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3,600 Pound Keeperless Cargo Hook Kit

For The

Airbus Helicopters AS350 Series and EC130B4

STC SR00886SE

Part Numbers
200-261-01
200-353-00
200-353-01

Owner's Manual

Owner's Manual Number 120-094-01
Revision 6
June 16, 2021

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RECORD OF REVISIONS

Revision	*Date*	*Page(s)*	*Reason for Revision*
0	03/24/06	All	Initial Release
1	12/14/07	Section 1, Section 2, & Section 3	Added warnings, cautions and notes explanation to Section 1. Updated warnings, cautions and notes format throughout. Corrected washer p/n (to 510-183-00) in Figure 2-1 and Figure 2-2.
2	05/12/09	All	Added kit part number 200-353-00 which includes new components - cargo hook bumper and manual release cable. Updated figures to show new cargo hook manual release side appearance.
3	10/28/09	2-3, 2-4	Added caution note and revised Figure 2.5
4	03/08/10	1-2 thru 1-4, 2-1, 2-2	Added notes to allow the bumper and manual release cable to be used with kit P/N 200-261-01.
5	01/26/16	All	Added kit P/N 200-353-01 (which includes cargo hook with Surefire Release (P/N 528-029-02)) and associated instructions.
6	06/16/21	1-3, 1-4	Added kit P/N 200-362-00 as the collection of upgrade kit parts noted on page 1-3. Added Table 1.3 for the bill of materials for this kit.

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Section 1
General Information

Introduction

The P/N 200-261-01, P/N 200-353-00, and 200-353-01 Cargo Hook Kits are approved as a replacement for the following Cargo Hooks on the Airbus Helicopters AS350B, AS350B1, AS350B2, AS350B3, AS350BA, AS350D and EC130B4 Series. This applies to either the swing or sling type systems for all models except the AS350B3 for which it applies to the sling system only and the EC130B4 for which it applies to the swing system only.

P/N	Manufacturer
17149-1	Breeze-Eastern
14027-4	Breeze-Eastern
14027-7	Breeze-Eastern
S1609-3	Siren
S1609-5	Siren
S1609-6	Siren
528-010-00	Onboard Systems
528-023-01	Onboard Systems

Kit P/N's 200-353-00 and 200-353-01 kits are identical except the P/N 200-353-01 kit includes a Cargo Hook with Surefire release as part of its electrical release system. Surefire is a safety enhancement 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. See Theory of Operation section for complete description of the Surefire release.

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.

Bill of Materials

The following items are included with the P/N 200-353-00 and P/N 200-353-01 Cargo Hook Kits and the P/N 200-261-01 Cargo Hook Kit which it supersedes. If shortages are found contact the company from whom the system was purchased. The primary difference between the P/N 200-353 series kits and the P/N 200-261-01 cargo hook kits is that the P/N 200-353 series kits include a cargo hook bumper and manual release cable.

NOTICE

The bumper (P/N 290-773-00) and manual release cable (P/N 268-024-02) are included with the current kits (P/N 200-353-00, -01). They may be added to an existing kit P/N 200-261-01 to convert it to the kit P/N 200-353-00 configuration. This conversion requires that Attach Bolt P/N 290-775-00 (in place of P/N 290-332-00) be used to accommodate the bumper. These parts (and a cotter pin) are available as an upgrade kit (P/N 200-362-00). See Table 1.3 for this upgrade kit parts list.

Table 1.1 Bill of Materials for Kit P/Ns 200-353-00, 200-353-01

Part No.	Description	Qty 200-353-00	Qty 200-353-01
528-029-00	Cargo Hook	1	-
528-029-02	Cargo Hook w/ Surefire	-	1
268-024-02	Manual Release Cable	1	1
290-773-00	Cargo Hook Bumper	1	1
290-775-00	Attach Bolt	1	1
215-343-00	Cockpit Decal	-	1
410-131-00	Connector	1	1
510-174-00	Washer	1	1
510-183-00	Washer	2	2
510-170-00	Nut	1	1
510-178-00	Cotter Pin	1	1
510-257-00	Bolt	2	2
510-042-00	Washer	2	2
512-010-00	Cushioned Loop Clamp	2	2
120-094-01	Owner's Manual	1	1
121-005-01	RFMS	1	1
122-017-00	CMM, Cargo Hook	1	1
123-002-02	ICA Manual	1	1

Bill of Materials continued

Table 1.2 Bill of Materials for Kit P/N 200-261-01

Part No.	Description	Qty
528-029-00	Cargo Hook	1
290-403-00	Hook to Man. Rel. Adapter	1
290-744-00	HK Man. Rel. Adapter	1
290-332-00	Attach Bolt	1
410-131-00	Connector	1
510-257-00	Bolt	2
510-042-00	Washer	2
512-010-00	Cushioned Loop Clamp	2
510-252-00	Jam Nut	1
510-178-00	Cotter Pin	1
510-170-00	Nut	1
510-174-00	Washer	1
510-183-00	Washer	2
120-094-01	Owner's Manual	1
121-005-01	RFMS	1
122-017-00	CMM, Cargo Hook	1
123-002-01	ICA Manual	1

Table 1.3 Bill of Materials for Kit P/N 200-362-00

Part No.	Description	Qty
268-024-02	Manual Release Cable	1
290-773-00	Cargo Hook Bumper	1
290-775-00	Attach Bolt	1
510-178-00	Cotter Pin	1

Specifications

Table 1.4 Specifications (528-029-00, -02 Cargo Hook)

Design 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 lbs. Max.(.600" travel)
Electrical requirements	22-32 VDC 6.9 - 10 amps
Minimum release load	0 lbs.
Unit weight	3.0 lbs (1.4 kg.)
Mating electrical connector	PC06P8-2S

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 and an external manual release cable 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.

The optional cargo hook with Surefire includes a short time delay circuit built into the cargo hook's electrical release system (cargo hook P/N 528-029-02). This feature is a safety enhancement 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 time delay feature requires that the release switch be depressed and held for more than a 1/2 second to open the cargo hook. Surefire makes the electrical release a more deliberate pilot command. If the cargo hook must be released immediately, use the mechanical backup release.

In addition to its P/N, a cargo hook with Surefire can be identified by a gold color solenoid housing (see Figure 1.1). Also a placard on the underside of the solenoid housing indicates that the electrical release is delayed by ½ second.

