL-PRF-85285 Type 1 polyurethane coating or equivalent. | Dents, gouges and scratches greater than .020" deep. Cracks. |
| Bushing P/N 517-016-00 (item 3, Figure 5.1.5) | 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. |

5.1 Cargo Hook Swing Suspension System Inspection continued

Table 5.1.7 Suspension System Inspection Criteria continued

| Component | Damage Permitted without Repair | Repair | Maximum Damage which Causes Replacement |
|--|---|---|--|
| Fork End Fitting P/N 290-849-00 (item 1A, Figure 5.1.6, Figure 5.1.7) | Wear on inside diameter of lug holes, diameter less than .397". Dents, gouges, and scratches less than .020" deep outside lug areas. Dents, gouges, and scratches less than .010" deep around lugs. | None. Blend at 20:1 ratio, length to depth, to provide smooth transitions. | Wear on inside diameter of clevis holes, diameter greater than .397". Dents, gouges, and scratches greater than .030" deep outside lug areas. Dents, gouges, and scratches greater than .020" deep around lugs. Cracks. |
| Quick Release Pin P/N 290-851-00 (item 2, Figure 5.1.6). | Wear on outside diameter, diameter greater than .362". | None. | Wear on outside diameter, diameter less than .362". Cracks. |
| Gimbal P/N 290-746-00 (item 8A, Figure 5.1.6, Figure 5.1.7) | 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. |
| Bushing P/N 517-048-00 (item 8B, Figure 5.1.6, Figure 5.1.7) | 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 P/N 517-016-00 (item 8C, Figure 5.1.6, Figure 5.1.7) | 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. |
| Standoff Bushing P/N 290-749-00 (item 9, Figure 5.1.6, Figure 5.1.7) | Wear on shoulder diameter, diameter greater than .487". | None. | Wear on shoulder diameter, diameter less than .487". |

5.1 Cargo Hook Swing Suspension System Inspection continued

Table 5.1.7 Suspension System Inspection Criteria continued

| Component | Damage Permitted without Repair | Repair | Maximum Damage which Causes Replacement |
|---|--|---|--|
| Quick Release Pin P/N 290-784-00 | Wear on outside diameter, diameter greater than .362”. | None. | Wear on outside diameter, diameter less than .362”. Cracks. |
| Suspension Cable Adapter P/N 290-864-00 (item 10A, Figure 5.1.7). | 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. |
| Bushing P/N 517-016-00 (item 10B, Figure 5.1.6) | 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. |
| Frame Strut P/N 235-116-00 (item 1, Figure 5.1.8) | Dents, gouges, and scratches less than .010” deep. | 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 and MIL-PRF-85285 Type 1 polyurethane coating or equivalent. | Dents, gouges and scratches greater than .020” deep. Cracks. |
| Rod End Fitting P/N 517-055-00 (item 2, Figure 5.1.8) | Wear on or elongation of inside diameter of spherical bearing, diameter less than .330”. Dents, gouges, corrosion and scratches less than .020” deep. | None. | Wear on or elongation of inside diameter of spherical bearing, diameter greater than .330”. Dents, gouges, corrosion and scratches greater than .020” deep. Binding of spherical bearing in its housing. |

5.1 Cargo Hook Swing Suspension System Inspection continued

Table 5.1.7 Suspension System Inspection Criteria continued

| Component | Damage Permitted without Repair | Repair | Maximum Damage which Causes Replacement |
|--|--|---|--|
| Swing Frame Weldment P/N 235-117-00 (item 1, Figure 5.1.8) | Dents, gouges, scratches, and corrosion less than .010" deep. Bent lateral tube, gap measured alongside a straight edge is less than or equal to .35" (see sketch below). | Blend at 20:1 ratio, length to depth, to provide smooth transitions. Protect affected surfaces (as noted above for P/N 235-116-00). None. | Dents, gouges and scratches greater than .020" deep. Cracks. Bent lateral tube, gap measured alongside a straight edge greater than .35" (see sketch below). |
| | | | |
| Pivot Shaft P/N 290-842-00 (item 2, Figure 5.1.9). | Wear on outside diameter, diameter greater than .990". | None. | Wear on outside diameter, diameter less than .990". Cracks. |
| Shaft Cap P/N 290-843-00 (item 3, Figure 5.1.9) | Dents, gouges, and scratches less than .030" deep. | 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 .060" deep. Cracks |
| Gimbal, P/N 290-841-00 (item 4A, Figure 5.1.9). | 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 Swing Suspension System Inspection continued

Table 5.1.7 Suspension System Inspection Criteria continued

| Component | Damage Permitted without Repair | Repair | Maximum Damage which Causes Replacement |
|---|--|---------------|---|
| Bushing P/N 517-046-00 (item 4B, Figure 5.1.9) | 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 P/N 517-056-00 (item 4C, Figure 5.1.9) | 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. |
| Flange Bushing P/N 517-057-00 (item 5, Figure 5.1.9). | 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. |
| Thrust Washer P/N 517-058-00 (item 6, Figure 5.1.9) | Teflon film still covers more than 50% of the wear area (the wear area is the side which faces the Gimbal Assembly). | None. | If copper is visible over more than 50% of the washer wear area, remove and replace the washer. |
| Bumper P/N 290-862-00 (item 9, Figure 5.1.9). | Gouges and scratches less than .060" deep. | None. | Gouges and scratches greater than .060" deep. Splitting. |
| Gimbal Shaft, P/N 290-739-00 Item 3 (Figure 5.1.10). | Wear on outside diameter, diameter at or greater than .732". | None. | Wear on outside diameter, diameter less than .732". Cracks. |
| Attach Bolt, P/N 290-775-00 (Item 7, Figure 5.1.10). | Wear on outside diameter, diameter at or greater than .490". | None. | Wear on outside diameter, diameter less than .490". Cracks. |

5.1 Cargo Hook Swing Suspension System Inspection continued

Table 5.1.7 Suspension System Inspection Criteria continued

| Component | Damage Permitted without Repair | Repair | Maximum Damage which Causes Replacement |
|---|---|---|---|
| Load Cell Assembly P/N 210-214-00, P/N 210-249-02 or P/N 210-249-05 (item 9, Figure 5.1.10) | 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 upper lugs, diameter less than .759". | None | Wear on inside diameter of upper lugs, diameter greater than .759". |
| Bumper, P/N 290-774-00 (item 13, Figure 5.1.10) | Gouges less than .060" deep. | None. | Gouges greater than .060" deep. Splitting. |
| Threaded fasteners | N/A | It is recommended to replace the threaded fasteners. | Wear, corrosion or deterioration. |

5.1 Cargo Hook Swing Suspension System Inspection continued

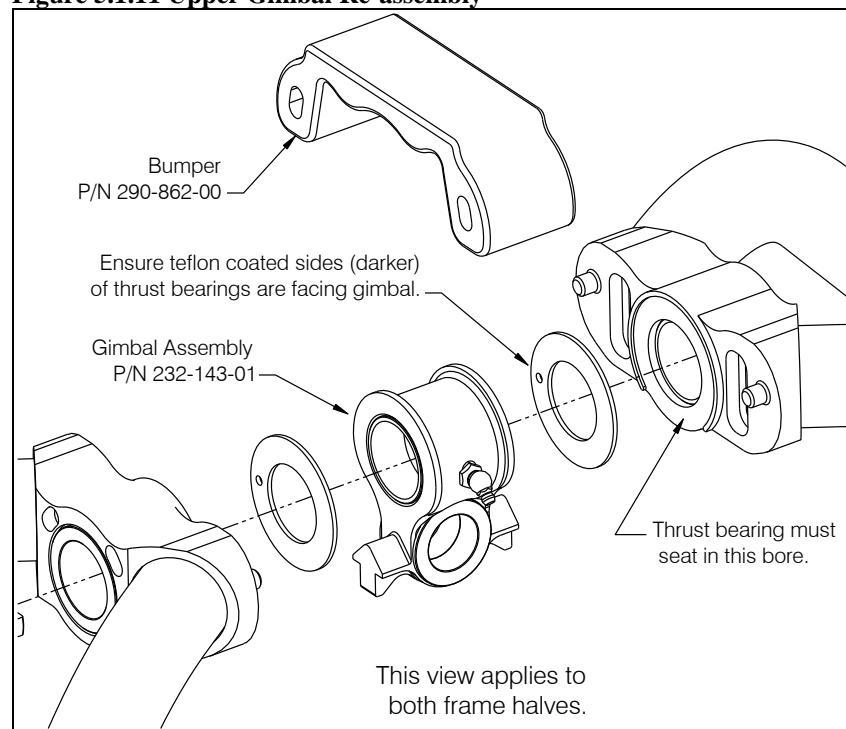
Swing Frame Re-assembly

Re-assemble the suspension frame per the following (refer to Figures 5.1.6, 5.1.7, 5.1.8, 5.1.9, 5.1.10 and Figure 5.1.11 below).

1. If replacing bushings press in replacement bushings with wet zinc chromate primer (TTP1757-1CY is recommended) applied to the inside diameter of the mating hole.
2. Insert Pivot Shaft (P/N 290-842-00) through one bushing, thrust washer* (P/N 517-058-00), Gimbal Assembly, thrust washer* (P/N 517-058-00) and through second frame half bushing.

* Ensure Teflon impregnated wear surfaces (darker sides) of thrust washers are facing gimbal.

