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Owner's Manual
Fuel Drain Guard Kit
Airbus Helicopters AS350 Series, EC130B4

Part Number 200-299-00

Owner's Manual Number 120-116-00
Revision 9
08/17/15

ONBOARD™ SYSTEMS
INTERNATIONAL

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www.OnboardSystems.com

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RECORD OF REVISIONS

Revision	*Date*	*Page(s)*	*Reason for Revision*
0	04/12/05	All	Initial Release
1	09/01/05	vi, 1-1, 2-1 – 2-8	Added Fuel Valve Seal, P/N 610-024-00, to kit. Added detail to installation instructions.
2	03/24/06	2-2	Updated manufacturer part number for fuel valve seal.
3	04/17/06	2-5	Added note regarding guard fit.
4	06/04/07	v, 2-4, 2-5	Added notes regarding guard fit to key on fuel tank Added warnings, cautions and notes explanation. Updated warnings, cautions and notes to current format.
5	04/18/08	2-6 & 2-7	Added caution explaining which Eurocopter cable grip to use. Added step to cable adjustment.
6	02/23/10	1-1, 2-1	Corrected referenced AD no. to 2005-03-08 (was 2005-03-05).
7	03/11/11	1-1, 1-2, 4-1	Added EC130B4 model, updated instructions for returning a system to the factory.
8	06/24/14	1-1, 1-2, 2-2, 2-4, 2-7, 5-1	Corrected Airbus Helicopters part numbers for lever and valve. Replaced fuel drain guard P/N 290-889-00 with 290-889-01.
9	08/17/15	1-1	Added fuel tank P/N 350A55-1015-0252.

Register Your Products for Automatic Notifications

Onboard Systems offers a free notification service via fax or email for product alerts and documentation updates. By registering your Onboard Systems products at our website, we will be able to contact you if a service bulletin is issued, or if the documentation is updated.

You can choose to receive notices on an immediate, weekly, or monthly schedule via fax, email or both methods. There is no charge for this service. Please visit our website at www.onboardsystems.com/notify.php to get started.

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CONTENTS

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Section 1
General Information

Introduction

The 200-299-00 Fuel Drain Guard Kit is approved for installation on Airbus Helicopters AS350 B2, B3, and EC130B4 models and on AS350B, B1, BA, and D models that have been retrofitted with the B-2 style dual fuel pump type tank. The Airbus Helicopters part number for this tank is 350A55-1015-0251 or 350A55-1015-0252. This kit is intended for helicopters with fuel drain lever P/N 350A55-1043-20 modified per AD 2005-03-08 (new P/N 350A08-2547-20) or fuel drain lever P/N 350A55-1043-21.

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 Fuel Drain Guard Kit, if shortages are found contact the company from whom the system was purchased.

Table 1-1 Bill of Materials (P/N 200-299-00)

Part Number	Description	Quantity
290-888-00	Retainer	1
290-889-01*	Guard	1
290-893-00	Bracket	1
510-526-00	Cotter Pin	2
120-116-00	Owner's Manual	1
610-024-00	Seal, fuel valve	1
123-020-00	ICA Maintenance Manual	1

*Fuel drain guard P/N 290-889-01 supersedes fuel drain guard P/N 290-889-00 and includes a slot for inspection of the gap between the lever and the fuel drain valve.

The following is *not* included with the Fuel Drain Guard Kit and should be obtained before installation is begun.

Table 1-2 Needed Supplies

Part Number	Description	Quantity
PR1422-B	Sealant	AR

Theory of Operation

The Fuel Drain Guard Kit protects the fuel drain valve on AS350/EC130 helicopters from accidentally being opened or damaged by the cargo swing. The fuel drain valve is located on the bottom of the fuel tank and extends below the belly skin of the helicopter. In this position it is vulnerable to damage or uncommanded opening. The most common occurrence of the cargo hook swing suspension striking the fuel drain valve happens when the helicopter lands on snow or on uneven terrain. The swing has limited ground clearance and when the skid gear sinks into the snow, the swing suspension is pushed upward into the fuel drain valve, opening it and causing fuel to drain. The fuel drain valve can also be opened in flight by the swing suspension flying vertically due to aerodynamics when ferrying with no load or from recoil effects from releasing large cargo hook loads.