NOTICE

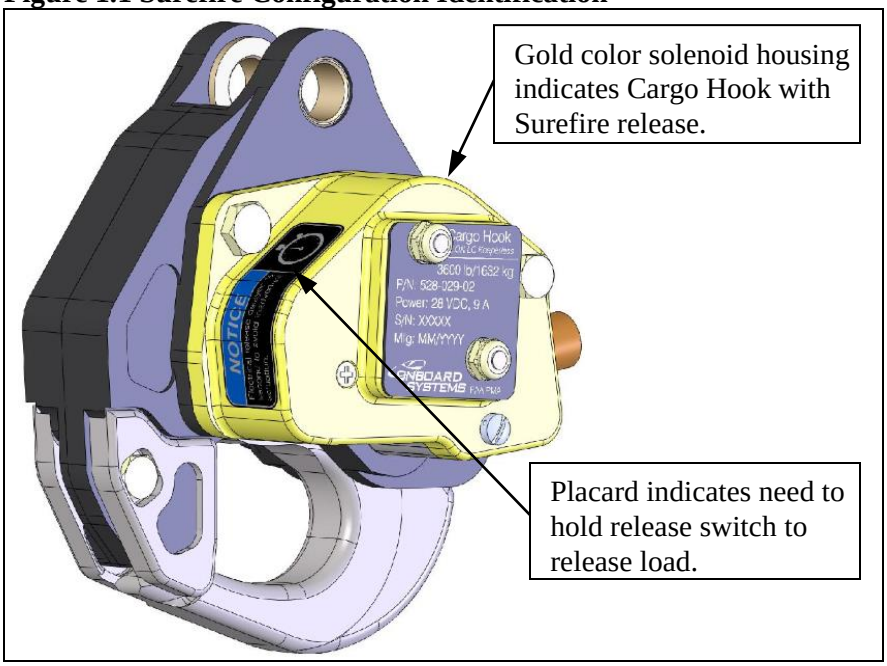
The 528-029-02 cargo hook includes an electronic delay of approximately ½ second. It is necessary to press and hold the cargo hook release button.

⚠ 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 1.1 Surefire Configuration Identification



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.

Cargo Hook Installation

Remove the existing cargo hook from the aircraft by disassembling it from the load cell. Disconnect the electrical release connector from the cargo hook. Remove the existing external manual release cable.

Attach the new cargo hook and bumper to the load cell (or load link) on the swing or sling suspension using the hardware supplied, as illustrated below. The cargo hook must be oriented as shown in Figure 2.2.

NOTICE

The cargo hook bumper is included with Kit P/N 200-353-00 only. It may be retrofitted to kit P/N 200-261-01 along with replacement of Attach Bolt P/N 290-332-00 with Attach Bolt P/N 290-775-00.

Figure 2.1 Cargo Hook Installation

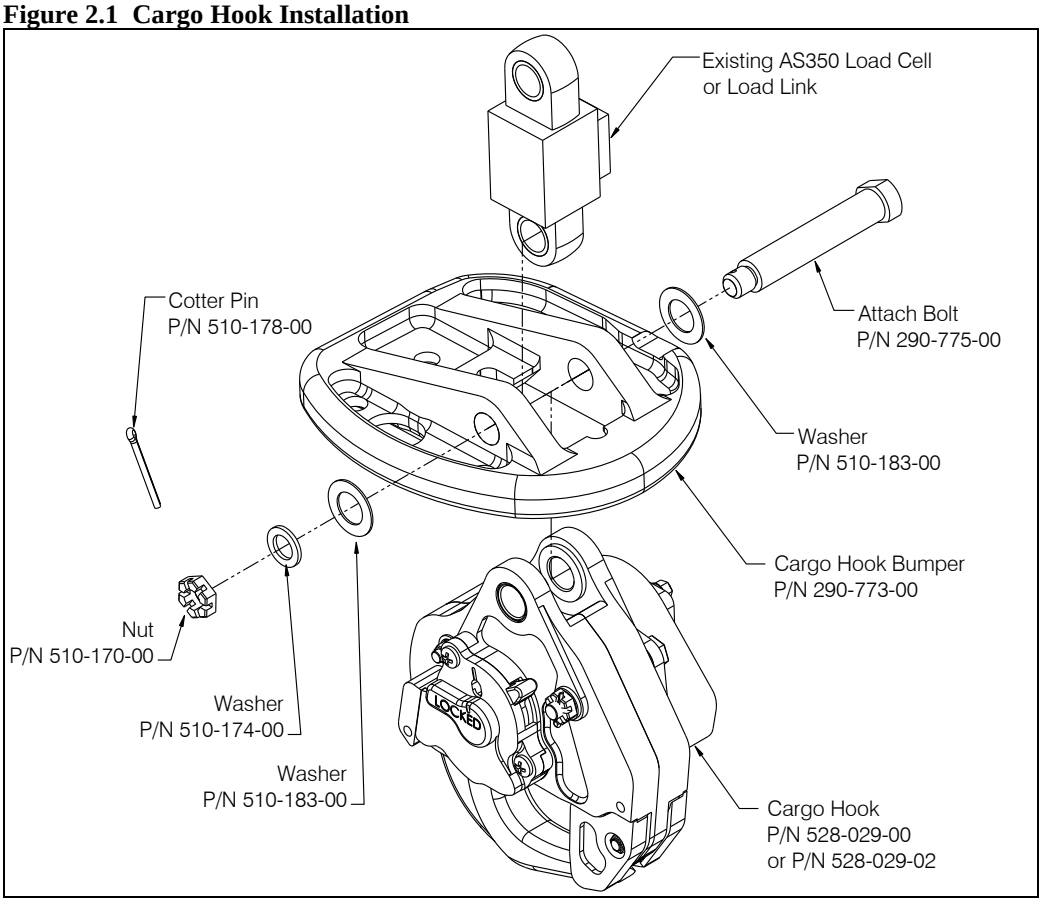
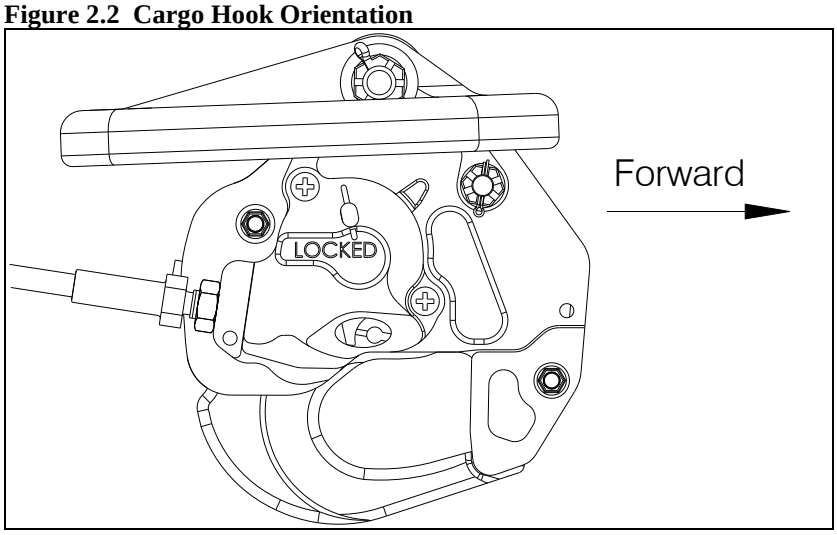


