Beamer 2 Reserve Parachute Owner's Manual

VERSION 1.0
VALID FROM: 2010
REVISION: 07.04.2011

High Adventure AG Wiesenbergstr. 10 CH-6383 Dallenwil
Switzerland
Telephone: +41(0)41 628 01 30 Fax: +41(0)41 628 01 88
Internet: www.high-adventure.ch e-mail: info@high-

adventure.ch

This instruction manual has to be carefully studied before using the Beamer 2 reserve parachute!

The purpose of this manual is to inform you about the correct usage of your Beamer 2 reserve parachute. It should contain all necessary information. However, should any question related to the usage of this reserve parachute arise, please directly contact High Adventure. If you require professional packing and/or repair service, please contact your local dealer or High Adventure.

CONTENTS

SAFETY ADVICE

The Beamer 2 is designed to be used as a paragliding reserve parachute. It cannot be used when jumping out of an aircraft!

The Beamer 2 reserve parachute complies with European construction specifications given in the checking guidelines 2.DV LuftGerPV 1, No.7c/Conformity tests according to EN 12491:2001. The use of this reserve parachute is at the owners (users) own risk. The manufacturer cannot be held liable for personal or material damage resulting from the usage of this reserve parachute.

It is mandatory to pay close attention to the correct installation of the reserve into the harness. The compatibility of the reserve parachute with the given harness has to be checked by a trained specialist. This reserve will only work and contribute to the pilots safety if installed and packed correctly.

TECHNICAL DATA

Type:	Beamer 2
Surface area:	41.75 m²
Weight:	1,950 kg
Volume:	5429ccm
Total length riser - lines - canopy:	823cm
No. of panels:	18
Max. loading according to EN/LTF:	130 kg
Sink speed b. 130 kg loading (EN Test):	3.8 m/s
Inspection-ID.:	EN 023.2010 / LTF RG 023.2010

Manufacturer

High Adventure AG
Wiesenbergstrasse 10
CH-6383 Dallenwil, Switzerland
Phone +41(0)41 628 01 30
Fax +41(0)41 628 01 88
Mail info@high-adventure.ch
Web www.high-adventure.ch

INTENDED PURPOSE

This reserve parachute is intended to be used in combination with a single seat

paraglider and has to be deployed manually in case of an emergency.

OPERATING LIMITS

Maximum usage speed: 115 km/h (32 m/s)

Packing interval: 12 months, thereafter repacking is necessary and must be recorded in the packing document.
Re-inspection interval: We recommend that the reserve should be inspected every 24 months. The re-inspection must be recorded in the packing document.
Certified duration of operation: 12 years with a bi-annual inspection and up to 14 years with annual re-inspections.
Attention: The life expectancy depends on how you use and handle your Beamer 2 reserve. (Acro, test openings etc. can considerably reduce its lifespan).

NECESSARY EQUIPMENT DOCUMENTS

- Owner's manual
- Packing - and Inspection proof document

USE OF THE RESERVE PARACHUTE

To open the reserve parachute in emergency situations pull the reserve handle with a powerful jolt. By doing so, the outer container opens and releases the reserve parachute which is still packed in the inner container. Next, throw the handle and inner bag containing the parachute into the air. The reserve handle is thrown away with the inner container!

The inner container is constructed such that the suspension lines deploy first and the canopy second. This prevents the parachute from opening prematurely (before achieving maximum line stretch).

This minimises the risk of the reserve parachute getting tangled up with the paraglider or the pilot in an emergency situation (e.g. collision with other pilots etc.). The faster the reserve is thrown, the quicker it will reach line stretch and open.

After being thrown, the inner container opens immediately. The powerful throw and/or the air flow stretches the suspension lines and opens the canopy.

When the parachute has completely opened, the pilot should check his/her altitude. With sufficient altitude, disable the main paraglider by pulling the risers/lines or trying reeling in the canopy to avoid down planning (opposing canopies). If there is not sufficient altitude, the pilot should keep his/ her attention on the ground and prepare for impact.

CARE & MAINTENANCE

The Beamer 2 reserve parachute was designed for high loading and extreme operational demands. Accordingly, only highly durable materials, proven over many years were chosen. However, the service life depends to a great extent upon the care of the owner. We recommend regular examination for wear and tear and immediate repair of damaged components by High Adventure or an authorised service centres.

