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Instructions for Continued Airworthiness Cargo Hook Suspension Systems

Part Numbers 200-391-XX, 200-401-XX, 200-428-00

STC SR00713SE

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Record of Revisions

Revision	*Date*	*Page(s)*	*Reason for Revision*
0	06/26/15	All	First Issue
1	02/22/16	5-13	Updated hardware P/Ns in Table 5.2.2.
2	03/30/17	i-vi	Removed model listing on title page (models are listed on the STC SR00713SE AML).
3	02/12/18	5-2, 5-11, 5-12, 5-14, 25-17	Added warnings to verify suspension has clearance with surrounding equipment. Removed NDT requirement for Load Cell/Link Assembly. Added Load Link Assembly to Table 5.2.1.

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List of Effective Pages

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Cover	i, ii Blank	3	02/12/18
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Section 4 Airworthiness Limitations	1, 2 Blank	0	06/26/15
Section 5 Inspection and Overhaul Schedule	1	0	06/26/15
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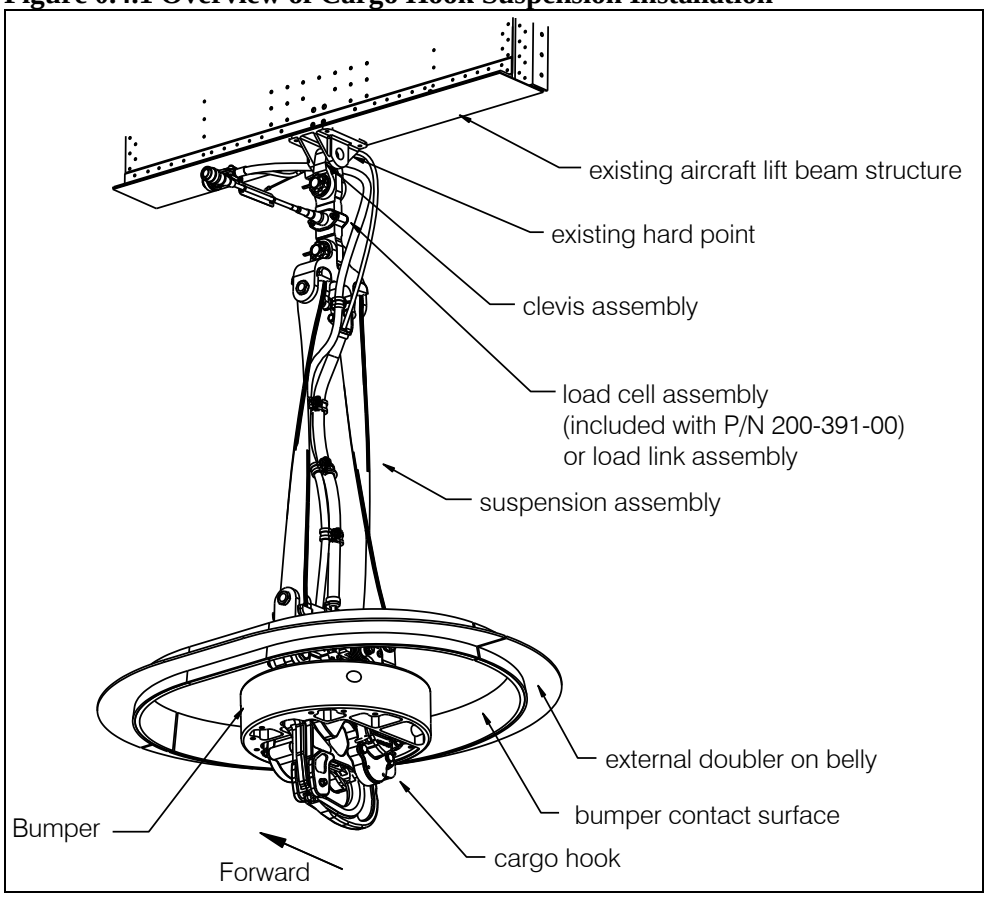
Section 0
Introduction

0.4 Scope

The following information is necessary to carry out the service, maintenance, and inspection of Cargo Hook Suspension System P/N's 200-391-XX, 200-401-XX, and 200-428-00.

The Cargo Hook Suspension Systems provide a means for medium Bell rotorcraft to transport jettisonable external loads. They are direct replacements for the Bell P/N 204-072-915-025 and 204-072-915-103 suspension systems. These systems interface with the helicopter's existing fixed provisions and include the cargo hook and bumper, the suspension assembly which serves as the structure to attach the system to the helicopter's hard point, the electrical release system which interfaces with the helicopter's existing internal cargo hook release wiring, and a manual release cable which interfaces with the helicopter's existing internal cargo hook manual release system.

Figure 0.4.1 Overview of Cargo Hook Suspension Installation

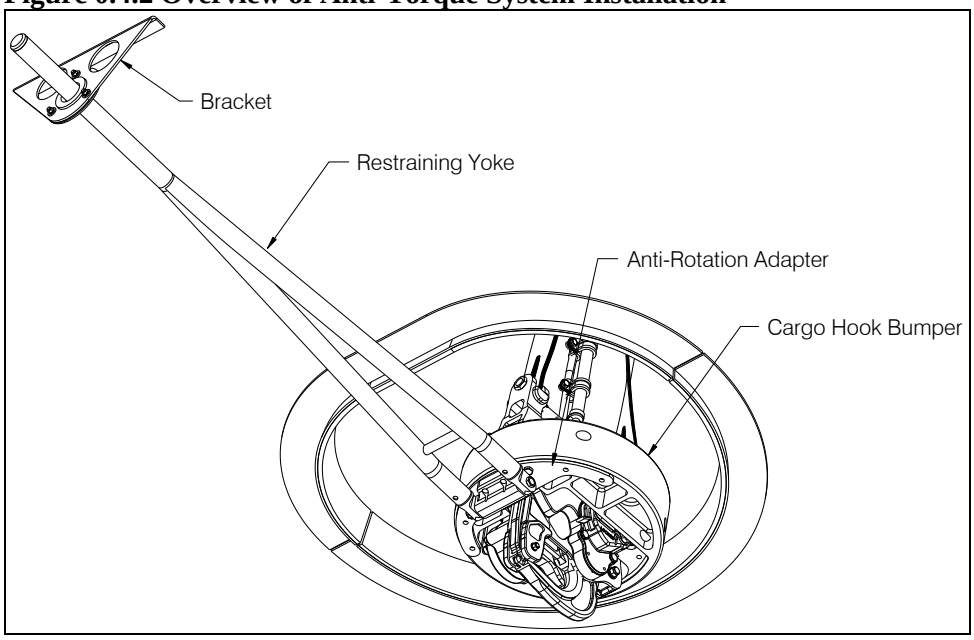


The P/N 200-391-XX system is the same as 200-401-XX except includes a load weigh system. The load weigh system includes the load cell assembly as part of the suspension system (see Figure 0.4.1), a load weigh indicator in the cockpit, and the interconnecting wire harness.

0.4 Scope continued

An optional system included in the scope of this ICA manual is an Anti-Torque System which can be installed to protect the cargo hook suspension system from excessive torsional loading induced by the external load. This system consists of an Anti-Rotation Adapter attached to the cargo hook bumper, a bracket mounted to the belly of the helicopter forward of the cargo hook (at approximately STA 102), and a Restraining Yoke which serves to transfer the torsion loads on the cargo hook out to the bracket.

Figure 0.4.2 Overview of Anti-Torque System Installation



Refer to the appropriate maintenance documentation provided by the type certificate holder for instructions regarding the fixed provisions parts (i.e. – the internal manual release and electrical release systems) of the aircraft that interface with these kits.

0.5 Purpose

The purpose of this Instructions for Continued Airworthiness (ICA) manual is to provide the information necessary to service, inspect and maintain the Cargo Hook Suspension Systems in an airworthy condition.

0.6 Arrangement

This manual contains instructions for the installation, maintenance inspection and operation of the Cargo Hook Suspension Systems on medium Bell helicopters. The manual is arranged in the general order that maintenance personnel would use to maintain and operate the Cargo Hook Suspension System in service.

The arrangement is:

Section 0 Introduction.
Section 4 Airworthiness Limitations (None apply to these Systems.)
Section 5 Inspection and Overhaul Schedule
Section 11 Placards and Markings
Section 25 Equipment and Furnishings

0.7 Applicability

These Instructions for Continued Airworthiness are applicable to Cargo Hook Suspension System P/N's 200-391-XX, 200-401-XX, and 200-428-00 on the medium Bell helicopters.

0.12 Precautions

The following definitions apply to safety labels 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. Also a Documentation Update Service is available on the web site. Registering for this service provides an e-mail or fax notification when a manual has been revised. Hard copies of all manuals are available from the factory, contact the factory at 800-275-0883 to request a copy.

Section 4
Airworthiness Limitations

4.2 No airworthiness limitations

The Airworthiness Limitations section is FAA approved and specifies 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 System 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

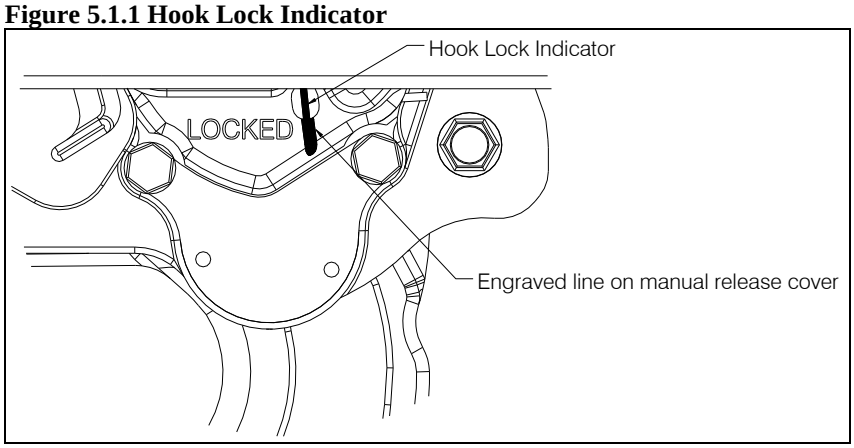
*Hours of external load operations should be interpreted to be **(1)** anything is attached to the primary cargo hook (whether or not a useful load is being transported) and **(2)** the aircraft is flying. If these conditions are **NOT** met, time does **NOT** need to be tracked.*

1. Activate the cargo hook's manual release system using the cockpit control. With no load on the load beam the cargo hook must open. Reset the load beam by hand after release and verify that the lock indicator on the side of the hook returns to the fully locked position (see Figure 5.1.1).

⚠ 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).

Figure 5.1.1 Hook Lock Indicator



5.1 Cargo Hook Suspension System Inspection continued

2. Check the electrical release system using the cockpit control.
   The following instructions are applicable to cargo hook P/N 528-020-12. In addition to the P/N this cargo hook can also be identified by its gold anodized solenoid cover. This cargo hook model has a time-delay circuit which provides an approximate ½ second delay between the time the release switch is pushed and the cargo hook opens to protect against inadvertent release.
   - Press and release the Cargo Release switch very briefly without holding it down. The load beam should remain *closed*.
   - Press and hold the Cargo Release switch for a few seconds. The load beam should fall to the open position and the cargo hook solenoid should continue to cycle repeatedly.
   - Reset the load beam by hand and verify the hook lock indicator returns to the fully locked position.

   The following instructions are applicable to cargo hook P/N 528-020-10.
   - Activate the electrical system and press the Cargo Release button on the cyclic to ensure the cargo hook electrical release system is operating correctly. The cargo hook must release. Reset the hook by hand after release and verify the hook lock indicator returns to the fully locked position.

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.

3. Move the cargo hook suspension throughout its range of motion within the hook well and ensure that it swings freely in all directions and has clearance with surrounding equipment.