Figure 5.1.11 Upper Gimbal Re-assembly



3. Rotate the pivot shaft so that the raised “keys” at each end are horizontal.
4. Align the rod ends to seat in the pockets of the frame feet.
5. Before fully seating and securing the frame halves together install the bumper (P/N 290-862-00) and insert the rod ends of the frame struts into the slots at each of the 4 frame feet.
6. Capture each end of pivot shaft with Shaft Caps (P/N 290-843-00) and install bolt (P/N 510-506-00), and nut (P/N 510-440-00). Ensure that the rod ends are aligned with the holes in both feet.
7. Torque the nut to 20 ft-lbs. Rotate the nut to the next castellation if necessary to insert cotter pin, not to exceed 30 ft-lbs.
8. Install and secure cotter pin (P/N 510-178-00).

5.1 Cargo Hook Swing Suspension System Inspection continued

9. Secure rod ends to frame feet with bolt (P/N 510-762-00) and nut (P/N 510-104-00). Torque to 8 – 12 ft-lbs.
10. Ensure the rod ends at each end of the frame struts are parallel, i.e.- the rod ends should be able to be rotated within the limits of the pockets in the frame feet. If necessary loosen a jam nut, rotate the strut so the tightened rod end is against the pocket, rotate other rod end in the same direction (to be parallel), and tighten its jam nut.
11. Slide Load Cell Assembly* over Gimbal Assembly, align holes, and then insert Gimbal Shaft (P/N 290-739-00) through. Place Shaft Retaining Bushings (P/N 290-740-00) over each end of Gimbal Shaft, insert bolt (P/N 510-443-00) through, and secure with washer (P/N 510-220-00) and nut (510-320-00). Tighten nut to 60-70 in-lbs and rotate to next castellation if necessary to insert cotter pin.

CAUTION

The Load Cell Assembly must pivot freely about its upper attach point independently of the bolt (P/N 510-443-00) and nut, back the nut off to previous castellation if necessary to achieve this.

*Note the orientation of Load Cell Assembly with respect to Cargo Hook in Figure 5.1.10, Cargo Hook load beam must point to the left when installed on the aircraft.

12. Slide the Bumper over the Cargo Hook, align the holes and insert the Attach Bolt (P/N 290-775-00) through a washer (P/N 510-183-00) and then through the Bumper and Cargo Hook.
13. Place a washer (P/N 510-183-00) over the shoulder of the Attach Bolt and a second washer (P/N 510-174-00) over the threaded portion and secure with nut (P/N 510-170-00). Tighten nut finger tight only until fully seated and if necessary back off to previous castellation to insert cotter pin (P/N 510-178-00).
14. Attach the Cable Assemblies to the frame feet (the shorter Cable Assemblies are attached to the forward frame feet) with hardware as illustrated in Figure 5.1.7. Tighten nuts to 95-110 in-lbs and rotate to next castellation if necessary to insert cotter pin. Ensure each Cable Assembly pivots freely on frame foot and the bolt does not rotate.
15. Route the electrical cables and ground strap through the cargo hook bumper and to the forward swing frame tube and secure as shown in Figure 25.22.

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.

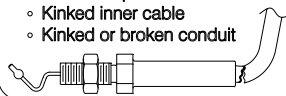
Section 11

Placards and Markings

11.1 Placards

The 200-292-02 Cargo Hook Suspension System requires that the placards shown in Table 11.1 be installed.

Table 11.1 Cargo Hook Suspension System Placards

| Placard part number and appearance | Location |
|---|---|
| <p>P/N 215-176-00</p> <div style="border: 1px solid black; padding: 10px; text-align: center;"> MAX. HOOK LOAD 2303 LBS 1045 KGS </div> <p>or P/N 215-178-00</p> <div style="border: 1px solid black; padding: 10px; text-align: center;"> MAX. HOOK LOAD 2500 LBS 1134 KGS </div> <p>dependent on the model of AS355 on which the system is installed.</p> | <p>Located on the belly of the aircraft near the cargo hook suspension in clear view of the ground support personnel.</p> |
| <p>P/N 215-272-00</p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>⚠ WARNING</p> <ul style="list-style-type: none"> ◦ Route to avoid strain ◦ Rig with proper free play ◦ Replace as condition requires (See reverse) ◦ See manual for complete instructions </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>⚠ WARNING</p> <p>Causes for replacement:</p> <ul style="list-style-type: none"> ◦ Kinked inner cable ◦ Kinked or broken conduit  </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <p>One Side</p> <p>Opposite Side</p> </div> | <p>Located on the manual release cable, near the cargo hook.</p> |

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Section 12

Servicing

12.2 Lubrication Information

Lubrication of the Cargo Hook Swing Suspension system is required every 500 hours of external load operations. To obtain maximum life under severe duty conditions such as logging or seismic work, it is recommended to lubricate the Swing Suspension every 250 hours. Recommended types of lubricant are AeroShell 17 (MIL-G-21164) or Mobilgrease 28 (MIL-G-81322).

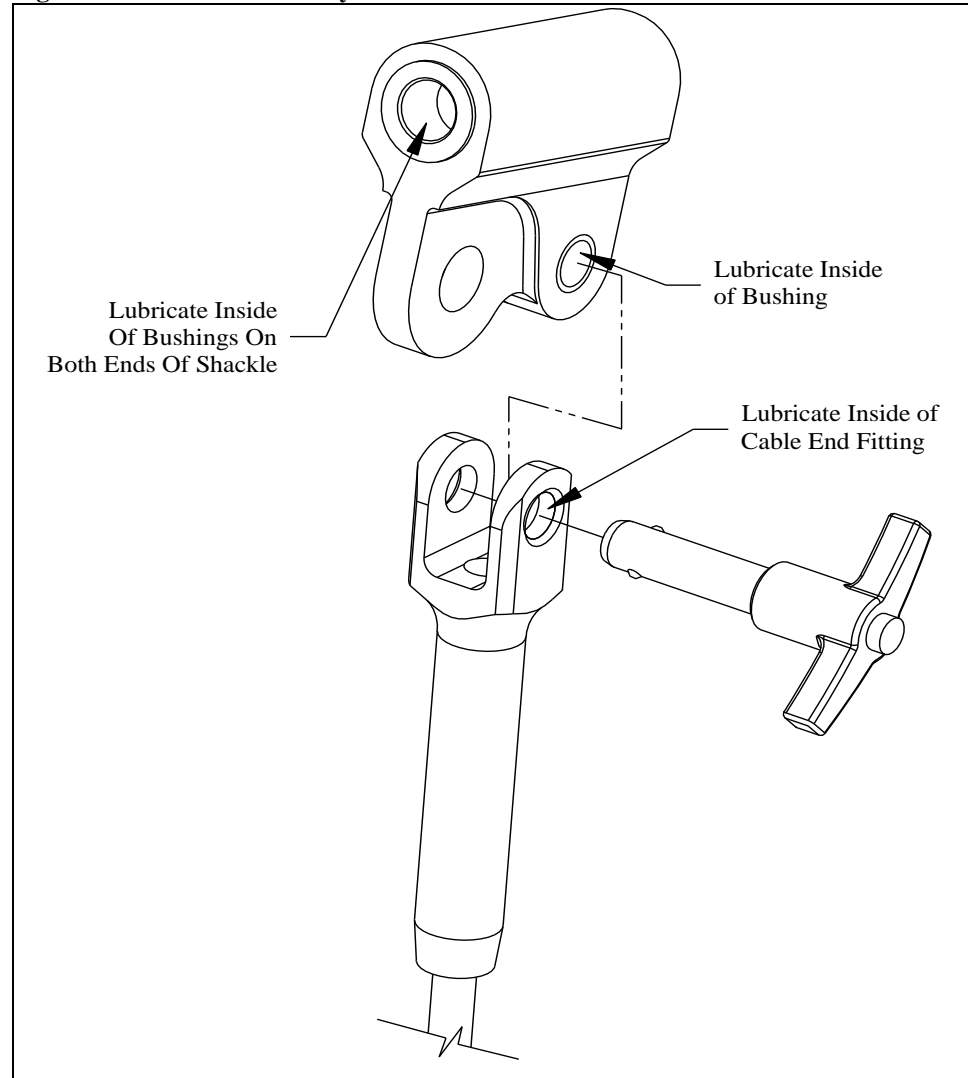
Lubricate the Cargo Hook Swing Suspension at points noted in Figure 12.1 and 12.2.

12.2 Lubrication Information, continued

Shackle Assembly Lubrication

Remove the Shackle Assemblies from the aircraft hard points and lubricate them and the mating fittings on the suspension cables as shown in Figure 12.1. This applies to all four Shackle Assemblies on the helicopter.

