



ASTM F-2316
Instructions for Continued Airworthiness:
BRS-1350 HS
for Flight Design GmbH CTSW

Aircraft Registration No.: _____

BRS-1350HS Serial No.: _____

BRS-1350HS Mfg. Date: _____

BRS Doc. No.: 020008-ic

Revision: A

Date: 06-04-12

This document has been produced to meet the requirements of ASTM F-2316 "Airframe Emergency Parachutes for Light Sport Aircraft" and has not been submitted for approval to the Federal Aviation Administration (FAA) or any other government entity.



RE: INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

The signatures below verify that both BRS Inc. and Flight Design GmbH certify and accept this manual, Document Number 020008-ic Rev. A, dated 05-30-2012 as the "Instructions for Continued Airworthiness" for the Flight Design GmbH, CTSW as required under ASTM Standard F2316.

Both parties agree that any deviations or changes to components affecting functionality of the items listed in this ICA will not be performed until the changes are reflected in a revised and accepted version of this document.

Name: JEFFREY E. PELTIER Date: 5/30/12

Signed: 

Title: MANAGER, PROGRAM ENGINEERING

BRS Inc.

Name: OLIVER REINHARDT Date: 01-June-2012

Signed: 

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REVISION PAGE

Rev	ECO	Date	Author	Check	Approval	Description
A	1204-0003					Initial Release
B						
C						



1. INTRODUCTION

The BRS-1350HS Recovery System is a rocket deployed emergency parachute system designed for use on Flight Design CTSW aircraft. It is designed to recover the aircraft in life threatening emergency situations, lowering the aircraft and occupants to the ground in a controlled descent.

The BRS-1350HS Parachute is enclosed in an aluminum Canister mounted in the baggage compartment aft of the cabin area. The Parachute is attached to the airplane primary structure with a 4-point Harness Assembly fabricated of flexible woven Kevlar straps. Two of the Harness Straps are routed forward over the top of the cabin, down the front door posts, and attach to structure on the front side of the firewall. The aft Harnesses attach to hard-points on the aft side of the aft cockpit bulkhead. When the system is activated, the Rocket will blow off the fiberglass Egress Panel and extract the Parachute away from the airplane. The deploying parachute peels the two forward attachment Harness Straps through the aircraft top skin, extracting the aft Harness Strap from inside the aircraft.

The system is activated by pulling an Activation Handle mounted to the aft bulkhead above the center console, between and slightly behind the aircraft occupants. The Handle Assembly is the only part of the system accessible to the pilot in flight. A Safety Pin and "Remove Before Flight" flag is supplied to safety the system when not in use or in maintenance.

A single, deliberate action is required for activation, assuming the Safety Pin and Flag had already been removed as required for flight. The Handle activates the Rocket Motor via a braided stainless steel cable routed through a Teflon, lined Housing. The first few inches of motion deliberately take up slack within the cable housing. The remaining motion simultaneously arms the Igniter and fires it. The Rocket Motor Igniter, a mechanical device that requires no electrical source, is unarmed in the normal configuration.

2. AIRWORTHINESS LIMITATIONS

Installation and field servicing of the BRS-1350HS must be performed by appropriately licensed and authorized personnel in accordance with BRS CTSW Installation Instructions. Annual/100 hr inspections must be performed by appropriately licensed and authorized personnel in accordance with the instructions outlined in this specification.

- 2.1 BRS-1350HS Parachute repack interval.6 years
- 2.2 BRS Rocket replacement.12 years

These service dates are printed on placards on the sides of the Parachute Canister and Rocket. Any repairs, repacking, or recharging of the BRS-1350HS must be performed by BRS Inc. or BRS Authorized Service Center. Inspections may be performed by appropriately licensed and authorized personnel at the designated intervals.

Using the BRS-1350HS for an actual in flight use will render the aircraft un-airworthy, until returned to service by appropriate authority. The BRS-1350HS parachute assembly is intended for (1) use only. If the BRS-1350HS is deployed, for whatever reason, BRS must know about it as soon as possible. The company tracks all uses of BRS units to see how and why it was used, what the results were, what injuries or damage may have resulted, and if any improvements to the device are possible, once the learning experience is gained.

Notify BRS immediately following any use of the BRS-1350HS system.