Special attention should be paid to the following points:

- The reserve should not be unnecessarily exposed to the sun (ultraviolet rays).
- A damp or wet reserve should be completely unpacked & dried at room temperature or outside in

  the shade.
- Do not expose the packed reserve to large changes in temperature. Provide sufficient air

  circulation to avoid condensation.
- Handle with care when handling on the ground after a deployment during safety training/SIV.
- Only clean the reserve with fresh water, and a neutral soap if necessary. Do not use solvents.

Warning: Mechanical influences, chemicals, cleaning agents, insects, mildew etc. can reduce the strength of the reserve.

STORAGE

Oils, fats, acids and paints must not be stored in the immediate vicinity of the reserve. Store in a well-ventilated and dry room. Store unpacked if not used for longer periods.

PACKING & INSPECTION INTERVALS

In order to guarantee a reliable and quick opening at any time, the reserve parachute must be unpacked, aired and repacked every 6 months according to current packing instructions. Immediate repacking is necessary if the reserve has been exposed to moisture, dampness or extreme heat.

If the reserve has been subject to an emergency deployment, or a deployment during safety training, it must be re-inspected by the manufacturer or by an authorised service centre. Likewise the reserve must be thoroughly inspected by trained personnel in case of high or asymmetrical loading (e.g. landing in a tree).

IN CASE OF DAMAGE

Should the reserve experience any damage or if you cannot clearly decide about its airworthiness, the reserve must be sent to High Adventure AG to be repaired. Repairs must be undertaken only by the authorised service centres!

REPAIRS

Repairs of reserve parachutes must never be done by unauthorised personnel. The various seams and lines have been manufactured with the utmost precision. Therefore only the manufacturer or authorised service centres should do repairs using original materials. Acids and mildew can influence the strength of the reserve. Reserve parachutes exhibit sustaining such damage must be returned to the manufacturer for re-inspection and repair.

RESERVE PARACHUTE CHECK, ATTACHMENT TO THE HARNESS AND PACKING INSTRUCTIONS

Before packing, the reserve should be visually inspected. The reserve must then be aired out for at least 24 hours. The humidity level should be adjusted to 60 – 65 %. Packing should best be carried out on a packing table. The surface should be clean and static free.

Necessary equipment:

- Line separator.
- Packing weight.

- Special rubber bands must be replaced every time the reserve is repacked (these are available through High Adventure)
- Packing tools and equipment to insert the reserve into the reserve container of a harness.
  The reserve should only be packed by certified personal.

Attachment to the harness

The Beamer 2 can either be installed into a front- or an integrated reserve-container.

The risers, labeled "L" and "R" attach to the corresponding (left and right) carabiner or to the dedicated reserve bridle attachment points on the shoulder of the harness.

Fig. 1 Attached to the carabiners (front attachment)

Fig. 2 Attached to the dedicated reserve bridle attachment points of the harness (shoulder attachment)

Caution: the brake handles and their labels "L" and "R" should be on the back of the riser. (Same as the normal orientation of risers and paraglider brakes which face toward the back).

When attaching the reserve parachute to the dedicated reserve straps on the shoulder of the harness, two screw-lock carabiners Ref. MRCI06.0 – stainless steel (INOX) with a minimal breaking load of 2250kg have to be used. The straps have to be secured with O-rings on both sides. (2,62mm x 31,42mm – available from High Adventure AG).

Brake handle position

The position of the brake handles has to be configured to match the attachment method (front vs. shoulder, see Fig.1 and Fig.2). To achieve this, there are two available configurations. In the case of the front mount/ carabiner attachment, the brake handles are detached from the steering lines and then re-attached. Caution: the brake handles have to be reattached below the rings through which the brake lines are guided (Fig. 3).

Preparation for the opening with brakes applied

The completely new brake concept controls the Beamer 2 in two stages: after deployment the brakes are pulled, set and stowed; the Beamer 2 sinks with very little horizontal speed. As soon as the pilot releases the brake handles, the brakes are released and the Beamer 2's glide performance can be fully achieved.

