MANUAL

RAZOR SYSTEM 2.5

RAZOR

SIDE MOUNT SYSTEM

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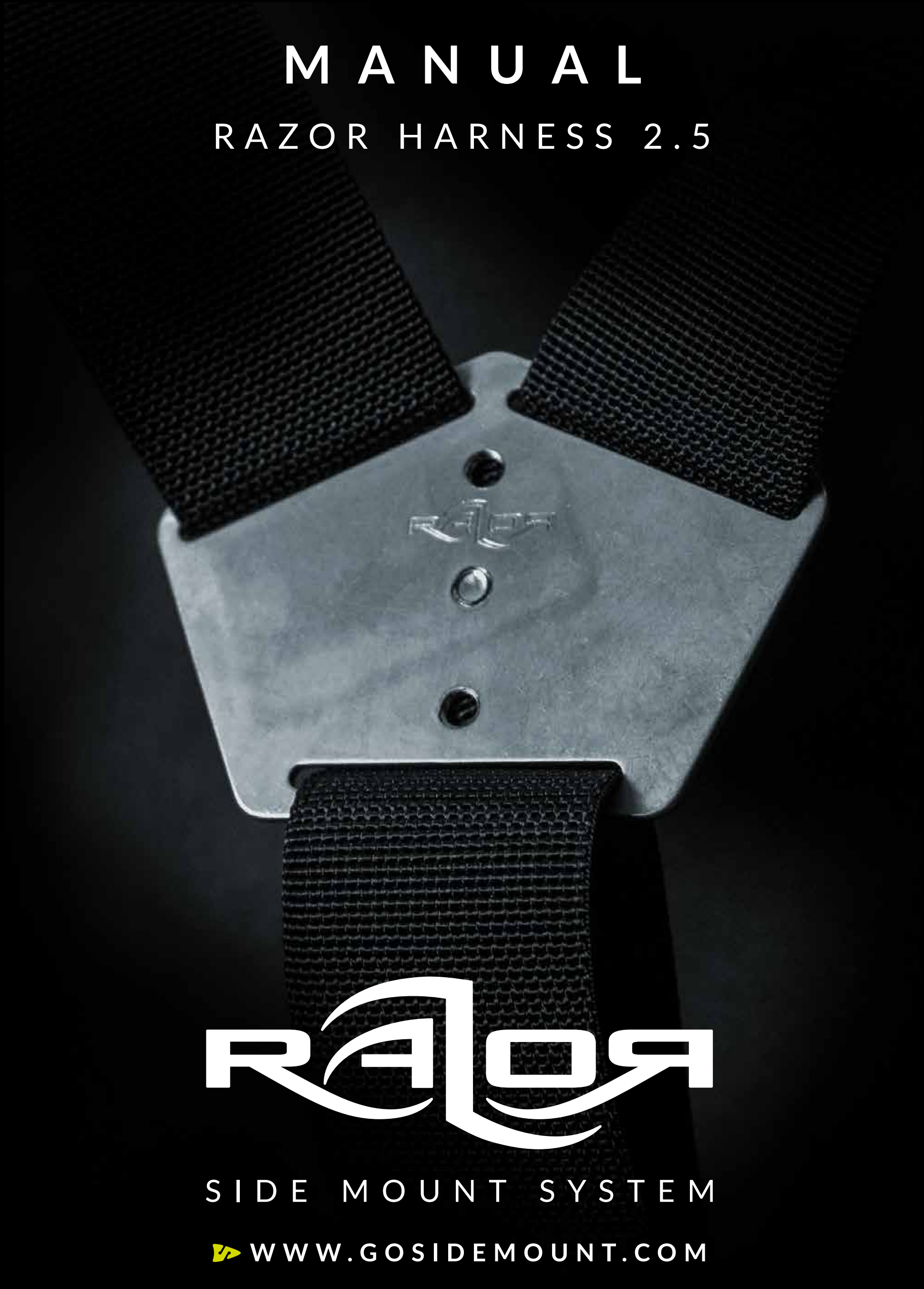
MANUAL

RAZOR HARNESS 2.5



RAZOR

SIDE MOUNT SYSTEM

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Table of contents

1 General Information

1.1 Important Warnings

WARNING
It is strongly recommended that you read the entire manual and notice the respective images, to understand the various parts and assembly process instructions before you assemble the Razor Side Mount System.

WARNING
This manual must be read and understood entirely before using the product. It is advised that you keep this manual in your possession during the entire life of your Razor Side Mount System.

FAILURE TO READ, UNDERSTAND, AND FOLLOW THE PRECAUTIONS LISTED IN THIS MANUAL COULD RESULT IN SERIOUS INJURY OR DEATH.

WARNING
When diving you must follow the rules and apply the skills taught by a recognized scuba diving certification agency. Before taking part in any diving activity, it is mandatory to have successfully completed a scuba diving course covering both theoretical and technical aspects of diving.

WARNING
This instruction manual does not replace a diving instruction course! We strongly recommend a sidemount course with an official Razor instructor or an instructor who is familiar with the system.

WARNING
In accordance with European standards, our BCs can only be considered certified where all components are present, as per the original RAZOR configuration, including the low pressure hose supplied. Any variation of the original configuration invalidates conformity to European certification standards.

1.2 CE-Certificate

All components of the Razor Side Mount System described in this manual have obtained the CE certification issued by a notified body according to European directive 89/686/EEC. Certification tests have been conducted according to the specifications set by the said directive, regulating the conditions for the release on the market and the fundamental safety requirement for Personal Protective Equipment (PPE). The CE mark denotes compliance with the fundamental requirements for health and safety. The number next to the CE marking is the identification code for the notified body yearly controlling production compliance with regulations, as per Art. 11A ED 89/686/EEC.

The BCs described in this manual have obtained the CE certification according the following European norms:

EN 250: 2000 for the Razor harness that provides divers with a device for fixing the tanks to the body : it has not to be used deeper than 50 m (164 feet).

EN 1809: 1997 European norm for jacket that provides divers with a buoyancy control device but does not guarantee a head up position of the wearer at the surface.

WARNUNG

THE RAZOR SIDE MOUNT SYSTEM IS NOT A LIFEJACKET.

Emergency face up floatation may not be provided for all wearers and in all conditions.

WARNUNG

Ensure you have fully understood the Razor Side Mount System function and features and adjust the Razor Harness appropriately before diving. If in doubt, ask your official Razor Instructor for help or **info@gosidemount.com.**

CE Test according to DIN EN 1809:1998-1 buoyancy compensator
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1.3 Important Cautions

For your protection while using the Razor Side Mount System, we call your attention to the following:

1. Use the equipment according to the instructions contained in this manual and only after having completely read and understood all instructions and warnings.
2. Use of the equipment is limited to the uses described in this manual or for applications approved in writing by Go Side Mount.
3. Cylinders must only be filled with atmospheric compressed air, according to the EN 12021 norm. Should moisture be present in the cylinder, beside causing corrosion of the cylinder, it may cause freezing and subsequent malfunction of the regulator during dives carried out in low temperature conditions (lower than 10°C (50°F)). Cylinders must be transported according to local rules provided for the transport of dangerous goods. Cylinder use is subjected to the laws regulating the use of gases and compressed air.
4. Equipment must be serviced by qualified personnel at the prescribed intervals. Repairs and maintenance must be carried out by an Authorized RAZOR Dealer service facility and with the exclusive use of original RAZOR spare parts.
5. Should the equipment be serviced or repaired without complying with procedures approved by Go Side Mount or by untrained personnel or not certified by Go Side Mount, or should it be used in ways and for purposes other than specifically designated, liability for the correct and safe function of the equipment transfers to the owner/user.
6. The content of this manual is based upon the latest information available at the time of going to print. Go Side Mount reserves the right to make changes at any time.
7. All dives must be planned and carried out so that at the end of the dive the diver will still have a reasonable reserve of air for emergency use. The suggested amount is usually 50 bars (725 psi).

Go Side Mount refuses all responsibility for damages caused by non-compliance with the instructions contained in this manual. These instructions do not extend the warranty or the responsibilities stated by Go Side Mount terms of sales and delivery.

WARNING
Always perform a pre-dive and post-dive inspection of the Razor Side Mount System.

WARNING
Do not use your Razor Side Mount System as an assist or “lift bag” for bringing objects to the surface. These objects may be lost during the ascent, creating a sudden increase in buoyancy and loss of buoyancy control.

WARNING
Do not attach a LPI hose to a scuba regulator high pressure (HP) port or to an air supply with pressure in excess of 200 psi (13.8 bar). This may result in damage or explosive failure of the inflation valve or low pressure hose, which could result in injury or death.

1.4 Inspection and handling of the BAT Wing

Pre-dive, dive and post-dive BAT wing examination helps to identify equipment problems before unsafe conditions exist, preventing diving accidents. All equipment must be regularly inspected by an authorized SCUBA equipment repair facility.

WARNING
DO NOT DIVE with a BAT Wing that does not pass any of the Pre-Dive, Dive or Post-Dive inspection points and tests. Loss of buoyancy control or air holding integrity could occur, resulting in serious injury or death.

Pre-Dive Visual Inspection and Valve Test:

1. Examine the entire Razor Side Mount System for cuts, punctures, frayed seams, excessive abrasion, loose / missing hardware and other damage of any kind.
2. Inspect the Oral Valve, Power Inflation Valve, Manual Dump Valve and Over Pressure Valve(s) for cracks, damage, or contamination.
3. Operate the Power Inflation Valve (with the LP hose attached and charged with air pressure), Oral Valve, manual Dump Valve and Over Pressure Valve, checking for proper operation and resealing. If the OP Valve has a Pull Dump, test it by pulling on the cord.
4. Inflate the BAT Wing through the Oral Valve until it is firm. Listen and check for leaks. Let the BAT Wing stand inflated for 30 minutes or more, then check the BAT Wing for loss of air.
5. Cross check all valves' operation and visually inspect your Razor Side Mount System with your dive partner before each dive, prior to entering the water.

WARNING
DO NOT DIVE with a BAT Wing that is damaged, leaks air, or does not function properly. Terminate any dive as safely and quickly as possible if the BAT Wing becomes damaged, leaks air, or does not function properly.

WARNING
The BAT Wing is not a breathing device. Never breathe from the BAT Wing. Your BAT Wing may contain gas residue, liquid, or contamination that may result in injury or death if inhaled.

WARNING
Keep water out of the inflatable aircell of the BC. Repeated use of the oral valve or the Overpressure Valve may allow water inside the BAT Wing, reducing the amount of buoyancy provided by the BAT Wing. This could result in injury or death. Drain all water out of the BAT Wing prior to every use.

1.5 Inspection and handling of the Razor Side Mount System

Post-Dive : Razor Side Mount System cleaning and examination and storage

With proper care and service, your Razor Side Mount System should provide years of enjoyment. Maintenance and care procedures must be observed and are as follows:

1. Rinse the Razor Side Mount System thoroughly inside and outside with fresh water after every use (do not use any aggressive solvent and/or cleansing liquid).

- Fill the BAT Wing Inner Bladders, approximately 1/4 full with clean fresh water through the Oral valve.
- Orally inflate the BAT Wing and shake to distribute water inside of the BAT Wing.
- Hold the BAT Wing upside down, depress the Oral Valve Button, and allow all water and air to drain from the Oral Valve mouthpiece.
- Repeat one or two more times.
- Rinse the entire BAT Wing with fresh water by dipping in a tub or spraying with a hose.
- Rinse all valves to make sure all sand and other debris is removed.

