Owner's Manual
Cargo Hook Kit

on the

Airbus Helicopters

models

SA-365N1, AS-365N2, AS 365 N3

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Applicable Equipment Part Numbers

200-498-00, 200-498-01, 200-498-10,
200-498-11

Please check our web site www.onboardsystems.com for the latest revision of this manual.

Record of Revisions

Revision	Date	Page(s)	Reason for Revision
0	10/10/2024	All	Initial Release
1	04/10/2025	All	Incorporated internal manual release cable into kits.
2	08/12/2025	All	Removed INOP placard, added angle bracket, loop clamp, and hardware, changed loop clamp P/N from 512-026-00 to 512-007-00.
3	09/19/25	10, 17	Changed the two loop clamps in landing gear bay (Figure 4.7) from P/N 512-024-00 to P/N 512-037-00.

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Table of Contents

1.0 Introduction

1.1 Scope

This owner's manual contains instructions for installation of Cargo Hook Kits (P/N 200-498-00, 200-498-01, 200-498-10, 200-498-11) on Airbus Helicopters SA-365N1, AS-365N2, and AS 365 N3 model helicopters.

1.2 Safety labels

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.

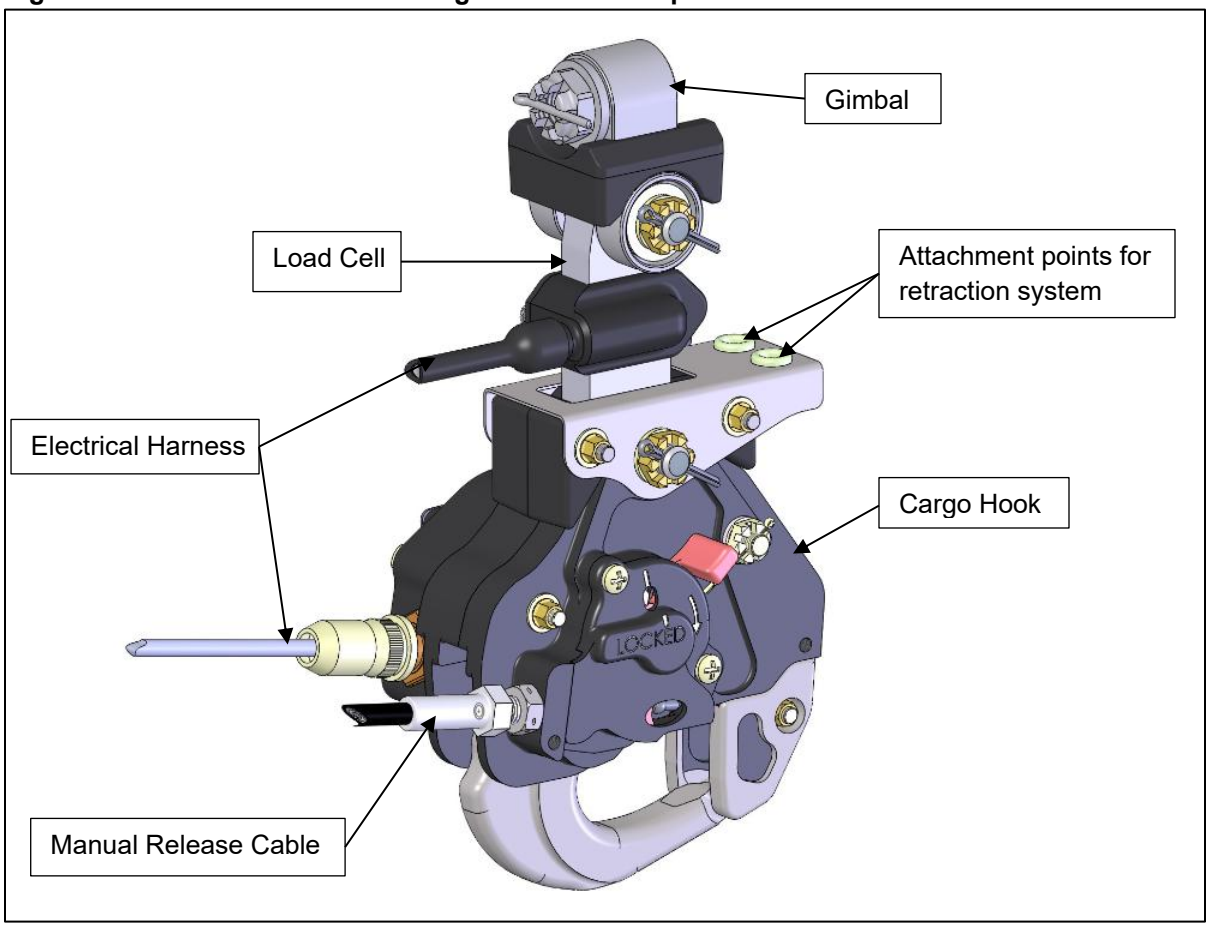
2.0 Referenced Documents

121-078-00	RFM Supplement
122-017-00	Component Maintenance Manual
123-058-00	ICA Manual

3.0 System Overview

Cargo Hook Kit P/Ns 200-498-00, 200-498-01, 200-498-10, and 200-498-11 are replacement cargo hook kits for Airbus Helicopters models SA-365N1, AS-365N2, and AS 365 N3. These kits require that the helicopter be equipped with the Airbus Helicopters type certified (TC) cargo hook installation. The components of the kit replace the TC cargo hook, load cell, load weigh indicator, the external electrical release harness, external manual release cable, internal manual release cable, and collective mounted manual release lever assembly. Provisions are included to connect to the TC cargo hook retraction system. An overview of the external components of the cargo hook kit is included in Figure 3.1.

Figure 3.1 Overview of External Cargo Hook Kit Components



3.1 Cargo Hook Overview

The Cargo Hook is the device that provides the direct means of attaching the load to the helicopter, load retention during flight, and release of load when commanded by controls in the cockpit. The Cargo Hook (see Figure 3.2 and Figure 3.3) included in the Cargo Hook Kit is the P/N 528-029 series.

The Cargo Hook can be released by the pilot with a primary quick release sub-system (PQRS) and a backup quick release sub-system (BQRS). A lever on the side of the cargo hook provides the means for ground crew to release a load.

The PQRS is an electrical system which is actuated by a push button switch in the cockpit. When the pilot pushes the switch, a rotary solenoid within the cargo hook is actuated and it rotates an internal mechanism to release the load. The push button switch, and internal wire harness are part of the TC approved cargo hook system. The provided external electrical harness connects the cargo hook's electrical connector (ref. Figure 3.2) to the connector on the aircraft, just inside the belly, on the right side of the aircraft.

The BQRS is a mechanical cable system. It is actuated by a release lever on the collective. Pulling the release lever pulls a cable which is connected to the cargo hook through internal and external manual release cables which are connected with a mechanical coupler just inside the belly, adjacent to the electrical connector. The translation of the cable at the cargo hook rotates the internal mechanism to release the external load.

Figure 3.2 Overview of Cargo Hook – Electrical Side

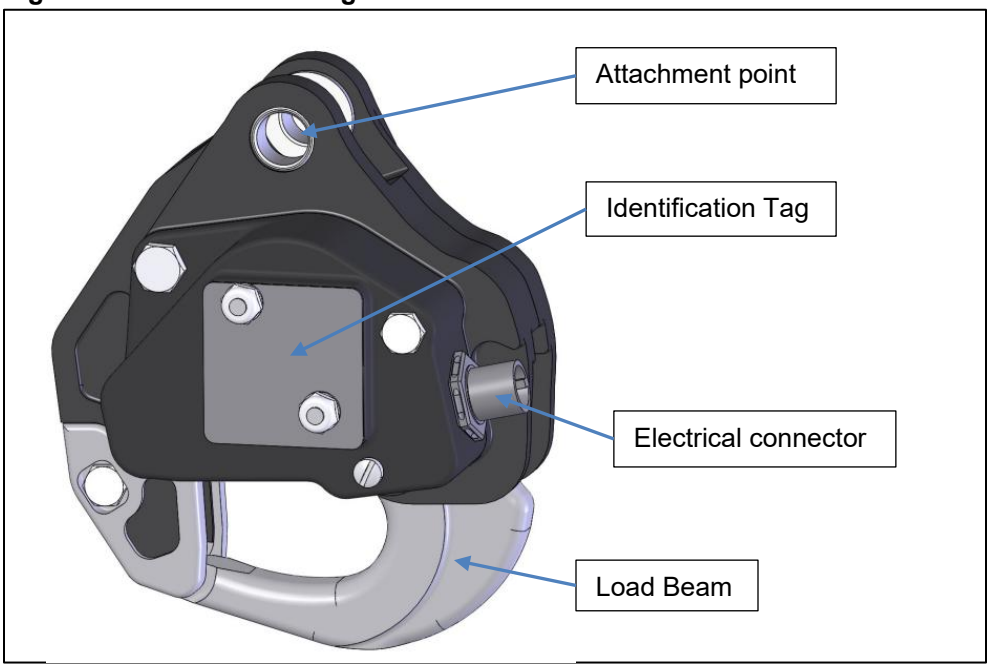
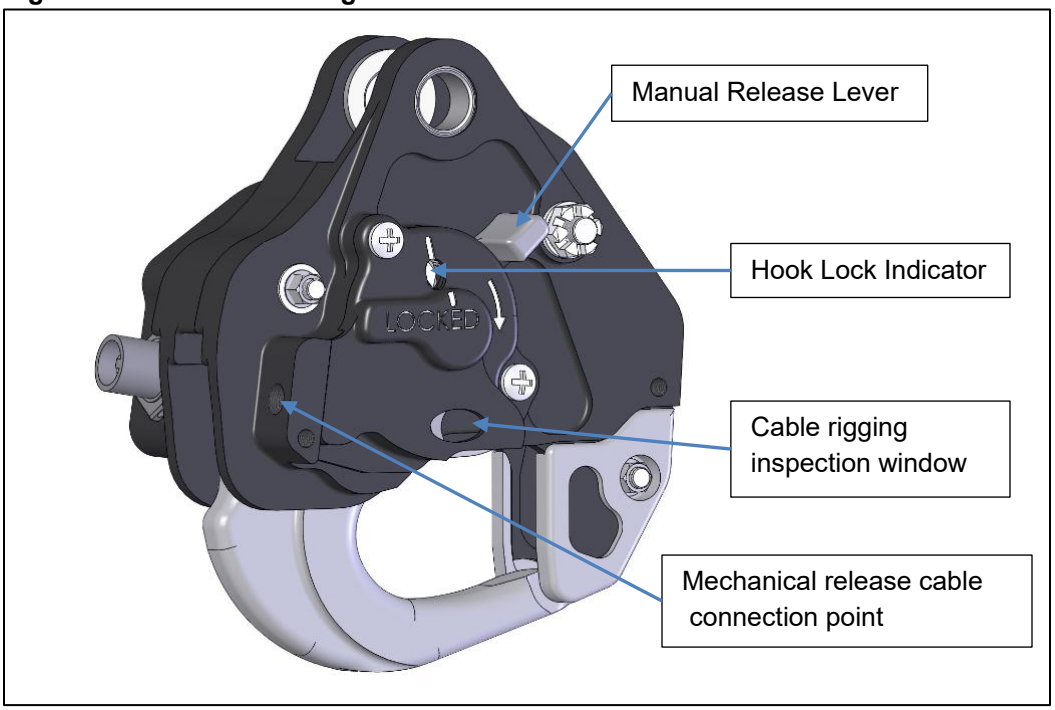