Figure 12.1 Shackle Assembly Lubrication

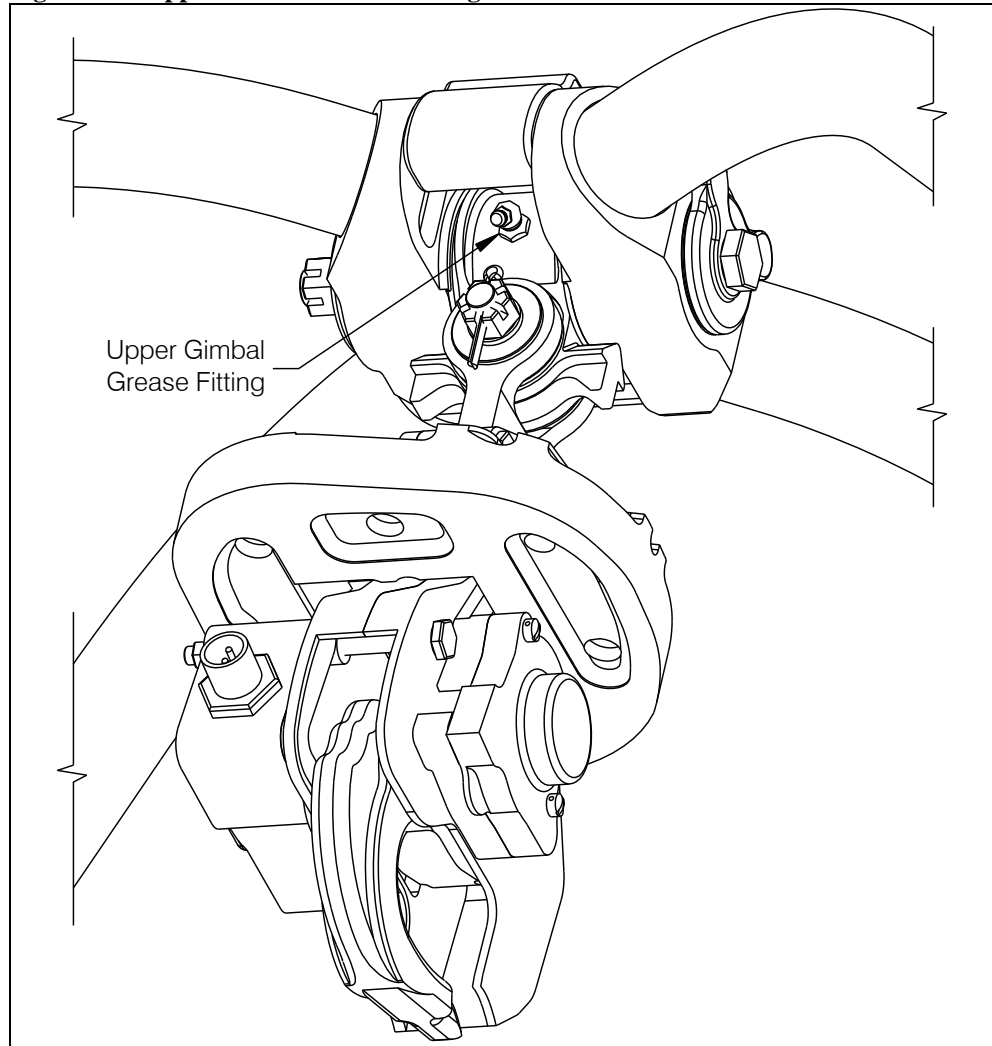


12.2 Lubrication Information, continued

Upper Gimbal Grease Fitting

Lubricate Upper Gimbal Assembly at the grease fitting located as shown in Figure 12.2. You may have to rotate the hook slightly to access the grease fitting.

Figure 12.2 Upper Gimbal Grease Fitting Lubrication



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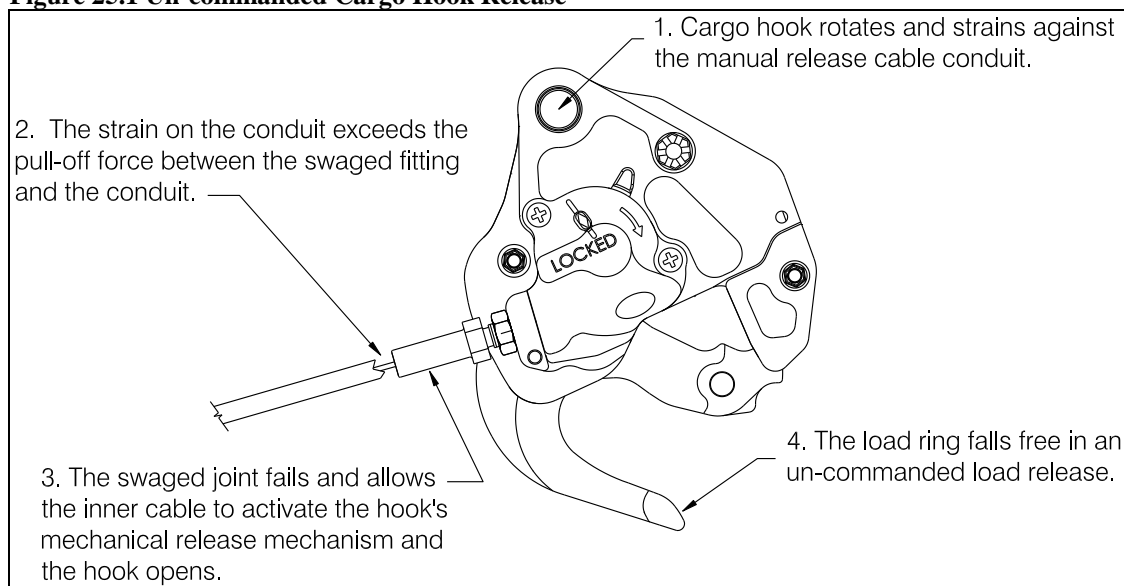
Section 25

Equipment and Furnishings



Un-commanded cargo hook release will happen if the manual release cable is improperly restrained. The cable 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

| <i>Pin</i> | <i>Function</i> |
|------------|-----------------|
| A | Ground |
| B | Positive |

25.2 Description

The Cargo Hook Swing Suspension System consists of four primary subsystems; these are the Swing Suspension Assembly, Manual Release System, Electrical Release System, and Load Weighing System.

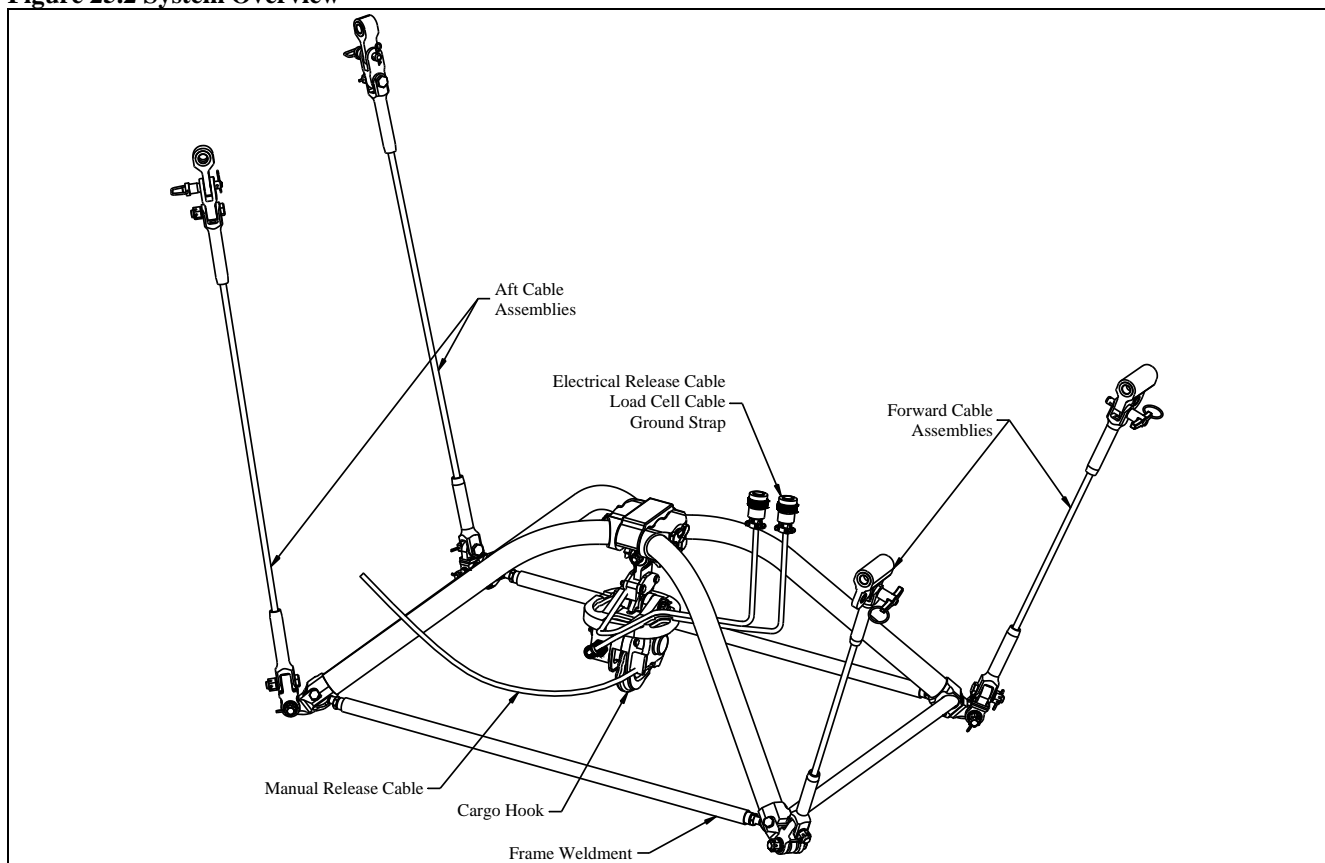
The Swing Suspension Assembly is attached to hard points and suspended below the belly of the helicopter by its four cable assemblies. The cable assemblies are attached to a pyramidal frame, which supports the cargo hook and a load cell through a gimbal (ref. Figure 25.2).

The Electrical Release System provides a means to release a cargo hook load through the use of a switch in the cockpit.

The Manual Release System provides an additional means to release a cargo hook load and consists of a release lever mounted to the collective that actuates a cable that is routed to the cargo hook.

The Load Weighing System consists of an indicator mounted within the cockpit, the load cell on the suspension, and associated wiring.