2. Dry the Razor Side Mount System: if hanging, make sure it is not in direct sunlight. Dry completely if storing, slightly inflated.

WARNING
Avoid prolonged or repeated exposure to chlorinated water, such as in swimming pools. Wash your Razor Side Mount System immediately after any use in chlorinated water. Chlorinated water can oxidize fabrics and materials on your BC, thereby shortening their life, and cause colors (especially neon) to fade. Damage and fading from prolonged exposure to chlorinated water is specifically not covered under warranty.

1.6 Storage

Post-Dive : Razor Side Mount System cleaning and examination and storage

Store your Razor Side Mount System, after it has fully dried, by partially inflating and then placing it in a cool, dark, dry, location: ultraviolet rays will shorten the life of the fabric and cause colors to fade.

Inspection and Service Interval

Your Razor Side Mount System should be inspected and maintained at an Authorized Service Center at least once a year, more often if you dive frequently. Any damage caused due to failure to properly maintain the Razor Side Mount System is not covered by the warranty.

Shelf life

Shelf life is seven years for a new, unused Razor Side Mount System when deflated and stored in a sealed container or bag at typical room temperature, with no exposure to UV.

Operating temperature range

Air	-20°C	to	+50°C	-4°F	to	122°F
Water	-2°C	to	+40°C	28°F	to	104°F

WARNING
Special instruction in cold water diving methods, and the specific use of this product in cold water, is required prior to cold water diving (temperatures below 10°C/50° F). This instruction is beyond the scope of this manual.

1.7 Choice of cylinders

Go Side Mount recommends depending on the region and type of diving cylinders following variants for diving with the Razor Side Mount System:

Steel cylinders:

7 Liter / 8Liter /10Liter / 12Liter 240 bar (85cuft / 108cuft LP Steel)

Aluminium cylinders:

6 Liter / 11Liter 200 bar (40cuft / 80cuft 3000 psi Aluminium)

WARNING
Diving with more than 2 cylinders requires special training to ensure the safety of the diver. These instructions are not included in this manual. Inquire with your official Razor instructor or from your dealer for the appropriate courses.

2 The Razor Side Mount System

2.1 Overview

«Necessity is the mother of invention»

Steve Bogaerts originally designed the Razor Harness for use on side-mount / no-mount exploration dives in very restricted cave where every piece of extra equipment can become a hindrance or hazard.

The system evolved over time as the exploration dives became more challenging and demanded more from both diver and equipment. The current system is the distillation of years of trial and error. That experience refined and streamlined equipment, skill sets and procedures.

Each of the components in the system is designed to fit together seamlessly and work as part of an integrated whole. The Razor Harness is at the heart of this system and is the foundation of all the Bogarthian Side-Mount procedures.

To get the full benefit from your Razor Harness you need to understand and implement the entire Bogarthian Side-Mount Philosophy. This philosophy is holistic in approach and is designed from the inside out so that as additional layers of equipment are added there is no change in the core equipment, equipment placement, procedures or skill sets.

Get properly trained for Side Mount diving. Training will distill into a few days' years of experience and advance your Side Mount diving accordingly.

2 The Razor Side Mount System

2.1 Overview

«Less is More»

The Razor Harness is simplicity and elegance personified with only 2 continuous pieces of webbing and 1 closure point. It is simple, strong, rugged, reliable, low profile and extremely minimalist in design. It fits like a glove and is very comfortable to wear.

The Razor will fit anyone no matter what their physical size or shape and is quick and easy to set up and adjust so that each individual diver gets a custom fit using standardized hardware.

The Razor can be adjusted at several points to ensure the optimal fit for each individual.

Each of the Shoulder Straps / Waist Straps can be adjusted at the Mini Back Plate. The length of the Lumbar / Crotch Strap can be adjusted at the Delta Shoulder Plate. The height of the Waist / Hip strap can be adjusted at the Mini Back Plate.

All the attachment points such as D Rings on the Razor Harness can be adjusted quickly and easily to allow personalized positioning of equipment placement.

Extra attachment points can be added easily if required.

Weight can be added to exactly where you need it on the Razor Harness to optimize trim.

2.2 The Basic Razor Side Mount System 2.5

Package content

1. Razor Harness
2. Redundant BAT Wing
3. T Weight System
4. Universal Spares Kit
5. Pocket Weight Base Layer

All hardware is heavy duty passivated stainless steel

2.3 The Complete Razor Side Mount System 2.5

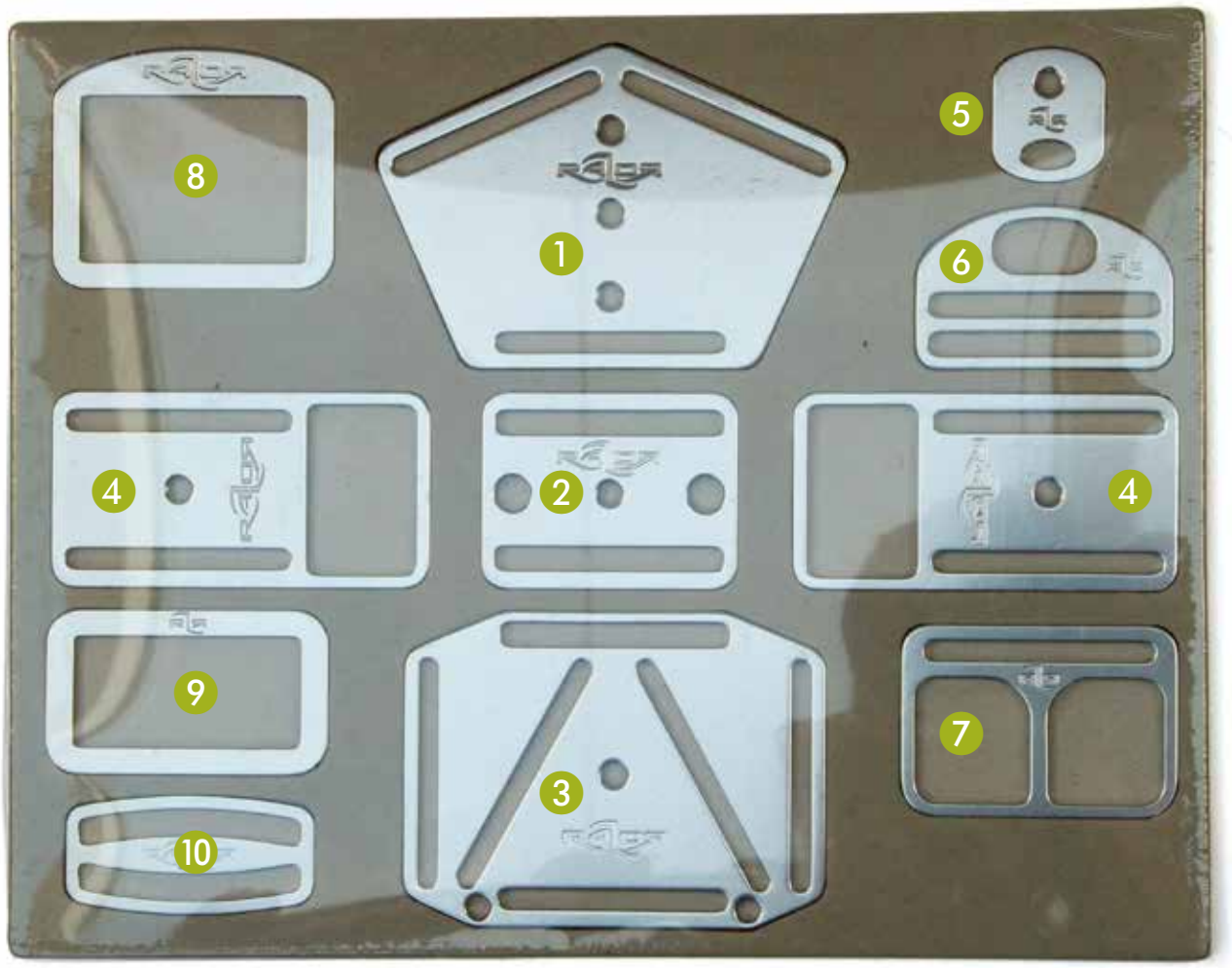
Package content

1. Razor Harness
2. Redundant BAT Wing
3. T Weight System
4. Expandable SM Pouch
5. 2 Double Ender
6. Universal Spares Kit
7. Side Mount Bungee Kit
8. Pocket Weight Base Layer

All hardware is heavy duty passivated stainless steel

3.1 Package content

Hardware plates:



1. DSP (Delta Shoulder Plate)
2. 1 x Bungee Tri-glide
3. MBP (Mini Back Plate)
4. 2 x DAPs (Drop Attachement Points)
5. Wing Tab
6. Slotted BAT Wing Tri-glide
7. Butt B Ring
8. Bottom Buckle Plate
9. Top Buckle Plate
10. Wide Gauge Tri-glide

All hardware is heavy duty
passivated stainless steel

3 The Razor Harness 2.5

3.1 Package content

Webbing and hardware bag

1. Hardware Bag
2. Shoulder and Waist Strap
3. Lumbar/Crotch Strap

All hardware is heavy duty
passivated stainless steel

3.1 Package content

Hardware bag content:

1. Long Neopren Razor Logo Wrap for Shoulder Webbing (Oral Inflator)
2. Short Neopren Razor Logo Wrap for Shoulder Webbing
3. 5 Pieces of bicycle tire inner tube
4. 4 x 1" Low Profile Waist D Rings
5. 6 x Standard Serrated Tri-glides
6. 2 x 2" Bent Shoulder D Rings
7. Bag with Screws and Washers
8. 2 x small swiveling snap bolts, 6ft SM Bungee and 4 x Hog Rings

