# MANUAL

# WRAP

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# WRAP OWNER'S MANUAL

**Lightweight reversible harness**

## Welcome to Bruce Goldsmith Design

Thank you for choosing a BGD product. We love flying and our goal is to make paragliding equipment that others will enjoy as much as we do. We build products with personality, exceptional equipment with the refined handling and innovative qualities that Bruce Goldsmith Design is renowned for.

## The WRAP – introduction

The WRAP is a lightweight reversible paragliding harness. It is made with the latest technologies, materials and techniques, and designed for performance and comfort in flight and when hiking. Please read this manual before using the harness. It contains information on how to set up, adjust, fly and store your harness. Correct use will extend harness life. We hope you enjoy many great flights and happy landings with the WRAP!

**Passive safety**

The WRAP has anti-forget Get-Up straps, and an airbag protector. Nitinol rods add structure to the airbag, helping it to preinflate. The airbag offers around 60% of its full protective capability before launch. The under-seat reserve container is designed for reserves with a maximum volume of 4.6l (S,M,L) or 5.3l (XL). The reserve deployment handle is on the right-hand side of the harness.

**Active safety – land on your feet!**

The WRAP has an effective, certified protector designed to protect your back in the event of a hard landing. However, no protector can be 100% guaranteed to save you from all injury. Standing up to land is an active safety precaution, and is much more effective than passive forms of protection. Never land in the seated position! Before landing, slide your legs out of the seat and resume a standing position.

**SOS label**
There is an SOS label on the right shoulder strap. Inside you can enter information that might be helpful for the emergency services, in case of an accident.

**Modifications**
Any kind of physical modification to the harness can reduce the performance of the protector and the safety of the harness, and invalidate the certification.

**In the event of parachute deployment**
The harness has been designed, tested and certified to withstand emergency parachute opening shock in accordance with the standard requirements for paragliding. It is posible that the opening shock could result in damage to parts of the harness. Always check your harness carefully for signs of excessive wear or damage, after a reserve deployment.

**Uses**

| | |
|---|---|
| Tandem | The WRAP can be used as a tandem passenger harness |
| Towing | The WRAP can be used for towed launches. The tow bridle release should be hooked directly to the main karabiners, ensuring that the karabiners are positioned with the opening bar facing the rear. See also the tow hook instructions or ask a qualified towing instructor at your airfield. |
| Flying over water | We do not recomend using the WRAP for flights over water. It is possible that the airbag could hold the pilot under water in the event of a water landing. |
| Quick-out karabiners | Quick-out karabiners can be used with the WRAP. Follow the instructions in the karabiner manual to ensure their correct installation and use. |
| Free-fall parachuting | The paraglider harness and the emergency parachute opening system are not suitable for use in free-fall parachuting. |

**Flying near water**
We recommend using a suitable **life jacket** and carrying a **webbing knife** for fast extraction in emergency situations if you will be flying near large bodies of water. In the event of an imminent water landing, you should disconnect as quickly as possible from the harnesses. Leg straps can be loosened before landing; the chest and leg buckles should be opened on landing.

**Certification**
The harness complies with LTF certification. The airbag protector certification number is PH_286.2019. Certificates can be found on the BGD website. Conformity tests were carried out by Air Turquoise SA, Rte du Pre-au-Comte 8, CH-1844 Villeneuve

**Disclaimer**
Paragliding is a potentially dangerous sport that can cause serious injury and even death. The use of BGD equipment is undertaken with the full knowledge that paragliding involves risks. Inappropriate use of your equipment will increase these risks. The pilot takes exclusive responsibility for all risks associated with the use of this equipment

# Harness diagram

Drinks tube exit

Back storage pocket

Zipped side pocket
with attachment loops

Reserve release handle

Reserve container

Airbag protector
pre-shaped with nitinol

Main suspension point

Stable frame geometry

Get-up strap system

Speedbar loops



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# Rucksack diagram

Helmet net stowed inside zipped pocket

Elastic cord to carry clothing

Stretchy side pocket for water bottle, clothing etc

Drinks tube system exit

Shoulder and waist strap padding is breathable

Large stretchy pocket

Removable hip belt with zipped pockets

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# Reserve parachute

The reserve parachute can potentially save your life. Its correct installation is vital! The WRAP is designed for the latest generation of lightweight reserves. It will fit rescues with a maximum volume of 4.6l (S,M,L) and 5.3l (XL).