The Fuel Drain Guard Kit provides mechanical protection for the fuel drain valve to prevent accidental contact while interfacing with Airbus Helicopters' existing valve, lever and control cable. The kit includes a cable bracket, which replaces Airbus Helicopters' bracket and provides an optimized mounting point for the control cable.

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.

Fuel Drain Guard Installation

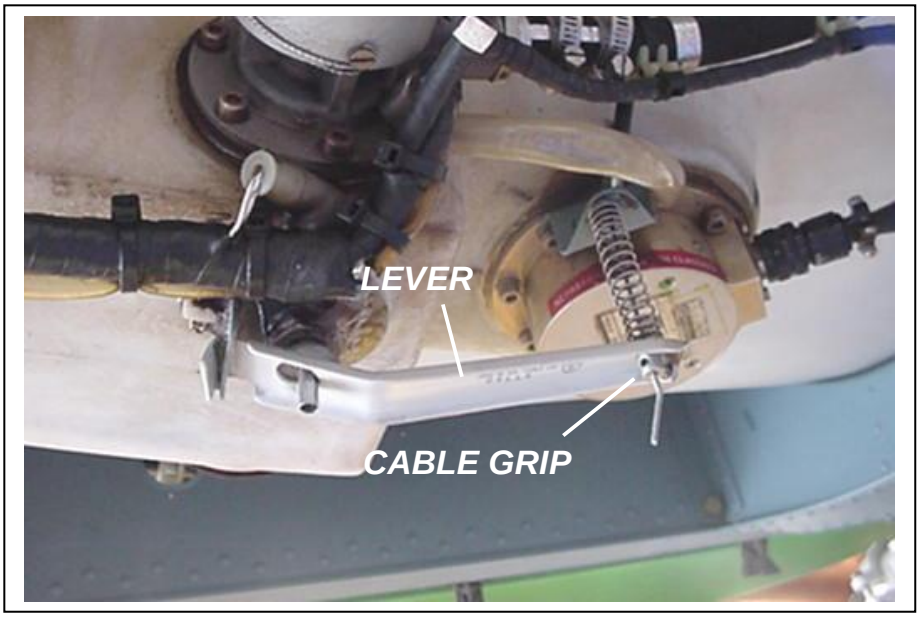
Preparation

- Obtain the materials given in Table 1-2.
- Verify that the fuel drain lever has been modified per AD 2005-03-08 requirements (as applicable).
- Completely drain the fuel from the fuel tank.

Disassembly

- Remove the aft lower cowling from the helicopter to access the fuel tank.
- Begin disassembly of the fuel drain assembly by disconnecting the fuel drain control cable from the Lever (Airbus Helicopters P/N 350A55-1043-21). To free the control cable, remove the Sleeve (Airbus Helicopters P/N N1-5ALU) and Cable Grip (Airbus Helicopters P/N 58-2-009). See Figure 2-1.