Figure 3.3 Overview of Cargo Hook – Mechanical Release Side



An external load is attached to the Cargo Hook by sliding a load ring, for example, over the open load beam and pushing it up to close and latch it. The mechanical hook lock indicator provides a visual verification that the Cargo Hook is closed and latched. A "window" provides a convenient means to verify that the manual release cable is adjusted properly.

The Cargo Hook does not include an internal switch (which the TC cargo hook does) thus the "LD OFF" and "LD ON" advisory lights within the housing for the TC load indicator are not functional.

3.1.1 Cargo Hook with Surefire Description

Cargo hook kit P/Ns 200-498-10 and 200-498-11 include cargo hook P/N 528-029-02 which includes Surefire release. This cargo hook includes a time delay circuit built into the cargo hook's electrical release system. This feature is intended to protect against inadvertent load release due to accidental contact with the release switch or mistaken actuation of the cargo hook switch when another is intended. The delay feature requires that the release switch be depressed and held for more than a half-second to open the cargo hook. Surefire makes the electrical release a more deliberate pilot command.

In addition to its P/N, a cargo hook with Surefire can be identified by a gold color solenoid housing (see Figure 3.4). Also, a placard on the solenoid housing indicates that the electrical release is delayed by ½ second.

NOTICE

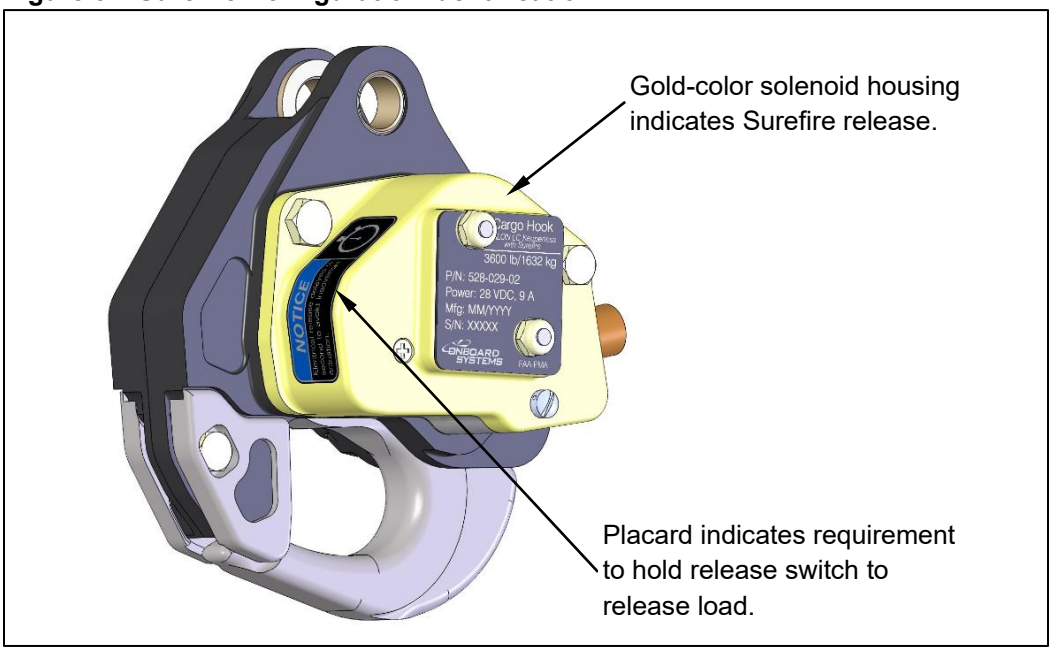
The 528-029-02 cargo hook includes an electronic delay of approximately ½ second. It is necessary to press and hold the cargo hook release button.

⚠ CAUTION

If a Surefire-equipped cargo hook must be released immediately without any delay (such as the case of engine failure or snagged load), use the mechanical backup release.

In addition to the delay feature the circuit includes on-off cycling to limit the duty-cycle on the cargo hook solenoid. If the release switch is held down, the solenoid will cycle on and off repeatedly in a "machine gun" fashion.

Figure 3.4 Surefire Configuration Identification



3.2 Load Weigh Indicator Overview

The load weigh indicator in conjunction with the load cell above the cargo hook are part of the load weigh system which provides the pilot with an indication of the weight of the external load being carried.

The load weigh indicator included with the Load Weigh System is Onboard Systems next generation indicator, the C-40 model (referred to herein as C-40 Indicator (P/N 210-293-

01). The C-40 Indicator makes several improvements over its predecessor (the C-39 model) while preserving classic features. The C-40 Indicator offers these improvements:

- Full color display
- Load measurement displayed in full, not X 10 (C-39 is X 10)
- Addition of Analog Bar and Maximum Load features
- Simplified user interface
- Addition of Cargo Hook hour meter
- Selectable backlight control voltage, 5 or 28 VDC
- Improved moisture resistance
- Expanded signal input range
- Field-upgradable firmware

The C-40 Indicator (P/N 210-293-10) included under Kit P/N 200-498-01 and 200-498-11 is NVG compatible.

Refer to the C-40 Owner's Manual 120-152-00 for additional information and detailed operating instructions for the C-40 Indicator.

3.3 Bill of Materials

Table 3.3.1 following includes a brief description of the kits, specifically the cargo hook and C-40 Indicator configurations included with each kit.

Table 3.3.1 Kit Configurations

Kit Part Number	Description
200-498-00	Cargo Hook Kit w/ Standard C-40 and Cargo Hook w/o Surefire
200-498-01	Cargo Hook Kit w/ NVIS Compatible C-40 Indicator and Cargo Hook w/o Surefire
200-498-10	Cargo Hook Kit w/ Standard C-40 and Cargo Hook w/ Surefire
200-498-11	Cargo Hook Kit w/ NVIS Compatible C-40 Indicator and Cargo Hook w/ Surefire

The following items are included with each of the cargo hook kits.

Table 3.3.2 Bill of Materials (200-498-00, 200-498-01, 200-498-10, 200-498-11)

Part No.	Description	Qty -00	Qty -01	Qty -10	Qty -11
210-293-01	C-40 Indicator	1	-	1	-
210-293-10***	C-40 Indicator, NVG	-	1	-	1
210-337-00	Cargo Hook w/ Load Cell and Gimbal	1	1	-	-
210-337-10	Cargo Hook (w/ Surefire) w/ Load Cell and Gimbal	-	-	1	1
511-327-00**	Nut, Castellated	1	1	1	1
511-328-00**	Cotter Pin	1	1	1	1
511-329-00**	Washer	1	1	1	1
215-343-00	Cockpit Decal	-	-	1	1
215-475-00	External Load Limitations Placard	1	1	1	1
232-943-00	Manual Release Lever Assembly	1	1	1	1
235-367-00	C-40 Trim Plate	1	1	1	1
268-066-00	Manual Release Cable - Fixed	1	1	1	1
270-323-00	Load Weigh Internal Harness	1	1	1	1
505-031-00	Grommet	2	2	2	2
510-095-00	Washer	5	5	5	5
510-102-00	Nut	5	5	5	5
510-178-00	Cotter Pin	1	1	1	1
510-456-00	Bolt	3	3	3	3
510-633-00	Screw	2	2	2	2
511-223-00	Screw	4	4	4	4
511-342-00	Screw	2	2	2	2
512-007-00	Cushioned Loop Clamp	1	1	1	1
512-011-00	Cable Tie – Black	23	23	23	23
512-024-00	Cushioned Loop Clamp	1	1	1	1
512-027-00	Cushioned Loop Clamp	3	3	3	3
512-028-00	Angle Bracket	1	1	1	1
512-037-00	Cushioned Loop Clamp	5	5	5	5
512-057-00	Cushioned Loop Clamp	2	2	2	2
512-075-00	Cable Tie Spacer	9	9	9	9
530-034-00	Carabiner	2	2	2	2
590-013-00	Spiral Wrap	8"	8"	8"	8"
120-232-00*	Owner's Manual	*	*	*	*
121-078-00*	RFMS	*	*	*	*
123-058-00*	ICA	*	*	*	*
122-017-00*	CMM, Cargo Hook	*	*	*	*

*Documentation must be downloaded from www.onboardsystems.com

** Included in a bag attached to the 210-337-00/-10 assembly.

*** Note: C-40 Indicator P/N 210-293-10 is NVIS compatible. A separate approval of its installation and operation within an NVIS instrument panel is required.