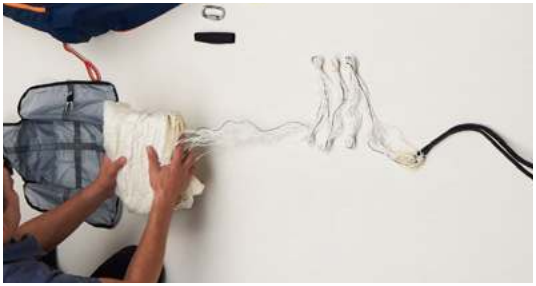
## Installing the reserve

**1) Place the reserve in the inner container**

The WRAP has a dedicated inner container with a deployment handle attached. No other container or handle should be used.

The reserve parachute should be folded following the manufacturer's instructions, to fit the dimensions of the inner container. The lines should be stacked on the opposite side to the deployment handle.

If necessary, ask a flight instructor or a qualified person for help refolding the emergency parachute in the inner container.



**2) Connect the reserve to the harness bridles**

There are three methods of attaching the reserve parachute bridle to the harness bridle.

**Method 1**: **maillon (recommended)**
Use a screw-lock maillon with a breaking strength of at least 2,400kg. The bridles should be held in position within the karabiner using elastic bands, to stop the karabiner from rotating and taking the strain laterally instead of vertically. The karabiner's screw-lock should be tightened to avoid any possibility of it opening accidentally.
This type of connection can absorb a higher opening shock than the second method.

**Method 2: bridle-to-bridle lark's foot**

1. Pass the harness bridle through the loop of the reserve bridle.

2. pass the reserve through the large loop of the harness bridle

3. The resulting connection should be tightened as much as possible to prevent dangerous friction between the two bridles during an emergency opening shock.

4. To prevent the connection from loosening over time, lock the knot with the Velcro strip on the harness bridle

**Method 3: twin-riser bridles**

If you are using a reserve parachute with a twin-riser bridle, it can be connected to the harness using the two loops at the base of the harness bridle near the shoulder straps. In this case, the harness's reserve bridle will not be used, and so it should be folded, fastened using two elastic bands, and positioned under the cover behind the pilot's neck.

The two connections should be made using screw-lock maillons with breaking strengths of at least 1,400 kg. It is important to ensure that the bridle is long enough to position the reserve parachute inside the harness pocket, with enough slack so that the parachute can be taken out of the pocket without causing the deployment bag itself to open during extraction.

CAUTION:
To prevent abnormal side loads, the bridle must be attached to both loops on their respective shoulder-straps.

Do not put any objects inside the bridle compartment.

### 3) Insert the reserve into the harness

1. Insert the parachute into the harness compartment with the handle on the outside and the lines facing down.

2. Seat the handle and ensure that the Velcro on the handle attaches to the Velcro on the harness.

3. Take the bridle cover zips to their start points under the rescue handle, then close the zips on both sides

4. Insert a thin 'helper' cord or plastic wire into the elastic loops and through the eyelets under the handle to help close the container.

5. Pull the elastic loops through the eyelets, and then insert the plastic wire from the reserve handle.

6. Tuck the ends of the plastic wire into the cover between the two loops. Ensure the 'helper' line or plastic is removed (carefully, to avoid friction damage).

After closing all container parts, check that the two zips under the opening system have been closed correctly. The two zips should be completely closed and the zip pulls stowed under their covers at the opposite ends.

## Compatibility check

Every new combination of reserve parachute and harness should be tested to ensure the reserve can be effectively deployed. Checks should be carried out by hanging in a flight simulator. Deployment of the reserve must be easily achievable from the normal flying position.

## Deploying the reserve

It is important to periodically check for the position of the reserve handle during normal flight, so that the action for reaching for it will be instinctive in an emergency.

The deployment procedure in emergency situations is as follows:

1. Locate the reserve parachute handle and grasp it firmly with one hand

2. Pull the handle outwards in order to extract the reserve parachute from the harness container

3. Look for a clear area and, in a continuous motion, throw the reserve away from you and the glider

Once the reserve opens, collapse the paraglider to prevent it from interfering with the reserve. If the paraglider's leading edge is facing up, pull on both rear risers or brakes to collapse the paraglider; if the trailing edge is up, first turn it over by pulling on one rear riser or brake, and then pull on both, as above.

On landing, adopt an upright body position and ensure that you perform a parachute landing fall to minimise the risk of injury.