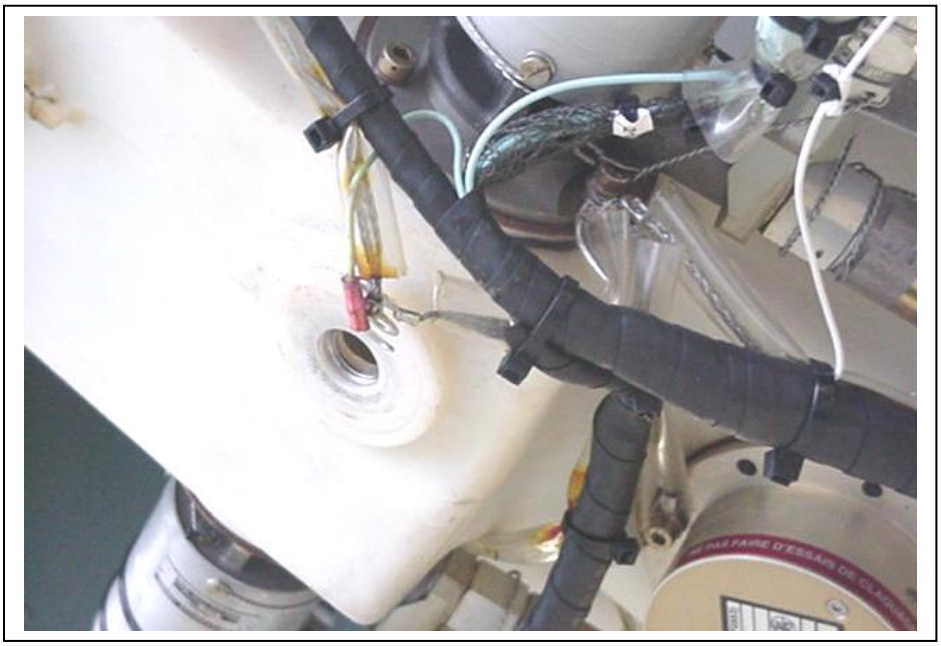
Figure 2-1 Removing Control Cable



Fuel Drain Guard Installation continued

- Remove and retain spring (Airbus Helicopters P/N 350A55-1044-21) and Lever.
- Remove the cable support bracket. Retain the two attachment screws.
- Remove the connections from the common ground point on the lever retainer.
- Remove the safety wire securing the Fuel Drain Valve (Airbus Helicopters P/N 350A52-1008-01). Remove the Fuel Drain Valve and the Retainer from the tank. Discard used Fuel Valve Seal (Airbus Helicopters P/N SD16X-21P).
- Remove the residual sealant from the tank, taking care to not mar the sealing surface. Prepare the area for sealing per Airbus Helicopters Standard Practices Manual.