All hardware is heavy duty passivated stainless steel

3 The Razor Harness 2.5

3.1 Package content

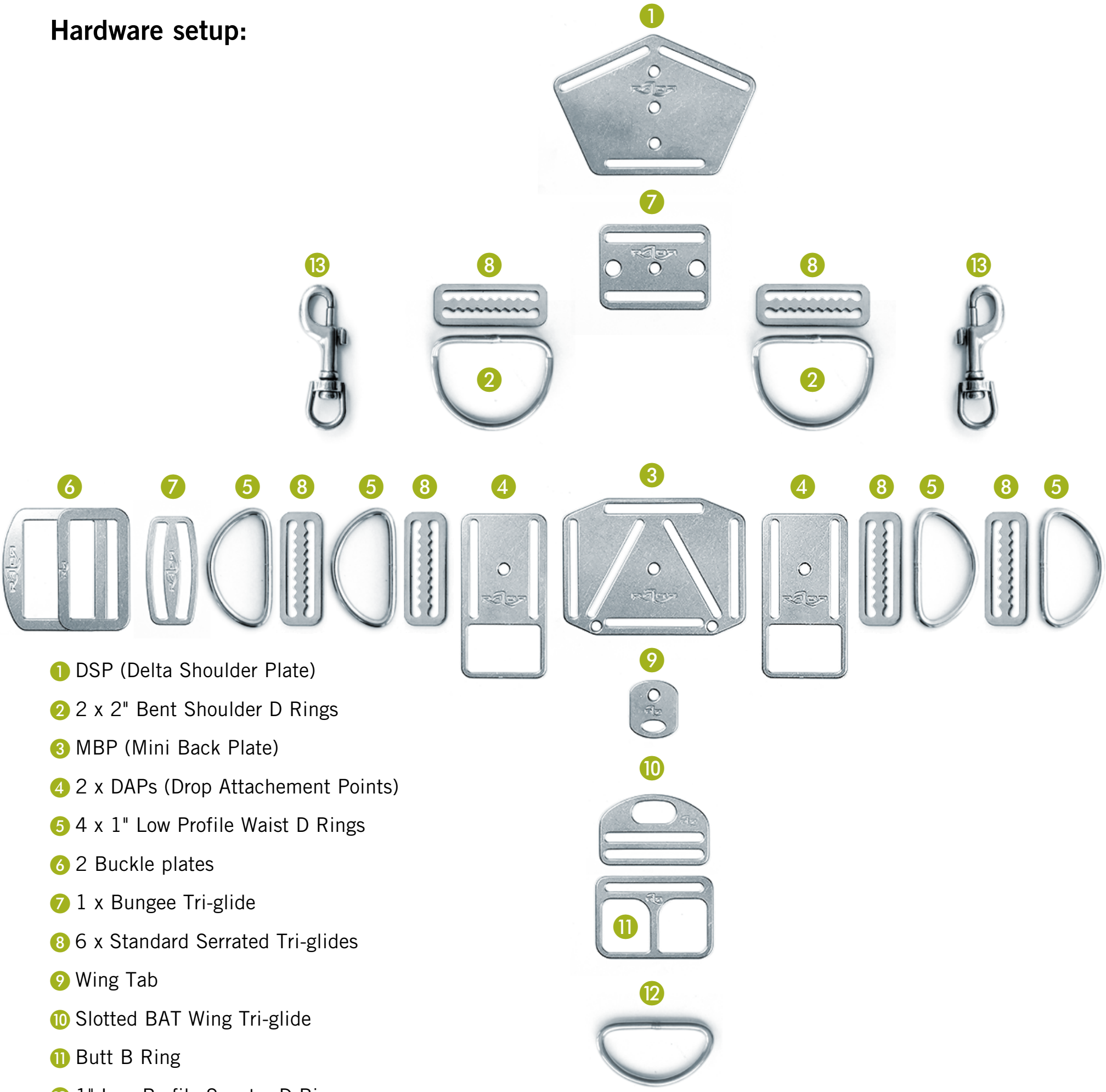
1. 1 DSP (Delta Shoulder Plate)
2. 1 12ft Shoulder / Waist Strap resin reinforced web-bing with grommet, button head screw and washer
3. 2 Neoprene Razor Logo Wraps for shoulder webbing

4. 2 2” Bent Shoulder D Rings
5. 1 MBP (Mini Back Plate)
6. 2 DAPs (Drop Attache-ment Points)
7. 4 1” Straight Waist D Rings
8. 2 Buckle Plates
9. 1 Bungee Tri-glide with two attachment holes.
10. 6 standard serrated Tri-glides
11. 1 6ft Lumbar / Crotch Strap resin reinforced webbing with Sewn Loop and 1” Low Profile Scooter D Ring
12. Slotted BAT Wing Tri-glide
13. Butt B Ring
14. 2 small swiveling snap bolts 6ft SM Bungee
15. 4 Hog Rings
16. 5 Pieces of bicycle tire inner tube
17. 1 Wide Tri-glide

All hardware is heavy duty passivated stainless steel

3.2 Hardware layout

Hardware setup:

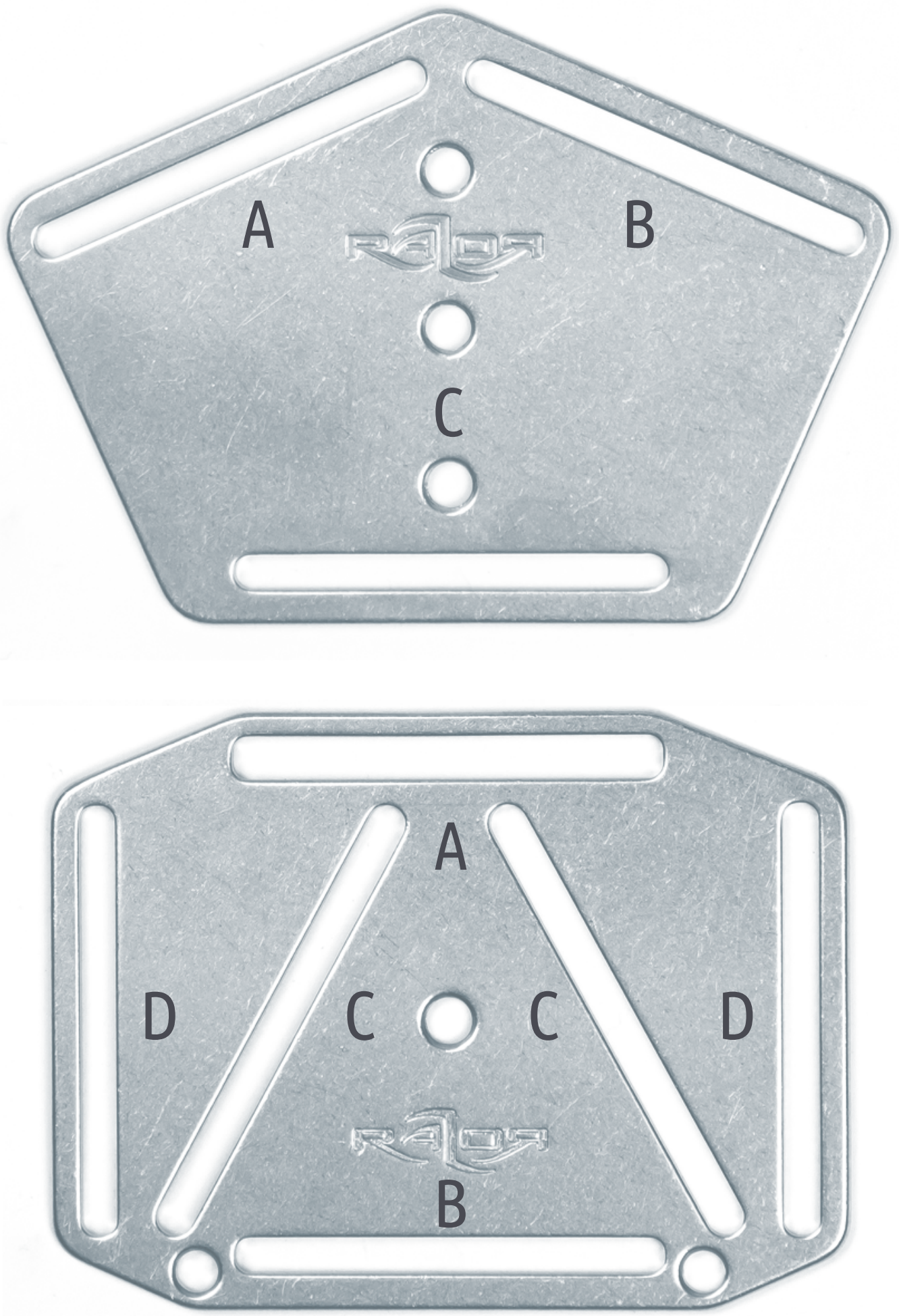


1. DSP (Delta Shoulder Plate)
2. 2 x 2" Bent Shoulder D Rings
3. MBP (Mini Back Plate)
4. 2 x DAPs (Drop Attachement Points)
5. 4 x 1" Low Profile Waist D Rings
6. 2 Buckle plates
7. 1 x Bungee Tri-glide
8. 6 x Standard Serrated Tri-glides
9. Wing Tab
10. Slotted BAT Wing Tri-glide
11. Butt B Ring
12. 1" Low Profile Scooter D Ring
13. 2 x small swiveling snap bolts

All hardware is heavy duty
passivated stainless steel

3.2 Hardware layout

Figure 2:
Delta Shoulder Plate (DSP) & Mini Backplate (MBP):

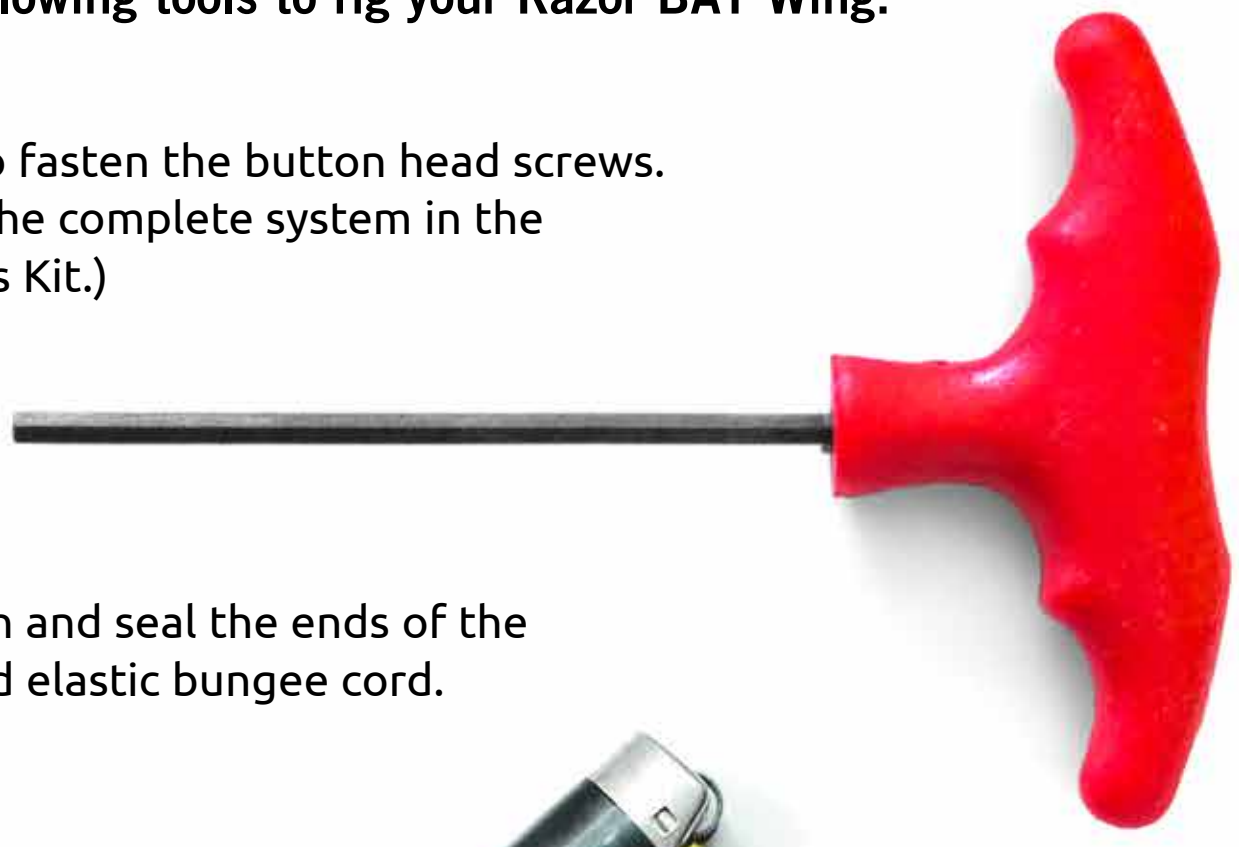


4 Rigging the Razor Harness 2.5

4.1 Tools

You will need the following tools to rig your Razor BAT Wing:

- A hex wrench to fasten the button head screws. (included with the complete system in the Universal Spares Kit.)



- A lighter to burn and seal the ends of the cut webbing and elastic bungee cord.

- A knife or scissors to cut the harness webbing and the elastic bungee cord.

