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Cargo Hook/Load Weigh Kits

For the

Bell 206 A & B

System Part Numbers

200-267-02, 200-389-00, 200-390-00

Owner's Manual

Owner's Manual Number 120-144-00
Revision 1
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Record of Revisions

Revision	*Date*	*Page(s)*	*Reason for Revision*
0	08/18/15	All	Initial Release
1	01/26/16	1-3, 2-2, 2-12	Removed C-39 load indicator operation instructions and replaced with reference to Owner's Manual 120-039-00. Updated tightening instructions for attaching Link Assembly to Bell frame.

Current revision levels of all manuals are posted on Onboard Systems Int'l website at www.onboardsystems.com. Hard copies of current revision levels of all manuals are available from the factory.

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Section 1
General Information

Introduction

The 200-267-02, 200-389-00, and 200-390-00 Cargo Hook/Load Weigh kits are approved for installation on Bell 206A and 206B models which are equipped with Bell cargo hook suspension P/N's 206-072-900-1, -101, or -103.

Kit P/N 200-267-02 includes the cargo hook, a link assembly which serves to attach the cargo hook to the Bell "horseshoe" suspension frame, and a manual release cable to connect the cargo hook's release mechanism to the Bell internal manual release system.

Kit P/N 200-390-00 is the same as the 200-267-02 kit except it includes a load weigh system. The load weigh system includes a pin load cell at the cargo hook, a load weigh indicator installed in the cockpit and an interconnecting wire harness. Its purpose is to provide the pilot with an indication of the weight of the external load carried by the helicopter.

Kit P/N 200-389-00 is an upgrade kit for an operator with an Onboard Systems E-45 Load Weigh System installed. It utilizes the load weigh indicator and the internal wire harness of the E-45 load weigh system but replaces the link style load cell with the pin load cell. It does not include a cargo hook. It is compatible with Onboard Systems cargo hook P/N's 528-029-00 and 528-023-01.

NOTICE

*The kits listed above are **NOT** compatible with early Onboard Systems cargo hooks approved on the Bell 206A and 206B (P/N 528-010 series or 528-017 series).*

Safety Labels

The following definitions apply to the symbols used throughout this manual to draw the reader's attention to safety instructions as well as other important messages.

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

Draws the reader's attention to important or unusual information not directly related to safety.

Used to address practices not related to personal injury.

Bill of Materials

The following items are included with the P/N 200-267-02, 200-389-00, and 200-390-00 kits, if shortages are found contact the company from whom the system was purchased.

Table 1.1 Bill of Materials

Item	Description	Quantity		
		200-267-02	200-389-00	200-390-00
210-095-00	C-39 Indicator	-	-	1
210-301-01	Pin Load Cell Assembly	-	1	1
232-732-00	Load Link Assembly	1	1	1
268-055-00	Manual Release Cable	1	1	1
270-048-04	Load Weigh Internal Harness	-	-	1
290-332-00	Attach Bolt	1	-	-
528-029-00	3.6K Keeperless Hook	1	-	1
235-035-00	QD Bracket	-	-	1
215-010-00	Placard	-	-	2
215-012-00	Placard	-	-	1
400-048-00	Power Switch	-	-	1
510-028-00	Screw	-	-	6
510-029-00	Nut	-	-	6
510-042-00	Washer	2	-	2
510-062-00	Washer	-	-	6
510-170-00	Nut	1	1	1
510-174-00	Washer	1	1	1
510-178-00	Cotter Pin	1	1	1
510-183-00	Washer	2	1	1
510-257-00	Bolt	2	-	2
512-010-00	Loop Clamp	2	-	2
120-039-00	Owner’s Manual, C-39 Indicator	-	1	1
120-144-00	Owner’s Manual	1	1	1
121-059-00	RFMS	1	1	1
122-017-00	Component Maintenance Manual, Cargo Hook	1	1	1

Specifications

Table 1.2 Cargo Hook Specifications

Design load	3,600 lb. (1,633 kg.)
Design ultimate strength	13,500 lb. (6,123 kg.)
Electrical release capacity	9,000 lb. (4,082 kg.)
Mechanical release capacity	9,000 lb. (4,082 kg.)
Force required for mechanical release at 3,500 lb.	8 lb. Max.(.600” travel)
Electrical requirements	22-32 VDC 6.9 - 10 amps
Minimum release load	0 pounds
Unit weight	3.0 pounds (1.35 kg.)
Mating electrical connector	PC06A8-2S SR

Theory of Operation

The primary elements of the Cargo Hook are the load beam, the internal mechanism, and a DC solenoid. The load beam supports the load and is latched through the internal mechanism. The DC solenoid, an external manual release cable, and a manual release lever provide the means for unlatching the load beam.

The load is attached to the load beam by passing the cargo sling ring into the throat of the load beam and pushing the ring against the upper portion of the load beam throat, which will initiate the hook to close. In the closed position, a latch engages the load beam and latches it in this position.

To release the load, the latch is disengaged from the load beam. With the latch disengaged, the weight of the load causes the load beam to swing to its open position, and the cargo sling slides off the load beam. The load beam then remains in the open position awaiting the next load.

A load release can be initiated by three different methods. Normal release is achieved by pilot actuation of the push-button switch in the cockpit. When the push-button switch is pressed, it energizes the DC solenoid in the Cargo Hook, and the solenoid opens the latch in the internal mechanism. In an emergency, release can be achieved by operating a mechanical release cable. The release cable operates the internal mechanism of the Cargo Hook to unlatch the load beam. The load can also be released by the actuation of a lever located on the side of the Cargo Hook.

Section 2
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.

2.1 Cargo Hook Installation

Disconnect the manual release cable from the existing cargo hook and at the bracket on the belly of the helicopter and remove. Disconnect the electrical release harness from the cargo hook, this harness will be re-used with the new cargo hook. Remove the cargo hook and the Universal Assembly (Bell P/N 206-072-189-101 or P/N 204-011-128-1) which attaches the cargo hook to the Bell suspension frame.

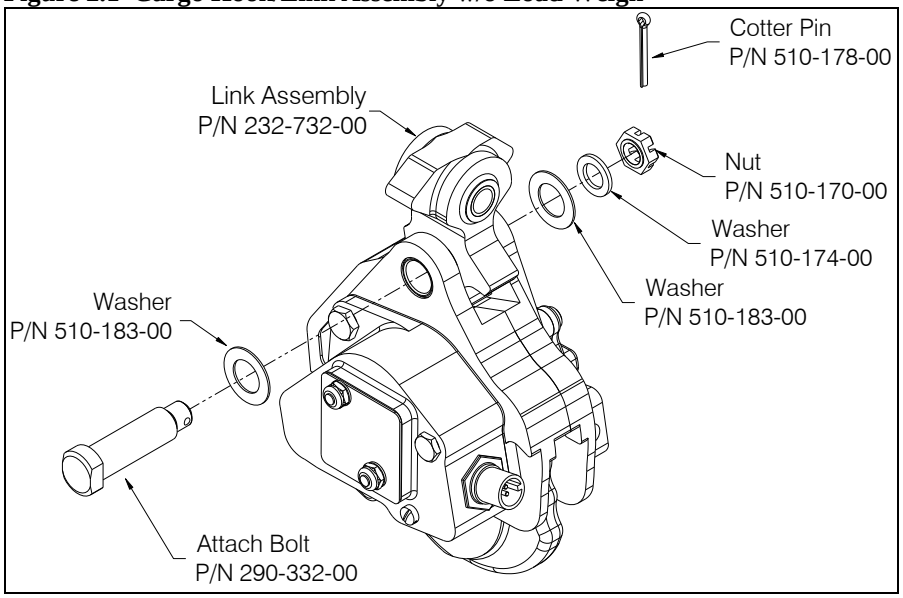
If installing Kit P/N 200-389-00 which is a load cell upgrade kit for use with an existing Onboard Systems keeperless cargo hook, remove the existing link style load cell, the Universal Assembly, and any other link between the cargo hook and the Bell suspension frame.

Attach the Cargo Hook to the Link Assembly using the hardware supplied, as illustrated below.

NOTICE

The Link Assembly is "keyed" to prevent incorrect orientation with respect to the cargo hook. It is oriented on the cargo hook as shown below.

Figure 2.1 Cargo Hook/Link Assembly w/o Load Weigh

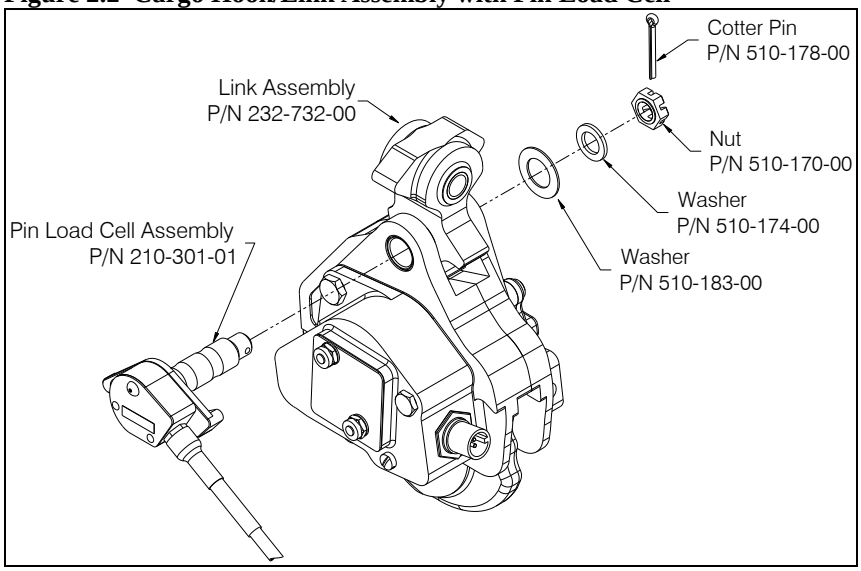


Tighten nut on attach bolt to finger tight only and then rotate to previous castellation if necessary to insert cotter pin. Install and secure cotter pin.