Figure 2-2 Fuel Drain Disassembly Complete

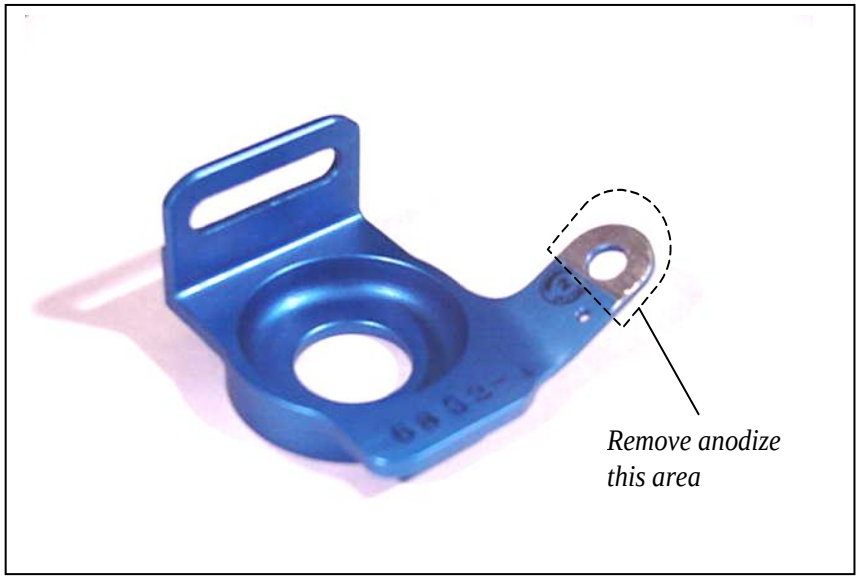


Fuel Drain Guard Installation continued

Install Duel Drain Guard

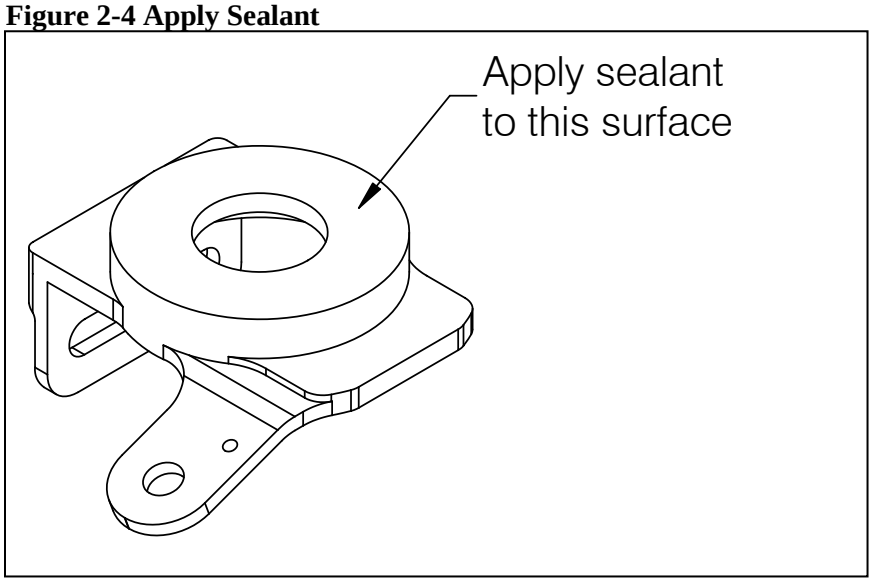
- ❑ Prepare the Retainer (P/N 290-888-00) for electrical bonding by removing the anodize from the area shown in Figure 2-3.

Figure 2-3 Prepare Retainer



- ❑ Prepare PR1422-B or equivalent fuel tank sealant per Airbus Helicopters Standard Practices Manual. Apply sealant to Retainer as shown in Figure 2-4. Retain unused sealant to ensure proper cure.

Figure 2-4 Apply Sealant



Fuel Drain Guard Installation continued

- Position and hold the Guard (P/N 290-889-01) on the fuel tank by aligning the notch in the Guard with key in the fuel tank. See Figure 2-5.

Figure 2-5 Position Guard

NOTICE

On some aircraft, the guard may have to be modified to fit the key on the fuel tank. In these cases, the sides of the clearance slot on the guard should be widened the minimum amount necessary in order to fit over the key. See figures 2-6 and 2-7.

Figure 2-6 Fuel Tank Key

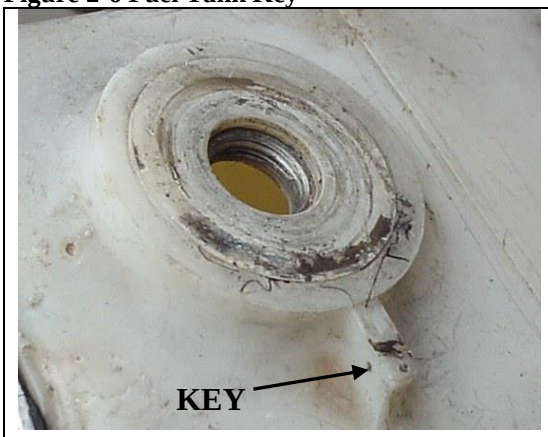
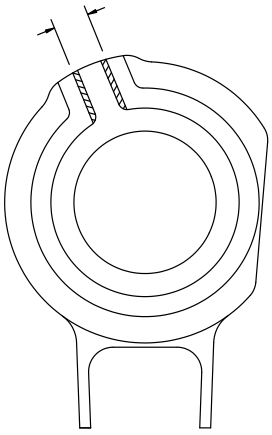


Figure 2-7 Modification of Guard Slot



Fuel Drain Guard Installation continued

- Carefully place the Retainer inside the Guard by inserting the tab through the slot in the Guard. Press the retainer to the tank firmly and center it about the drain hole. See Figure 2-8.

Figure 2-8 Retainer/Guard Assembly

- Secure the Guard and Retainer by re-installing the Fuel Drain Valve with Fuel Valve Seal, P/N 610-024-00 (Airbus Helicopters P/N SD16X-21P). Use a flat-blade screwdriver to prevent the Retainer from twisting when tightening the Fuel Drain Valve. Torque per Airbus Helicopters specifications.

NOTICE

The guard is not intended to fit tightly with the fuel tank. When properly installed, the guard should have freedom to move slightly.