The brakes have to be positioned in the applied brake position before the reserve parachute is packed. When the brake handles are attached and stowed in their correct position, the brake lines are shortened by about 42 cm. At this distance, there is a loop in the brake line. The stiff portion of the brake handle is inserted through this loop. (Fig. 3 and Fig. 4).

Fig. 3 Stowing the brake line for opening with brakes applied. Front attachment of the reserve parachute.

Fig. 4 Stowing the brake line for opening with brakes applied. Shoulder attachment of the reserve parachute.

The loop of the shortened brake line and the stiff portion of the brake handle are tucked into the dedicated housing. (Fig. 5 & 6). Caution: each stiff brake toggle portion must be stowed away outside/over the ring and then into the housing.

Fig. 5

Fig. 6

Lay out the canopy, untangle and check the lines

Connect the risers to the harness or your packing table (Fig. 7/8). The beamer 2 should be spread open similar to a paraglider that is ready and laid out for launch. (Brake handles and top surface should be facing down - to the ground). In doing so, the lines (left wing, middle lines and right wing) are separated from each other (Fig. 9).

Find the nose of the canopy (High Adventure label with product information's) and then check to make sure the nose line is free and untangled. This line which is connected to the top of each riser, should run all the way to the canopy without being crossed or tangled by any other lines (Fig. 10-12).

Flatten the panels between the middle lines

Anchor all the middle lines to the centre of the line separator and put the lines attached to the peripheral band from the nose to the middle line on the centre of the trailing edge, separately on each canopy half. (Fig. 13). Stretch all middle lines. The rest of the canopy sail between the middle line attachment points is stretched with pocket forming adjacent to the canopy nose. The canopy nose should now be anchored with a suitable weight (Fig. 14-26).

Fig. 7

Fig. 8

Fig. 9

Fig. 10

Fig. 11

Fig. 12

Fig. 13

Fig. 14

Fig. 15

Fig. 18

Fig. 19

Fig. 20

Fig. 21

Fig. 22

Fig. 23

Fig. 24

Fig. 25

Reserve parachute with stretched middle lines and panels.

Fig. 26

Folding the individual canopy halves of the parachute

Put one side of the wing with the lines over the line separator to the opposite side. Pay attention to the middle lines. They should not get out of place.

Fig. 27

Fig. 28

Fig. 29

Fig. 30 pick up the trailing edge starting at the middle line

Fig. 31 stretch panel No. 1

Fig. 32 fasten the line of panel No. 1 in the line separator. *Fig. 33* spread out panel No. 1. Caution: make sure that the line is on top of the middle lines, which forms the axis of the reserve. Shape and size of this panel can vary depending on the brake configuration.

Fig. 34 reduce panel No. 1 using a double s-fold

Fig. 35 anchor the line from Panel No. 2 to the line separator

Fig. 36 put the line with its attachment point of panel No. 2 on top of the middle lines and fix it with your hand

Fig. 37 lay the second panel on top of the first

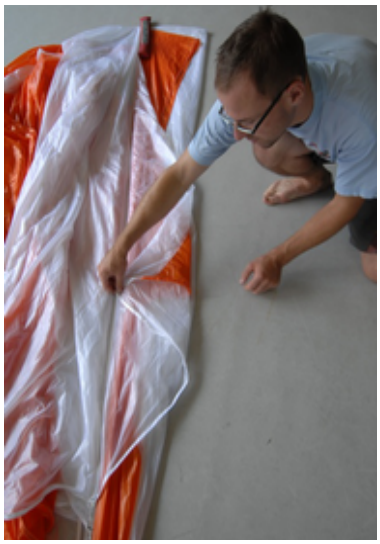


Fig. 38 reduce panel No. 2 by s-fold

Fig. 39-40 anchor panel No. 3 in the line separator and put the line with its attachment point of panel No. 3 on top of the middle lines

Fig. 41 pull out panel No. 3

Fig. 42 sweep panel No. 3 outwards (s-fold)

Fig. 43 put it on top of panel No. 2 (applying slight tension)

Fig. 44

Fig. 45-46 anchor the line of panel No. 4 to the line separator

Fig. 47 pull out panel No. 4

Fig. 48-49 sweep panel No. 4 outwards (s-fold)