3.4 Specifications

Table 3.4.1 Cargo Hook Specifications

Rated load	3,600 lbs. (1,633 kg.)
Design ultimate strength	13,500 lbs. (6,123 kg.)
Electrical release capacity	9,000 lbs. (4,082 kg.)
Mechanical release capacity	9,000 lbs. (4,082 kg.)
Force required for mechanical release at 3,600 lb.	8 lb. max. (.600" travel)
Electrical requirements	22-32 VDC 6.9 – 10 amps
Minimum release load	0 pounds
Unit weight	3.0 lb (1.4 kg.)

Table 3.4.2 Load Cell Specifications

Rated load	3,527 lbs. (1,600 kg.)
Design ultimate strength	13,228 lbs. (6,000 kg.)

⚠ CAUTION

**Load ratings given are specific to the equipment described only. Loading limits for the helicopter still apply. Consult the flight manual issued by the TC holder and the flight manual supplement provided with the cargo hook kit for limits.*

4.0 Cargo Hook Kit Installation Instructions

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

4.1 Removal of Existing TC Cargo Hook, Load Cell, and Manual Release Cable

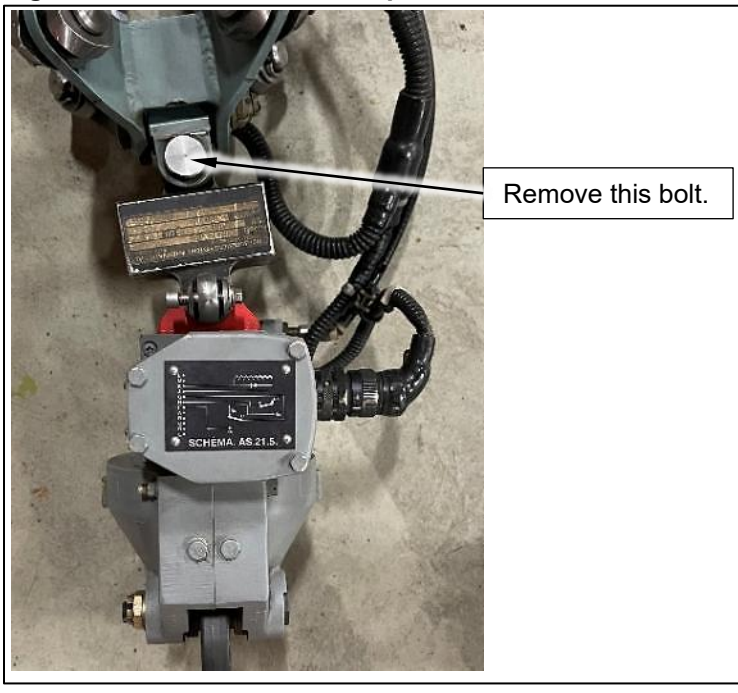
1. Open the hinged panel on the right side of the aircraft belly and disconnect the existing external electrical harness and manual release cable at their connections at frame X2820.

2. Separate them from their attachment points along the right forward suspension cable. These will be replaced by the provided electrical harness and release cable that are compatible with the Onboard Systems cargo hook.

3. Disconnect the cargo hook retraction system bungee cords from the attachment pin for the TC cargo hook.

4. Remove the TC cargo hook and load cell from the suspension by removing the bolt (Airbus P/N 365A84-3078-20), washer, nut and cotter pin at the upper load cell pivot (ref Figure 4.1). Retain the bolt for re-use; a replacement washer, nut and cotter pin are provided.

Figure 4.1 Removal of TC components



5. Remove access panels from the helicopter as needed to access the routing of the internal TC manual release cable, the supplied manual release cable will be routed along the same route.

6. Remove the TC manual release system components: release lever on the collective, the trigger cable to the control box, the control box and its supporting bracket in the landing gear bay, and the release cable from the control box to the connection point to the external manual release cable near the belly. Retain the Stowage Cap (reference Figure 4.2) for re-use with the provided manual release cable.

4.2 Installation of Fixed Manual Release Cable

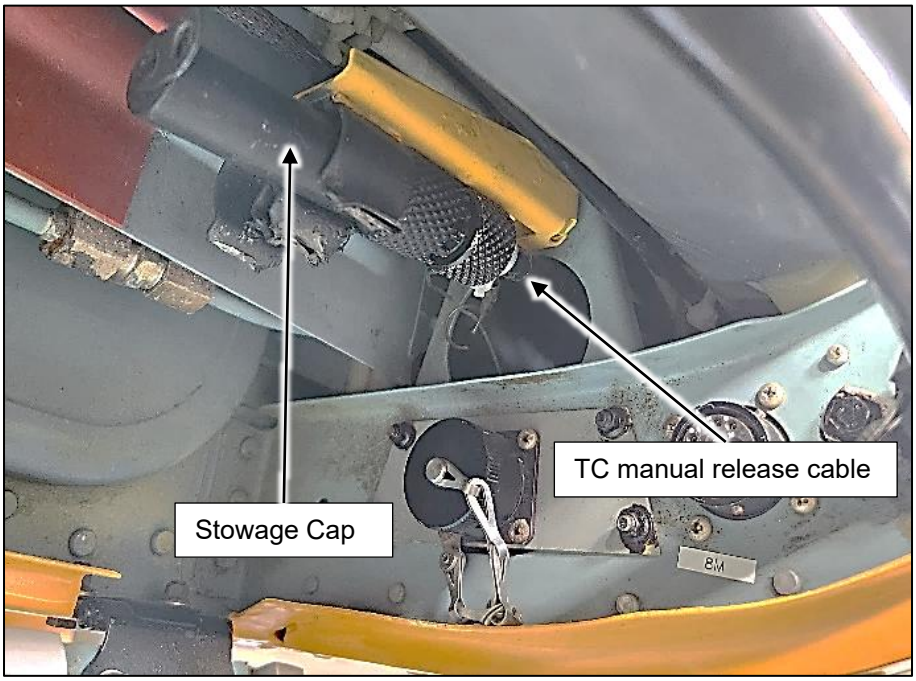
The fixed manual release cable (P/N 268-066-00) replaces the existing TC manual release cable including the external mechanical control box mounted in the landing gear bay under the center console. The routing is to be the same except for the removal of the control box and its bracket.

NOTICE

Wherever possible, provide maximum bend radii in the manual release cable, especially where the cable is transitioned from being routed forward to inboard. A tight bend radius results in increased friction in the system and higher lever force at the collective mounted lever.

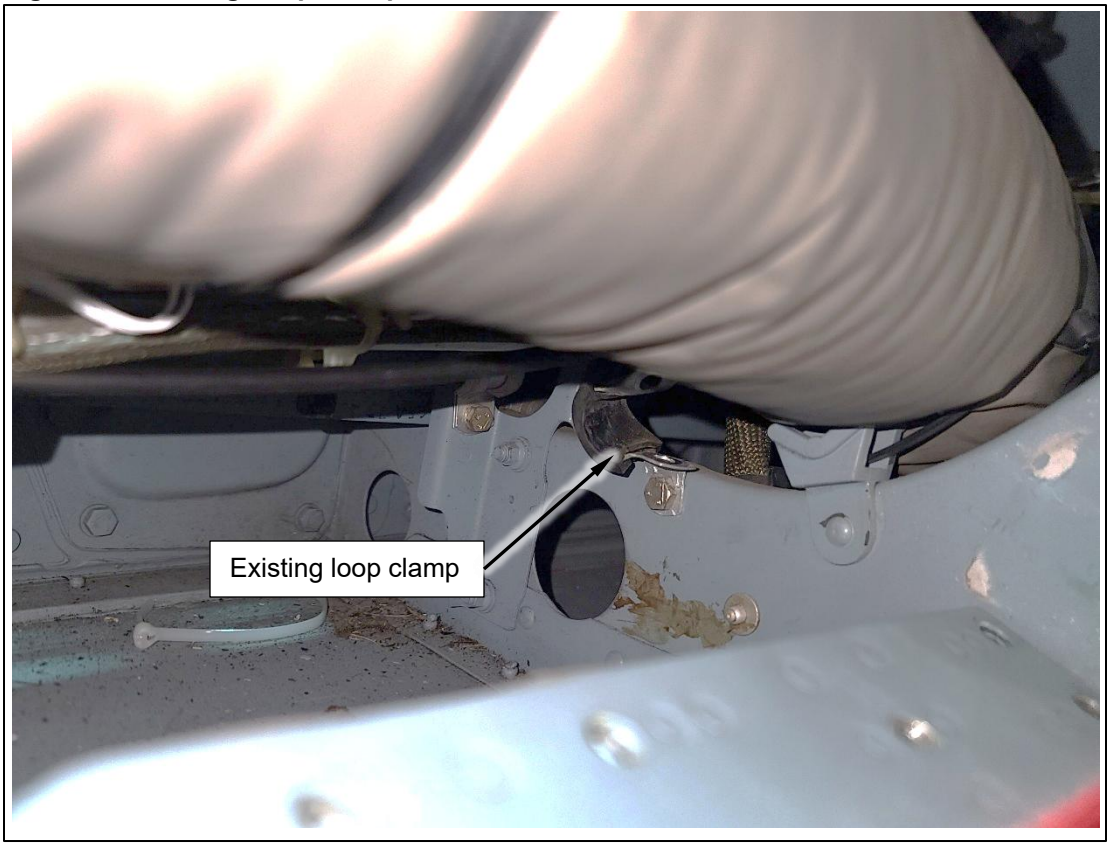
1. Starting at the aft end (at frame X2820, see Figure 4.2), route the smaller end of the manual release cable forward through the airframe, duplicating the route of the removed TC manual release cable.