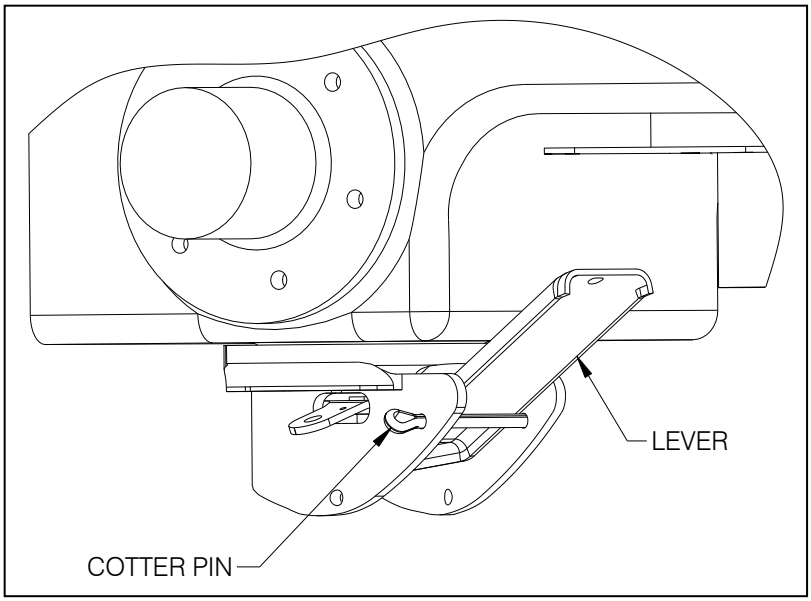
- Secure the Fuel Drain Valve with safety wire using the small hole in the retainer tab.

- Re-install the electrical connections to the new Retainer tab per Airbus Helicopters Electrical Bonding Procedure. Refer to Airbus Helicopters Standard Practices Manual, 20.02.07.

- Install the Lever by placing it in Retainer slot and rotating upwards. Secure with cotter pin (P/N 510-526-00). See Figure 2-9.

Fuel Drain Guard Installation continued

Figure 2-9 Install Lever



- Install a second cotter pin through the other holes in the Guard (this cotter pin is for valve protection only and is not used for rigging purposes).
- Prepare to install Bracket (P/N 290-893-00) by threading the control cable through the Bracket hole. Install Bracket using the two screws removed previously.
- Pass the cable through the spring and then the Lever. Install the Sleeve and Cable Grip.

CAUTION

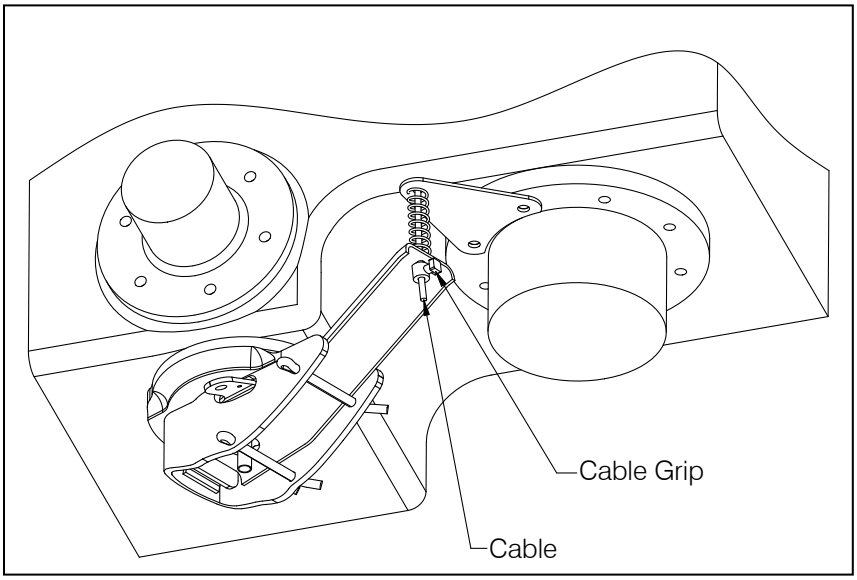
To avoid inadvertent fuel loss, Airbus Helicopters P/N 58-2-009 Cable Grip must be used with this STC.

Fuel Drain Guard Installation continued

Adjustment

- Adjust the cable travel by doing the following: allow the lever to rest against the cotter pin stop. Slide the Cable Grip up to the bottom of the lever and secure. See Figure 2-10.