Figure 2.2 Cargo Hook Orientation



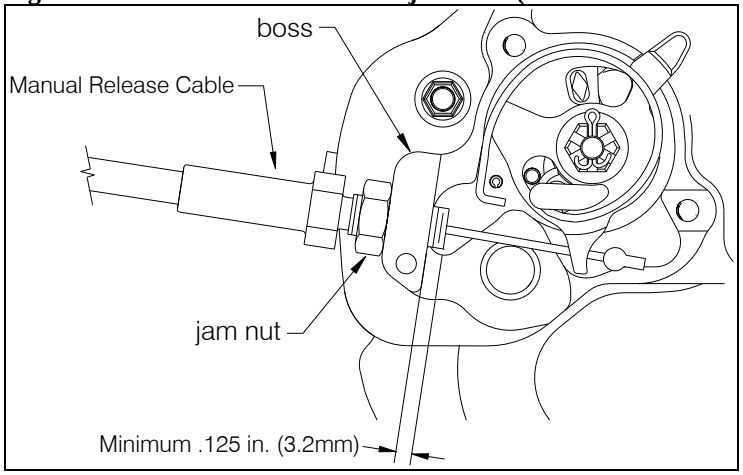
Connect the manual release cable (P/N 268-024-02) to the cargo hook per the following instructions:

NOTICE

The 268-024-02 manual release cable is included with Kit P/Ns 200-353-00 and 200-353-01. It also may be be used to replace the OEM cable used with kit P/N 200-261-01.

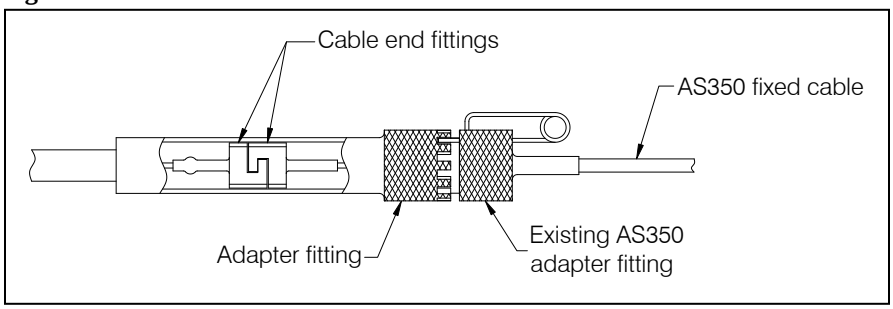
- Remove the manual release cover from the cargo hook.
- Thread the fitting at the end of the manual release cable into the manual release boss on the cargo hook side plate until the threads protrude approximately .125 inches beyond the boss (applicable to P/N 268-024-02) and secure with jam nut (as shown in Figure 2.3). 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 2.3 Initial Release Cable Adjustment (P/N 268-024-02 shown)



- Route the manual release cable from the cargo hook in the same manner as the OEM manual release cable that was removed.
- Connect the other end of the manual release cable to the fixed section of the existing AS350 manual release cable by mating the cable end fittings together as shown below (slide back the Adapter Fitting to access fitting on removable cable). Slide the Adapter Fitting forward and thread it onto the existing AS350 fitting, and engage a castellation on the Adapter Fitting with the retaining pin to lock it in place.

Figure 2.4 Manual Release Cable Junction



- At the cargo hook, place the cable ball end fitting into the manual release lever fork as illustrated in Figure 2.5.

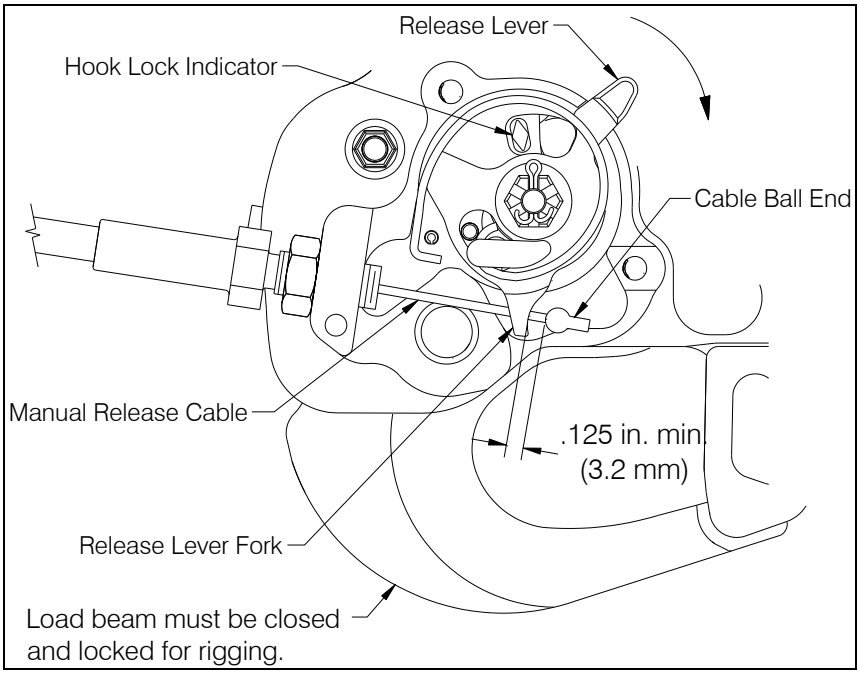
⚠ CAUTION

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 readily felt as the lever rotates relatively easily for several degrees as the free play is taken up) and measure the cable ball end free play with the manual release lever in the cockpit in the non-release position. Adjust the manual release cable system to obtain a minimum of .125 inches (3.2mm) of freeplay at the fork fitting as shown in Figure 2.5.

- Re-install the manual release cover with the two screws.
- Snap the Adapter Fitting into the existing clip mounted to the belly of the helicopter.

Figure 2.5 Manual Release Cable Rigging



The cargo hook kit includes an electrical connector (P/N 410-131-00) to be spliced into the existing Airbus Helicopters harness.

Cut off the existing electrical connector and splice in the supplied connector, referring to Table 2.1 below for cargo hook connector pin out.

Table 2.1 Cargo Hook Connector

Pin	*Function*
A	Ground
B	Power

CAUTION

Early versions of the cargo hook 528-029-00 were equipped with a suppression diode that will be damaged if the cargo hook electrical connection is 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.