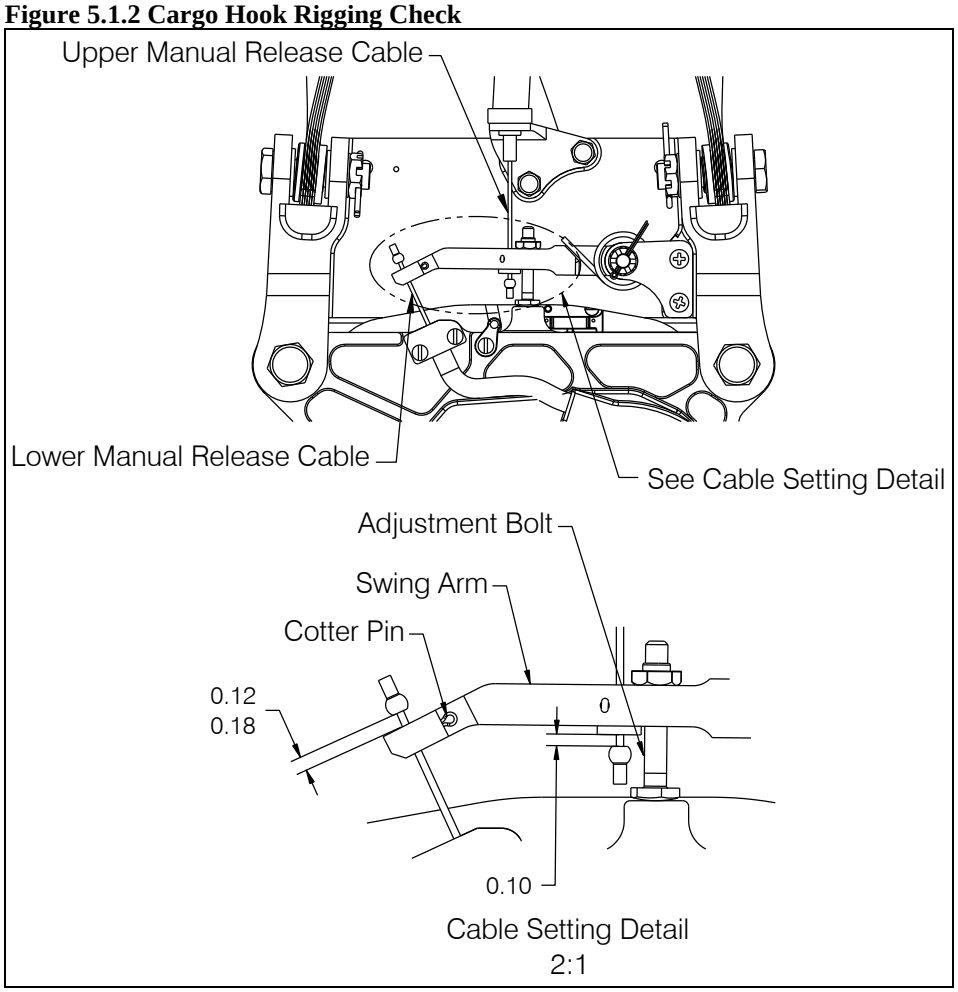
WARNING

Ensure clearance with all equipment, fuel lines, etc. in the surrounding area under the transmission. The 412EP model has a configuration of fuel line that can be contacted by the suspension assembly forward strap when the cargo hook is in the right forward corner of the hook well. Do not use the cargo hook suspension if this fuel line is present and is contacted by the suspension.

5.1 Cargo Hook Suspension System Inspection continued

4. Check the manual release cable rigging per the following.
   - Ensure the cargo hook load beam is closed and locked.
   - Pull the lower manual release cable outward from the cargo hook to remove any slack and check the gap between its cable ball end and the swing arm, it should measure .12/.18" (3.0/4.6 mm) (see Figure 5.1.2).
   - Check the gap between upper manual release cable ball end and the cable guide on the underside of the swing arm. This gap should measure .10" (2.5 mm).
   - If the rigging is out of specifications, loosen the nut on the adjustment bolt and adjust the swing arm position. If these settings cannot be achieved by adjusting the swing arm position, refer to section 25 for adjustment at the top of the suspension assembly at the joint with the fixed manual release cable.

Figure 5.1.2 Cargo Hook Rigging Check



5.1 Cargo Hook Suspension System Inspection continued

5. Visually inspect the orientation of the cargo hook. The cargo hook load beam should be pointed forward, i.e. – cargo hook should be parallel to BL0.0 of the aircraft. If it is not aligned this may be an indicator of the Strap Assemblies being loaded in torsion beyond their limit. See NOTICE below.

6. Visually inspect the lay of the individual straps within each Strap Assembly; straps should be uniformly together from top to bottom with no significant separations or gaps.

7. Visually inspect the Strap Assemblies for cracks. Wipe the edges of the straps clean and use a light and magnifying glass to inspect the edges for cracks. Pay close attention to the areas around the upper and lower ends of the straps (see Figure 5.1.3).

NOTICE

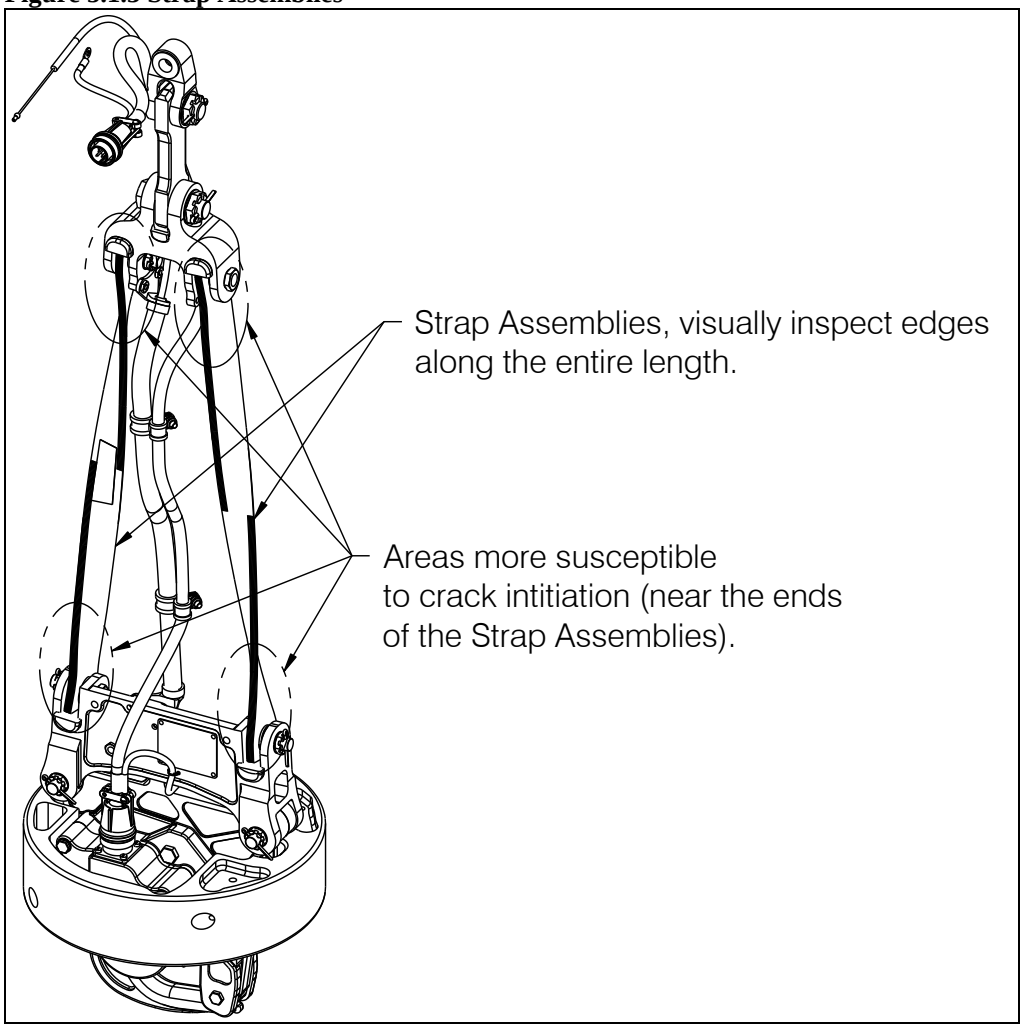
If the orientation of the cargo hook is out of plane and/or the straps have cracks present, this is indication of large torsional loads applied to the system and it is recommended that the Anti-torque System be used for those operations.

NOTICE

The Anti-torque System is recommended for external loads attached via a spreader bar, such as a fertilizer bucket.

5.1 Cargo Hook Suspension System Inspection continued

Figure 5.1.3 Strap Assemblies



5.1 Cargo Hook Suspension System Inspection continued

8. Inspect the visible sections of the inner cable of the upper and lower manual release cables for kinks or frays.

Broken or kinked conduit, inner cable kinks, frays, or sticky operation are each cause for immediate replacement.

9. Visually inspect for presence and security of fasteners and electrical connections.
10. Visually inspect the external electrical release harness and its connections for damage and security.
11. Visually inspect the ground strap for chafing, exposed inner conductor, or other damage and security of each end.
12. Visually inspect the suspension structural components for cracks and damage.

If the load weigh system is installed (included with P/N 200-391-XX), perform the following.

13. Visually inspect the load cell strain relief and harness for damage and security.
14. Visually inspect for security of the C-39 load weigh indicator.
15. Verify calibration of the load cell by lifting a load of known weight (see C-39 load weigh indicator manual for instructions).

If the Anti-torque System (P/N 200-428-00) is installed perform the following.

16. Visually inspect for security of the Anti-Rotation Assembly and its attachment to the bumper.
17. Visually inspect for security of the bracket on the belly of the helicopter.

5.2 Cargo Hook Suspension System Overhaul

It is recommended that only minor repairs be attempted by anyone other than the factory. The following procedures and information are provided for the benefit of experienced aircraft maintenance facilities and trained maintenance and inspection personnel capable of carrying out the procedures. They must not be attempted by those lacking the necessary expertise.

Every 1500 hours of external load operations or 6 years, whichever comes first, remove the suspension system from the helicopter, and disassemble per the instructions in this section and inspect.

NOTICE

The 6 year period is from the initial installation date when the cargo hook suspension system is new or newly overhauled, regardless of storage or inactivity periods. If initial installation date is unknown, then the 6 year period is from the date of manufacture as indicated on the data plate or 6 years from date of last overhaul indicated on the overhaul sticker.

An overhaul kit, P/N 212-042-00, is recommended to complete the cargo hook suspension system overhaul. This overhaul kit contains all recommended item to be replaced at time of overhaul. Table 5.2.1 lists the parts contained in the overhaul kit.

Remove the suspension system from the helicopter (refer to section 25.16) and disassemble per the following instructions.

1. Disconnect the electrical release harness (24) from the connector on the cargo hook and remove the screw securing the ground strap terminal to the cargo hook.
2. Remove the cotter pin from the end of the swing arm to separate the cargo hook's manual release cable ball end from the swing arm (36).
3. Separate the cargo hook (13) from the Hook Adapter Assembly (27) by removing the cotter pin (12), nut (11), washer (10), and bolt (9) at each attach lug.
4. Separate the bumper (14) from the cargo hook by removing the two nuts (17) recessed with the bumper from the socket head cap screws (15) and removing the screws and spacers (16).
5. Separate the manual release cable assembly (32) from the Hook Adapter Assembly (27) and Upper Adapter Assembly by removing the two bolts (34) at each of its brackets.
6. Separate the manual release cable assembly from the Swing Arm by removing the cotter pin (48) and sliding the cable over and out of the slot in the Swing Arm.

5.2 Cargo Hook Suspension System Overhaul continued

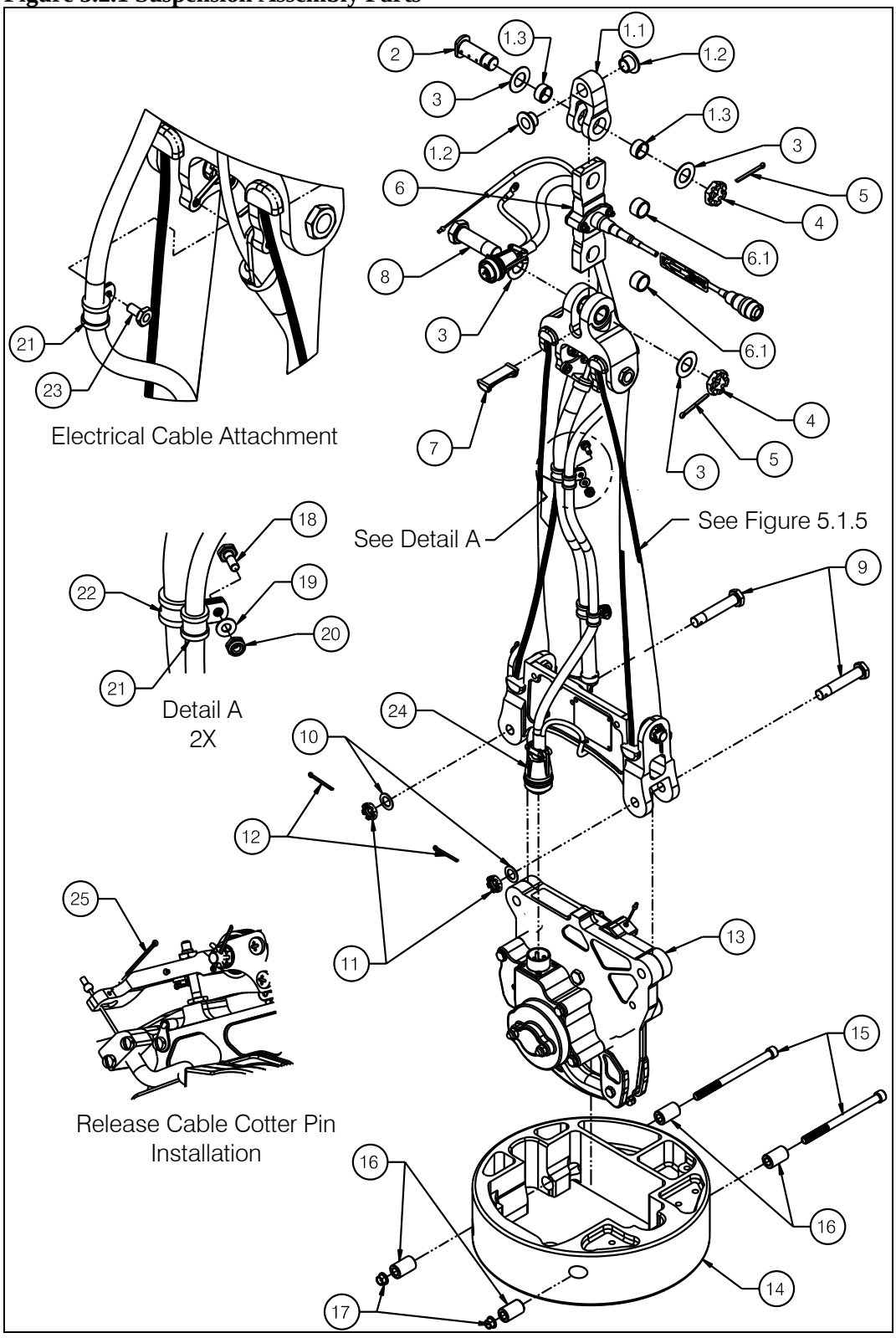
7. Remove the bolt (23) from the cushioned loop clamp (21) securing the electrical release harness conduit to the Upper Adapter Assembly and remove the manual release cable assembly and electrical release harness from the suspension assembly.
8. Separate each Strap Assembly (30, 31) from the Hook Adapter Assembly (37) and Upper Adapter Assembly (26) by removing the cotter pin (30), nut (29), washer (28), and bolt (27) at each end.
9. Separate the Load Cell Assembly (or Load Link Assembly) (6) from the Upper Adapter Assembly and Clevis Assembly (1) by removing the cotter pin (5), nut (4), washer (3), and bolt (2, 8) at each end.
10. Pry the travel stops (26.4, 37.3) out of each clevis in the Upper Adapter Assembly and Hook Adapter Assembly.