Figure 25.2 System Overview



25.5 Component Weights

The weights and cgs of the systems are listed in Table 25.2.

Table 25.2 Component Weights and CGs

| Item | Weight | Station |
|-----------------------|---------------------|---------------------|
| Removable Provisions* | 30.5 lbs (13.8 kgs) | 134.4 in. (3414 mm) |
| Fixed Provisions** | 4.5 lbs (2.0 kgs) | 92.0 in. (2337 mm) |
| Total | 35 lbs (15.9 kgs) | 128.9 in (3275 mm) |

* The removable provisions include the swing suspension w/ hook, external manual release cable, and external 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.

** The fixed provisions are those items of the kit that remain on the aircraft. These include the fixed manual release cable, internal electrical wire harnesses, the load weigh indicator, and the miscellaneous brackets that support these items.

25.12 Storage Instructions

Remove the cargo hook and store it per the instructions in CMM 122-017-00. Clean the exterior swing suspension components thoroughly of excess dirt and grease with a rag before packaging. Pack the suspension system in a heat-sealable package. 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 documentation 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). |
| 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 Component Maintenance Manual (CMM) 122-017-00. Inspect wiring per Note 1. |
| 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) or repair per CMM 122-017-00. |
| 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. |
| 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 the manual 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) or repair per CMM 122-017-00. |
| 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) or repair per CMM 122-017-00. |
| Fuse/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. |

Table 25.3 Troubleshooting continued

| | | |
|---|---|--|
| Load Weigh Indicator does not light up. | Faulty wiring or fuse. | Check the fuse/circuit breaker (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

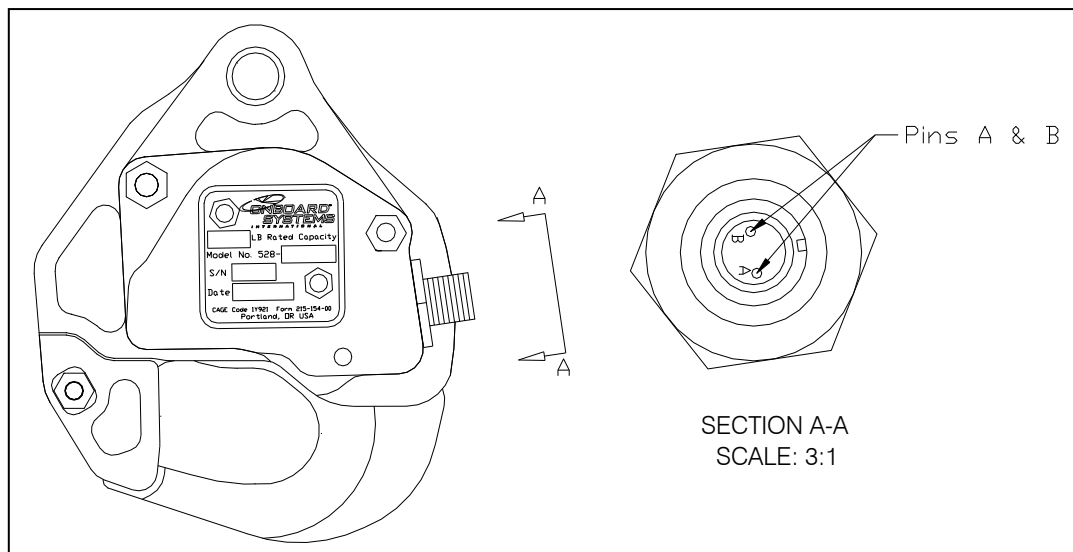


Table 25.3 Notes continued:

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. Refer to Figure 25.5 for electrical schematic.

Figure 25.4 Wire Harness Routing

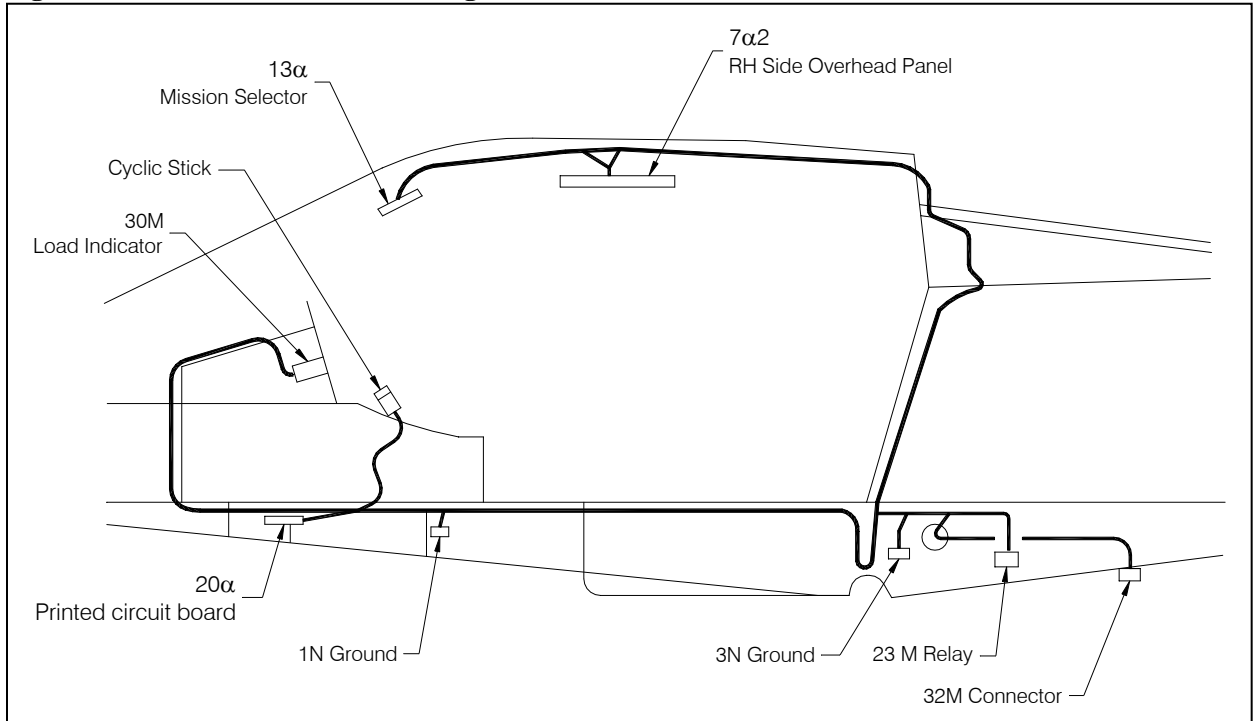


Table 25.3 Notes continued:

2. Checking Wire Harnesses continued

Figure 25.5 Electrical Schematic

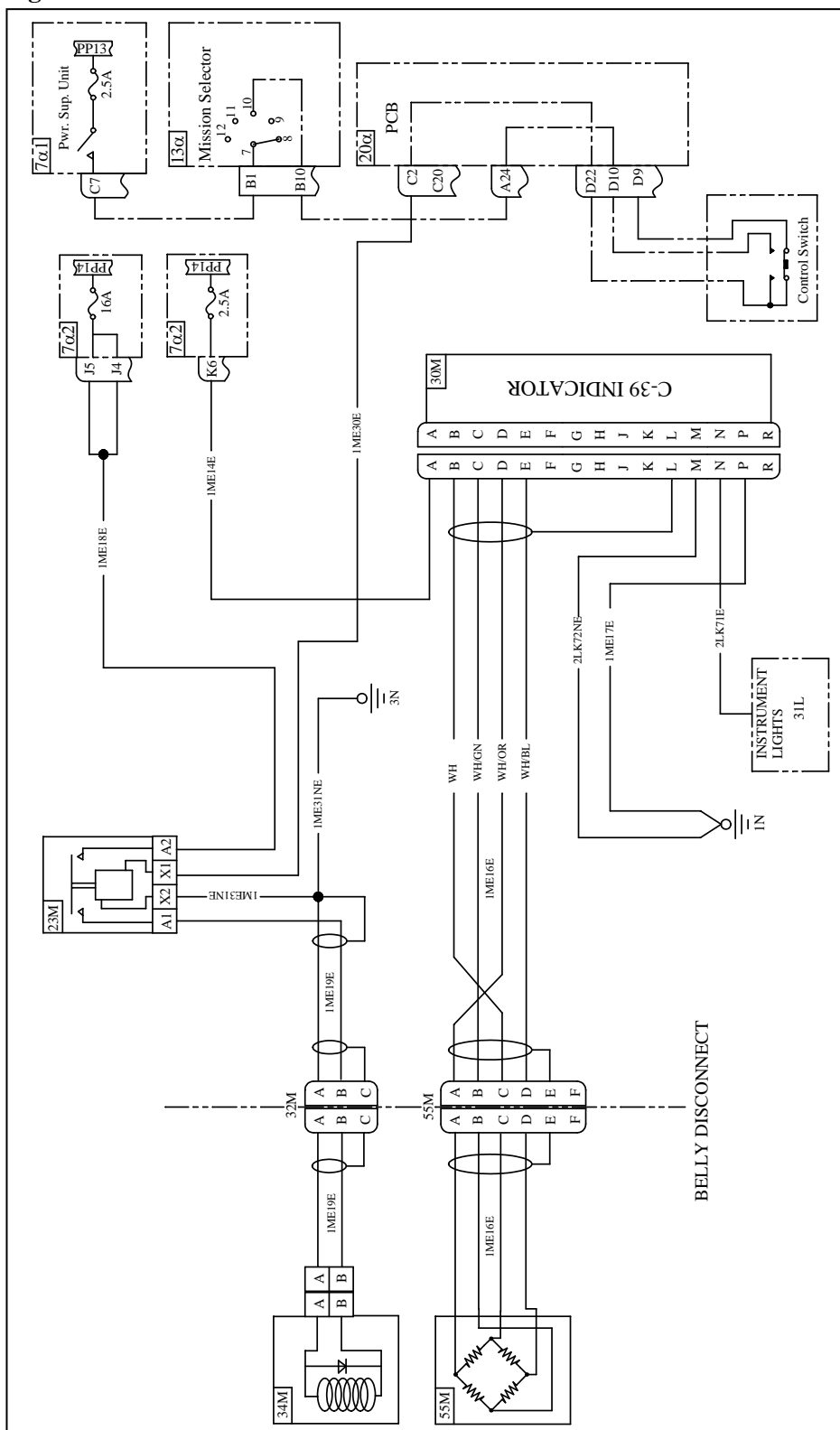
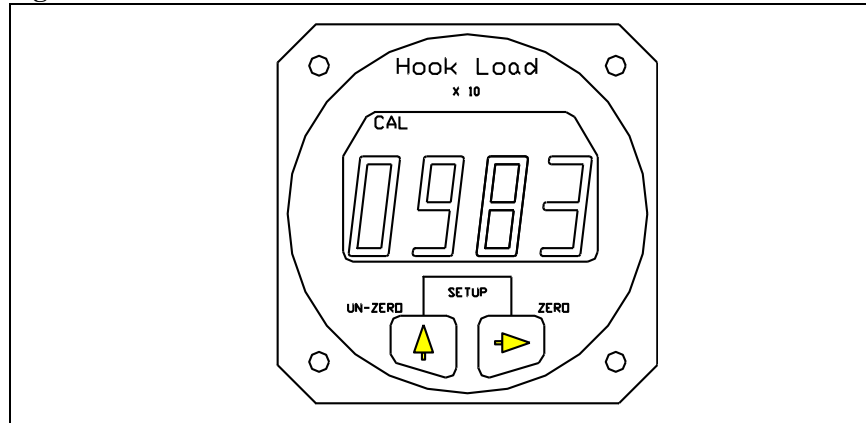