Fig. 50 anchor the line of panel No. 5 to the line separator

Fig. 51-52 folding of subsequent panels (as far as the wing tip) is carried out according to the description on folding panels 3, 4 and 5

Fig. 53

Fig. 54

Fig. 55

Fig. 56

Fig. 57

Fig. 58

Fig. 59

Fig. 60 Wing tip

Fig. 61

Fig. 62 folded one side of the wing

Fig. 63-64 put opposite half of the wing including lines over the line separator to the other side

Fig. 65 the middle lines form the axis of symmetry

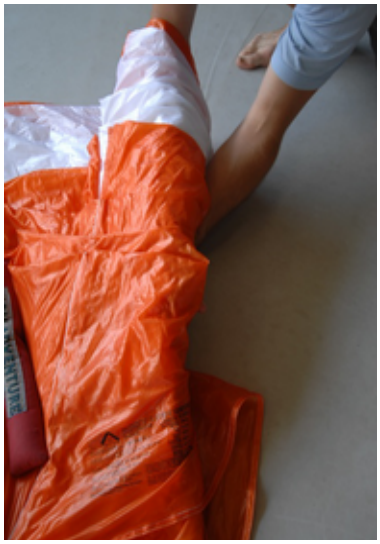
Fig. 66 folding of the second side is identical to the first one

Fig. 67 …as far as the wing tip

Fig. 68 check free run of the lines…

Fig. 69 …all the way down to the base

Fig. 70 all the lines have to be on top of the sail in the middle



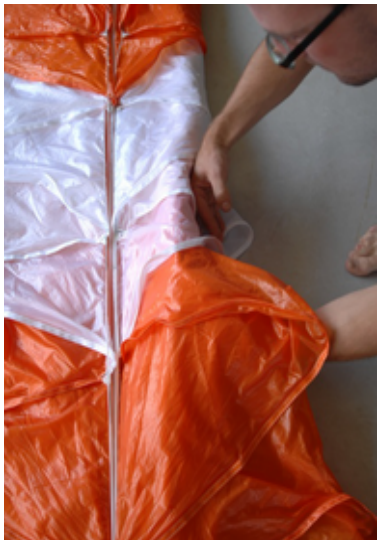


Fig. 74

Fig. 75 idem

Fig. 76

Fig. 77

Fig. 78

Fig. 79 Put wing sides on top of each other

Fig. 80

Fig. 81

Measures to avoid tangled lines

The following pictures illustrate how you can effectively avoid having the lines become tangled (run on top of the reserve parachute).

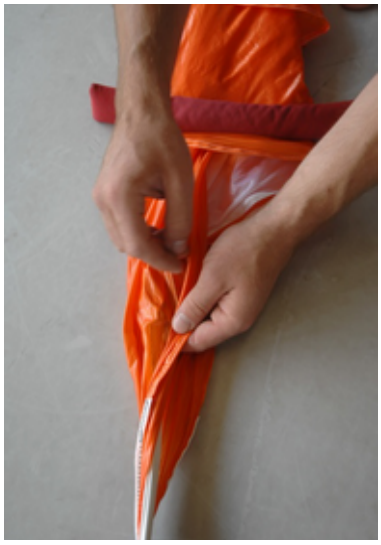


Fig. 82-84 wrap panel No. 1 around all the lines…

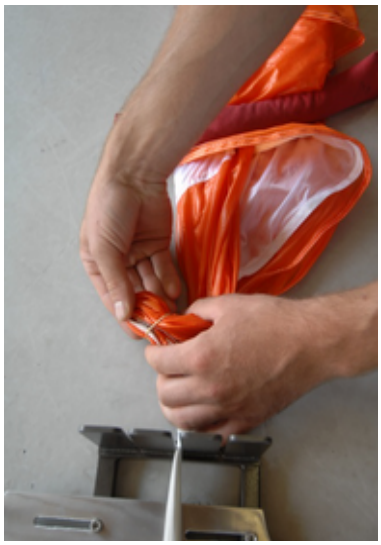


Fig. 85-86 …use an elastic band to secure

Insertion of the reserve into the inner container

Fold the canopy (S-shapes as illustrated in Fig.87-92) such that it fits the inner container.