Cargo Hook Installation continued

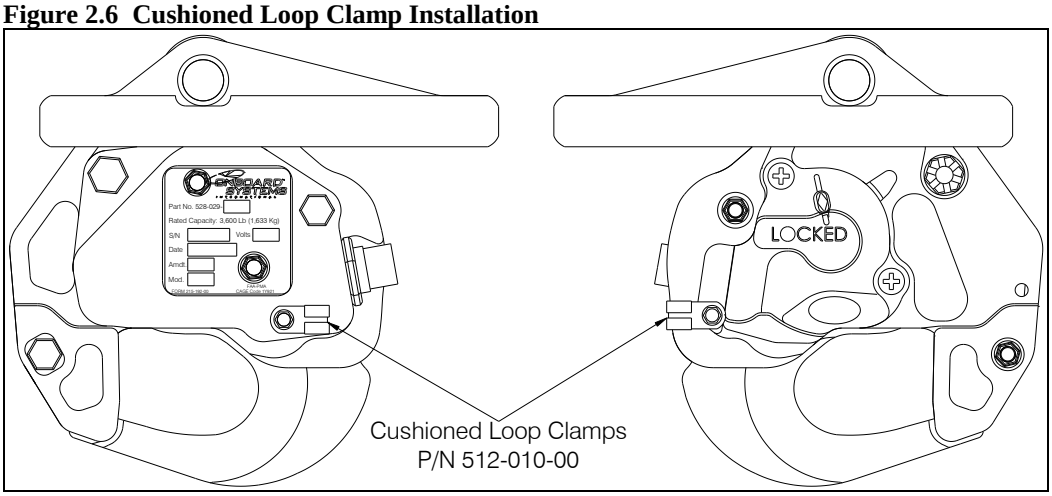
The cargo hook kit includes two cushioned loop clamps (P/N 512-010-00) to be used with the existing elastic cords that are part of the OEM swing suspension installation.

NOTICE

If installing the cargo hook onto a single point suspension (sling) the loop clamps are not needed and can be omitted from the installation.

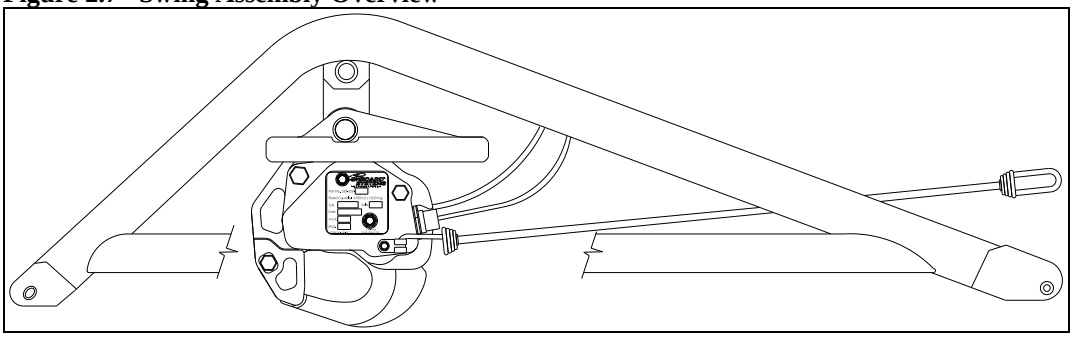
Secure the cushioned loop clamps to each side of the cargo hook (as shown below) using bolts (P/N 510-257-00) and washers (P/N 510-042-00) provided. Safety wire the bolt on the left side of the cargo hook to the electrical release connector and safety wire the bolt on the right side of the cargo hook to the manual release cable jam nut.

Figure 2.6 Cushioned Loop Clamp Installation



Attach the existing two elastic cords to the loop clamps. Refer to the illustration below.

Figure 2.7 Swing Assembly Overview



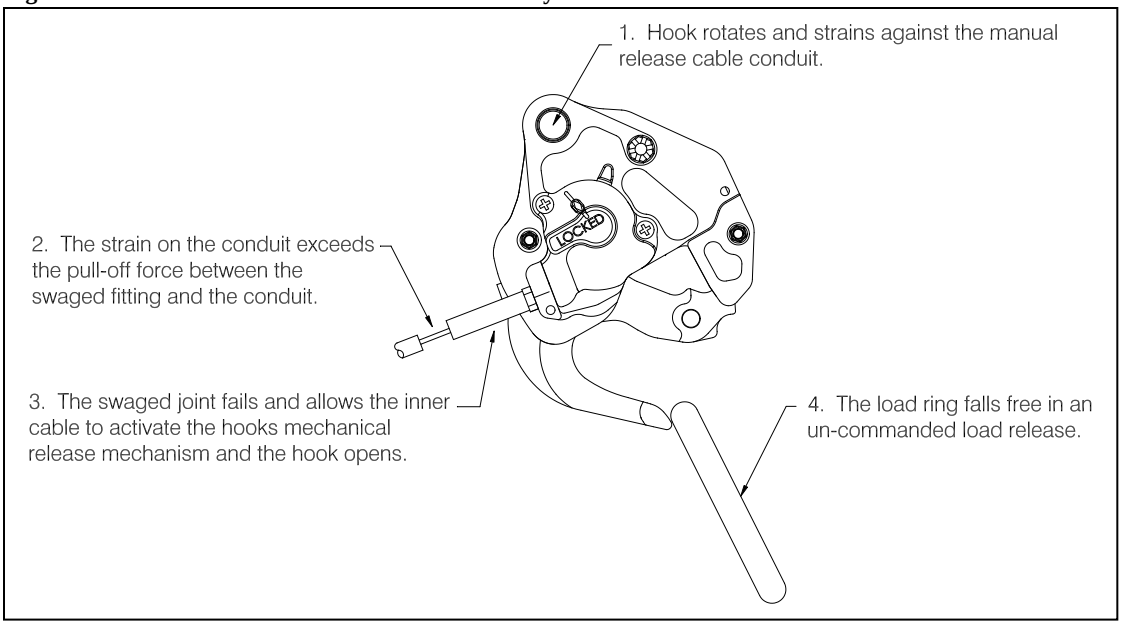
Install the Cockpit Decal (P/N 215-343-00) as near as possible to the Cargo Release switch on the cyclic in a location that is visible to the pilot.

Cargo Hook Installation continued

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 2-6 Un-Commanded Release From Incorrectly Secured Cable



Installation Check-Out

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

1. Swing the installed Cargo Hook to ensure that the manual release cable and the electrical release harness have enough slack to allow full swing of the cargo hook and suspension assembly without straining or damaging the cable or harness. The cable and harness must not be the stops that prevent the Cargo Hook from swinging freely in all directions.

2. With no load on the cargo hook load beam pull the cargo hook mechanical release lever on the collective, the Cargo Hook must release. Reset the cargo hook load beam.

3. Provide power to the electrical release system. Electrical release system operation depends on the cargo hook P/N 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.
- 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.

- Press and release the Cargo Release switch on the cyclic, the load beam should immediately fall to the open 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.

Component Weights

The weight of the Cargo Hook Kit is listed below. Remember to subtract the weight of the cargo hook and components that were replaced.

Table 2-2 Cargo Hook Kit Weight

Item	Weight
Cargo Hook Kit	4.3 lbs (1.95 kgs)

Cargo Hook Location

Refer to the Airbus Helicopters Flight Manual Supplement for external load weight and balance data.

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 121-005-01 into the Rotorcraft Flight Manual.