If the Anti-Torque System is installed remove and disassemble it per the following.

1. Separate the Restraining Yoke (61) from the Anti-Rotation Block (55) by removing the cotter pin (60), nut (59), washer (58) and bolt (57).
2. Slide the Restraining Yoke aft and out of the Bracket (66) mounted to the belly of the helicopter.
3. Separate the Anti-Rotation Plate (50) from the Bumper on the Cargo Hook by removing the six nuts (53), washers (52), and bolts (51).
4. Remove the screw securing the ground strap to the Cargo Hook.
5. Separate the Anti-Rotation Plate and Anti-Rotation Block by removing the four flathead screws (54).
6. Remove the Bracket from the belly of the helicopter by removing the bolts and washers securing it.

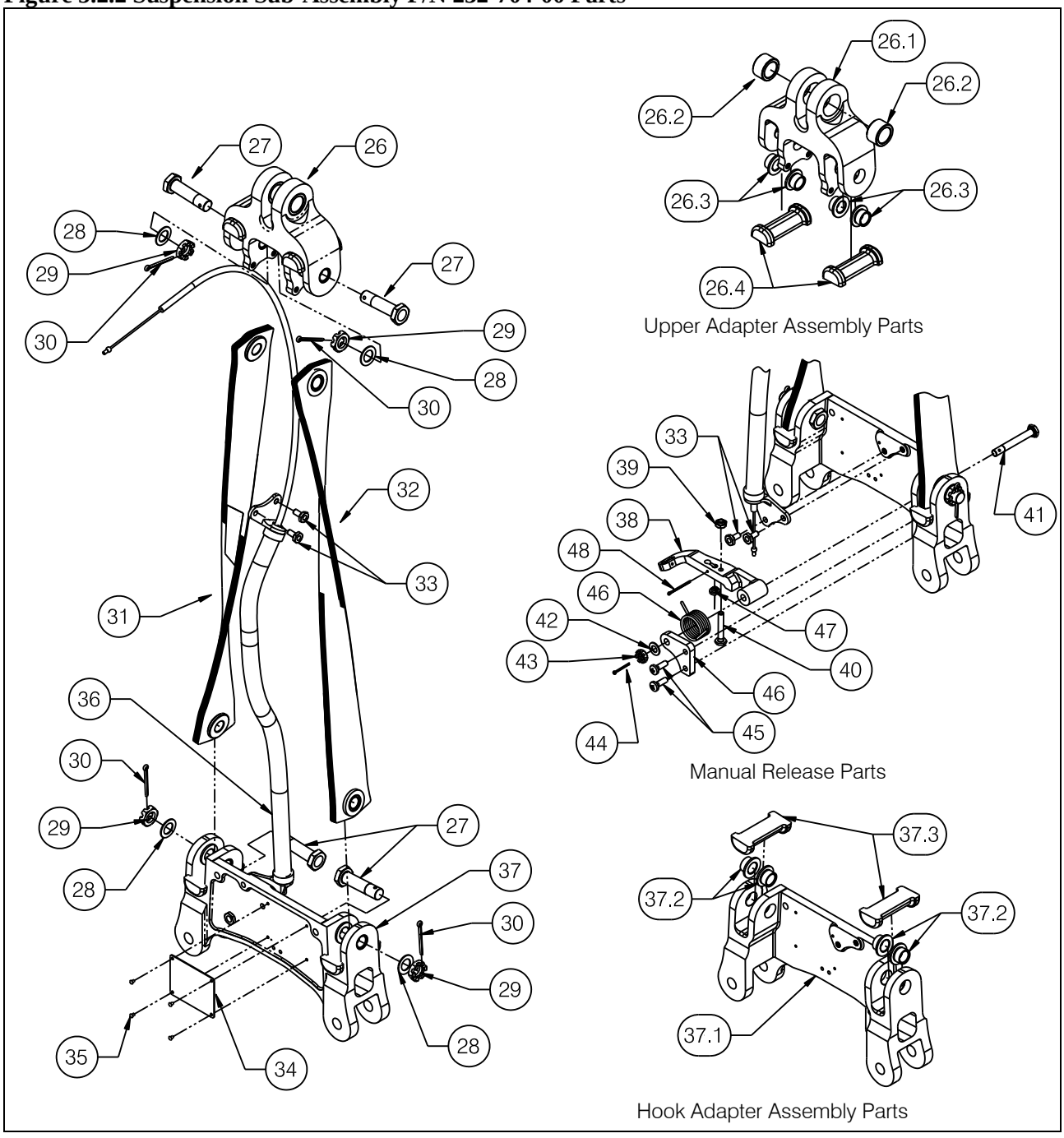
5.2 Cargo Hook Suspension System Overhaul continued

Figure 5.2.1 Suspension Assembly Parts



5.2 Cargo Hook Suspension System Overhaul continued

Figure 5.2.2 Suspension Sub-Assembly P/N 232-704-00 Parts



5.2 Cargo Hook Suspension System Overhaul continued

Table 5.2.1 Suspension Assembly Parts

ITEM	PART NO.	DESCRIPTION	QTY	OVERHAUL KIT QTY
1.1	291-864-00	Gimbal	1	-
1.2	517-121-00	Bushing	2	2
1.3	291-877-00	Bushing	2	2
2	232-729-00	Load Bolt Assembly	1	-
3	510-172-00	Washer	4	4
4	510-096-00	Nut	2	2
5	510-098-00	Cotter Pin	2	2
6*	210-088-02	Load Cell Assembly	1	-
6.1	290-179-00	Bushing	2	2
7	291-888-00	Load Cell Travel Stop	1	1
8	511-125-00	Bolt	1	-
9	511-126-00	Bolt	2	-
10	510-109-00	Washer	2	2
11	511-015-00	Nut	2	2
13	528-020-12	Cargo Hook	1	-
14	291-874-00	Bumper	1	-
15	510-314-00	Socket Head Cap Screw	2	-
16	290-210-01	Bumper Spacer	4	-
17	510-104-00	Nut	2	2
18	510-453-00	Bolt	2	2
19	510-095-00	Washer	2	2
20	510-213-00	Nut	2	2
21	512-027-00	Cushioned Loop Clamp	3	3
22	512-033-00	Cushioned Loop Clamp	2	2
23	510-243-00	Bolt	1	1
24	270-221-00	Electrical Release Cable	1	-
25	510-115-00	Cotter Pin	1	1
26	232-705-00	Upper Adapter Assembly	1	-
26.1	291-868-00	Upper Adapter	1	-
26.2	291-913-00	Bushing	2	2
26.3	291-871-00	Bushing	4	4
26.4	291-875-00	Travel Stop	2	2
27	511-107-00	Bolt	4	-
28	510-109-00	Washer	4	4
29	511-015-00	Nut	4	4
30	510-113-00	Cotter Pin	4	4
31	232-707-00	Aft (CCW) Strap Assembly	1	-
32	232-721-00	Forward (CW) Strap Assembly	1	-
33	510-243-00	Bolt	4	4
34	215-330-00	Serial Number Plate	1	-
35	510-940-00	Drive Screw	4	-
36	268-058-00	Manual Release Cable	1	-

5.2 Cargo Hook Suspension System Overhaul continued

Table 5.2.1 Suspension Assembly Parts continued

ITEM	PART NO.	DESCRIPTION	QTY	OVERHAUL KIT QTY
37	232-706-00	Hook Adapter Assembly	1	-
37.1	291-866-00	Hook Adapter	1	-
37.2	291-871-00	Bushing	4	4
37.3	291-875-00	Travel Stop	2	2
38	290-178-00	Swing Arm	1	-
39	510-117-00	Nut	1	1
40	510-116-00	Adjustment Bolt	1	1
41	510-518-00	Bolt	1	1
42	510-420-00	Washer	1	1
43	510-259-00	Nut	1	1
44	514-001-00	Torsion Spring	1	1
45	510-465-00	Screw	2	2
46	291-867-00	Pivot Plate	1	-
47	290-180-00	Nylon Bushing	1	1

*If load weigh system (included with 200-391 series kits) is not installed, the Load Cell Assembly is replaced by Load Link Assembly P/N 232-708-00. Assembly P/Ns 210-088-02 and 232-708-00 include the Bushings (P/N 290-179-00).

5.2 Cargo Hook Suspension System Overhaul continued

Figure 5.2.3 Anti-Torque System Parts

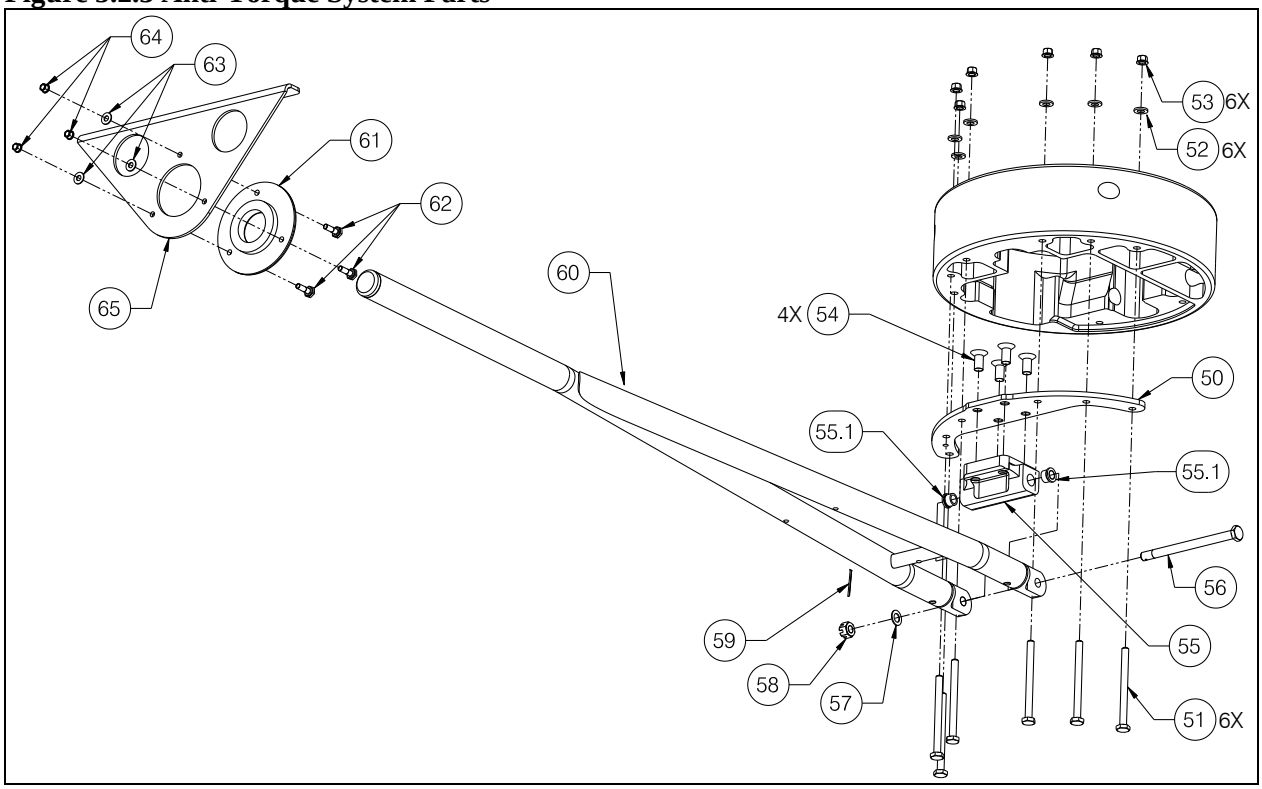


Table 5.2.2 Anti-Torque System Parts

ITEM	PART NO.	DESCRIPTION	QTY
50	291-901-00	Anti-Rotation Plate	1
51	510-350-00	Bolt	6
52	510-778-00	Washer	6
53	510-227-00	Nut	6
54	511-114-00	Screw	4
55	291-900-00	Anti-Rotation Block	1
56	291-640-00	Bushing	2
57	511-115-00	Bolt	1
58	510-239-00	Washer	1
59	510-719-00	Nut	1
60	510-115-00	Cotter Pin	1
61	235-258-00	Restraining Yoke	1
62	291-898-00	Bushing	1
63	510-343-00	Bolt	3
64	510-095-00	Washer	3
65	510-478-00	Nut	3
66	235-257-00	Bracket	1
67*	270-225-00	Ground Strap	1
68*	511-129-00	Screw	1
69*	510-043-00	Nut	1
70*	510-095-00	Washer	1

*Not shown, items 68, 69, and 70 are hardware for attaching ground strap to Anti-Rotation Plate.