4.2 Overview

- Below is an easy to follow guide detailing the 10 steps to rigging and adjusting your Razor Harness.

  Each step has supporting pictures.

- It is highly recommended that you read through the guide and look at the accompanying pictures to thoroughly familiarize yourself with the various parts and assembly procedures before you start to put your Razor Harness together.

- Ideally you should have your Side-Mount Instructor rig your Razor Harness with you.

  Rigging the harness is much easier with 2 people.

- No one is perfectly bilaterally symmetrical and a properly fitted harness will not be either.

  The person having the harness fitted should wear it while their partner makes adjustments in situ to get the perfect fit.

- If rigging the harness by yourself a full length mirror will help you to position everything correctly.

  Ideally when you rig the harness you should do so while wearing your normal exposure protection so that it fits snugly. If that is not practicable then wear clothing of a similar thickness to your normal exposure protection and make sure you leave some extra webbing for later adjustments should they be required.

- It is highly recommended that you use the T weight system with the Razor Harness however if you are going to put weight directly on the Razor Harness then it is advisable to work out how much weight you will need and where you want to place it on your harness before assembling it (see Step 9: Weighting and Trim).

Step 1: Rigging the Razor Harness

Slotted BAT Wing Tri-glide and Butt B Ring

1. Place the Slotted BAT Wing Tri-glide and the Butt B Ring as shown next to the lumbar/crotch strap.

2. Run the webbing through the lower slot and run the metal parts in position before running the webbing through the second slot of the BAT Wing Tri-glide.

3. Make sure the But B Ring is on the side of the Scooter D Ring.

Step 1: Rigging the Razor Harness

Mini Back Plate and bicycle tire inner tube

1. Now slide the Mini Back Plate on the webbing by pointing the Razor logo of the plate to the inside and the 2 holes facing the Butt B Ring.

2. Move the Mini Back Plate so that it is positioned along with the scooter loop on the height where you would wear a belt.

3. Don't forget to place a bicycle tire inner tube right above the Mini Back Plate. It will be used to store the backup webbing of the lumbar strap.

Step 1: Rigging the Razor Harness

Bungee Tri-glide with two attachement holes

1. Now put on the Bungee Tri-glide to the webbing and as well place the Delta Shoulder Plate on the lumbar strap.

2. You can run the webbing double through the wide slots of the Bungee Tri-glide.

3. Once placed you should see the Razor engraved logos on the outside of the harness on the same side as the the scooter D Ring is.

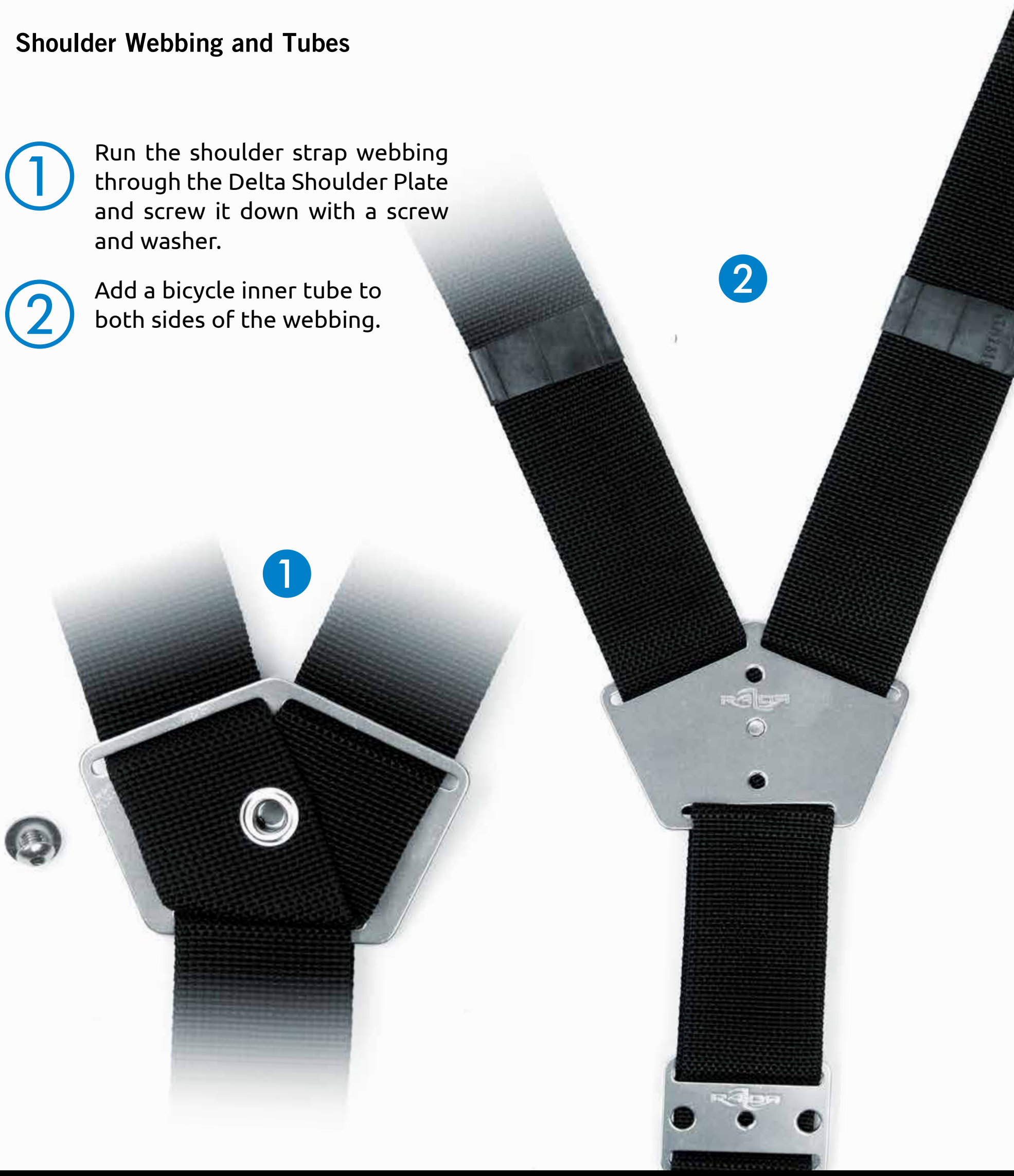
Step 1: Rigging the Razor Harness

- Make sure to leave plenty of extra webbing for any adjustments that may be required later then cut off any excess and burn the end to seal it.
- The free end of the webbing should be on the underside of the Lumbar Strap towards the diver and can be held neatly in place with the loop of bicycle tire inner tube.
- Weights can be added to the Lumbar Strap below the Wide Gauge Tri-glide if required (see Step 9: Weighting and Trim) but it is recommended to use the T Weight System rather than add weight directly to the Razor Harness itself.

Step 1: Rigging the Razor Harness

Shoulder Webbing and Tubes

1. Run the shoulder strap webbing through the Delta Shoulder Plate and screw it down with a screw and washer.
2. Add a bicycle inner tube to both sides of the webbing.



Step 1: Rigging the Razor Harness

Mini Back Plate and Tube

1 Now place the 2" Bent Shoulder D Rings to both sides. Check that the D Rings are pointing out from the webbing.

Step 1: Rigging the Razor Harness

Mini Back Plate and Tube

1 Attach the Neopren Razor Logo Wraps around the webbing. Make sure that the long version is on the right side in preparation for the oral inflator tube.

Step 1: Rigging the Razor Harness

- Pass each shoulder strap through the inside of slot C on the MBP then back out through slot D.

- The Harness should assume a “Heart Shape” at this point with the shoulder straps entering on the inside of the MBP and the Waist Straps exiting on the outside.

- Tighten the shoulder straps until you have a snug fit which is even on both sides with the DSP and MBP centered along the midline of your back and the MBP at the desired height.

Step 2: Adjusting the height of the MBP

The Lumbar / Crotch Strap is a continuous piece of webbing that begins at the DSP.

Position the top of the Crotch strap loop at the correct height just below the belly button and then pull the free end of the webbing through slot C of the DSP until the correct overall length is achieved making sure the correct position of the DSP is maintained.

Adjustment

As the Crotch Strap end has a sewn loop 1 with a 1”low profile scooter D Ring 2.
It cannot be adjusted for length from this end and all the adjustment must take place at the DSP 3.

Step 2: Adjusting the height of the MBP

The MBP can be moved either up or down the lumbar/crotch strap webbing until it is positioned in the ideal location based on individual diver preference.

Step 2: Adjusting the height of the MBP

- The position of the MBP will determine the position of the lower attachment points for the bottom of the Side-Mount Tanks.

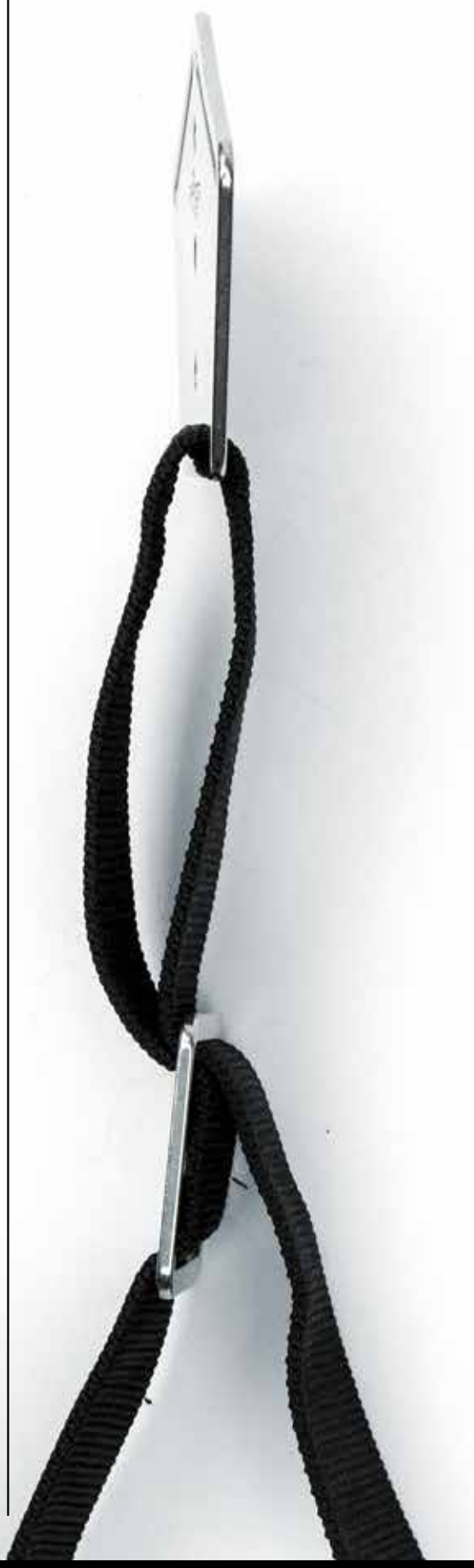
- Most divers will position the MBP at waist height but shorter divers may wish to move the MBP lower to mid hip height to be able to position the side mount tanks lower on the body for greater comfort.

Step 3: Fitting the Lumbar / Crotch Strap

- If using a butt mounted primary light canister remember to leave the crotch strap a little loose so that it can pass over the light canister to hold it in place while diving or even better size the crotch strap with light canister in place.
- The loop of webbing created between the DSP and the Bungee Tri-glide should be large enough to comfortably pass the Side-Mount Bungee and clip through with the bottom of the loop in line with the armpits (see Step 8: Sizing and Fitting the Side-Mount Bungee).