Section 3
Operation Instructions
Operating Procedures

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

1. Ensure that the electrical release harness and manual release cable do not limit the movement of the hook.
2. Be completely familiar with this manual, particularly the Cargo Hook rigging section.
3. Be completely familiar with all Airbus Helicopters Cargo Hook operating instructions and the ICA Maintenance Manual 123-002-01 or 123-002-02 as applicable.
4. Provide power to the cargo hook electrical release system. Electrical release system operation depends on the cargo hook P/N installed. The following instructions are applicable to cargo hook P/N 528-029-02 which is equipped with Surefire 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.
    - 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.

    - Press the cargo hook release switch on the cyclic and the load beam should fall to the open position.
    - Reset the hook by hand after release. If the hook does not re-latch do not use the unit until the difficulty is resolved.

CAUTION

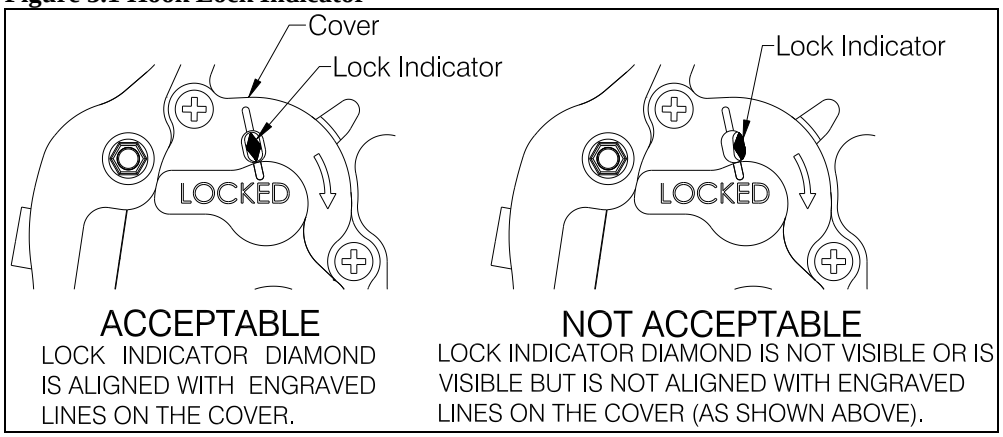
The cargo hook release solenoid is intended to be energized only intermittently. Depressing the electrical release button continuously in excess of 20 sec. will cause the solenoid to overheat, possibly causing permanent damage.

5. 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. In the fully locked position the hook lock indicator must align with the lines on the manual release cover (see Figure 3.1). If the hook does not release or re-latch, do not use the unit until the problem is resolved.

⚠ CAUTION

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

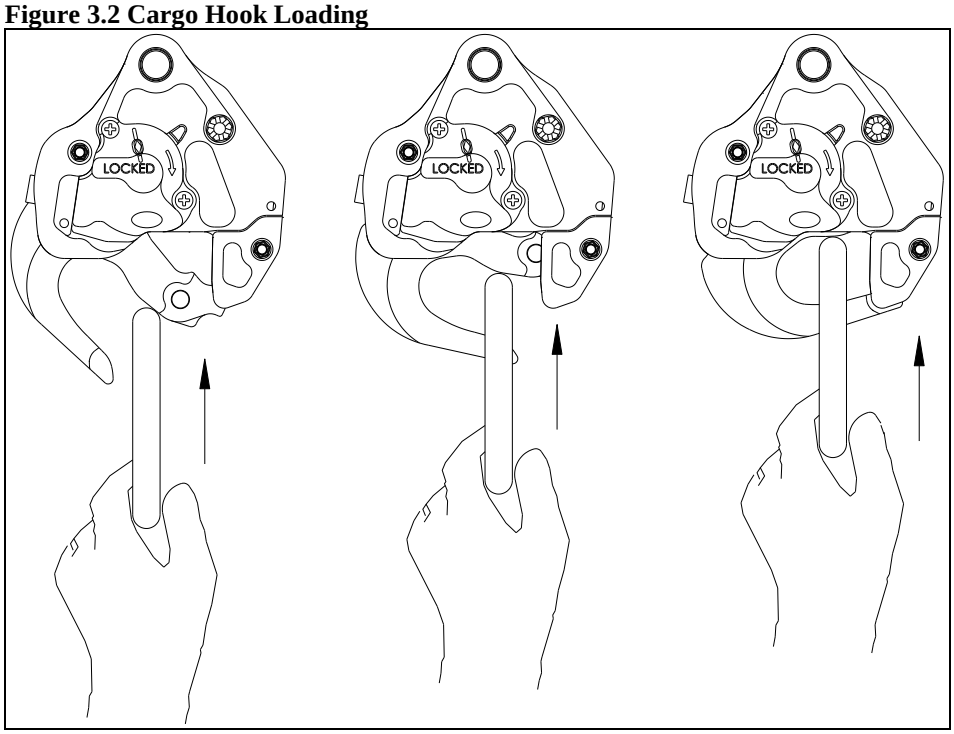
Figure 3.1 Hook Lock Indicator



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 3.2, until an internal latch engages the load beam and latches it in the closed position.

Figure 3.2 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. Figure 3.3 shows the recommended rigging and rigging to avoid but is not intended to represent all rigging possibilities.