Figure 4.2 Aft Termination Point (TC Manual Release Cable Shown)



2. At the next frame forward, remove the existing loop clamp (see Figure 4.3) that supported the TC cable and replace with the provided loop clamp P/N 512-024-00 and angle bracket P/N 512-028-00, using the existing hole in the frame. Attach the bracket to the frame with screw P/N 510-633-00, washer P/N 510-095-00 and nut P/N 510-102-00 and position the release cable within the loop clamp and loosely secure it to the bracket with screw P/N 510-633-00, washer P/N 510-095-00 and nut P/N 510-102-00. Screw to be tightened after routing is completed.

Figure 4.3 Existing Loop Clamp to Remove



3. Where the manual release cable passes over the actuator for the step, protect it from chafing on it by wrapping it with the supplied spiral wrap (P/N 590-013-00). Trim to fit as required.

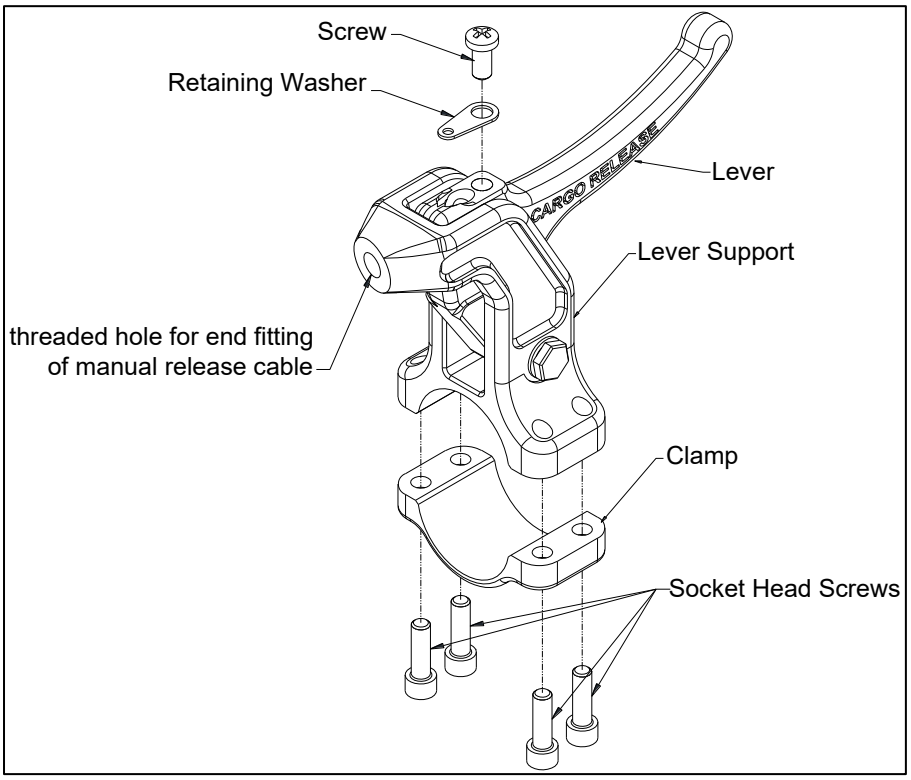
4. Along the route further forward, loosely secure the release cable to the cable tie spacers that were used for the TC manual release cable. Use the supplied cable ties (P/N 512-011-00).

5. Route the manual release cable inboard through the hole* at Y250 (duplicating the route of the TC release cable) and then up through the hole* between the pilot and co-pilot seats.

* Depending on the condition of existing grommets, optionally replace them with grommets (P/N 505-031-00) that are provided for each of these holes. Install grommets with sealant per Airbus SPM.

6. Disassemble the Release Lever Assembly (P/N 232-943-00) by removing the screw and retaining washer and the four socket head screws and clamp.

Figure 4.4 Release Lever Disassembly



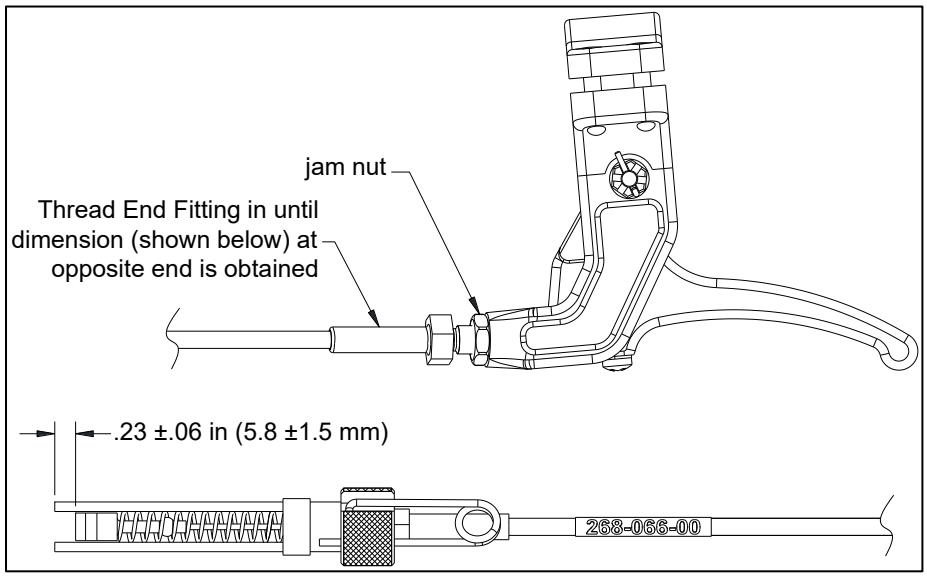
7. Partially thread the Lever Support onto the end fitting of the manual release cable.

8. Compress the spring at the opposite end to insert the ball end of the inner cable into the slot at the base of the Lever.

9. Capture the cable ball end by re-installing the retaining washer and screw.

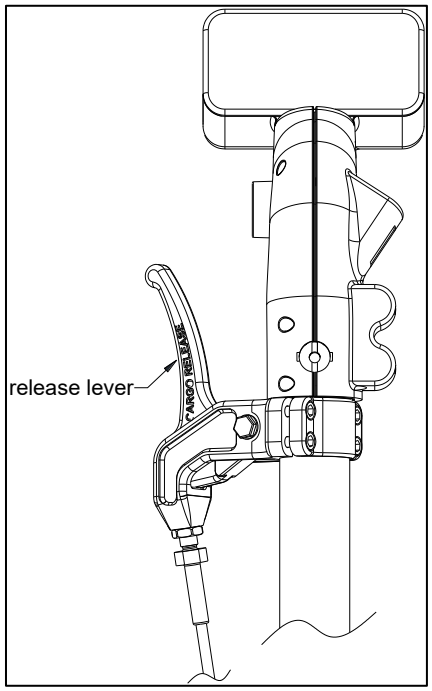
10. Continue to thread the end fitting into the Lever Support until the measurement at the opposite end that is shown in Figure 4.5 is achieved. Tighten the jam nut.

Figure 4.5 Manual Release Cable Initial Setting



11. Position the release lever assembly over the collective shaft at the same location as the removed release lever, rotate it to the left as necessary to provide clearance with the panel below at the lowest collective position, and secure with the four socket head screws. Tighten the four screws evenly to 15-17 in-lb (1.7 – 2.0 Nm).

Figure 4.6 Release Lever Positioning



For the following steps, it is recommended to position the collective in the full up position to ensure sufficient slack is provided in the release cable, so it does not restrict collective movement.

12. From under the aircraft, remove the existing standoff above the control box bracket location (reference Figure 4.7) and loosely secure the manual release cable with cushioned loop clamp, screw, and washer as shown. Don't tighten screw until step 14 is complete.

13. Loosely secure the manual release cable with another cushioned loop clamp, screw and washer at the position as shown in Figure 4.7. Don't tighten screw until step 14 is complete.

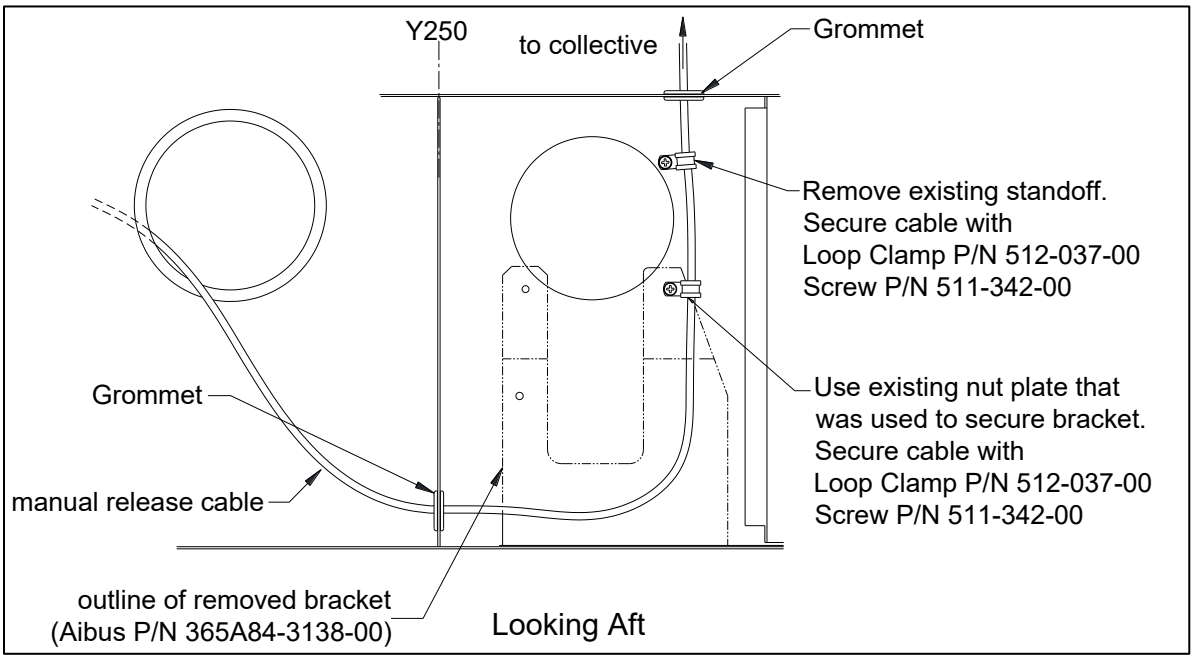
14. Between the release lever on the collective and the hole through the panel below, ensure there is sufficient slack in the release cable to prevent it from being pulled tight in any collective position.