Table 25.3 Notes continued:

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 printed on the tag attached to the load cell cable.

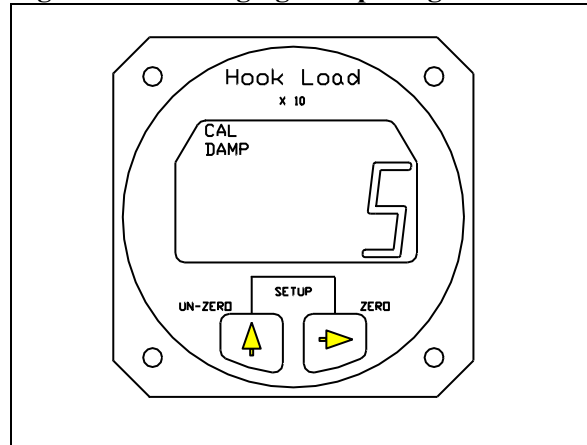
If this code does not match, contact Onboard Systems for further guidance.

Table 25.3 Notes continued:

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

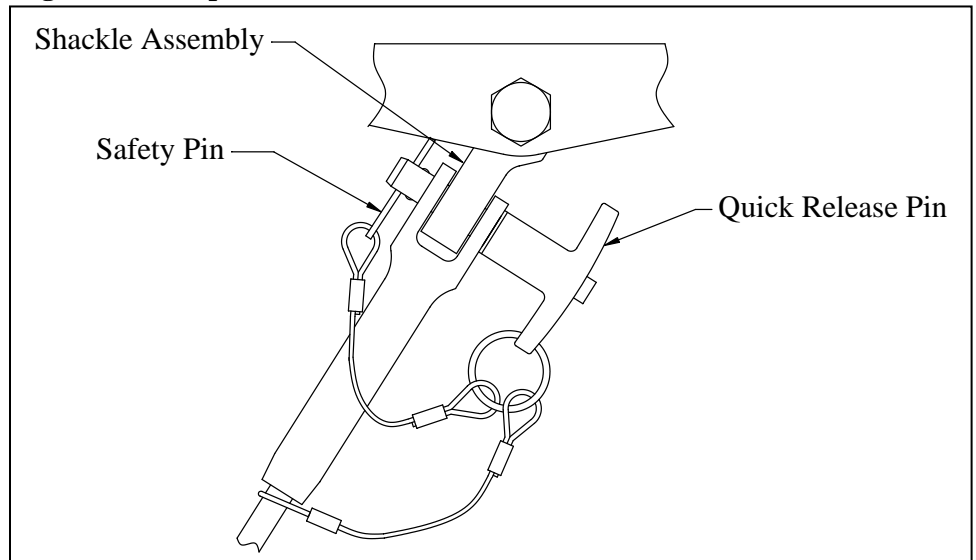
Cargo Hook Removal

1. Remove the manual release cover by removing two screws (see Figure 25.10).
2. Disconnect the electrical release harness connector from the Cargo Hook.
3. Remove the cotter pin (P/N 510-178-00) from the Attach Bolt (P/N 290-775-00) (reference Figure 25.18).
4. Remove the castellated nut (P/N 510-170-00) from the Attach Bolt.
5. Remove Attach Bolt and all washers and separate the Cargo Hook from the load cell on the swing frame assembly.
6. Remove the manual release cable by loosening its jam nut rotating the Cargo Hook about its manual release cable threads.
7. Remove the Hook Bumper (P/N 290-774-00) from the cargo hook.

Suspension System Removal

1. Disconnect the load cell cable at the bulkhead connector on the belly of the aircraft.
2. Disconnect the electrical release cable at the bulkhead connector on the belly of the aircraft.
3. Disconnect the ground strap at the fitting at the belly of the aircraft.
4. Disconnect the manual release cable at the quick release fitting (see Figure 25.9)
5. Remove the Safety Pins (P/N 510-464-00) and Quick Release Pins (P/N 290-851-00) at the 4 joints where the suspension cable ends mate with the Shackle Assemblies as illustrated below and remove the suspension system from the aircraft.

Figure 25.8 Suspension Attachment Hardware

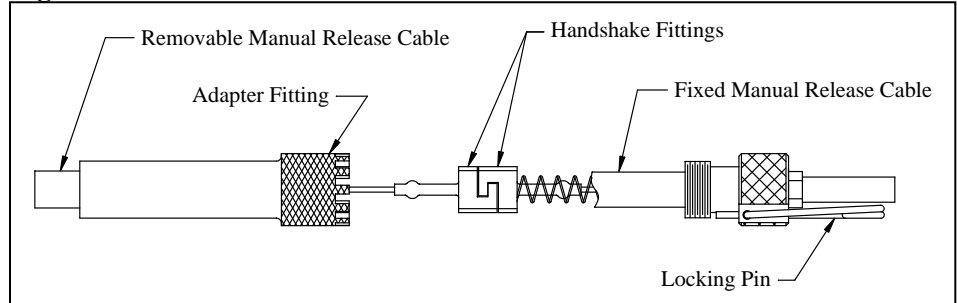


25.16 Component Removal continued

Lower Manual Release Cable Removal

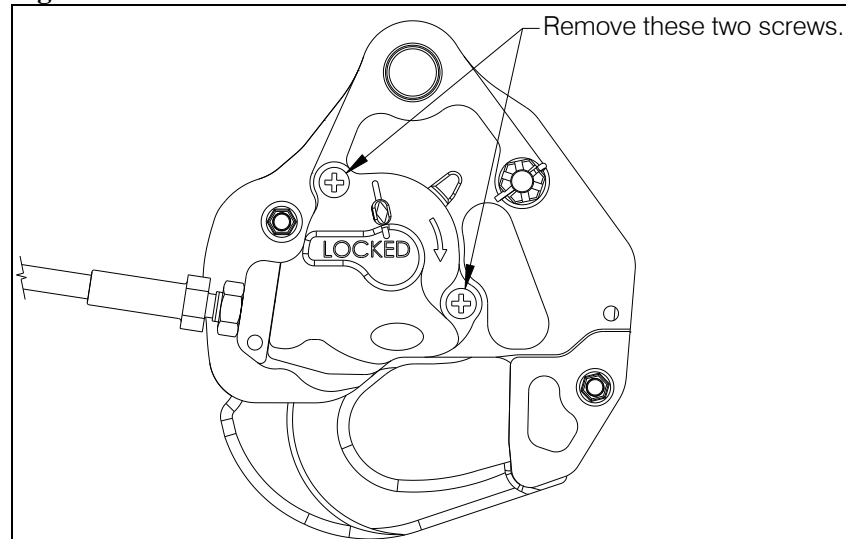
1. Disconnect the cable at the joint with the fixed manual release cable on the belly of the helicopter by removing from the fixed clip and removing the Locking Pin and unthreading the Adapter Fitting to expose and disconnect the Handshake Fittings.