2.1 Cargo Hook Installation *continued*

If installing kit P/N 200-389-00 or P/N 200-390-00 (includes load weigh system), assemble the cargo hook to the link assembly with the pin load cell assembly (P/N 210-301-01) per Figure 2.2.

Figure 2.2 Cargo Hook/Link Assembly with Pin Load Cell



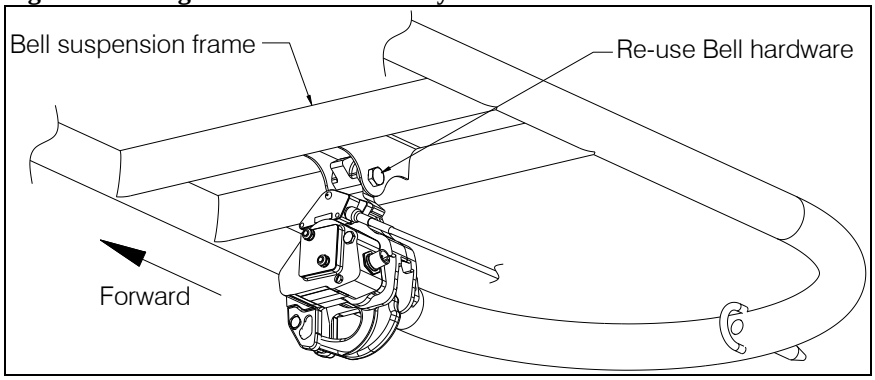
Tighten nut on pin load cell assembly to finger tight only and then rotate to previous castellation if necessary to insert cotter pin. Install and secure cotter pin.

Attach the Cargo Hook/Link Assembly to the Bell suspension frame assembly re-using the Bell hardware that was previously used to attach the Bell Universal Assembly to the frame (see Figure 2.3). The cargo hook load beam must point to the right (the cargo hook electrical connector is to the left). See the appropriate Bell service instructions for the correct installation torque values.

CAUTION

After tightening, the Link Assembly must pivot on the bolt and the bolt must not rotate within the suspension frame ears.

Figure 2.3 Cargo Hook/Link Assembly Installation

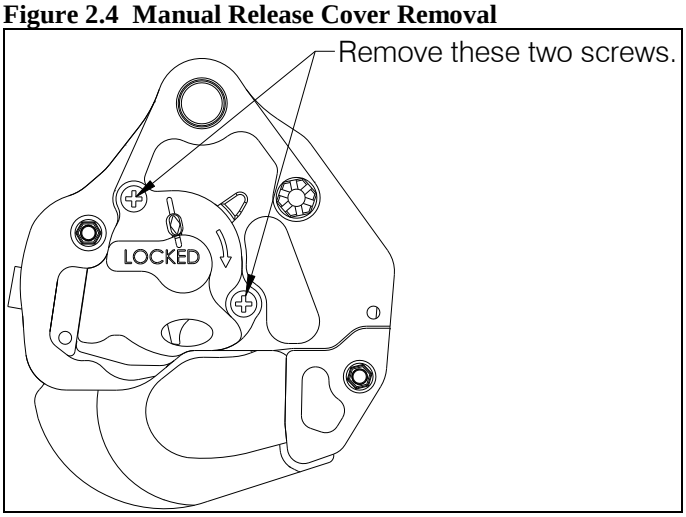


2.1 Cargo Hook Installation *continued*

Connect the manual release cable (P/N 268-055-00) to the cargo hook per the following instructions. This manual release cable P/N has a lower profile fitting to attach to the cargo hook and is more flexible than the existing installed manual release cable. These features better accommodate the closer proximity of the cargo hook to the frame with the Link Assembly used in these kits.

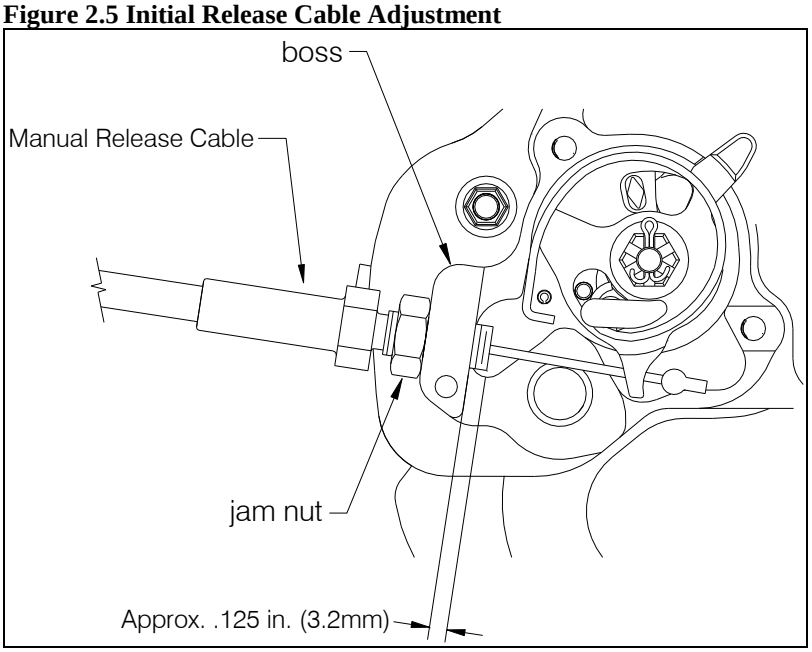
- Remove the manual release cover from the cargo hook by removing the manual release cover screws (see below).

Figure 2.4 Manual Release Cover Removal



- Thread the fitting at the end of the manual release cable into the manual release boss on the cargo hook side plate until the threads protrude approximately .125 inches beyond the boss and secure with jam nut (as shown in Figure 2.5). Leave the manual release cover off of the cargo hook until the other end of the release cable is connected, in order to verify proper setting.

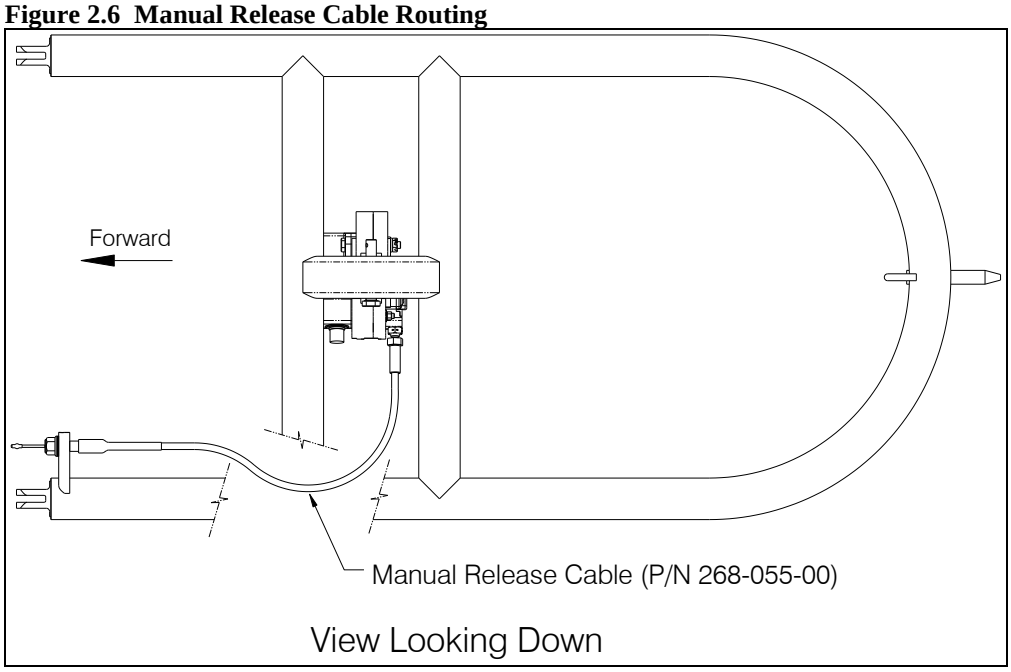
Figure 2.5 Initial Release Cable Adjustment



2.1 Cargo Hook Installation *continued*

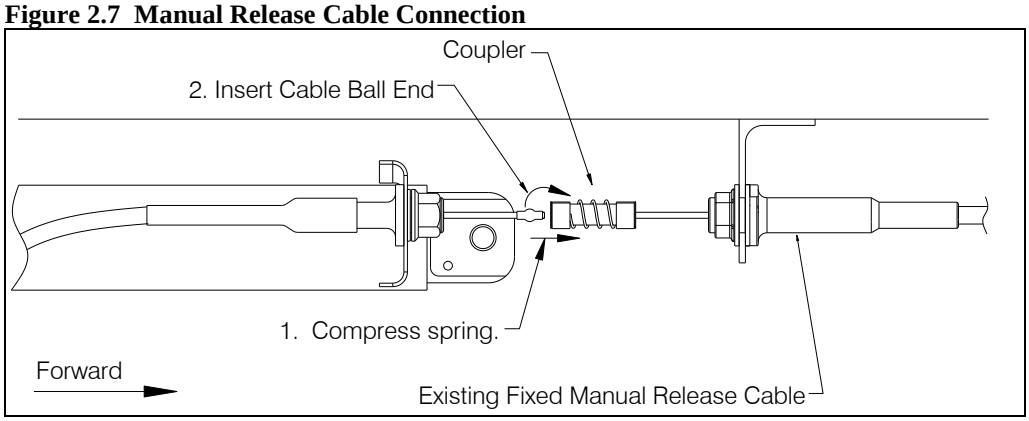
- Route the manual release cable as shown to the bracket on the left side of the frame weldment and connect it by removing the pre-installed nut and washer and re-installing them over the manual release cable's end fitting after inserting through the hole in the bracket.