Adjustment

The free end of the webbing should be doubled back through the Bungee Tri-glide on the Lumbar strap to lock it in place.



Step 3: Fitting the Lumbar / Crotch Strap

- The DSP is placed with the button head screw on the inside against the divers back

- The DSP should be positioned between the shoulder blades below the nape of the neck.
- To get the right height place one arm behind your head and the tips of your fingers should just touch the top of the DSP.
- Make sure that the top of the DSP is clear of your Drysuit neck seal or zipper.
- It should also be positioned below the closed zip position of a wetsuit.

Step 4: Adjusting the length of the Shoulder Straps

Weights can be added to the Waist Straps where they exit the MBP if required but it is recommended to use the T Weight System rather than add weight directly to the Razor Harness itself (see Step 9: Weighting and Trim).

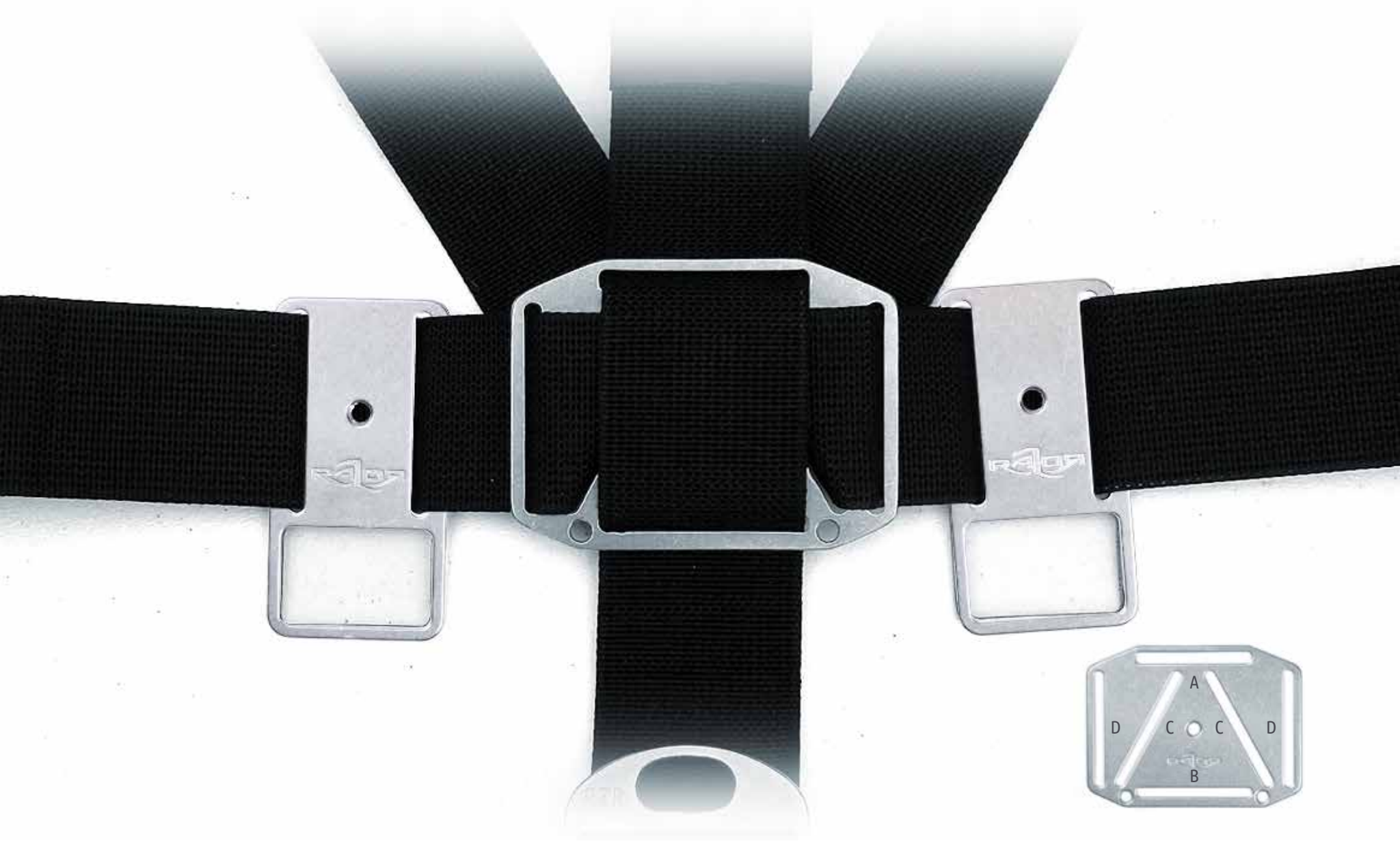
All the hardware on both sides of the waist straps will have to be removed in order to do this.

Step 5: Fitting the Chest D Rings

- Making sure the DSP remains in the correct position the shoulder D Rings should be positioned at the same approximate height as the ends of the clavicle.
- To fine tune this position stand with both arms straight out from the shoulders palms facing down and thumbs extended then bend at the elbows until the thumbs hit the shoulders without lowering the arms.
- The D Rings should be placed at this height and can be moved to the ideal location easily by sliding the serrated Tri-glides either up or down the webbing ensuring each side is even in height.

Step 6: Fixing Attachment Hardware on the Waist Straps

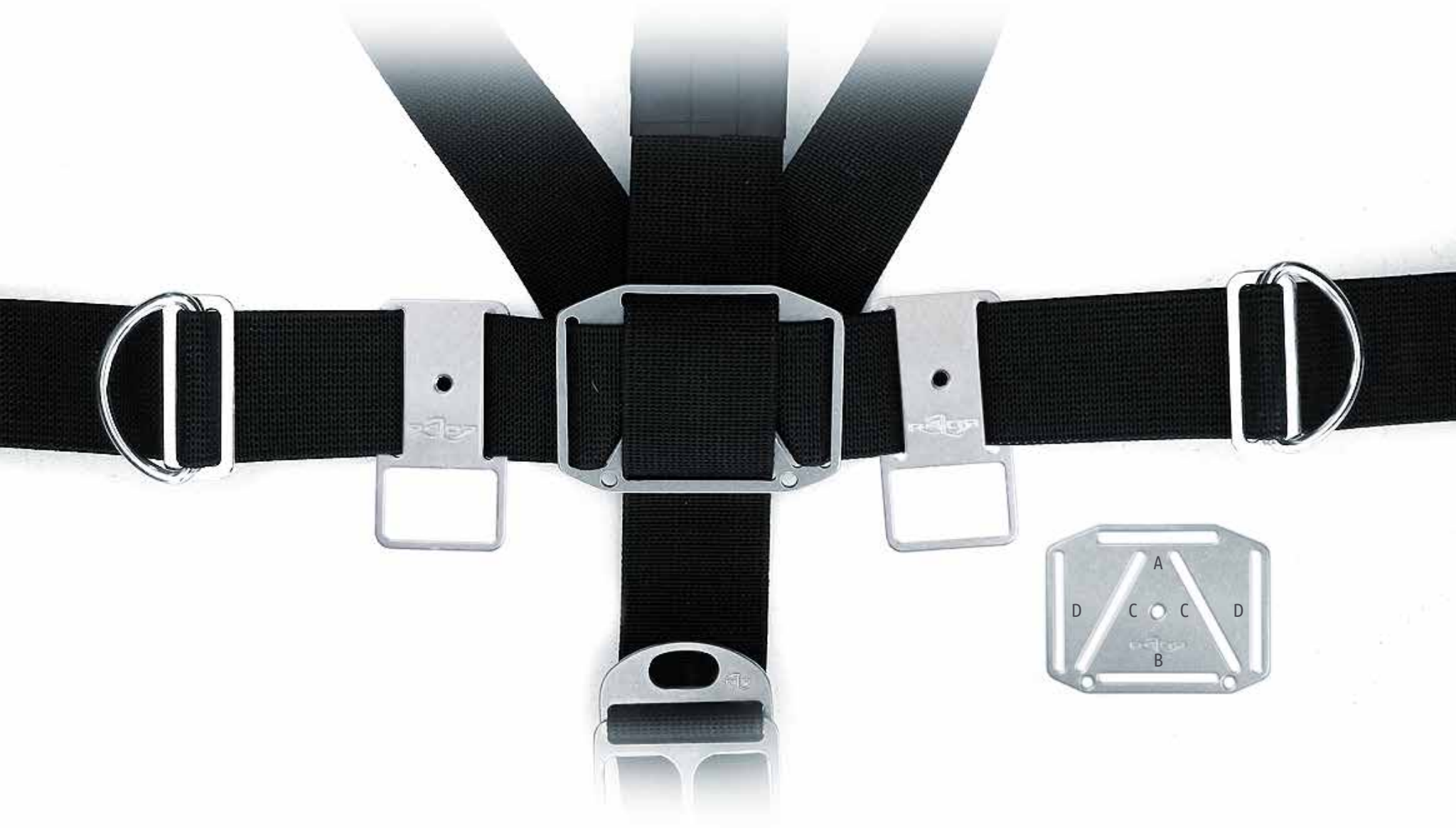
- The two Drop Attachment Points (DAPs) should be positioned on the waist webbing either side of the MBP.



- The DAP's should be close to the MBP so that anything clipped to them will not hang too far to the sides and get between the body and the SM tanks.
- If required the loop of the DAP can be placed in a vice and bent gently to have them stand off slightly from the body to make clipping in easier.
- The DAPs are an ideal location to clip off the Razor Expandable Pouch as well as other items such as reels or lift bags for example.
- The DAPs can also be used to clip off a heavy butt mounted primary light canister to give it more support if required.

Step 6: Fixing Attachment Hardware on the Waist Straps

- Now move the serrated belt slides and 2” straight D Rings until they are positioned just behind the hipbone on each side of the waist strap webbing.



- Make sure that both D Rings are positioned evenly and far enough back that the bottom of the Side-Mount Tanks will not hang down below the body when trimmed out in a horizontal position.
- Weights can be added to the Waist Strap between the DAPs and the Hip D ring if required but it is recommended to use the T Weight System rather than add weight directly to the Razor Harness itself (see Step 9: Weighting and Trim).

  Hardware on both sides of the waist straps will have to be removed in order to do this.
- Extra attachment hardware such as a second D ring on each side can be added at this point if required.

Step 6: Fixing Attachment Hardware on the Waist Straps

- Steel tanks will tend to remain negative throughout the dive even as gas is used from them. However if using Aluminium 80cuft Side-Mount tanks a second attachment point further forward is necessary to adjust tank trim as gas is breathed from the tanks and they get lighter and become more buoyant.
- When the bottom of the tanks start to float up clipping them forward keeps them horizontal along the sides of the divers body thus reducing profile and drag.
- The first D ring should be positioned behind the hip with the second d ring positioned half way between this and the center line of the body.
- The Low Profile D Rings are ideal for use in warm and cold water using either Aluminium or Steel Side-Mount tanks.

Step 7: Fitting the Low Profile Buckle

Attach the Low Profile Buckle to the left hand side of the webbing leaving plenty of extra webbing for adjustments of the harness. You have 2 possibilities - version 1 or 2

1 Version 1 is the tuffer but more streamlined one. To be able to make this work you have to run the webbing on the inside of the Tri-glide.