Figure 25.9 Manual Release Cable Connection



2. 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 25.10 Manual Release Cover Removal



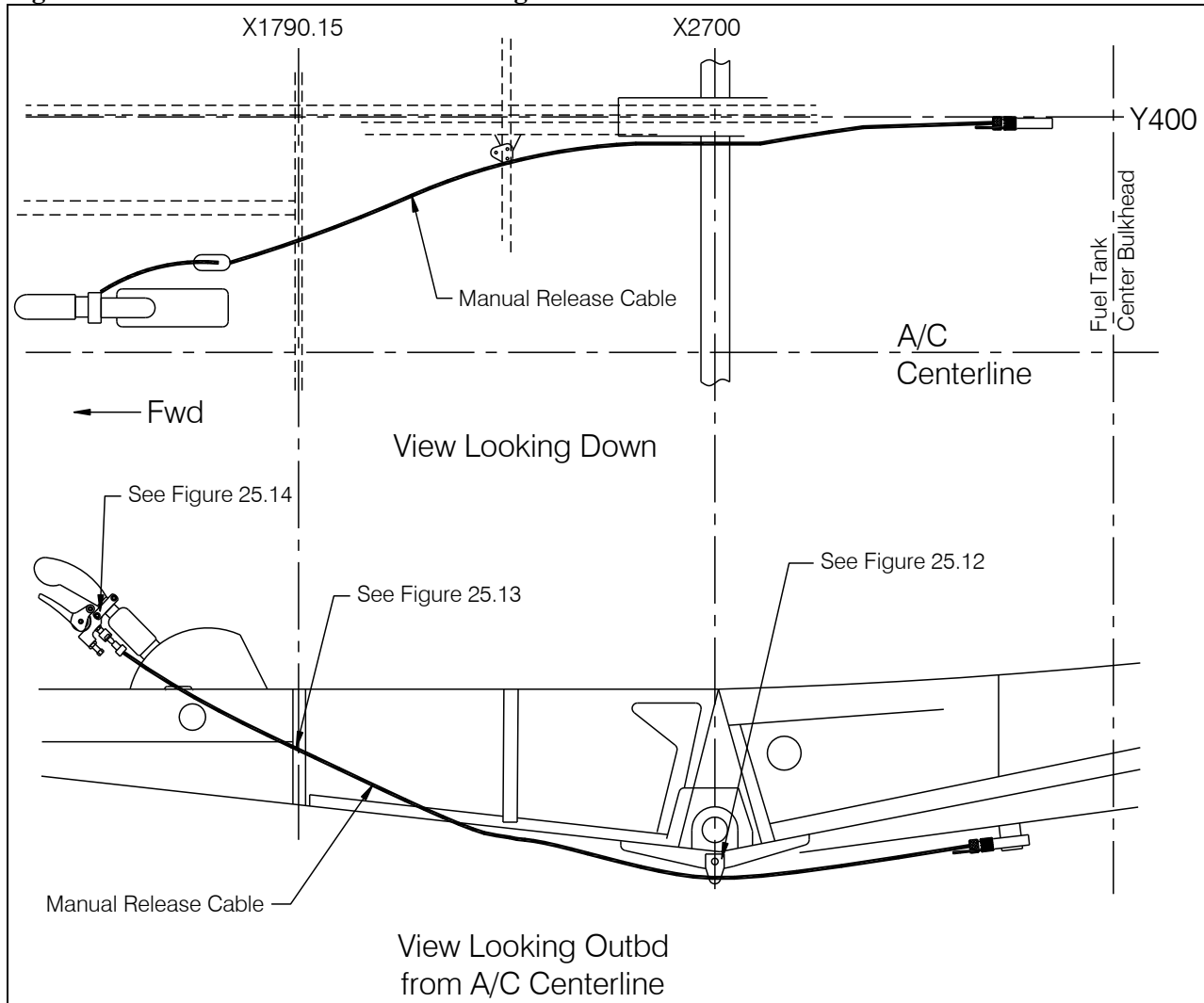
3. Loosen the jam nut and unthread the release cable from the hook.

25.16 Component Removal continued

Fixed Manual Release Cable Assembly Removal

The fixed manual release cable is routed from the release lever mounted to the collective stick to the bracket on the belly of the helicopter where it is mated with the removable section of the cable.

Figure 25.11 Manual Release Cable Routing

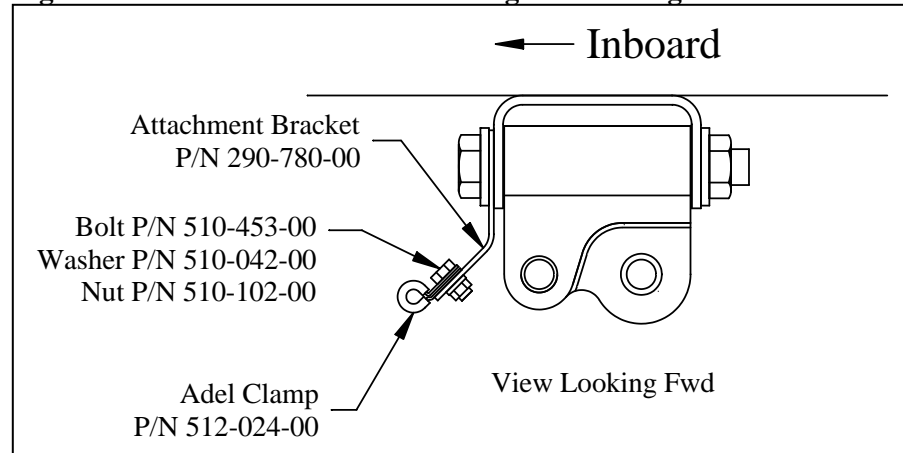


25.16 Component Removal continued

Fixed Manual Release Cable Assembly Removal continued

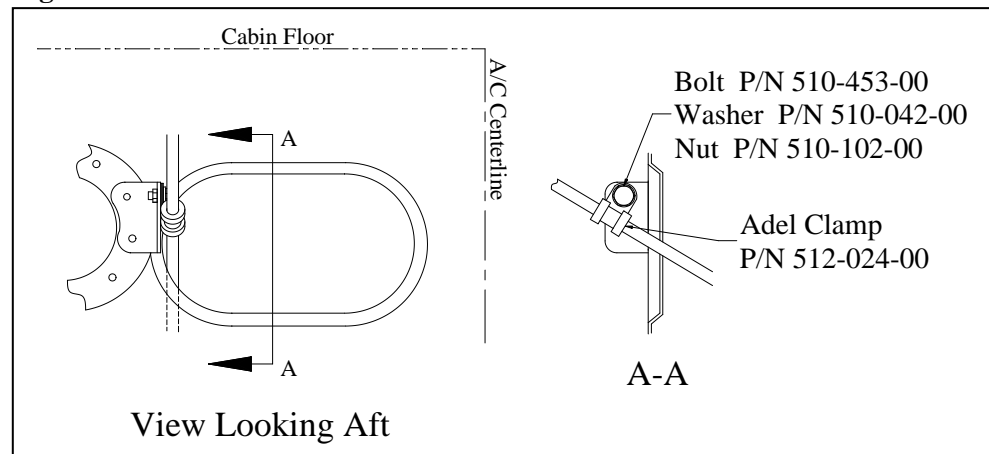
1. Disconnect the cable at the joint with the fixed manual release cable on the belly of the helicopter by removing from the fixed clip, removing the locking pin and unthreading the Adapter Fitting to expose and disconnect the Handshake Fittings (reference Figure 25.9).
2. Remove the Adel clamp from the Attachment Bracket at the RH forward landing gear fitting and remove it from the cable.

Figure 25.12 Cable Attachment Landing Gear Fitting



3. Moving farther forward, remove the adel clamp on the bracket at frame at X1790.15 and remove it from the cable.

Figure 25.13 Cable Attachment

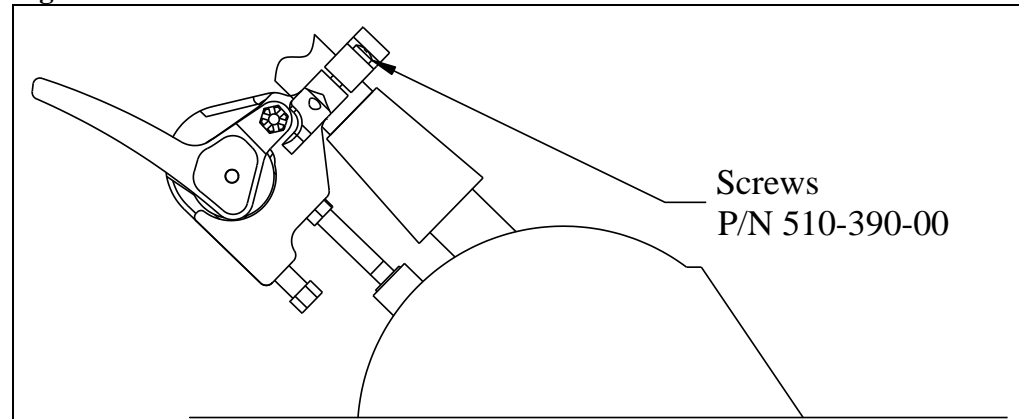


25.16 Component Removal continued

Fixed Manual Release Cable Assembly Removal continued

4. Above the floor and on the collective stick remove the release lever by removing two screws (see below).

Figure 25.14 Manual Release Lever



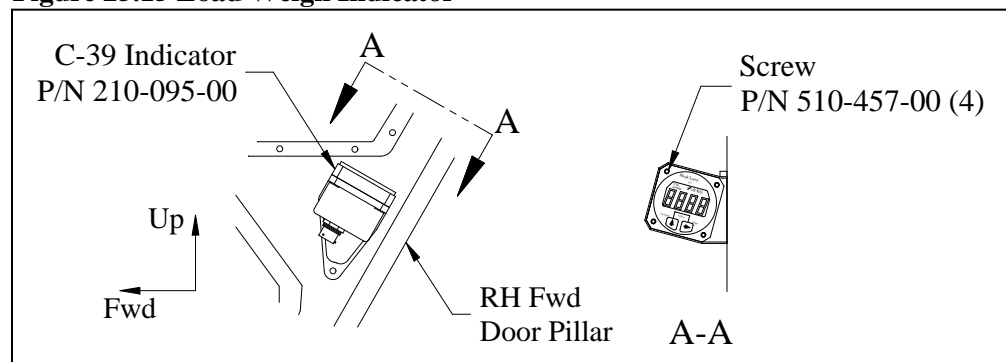
5. Feed the cable fwd and then up through the slot in the floor. Note: remove the grommet from the slot to allow the end fitting on the cable to be fed through.