⚠ WARNING

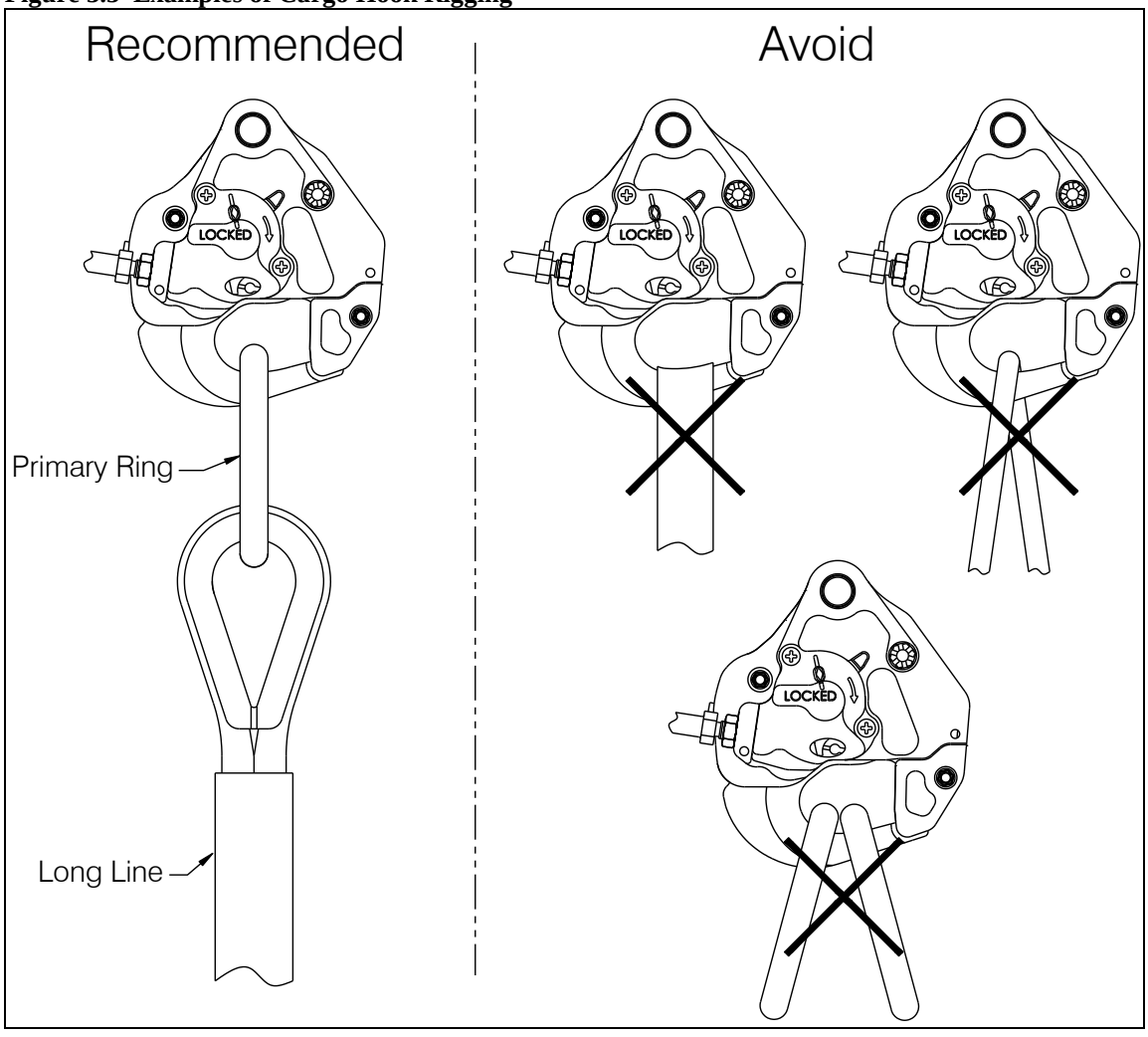
It is the responsibility of the operator to assure the cargo hook will function properly with each rigging.

Cargo Hook Rigging continued

WARNING

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.

Figure 3.3 Examples of Cargo Hook Rigging



Section 4
Maintenance

Refer to the Instructions for Continued Airworthiness (ICA) manual 123-002-02 and Cargo Hook Component Maintenance Manual (CMM) 122-017-00 for maintenance.

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.

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:
  - 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
STC

United States of America

Department of Transportation - Federal Aviation Administration

Supplemental Type Certificate

Number **SR00886SE**

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 **27** *of the* **Federal Aviation Regulations.**

Original Product—Type Certificate Number: H9EU
Make: Airbus Helicopters
Model: AS350B, AS350B1, AS350B2, AS350B3, AS350BA, AS350D, and EC130B4

Description of the Type Design Change: Installation of Onboard Systems International Cargo Hook Kits in accordance with the Master Drawing List (MDL) No. 155-060-00, Revision 21, dated January 27, 2016, or later Federal Aviation Administration (FAA) approved revision.

Limitations and Conditions: 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. Approval of this change in type design applies to: AS350B, AS350B1, AS350B2, AS350BA, and AS350D equipped with either a swing or sling type system; AS350B3 equipped with the sling type system only; and EC130B4 equipped with the swing type system only. For these models and swing/sling configurations, approval of this change applies to rotorcraft which are equipped with: an FAA-approved installation of Breeze Eastern Part Number (P/N) 17149-1, 14027-4, or 14027-7; Siren P/Ns S1609-3, S1609-5, or S1609-6 cargo hooks.

(See Continuation Sheet Page 3 of 3 Pages)

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 6, 2001
Date reissued:
Date amended: 01/02/03; 12/10/04; 10/18/07; 08/11/09; 12/23/11, 2/16/17

By direction of the Administrator

(Signature)

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.

PAGE 1 OF 3 PAGES

STC continued

United States of America

Department of Transportation - Federal Aviation Administration

Supplemental Type Certificate

(Continuation Sheet)

Number **SR00886SE**

Onboard Systems International

Issued:

Reissued:

Amended: 01/02/03; 12/10/04; 10/18/07; 8/11/09; 12/23/11; 2/16/17

Limitations and Conditions continued:

This modification must be maintained in accordance with Instructions for Continued Airworthiness (ICA) Document No. 123-002-00, Revision 7, dated March 26, 2014, Document No. 123-002-01, Revision 2, dated March 10, 2010, or Document No. 123-002-02, Revision 2, dated January 27, 2016, as applicable, or later FAA-accepted revisions. Operated in accordance with RFMS 121-005-00, Revision 3, dated June 9, 2006, or RFMS No. 121-005-01, Revision 2, dated February 13, 2017, as applicable, or later FAA-approved revisions. A copy of this certificate, the applicable FAA-approved RFMS, the Owner's Manual identified in the MDL, and the applicable ICA must be maintained as 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.

- END -

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 8110-2-1 (10-68)

PAGE 3 OF 3 PAGES

Canadian Approval

Transport Canada / Transports Canada
Aviation / Aviation

Suite 620
800 Burrard Street
Vancouver, B.C.
V6Z 2J8

Your file *Votre référence*

Our file *Notre référence*
01-1927

March 27, 2001

Mr. Ron Pirtle
Onboard Systems International
11212 NW St. Helens Road
Portland, OR
97231 USA

Dear Mr. Pirtle,

Subject: Acceptance of FAA STC SR00886SE

This is in response to the FAA Seattle ACO letter dated March 14, 2001 (reference 190S-01-157), requesting Transport Canada approval of the subject STC.

In accordance with our current policy associated with the review of foreign STC's, some STCs applicable to certain categories of aircraft may be accepted solely on the basis of their foreign certification, and do not require the issue of a corresponding certificate by Transport Canada. The subject STC falls within these criteria.

This STC will be entered in the national index of STCs that have been reviewed and accepted by Transport Canada for installation on Canadian registered aeronautical products.

This letter confirms formal acceptance of the referenced STC by Transport Canada.

Yours truly,

Henry Wong
for
Regional Manager
Aircraft Certification

c.c. Mr. Ali Bahrami, Manager Seattle Aircraft Certification Services

Canada

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EASA STC

European Aviation Safety Agency

SUPPLEMENTAL TYPE CERTIFICATE

10016726, 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 (EC) No. 1702/2003 to

ONBOARD SYSTEMS INT.
13915 NW 3rd COURT
VANCOUVER 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 Product TC Number:	**EASA.R.008**
TC Holder:	**EUROCOPTER**
Model:	**AS350B, AS350BA, AS350B1**
Model:	**AS350B2, AS350B3, AS350D**
Model:	**EC130B4**
Original STC Number:	**FAA STC SR00886SE**

EASA Certification Basis:
The original product certification basis as per EASA TCDS.R.008 Issue 04, 23 November 2009.
The Certification Basis for the original product remains applicable to this certificate/ approval.
The certificated noise and/ or emissions levels of the original product are unchanged and remain applicable to this certificate/ approval.