Figure 2.6 Manual Release Cable Routing



- Connect the cable ball end to the fixed manual release cable's coupler by compressing its spring and inserting the ball.

Figure 2.7 Manual Release Cable Connection



2.1 Cargo Hook Installation *continued*

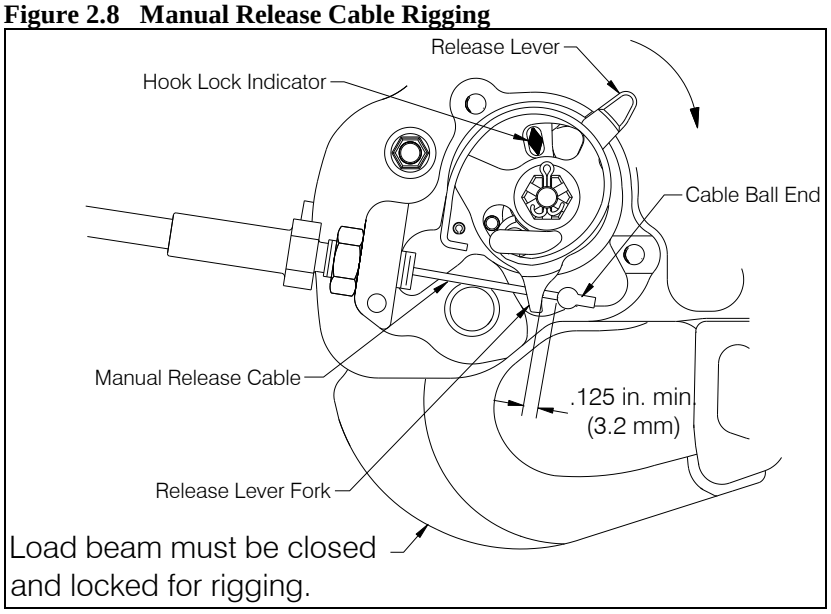
- At the cargo hook, ensure the manual release cable is between the two prongs of the release lever fork as illustrated in Figure 2.8.

WARNING

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

- With the cargo hook closed and locked, rotate the release lever in the clockwise direction to remove free play (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) and measure the gap between the cable ball end and the release lever fork with the manual release lever in the cockpit in the non-release position. This gap should be a minimum of .125 inches (3.2 mm) as shown in Figure 2.8.

Figure 2.8 Manual Release Cable Rigging



- If necessary adjust the manual release cable system to obtain the minimum gap of .125 inches at the release lever fork (the maximum gap is limited by the manual release cover, i.e.- the release cable must fit within the cover when it is installed). The system can be adjusted some at the cargo hook by loosening the jam nut and disconnecting it at the bracket on the frame and rotating the manual release cable in the required direction. Be sure to maintain full thread engagement between the manual release cable end fitting and cargo hook.

- 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.

2.1 Cargo Hook Installation *continued*

- Attach the supplied loop clamps, P/N 512-010-00, through the end loops of the existing cargo hook restraining shock cord. Route the shock cord through the eyelet and over the existing threaded rod as illustrated in Figure 2.9.
- Secure the loop clamps to the cargo hook manual release side as illustrated in Figure 2.10 using the bolts (P/N 510-257-00) and washers (P/N 510-042-00) provided. Torque bolts to 20-25 in-lbs.

Figure 2.9 Cargo Hook Retraction Overview

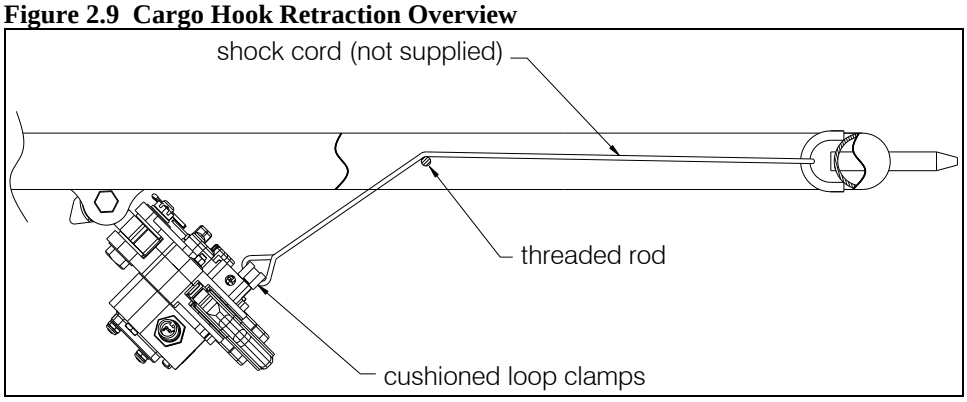
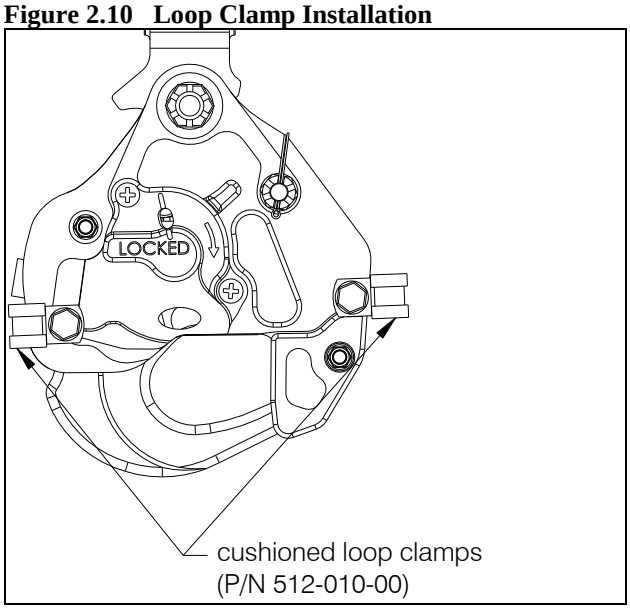


Figure 2.10 Loop Clamp Installation



2.1 Cargo Hook Installation *continued*

The cargo hook kits use the existing Bell electrical release harness. Connect the electrical release harness connector to the Cargo Hook and route it and the pin load cell harness (if load weigh system is installed) with the manual release cable. Secure it to the manual release cable in several locations along its length with ty-raps or nylon ties. Listed below is the pin out for the cargo hook connector.

Table 2.1 Cargo Hook Connector

Pin	*Function*
A	Ground
B	Positive

CAUTION

Early versions of the Cargo Hook were equipped with a suppression diode that will be damaged if the Cargo Hook electrical connections are reversed. Do not attach the electrical connector until the polarity of the aircraft connector is determined to be compatible with the Cargo Hook connector listed in Table 2.1.

2.2 Load Weigh System Installation

2.2.1 Internal Harness Installation

The Internal Harness is made up of four cables terminated to one connector (see Figure 2.2.1 for overview). The connector is plugged into the back of the Indicator. One of the cables is marked "LOAD CELL" and is fitted with a bulkhead fitting. This cable is connected to the load cell. Another cable is marked "POWER" and is connected to the aircraft electrical power. Another cable is marked "LIGHT", refer to the *Indicator Internal Back Light* section for installation instructions. The last cable is marked "DATA" and can be connected to the optional Data Recorder or Analog Slave Meter. These optional items are not included under this STC.

The DATA cable may or may not be terminated with a connector depending on manufacture date.

Route the LOAD CELL cable with the hook manual release cable and electrical release cable to the cargo hook area. The LOAD CELL cable connector can be attached to the existing cargo hook manual and electrical disconnect bracket on the belly of the helicopter using the furnished Bracket P/N 235-035-00 and hardware.