5.2 Cargo Hook Suspension System Overhaul continued

Perform penetrant inspection in accordance with ASTM-E1417 and MIL-STD-1907, Grade A on the parts listed below.

1. Upper Adapter (26.1)
2. Hook Adapter (37.1)

Perform magnetic particle inspection in accordance with ASTM-E1444 and MIL-STD-1907, Grade A on the parts listed below.

1. Clevis (1.1)
2. Load Bolt Assembly (2)

In addition, carefully inspect parts in accordance with the instructions in Table 5.2.3. Inspect the parts in a clean, well-lit room using standard dimensional measuring tools and visual methods. Repair parts found within inspection limits. Replace any part found beyond limits. Refer to Figures 5.2.1 through 5.2.3 for part identification.

5.2 Cargo Hook Suspension System Overhaul continued

Table 5.2.3 Suspension System Inspection Criteria

Seq	Component	Inspection Criteria & Limit	Repair Action	Finish	Recommended replacement at overhaul.
1.	Clevis Assembly (1)	Dents, nicks, gouges, scratches and corrosion – 0.030 in. (0.76mm) deep. Wear on lower bushing ID, .635 in. (16 mm) maximum. Wear on upper bushing ID, .505 in. (12.8 mm) maximum.	Glass bead blast at less than 30 PSI to remove corrosion. Blend at 10:1 ratio as required to provide smooth transitions. Replace bushings if required. Install bushings with zinc chromate primer (TT-P-1757 or similar).	Passivate per AMS-QQ-P-35 or ASTM A967	No
2.	Link Assembly (6) (replaced by Load Cell Assembly if Load Weigh System is installed).	Dents, nicks, gouges, scratches and corrosion – 0.030 in. (0.762 mm) deep. Wear on bushing ID, .635 in. (16 mm) maximum.	Glass bead blast at less than 30 PSI to remove corrosion. Blend at 10:1 ratio as required to provide smooth transitions. Replace bushings if required. Install bushings with wet zinc chromate primer (TT-P-1757 or similar).	Passivate per AMS-QQ-P-35 or ASTM A967	No
3.	Upper Adapter (26.1)	Dents, nicks, gouges, scratches, and corrosion - .015 in. (.38 mm) Wear on lower bushing IDs (qty 4), .464 in. (11.8 mm) maximum. Wear on upper bushing IDs (qty 2), .635 in. (16 mm) maximum.	Glass bead blast at less than 30 PSI (2.11 KGF/CM^2) to remove corrosion. Blend at 10:1 ratio as required to provide smooth transitions.	Apply alodine (MIL-DTL-5541) and zinc chromate primer (MIL-PRF-23377 or similar) to affected surfaces – see Note 1	No

5.2 Cargo Hook Suspension System Overhaul continued

Table 5.2.3 Suspension System Inspection Criteria continued

Seq	Component	Inspection Criteria & Limit	Repair Action	Finish	Recommended replacement at overhaul.
4.	Hook Adapter (37.1)	Dents, nicks, gouges, scratches, and corrosion - .015 in. (.38 mm) within Zone A, .030 in. (.76 mm) outside of Zone A, see Figure 5.2.4. Wear on bushing IDs (qty 4), .464 in. (11.8 mm) maximum.	Glass bead blast at less than 30 PSI (2.11 KGF/CM^2) to remove corrosion. Blend at 10:1 ratio as required to provide smooth transitions.	Apply alodine (MIL-DTL-5541) and zinc chromate primer (MIL-PRF-23377 or similar) to affected surfaces – see Note 1.	No
5.	Strap Assemblies (31) (32)	Cracks. Gouges, scratches, and nicks - .010 (.25 mm) deep. Wear on bushing ID, .464 in. (11.8 mm) maximum.	None. Replace.	N/A	No
6.	Load Bolt Assy (2)	Wear on OD, .610 in. (15.49 mm) minimum.	None. Replace.	N/A	No
7.	Cargo Hook Bumper (14)	Denting, cuts or abrasions – 0.060 in. (1.27 mm) deep	None. Replace.	N/A	No
8.	Travel Stop (26.4, 37.3)	Gouges, dents or cuts at interface with strap assemblies - .030 in. (.76 mm) deep.	None. Replace.	N/A	Yes
9.	Swing Arm (38), Pivot Plate (46)	Dents, nicks, gouges, scratches and corrosion – 0.030 in. (0.76 mm) deep.	Blend at 10:1 ratio as required to provide smooth transitions.	Apply zinc chromate primer (MIL-PRF-23377 or similar) to affected surface – See Note 1.	No

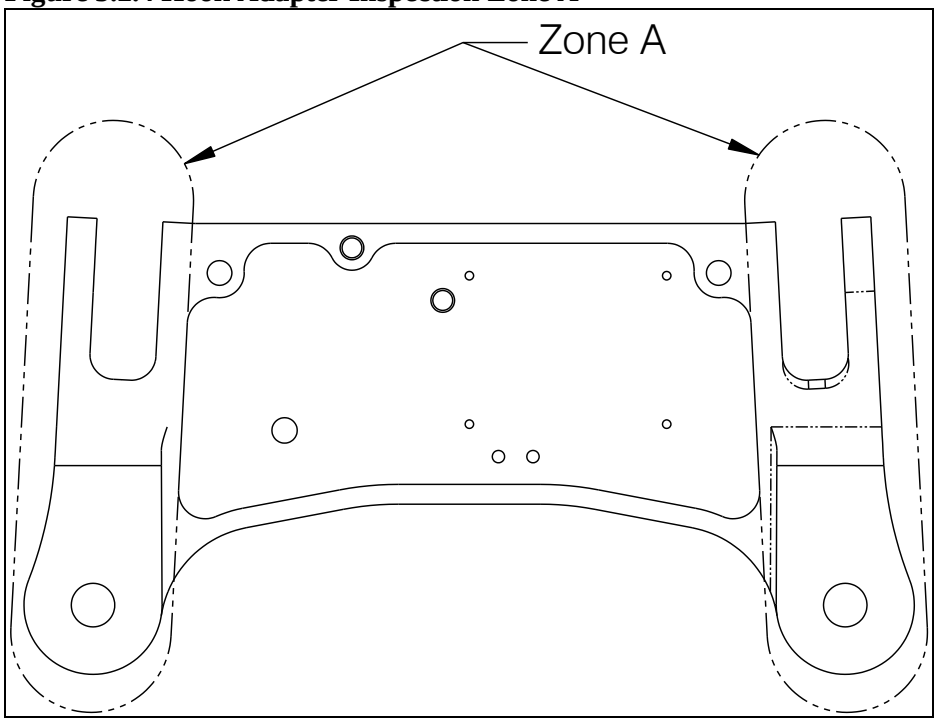
5.2 Cargo Hook Suspension System Overhaul continued

Table 5.2.3 Suspension System Inspection Criteria continued

Seq	Component	Inspection Criteria & Limit	Repair Action	Finish	Recommended replacement at overhaul.
10.	Upper Manual Release Cable (36)	Any kinking, fraying or wear of inner cable. No damage allowed at ball ends.	None. Replace.	N/A	No
11.	Bolt (27) Qty 4 Bolt (9) Qty 2	Wear on OD, .420 in. (10.67 mm) minimum.	None. Replace.	N/A	No
12.	Bolt (8)	Wear on OD, .610 in. (15.49 mm) minimum.	None. Replace	N/A	No
13.	All remaining nuts, bolts, cotter pins, washers.	Wear, corrosion or deterioration.	None. Replace.	N/A	Yes

Note 1 - Optionally strip and re-anodize black per MIL-A-8625 Type II Class 2.

Figure 5.2.4 Hook Adapter Inspection Zone A



5.2 Cargo Hook Suspension System Overhaul continued

Table 5.2.4 Anti-Torque System Inspection Criteria

Seq	Component	Inspection Criteria & Limit	Repair Action	Finish	Recommended replacement at overhaul.
1.	Anti-Rotation Block Assembly (55)	Dents, nicks, gouges, scratches and corrosion – 0.030 in. (0.762 mm) deep. Wear on bushing ID, .336 in. (8.5 mm) maximum.	Glass bead blast at less than 30 PSI (2.11 KGF/CM^2) to remove corrosion. Blend at 10:1 ratio as required to provide smooth transitions.	Apply alodine (MIL-DTL-5541) and zinc chromate primer (MIL-PRF-23377 or similar) to affected surfaces – see Note 1.	No
2.	Anti-Rotation Plate (50)	Dents, nicks, gouges, scratches and corrosion – 0.030 in. (0.762 mm) deep.	Glass bead blast at less than 30 PSI (2.11 KGF/CM^2) to remove corrosion. Blend at 10:1 ratio as required to provide smooth transitions.	Apply alodine (MIL-DTL-5541) and zinc chromate primer (MIL-PRF-23377 or similar) to affected surfaces – see Note 1.	No
3.	Restraining Yoke (60)	Dents, nicks, gouges, scratches and corrosion – 0.030 in. (0.762 mm) deep.	Glass bead blast at less than 30 PSI (2.11 KGF/CM^2) to remove corrosion. Blend at 10:1 ratio as required to provide smooth transitions.	Apply zinc chromate primer (MIL-PRF-23377 or similar) to affected surfaces.	No
4.	Bracket (65)	Dents, nicks, gouges, scratches and corrosion – 0.030 in. (0.762 mm) deep.	Blend at 10:1 ratio as required to provide smooth transitions.	Apply alodine (MIL-DTL-5541) and zinc chromate primer (MIL-PRF-23377 or similar) to affected surfaces – see Note 1.	No
5.	Bushing (61)	Wear on bushing ID, 1.50 in. (38 mm) maximum.	None. Replace.	None.	No.
6.	All remaining nuts, bolts, cotter pins, washers.	Wear, corrosion or deterioration.	None. Replace.	N/A	Yes

Note 1 - Optionally strip and re-anodize black per MIL-A-8625 Type II Class 2.

5.2 Cargo Hook Suspension System Overhaul continued

Re-assemble the suspension system per the following. Apply grease (Mobilgrease 28 (MIL-PRF-81322) is recommended) to the shank of all pivot bolts where noted.

1. Assemble the Adjustment Bolt (40) onto the Swing Arm (38) by threading it in until approximately 3/8" of threads is extending through. Thread locknut (39) over adjustment bolt.
2. Apply grease and insert bolt (41) through Hook Adapter, and assemble the Swing Arm over it.
3. Place torsion spring (46) over the Swing Arm hub and capture with Pivot Plate (46) by securing the Pivot Plate to the Hook Adapter with two screws (45).
4. Install washer (42) and nut (43) over the bolt (43) and tighten nut finger tight and then back off to previous castellation to install cotter pin (44). Ensure Swing Arm pivots without any binding.
5. Ensure Travel Stops (37.3) are inserted and secure within the Hook Adapter (37.1) upper lugs. Apply grease to bolt (27) and assemble Strap Assemblies (32, 33) onto the Hook Adapter with bolt, washer (28), and nut (29). Tighten each nut until seated and then back off to previous castellation if necessary to insert cotter pin (30).

