	<b>Service Bulletin</b>	
	<b>Flight Design GmbH</b> Zum Tower 4 01917 Kamenz Germany Tel.: +49 (0)3578 37335 0 Fax: +49 (0)3578 37335 69 E-Mail: <a href="mailto:airworthiness@flightdesign.com">airworthiness@flightdesign.com</a>	<b>SB-ASTM-CTSW-13; SB-ASTM-CTLS-11;          Revision 00</b>
	Date of Initial Publication: <b>02-Oct-2015</b> Publication Date of this Revision: <b>02-Oct-2015</b>	

# Service Bulletin

## Verification of Rescue System Cover Installation

**SB-ASTM-CTSW-13**

**SB-ASTM-CTLS-11**

### Repeating Symbols:

Please pay attention to the following symbols throughout this document emphasizing particular information.

- ▲ **Warning:** Identifies an instruction, which if not followed may cause serious injury or even death.
- **Caution:** Denotes an instruction which if not followed, may severely damage the aircraft or could lead to suspension of warranty.
- **Note:** Information useful for better handling.

## 1 Planning Information

### 1.1 Affected Aircraft

Type: CT  
 Model: CTSW; CTLS-LSA;  
 Serial Number: CTSW: All aircraft;  
 CTLS-LSA: All aircrafts prior to serial number F-15-04-50 (including).  
 Applicable Countries: Countries with aircraft operated as Light-Sport Aircraft in compliance with ASTM standards


### 1.2 Concurrent Documents

- none -

### 1.3 Reason

As part of the investigation of an accident with a CTSW aircraft it was noticed that the hatch that covers the egress opening of the Airframe Emergency Parachute system had not been installed in line with the manufacturer's installation process. As consequence the hatch was not immediately and fully removed when the Emergency Parachute was activated. In the investigated case the parachute was extracted and opened as intended. As it cannot be ensured that the observed non-conforming installation will always allow proper parachute extraction, Flight Design has decided to mandate inspection of the installation of all similar type covers on all CT series aircraft.

- **Note:** MC aircraft have a different design of egress hatch, where this issue is not possible.

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#### 1.4 Subject

Inspection of the Airframe Emergency Parachute Egress Hatch for correct installation. In case of incorrect installation: Removal and re-installation to manufacturer instructions. Instructions for re-installation will be provided by Flight Design directly to the repairman of the affected aircraft.

Verification of the presence and correct installation of the egress opening edge protection. Correction of the installation, if required.

#### 1.5 Compliance

Compliance must be shown latest within 3 months following the issue date of this Notification, or at the next annual inspection of the aircraft, whichever comes first.

**▲ Warning:** Non-compliance with these instructions could result in further damage, personal injuries or death.

#### 1.6 Approval

This SB is approved by the aircraft manufacturer i.a.w. ASTM F2483 for conduct on damaged aircraft as defined in 1.1. Subsequent to complete and correct conduct of this SB the aircraft being repaired will still meet the requirements of the applicable ASTM design and performance specification subsequent to the repair.

#### 1.7 Type of Maintenance

Inspection: Line

Re-Installation, if required: Heavy

#### 1.8 Personnel Qualifications

Aircraft inspector with qualification to conduct an annual inspection, as per national regulations.

For US LSA aircraft: Repairman, Light Sport Aircraft-Maintenance (LSRM) – holds a repairman certificate (light sport aircraft) with a maintenance rating, A&P, IA or an FAA repair station.

#### 1.9 Release to Service

Conduct of this SB must be inspected by an aircraft inspector according to the national applicable regulations for the country of registry of the aircraft.


Conduct of this SB must be logged in the aircraft log book with date and signature of the responsible Person according to national regulations.

Confirmation of Completion of this SB (chapter 4.2) has to be submitted to Flight Design.

#### 1.10 Weight and Balance

The effect to empty aircraft weight and cg is significantly below 0.45 kg (1 lb). Therefore, in compliance with FAA publication AC 43.13-1B reweighing of the aircraft is not required due to this measure alone.

**▲ Warning:** When this exemption has been used already for earlier maintenance events on the aircraft, or when other maintenance events are conducted in parallel

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and the weight changes of the individual events add up to more than 0.45 kg (1 lb), re-weighing of the aircraft is required for the sum of the effects.