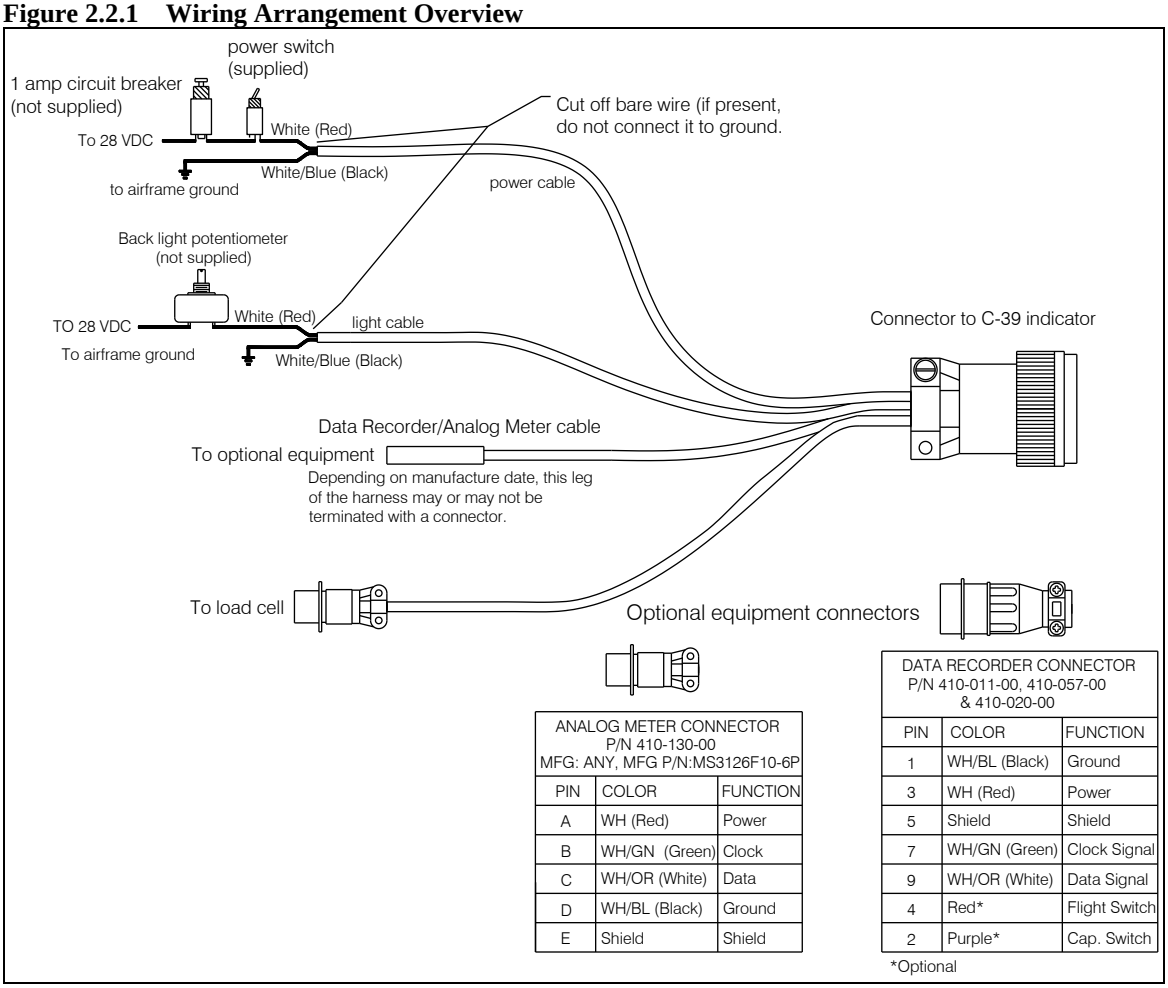
Route the POWER cable to the location for the Power switch (see section 2.2.5).

Route the LIGHT cable to the aircraft's instrument panel lighting circuit (see Section 2.2.3).

Secure the cables to existing wiring bundles with the Ty-wraps. **Secure the cables clear of flight control rods.**

2.2 Load Weigh System Installation *continued*

Figure 2.2.1 Wiring Arrangement Overview



ANALOG METER CONNECTOR
P/N 410-130-00
MFG: ANY, MFG P/N:MS3126F10-6P

PIN	COLOR	FUNCTION
A	WH (Red)	Power
B	WH/GN (Green)	Clock
C	WH/OR (White)	Data
D	WH/BL (Black)	Ground
E	Shield	Shield

DATA RECORDER CONNECTOR
P/N 410-011-00, 410-057-00
& 410-020-00

PIN	COLOR	FUNCTION
1	WH/BL (Black)	Ground
3	WH (Red)	Power
5	Shield	Shield
7	WH/GN (Green)	Clock Signal
9	WH/OR (White)	Data Signal
4	Red*	Flight Switch
2	Purple*	Cap. Switch

*Optional

2.2.2 Indicator Installation

The Indicator should be mounted in a position that is convenient, accessible and visible to the pilot. It can be mounted in a standard 2¼" instrument hole. Connect the Indicator to its Internal Harness, refer to *Internal Harness Installation*.

2.2 Load Weigh System Installation *continued*

2.2.3 Indicator Internal Back Light

The 210-095-00 Indicator is equipped with an Internal Back Lighting System that can be connected to the aircraft 28 VDC light dimming circuit. Use a 22 gauge, twisted pair, shielded cable to connect the aircraft dimming circuit to the Internal Harness. Connect the cable shield wire to airframe ground at the light dimmer end of the cable **ONLY**.

The 210-095-02 Indicator is equipped with an Internal Back Lighting System that can be connected to the aircraft 5 VDC light dimming circuit. Use a 22 gauge, twisted pair, shielded cable to connect the aircraft dimming circuit to the Internal Harness. Connect the cable shield wire to airframe ground at the light dimmer end of the cable **ONLY**.

2.2.4 Remote Analog Meter

The 210-095-00 and 210-095-02 Indicator are equipped with an Analog drive circuit that can be connected to a user supplied remote analog meter. Use a 22 gauge, twisted pair, shielded cable to connect the Remote Analog Meter to the Indicator. Disassemble the Indicator mating connector and carefully solder the positive wire, from the analog meter, to pin G and the common wire to pin F. Connect the cable shield wire to airframe ground as close to the Analog Meter as possible, at the Analog Meter end of the cable **ONLY**.

The 210-095-00 and 210-095-02 Indicator can be connected to Onboard Systems' Analog Slave Meter, P/N 210-180-00, through the "DATA" cable. The Analog Slave Meter may be mounted in any convenient location in a standard 3" instrument hole. Attach connector, P/N 410-130-00, to data line per pin out in Figure 2-3 to connect the Analog Slave Meter to the Internal Harness "DATA" cable. If a data connector is present on the data line use cable P/N 270-059-00 to connect to Analog Slave Meter.

2.2 Load Weigh System Installation *continued*

2.2.5 Electrical Connections

Install the supplied power switch, P/N 400-048-00. The "POWER" cable on the Internal Harness is supplied extra long, cut off the excess cable and use as needed to connect the switch and circuit breaker. Connect the "POWER" white (red if wire harness P/N 270-048-00 is installed) wire to one side of the power switch, connect another piece of suitable wire to the other side of the switch and then to an available 1 or 2 amp circuit breaker as illustrated in Figure 2.2.1. Connect the circuit breaker to the 28VDC bus. Connect the white/blue (black if wire harness P/N 270-048-00 is installed) wire to the ground bus. The bare wire (with P/N 270-048-00 harness only) should be cut off as it is not needed at this end of the cable. Use a minimum of 22 gauge wire to make all connections. Secure the connections and protect from corrosion.

Connect the Internal Harness to the Indicator connector.

Install the placard 215-010-00 "ELECTRONIC WEIGHING SYSTEM" next to the power switch and circuit breaker. Install the placard 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" next to the Indicator.

NOTICE

If the C-23 Printer is being utilized with the C-20 or C-30 Data Recorder, a 5 amp circuit breaker should be used.

2.3 Installation Check-Out

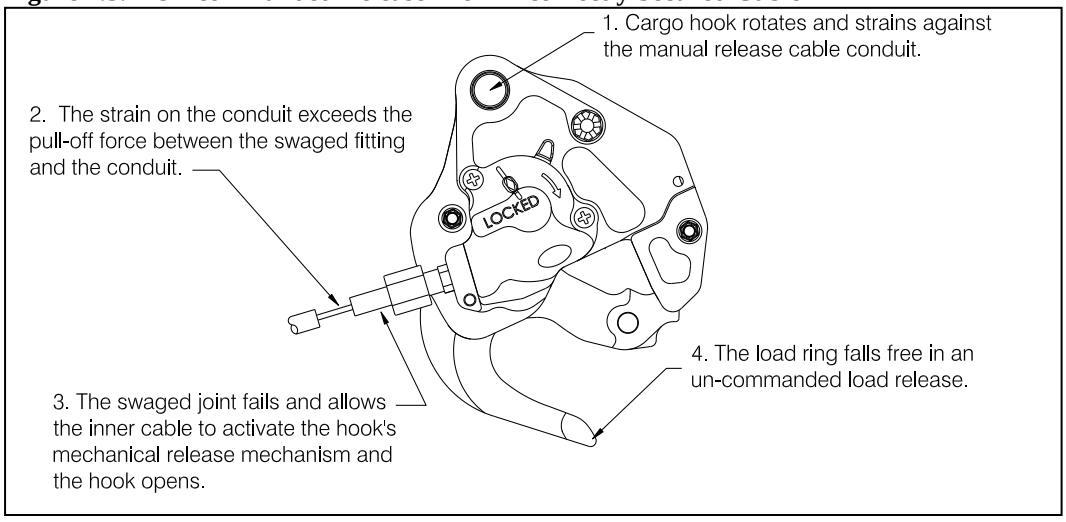
After installation of the Cargo Hook Kit, perform the following functional checks.

1. With no load on the cargo hook load beam, pull the handle operated cargo hook mechanical release, the Cargo Hook should release. Reset the cargo hook load beam.
2. Close the cargo hook release circuit breaker and position the battery switch to the ON position. With no load on the cargo hook load beam, depress the cargo hook electrical release button, the Cargo Hook should release. Reset the cargo hook load beam
3. Swing the Cargo Hook to ensure that the manual release cable and the electrical harnesses have enough slack to allow full swing of the Cargo Hook without straining or damaging the cable or harnesses. The cable or harnesses must not be the stops that prevent the Cargo Hook from swinging freely in all directions.
4. Swing the Cargo Hook fore and aft and ensure the Link Assembly rotates on the bolt at the Bell frame and that the bolt does not rotate.

WARNING

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

Figure 2.3.1 Un-commanded Release From Incorrectly Secured Cable



2.4 Component Weights

The weights of the Cargo Hook Kits are listed in Table 2.4.1 below. Select kit component weights are listed in Table 2.4.2.