2 Version 2 is the way easier way since you can run the webbing on the outside back through the Wide Gauge Tri-glide. The closing system then is not bent to your body but on the other side you can see one Razor logo more engraved ;)

Step 7: Fitting the Low Profile Buckle

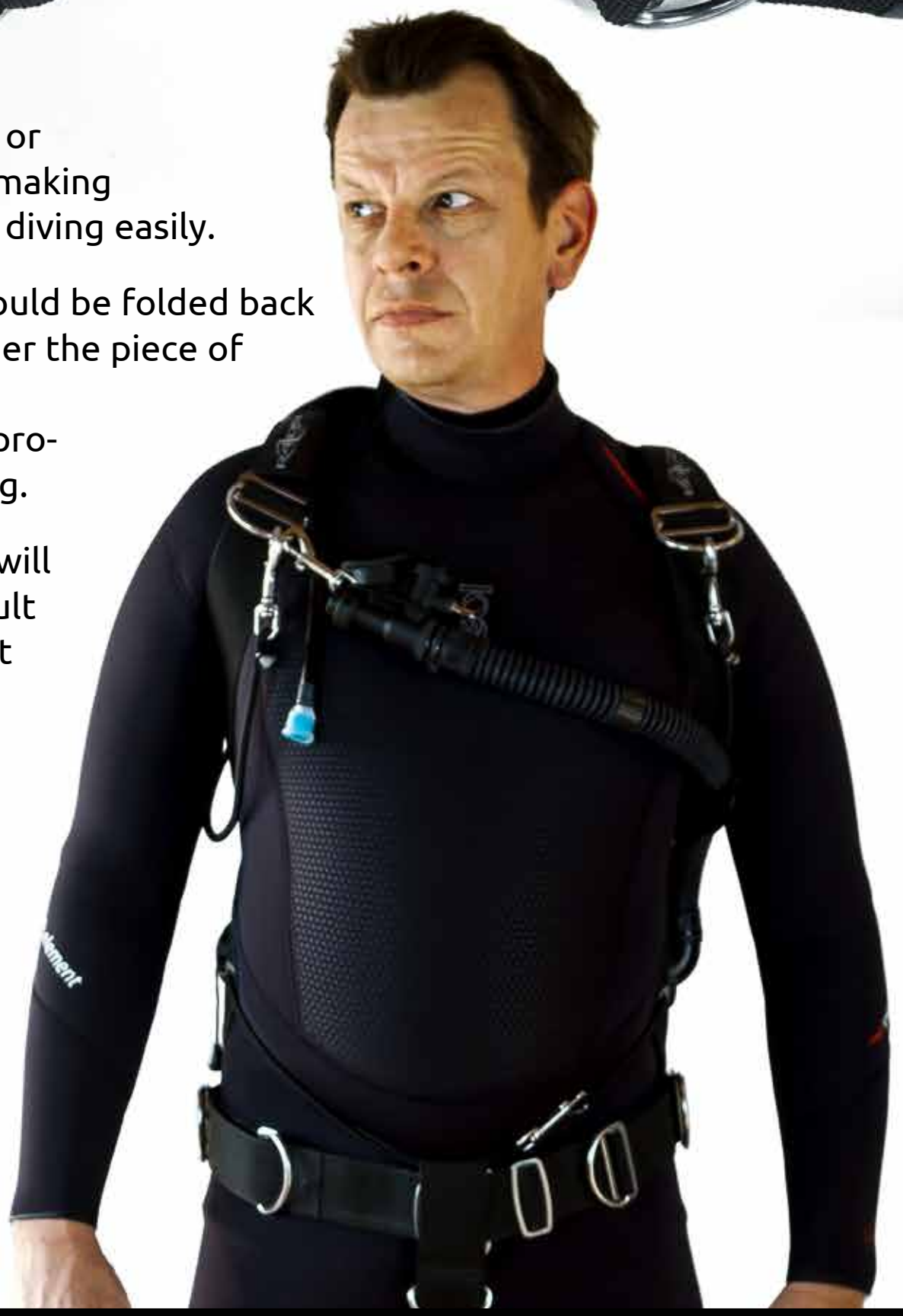
- The loop of webbing between the buckle and the wide gauge Tri-glide should be small enough so that neither of the buckle plates can rotate and are held in the correct orientation.

- The buckle should be positioned to fasten in the middle of the waist and be covered by the crotch strap loop to streamline the configuration.
- Make sure to leave plenty of extra webbing for any adjustments that may be required later then cut off any excess and burn the end to seal it.
- The free end of the webbing should be on the inside of the left Waist Strap and can be held neatly in place with the loop of bicycle tire inner tube provided.

Step 7: Fitting the Low Profile Buckle

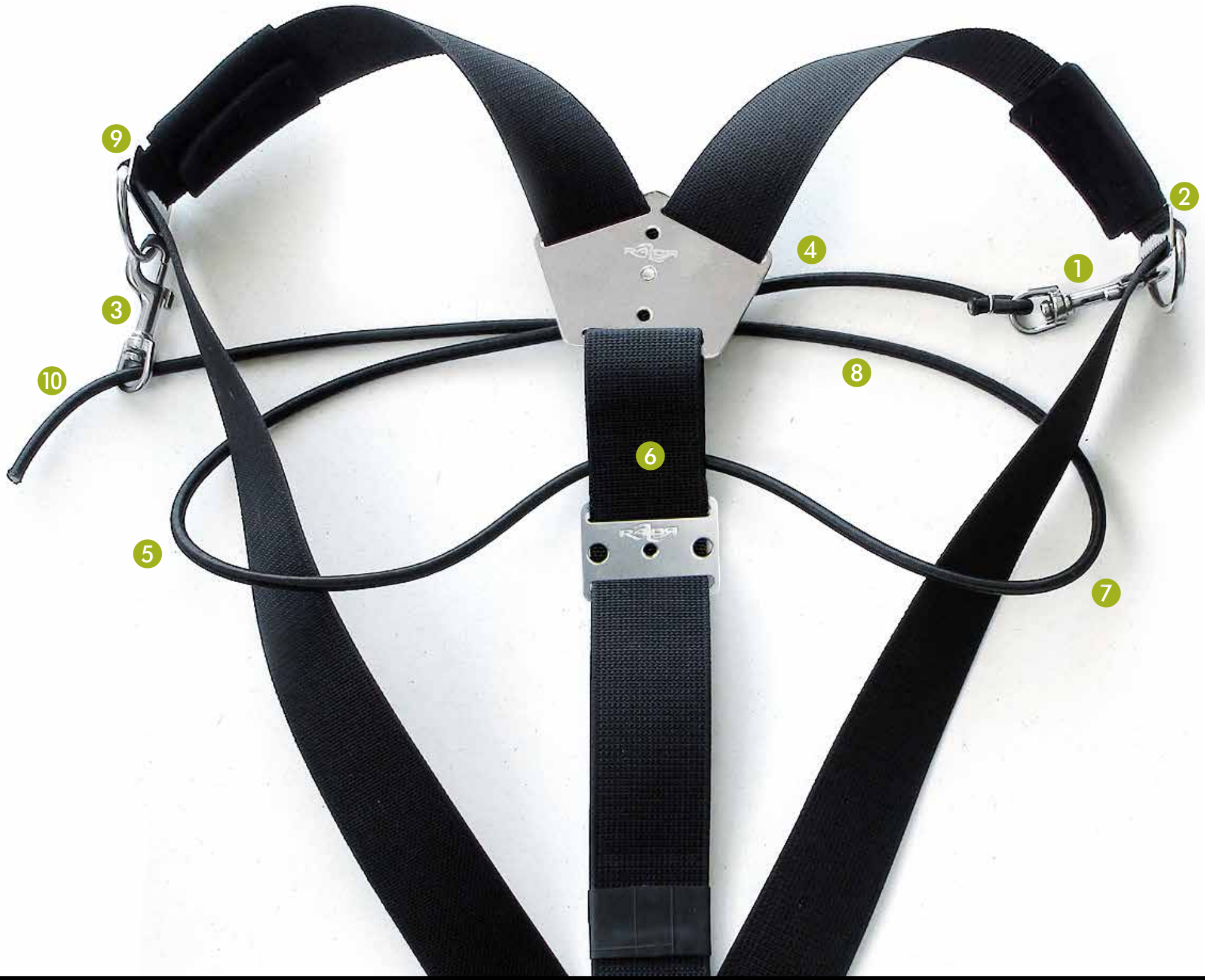
- The buckle is tightened by passing the right hand waist strap through both of the buckle plates and then back under the large plate.

- The buckle can be tensioned or released with just one hand making adjustments on the fly while diving easily.
- The free end of the strap should be folded back on itself and also tucked under the piece of inner tube on the right hand side webbing that has been provided to stop it from dangling.
- When the webbing is new it will be stiff and somewhat difficult to use but after a few dives it will soften and develop a certain amount of “memory” that will make it much easier to work with.
- If you use soft webbing to begin with it will get too soft after a few uses and the harness will tend not retain its desired shape which will make donning and doffing it more difficult and it will wear much faster.



Step 8: Sizing and Fitting the Side-Mount Bungee

- Clip the swiveling snap bolt already attached to the SM Bungee (1) to the right hand shoulder D ring (2) and clip the free swiveling bolt snap (3) to the left shoulder D ring.
- Then run the free end of the SM Bungee across the chest (4) and under the left arm around the back (5), passing it through the loop in the webbing between the DSP and the wide slot Tri-glide (6), under the right arm (7) and back around the chest (8) to the left shoulder D Ring (9).
- Run the free end of the SM bungee through the loop of the bolt snap attached to the left shoulder D Ring and pull on it until the cord is reasonably snug (10).



Step 8: Sizing and Fitting the Side-Mount Bungee

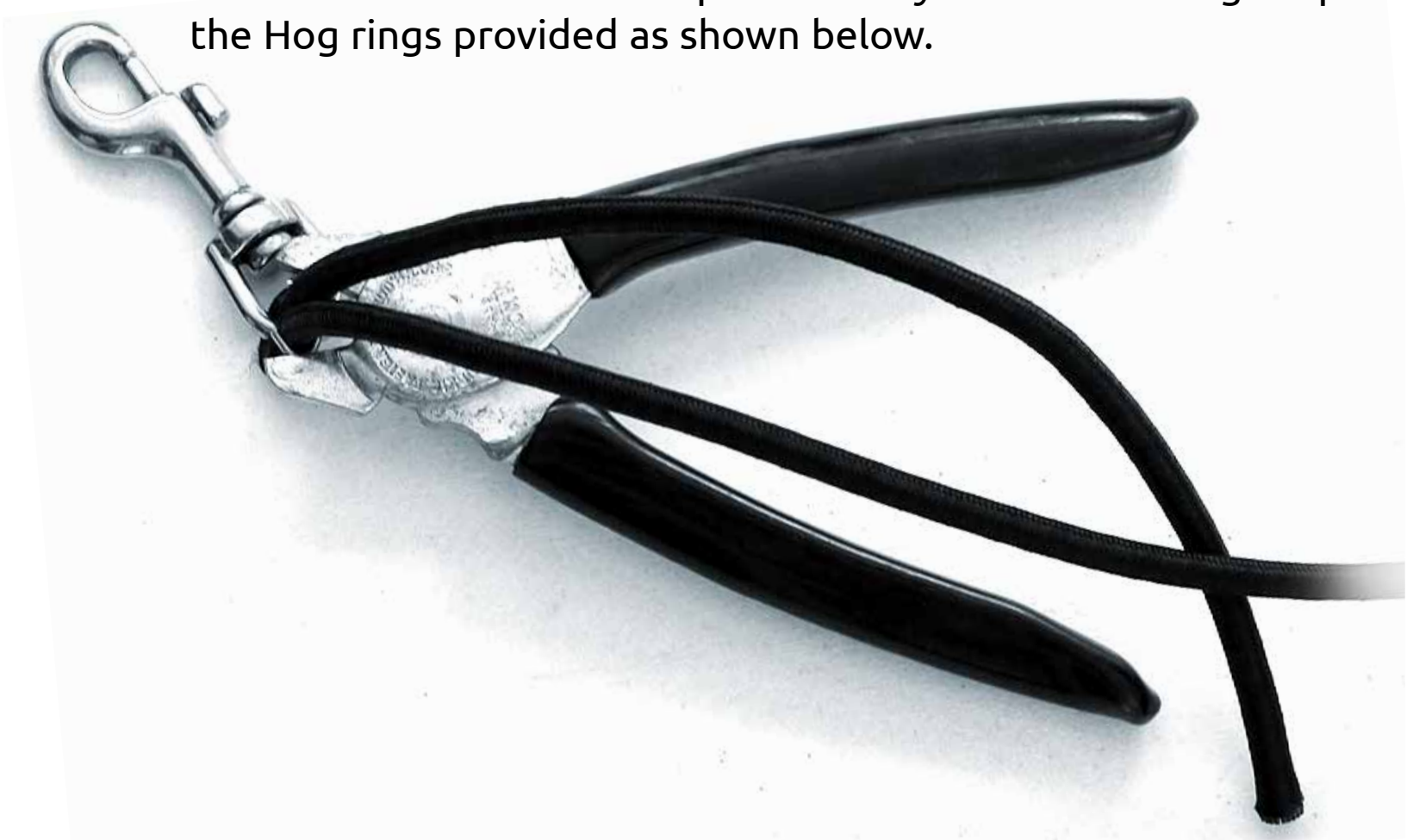
- This should be approximately the right length for the SM Bungee and it can be temporarily attached to the snap bolt using a cable tie as shown below.