### 1.11 References

#### 1. Drawings:

- none -

#### 2. Documents:

- none -

### 1.12 Superseded Documents

- none -

### 1.13 Contact Details

For further information on conduct of this SB, or to report any Safety of Flight or Service Difficulty issues contact your Distributor responsible for your country. Your Distributor can be located via the Flight Design website: [www.flightdesign.com](http://www.flightdesign.com) under "Dealer Location".

Specific contact in USA:

Flight Design USA

P.O. Box 325 South Woodstock, CT 06267

Tel: 860 963 7272 / Fax: 860 963 7152

Web: [www.flightdesignUSA.com](http://www.flightdesignUSA.com)

E-Mail: [airworthiness@flightdesignUSA.com](mailto:airworthiness@flightdesignUSA.com)

In cases where the local distributor is not known or available contact Flight Design GmbH directly: [airworthiness@flightdesign.com](mailto:airworthiness@flightdesign.com).

### 1.14 Disclaimer

This Service Bulletin has been generated with utmost care. Nevertheless errors and misunderstandings can never be fully excluded. In case of any doubts the applicant of this Service Bulletin is requested to contact Flight Design immediately to clarify the issue.

## 2 Resources


In case re-installation is required, refer to concurrent SI that will be provided to you by Flight Design upon request.

### 2.1 Workshop Conditions

Dry workshop; for inspection purposes with temperatures above freezing; for re-installation of the hatch with temperatures above 21°C.

### 2.2 Parts

- none -

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### **2.3 Materials**

In case re-installation is required, refer to concurrent SI that will be provided to you by Flight Design upon request.

### **2.4 Tools**

1. Flashlight
2. Inspection mirror

### **2.5 Special tools**

1. Hard wood spatula, in case removal of the hatch is required

### **2.6 Manpower**

The inspection can be performed within approximately 0,5 hours (working time).

In case required, the re-installation can be performed within approximately 2 hours (working time). The working time includes:

- Removal of the old hatch
- Preparation of hatch and opening
- Re-installation of the hatch

The working time does not include:

- Curing times for paint and resin

### **2.7 Cost**

Not applicable

## **3 Instructions**

In case re-installation is required, refer to concurrent SI that will be provided to you by Flight Design upon request.

### **3.1 General**

This chapter provides extended explanations for the sequential inspection steps.

### **3.2 General Procedures**

- none -

### **3.3 Detailed Procedure**

#### **3.3.1 Securing of the Aircraft**

1. Make sure the aircraft is properly parked and wheel chocks are applied.
2. Make sure the safety pin is inserted to the activation handle of the Airframe Emergency Parachute System, so that the system cannot be accidentally deployed.


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Fig. 1 – Sample view of BRS activation handle in a CTLS with locking pin inserted – other systems and aircraft models comparable.

**▲ Warning:** Never conduct maintenance in the vicinity of the Parachute System without this locking pin inserted. Inadvertent activation of the system while doing maintenance is highly dangerous and can cause serious injury or death, also to persons not involved in the activity.

3. Open the luggage compartment hatches on both sides.
4. Remove any luggage from the luggage compartment to allow unhindered access to the compartment.

### 3.3.2 Inspection of the Installation

The extraction hatch is located on the upper side of the fuselage, behind the upper cabin window, above the Airframe Emergency Parachute System that is installed to the luggage compartment.

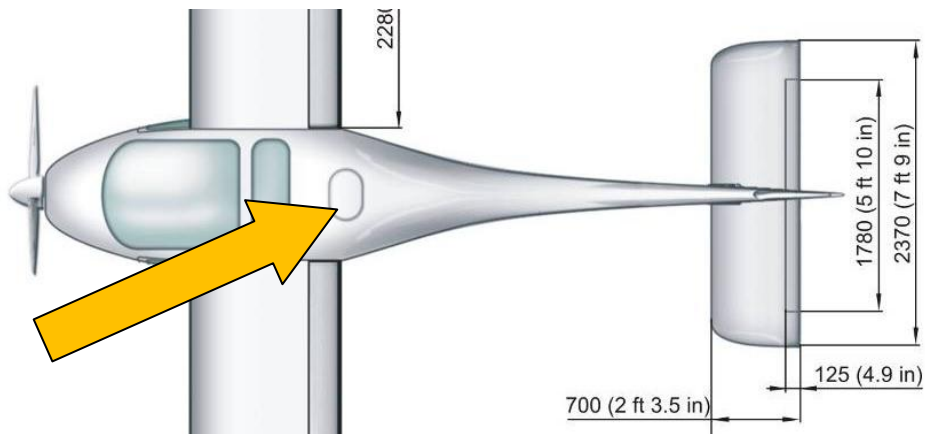



Fig. 2 – Sample view of the location of the extraction hatch on a CTLS – other aircraft use the equivalent position