Table 2.4.1 Kit Weights

Item	Weight
Kit P/N 200-267-02	4.1 lbs (1.86 kgs)
Kit P/N 200-389-00	2.4 lbs (1.1 kgs)
Kit P/N 200-390-00	5.4 lbs (2.45 kgs)

Table 2.4.2 Component Weights

Item	Weight
Cargo Hook	3.1 lbs (1.4 kgs)
Link Assembly	0.63 lbs (.29 kgs)
Manual Release Cable	0.27 lbs (.12 kgs)
Pin Load Cell Assembly	0.30 lbs (.13 kgs)
C-39 Indicator	0.47 lbs (.21 kgs)
Load Weigh Internal Harness	0.64 lbs (.29 kgs)

2.5 Cargo Hook Location

Table 2.5.1 Cargo Hook Location

Fuselage Station	108.5

2.6 Paper Work

In the US, fill in FAA form 337 for the initial installation. This procedure may vary in different countries. Make the appropriate aircraft log book entry. Insert the Rotorcraft Flight Manual Supplement P/N 121-059-00 into the Rotorcraft Flight Manual.

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Section 3
Operation Instructions
Operating Procedures

If the load weigh system is installed, refer to Owner's Manual 120-039-00 for operation instructions for the C-39 load weigh indicator.

Prior to a flight involving external load operations, perform the following.

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

CAUTION

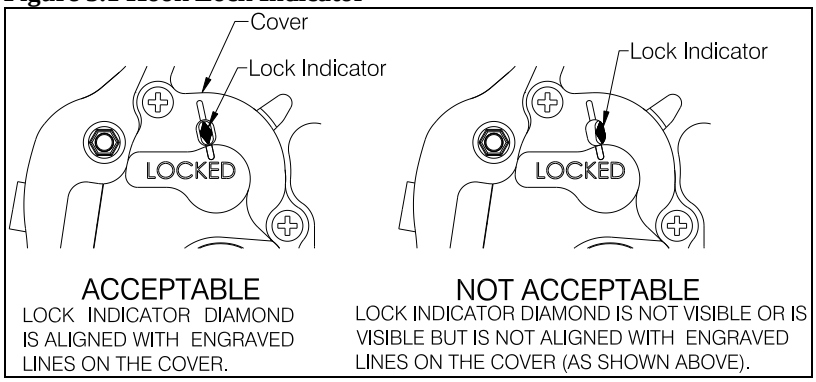
The cargo hook release solenoid is intended to be energized only intermittently. Depressing the electrical release button continuously in excess of 20 seconds will cause the release solenoid to overheat, possibly causing permanent damage.

3. Activate the manual release lever to test the cargo hook manual release mechanism. The mechanism should operate smoothly and the Cargo Hook must release. Reset the load beam by hand after release. Verify that the hook lock indicator on the side of the hook returns to the fully locked position. If the hook does not release or re-latch, do not use the unit until the problem is resolved.

WARNING

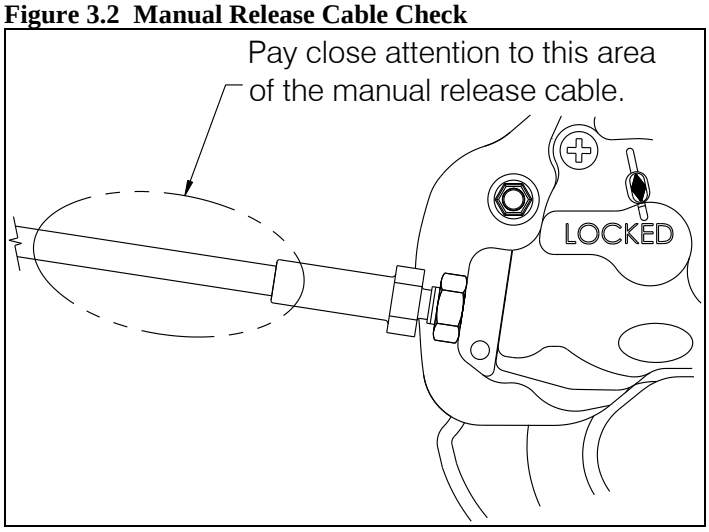
In the fully locked position the hook lock indicator must align with the lines on the manual release cover (see Figure 3.1).

Figure 3.1 Hook Lock Indicator



4. Visually check the manual release cable for damage, paying close attention to the flexible conduit at the area of transition to the cargo hook end fitting (refer to Figure 3.2). Check for splitting of the outer black conduit in this area and separation of the conduit from the steel end fitting.

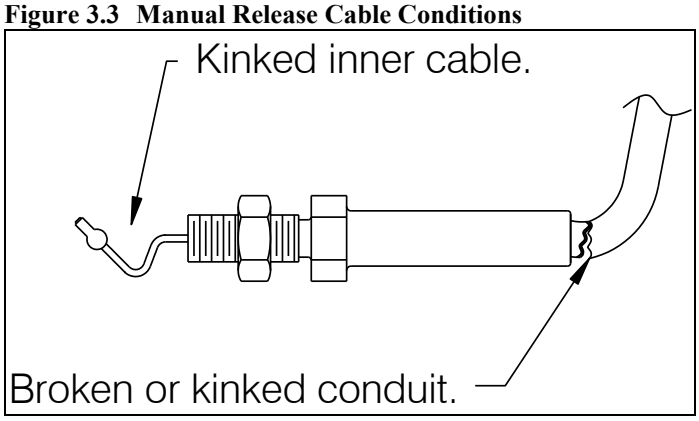
Figure 3.2 Manual Release Cable Check



WARNING

Manual release cables are wearable items and must be replaced as condition requires. Broken or kinked conduit, inner cable kinks (ref Figure 3.3), frays, or sticky operation are each cause for immediate replacement.

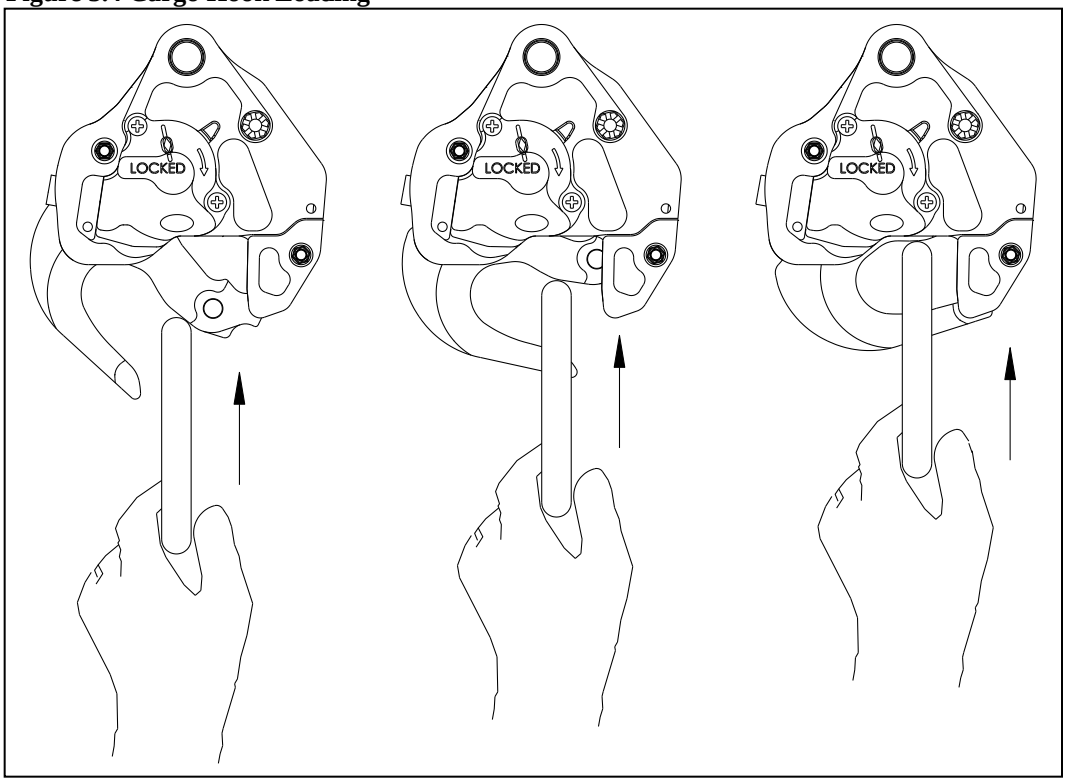
Figure 3.3 Manual Release Cable Conditions



Cargo Hook Loading

The cargo hook can easily be loaded with one hand. A load is attached to the hook by pushing the ring upward against the upper portion of the load beam throat, as illustrated in Figure 3.4, until an internal latch engages the load beam and latches it in the closed position.

Figure 3.4 Cargo Hook Loading



Cargo Hook Rigging

Extreme care must be exercised when rigging a load to the Cargo Hook. Steel load rings are recommended to provide consistent release performance and resistance to fouling. The following illustration shows the recommended rigging and rigging to avoid, but is not intended to represent all rigging possibilities.