NOTICE

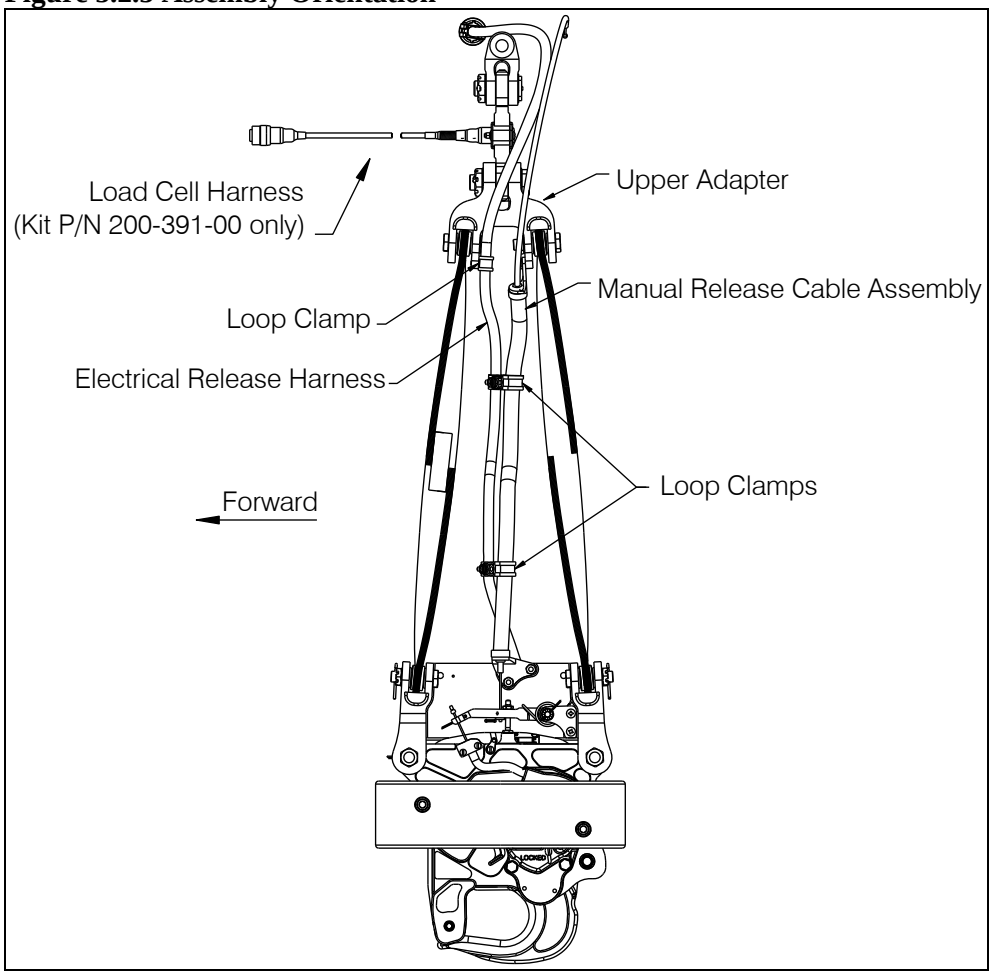
There are two Strap Assembly P/Ns. One is a clockwise twist and the other a counterclockwise twist. One of each is required but they are not assembly sensitive i.e. - either end of Strap Assembly can be installed at either hook adapter lug.

6. Ensure Travel Stops (26.4) are inserted and secure within the Upper Adapter (26.1) lower lugs. Apply grease to bolt (27) and assemble the other end of each Strap Assembly onto the Upper Adapter with bolt, washer (28) and nut (29). Tighten nut until seated and then back off to previous castellation if necessary to insert cotter pin (30).
7. Assemble the manual release cable (36) onto the Upper Adapter and Hook Adapter with two bolts (33) at each of its brackets. At the upper adapter, attach the manual release cable bracket to the inside of the aft clevis (see Figure 5.1.9). Tighten bolts to 20-25 in-lbs.
8. At the Hook Adapter, insert the inner cable of the manual release cable through the slot in the center of the swing arm and slide it to the opposite end of the slot. Place the Nylon Bushing (47) over the cable ball end. Insert cotter pin (48) through the swing arm to retain the inner cable in position.
9. Insert the inner cable of the cargo hook's manual release cable through the slot in the end of the swing arm and slide it to the opposite end of the slot and insert cotter pin (25) through to retain it.

5.2 Cargo Hook Suspension System Overhaul continued

10. Insert Travel Stop within upper clevis of Upper Adapter and assemble the Load Cell Assembly or Link Assembly (6) onto the Upper Adapter per Section 25.17.
11. Assemble the Clevis Assembly onto the Load Cell Assembly or Link Assembly per Section 25.17.
12. Secure the electrical cable to the manual release cable using two pairs of cushioned loop clamps (21 and 22) secured together with bolt (19), washer (19) and nut (20). Secure the electrical cable to the forward clevis of the upper adapter with loop clamp (21) and bolt (23) at the tapped hole on the near side in figure shown below.
13. Slide the Bumper (14) over the Cargo Hook (13) and align its holes with the mounting holes in the Cargo Hook, insert Bumper Spacers (16) from each end of Bumper mounting holes and insert socket head cap screws (15) through. Thread nuts over screws and tighten to 60-85 in-lbs.
14. Attach the Cargo Hook (13) onto the lower lugs of the Hook Adapter using bolts (9), washers (10), and nuts (11). Tighten nuts until seated and back off to previous castellation if necessary to insert cotter pin.

Figure 5.2.5 Assembly Orientation



5.2 Cargo Hook Suspension System Overhaul continued

If the Anti-Torque System was part of the inspection re-assemble it per the following.

1. Assemble the Anti-Rotation Plate (50) and Anti-Rotation Block (55) together with the four flathead screws (54).
2. Attach the Anti-Rotation Plate (50) to the Bumper on the Cargo Hook with the six nuts (53), washers (52), and bolts (51). Tighten to 50-70 in-lbs.
3. Route the ground strap from the Anti-Rotation up through the bumper and to the termination point on the cargo hook and secure with the same screw as used for the suspension ground strap.
4. Assemble the Restraining Yoke (61) to the Anti-Rotation Block (ensure bushings (56) are installed) by aligning its holes and inserting bolt (57) through and securing the bolt with washer (58), nut (59) and cotter pin (60). Tighten nut finger tight only and rotate to previous castellation if necessary to install cotter pin. Ensure Restraining Yoke pivots freely about the joint.
5. Attach the Bushing (62) to the Bracket (66) with three bolts (63), washers (64), and nuts (65). Tighten nuts to 20-25 in-lbs.
6. Attach the bracket to the belly of the helicopter with the bolts (2 or 4 depending on aircraft model) and tighten to 20-25 in-lbs.

5.3 Cargo Hook Overhaul Schedule

Time Between Overhaul (TBO) for the cargo hook: 1500 hours of external load operations or 6 years, whichever comes first.

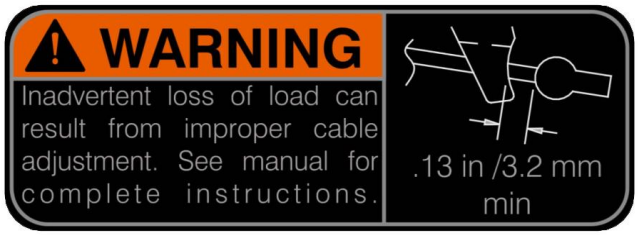
*Hours of external load operations should be interpreted to be **(1)** anything is attached to the primary cargo hook (whether or not a useful load is being transported) and **(2)** the aircraft is flying. If these conditions are **NOT** met, time does **NOT** need to be tracked.*

Overhaul the cargo hook per Component Maintenance Manual 122-004-00. Contact Onboard Systems for guidance to locate authorized overhaul facilities.

Section 11
Placards and Markings
11.1 Placards

The P/N 200-391-XX, 200-401-XX, and 200-428-00 kits require 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/N 215-336-00 	Mounted on the solenoid housing on cargo hook P/N 528-020-12.
P/N 215-318-00 	Mounted adjacent to and forward of the manual release lever on the side of the cargo hook frame.
P/N 215-240-00 	Mounted on the top side of the cargo hook frame.

11.1 Placards continued

Table 11.1 Cargo Hook Suspension System Placards, continued

Placard part number and appearance	Location
P/N 215-010-00 ELECTRONIC WEIGHING SYSTEM	When a 200-391-XX system is installed, mounted adjacent to both the power switch and the circuit breaker in full view of the pilot and co-pilot.
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.	When a 200-391-XX system is installed, mounted adjacent to the Onboard Systems digital/analog indicator in full view of the pilot and co-pilot.

Section 25
Equipment and Furnishings
25.1 Cargo Hook Connector

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

Table 25.1.1 Cargo Hook Connector

Pin	*Function*
A	Not Used
B	Positive
C	Ground

25.2 System Description

A load release from the cargo hook can be initiated by three different methods.

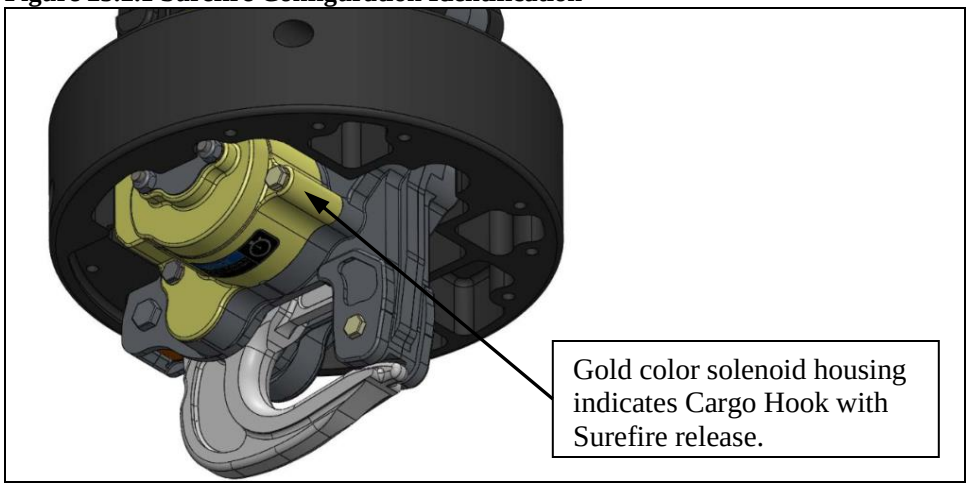
1) Normal release is achieved by pilot actuation of the release switch on the cyclic. When the switch is pressed, it energizes a solenoid in the Cargo Hook, and the solenoid opens a latch in the internal mechanism. An optional cargo hook configuration (P/N 528-020-12) under this STC includes a time delay circuit which provides an approximate half-second delay to protect against inadvertent load release due to accidental contact with the release switch or inadvertent actuation of the wrong switch. This circuit also includes on/off cycling to limit the duty cycle on the solenoid. If the release switch is held down, the solenoid will cycle on and off repeatedly in a "machine gun" fashion.

   In addition to the part number identification, a cargo hook with the time delay feature can also be identified by a gold anodized solenoid housing.

⚠ CAUTION

If a Surefire-equipped cargo hook must be released immediately without <u>any</u> delay, use the mechanical backup release.

Figure 25.2.1 Surefire Configuration Identification



2) An alternate means of release can be achieved by actuating the manual release system's lever in the cockpit. Actuating the lever pulls the inner cable of the manual release cable which is routed to the Cargo Hook and this action actuates the internal mechanism of the Cargo Hook to release the load.

3) The load can also be released by ground crew using a lever located on the side of the Cargo Hook.

25.5 Component Weights

The weight and cg of the systems are listed in Table 25.5.1.

Table 25.5.1 System Weights and CGs

Item	Weight lbs (kgs)	STA in (mm)	BL in (mm)
P/N's 200-391-00, 200-391-01, 200-391-10, 200-391-11 Cargo Hook Suspension System with Load Weigh	29 lbs (13.1)	135.0 (3429)	0
P/N's 200-401-00, 200-401-01, 200-401-10, 200-401-11 Cargo Hook Suspension System	26.5 (12.0)	137.55 (3494)	0
P/N 200-428-00 Anti-Torque System	5.4 (2.45)	122 (3099)	0

25.12 Storage Instructions

Refer to the Component Maintenance Manual (CMM) 122-004-00 for storage instructions for the cargo hook.

Clean the exterior suspension components thoroughly of excess dirt and grease with a rag before packaging. Store the components in a heat-sealable package with a desiccant and label with the date of storage. Refer to MIL-PRF-23199 and MIL-STD-2073-1 for additional guidance.

25.15 Troubleshooting

Table 25.15.1 Troubleshooting

MALFUNCTION	PROBABLE CAUSE	CORRECTIVE ACTION
Cargo hook does not operate electrically or manually.	Defective internal mechanism or corroded and seized mechanism pivot bushings/bearings.	Remove and replace cargo hook (see sections 25.16 and 25.17) or repair per Cargo Hook Component Maintenance Manual (CMM) no. 122-004-00.
Cargo hook P/N 528-020-10 does not operate electrically, manual cable release operates normally.	Open electrical circuit, faulty wiring, circuit breaker, switch or solenoid.	Using multi-meter, check the resistance between pins B and C of the cargo hook electrical connector (see Note 1 below for schematic). Resistance should be between 1.6 and 2.2 ohms. If open indication or resistance is outside this range, remove and replace cargo hook (see sections 25.16 and 25.17) or repair per CMM 122-004-00. Check the aircraft circuit for opens and shorts by using a multi-meter on the hook connector. When the release switch s pressed 28V aircraft voltage should be seen on the connector pins. Refer to the Bell maintenance documentation for aircraft side cargo hook wiring.
Cargo hook P/N 528-020-12 (includes time delay circuit) does not operate electrically, manual cable release operates normally.	Release switch not held down long enough. Open electrical circuit, faulty wiring, circuit breaker, switch or solenoid.	Hold the release switch for a longer time. The time delay circuit incorporates an electronic delay of approximately ½ second after which time the hook solenoid will activate repeatedly. If the release switch is not held down long enough the hook solenoid will not activate. Check the aircraft circuit for opens and shorts by using a multi-meter on the hook connector. When the release switch is pressed 28V aircraft voltage should be present on the connector pins. Refer to the Bell maintenance documentation for aircraft side cargo hook wiring. Check the aircraft connector polarity. The time delay circuit is polarity sensitive and protected against reverse polarity. +28V should be on pin B and ground on pin C. Check the power pins on the hook itself. A multi-meter set to the kilo-ohms range should read between 2-8Kohms. Some auto-ranging meters will not read properly so be sure to try a manual kilo-ohms range. If the meter reads open or short there is a problem with the solenoid module itself and the hook should be replaced or repaired per CMM 122-004-00.