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**Correct** installation of the extraction hatch is given when (see Fig. 3):


- The paint surface of both:
  - o the fuselage flange that forms the extraction opening and
  - o the inner side of the hatch
 is painted and was not sanded prior to the installation of the hatch.
- The hatch is glued to the fuselage flange that forms the extraction opening using thickened resin with clearly visible excess thickened resin at the edges of the installation. The thickened resin is non-transparent and has a more white color.
- On the outside the hatch is more flush with the fuselage surface. This is a sign for the thickness of the thickened resin in-between the opening flange and the hatch.
- The lower edge of the fuselage flange that forms the extraction opening is covered with black plastic edge protection with metal inlay (visible only at the ends), and this edge protection cannot be easily slipped off the edge of the flange.

**Wrong** installation of the extraction hatch is given when any one of the following listed aspects is identified (see Fig. 4):

- The inner paint surface of the hatch shows signs of sanding or removed paint right next to the gluing area of the hatch
- The painted surface of the fuselage flange that forms the extraction opening shows signs of sanding or removed paint right next to the gluing area of the hatch
- There are no traces at all of excess thickened resin at the edges of the installation; possibly visible excess material leaves the impression of un-thickened resin which looks clear, transparent, possibly slightly blue
- Excess material that is visible on the inner surface is elastic like Acrylic, RTV Silicone or similar sealant
- Elastic tape is used to cover the edges of the opening from outside
- The hatch is clearly recessed below the fuselage contour around the opening. This is a sign for the possibility of non- thickened resin in-between the flange and hatch, which can mean that the hatch is incorrectly glued, with only plain resin without the required fillers.
- The plastic edge that covers the lower edge of the fuselage flange is missing in part or in full, or slides off easily.

**▲ Warning:** Any one of the signs identified here is possibly sufficient to make the installation incorrect, independent from other aspects looking correct. In case of doubt contact Flight Design with supporting picture documentation for clarification.