Load Weigh Indicator Removal

The C-39 Load Weigh Indicator is located in the cockpit 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 25.15 Load Weigh Indicator

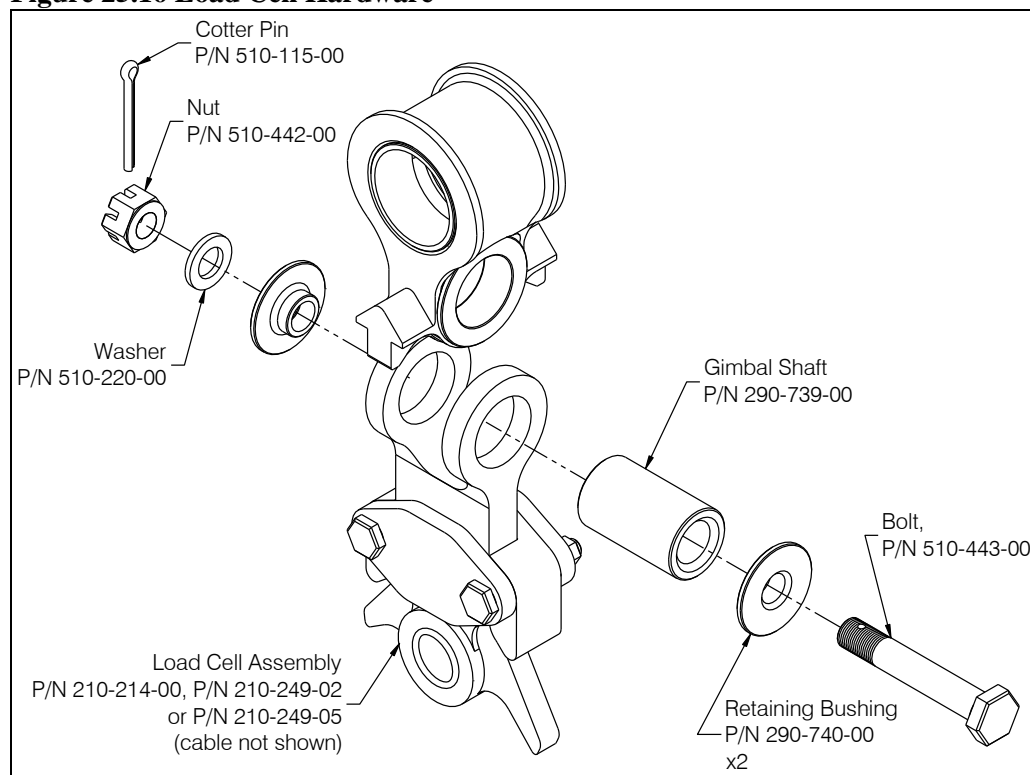


25.16 Component Removal continued

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 suspension frame (not shown) by removing the hardware as illustrated below.

Figure 25.16 Load Cell Hardware



Self Lubricated Bushing Removal

All self-lubricated bushings use an interference fit to hold them in place. Use an arbor press or similar to press the bushings out of bore they are mounted in.



Do not use heat on any of the parts when removing the self-lubricated bushings. These parts are all heat-treated and using heat may affect their mechanical properties.

25.17 Component Re-installation

Suspension Re-installation

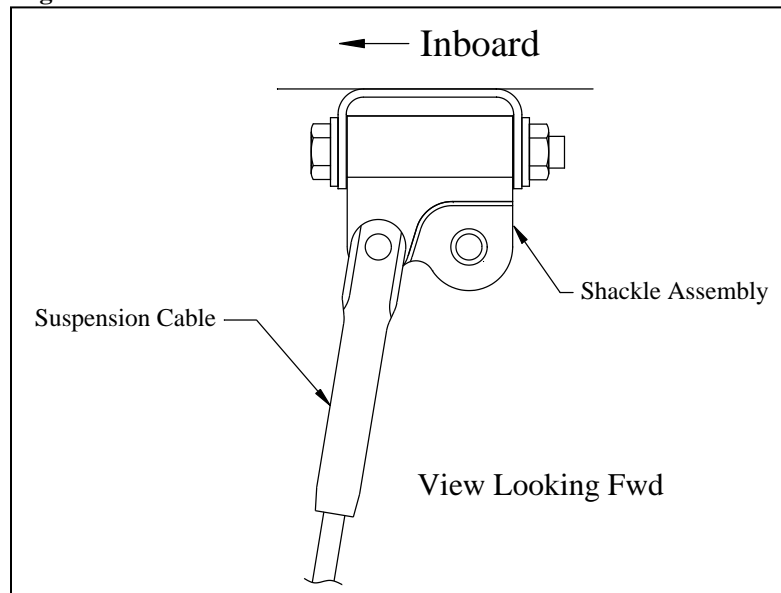
1. Inspect the Suspension for evidence of damage, corrosion, cable fraying, freedom of rotation at all pivot points, and security of fasteners. If damage is evident, do not use the items until they are repaired.
2. Install the Suspension by securing the four Clevis Cable Ends to the Shackle Assemblies with the Quick Release Pins.

NOTICE

Install the Suspension such that the longer cables attach to the rear attach points and the Cable Clevis Ends are pinned to the inboard holes of the forward Shackle Assemblies (as illustrated below).

3. Connect the load cell cable connector at the bulkhead connector at the belly of the aircraft.
5. Connect the ground strap attached to the cargo hook to the ground strap attached to the aircraft.
6. Connect the electrical release cable at the bulkhead connector at the belly of the aircraft.
7. Connect the manual release cable at the quick release fitting (Figure 25.9).

Figure 25.17 Cable Attachment

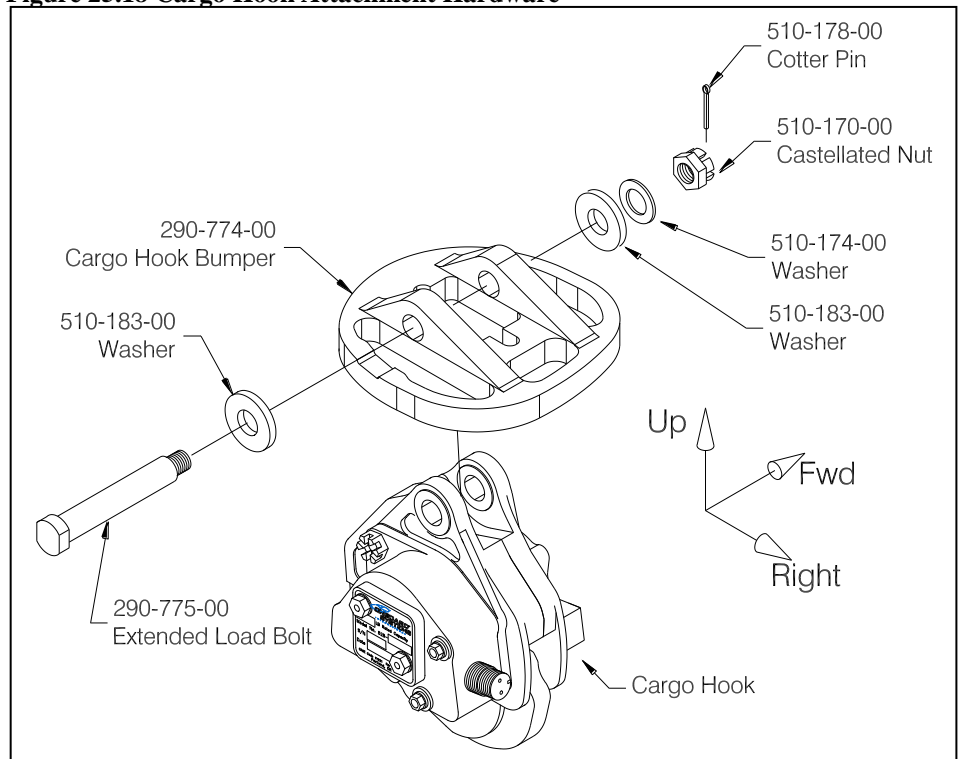


25.17 Component Re-installation continued

Cargo Hook Re-installation

1. Attach the Cargo Hook, P/N 528-029-00 to the suspension system by installing the Bumper P/N 290-774-00 over the Cargo Hook.
2. Install the load bolt P/N 290-775-00 and washer P/N 510-183-00 as illustrated in Figure 25.18.
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 until fully seated, finger tight only. Back off nut to previous castellation, if needed, to install and secure cotter pin P/N 510-178-00.

Figure 25.18 Cargo Hook Attachment Hardware



NOTICE

The Cargo Hook Load Beam must point to the left side of the helicopter when looking from the rear (as shown above).