Fig. 87

Fig. 88

Fig. 89

Fig. 90

Fig. 91

Fig. 92

Fig. 93

Fig. 94

Fig. 95

Fig. 96 **Important:** The reserve has to be released entirely as soon as the first container leaf is opened.

Fig. 97 anchor the container with suitable weights

Fig. 98 release the main risers

Fig. 99 place the suspension lines in figure eights... (*pay attention that the width of the inner container is not exceeded)*

Fig. 100 … and held them in place using rubber bands

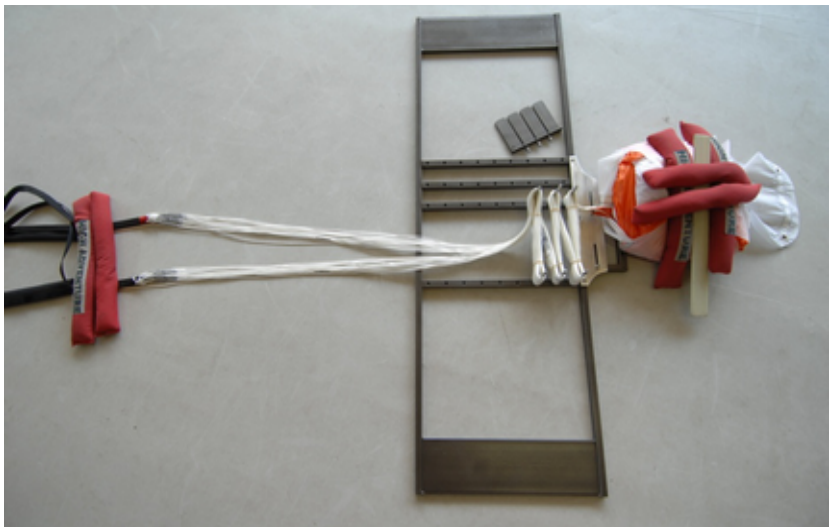


Fig. 101 the last 50-60cm of the suspension lines are used to close the container and must remain free from rubber bands.

Fig. 102

Fig. 103

Fig. 104

Fig. 105

Fig. 106

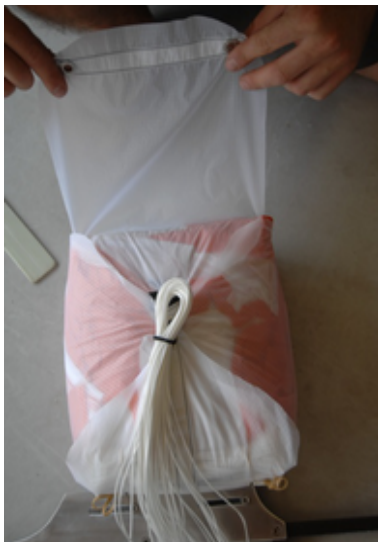


Fig. 107

Fig. 108

Fig. 109

Fig. 110

Fig. 111

Fig. 112 Attachment of handle when using front container

Fig. 108 Attachment of handle when using integrated container.

Attention: The inner container has been closed using the suspension lines. The tension of the packing rubber bands on the inner container must not be too high. This can be tested by lifting the reserve using the main bridle. The suspension lines must fall out of the packing rubber bands without applying any additional tension.

INSERTION INTO THE OUTER CONTAINER

Insertion into the external container or to the harness- integrated container has to be carried out according to the instruction manual of the harness or the external container.

COMPATIBILITY TEST

Every new combination of reserve parachute and harness has to be tested by the manufacturer or someone trained by the manufacturer.

The reserve parachute has to be operated in the flight position. The deployment strength has to be less than 7kg.

Authorized inspection personnel should confirm that a compatibility test has been carried out and should make a record verifying the compatibility in the packing and inspection document.

PRE-FLIGHT CHECK

In addition to the normal pre-flight check (see instruction manual for paraglider, harness, tow release etc.), the correct attachment of the reserve parachute and the deployment handle should also be checked prior to every flight. If the reserve bridle line is disengaged after every flight (as with front container systems), then the pre-flight check must also include checking the correct attachment of the bridle line!