Figure 2-10 Adjust Cable Travel



- Check the cable adjustment with the release handle on the side of the aircraft. There should be a minimum of .25 inch (6mm) cable travel before valve opens. Adjust the Cable Grip as required.

Leak Test

- Allow the sealant to cure per Airbus Helicopters Standard Practices Manual before adding fuel. Verify proper cure of unused sealant.

- Add fuel to the tank and check for leakage.

- Reinstall aft lower cowling. Check for clearance between Guard and cowling. If required trim cowling cutout to provide a min of .125 inch (3.5mm) clearance between the cowling and guard. See Figure 2-11 for completed installation.

Fuel Drain Guard Installation continued

Figure 2-11 Installation Complete

Installation Check-Out

After installation of the fuel drain guard kit, perform the following functional check.

1. Pull the handle on the side of the helicopter and verify that fuel is dispensed from the valve.

Component Weights and CG

The weight of the Fuel Drain Guard is listed below. When performing weight and balance calculations remember to deduct equipment removed, such as brackets, etc.

Table 2-2 Component Weight

Item	Weight	Station
Fuel Drain Guard Kit	0.40 lbs (0.15 kgs)	135 in. (3430 mm)

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.

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Section 3
Operation Instructions

Operating Procedures

1. There are no special operating procedures. Fuel drain valve will operate per Airbus Helicopters instructions.

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Section 4
Maintenance

Refer to the Instructions for Continued Airworthiness (ICA) manual 123-020-00 for maintenance of the fuel drain guard.

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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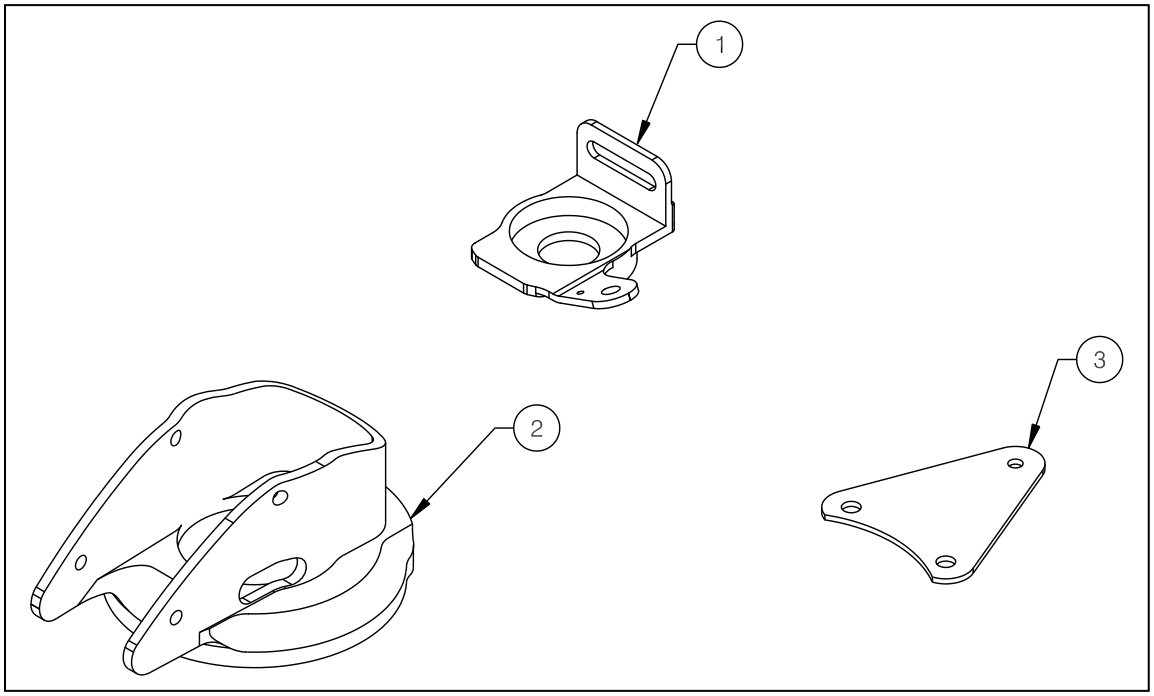
Section 5
System Part Numbers