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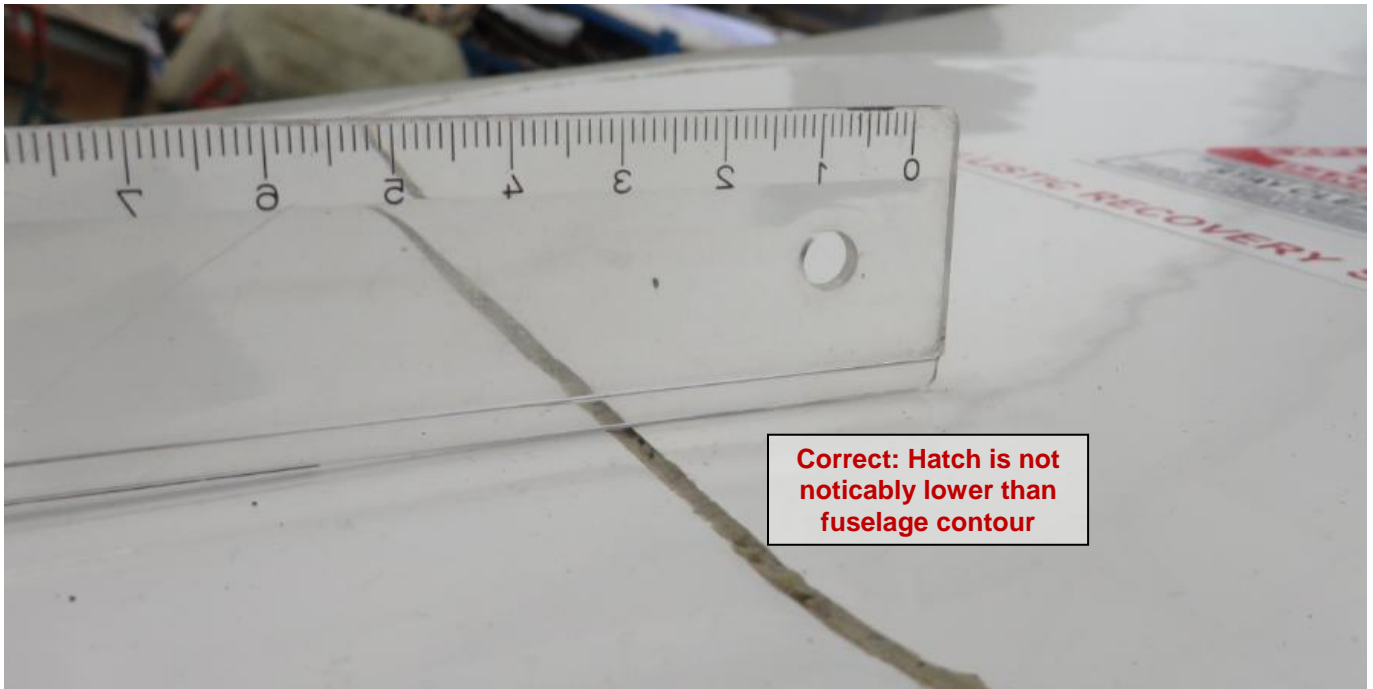
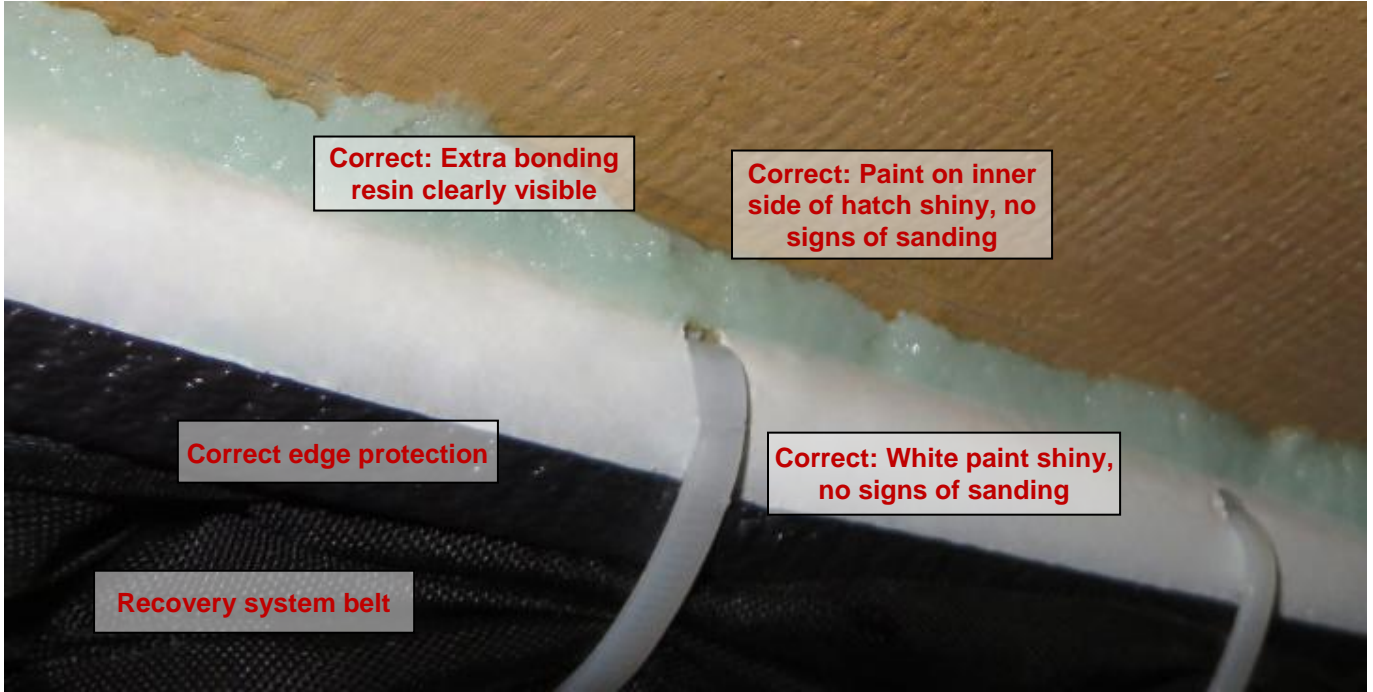