25.17 Component Re-installation continued

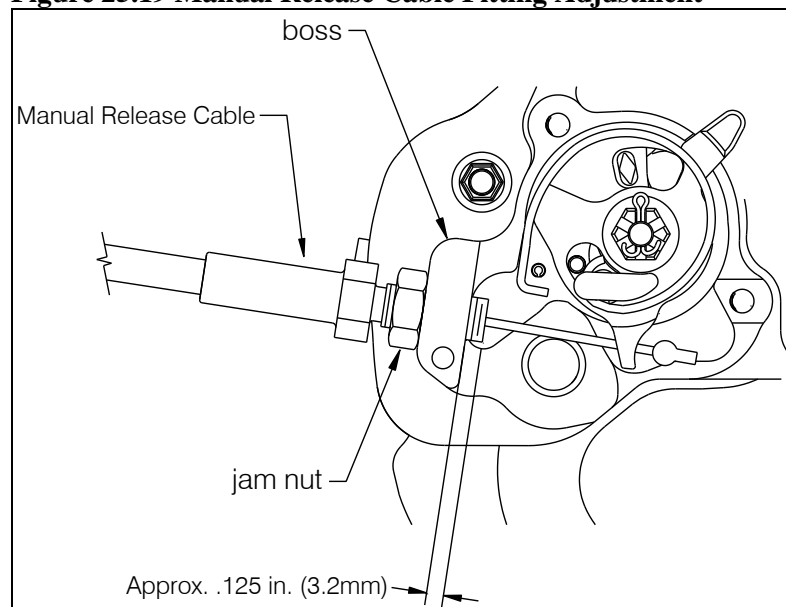
Manual Release Cable Re-installation

Connect the manual release cable (P/N 268-030-01) 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 (see Figure 25.19). Note: As the cable is routed the amount of engagement will change slightly due to bending of the cable housing.

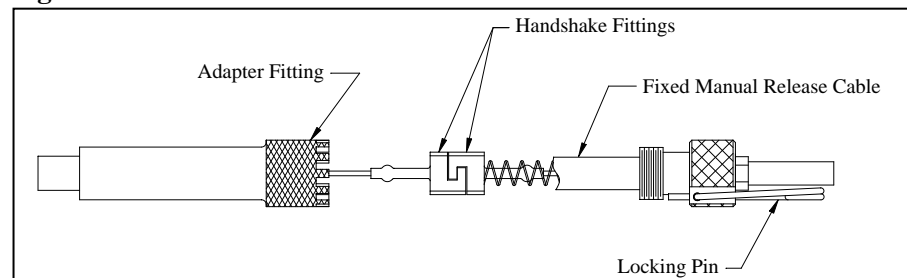
Leave the cover off of the cargo hook until the other end of the release cable is connected, in order to verify proper setting.

Figure 25.19 Manual Release Cable Fitting Adjustment



Connect the opposite end of the cable assembly to the end of the fixed manual release cable by engaging the handshake fittings (see Figure 25.20), threading the Adapter Fitting on, and engaging a castellation with the locking pin.

Figure 25.20 Manual Release Cable Connection



Snap the fitting into the fixed clip on the belly of the helicopter.

25.17 Component Re-installation continued

Manual Release Cable Re-installation continued

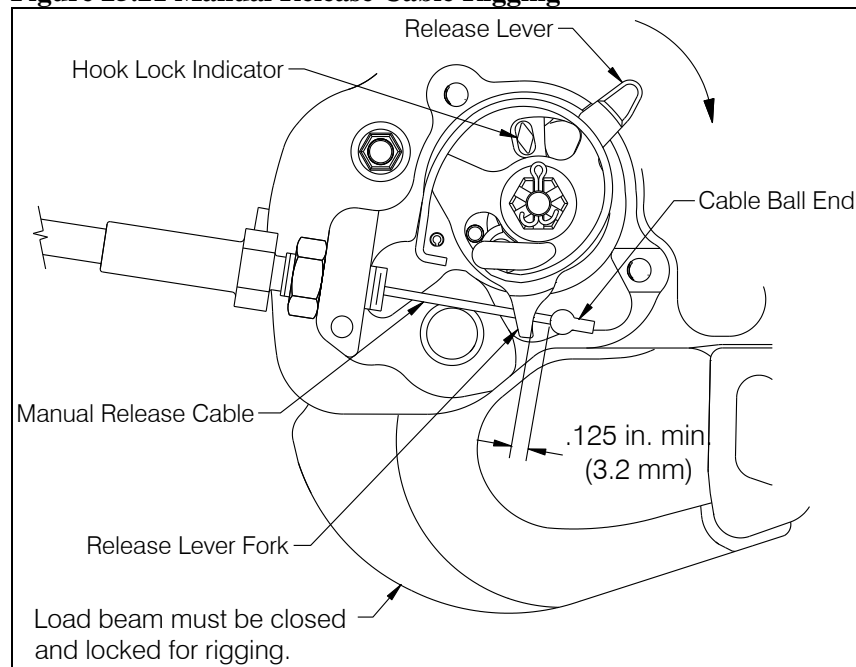
Verify proper setting at the hook:



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

Place the cable ball end fitting into the hook manual release fork fitting as illustrated in Figure 25.21. 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 must measure a minimum of .125" (see below). The maximum gap is limited by the cable ball end fitting inside the manual release cover.

Figure 25.21 Manual Release Cable Rigging



If the gap does not measure a minimum of .125", make adjustments at the cargo hook or at the manual release lever on the collective. Adjustment at the cargo hook is done by disconnecting the cable at the interface with the fixed manual release cable (Figure 25.20), loosening the jam nut at the cargo hook, and rotating the cable in the required direction.

25.17 Component Re-installation continued

Fixed Manual Release Cable Assembly Re-installation

1. Feed the end of the cable through the slot in the floor and re-install grommet.
2. Install the release lever onto the collective shaft with the two screws (P/N 510-390-00).
3. Install the adel clamp around the release cable at the bracket at frame 1790.15 with hardware as shown in Figure 25.13.
4. Install the adel clamp around the release cable at the Attachment Bracket with hardware as shown in Figure 25.12.
5. Clip the end of the cable assembly onto the bracket on the belly of the helicopter.

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 to the gimbal fitting on the suspension frame with hardware as illustrated in Figure 25.16.
2. Tighten nut to 60-70 in-lbs and rotate to next castellation if necessary to insert cotter pin.

CAUTION

The Load Cell Assembly must pivot freely about its upper attach point independently of the bolt (P/N 510-443-00) and nut, back the nut off to previous castellation if necessary to achieve this.

3. Connect the load cell electrical cable connector on the load cell cable to the connector on the belly of the helicopter.
4. Attach load cell cable to bumper with ty-wraps. Ensure cable does not get pulled or pinched at any point in the full range of motion of cargo hook and swing.

NOTICE

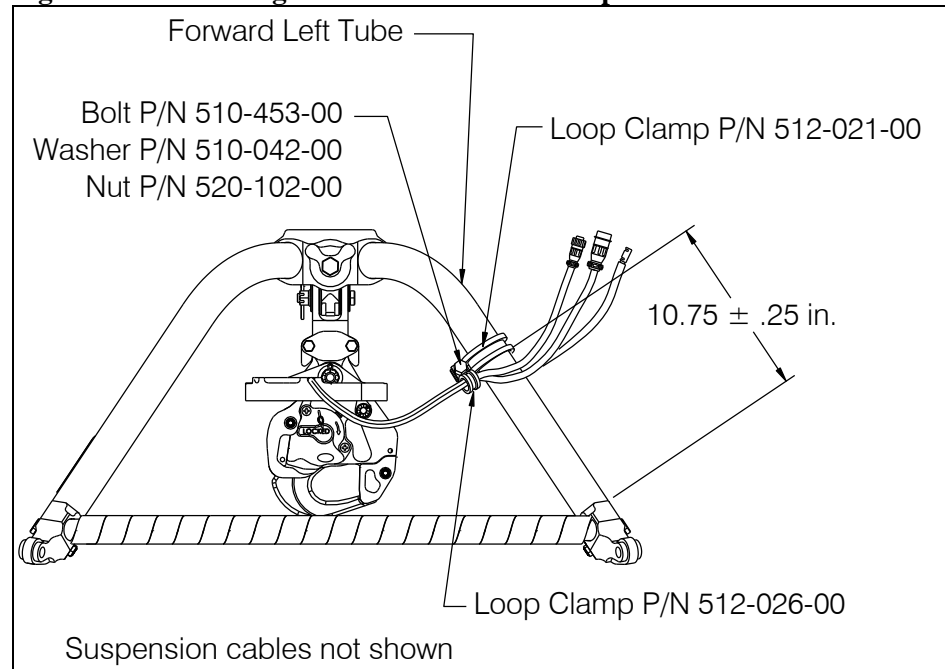
A Link Assembly (P/N 232-436-00 or P/N 232-436-01) can be installed in place of the Load Cell Assembly. It is installed using the same hardware as the Load Cell Assembly. The Link Assembly does not provide load weighing.

25.17 Component Re-installation continued

Load Cell Re-installation continued

5. Route the load cell cable with the cargo hook electrical release cable and ground strap to the forward left (with respect to installation position) tube of the swing frame and secure with loop clamps and hardware as shown below. Move the cargo hook throughout its range of motion and verify that the cables and ground strap are not pulled tight in any position, adjust the loop at the loop clamp to provide enough slack if necessary.

Figure 25.22 Securing Cables and Ground Strap to Frame



Self-lubricated Bushing Re-installation

1. Install bushings with wet zinc chromate primer (TTP1757-1CY or equivalent) applied on the inside diameter of the mating hole.
2. Use an arbor press and an appropriately sized press tool to push the bushing into the hole until it is fully seated.

25.18 General Procedural Instructions-Testing

After component re-installation, 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.

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.

2. Activate the release handle 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 relatch 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.