Description of Design Change:
Installation of Cargo Hook Kit Model 200-261-00, 200-261-01, and 200-353-00
This STC is a revision to EASA STC EASA.IM.R.S.01027 Revision 1 through the validation of amendment dated 11 August, 2009 to FAA STC SR00886SE.

See Continuation Sheet(s)

For the European Aviation Safety Agency,

Date of issue: 13.01.2010

Massimo MAZZOLETTI
Certification Manager
Rotorcraft, Balloons, Airships

European Aviation Safety Agency

Associated Technical Documentation:
Definition and installation:
Onboard Systems Master Drawing List Doc. No. 155-060-00, Rev. 11, dated June 11, 2009
Installation of the 200-261-00 Cargo Hook Kit in accordance with Onboard Systems Owner's Manual No. 120-094-00, Rev. 7 dated September 05, 2006
Installation of the 200-261-01 Cargo Hook Kit and 200-353-00 Cargo Hook Kit in accordance with Onboard Systems Owner's Manual No. 120-094-01, Rev. 2 dated May 12, 2009
Inspection and maintenance:
Inspection and maintenance of 200-261-00 Cargo Hook Kit in accordance with section ATA 5 of Onboard Systems Instructions for Continued Airworthiness No. 123002-00, Rev. 4 dated March 26, 2007,
and
Onboard Systems Cargo Hook Service Manual No. 122005-00, Rev. 9 dated January 3, 2006
Inspection and maintenance of 200-261-01 Cargo Hook Kit in accordance with section ATA 5 of Onboard Systems Instructions for Continued Airworthiness No. 123002-01, Rev. 0 dated March 23, 2006,
and
Onboard Systems Cargo Hook Service Manual No. 122017-00, Rev. 4 dated June 9, 2009
Inspection and maintenance of 200-353-00 Cargo Hook Kit in accordance with section ATA 5 of Onboard Systems Instructions for Continued Airworthiness No. 123002-02, Rev. 0 dated May 22, 2009,
and
Onboard Systems Cargo Hook Service Manual No. 122017-00, Rev. 4 dated June 9, 2009
Operation:
Operation of 200-261-00 Cargo Hook Kit in accordance with Onboard Systems RFMS No. 121-005-00, Rev. 3 dated June 09, 2006
Operation of 200-261-01 Cargo Hook Kit and 200-353-00 Cargo Hook Kit in accordance with Onboard Systems RFMS No. 121-005-01, Rev. 1 dated July 1, 2009

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)

Limitations:
The cargo hook kits approved under this STC can be installed on AS 350 B, BA, B1, B2, and D helicopters equipped with Eurocopter swing or sling type systems, or on AS350B3 equipped with Eurocopter sling type system only, or on EC 130B4 equipped with Eurocopter swing type system only, those sling or swing systems being equipped with the following cargo hooks:
- Breeze Eastern P/N 17149-1 or 14027-4, or 14027-7, or
- Siren P/N S1609-3, -5, or -6, or
- Onboard Systems P/N 528-010-00 or 528-023-01

The cargo hook kits approved under this STC are compatible with the installation of an Onboard Systems 200-295-00 load weight system per STC EASA.IM.R.S.01122 (FAA SH1262NW).

Note:
The following numbers are listed on the certificate:
EASA old Project Number: EASA.IM.R.S.01027, REV. 2

SUPPLEMENTAL TYPE CERTIFICATE - 10016726, REV. 2 - ONBOARD SYSTEMS INT.

EASA Form 91, Issue 3 - 11/11/2009

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European Aviation Safety Agency

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

This Certificate shall remain valid unless otherwise surrendered or revoked.

- end -

Note:
The following numbers are listed on the certificate:
EASA old Project Number: EASA.IM.R.S.01027, REV. 2

SUPPLEMENTAL TYPE CERTIFICATE - 10016726, REV. 2 - ONBOARD SYSTEMS INT.

EASA Form 91, Issue 3 - 11/11/2009

ANAC

AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

CERTIFICADO SUPLEMENTAR DE TIPO

(Supplemental Type Certificate)

NÚMERO (Number) **2010S09-08**

Este certificado, emitido com base na Lei nº 7565 "Código Brasileiro de Aeronáutica", de 19 de dezembro de 1986,
(This certificate, issued in the basis of the Law No. 7565 "Código Brasileiro de Aeronáutica", dated 19 December 1986,

é conferido ao (à): (is granted to:) Onboard Systems International
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 therefor as)

especificadas, satisfeito aos requisitos de aeronavegabilidade aplicáveis.
(specified hereon, met the applicable airworthiness requirements.)

Produto Original - Número do Certificado de Tipo: (Original Product – Type Certificate No:) 8812 (ANAC).

Fabricante: (Manufacturer:) Eurocopter France.

Modelo(s): (Model(s):) AS350B1, AS350B2, AS350B3, AS350BA and EC130B4.

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

Fabrication of Onboard System Model 200-261-00, 200-261-01 and Model 200-353-00 Cargo Hook Kit in accordance with Onboard Systems Master Drawing List (MDL) No. 155-060-00, revision 13, dated May 14, 2010, or later approved revision.

This CST validates in Brazil the STC # SR00886SE, issued by FAA (USA).

LIMITAÇÕES E CONDIÇÕES:
(Limitations and Conditions:)

See continuation sheet for applicable data.

DATAS:
(Dates of:)

Do Requerimento: (Application:) 28 July 2010 **Da emissão:** (Issue:) 14 Sep. 2010 **Da reemissão:** (Reissue:) 23 Sep. 2010

HÉLIO TARQUINIO JÚNIOR
Gerente-Geral - Substituto, Certificação de Produto Aeronáutico
(Acting Manager, Aeronautical Product Certification)

DINO ISHIKURA
Superintendente de Aeronavegabilidade
(Airworthiness Superintendent)

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ANAC

AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

Folha de Continuação ao
(Continuation Sheet to)

CERTIFICADO SUPLEMENTAR DE TIPO
(Supplemental Type Certificate)

NÚMERO 2010S09-08
(Number)

LIMITAÇÕES E CONDIÇÕES:
(Limitations and Conditions:)

I. The approval of this type design change should not be extended to other aircraft of this model 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 aircraft.

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 FAA approved Airplane Flight Manual Supplement (AFMS) specified below:

- Document No. 121-005-00, Rev. 3, dated 09 June 2010, or later approved revision, for the Onboard Systems 200-261-00 Cargo Hook; and
- Document No. 121-005-01, Rev. 1, dated 01 July 2010, or later approved revision, for the Onboard Systems 200-261-01 or the 200-353-00 Cargo Hook.

IV. Installation of the Cargo Hook Kit in accordance with the following approved documents:

- Document No. 120-094-00, Rev. 9, dated 08 Mar. 2010, or later approved revision, for the Onboard Systems 200-261-00 Cargo Hook; and
- Document No. 120-094-01, Rev. 4, dated 08 Mar. 2010, or later approved revision, for the Onboard Systems 200-261-01 or the 200-353-00 Cargo Hook.