25.15 Troubleshooting continued

Table 25.15.2 Troubleshooting continued

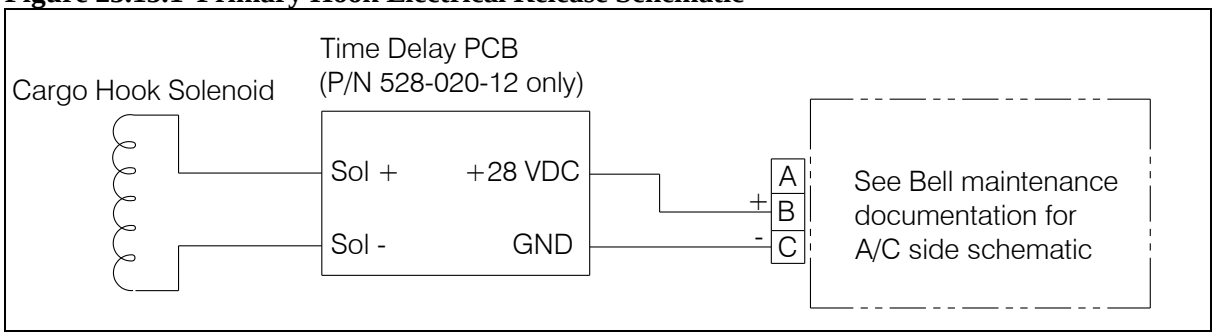
MALFUNCTION	PROBABLE CAUSE	CORRECTIVE ACTION
Cargo hook operates electrically, but not manually.	Kinks or wear in manual release cable or corrosion or frozen water in cable.	Inspect manual release cable and cable connection to Cargo Hook. Disconnect cable at junction with fixed provisions cable to isolate problem. Refer to Bell maintenance documentation for fixed provisions side of manual release system. Remove and replace cargo hook or manual release cable (see Sections 25.16 and 25.17) or repair Cargo Hook per CMM 122-004-00.
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 Cargo Hook per CMM 122-004-00.
Cargo hook manual release cable pull-off force exceeds 18 lbs (80 N) at the hook.	Friction in internal mechanism.	Remove and replace cargo hook (see Section 25.16 and 25.17) or repair Cargo Hook per CMM 122-004-00.
Circuit breaker opens when cargo hook is energized.	Short in the system, faulty wiring, circuit breaker or solenoid.	Refer to the Bell maintenance documentation for aircraft side cargo hook wiring. Check solenoid resistance (see above), remove and replace Cargo Hook or repair CMM 122-004-00.
Load Weigh Indicator does not light up.	Faulty wiring or circuit breaker.	Check the circuit breaker 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 2 below).
Indicator displayed load is not stable.	Dampening level is too small.	Adjust the dampening level to a larger number (see Note 3 below).
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 3 below).

25.15 Trouble Shooting continued

Table 25.15.1 Notes:

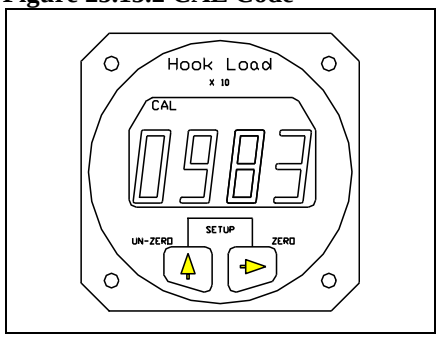
1. **Electrical Schematic**

Figure 25.15.1 Primary Hook Electrical Release Schematic



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 25.15.2 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.

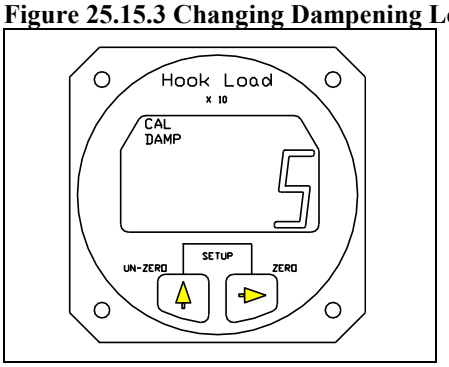
25.15 Trouble Shooting continued

Table 25.15.1 Notes continued:

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 25.15.3 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

Suspension Assembly Removal

To remove the Suspension Assembly:

1. Disconnect the electrical release harness and load weigh harness (if installed) from their respective fixed connectors near the top of the suspension assembly.
2. Remove the screw securing the ground strap to the bracket near the top of the suspension assembly.
3. Disconnect the Suspension Assembly's manual release cable from the fixed manual release cable near the top of the suspension assembly.
4. Remove the cotter pin, nut, washer, and bolt securing the suspension assembly clevis to the aircraft hard point and remove the suspension assembly from the aircraft.

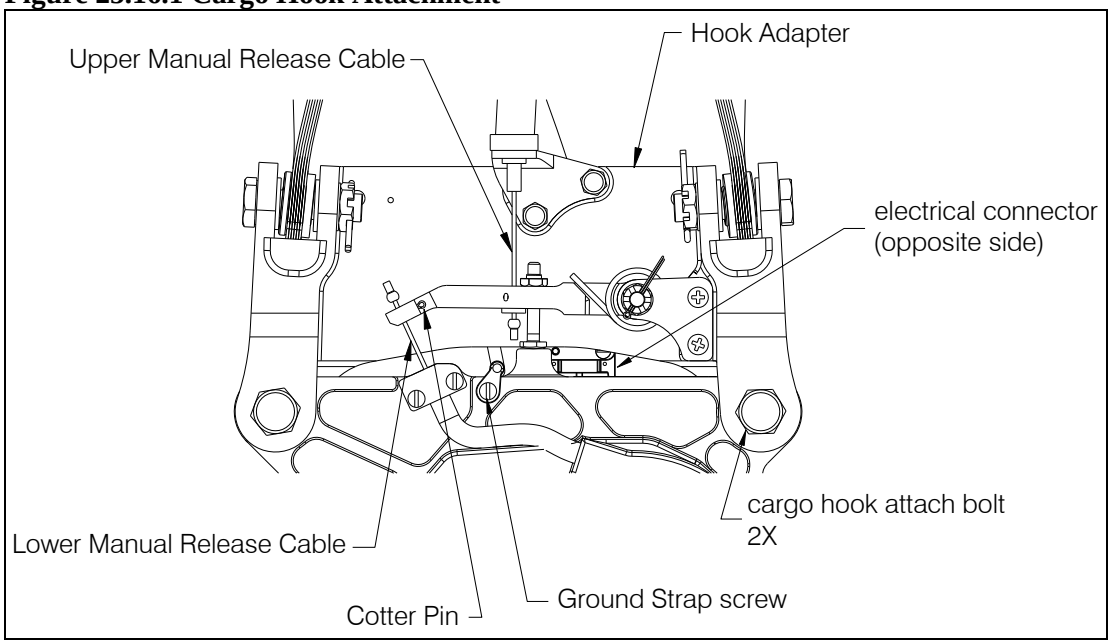
25.16 Component Removal continued

Cargo Hook Removal

To remove the Cargo Hook from the Suspension Assembly, follow the instructions below, refer to Figure 25.16.1.

1. Remove the silicone sealant and remove the screw securing the ground strap (or two ground straps if the Anti-Torque System is installed) to the side plate adjacent to the lower manual release cable.
2. If the Anti-Torque System is installed, separate it from the Cargo Hook Bumper by removing the six nuts, washers and bolts that attach it.
3. Disconnect the electrical release connector on the top right hand side of the cargo hook.
4. At the end of the Swing Arm, remove the cotter pin which captures the inner cable from the cargo hook and slide the inner cable out of the slot in the Swing Arm.
5. Remove the cotter pins, nuts and washers from the end of the two cargo hook attach bolts which secure the cargo hook to the lower lugs of the Hook Adapter and separate the cargo hook from the suspension assembly.

Figure 25.16.1 Cargo Hook Attachment



25.16 Component Removal continued

Manual Release Cable Removal

NOTICE

The cargo hook suspension interfaces with the aircraft's existing internal manual release cable system. Refer to the maintenance documentation provided by the type certificate holder for the aircraft side.

1. Disconnect the manual release cable ball end from the aircraft side connection.
2. Remove the two bolts that secure each manual release cable mounting bracket (at the hook adapter and at the upper adapter).
3. Remove the nuts and washers from the bolts that secure the two (2) pairs of cushioned loop clamps around the manual release cable and electrical release harness conduits (between the mounting brackets).
4. Remove the cotter pin from the Swing Arm at the Hook Adapter (reference Figure 25.16.1) and slide the inner cable of the manual release cable over and out of the Swing Arm and remove the Manual Release Cable Assembly from the Suspension Assembly.

25.16 Component Removal continued

C-39 Load Weigh Indicator Removal

The C-39 Indicator location is optional within the cockpit. It is designed to fit within a standard 2 ¼" instrument panel hole.

1. Remove the four mounting screws that secure it within its mounting position.
2. Disconnect the electrical connector from the back of the indicator and remove the indicator from the aircraft.

Load Cell Assembly Removal

The load cell assembly is included with P/N 200-391 series kits and is located at the top of the suspension assembly.

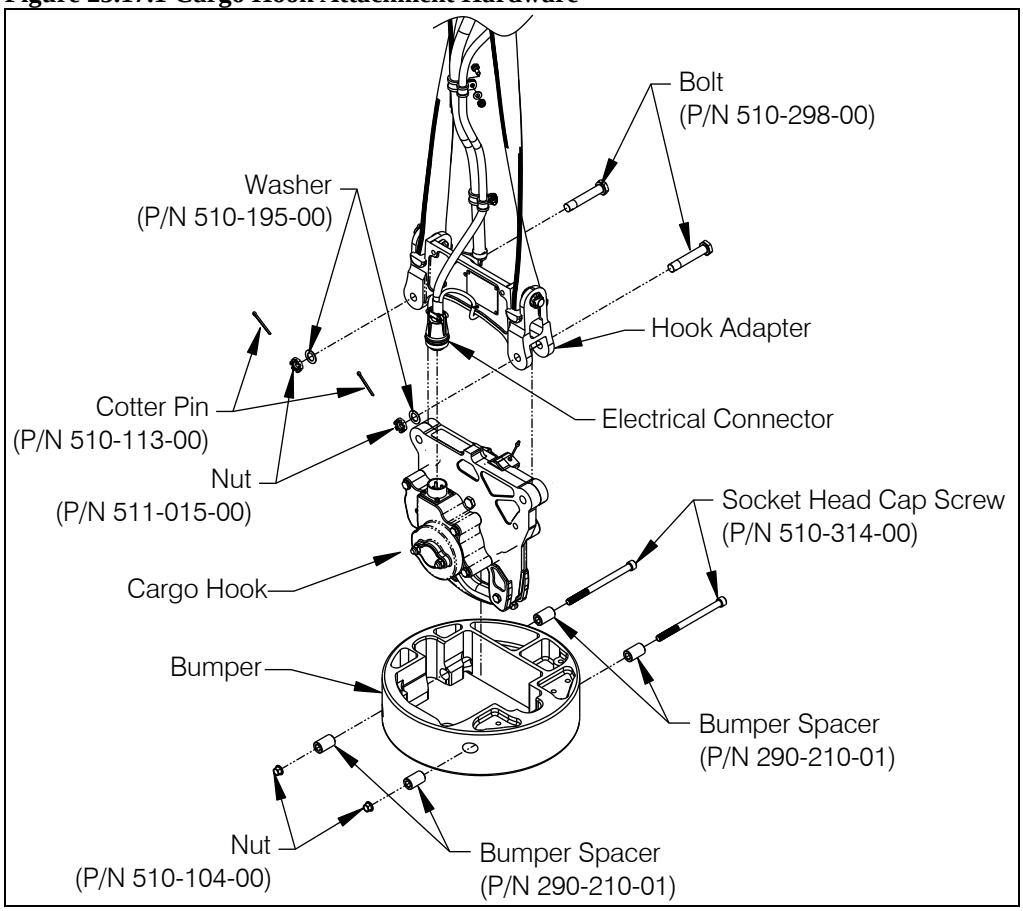
1. Remove the suspension assembly from the aircraft.
2. Remove the cotter pins, nuts and washers from the bolts securing each end of the load cell assembly to the mating parts of the suspension assembly.

25.17 Component Re-installation

Cargo Hook Re-installation

1. Slide the Bumper over the Cargo Hook from the bottom side of the hook (as shown below) and align its holes with the holes in the cargo hook frame.
2. Insert four Bumper Spacers as shown below and insert Socket Head Cap Screws through and secure with nuts. Tighten nuts to 60-85 in-lbs.
3. Attach the Cargo Hook w/ Bumper to the suspension system by inserting it within the lugs of Hook Adapter of the Suspension Assembly with it oriented as shown in Figure 25.17.1.
4. Insert bolts through each lug and secure with washer and nut. Tighten nut until it is fully seated, then rotate to previous castellation if necessary to insert cotter pin.
5. Connect the electrical connector from the Suspension Assembly to the Cargo Hook connector.