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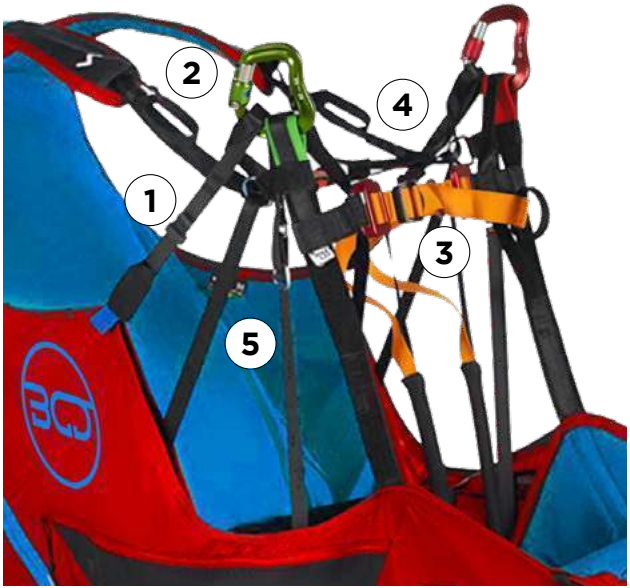
# Setting up the harness

## Adjustments

The harness is the connection between pilot and paraglider, and proper adjustment is essential to ensure a safe and comfortable paragliding experience. You can fly well in a bad harness that is well adjusted, but a good harness that is badly adjusted might put you off flying altogether! It is worth taking the time to find the optimal set-up for you.
The reserve parachute should be installed before making adjustments.




The **back inclination** (1), **shoulder straps** (2), **chest strap** (3), **shoulder-strap retainer** (4) and **seat depth** (5) can all be adjusted.

Factory settings are marked with thread on all of the adjustable straps. The shoulder straps should be adjusted before the first flight. We recommend flying for the first time with the other settings at their factory positions as a starting point. These are satisfactory for the majority of pilots.

*factory setting marker*

To find the optimum settings it is best to use a harness hanger, and have the things you normally fly with in the back pocket for the hang test.

All adjustments should be performed symmetrically, on both sides.

**Back inclination (1)**
Sets a more upright or a more laid-back position, according to pilot preference.

**Shoulder straps (2)**
The shoulder straps should be adjusted to fit the pilot. They should be close against the shoulders without being too tight.

**Chest strap (3)**
The chest strap controls the distance between the two karabiners, which can vary from 36 to 48 centimetres. The recommended settings for your paraglider will be in its manual. Having the chest strap ishorter and tighter increases stability. Having an excessive distance between the karabiners does not improve glider performance, and tightening the chest strap too much may exacerbate the twist effect that can follow an asymmetric collapse of the wing.

**Shoulder-strap retainer (4)**
There is a small additional strap to keep the main shoulder straps in place. It has a built-in whistle for use in an emergency.

**Seat depth (5)**
This adjustment varies the angle between the legs and the back. It changes the load distribution between the back and the legs, and the seat depth.

## Installing the speedbar

The WRAP is compatible with most speedbars. It has an elastic keeper to keep the speedbar away from the pilot's legs for the take-off run, and to prevent the reserve handle from getting tangled in the speed system in the event of a reserve deployment.

To install the speedbar, the speedbar lines should be passed first through the rings fixed to the elastic and then through the eyelets near the front corners of the seat. They should then pass through the sheaves in the rear corners of the seat. The elastic from the eyelets should be tied to the speed bar.

The speed system length should be adjusted after the other harness adjustments have been made. To adjust the lines to the correct length, adopt a flying position in the harness, ideally in a hanger. Ask a helper to hold the risers up in their flying position. With no bar applied, the bar should sit no more than 10cm from the front of the harness.

If the speedbar line is too short, the speed system could be unintentionally engaged in flight. It is safer to start with the length a little too long, and progressively shorten it over the next flights.

## Foot stirrup

The WRAP can be fitted with a foot stirrup, to keep the legs outstretched in flight and support the feet. Follow the instructions in the foot stirrup manual to install it on the harness.

*Attaching a Brummel hook*

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# Flying with the WRAP

## Putting on the harness

The WRAP has a Get-Up closure system. Close the two leg straps by feeding the buckles through their corresponding parts. Then fasten the clip on the upper chest strap to keep the shoulder straps in place.

## Connecting glider to harness

Attach the paraglider risers to the harness karabiners at the main suspension points. The A-risers should face forwards. Ensure the karabiners are properly locked closed. Attach the speedbar to the paraglider's risers with a Brummel hook or larksfoot knot (see the glider's manual for help on this).