3. REFERENCES

3.1 Flight Design GmbH., CTSW Parachute Installation Manual 020008-PM

4. ALTERATION OF FACTORY INSTALLATION

Unauthorized personnel should not tamper with, or attempt to modify, repair, or disassemble the BRS-1350HS system at any time. BRS has gone to considerable effort to ensure that the system will function reliably. Any change in its installation may render the system incapable of proper operation.

Modification of any component part of the BRS unit, or failure to strictly follow the procedures and directions set forth in this manual, can result in deployment failure and personal injury or death to the pilot and passengers aboard the aircraft!!

5. ANNUAL/100 HR INSPECTION PROCEDURES

(Refer to the appropriate Installation Instructions while working on the BRS-1350HS system.)

Treat the BRS-1350HS like a loaded gun. The Rocket Assembly at rest, is in an "un-armed" condition. Arming takes place in the same motion that activates the system. Take all appropriate precautions to see that other persons cannot tamper with the BRS-1350HS. Approximately 40-55 pounds of pull force at the Handle, is required to activate the Rocket.

Do not "experiment" with the BRS-1350HS or activate it while on the ground just to see if it works. People may be injured, property damaged, and significant cost will be incurred to repack the parachute and recharge the rocket. In addition, activation of the BRS-1350HS, even experimentally, will render it and the aircraft inoperable until BRS Inc. has serviced it and the aircraft repaired.

The following checklist describes the annual/100 hr inspection procedures. If the BRS-1350HS is damaged, it must be removed and returned to the BRS Inc. or authorized

service center (without the Rocket) for inspection, repair and repack. If the structural or functional integrity of any of the BRS-1350HS components are questionable or water contamination is suspected, contact the factory for maintenance instructions.

EXTERNAL INSPECTION -


1. Inspect the Egress Panel for security, leakage and to ensure the required "Danger, Stay Clear" label is still in place.
2. Inspect both sides of aircraft aft of doors to ensure "Ballistic Warning" labels are present and legible.

INTERNAL INSPECTION -


1. Install the Safety Pin with "REMOVE BEFORE FLIGHT" Flag in the Activation Handle.
2. Rotate the Activation Handle in its Holder to ensure free of corrosion.
3. Look for evidence of leakage (i.e. stains, moisture, etc.) around the circumference of the Egress Hole.
4. Check for wear, cuts, tears, and/or abrasion of textile components.
5. Check for dents, breaks, and/or corrosion of metal components.
6. Check Parachute Canister base for secure fit on its mounting frame. Insure that all mounting screws are tight by manually trying to move Canister Assembly on mount.
8. Check for a secure fit of the Rocket Motor to its Mounting Plate. Insure that all mounting screws are tight by manually trying to move Rocket Assembly on mount.
9. Using flashlight, visually check presence and security of screw retaining activation cable into igniter. Screw head is visible through access hole in side of Rocket Cone.
10. Check for a secure fit of the Pick-up Collar to the Rocket Motor. Insure that the Special Aluminum Shear Screws snug the Pick-up Collar in place.
11. Check security of the Activation Handle Assembly. The placard text must be legible.


6. REMOVAL OF BRS-1350HS CANISTER/ ROCKET ASSEMBLIES FOR SERVICING.

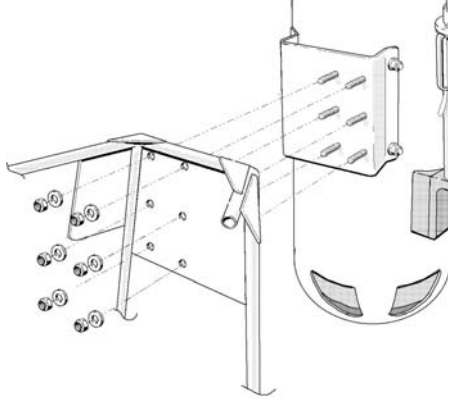
Please refer to appropriate Installation Manual for details.