⚠ CAUTION

Sufficient slack must be present in the manual release cable so that it does not limit the full travel of the collective.

15. Fully tighten screws securing loop clamps and tighten all cable ties.

Figure 4.7 Release Cable Routing through Landing Gear Bay



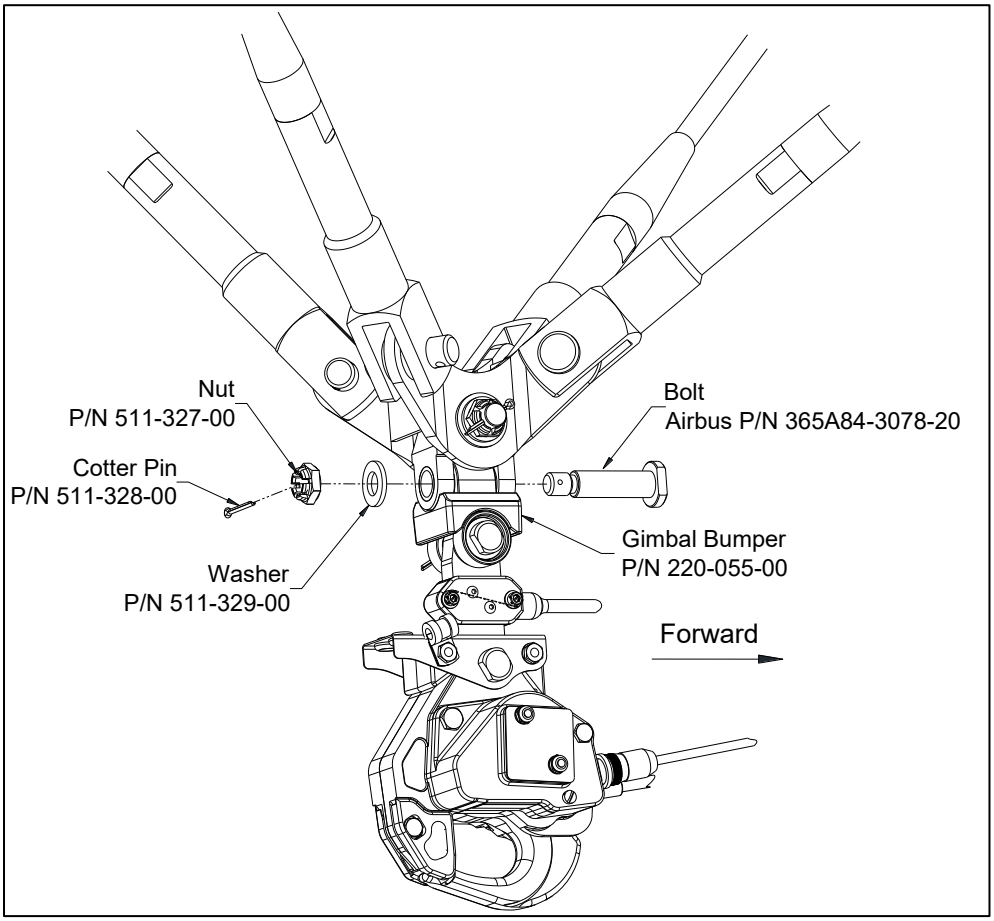
4.3 Installation of STC Cargo Hook/Load Cell Assembly

For the following steps, it may be preferable to remove the suspension system from the helicopter and place it on a bench to attach the cargo hook, load cell and route the manual release cable and electrical harness along the suspension RH cable. If installing with suspension installed on aircraft, raising the aircraft to allow suspension to fully deploy may aid in installation.

1. Orient the cargo hook/load cell assembly (P/N 210-337-00 or P/N 210-337-10) so that the cargo hook is oriented as shown in Figure 4.8, with the load beam opening aft.

2. Attach the assembly to the clevis fitting on the suspension, re-using the bolt that was removed. Apply a thin film of grease to bolt (Mobilgrease 28 or AeroShell 7 recommended). Secure the bolt with the included washer (P/N 511-329-00) and nut (P/N 511-327-00). Tighten to finger tight and rotate to next castellation if necessary to insert cotter pin (P/N 511-328-00). Ensure the joint pivots freely after tightening.

Figure 4.8 Installation of Assembly P/N 210-337 (shown deployed)



3. Route (reference Figure 4.12) the manual release cable and electrical harness along the right forward suspension cable. Omit the loop clamps and hardware at this point

or if working on the bench, assemble these items and leave the nuts loose until the system is connected to the helicopter provisions.

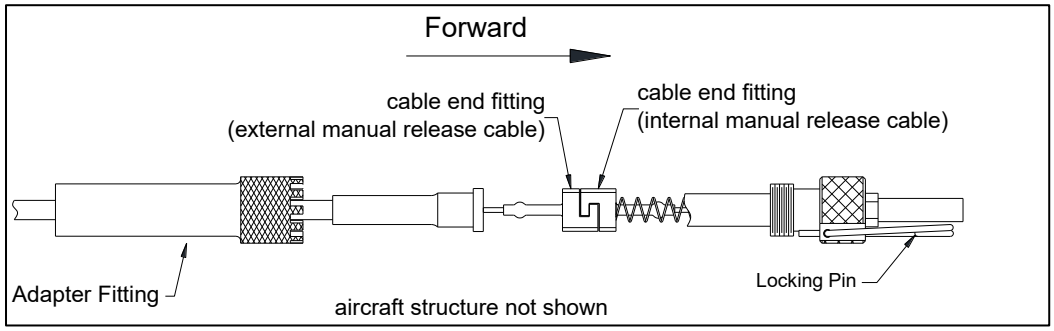
With the system on the helicopter, connect the mating connectors of the manual release cable and electrical wiring to the fixed provisions connectors per the following.

4. Connect the electrical connector to the 8M connector.

5. Connect the free end of the manual release cable to the internal manual release cable per the following instructions.

6. Slide the Adapter Fitting back to expose the Cable End Fitting (ref. Figure 4.9) and connect it to the mating Cable End Fitting of the internal manual release cable.

Figure 4.9 Manual Release Cable Connection

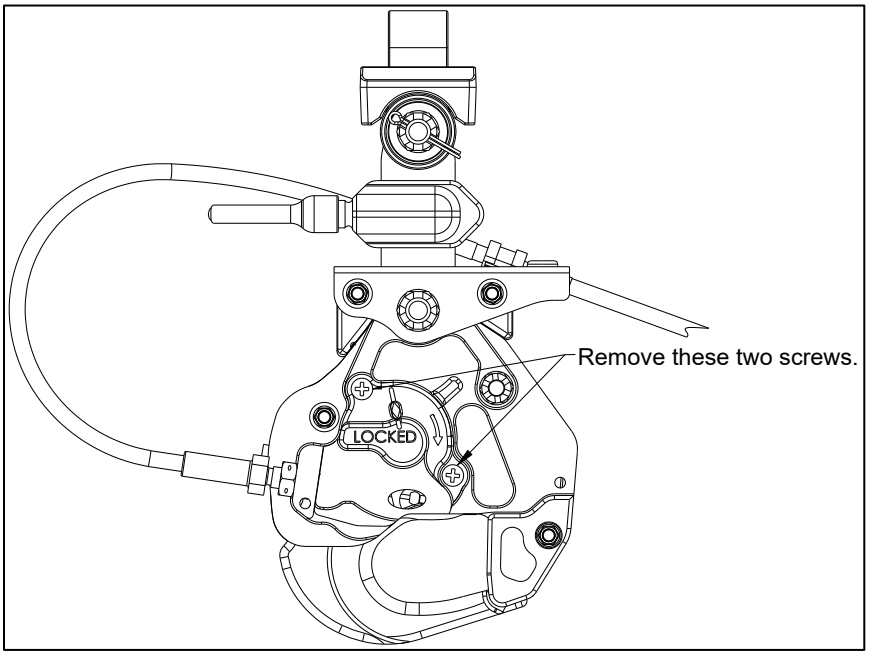


7. Slide the Adapter Fitting over the threads of the aircraft side manual release cable and hand-tighten until secure and install locking pin. Clip the adapter fitting into the stowage clip.

Verify the rigging of the manual release cable at the cargo hook per the following.

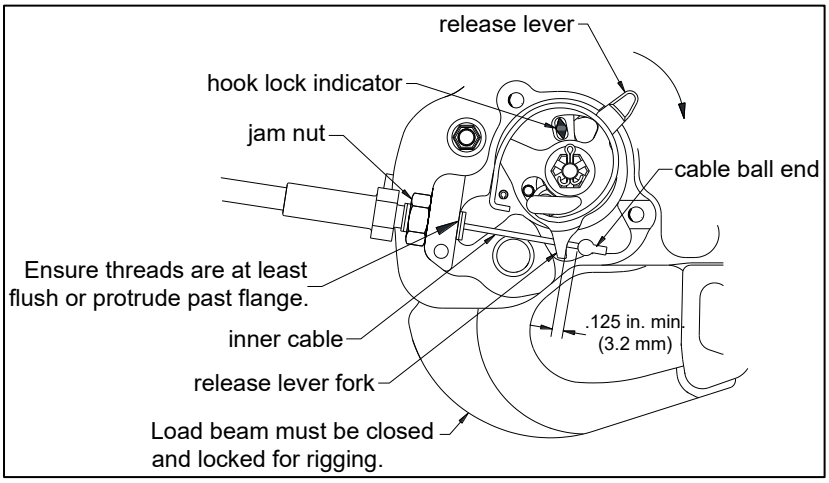
8. Remove the manual release cover from the cargo hook by removing two screws (see below).