## Pre-flight checks

It is a good idea to use a preflight inspection method and repeat the same sequences mentally for each flight. Check:

- The reserve parachute handle is fastened in its correct position, and the plastic wires are firmly in place
- The pockets and zips are closed
- All the buckles are closed
- The paraglider is connected correctly to the harness, and both karabiners are locked closed
- The speedbar is attached correctly to the glider

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# Harness / Rucksack Conversion

The sequence shows harness to rucksack conversion; reverse the sequence to change from rucksack. to harness

Completely unzip the back pocket and open out the backpack flap.

Turn it upside down and fold the seat against the harness back, with all the straps inside between the two. Secure with the red clips.

Place the packed paraglider above the harness airbag.

Close the rucksack. Stow helmet, instrument, clothes etc in the space at the top.

# Maintenance

## Inspection

You should visually inspect the harness after any impact, bad landing or launch, or if there are signs of damage or excessive wear. We recommend having your harness **checked** by your retailer every **two years**, and replacing the main **karabiners** every **five years**.

## Care

- To prevent unnecessary wear and deterioration of the harness, it is important to avoid scraping it against the ground, rocks or abrasive surfaces.
- Do not expose the harness unnecessarily to UV radiation (sunlight) outside normal flying activities.
- Wherever possible, protect the harness from humidity and heat.
- Store all your paragliding equipment in a cool, dry place, and never put it away damp or wet.
- The harness can be gently cleaned with a plastic-bristle brush and/or a damp cloth. If it gets exceptionally dirty, wash it with water and a mild soap. Allow the harness to dry naturally in a well-ventilated area away from direct sunlight.
- If your reserve parachute ever gets wet (e.g. in a water landing) you must remove it from the harness, dry it and repack it before putting it back in the container.
- Repairs and replacement of harness components should be performed by the manufacturer or authorised service staff. Only they d service staff have the materials and techniques to ensure correct product

functionality and its conformity to product certification.

- Zip fasteners should be kept clean and lubricated with silicone spray.

In the case of making any request to an official retailer or BGD for maintenance, please quote the complete identification number shown on the silver label in the rear pocket.

Correct use will extend the life of the harness. We hope you experience great flights and happy landings with the WRAP!

## Recycling

We all have a responsibility to look after the environment and protect the places in which we fly. When the harness comes to the end of its useful life, remove all the metal parts and dispose of the rest in an appropriate recycling facility.

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# Specifications

| Size | S | M | L | XL |
|---|---|---|---|---|
| Maximum clip-in weight (kg) | 120 | | | |
| Pilot height (cm) | 155-172 | 169-181 | 178-190 | 187-200 |
| Total weight incl. reserve handle, protection and karabiners (kg) | 2.6 | 2.75 | 2.9 | 3.2 |
| Removable hip belt weight (g) | 116 | 127 | 141 | 141 |
| Protection | Airbag | | | |
| Straps | Get-up | | | |
| Maximum reserve volume (l) | 4.6 | 4.6 | 4.6 | 5.3 |
| Distance between karabiners and seat (cm) | 43 | 45 | 47 | 48 |
| Distance between karabiners (cm) | 36-47 | 36-48 | 36-49 | 36-49.5 |
| Seat board width (cm) | 33.5 | 35 | 37 | 38 |
| Seat board depth (cm) | 34.7 | 36.5 | 38.5 | 39.5 |
| Rucksack volume (l) | 80 | 88 | 98 | 102 |

# Warranty

BGD GmbH takes the greatest care in design and production of its products and proudly offers two years or 200 hours warranty from the date of purchase against manufacturing defects.

You are required to complete the warranty form on the website within 14 days of purchase. Only a fully completed warranty form will be accepted to validate the warranty.

In order to settle a warranty claim, BGD must be notified in writing immediately after discovery of a defect, and the affected product must be sent to BGD for inspection. BGD will then decide how a possible fault should be rectified, either through repair, replacement of parts or replacement of the product. Solely BGD or an agreed service centre should undertake repair or replacement of damaged parts. If unapproved third parties undertake repair work, there will be no entitlement to compensation under this warranty. The owner is not entitled to replacement equipment during the warranty claim.

Some degradation of materials due to wear and tear is to be considered normal and will be excluded from claims. Damage due to careless or incorrect use of the product including accidents, inadequate maintenance, unsuitable storage, damage by solvents, fuel, chemicals, sand or seawater, overloading, exposure to extreme temperatures, or prolonged sun exposure and colour fading are also excluded.

The warranty exists solely between the original owner of the equipment and BGD. The warranty obligations only apply to private sport and leisure-time activities, not for use for commercial purposes. If you are unsure about any information contained in this manual, please contact your BGD dealer.

Bruce Goldsmith and team.

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