6.1	Install the "Remove Before Flight" flag and Safety Pin, prior to working on BRS-1350HS unit.	 A close-up photograph showing a red plastic flag with the text 'REMOVE BEFORE FLIGHT' in white and red lettering. The flag is being inserted into a hole in a silver, metallic, perforated surface. Several other screws are visible on the surface.
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6.3	<p>Disconnect Rocket from Activation Housing Assembly by first removing small plastic cover (item 2) from side of Rocket Cone (item 21) to expose 10-24 Screw (item 3).</p> <p>Carefully remove Screw (item 3) and Star Washer (item 4).</p>	 A close-up photograph of a black rocket cone. A screwdriver is being used to turn a screw that is partially inserted into a hole on the side of the cone. A small black plastic cover is shown separately to the left of the cone.
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6.4	Unscrew Cone Adapter (small black cylinder on end of Activation Assembly) from end of Rocket Cone. May require a wrench.	 A close-up photograph showing a hand holding a small black cone adapter. The adapter is being unscrewed from the end of a larger black rocket cone. The adapter has a threaded end that fits into the rocket cone.
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6.8	<p>Open gate of ½" Link and remove all 4 Harness Sections.</p> <p>It may be necessary to cut the Plastic Cable-ties securing the ½" Link.</p>	
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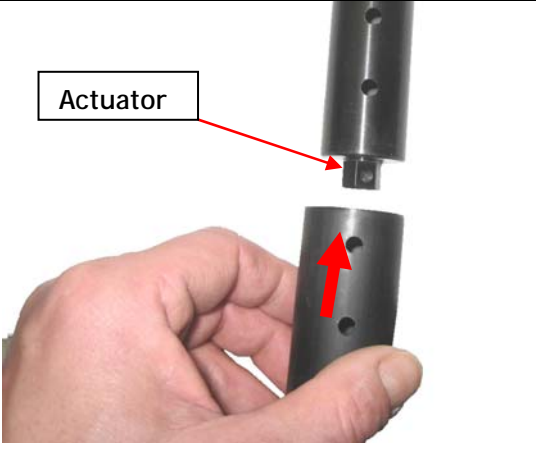
6.9	<p>Remove 6 Nuts securing BRS Canister unit to parachute mounting frame and carefully remove BRS from airplane.</p> <p>Return only Parachute in the Canister with Pick-up Collar attached to BRS Inc. for servicing.</p> <p><i>DO NOT disconnect Pick-up Collar and Rocket Lanyards from Parachute Assembly. Ship unit as it appears here.</i></p>	
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6.2	<p>Remove the two, aluminum 8-32 Special Screws (item 14) that attach the Pick-up Collar (item 13) to the Rocket Motor Assembly and discard them. Slide the Pick-up Collar off of the Rocket Motor.</p> <p>The Pick-up Collar Assembly must remain attached to the Parachute and be returned along with the Parachute Canister Assembly to BRS for servicing.</p>	
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6.5	<p>Before the Rocket can be removed from its Mount, the Rocket Cone must be removed from the Igniter.</p> <p>Remove the 2 Screws (item 6) which secure the Cone to the Igniter, and remove Rocket Cone.</p>	
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6.6	<p>Remove the 3 Screws (item 15) securing Rocket to Rocket Mount.</p> <p>After removing Rocket from Mount, run Screws back into base of Rocket to avoid losing.</p> <p style="text-align: center;"><u>WARNING!</u></p> <p style="text-align: center;">Do not ship the used Rocket back to BRS. It is illegal for non-licensed persons to ship a loaded Rocket by commercial carrier!</p>	
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6.7	<p>Canister must be in this configuration for when shipping unit for servicing.</p> <p>Rocket removed Fabric Cover and Pick-up Collar still in place.</p> <p>DO NOT ATTEMPT TO SHIP BRS UNIT WITH LIVE ROCKET!</p>	
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6.7	To render Rocket Assembly safe for storage, re-install Rocket Cone to Igniter. This will protect the Actuator. Re-secure with Screws removed earlier.	
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6.10	<p>If Rocket is not due for replacement and will be re-installed on aircraft, temporarily store Rocket in a secure location which is clean, dry and cool.</p> <p>Rocket must be stowed with Rocket Cone installed to Igniter Body.</p> <p style="text-align: center;">Keep out of reach of children!</p>
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7. RE-INSTALLING ROCKET AND PARACHUTE AFTER SERVICING.

7.1	<p>To re-install BRS Canister Assembly, refer to BRS Doc. No. 020008-PM, "Flight Design CTSW Parachute, Installation Manual". Section 1.</p> <p>See Section 5 for re-installation of Activation Assembly.</p>	
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