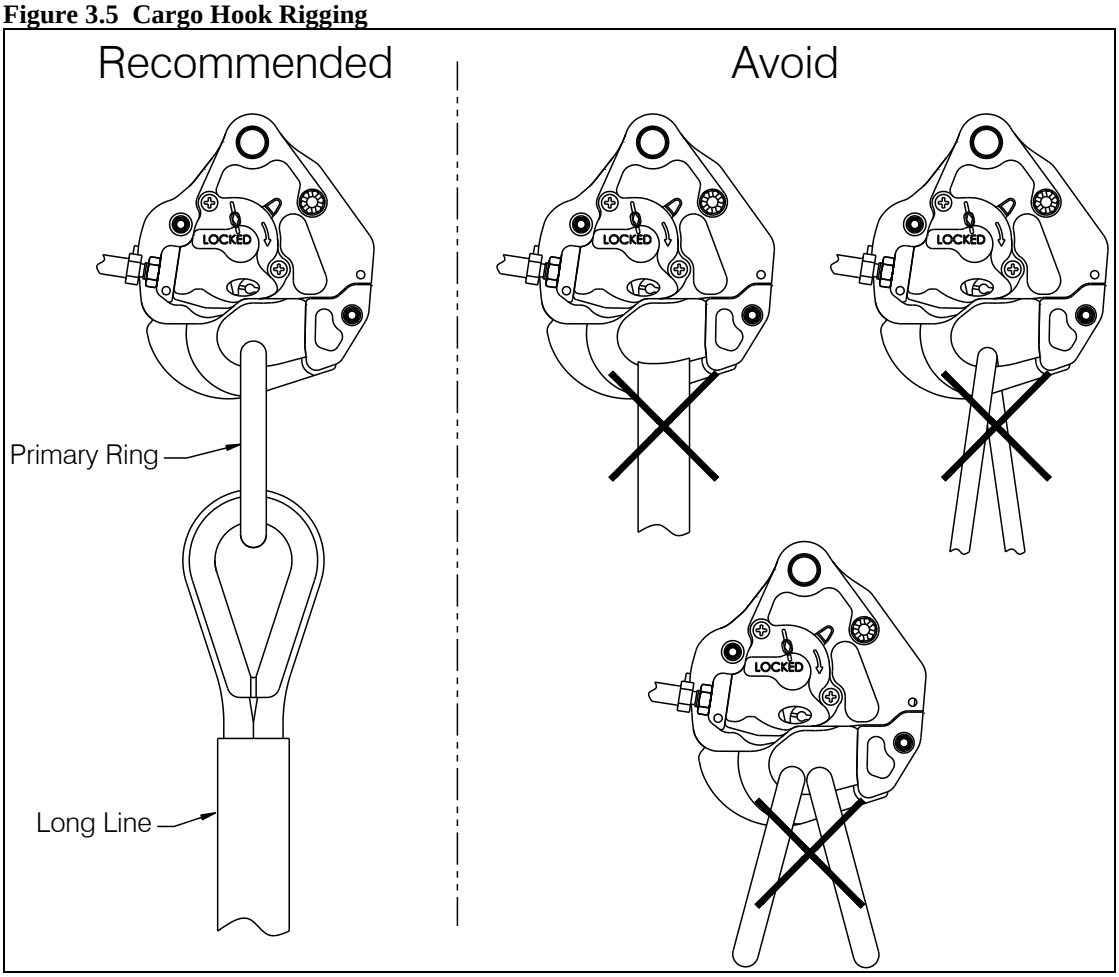
It is the responsibility of the operator to ensure the cargo hook will function properly with each rigging.

Nylon Type Straps and Rope

Nylon type straps (or similar material) or rope must not be used directly on the cargo hook load beam. If nylon straps or rope must be used they should be first attached to a steel primary ring. Verify that the ring will freely slide off the load beam when it is opened. Only the primary ring should be in contact with the cargo hook load beam.

Cargo Hook Rigging, continued

Figure 3.5 Cargo Hook Rigging



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Section 4
Maintenance

Refer to ICA 123-042-00 for maintenance information for the cargo hook kits and Component Maintenance Manual (CMM) 122-017-00 for detailed maintenance information including overhaul for the Cargo Hook.

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 an RMA number before shipping your return.

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

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

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Section 5
Certification
FAA STC

United States of America
Department of Transportation - Federal Aviation Administration

Supplemental Type Certificate

Number **SR00896SE**

This certificate, issued to **Onboard Systems International**
13915 NW 3rd Court
Vancouver, WA 98685

certifies that the change in the type design for the following product with the limitations and conditions therefore as specified hereon meets the airworthiness requirements of Part **6** *of the* **Civil Air** *Regulations.*

Original Product—Type Certificate Number: H2SW
Make: Bell
Model: 206A and 206B

Description of the Type Design Change: Installation of Onboard Systems International Cargo Hook Kit and Load Weight Kit in accordance with Onboard Master Drawing List No. 155-063-00, Revision 9, dated August 25, 2015, or later Federal Aviation Administration (FAA) approved revision. Maintained in accordance with Owner's Manual Document 120-098-00, Revision 7, dated June 16, 2010, Owner's Manual, Document 120-098-01, Revision 3, dated October 17, 2014, or later FAA-approved revisions; or Instructions for Continued Airworthiness (ICA) Document 123-042-00, Revision 0, dated August 18, 2015, or later FAA-accepted revision, as applicable. Operated in accordance with FAA-approved Rotorcraft Flight Manual Supplement (RFMS) Documents 121-008-00, Revision 2; 121-008-01, Revision 1; or 121-059-00, Revision 0; all dated November 30, 2015, as applicable.

Limitations and Conditions: Approval of this change in type design applies only to those Bell model rotorcraft listed above, which were previously equipped with an FAA approved installation of Bell cargo hook suspension system, Part Number (P/N) 206-072-900-1, 206-072-900-101, or 206-072-900-103; Bell cargo hook provisions kit, P/N 206-706-335-3, 206-706-335-5, or 206-706-335-105; and Breeze-Eastern cargo hook, P/N SP-4232-4, SP-4232-5, or SP-4232-5L. This approval should not be extended to other rotorcraft of these models on which other previously approved modifications are incorporated unless it is determined by the installer that the relationship between this change and any of those other previously approved modifications, including changes in type design, will introduce no adverse effect upon the airworthiness of that rotorcraft. A copy of this certificate, the Owner's Manual identified in the MDL, the applicable FAA-approved RFMS, and the ICA (if applicable) must be maintained as a part of the permanent records of the modified rotorcraft.

If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: September 22, 2000
Date of issuance: March 26, 2001
Date reissued:
Date amended: 5/17/01; 1/13/03; 3/31/10; 12/7/15

FEDERAL AVIATION ADMINISTRATION

By direction of the Administrator

(Signature)

for Manager, Seattle Aircraft Certification Office
(Title)

Any alteration of this certificate is punishable by a fine of not exceeding $1,000, or imprisonment not exceeding 3 years, or both.

This certificate may be transferred in accordance with FAR 21.47.

FAA Form 8110-2 (10-66) PAGE 1 OF 2 PAGES

Transport Canada STC

Transport Canada Transports Canada

Department of Transport

Supplemental Type Certificate

This approval is issued to:

Onboard Systems International
13915 North West 3rd Court
Vancouver, Washington
United States of America 98685

Number: SH01-40
Issue No.: 3
Approval Date: June 18, 2001
Issue Date: June 14, 2016

Responsible Office: Pacific

Aircraft/Engine Type or Model: Bell 206A, 206B

Canadian Type Certificate or Equivalent: H-92

Description of Type Design Change: Installation of Onboard Systems Model 200-267 or Model 200-389, - 390 Cargo Hook System per FAA STC SR00896SE

Installation/Operating Data, Required Equipment and Limitations:

Installation of Onboard Systems International Cargo Hook Kit and Load Weigh Kit System in accordance with FAA approved Onboard Systems Master Drawing List No. 155-063-00, Rev 9, dated August 25, 2015 *. Onboard Systems International Cargo Hook Kit to be maintained in accordance with Owner's Manual, Document No. 120-098-00, Rev 7, dated June 16, 2010 *; Owner's Manual, Document No. 120-098-01, Rev 3, dated October 17, 2014 *; or Instructions for Continued Airworthiness (ICA) Document No. 123-042-00, Rev 0, dated August 18, 2015, or later FAA accepted revision, as applicable.

Modified rotorcraft must be operated in accordance with FAA approved Onboard Systems Rotorcraft Flight Manual Supplement (RFMS) No. 121-008-00, Rev 2; 121-008-01, Rev 1; or 121-059-00, Rev 0, all dated November 30, 2015 * as applicable.

Approval of this change in type design applies only to Bell 206A and 206B rotorcraft which were previously equipped with an FAA approved installation of the following: Bell Cargo Hook Suspension Assembly, P/N 206-072-900-1, -101, or -103; Bell Cargo Hook Provisions Kit, P/N 206-706-335-3, -5, or -105; and Breeze- Eastern Cargo Hook, P/N SP-4232-4, -5, or -5L.

* (or later FAA approved revision)

Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated **will not** adversely affect the airworthiness of the modified product.

Henry Wong
For Minister of Transport

Canada

EASA STC

SUPPLEMENTAL TYPE CERTIFICATE

10030532 REV. 2

This Supplemental Type Certificate is issued by EASA, acting in accordance with Regulation (EC) No. 216/2008 on behalf of the European Community, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation and in accordance with Commission Regulation (EU) No. 748/2012 to:

ONBOARD SYSTEMS INTERNATIONAL

13915 NW 3RD COURT
VANCOUVER WA 98685
USA

and certifies that the change in the type design for the product listed below with the limitations and conditions specified meets the applicable Type Certification Basis and environmental protection requirements when operated within the conditions and limitations specified below:

Original Type Certificate Number: EASA.IM.R.512
Type Certificate Holder: BELL HELICOPTER TEXTRON CANADA LIMITED
Type: BELL 206
Model: 206 A/ 206 B
Original STC Number: FAA STC SR00089SE

Description of Design Change:
Installation of Onboard Systems International replacement Cargo Hook kit and Load Weight Kit for Bell 206A and 206B in accordance with Onboard Master Drawing List No. 15506300.
With Revision 2, the Kit Part Numbers included in this approval are: 200-267-00, 200-267-01, 200-267-02, 200-389-00, and 200-390-00.