Fig. 3 – Sample view a **correct** installation showing the listed details

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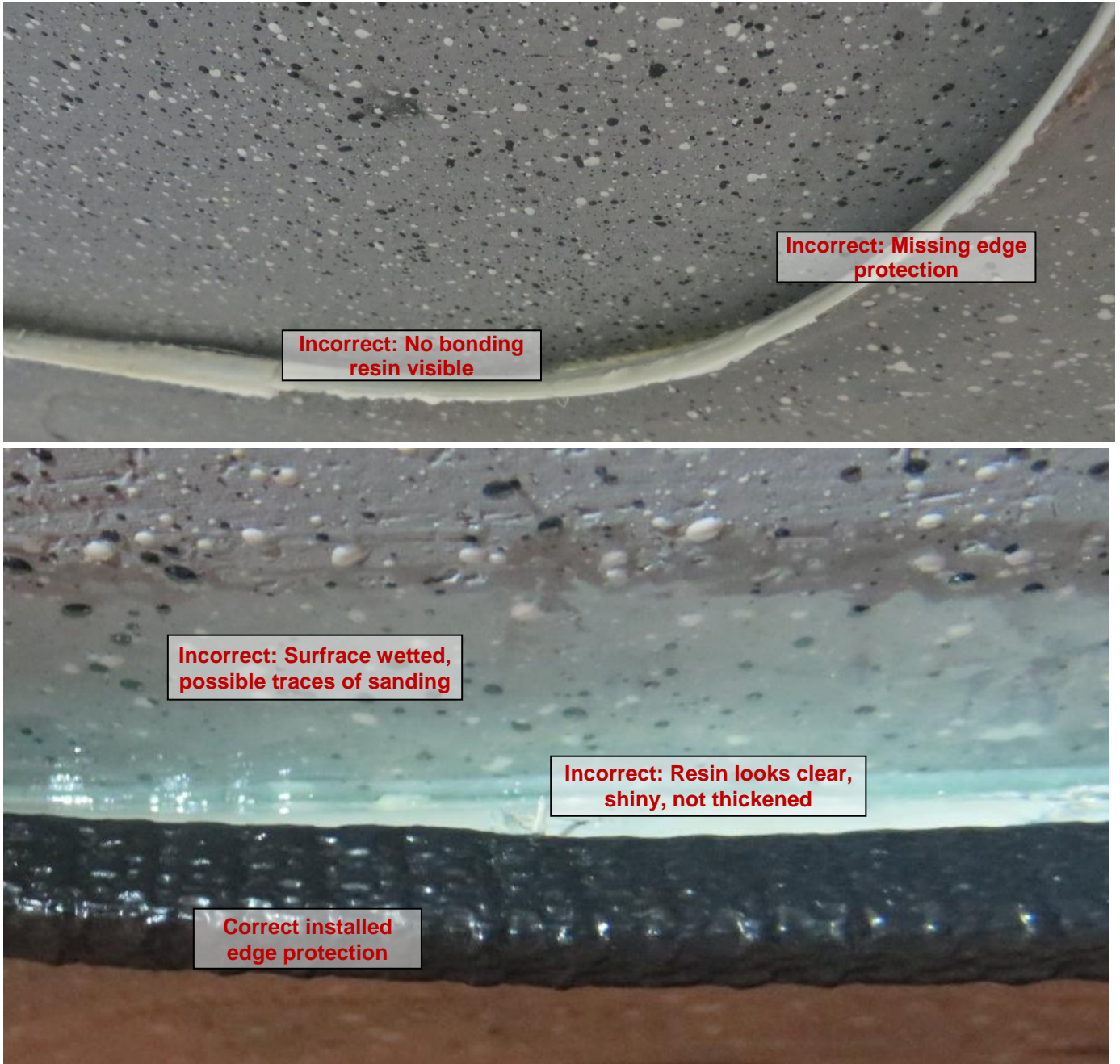



Fig. 4 – Sample view a **wrong** installation showing examples of the listed details

Conduct the following inspection steps:

1. Check that the outside edge of the hatch is not covered with adhesive tape. In case you find adhesive tape, remove completely before conduct of the subsequent steps. When the hatch is not properly attached following removal of any adhesive tape, the hatch is considered as wrong installed, must be removed and re-installed.



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**▲ Warning:** Never attach the hatch with adhesive tape, and never cover the edge of the hatch with adhesive tape. Use of adhesive tape most likely prevents extraction of the Parachute. This can cause serious injury or death.