Figure 25.17.1 Cargo Hook Attachment Hardware



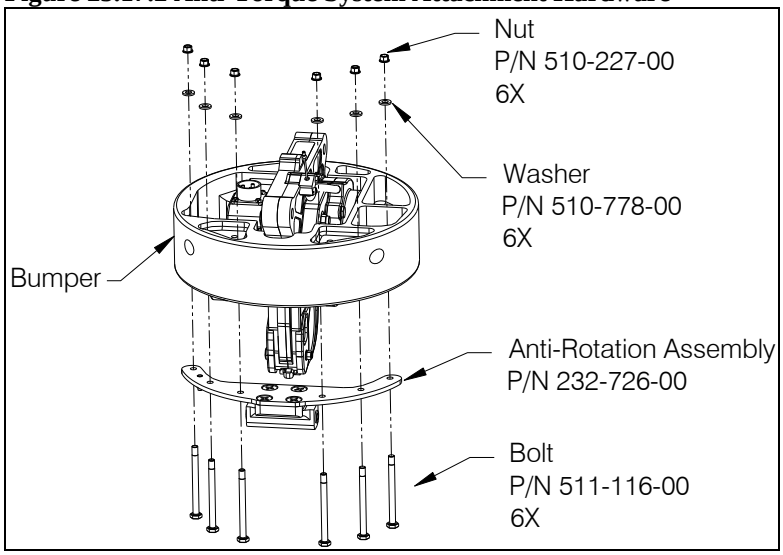
25.17 Component Re-installation continued

Cargo Hook Re-installation continued

6. If the Anti-Torque System is being used attach its Anti-Rotation Assembly to the Bumper with six bolts, washers, and nuts as shown in Figure 25.17.2. Tighten nuts to 50-70 in-lbs.

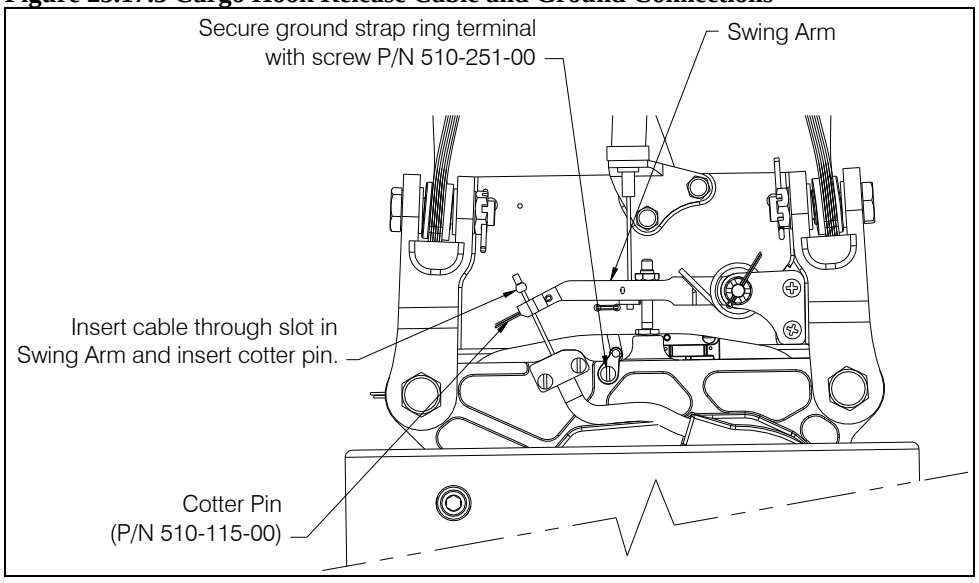
7. Ensure the anodize finish is removed around the tapped hole on the side plate, clean surface if necessary, and attach the ground strap ring terminal with screw (see Figure 25.17.3 for location). If a new cargo hook is being installed, lightly remove the anodize layer around the hole and treat with a MIL-DTL-5541 conversion coating to protect against corrosion.

Figure 25.17.2 Anti-Torque System Attachment Hardware



8. Slide the cable ball end of the manual release cable from the cargo hook through the slot in the swing arm and capture by inserting cotter pin.

Figure 25.17.3 Cargo Hook Release Cable and Ground Connections



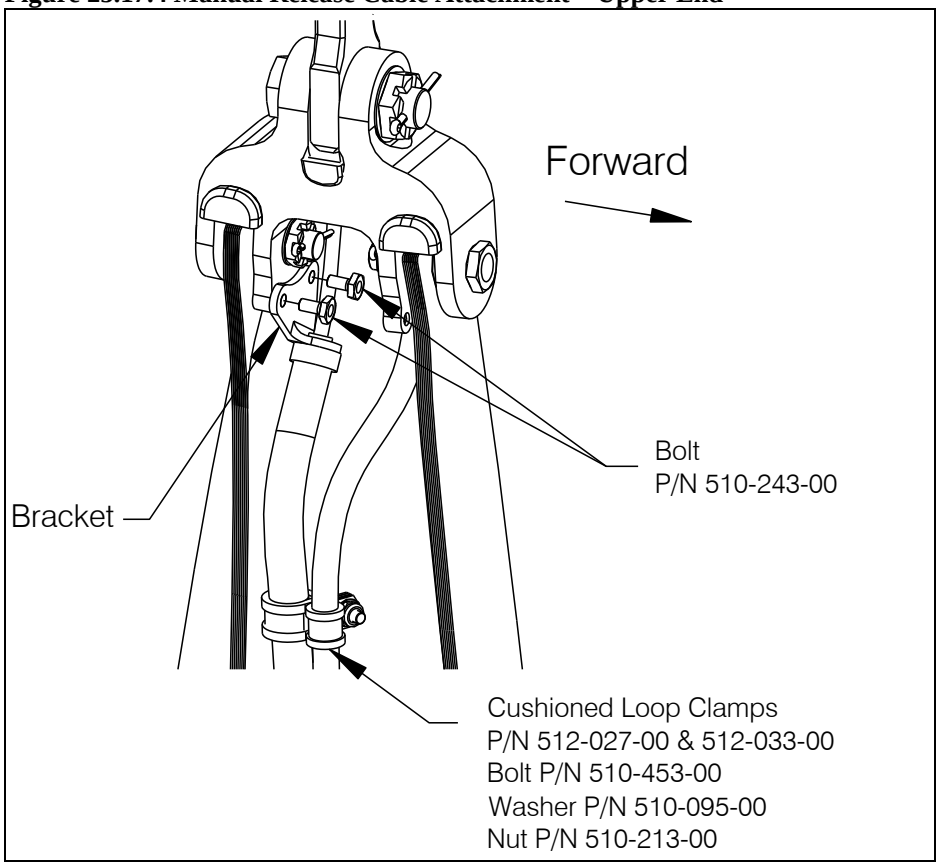
25.17 Component Re-installation continued

Manual Release Cable Re-installation continued

1. The Manual Release Cable Assembly (P/N 268-058-00) has two support brackets integrated into its design. Position the upper end of the manual release cable (the end with the longer inner cable length beyond the bracket) at the aft lug of the upper adapter of the suspension assembly and secure the bracket with two bolts (P/N 510-243-00). Torque bolts to 20-25 in-lbs.

2. Approximately 5 to 6 inches down from the bottom of the bracket, attach the manual release cable to the electrical conduit with loop clamps and hardware shown below. Torque nut to 20-25 in-lbs.

Figure 25.17.4 Manual Release Cable Attachment – Upper End



25.17 Component Re-installation continued

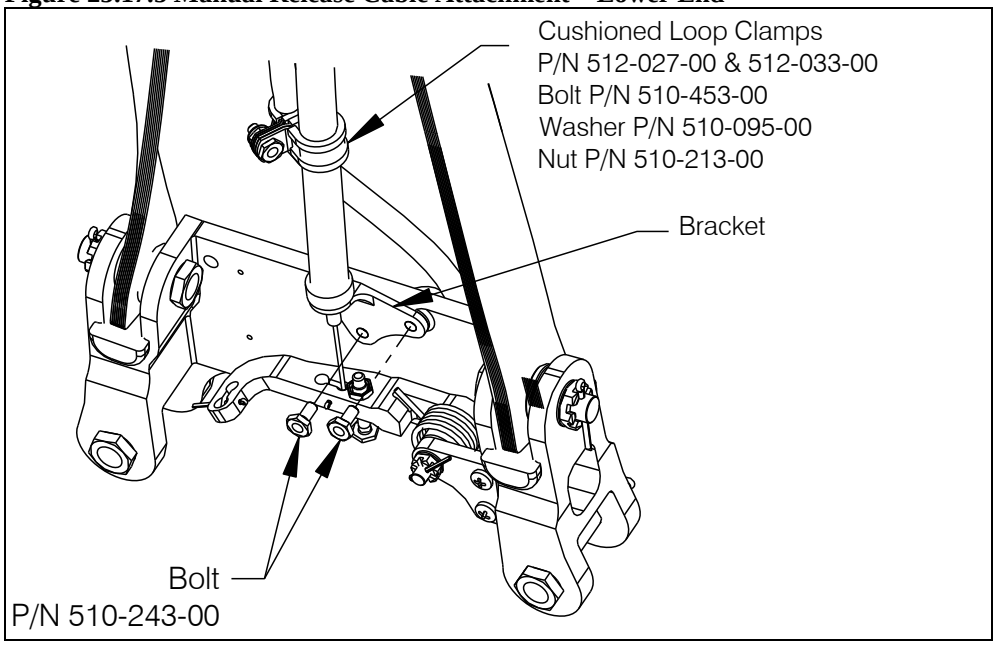
Manual Release Cable Re-installation continued

3. Position the bracket at lower end of the manual release cable (the end with the longer inner cable length beyond the bracket) over the mating holes of the hook adapter and secure it with two bolts (refer to Figure 25.17.5). Torque bolts to 20-25 in-lbs.

4. Approximately 5 to 6 inches up from the top of the bracket, attach the manual release cable to the electrical conduit with loop clamps and hardware shown below. Torque nut to 20-25 in-lbs.

5. Insert inner cable ball end through the slot in the swing arm and secure with cotter pin. Place nylon bushing over cable ball end.

Figure 25.17.5 Manual Release Cable Attachment – Lower End

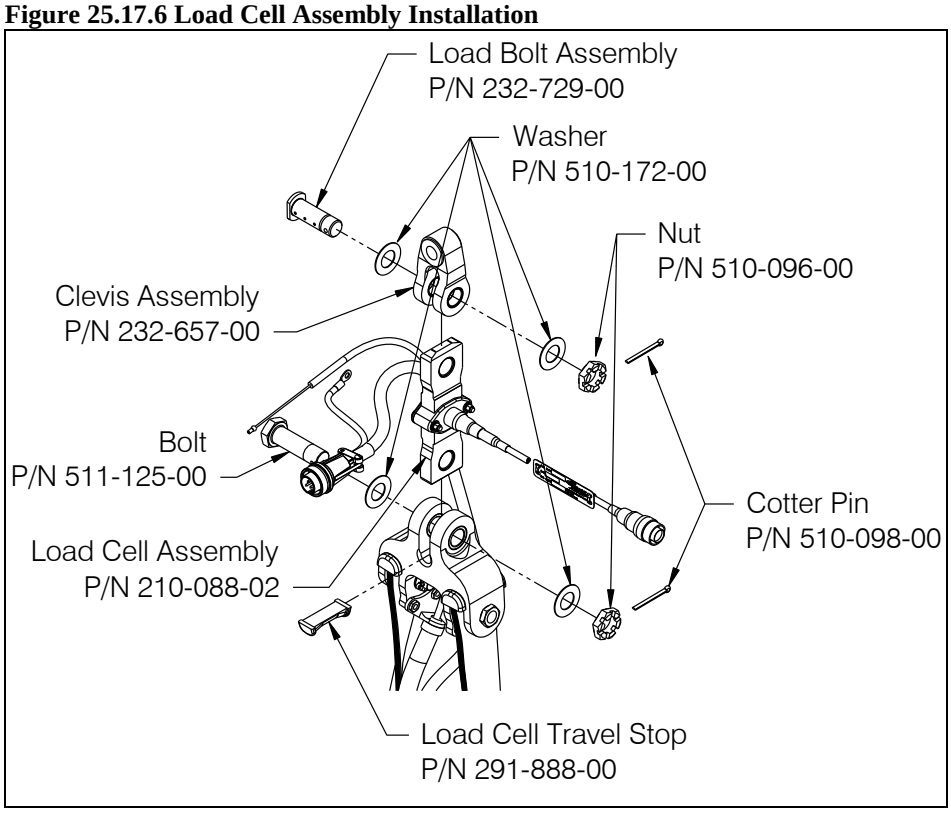


25.17 Component Re-installation continued

Load Cell Assembly Re-installation

1. Ensure the Load Cell Travel Stop (P/N 291-888-00) is inserted and seated within the Upper Adapter Assembly lugs.
2. Apply grease (Mobilgrease 28 (MIL-PRF-81322) is recommended grease) to outside diameter of the bolts.
3. Position the Load Cell Assembly within the Clevis Assembly and Upper Adapter Assembly lugs and secure with hardware as shown below. Tighten each nut finger tight, and then rotate to previous castellation if necessary to install cotter pin. After tightening ensure each joint rotates freely.