See Continuation Sheet(s)

For the European Aviation Safety Agency

Date of Issue: 28 February 2017

Pier Giorgio COLOMBO
Medium Rotorcraft Section Manager

EASA Certification Basis:
The Certification Basis for the original product remains applicable to this certificate/ approval.
The requirements for environmental protection and the associated certificated noise and/ or emissions levels of the original product are unchanged and remain applicable to this certificate/ approval.

Associated Technical Documentation:
For System Part Numbers 200-267-00:
- Rotorcraft Flight Manual Supplement Document Number 121-08-00 Revision 2, dated November 30, 2015.

For System Part Numbers 200-267-01:
- Rotorcraft Flight Manual Supplement Document Number 121-008-01, Revision 1, dated November 30, 2015.

For System Part Numbers: 200-267-02, 200-389-00, 200-390-00:
- Rotorcraft Flight Manual Supplement Document Number 121-059-00, Revision 0, dated November 30, 2015

or later revisions of the above listed documents approved by EASA in accordance with EASA ED Decision 2004/04/CF (or subsequent revisions of this decision)" and/ or the Technical Implementation Procedures of EU/ USA Bilateral Agreement.

- Master Drawing List Document Number 155-063-00, Revision 10, dated August 30, 2016.
- Owner's Manual Document Number 120-144-00, Revision 1, dated January 26, 2016.
- Owner's Manual Document Number 120-098-01, Revision 2, dated September 13, 2010.
- Instructions for Continued Airworthiness, Document Number 123-042-00, Revision 0, dated August 18, 2015.
- Owner's Manual Document Number 120-098-00, Revision 7, dated June 16, 2010.
- Component Maintenance Manual Document Number 122-005-00, Revision 29 dated March 03, 2014.
- Component Maintenance Manual, Cargo Hook Document Number 122-017-00, Revision 22, dated January 26, 2016.

Limitations/Conditions:
Approval of this change applies only to Bell Helicopter models 206A and 206B previously equipped with Bell cargo suspension systems, Part Number (P/N) 206-072-900-1, 206-072-900-101, or 206-072-900-103; Bell cargo hook provision kit, P/N 206-706-335-3, 206-706-335-5, or 206-706-335-105; and Breeze-Eastern cargo hook, P/N SP-4232-4, SP-4232-5, or SP-4232-5L.

Prior to installation of this design change it must be determined that the interrelationship between this design change and any other previously installed design change and/ or repair will introduce no adverse effect upon the airworthiness of the product.

- End -

P-EASA.IM.R.S.00593
SUPPLEMENTAL TYPE CERTIFICATE - 10030532 - REV. 2 - ONBOARD SYSTEMS INTERNATIONAL - 302945

ANAC STC

CERTIFICADO SUPLEMENTAR DE TIPO

(*Supplemental Type Certificate*)

NÚMERO: 2021S12-06
(Number)

Este Certificado, emitido com base na Lei nº 7565 "Código Brasileiro de Aeronáutica", de 19 de dezembro de
This Certificate, issued in the basis of the Law No 7565 "Código Brasileiro de Aeronáutica", dated 19 December

1986, é conferido ao (à): Onboard Systems International
1986, is granted to:
13915 NW 3rd Court
Vancouver, WA 98685
USA

por ter a modificação ao projeto de tipo do produto abaixo citado, observadas as limitações e condições
for having the change to the type design of the product mentioned below, with the limitations and conditions

especificadas, satisfeito aos requisitos de aeronavegabilidade aplicáveis.
conditions there for as specified hereon, met the applicable airworthiness requirements.

Produto Original - Número do Certificado de Tipo: H-92 (TCCA)
Original Product - Type Certificate No:

Fabricante: Bell Textron Canada
Manufacturer:

Modelo(s): 206A, 206B.
Model (s):

DESCRIÇÃO DA MODIFICAÇÃO AO PROJETO DE TIPO:
Description of Type Design Change:

Installation of Onboard Systems International Cargo Hook Kit and Load Weight Kit in accordance with Onboard Systems Master Drawing List (MDL), Document No. 155-063-00, Rev. 10, dated 30 Aug. 2016, or later approved revision.

This CST validates in Brazil the STC No. SR00896SE, issued by FAA (USA).

LIMITAÇÕES E CONDIÇÕES:
Limitations and Conditions:

See continuation sheet for applicable data.

DATAS: *Dates of:*
Do requerimento: 02 Aug. 2021 *Aplication:*
Da emissão: 10 Dec. 2021 *Issuance:*
Da reemissão: *Reissuance:*
Da emenda: *Amendment:*

Gerência de Certificação de Projeto de Produto Aeronáutico
(Aeronautical Product Design Certification Branch)

Superintendência de Aeronavegabilidade
(Department of Airworthiness)

Certificado assinado digitalmente (Digitally signed Certificate)

F-400-01G

Fl. 01 de 02
Sheet of

H.02-5593-0

Folha de Continuação ao
(*Continuation Sheet to*)

CERTIFICADO SUPLEMENTAR DE TIPO
(*Supplemental Type Certificate*)

NÚMERO: 2021S12-06
(Number)

LIMITAÇÕES E CONDIÇÕES:
Limitations and Conditions:

I. The approval of this type design change should not be extended to other rotorcraft of these models on which other previously approved modifications are incorporated unless it is determined by the installer that the relationship between this change and any of those other previously approved modifications, including changes in Type Design, will introduce no adverse effect upon the airworthiness of that rotorcraft.

II. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

III. Operation must be performed in accordance with the applicable Onboard Systems FAA approved Rotorcraft Flight Manual Supplement (RFMS), specified below:

- For Cargo Hook Kit P/N 200-267-00: Document No. 121-008-00, Rev. 2, dated 30 Nov. 2015, or later FAA approved revision;
- For Cargo Hook Kit P/N 200-267-01: Document No. 121-008-01, Rev. 1, dated 30 Nov. 2015, or later FAA approved revision;
- For Cargo Hook/Load Weigh Kit P/N 200-267-02, 200-389-00 or 200-390-00: Document No. 121-059-00, Rev. 0, dated 30 Nov. 2015, or later FAA approved revision.

IV. The maintenance of the rotorcraft shall be performed in accordance with the applicable Onboard Systems Owner's Manual or Instructions for Continued Airworthiness (ICA), specified below:

- For Cargo Hook Kit P/N 200-267-00: Owner's Manual, Document No. 120-098-00, Rev. 7, dated 16 June 2010, or later FAA approved revision;
- For Cargo Hook Kit P/N 200-267-01: Owner's Manual, Document No. 120-098-01, Rev. 3, dated 17 Oct. 2014, or later FAA approved revision;
- For Cargo Hook/Load Weigh Kit P/N 200-267-02, 200-389-00 or 200-390-00: ICA, Document No. 123-042-00, Rev. 0, dated 18 Aug. 2015, or later FAA accepted revision.

V. Approval of this change in type design applies only to those Bell Textron Canada model rotorcraft listed above, which are previously equipped with Bell cargo hook suspension system, Part Number (P/N) 206-072-900-1, 206-072-900-101, or 206-072-900-103; Bell cargo hook provisions kit, P/N 206-706-335-3, 206-706-335-5, or 206-706-335-105; and Breeze-Eastern cargo hook, P/N SP-4232-4, SP-4232-5, or SP-4232-5L, per Bell Textron Canada "mod" No. BHT-206-SI-94.

VI. The applicable placards presented in the Onboard Systems drawings No. 215-421-00, Rev. 0, dated 28 Oct. 2021; 215-422-00, Rev. 0, dated 28 Oct. 2021; 215-424-00, Rev. 0, dated 28 Oct. 2021; AND 215-425-00, Rev. 0, dated 02 Nov. 2021, or later approved revisions of these drawings, must be installed on the rotorcraft.

VII. A copy of this Certificate, the Owner's Manual identified in the MDL, the applicable Supplement referred on item III above, and the ICA (if applicable) shall be maintained as part of the permanent records of the modified rotorcraft.