Figure 4.10 Manual Release Cover Screws



9. With the cargo hook closed and locked, rotate the release lever in the clockwise direction to remove free play and hold (the free play is taken up when the hook lock indicator begins to move, this is also felt as the lever rotates relatively easily for several degrees as the free play is taken up). Check the gap between the cable ball end and the release lever fork (ref. Figure 4.11) with the release system in the non-release position. This gap must be a minimum of .125 inches (3.2 mm) as shown.

Figure 4.11 Manual Release Cable Rigging Check



If necessary, adjust the manual release cable system to obtain the minimum gap of .125 inches (3.2 mm) at the release lever fork. Minor adjustments can be made at the release lever on the collective. Larger adjustments must be made at the cargo hook.

The recommended location to adjust is at the cargo hook. Adjust at the cargo hook per the following.

10. If the manual release cable was loosely routed it, disconnect it at its connection point to the fixed manual release cable and remove the loop clamp securing it to the bracket at the cargo hook.

    If the manual release cable is secured with hardware, remove the cargo hook by cutting the cotter pin at its attachment point to the load cell and removing the nut and attach bolt. An extra cotter pin (P/N 510-178-00) is provided to use in this instance.

11. Loosen the jam nut and turn the manual release cable with respect to the cargo hook. Thread in clockwise to increase the gap. Thread out to decrease the gap, be sure to maintain full thread engagement between the manual release cable fitting and flange of the cargo hook.

12. If removed, re-position the manual release cable along its route and re-connect to the aircraft side to verify setting is satisfactory. Adjust further as necessary.

    If the cargo hook was removed, re-assemble it to the load cell and tighten the nut to finger tight and rotate it to the nearest castellation to insert and install the cotter pin.

13. Re-install the manual release cover with the two screws and ensure the manual release cable jam nut is tightened securely against the cargo hook.

As needed, the system can be adjusted at the collective mounted release lever per the following, otherwise skip to step 19.

14. Remove the four screws securing the lever support to the collective.

15. Loosen the jam nut.

16. Rotate the lever assembly with respect to the release cable end fitting. Rotate the release cable fitting CW to increase the gap* at the cargo hook or rotate it CCW to decrease the gap (this will compress the spring further at the release cable connection).

    *The increase in gap will be limited by the position of the Handshake Fittings as they will bottom out within the housing of release cable connection.

17. Re-assemble the release lever assembly onto the collective, temporarily securing with the screws, and re-check the gap.

18. When the gap is acceptable, tighten the screws until the release lever is secure on the collective.

Outside the aircraft, if not done previously, secure the electrical harness and manual release cable along the RH forward suspension cable per the following.

19. Working from the aircraft connection side down to the cargo hook, secure the manual release cable along with electrical harness along the right forward suspension cable per the figure below. Do not fully tighten the screws securing the loop clamps until any adjustments are made when routing is completed. Re-use of existing routing hardware is acceptable at the discretion of the installer.

20. To set the length of the loop of the manual release cable from the loop clamp at the bracket on the cargo hook, position the manual release cable so that the heat shrink markers are on either side of the lowest loop clamps on the suspension cable (as shown below).

21. The excess length of the harness and release cable accommodates movement of the cargo hook during operation; these should be looped as shown at the cargo hook (see also Figure 4.13 for photo).

22. Additional cable tie spacers (P/N 512-075-00) and cable ties (P/N 512-011-00) are provided to use as necessary to provide a neat and secure routing.

23. Tighten any screws that were left loose for routing.

Figure 4.12 External Harness and Release Cable Routing

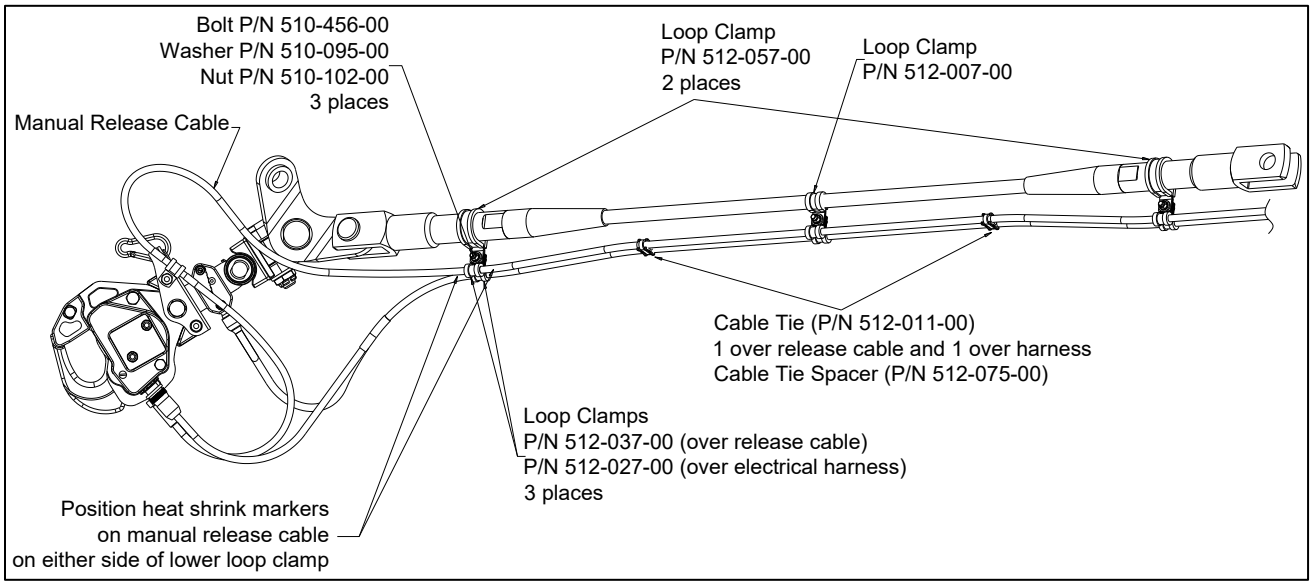


Figure 4.13 Photo of Completed Routing at Cargo Hook

WARNING

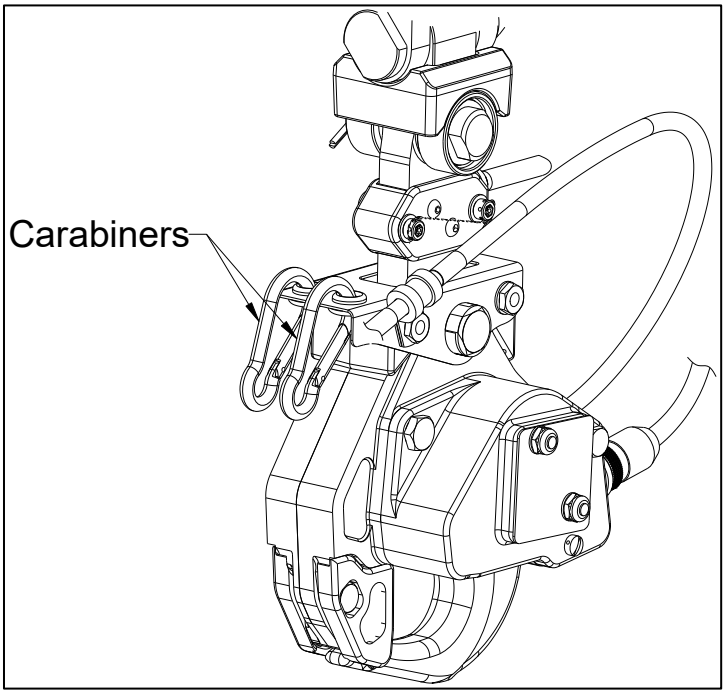
Un-commanded cargo hook release will happen if the manual release cable is improperly restrained. The release cable must not be the stop that prevents the Cargo Hook from pivoting freely. If the Cargo Hook rotation strains the release cable, the swaged end of the cable may separate allowing the inner cable to activate the cargo hook manual release mechanism. The result is an un-commanded release. Ensure that no cargo hook position is restrained by the manual release cable.

4.4 Connection of Retraction System

The aircraft's existing retraction system's bungee cords are re-used with the STC cargo hook.

1. Clip the carabiners (P/N 530-034-00) to the free end of the bungee cords through the hole in the tab at the end (or to the grommeted holes in the bracket on the cargo hook).

Figure 4.14 Carabiner Attachment



2. Attach each bungee cord to the grommeted holes in the bracket on the cargo hook.

4.5 C-40 Indicator and Internal Wiring Installation

The C-40 Indicator is interchangeable with the existing Airbus TC load indicator and is to be mounted in the same location (either within a bracket on the RH door post or in the instrument panel). It is compatible with the existing load cell wiring with some modification or the existing wiring between the 8M and 13M wires can be replaced with wiring provided. Note that the LD ON and LD OFF lights are not functional with this STC. These lights should be removed, a blanking plate added or blocked in some other more permanent means.

Install the C-40 Indicator and internal wiring (refer to Figure 4.15 for wiring diagram) per the following.

1. Disconnect the electrical connector (13M) from the TC load indicator.
2. Remove the TC load indicator from its mounting position. If nut plates are present on the backside of the mounting surface, these must be removed as the C-40 Indicator has blind tapped holes for mounting.
3. Place the C-40 Indicator into the mounting position from behind the bracket/panel, optionally use the provided Trim Plate (P/N 235-367-00) over the bracket/panel, and secure with the four provided screws (P/N 511-223-00).
4. Before proceeding to the wiring installation, verify that the harness that was connected to the longer TC load indicator will reach the connector of the shorter C-40 Indicator.

If the existing wires from 8M to 13M can be re-used (i.e. – are of sufficient length and are in good condition), follow instructions in Section 4.5.1. Otherwise, skip to Section 4.5.2.