Figure 25.17.6 Load Cell Assembly Installation



25.17 Component Re-installation continued

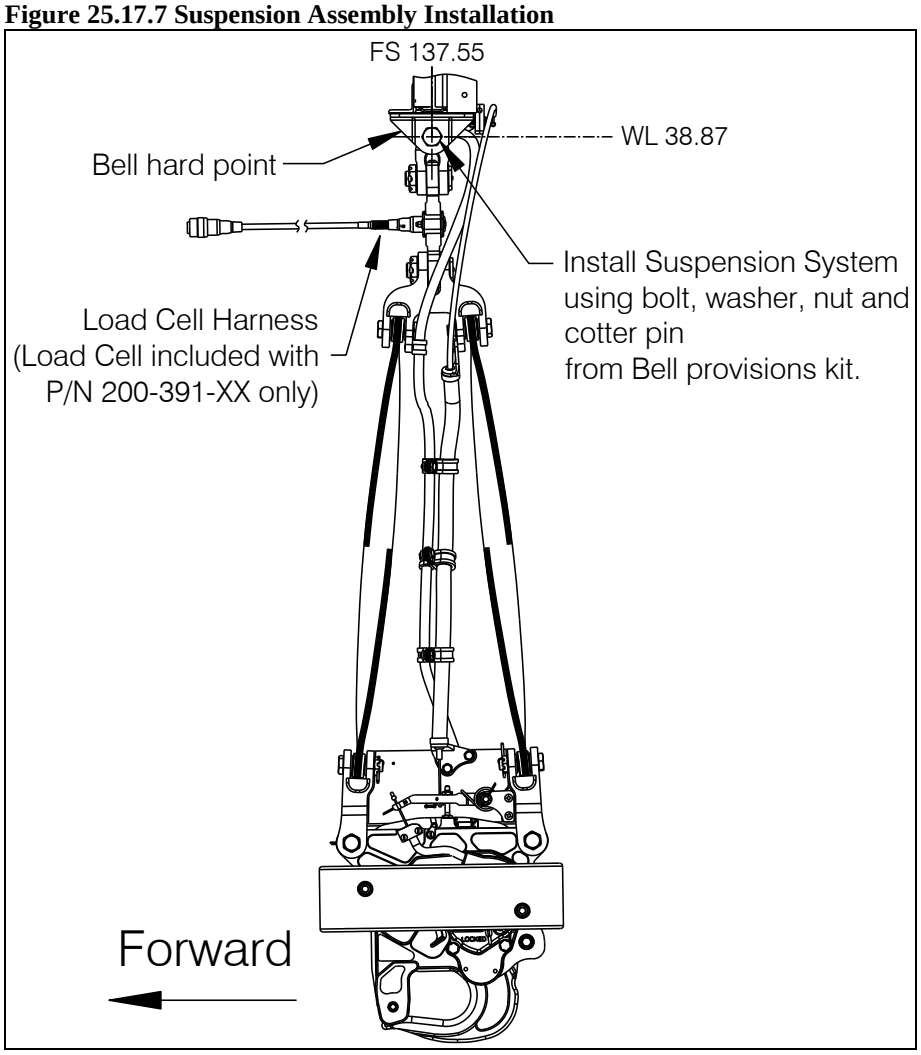
Suspension Re-installation

1. Position the suspension system with the cargo hook oriented as shown below and secure it to the hard point with the bolt, washer, nut and cotter pin from the Bell provisions kit.

WARNING

Before proceeding move the suspension throughout its range of motion and ensure clearance with all equipment, fuel lines, etc. in the surrounding area under the transmission.

Figure 25.17.7 Suspension Assembly Installation



25.17 Component Re-installation continued

Suspension Re-installation continued

2. Connect the electrical connector from the suspension system to the existing fixed provisions connector near the hard point.
3. At the top of the suspension system route the free end of the manual release cable to the right of the hard point (see Figure 25.17.7).
4. Engage the cable ball end of the manual release cable into the existing cable connector (Bell P/N 204-070-995) and secure with cotter pin (P/N MS24665-155).
5. Remove the existing screw and washer from the clamp (Bell P/N 204-070-996-001).
6. Place outer conduit of manual release cable into the clamp and locate the end approximately .42" (10.7 mm) past the edge of the clamp as shown. Place the ring terminal of the ground strap from the Suspension System under the screw head and washer and tighten screw to secure the clamp around the conduit.
7. Adjust the Connector (Bell P/N 204-070-995) to obtain .10" (2.5 mm) of clearance between the underside of the swing arm and the cable ball end of the manual release cable (see Cable Setting Detail). The adjustment bolt of the swing arm should be in contact with the top of the cargo hook case and the swing arm should be approximately parallel to the top of the cargo hook case when the .10" measurement is taken.
8. Pull the lower manual release cable outwards from the hook to remove all of its slack and measure the clearance between its cable ball end and the swing arm. This measurement shall be .12/.18" (see Cable Setting Detail) when the load beam is closed and locked.

⚠ CAUTION

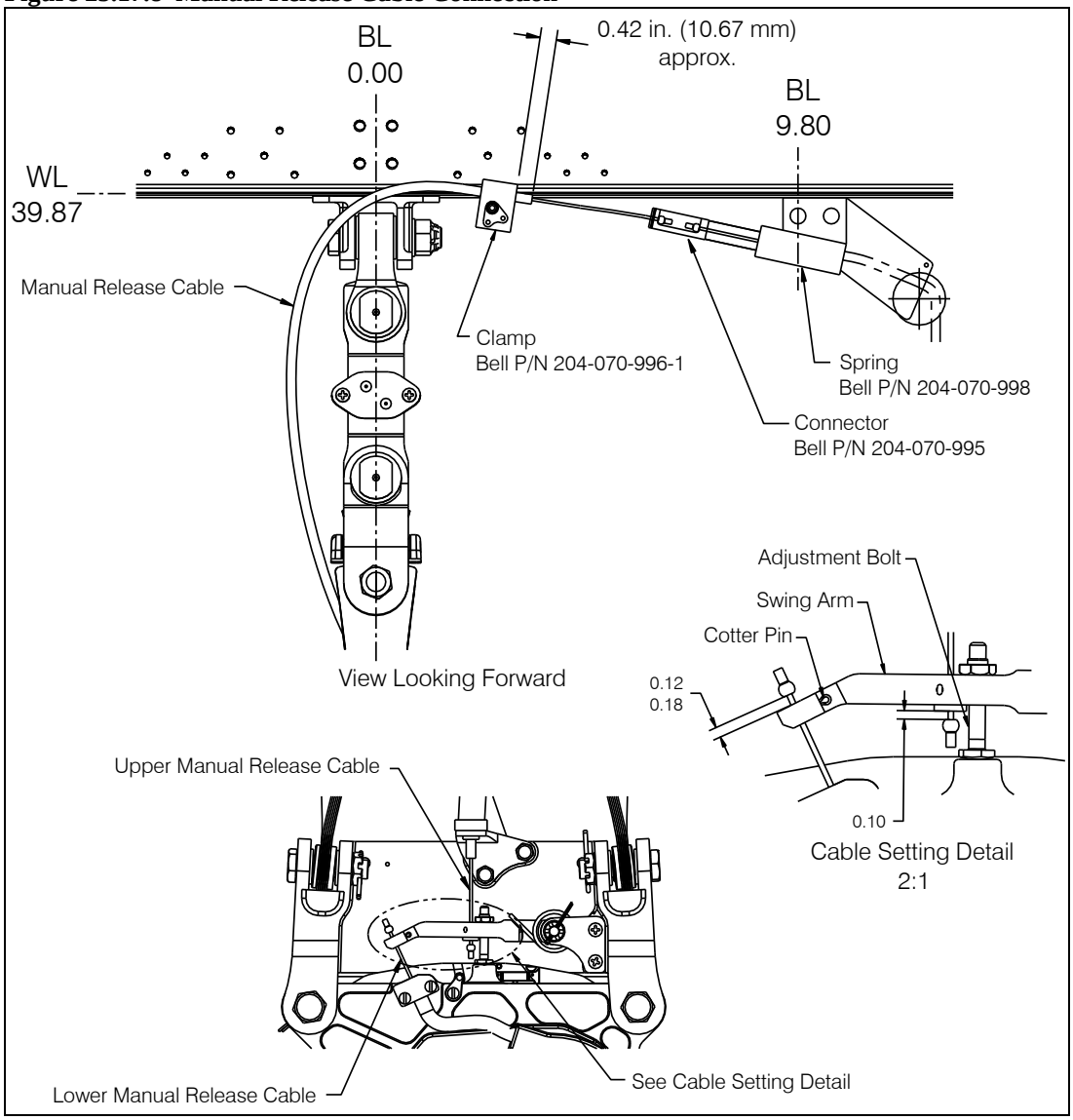
When rigging the manual release cable, the cargo hook load beam must be in the closed and locked position.

9. If adjustment is made to the adjustment bolt in order to obtain proper clearance, re-check adjustment of both the upper and lower manual release cables.

25.17 Component Re-installation continued

Suspension Re-installation continued

Figure 25.17.8 Manual Release Cable Connection



25.17 Component Re-installation continued

C-39 Load Weigh Indicator Re-installation

The C-39 load weigh indicator location is optional within the cockpit. It is designed to fit within a standard 2 ¼" instrument panel mounting hole.

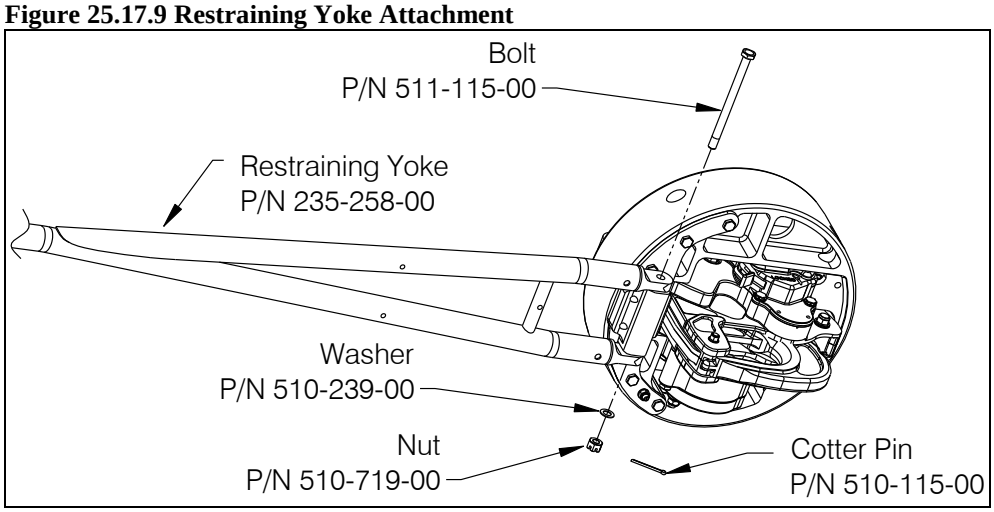
1. Place the load weigh indicator within its mounting location and secure with four screws.
2. Connect the electrical connector on the wiring harness to the connector on the back of the indicator.

Anti-Torque System Re-installation

If the optional Anti-Torque System is being used re-attach it per the following.

1. Attach the Anti-Rotation Assembly to the Cargo Hook Bumper as shown in Figure 25.17.2.
2. Slide the end of the Restraining Yoke through bushing in the bracket on the belly of the helicopter and attach it to the Anti-Rotation Assembly with hardware per the figure below.
3. Tighten nut to finger tight only and rotate to previous castellation if needed to insert cotter pin. Restraining Yoke should pivot freely on bolt.

Figure 25.17.9 Restraining Yoke Attachment



25.18 General Procedural Instructions-Testing

After re-installation of the cargo hook, manual release cable, or an electrical system component perform the following:

1. Check the electrical release system using the cockpit control. The following instructions are applicable to cargo hook P/N 528-020-12.

NOTICE

The 528-028-12 Cargo hook includes an electronic delay of approximately ½ second. It is necessary to press and hold the cargo hook release button.

In addition to the P/N this cargo hook can also be identified by its gold anodized solenoid cover. This cargo hook model has a time-delay circuit which provides an approximate ½ second delay between the time the release switch is pushed and the cargo hook opens to protect against inadvertent release.

- Press and release the Cargo Release switch very briefly without holding it down. The load beam should remain *closed*.
- Press and hold the Cargo Release switch for a few seconds. The load beam should fall to the open position and the cargo hook solenoid should continue to cycle repeatedly.
- Reset the load beam by hand and verify the hook lock indicator returns to the fully locked position.

The following instructions are applicable to cargo hook P/N 528-020-10. Activate the electrical system and press the Cargo Release button on the cyclic 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 resolved.

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 via the foot pedal in the cockpit 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 cargo hook does not release or re-latch, do not use the unit until the difficulty is resolved.