V. This modification must be Inspected and Maintained in accordance with section ATA 5 of the applicable FAA approved Onboard Systems Instructions for Continued Airworthiness specified below:

- Document No. 123-002-00, Rev. 6, dated 10 Mar. 2010, or later approved revision, and Onboard Systems International Cargo Hook Service Manual No. 122-005-00, Rev. 9, dated 03 Jan. 2006 for the Onboard Systems 200-261-00 Cargo Hook;
- Document No. 123-002-01, Rev. 2, dated 10 Mar. 2010, or later approved revision, and Onboard Systems International Cargo Hook Service Manual No. 122-017-00, Rev. 4, dated 09 June 2006 for the Onboard Systems 200-261-01 Cargo Hook; and

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ANAC

AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

Folha de Continuação ao
(Continuation Sheet to)

CERTIFICADO SUPLEMENTAR DE TIPO
(Supplemental Type Certificate)

NÚMERO **2010S09-08**
(Number)

LIMITAÇÕES E CONDIÇÕES:
(Limitations and Conditions:)

– Document No. 123-002-02, Rev. 1, dated 09 Mar. 2010, or later approved revision, and Onboard Systems International Cargo Hook Service Manual No. 122-017-00, Rev. 4, dated 09 June 2006 for the Onboard Systems 200-353-00 Cargo Hook.

VI. Approval of this change in type design applies to the AS350B1, AS350B2, AS350BA equipped with either a swing or sling type system, and AS350B3 equipped with sling type only, or the EC130B4 equipped with swing type system only, which are equipped with an FAA approved installation of Breeze Eastern part number (P/N) 17149-1, 14027-4, or 14027-7, or Siren P/N S1609-3, -5, or -6, or Onboard System 528-023-01 cargo hooks.

VII. A copy of this Certificate and the Supplement referred on item III, as applicable, above shall be maintained as part of the permanent records of the modified aircraft.

VIII. Reissued on 23 Sep. 2010 to include the AS350B2 rotorcraft model.

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H.02-3415-0

ANAC

AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

CERTIFICADO SUPLEMENTAR DE TIPO

(Supplemental Type Certificate)

NÚMERO (Number) **2010S09-07**

Este certificado, emitido com base na Lei nº 7565 "Código Brasileiro de Aeronáutica", de 19 de dezembro de 1986,
(This certificate, issued in the basis of the Law No. 7565 "Código Brasileiro de Aeronáutica", dated 19 December 1986,

é conferido ao (à): (is granted to:) Onboard Systems International
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 therefor as)

especificadas, satisfeito aos requisitos de aeronavegabilidade aplicáveis.
(specified hereon, met the applicable airworthiness requirements.)

Produto Original - Número do Certificado de Tipo: (Original Product – Type Certificate No:) 84 (FN157) (DGAC).

Fabricante: (Manufacturer:) Eurocopter France.

Modelo(s): (Model(s):) AS350B.

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

Fabrication of Onboard System Model 200-261-00, 200-261-01 and Model 200-353-00 Cargo Hook Kit in accordance with Onboard Systems Master Drawing List (MDL) No. 155-060-00, revision 13, dated May 14, 2010, or later approved revision.

This CST validates in Brazil the STC # SR00886SE, issued by FAA (USA).

LIMITAÇÕES E CONDIÇÕES:
(Limitations and Conditions:)

See continuation sheet for applicable data.

DATAS:
(Dates of:)

Do Requerimento: (Application:) 28 July 2010 **Da emissão**: (Issue:) 14 Sep. 2010 **Da reemissão**: (Reissue:)

HÉLIO TARQUINIO JÚNIOR
Gerente-Geral - Substituto, Certificação de Produto Aeronáutico
(Acting Manager, Aeronautical Product Certification)

DINO ISHIKURA
Superintendente de Aeronavegabilidade
(Airworthiness Superintendent)

F-400-01E (08.10)

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AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

Folha de Continuação ao
(Continuation Sheet to)

CERTIFICADO SUPLEMENTAR DE TIPO
(Supplemental Type Certificate)

NÚMERO **2010S09-07**
(Number)

LIMITAÇÕES E CONDIÇÕES:
(Limitations and Conditions:)

I. The approval of this type design change should not be extended to other aircraft of this model 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 aircraft.

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 FAA approved Airplane Flight Manual Supplement (AFMS) specified below:

- Document No. 121-005-00, Rev. 3, dated 09 June 2010, or later approved revision, for the Onboard Systems 200-261-00 Cargo Hook; and
- Document No. 121-005-01, Rev. 1, dated 01 July 2010, or later approved revision, for the Onboard Systems 200-261-01 or the 200-353-00 Cargo Hook.

IV. Installation of the Cargo Hook Kit in accordance with the following approved documents:

- Document No. 120-094-00, Rev. 9, dated 08 Mar. 2010, or later approved revision, for the Onboard Systems 200-261-00 Cargo Hook; and
- Document No. 120-094-01, Rev. 4, dated 08 Mar. 2010, or later approved revision, for the Onboard Systems 200-261-01 or the 200-353-00 Cargo Hook.

V. This modification must be Inspected and Maintained in accordance with section ATA 5 of the applicable FAA approved Onboard Systems Instructions for Continued Airworthiness specified below:

- Document No. 123-002-00, Rev. 6, dated 10 Mar. 2010, or later approved revision, and Onboard Systems International Cargo Hook Service Manual No. 122-005-00, Rev. 9, dated 03 Jan. 2006 for the Onboard Systems 200-261-00 Cargo Hook;
- Document No. 123-002-01, Rev. 2, dated 10 Mar. 2010, or later approved revision, and Onboard Systems International Cargo Hook Service Manual No. 122-017-00, Rev. 4, dated 09 June 2006 for the Onboard Systems 200-261-01 Cargo Hook; and

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AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

Folha de Continuação ao
(Continuation Sheet to)

CERTIFICADO SUPLEMENTAR DE TIPO
(Supplemental Type Certificate)

NÚMERO (Number) **2010S09-07**

LIMITAÇÕES E CONDIÇÕES:
(Limitations and Conditions:)

– Document No. 123-002-02, Rev. 1, dated 09 Mar. 2010, or later approved revision, and Onboard Systems International Cargo Hook Service Manual No. 122-017-00, Rev. 4, dated 09 June 2006 for the Onboard Systems 200-353-00 Cargo Hook.

VI. Approval of this change in type design applies to the AS350B equipped with either a swing or sling type system which are equipped with an FAA approved installation of Breeze Eastern part number (P/N) 17149-1, 14027-4, or 14027-7, or Siren P/N S1609-3, -5, or -6, or Onboard System 528-023-01 cargo hooks.

VII. A copy of this Certificate and the Supplement referred on item III, as applicable, above shall be maintained as part of the permanent records of the modified aircraft.

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

F-400-01E (08.10)

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