4.5.1 Internal Wiring Installation using Existing Wires from 8M to 13M

1. Disassemble the electrical connector (13M*) and extract the contacts from the connector. Discard the electrical connector.

   *A later model of the TC indicator is designated as 140M and has two connectors (P1 and P2). Disassemble and extract the contacts from both connectors.

2. Re-pin the wires (2ME180G, 2ME38F, 2ME37F, 2ME34F, 2ME35F and the shield termination wire to the provided connector (P/N 410-125-00) per the wiring diagram**. The later model TC indicator has D38999 connectors, so the contacts are not compatible, with this configuration cut the contacts off and use the contacts provided with the connector (P/N 410-125-00).

   **Airbus wire numbers in the wiring diagram are representative of an AS365 configuration, but these vary by model and aircraft, verify connections are from the C-40 Indicator connector pin to the Load Cell connector pin as shown in wiring diagram to ensure correct function.

3. Re-use the wire (2ME32NE on the AS365) to 6Nb ground for the TC Indicator and terminate to pin P of connector P/N 410-125-00 using contact provided with connector. Alternatively, replace this wire with 20 or 22 AWG M22759 series wire.

4. Optionally connect the C-40 Indicator Backlight so that it will brighten/dim with the other instruments. To connect it, complete steps 5 and 6.

NOTICE

The C-40 Indicator does function normally without the Backlight control voltage connected but will just not dim with other instruments. Full brightness of the Indicator is overridden by the aircraft dimming control voltage (if connected).

5. Connect a 20 or 22 AWG M22759 wire from pin N of connector P/N 410-125-00 to the aircraft's instrument panel lighting circuit.

6. Re-use the wire (2ME124NE on the AS365) to 4Nc ground for the TC LD ON and LD OFF lights (terminate to pin M of P/N 410-125-00) for C-40 Backlight Ground using contact provided with connector. Alternatively use other available aircraft ground wire to 6Nb, 4Nc, or other ground point, with 22 AWG M22759 wire. Alternatively, replace this wire with 20 or 22 AWG M22759 series wire.

   Note: The wire (2ME36E on the AS365) for the LD ON and LD OFF lights from the 36α fuse panel is not used.

4.5.2 Internal Load Weigh Wiring using Supplied Wiring Kit P/N 270-323-00

If the existing wires from 8M to 13M are not to be used, remove them and replace with the wires provided with the Wire Harness Kit P/N 270-323-00 and connect the other wires as follows:

1. Disassemble the 8M and 13M* connector and extract the wires (except don't extract the cargo release wires pins K and J at 8M) from the connectors and remove the wires from the aircraft or cap and stow them.

   *A later model of the TC indicator is designated as 140M and has two connectors (P1 and P2). Disassemble and extract the wires from both connectors.

2. Route and secure the 4-conductor LOAD CELL wire and INDICATOR PWR between 8M and 13M (or 140M) in the same way as the TC load weigh system wires were routed.

3. Cut the 4-conductor wire to length as needed and at each end: strip the outer jacket back 1.50" (38 mm) and cut the shield back 1.25" (leaving .25" exposed).

4. Slide a shield termination (P/N 410-199-00) over the end of the wire and center over the exposed shield and use a heat gun to shrink in place. Trim the shield termination wire to the length of the other wires. Repeat at the other end.

5. At the 8M connector, crimp a contact P/N 410-456-00 on each of the wires of the 4-conductor LOAD CELL wire and the shield termination lead wire and insert into the connector per the wiring diagram (2 extra contacts are provided).

6. At the 8M connector, prep the end of the INDICATOR PWR wire and crimp a contact P/N 410-397-00 on and insert into contact location M.

7. At the 13M connector, crimp a contact (provided with connector P/N 410-125-00) on each wire and insert into the connector per the wiring diagram.

8. Re-use the wire (2ME32NE on the AS365) to 6Nb ground for the TC indicator installation, terminate this wire to pin P of connector P/N 410-125-00 (for C-40 Indicator Ground) using contact provided with connector. Alternatively, replace this wire with 20 or 22 AWG M22759 series wire.

9. Optionally connect the C-40 Indicator Backlight so that it will brighten/dim with the other instruments. To connect it, complete steps 10 and 11.

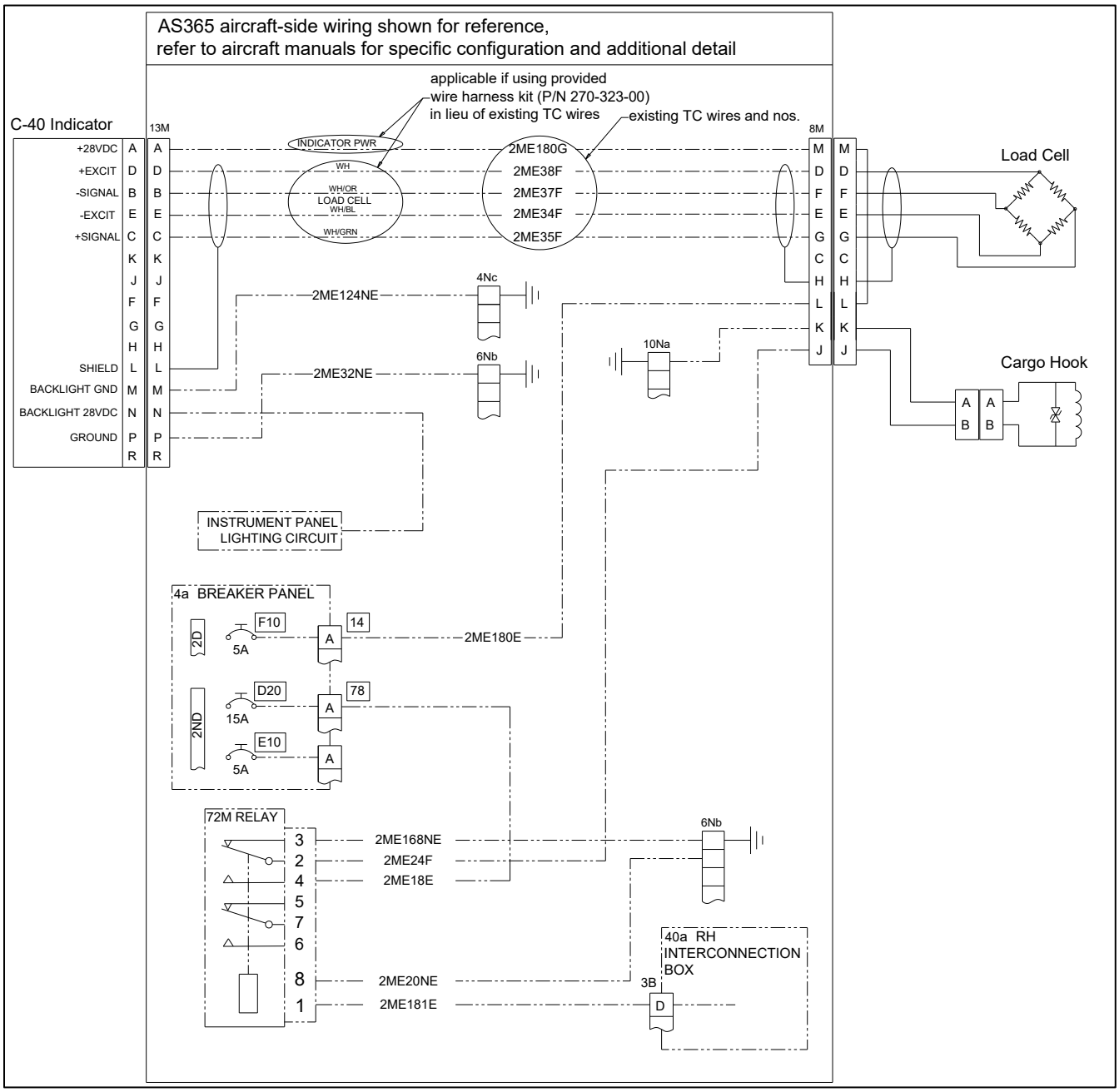
NOTICE

The C-40 Indicator does function normally without the Backlight control voltage connected but will just not dim with other instruments. Full brightness of the indicator is overridden by the aircraft dimming control voltage (if connected).

10. Connect a 20 or 22 AWG M22759 wire from pin N of connector P/N 410-125-00 to the aircraft's instrument panel lighting circuit.

11. Re-use the wire (2ME124NE on the AS365) to 4Nc ground for the TC LD ON and LD OFF lights (terminate to pin M of P/N 410-125-00) for C-40 Backlight Ground using contact provided with connector. Alternatively use other available aircraft ground wire to 6Nb, 4Nc, or other ground point, with 22 AWG M22759 wire. Alternatively, replace this wire with 20 or 22 AWG M22759 series wire.

Figure 4.15 Wiring Diagram



4.6 Placards

1. If a load limitation placard is NOT installed, install the External Load Limitation Placard (P/N 215-475-00) on the belly of the aircraft, near the cargo hook and in clear view for ground personnel.

2. Applicable to kit P/Ns 200-498-10 and 200-498-11 that have cargo hook with Surefire: install placard P/N 215-343-00 adjacent to the Cargo Release button on the cyclic or in a position that is readily visible to the pilot.

4.7 Installation Check-out

After installation of the cargo hook kit, perform the following functional checks.

NOTICE

The "LD ON" and "LD OFF" lights in the cockpit is not functional as the cargo hook does not include a switch (which the TC cargo hook does).

1. Provide power to the electrical release system. Perform the following depending on the cargo hook P/N that was installed.

   The following instructions are applicable to cargo hook P/N 528-029-02 which is equipped with Surefire electrical release. With no load on the cargo hook perform the following.

   - Very briefly press the Cargo Release switch, the cargo hook should not actuate and 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. Pulling the hook to a vertical position or hanging a small weight off the hook may be necessary for the hook to open from the stowed position.

   - Push up on the load beam and verify that it latches and the hook lock indicator is aligned with the engraved line on the manual release cover.