- Now move the clips to the opposite D Rings so that the SM Bungee is no longer crossing the chest.

- The elastic bungee cord runs across the back, under the arms and attaches to the outside of the shoulder D rings when the Razor Harness is worn.

Step 8: Sizing and Fitting the Side-Mount Bungee

- It will require some experimentation with your side mount tanks in the water to get the exact length of the cord right so leave it long to begin with and shorten it progressively as required.
- Once you have got the ideal tension cut the cord to the appropriate length burn the end to seal it and fix it permanently to the swiveling snap bolt with one of the Hog rings provided as shown below.



- The SM Bungee will stretch over time and may need to be shortened periodically or replaced.
- It is recommended to replace the SM Bungee regularly or as soon as it shows any sign of wear and tear.
- It is strongly recommended to make up a second SM Bungee and carry it with you while diving in the Expandable Pouch as a backup.
- The complete Razor Side Mount System comes with a Spare Side Mount Bungee included in the package.
- A “Spare SM Bungee” is also available in the Go Side Mount Online Shop as a separate item if required.

Step 9: Weighting and Trim

Diving either under weighted or over weighted is inefficient and potentially dangerous. Correct weighting is critical to mastery of buoyancy control and trim allowing easier more comfortable diving.

Both the correct amount of ballast weight required and its ideal position on the diver need to be established.

Enter the water wearing all of your equipment including your normal exposure protection and full tanks.

Dump all of the air from both the Primary and Backup BAT Wing and your Drysuit if you are using one.

Add any weight required until you are neutrally buoyant while holding a normal breath just below the surface.

This is the amount of weight you will need to add to the T Weight System and/or to the Pocket Weight System plus a small amount extra to compensate for the weight of the gas in the tanks.

It is recommended to redo the weighting check at the end of the dive with the gas in your SM tanks at 750psi / 50 Bar.

Now you will need to establish the correct positioning of the weight to improve trim, swimming efficiency and your stability in the water.

Trim has 2 components horizontal (head to toe) and lateral (side to side).

Horizontal trim can be optimized by moving the weight higher or lower as required.

Lateral trim can be optimized by positioning weights as close to the center line of the body as possible to minimize turning moments.

Having weights positioned as close as possible to both the center line of the body and the middle of the body will give greater stability and therefore greater control while diving in all orientations.

Step 9: Weighting and Trim

- Weights can be added easily to either the Lumbar T Weight Belt or the Waist T Weight Belt or to both if required.
- The optimal positioning for ballast weight assuming neutral trim is to either side of, or just above the MBP using both the Lumbar and Waist strap of the T Weight System.
- When using the BAT Wing this ensures that the center of gravity is also the center of buoyancy thereby increasing stability and control.
- If more head down trim is required which is often the case when side-mounting due to the tanks being lower on the diver and dropping the center of gravity towards the feet then more of the ballast weight can be positioned higher on the Lumbar Strap of the T Weight System or placing a Weight Pouch higher on the Pocket Weight System to counteract this.
- If more head up trim is required due then more of the ballast weight should be positioned lower at the Waist Strap of the T Weight System

Step 9: Weighting and Trim

Refer to the "Razor T Weight System" manual and as well check out the Manual "Razor Pocket Weight System" for instructions on how to attach weights correctly to the Razor Harness.

Although not recommended weight can also be added directly to the Razor Harness in the following locations:

Positioning weights

1. To each of the Shoulder Straps where they exit the DSP
2. On the Lumbar Strap below the DSP
3. On the Lumbar Strap above the MBP
4. To each of the Waist Straps either side of the MBP
5. To each of the Waist Straps between the DAP's and the Hip D rings

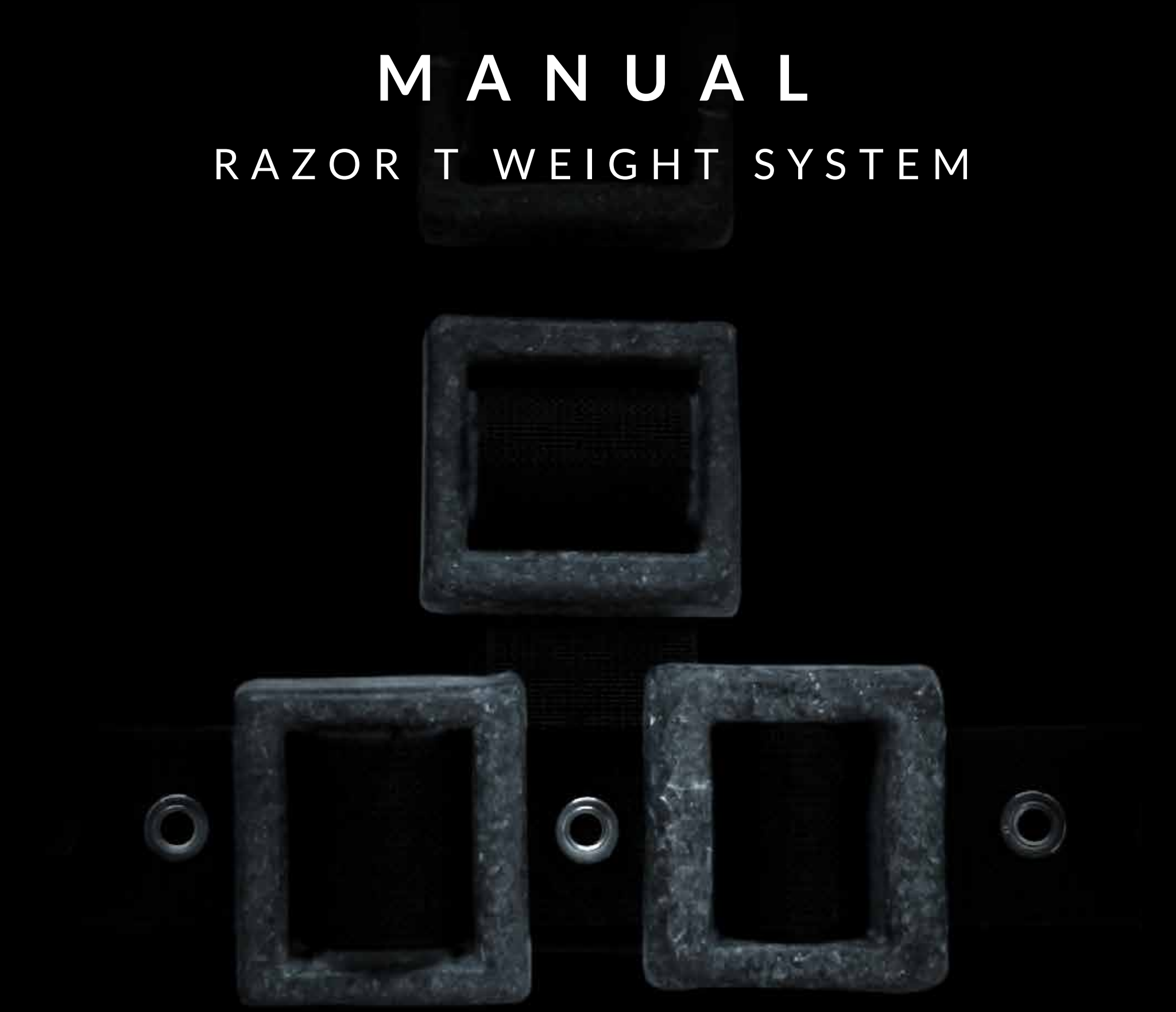
Step 10: Final Adjustments

- Remember everything changes when you get wet!
- Find some shallow open water or a swimming pool and try out the harness.
- The Razor Harness should have a tight fit to increase control of buoyancy, trim and equipment load.
- A sloppy harness equates to a sloppy diver!
- Swimming efficiency and gas consumption will improve when the diver and equipment load are all one unit and move together.
- Once you have made the final adjustments to your harness you can cut off any extra webbing and burn the ends to seal them.
- Remember to leave enough adjustment in the harness for changes in thickness of exposure protection or any gain in weight.
- All loose ends of webbing remaining can be held in place with the short sections of bicycle tire inner-tube provided.
- Many divers choose to get 2 Razor Harnesses, 1 for cold water diving in a Drysuit and 1 for warm water diving in a Wetsuit so that they do not have to worry about adjusting the harness or changing D rings etc. when they change environments.
- All the other components of the Razor System will work with either harness without any further changes needing to be made.

Step 10: Final Adjustments

MANUAL

RAZOR T WEIGHT SYSTEM



RAZOR

SIDE MOUNT SYSTEM

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Content

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1 The Razor T Weight System

1.1 Package Content

Parts:

1. Lumbar Strap
2. Waist Strap
3. Neoprene Wrap
4. 4 Button Head Screws
5. 4 Washers

All hardware is heavy duty passivated stainless steel

1.2 Overview

The Razor T Weight System (TWS) is a modular 2 part weighting system designed to make adding or removing weights from the Razor Harness quick and easy.

Part one allows weight to be added to the Lumbar area between the DSP and the MBP and the second part allows weight to be added to the waist area between the DAPs and the MBP.

You can use either part individually or use both together at the same time so you have the option of using 3 different configurations according to diver preference:

① Weights placed on the Lumbar Strap only

② Weights placed on the Waist Strap only

③ Weights placed on both the Lumbar Strap and Waist Strap

1.2 Overview

- The TWS is designed to use standard lead diving weights that are universally available. Up to four 3kg block weights can be added to the Lumbar Strap and two 3kg blocks weights can be added to the waist strap.
- So in total as much as 18kgs/40lbs can be added to the TWS although with a properly weighted equipment configuration this amount should never actually be required.
- The advantage of using the TWS over a weight belt is that it reduces clutter and allows you to place weight exactly where you need it to optimize trim.
- Unlike a weight belt or weight pockets the weights are held very securely and there is no chance of losing them accidently resulting in a potential for injury/DCS due to a buoyant ascent in the open water. In the overhead environment loss of weights would result in the diver becoming pinned to the ceiling unable to exit.
- The TWS ensures weights are placed close to both the center line and the midline of the body helping to maintain stability and reduce turning moments thus giving the diver greater control while diving.
- When the TWS is used in conjunction with BAT Wing then both the center of ballast and center of buoyancy are very close to one another which also helps to maintain stability and control while diving.