200-299-00 Fuel Drain Guard Kit



Item	Part Number	Description	Qty
1	290-888-00	Retainer	1
2	290-889-01	Guard	1
3	290-893-00	Bracket	1
4*	510-526-00	Cotter Pin	2
5*	610-024-00	Seal, fuel valve	1

*Item not shown

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Section 6
Certification
STC

United States of America
Department of Transportation—Federal Aviation Administration

Supplemental Type Certificate

Number **SR01588SE**

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

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part **27** *of the* **Federal Aviation Regulations.**

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

Description of the Type Design Change: Fabrication of Onboard Systems Model 200-299-00 Fuel Drain Guard Kit in accordance with Federal Aviation Administration (FAA) approved Onboard Systems Master Drawing List No. 155-111-00, Rev. 6, dated March 11, 2011, or later FAA-approved revision and Installation of the Fuel Drain Guard Kit in accordance with FAA-approved Onboard Systems Owner's Manual No. 120-116-00, Rev. 7, dated March 11, 2011, or later FAA-approved revisions. Inspect and Maintain Fuel Drain Guard Kit in accordance with Section 5 of FAA-approved Onboard Systems Instructions for Continued Airworthiness (ICA) Document 123-020-00, Rev. 3, dated March 11, 2011, or later FAA-approved revision.

Limitations and Conditions: Approval of this change in type design applies to only those Eurocopter model rotorcraft listed. This approval should not be extended to helicopters 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 helicopter. A copy of this Certificate and the FAA-approved ICA, Onboard Systems ICA, Document 123-020-00, Rev 3, dated March 11, 2011, or later FAA-approved revision, must be maintained as part of the permanent records for the modified aircraft.

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: February 18, 2005
Date of issuance: August 17, 2005
Date reissued: September 29, 2005
Date amended: July 5, 2011

FEDERAL AVIATION ADMINISTRATION

By direction of the Administrator

(Signature)

Acting 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 (10-68) PAGE 1 OF 2 PAGES

Canadian Approval

Transport Canada / Transports Canada

Civil Aviation / Aviation Civile

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

Your file Votre référence

Our file Notre référence
NAPA# P-11-0277
RDIMS#7051438

October 11, 2011

Mr. Mark Hanson
Onboard Systems International
13915 NW 3rd Court
Vancouver, WA 98685
USA

Subject: Acceptance of amended Foreign STC SR01588SE

Dear Mr. Hanson

This is in response to FAA letter dated September 1, 2011 requesting Transport Canada approval of the subject STC.

In accordance with our current policy associated with the review of foreign STCs, 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,

Michael Chan
Regional Engineer
Aircraft Certification
Pacific Region

Cc. Manager, Seattle Aircraft Certification Office,

EASA Approval

European Aviation Safety Agency

SUPPLEMENTAL TYPE CERTIFICATE

EASA.IM.R.S.01164

This certificate, established in accordance with Regulations (EC) No 1592/2002 and (EC) No 1702/2003 and issued to:

ONBOARDS SYSTEMS INTERNATIONAL
13915 NW 3rd Court
VANCOUVER Wa 98685
USA

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 Type Certificate number: *DGAC TC N° 84, EASA R 008*
Manufacturer: *Eurocopter*
Model: *Eurocopter AS 350 B, B1, B2, B3, BA, D*
Original STC Number: *FAA STC SR01588SE*

Description of Design Change:

ONBOARD SYSTEMS fuel drain guard kit for Eurocopter AS 350 series helicopter.
Validation of FAA STC SR01588SE

European Aviation Safety Agency

Associated Technical Documentation:

Refer to installation instructions, inspection and maintenance instructions listed in FAA STC SR01588SE reissued September 29, 2005

Limitations and Conditions:

Refer to FAA STC SR01588SE reissued September 29, 2005

This STC is approved only for the product configuration as defined in the approved design data referred to in the paragraph "Description". Compatibility with other aircraft/engine configurations shall be determined by the installer.

This certificate shall remain valid unless otherwise surrendered or revoked.

For the European Aviation Safety Agency,
Date of Issue: March 06, 2006

Massimo MAZZOLETTI
Certification Manager
Rotorcraft, Balloons and Airships