   The following instructions are applicable to cargo hook P/N 528-029-00.

   - With no load on the cargo hook, press and release the Cargo Release switch on the cyclic. The cargo hook's load beam should immediately fall to the open position. Pulling the hook to a vertical position or hanging a small weight off the cargo hook may be necessary for the hook to open from the stowed position.

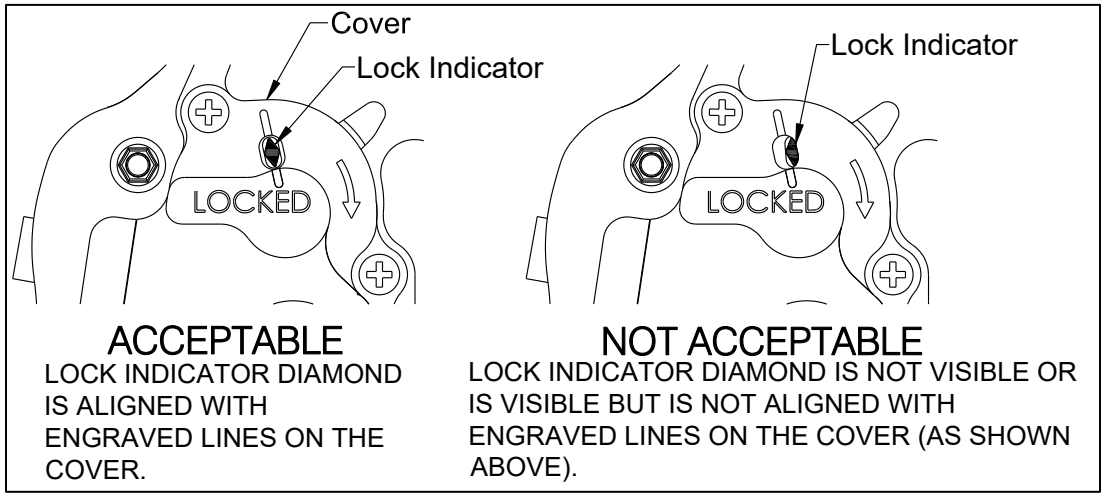
   - Push up on the load beam to return it to the closed position and verify that it latches closed and the hook lock indicator is aligned with the engraved line on the manual release cover.

2. Pull the release lever on the collective to operate the cargo hook's mechanical release system, the cargo hook should release. Pulling the hook to a vertical position or hanging a small weight off the hook may be necessary for the cargo hook to open from the stowed position. Reset the load beam to the closed and latched position.

3. Verify that the hook lock indicator on the side of the cargo hook returns to the fully locked position. In the fully locked position, the hook lock indicator should align with the lines on the cover.

4. Verify the rigging per Figure 4.11. If .125 inch (3.2 mm) minimum gap is not achieved re-adjust rigging per section 4.3 steps 8 thru 13.

Figure 4.16 Hook Lock Indication



On startup the C-40 Indicator will display an information screen while performing a brief self-diagnostic routine and then display the load screen.

5. Set the Installation Zero for the installation per the instructions contained in the Owner's Manual 120-152-00 for the C-40 Indicator.

6. In the Settings select desired units (lb or kg), brightness of the display, maximum load, backlight voltage and other settings as preferred (refer to the Owner's Manual 120-152-00 for detailed instructions).

NOTICE

One setting that must be set to function properly is the backlight voltage. If the wire for the backlight was connected the backlight voltage must be set to the aircraft circuit voltage (5 VDC or 28 VDC). Setting to the incorrect voltage will not damage the unit; it will either be brighter or dimmer than it should be.

7. If the NVIS compatible C-40 Indicator (P/N 210-293-10) is installed, its recommended maximum brightness setting is 4.

NOTICE

The C-40 Indicator P/N 210-293-10 is NVIS compatible. A separate approval of its installation and operation within an NVIS instrument panel is required.

8. Enter the calibration code (Cal Code) of the Load Cell into the C-40 Indicator. Refer to the Owner's Manual 120-152-00 for instructions for entering the calibration code.

9. Perform an EMC ground test per AC 43.13-1b section 11-107. For equipment that can only be checked in flight an EMC flight test may be required.

4.8 Component Weights

The weights of the major kit parts are listed in Table 4.8.1. These parts directly replace TC parts and their CG is the same as the TC parts. When performing weight and balance calculations remember to deduct the weight of parts removed.

Table 4.8.1 Component Weights

Component	Weight lbs (kgs)
Cargo Hook with Load Cell and Gimbal w/ Hardware (P/N 210-337-00/-01)	6.05 lbs (2.74 kg)*
C-40 Indicator (P/N 210-293-01/-10)	0.55 (0.25)
Total	6.6 lbs. (2.99 kg)

**The Cargo Hook, Load Cell and Gimbal replace the type certificate installed cargo hook and load cell (and connecting hardware) which weigh a combined 13.4 lbs. (6.1 kg), for. - total weight decrease of 7.35 lbs. (3.3 kg).*

***The external electrical harness and manual release cable weight replace the TC harness and release cable (weights are estimated to be the same). Weight is distributed from the Cargo Hook to the connection points just forward of the RH forward suspension attachment.*

4.9 Paper Work

In the US, fill in FAA form 337 for the initial installation and submit it to the FAA. Keep a copy for aircraft records. This procedure may vary in different countries. Make the appropriate aircraft logbook entry. Insert the Rotorcraft Flight Manual Supplement 121-078-00 into the Rotorcraft Flight Manual.

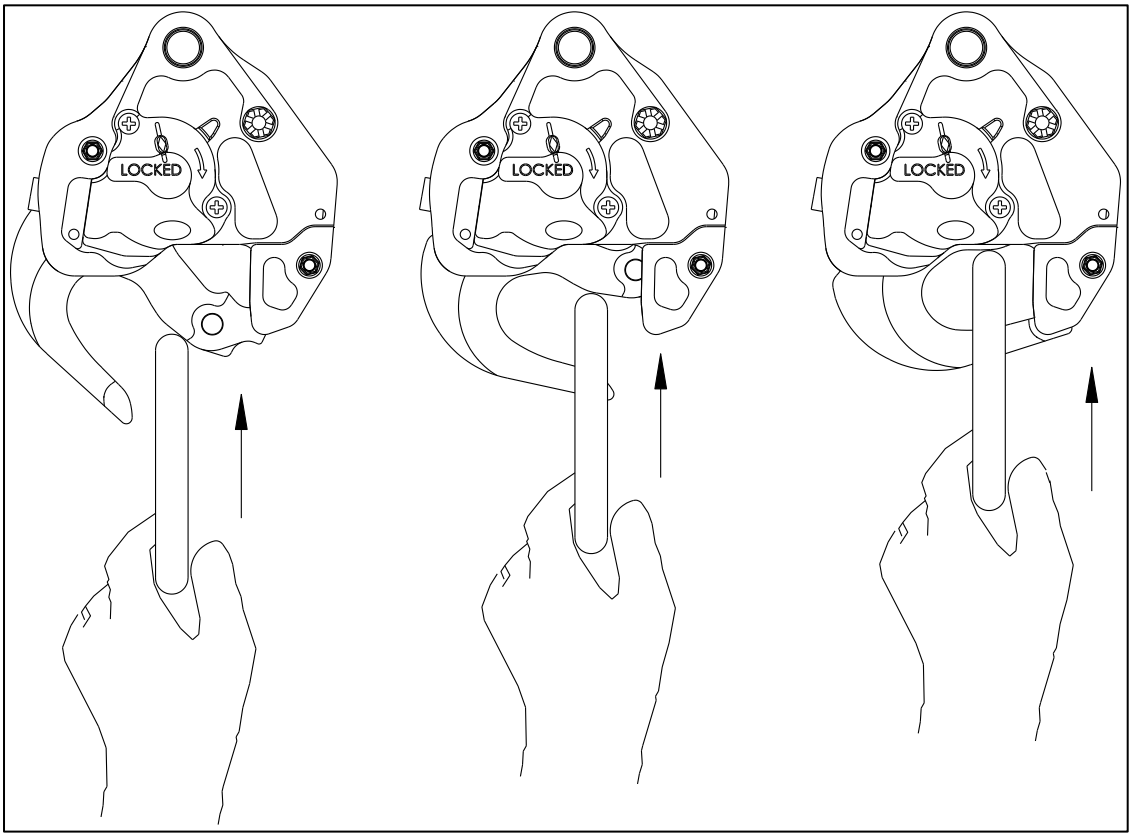
5.0 Operation Instructions

Refer to the RFMS 121-078-00 for pre-flight operational checks and guidance on attaching a load to the cargo hook.

5.1 Cargo Hook Loading

The cargo hook can easily be loaded with one hand. A load is attached to the cargo hook by pushing the ring upward against the upper portion of the load beam throat, as illustrated in Figure 5.1, until an internal latch engages the load beam and latches it in the closed position.

Figure 5.1 Cargo Hook Loading



6.0 Maintenance

Refer to the Instructions for Continued Airworthiness (ICA) manual 123-058-00 for maintenance of the cargo hook kits. For repair and overhaul of the cargo hook refer to Cargo Hook Component Maintenance Manual 122-017-00.

6.1 Instructions for Returning Equipment to the Factory

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

NOTICE

An RMA number is required for all equipment returns.

To obtain an RMA, please use one of the listed methods.

- Contact Technical Support by phone or e-mail: (Techhelp@OnboardSystems.com).
- Generate an RMA number at our website: http://www.onboardsystems.com/rma.php

After you have obtained the RMA number, please be sure to:

1. Package the component carefully to ensure safe transit.
2. Write the RMA number on the outside of the box or on the mailing label.
3. Include the RMA number and reason for the return on your purchase or work order.
4. Include your name, address, phone and fax number and e-mail (as applicable).
5. Return the components freight, cartage, insurance and customs prepaid to:

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

7.0 Certification

7.1 FAA STC