2. From the outside of the fuselage, inspect the edges of the hatch for:
  - a. signs of excess thickened resin,
  - b. signs of acrylic paste, RTV silicone or similar sealant, which would be elastic
3. In case you observe acrylic paste or other sanitary sealant from the outside, take extra care to verify from the inside that this material was only used to close the edge between hatch and fuselage outer surface. In no case the hatch may be installed using acrylic paste or other sanitary sealant instead of thickened resin.
4. From the inside use an appropriate light and an inspection mirror to check in-between the fuselage flange and the installed hatch. Inspect this area for:
  - a. Signs of excess thickened resin. In a correct installation you will always find here clear signs of this material.
  - b. Excess material is hard and does not have the consistency of acrylic , RTV silicone or similar sealant.
  - c. Absence of any signs of sanding of the gluing area on both, hatch and fuselage sided flange. Paint must be clearly visible to the very edge of any gluing. There must be no traces of sanding to the very edge of the gluing.
  - d. Conduct this inspection at multiple locations around the rim of the opening. Use both luggage door access to ensure proper visibility.
5. Check for the presence of the black plastic edge protection. Carefully test if the edge protector slides off easily from the edge of the opening flange.
  - a. When the protection is present but slides off easily, use pliers to carefully squeeze the slot of the edge protection (this slightly bends the metal inlay inside and creates better grip on the flange), and re-install the edge protection.
  - b. Test again if the edge protection now stays in place.
  - c. If this does not help, or if the edge protection is missing fully or in part, get a new edge protection from Flight Design and install.

### 3.3.3 Reporting of the Inspection Result

Use the attached response form to provide feedback to Flight Design, in case you observe an incorrect installation.


### 3.3.4 In Case of a Wrong Installed Hatch

**▲ Warning:** Do the following steps only when the aircraft is already at a workshop adequately qualified for the re-installation of the hatch! The aircraft cannot be flown with the hatch removed. The aircraft must not be flown with a temporarily installed hatch using tape or similar means.

In case of a non correct installation, and when the aircraft is at a workshop adequately qualified for the re-installation of the hatch, remove the installed hatch according to the following instructions.

● **Note:** In case of doubt – contact manufacturer first before removal.

1. Prepare a hard wood chisel that allows proper access to the gluing of the hatch from inside the cabin.

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2. Select an area where the gluing seems to have least width.
3. Carefully chisel from inside to the outside along the hatch surface, to release the hatch at one location.
4. Widen the released area and carefully peel off the rest of the hatch. Try if this is more easily done from the outside, or from the inside of the fuselage. Be careful not to damage the hatch!

After removal please make a photo documentation of the situation:

1. Take pictures of the removed hatch from the inside. In case of damage to the opening, make close pictures of the damaged area.
2. Take pictures of the fuselage flange from the outside. In case of damage to the hatch, make close pictures of the damaged area.

Use the attached feedback form to contact Flight Design for further information, and for the instruction to re-install the hatch.

### 3.3.5 Verification of Extraction Hatch Markings

Prior to completion of this SB, and after correction of a possibly incorrect installation of the hatch, verify that the egress hatch is marked in a correct way with a warning label. The warning label must be legibly attached directly to the outside of the hatch.


The relevant warning labels for the systems installed to Flight Design aircraft are provided by the Airframe Emergency Parachute System. Fig. 5 shows the label provided by BRS for this purpose.



Fig. 5 – Sample view of warning label provided by BRS

### 3.3.6 Completion of the Inspection

In case you have observed a correct installation, make sure that all tools are fully removed from the inspection area. Close both luggage hatches.

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### 3.4 Documentation

Conduct of this SB must be logged in the aircraft log book with date and signature of the responsible Person conducting the SB. National regulations have to be considered.

## 4 Appendix


### 4.1 Changes to Previous Revision

Original Issue – no changes

### 4.2 Feedback Form

Use the subsequent feedback form **to report a wrong installation** to Flight Design.

**Warning:** This SB is only considered complied-with for the respective aircraft, when a wrong installation is reported to Flight Design, and when the subsequent instructions provided by Flight Design are implemented with successful final inspection.

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### Feedback Form

Submission can be done by mail, Fax or as scanned copy by e-mail to Flight Design GmbH (see header of this page) or to your national Flight Design Distributor who will forward the information for you.

#### Information on wrongful installation

Aircraft Type: CT  
 Model: CT\_\_\_\_\_

Serial Number: \_\_\_\_\_

Aircraft Owner, Name and Address: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Spare hatch required: Yes  No

Spare plastic edge protection required: Yes  No

Number of Pictures attached:

Observations made (use separate page, if needed):  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
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 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

#### Confirmation

Conduct of this SB has been done at the following workshop:

\_\_\_\_\_

Responsible Mechanic:  
 \_\_\_\_\_

Date: \_\_\_\_\_ Location: \_\_\_\_\_ Signature: \_\_\_\_\_