----------END----------

F-400-01G

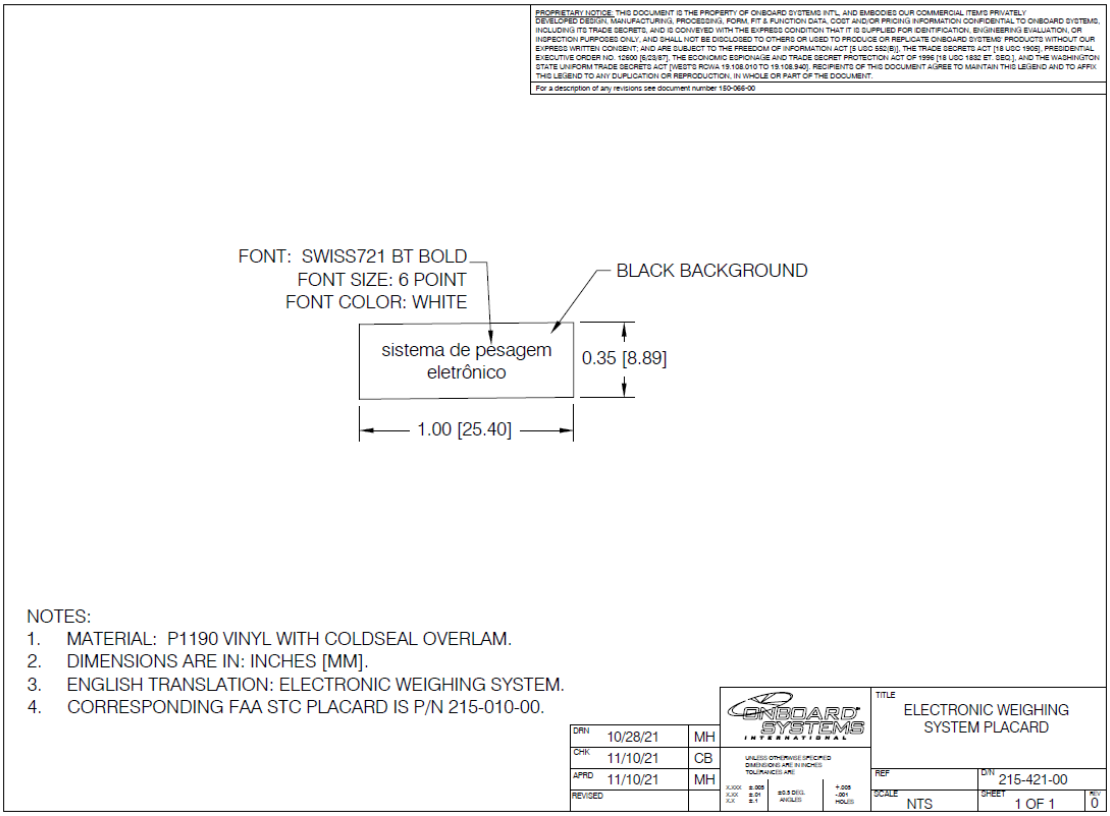
Fl. 02 de 02
Sheet of

H.02-5593-0

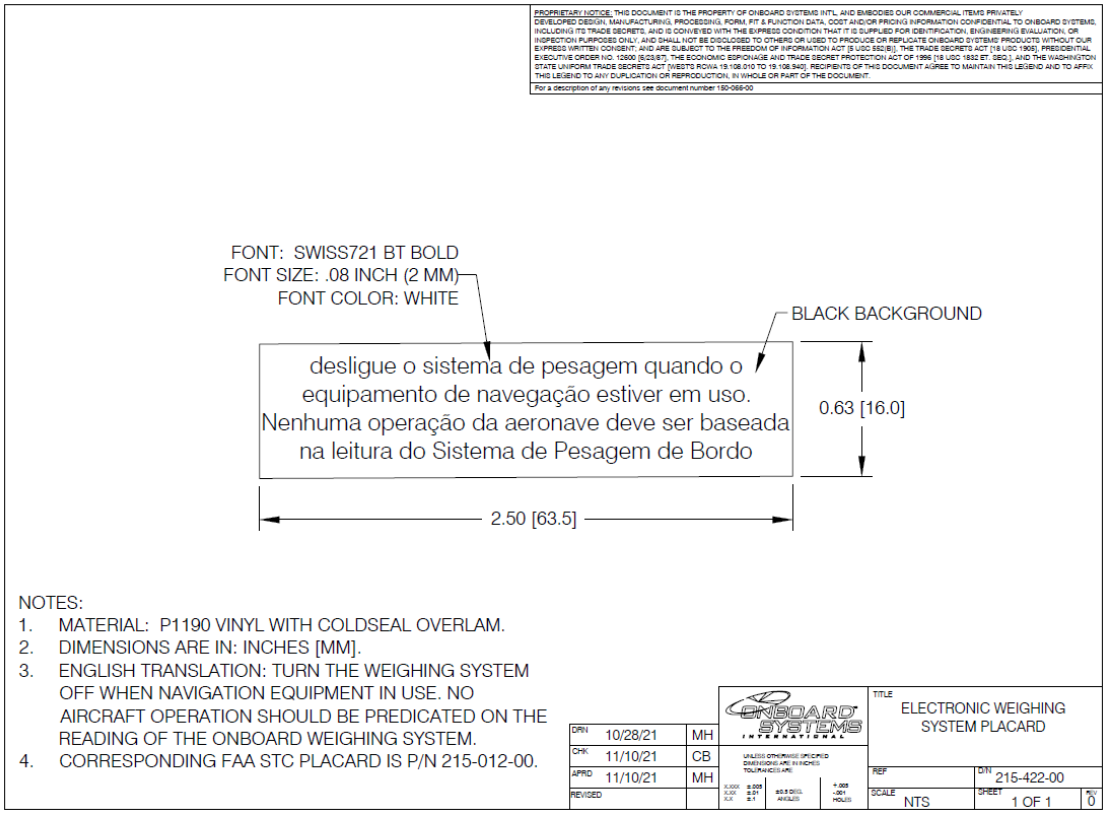
ANAC STC Placards

Placards in this section are for installation with the ANAC STC.

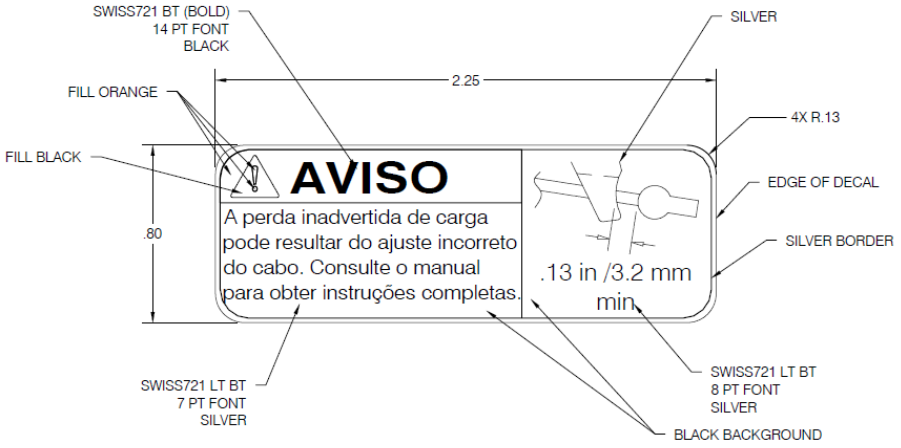
Install the following per Section 2.2.5 if the optional load weigh system is installed.



Install the following per Section 2.2.5 if the optional load weigh system is installed.



Install the following on the underside of the cargo hook:



NOTES:
1. MATERIAL: 3M 7940 FOIL.
2. DIMENSIONS ARE IN INCHES [MM].
3. ENGLISH TRANSLATION: WARNING INADVERTENT LOSS OF LOAD CAN RESULT FROM IMPROPER CABLE ADJUSTMENT
4. CORRESPONDING FAA STC PLACARD IS P/N 215-240-00.

DRN	10/28/21	MH
CHK	11/10/21	CB
APPD	11/10/21	MH
REVISED		

ONBOARD SYSTEMS INTERNATIONAL

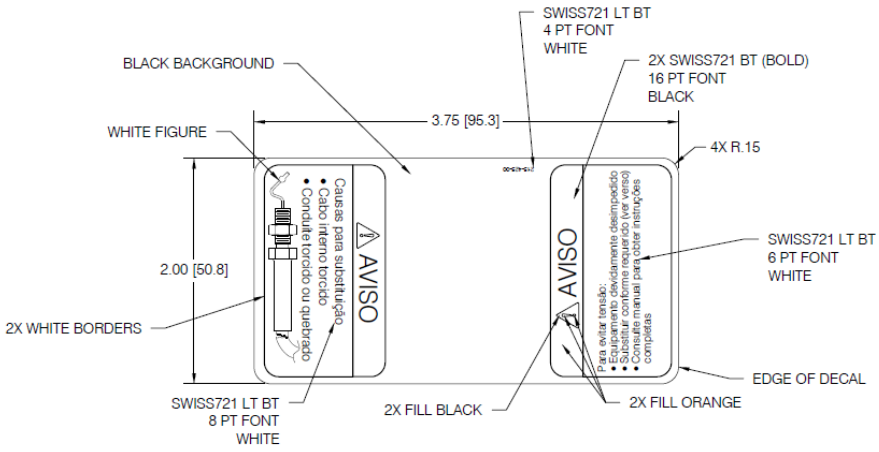
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: X.XXX ±.005, X.XX ±.01, X.X ±.1, ANGLES ±0.5 DECL, +.005 -.001 HOLES

TITLE: RIGHTING WARNING PLACARD

REF | P/N 215-424-00

SCALE NTS | SHEET 1 OF 1 | REV 0

Install the following over the manual release cable conduit:



NOTES:
1. MATERIAL: CONVEX COMIC HIGH BOND MATTE WHITE WITH COLD SEAL OVERLAM (MFG: CONVEX MFG P/N: CHBM63050W)
2. DIMENSIONS ARE IN: INCHES [MM].
3. CORRESPONDING FAA STC P/N IS 215-272-00.
4. ENGLISH TRANSLATION:

WARNING
ROUTE TO AVOID STRAIN,
RIG WITH PROPER FREE PLAY,
REPLACE AS CONDITION REQUIRES (SEE REVERSE)
SEE MANUAL FOR COMPLETE INSTRUCTIONS.
WARNING
CAUSES FOR REPLACEMENT:
KINKED INNER CABLE
KINKED OR BROKEN CONDUIT.

DRN	11/02/21	CB
CHK	-	-
APPD	-	-
REVISED		-

ONBOARD SYSTEMS INTERNATIONAL

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: X.XXX ±.005, X.XX ±.01, X.X ±.1, ANGLES ±0.5 DECL, +.005 -.001 HOLES

TITLE: MANUAL RELEASE CABLE WARNING

REF | P/N 215-425-00

SCALE 1:1 | SHEET 1 OF 1 | REV 0