1.2 Overview

Weight can be added directly to the Razor Harness itself (see Razor Harness Manual) but this is not recommended. The advantage of using the TWS over putting weights directly on the harness is fourfold:

① Ease of use in removing or changing weights quickly

② Hardware on the harness will not have to be removed and replaced to add or remove weights

③ No adjustments to the harness webbing are required as the length of the webbing stays the same and is not affected by adding or removing weights or using different size weight blocks

④ You do not have to travel with weight on the harness

Velcro closing weight pouches can also be used on the Razor Harness in conjunction with the TWS so that in an emergency divers have the option of ditching some weight at the surface during open water dives. Ditching weight underwater is not recommended as it may result in an uncontrolled buoyant ascent.

In an emergency if extra buoyancy is required at the surface while using SM configuration negatively buoyant Steel tanks can be removed or Aluminium tanks can be drained to 140bar/2000psi or below at which point they will start to become positively buoyant.

2 Rigging the TWS Lumbar Strap

① Remove the BAT wing if fitted to the Razor Harness.

② Bolt the top of the Lumbar Strap webbing to the bottom hole of the DSP using one of the supplied button head screws and a washer.

③ If the BAT Wing is also normally attached at this bottom hole on the DSP then the longer bolt found in the BAT Wing or Universal Spares kit will be required to fix both the Lumbar Strap and the BAT Wing to the same mounting point.

④ Slide block weights onto the webbing and position them correctly on the Lumbar strap between the DSP and the MBP to optimize trim. Ideally weight should not be placed above the Lumbar Strap Tri-glide so as not to interfere with the SM Bungee.

⑤ Up to 4 block weights can be added to the Lumbar Strap. If more head down trim is required the weight can be moved closer to the DSP or the heavier weights can placed at the top of the Lumbar Strap. If more head up trim is required weight can be moved closer to the MBP or the heavier blocks placed lower on the Lumbar Strap.

⑥ Feed the free end of the webbing through the top slot of the MBP (the top slot “A” on the MBP is cut slightly wider than the other slots to accept the Lumbar Strap easily) and double the webbing back over.

2 Rigging the TWS Lumbar Strap

⑦ The extra webbing can cut off and sealed by burning the cut end. Be sure to leave enough extra webbing to add more or larger weights in the future if necessary.

⑧ The webbing can be finished off by feeding it back through the bottom block weight if required although this is not really necessary as it will end up inside the Neoprene Wrap.

⑨ It is very important that the Lumbar strap of the Razor Harness determines the distance between the DSP and the MBP not the Lumbar Strap of the TWS. Make sure that the TWS Lumbar strap is not pulled tight and is the same length with the weights fitted as the Lumbar strap of the Razor Harness.

⑩ Fit the Neoprene Wrap around the weight blocks on the Lumbar Strap of the TWS and the Lumbar Strap of the Razor Harness so that they are both solidly locked together. Ideally the Velcro closure of the Neoprene Wrap should be positioned on the inside of the Razor Harness against the divers back. The loose end of the Lumbar strap should be secured inside the Neoprene wrap. The Neoprene wrap should not be placed around the webbing loop below the DSP so as not to interfere with the SM Bungee.

⑪ The Neoprene Wrap can be cut down in two places in between the guide stitching if required allowing the following configurations:

- Three single weight block wraps
- One double and one single weight block wrap
- One triple weight block wrap

Be sure to only cut between the stitching tramlines otherwise the edges of the neoprene will fray.

⑫ Double check all fittings on the TWS are secure and refit the BAT Wing.

3 Rigging the TWS Waist Strap

① Remove the BAT wing if fitted to the Razor Harness.

② Slide the Waist Strap of the TWS under the webbing of the Razor Harness that passes through slots A and B of the MBP and bolt it into the hole in the middle of the MBP using one of the supplied button head screws and a washer.

③ Slide one block weight onto either side of the Waist Strap webbing. Up to a maximum of 3kgs can be used on either side. The amount of weight used should be equal either side.

④ Bolt the outside grommets into the DAPs on either side using 2 of the button head screws and washers supplied. With small weight blocks use the two inside grommets and with large block weights use the 2 outside grommets.

⑤ The DAPs can be moved on the Razor Harness either closer to or further away from the MBP as required to get a good fit with the Waist Strap of the TWS.

⑥ Neoprene Wraps are not required for the Waist Strap

⑦ Double check all fittings on the TWS are secure and refit the BAT Wing.

4 Weighting and Trim

- It is very important to dive properly weighted and trimmed out in a well balanced equipment configuration. This will make your diving both safer and easier.
- Tank selection is important in helping to achieve correct weighting.
- Diving in cold water with a Drysuit and thick undergarments it is recommended to use low pressure Steel tanks as the primary SM tanks which will help to offset the extra positive buoyancy of the exposure protection.
- High pressure Steel tanks are not recommended as they tend to be too negatively buoyant and make handling SM tanks underwater very difficult.
- Diving in warm water in a wetsuit it is recommended to use Aluminium primary Side Mount Tanks so as not to be excessively over weighted.
- Aluminium tanks should always be used for stages and deco tanks so that as you add extra tanks to your configuration you do not become excessively over weighted.

To determine your correct amount of ballast the following weighting check should be carried out:

1. Enter the water wearing all of your equipment including the primary SM tanks
2. Completely deflate your Bat Wing and your Drysuit if you are using one
3. While holding a normal breath stop kicking and add enough weight until you sink to eye level. When you exhale you should submerge completely.
4. If you are using full tanks you will need to add a little more weight to compensate for the weight of the gas in the tanks that will be used during a dive.
5. Now that the correct amount of weight has been established submerge and attempt to hover in a horizontal position while moving the weight up or down the torso until the ideal position is achieved to maintain comfortable trim.

After a few dives as you become more relaxed and comfortable diving your Razor Side Mount System you may find that you can reduce your ballast weight a little.

When you are correctly weighted you will need very little gas in your Bat Wing.

If you are diving in a Drysuit all your buoyancy can be controlled with the Drysuit for the most part just using the BAT Wing for surface buoyancy and extra lift when carrying heavier equipment loads.

MANUAL

RAZOR BAT WING 2.5

RAZOR

SIDE MOUNT SYSTEM

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1 The Razor BAT Wing

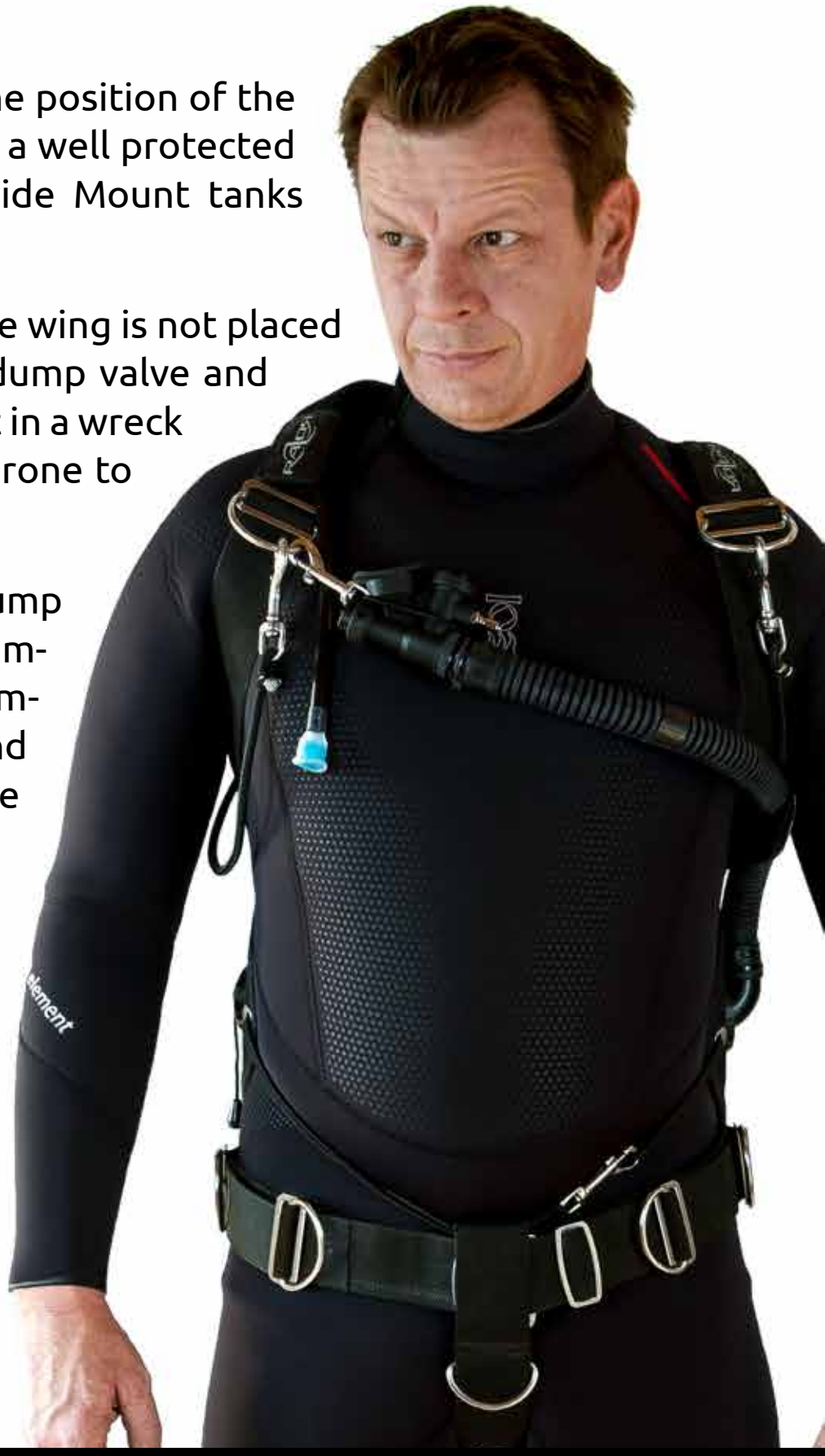
1.1 Package Content

HEAVY DUTY 3 LAYER DOUBLE REDUNDANT WING WITH 45LBS / 20KGS LIFT IN BOTH - PRIMARY AND BACKUP WING PLUS POCKET WEIGHT BASE LAYER.

1. **Primary Wing:**
2. 19” large diameter inflation hose with fixed low profile elbow and power inflator
3. Large Razor Logo Wrap for large diameter Inflation Hose
4. 6” LPI Hose
5. Heavy Duty Pull Dump Valve
6. **Backup Wing:**
7. Oral Inflation Hose with Bite-On Mouthpiece
8. Pocket Weight Base Layer
9. Openings to place the Razor Weight Pockets between the wing and the layer
10. Long Waist Bungee with snap bolt attached
11. Short Waist Bungee no snap bolt

1.2 Overview

- Once your Razor Harness and T Weight System have been set up then you can attach the BAT Wing to the Harness.
- The BAT Wing should be worn with the Primary Wing on the outside and the Backup Wing on the inside.
- This makes finding both the Primary and Backup wing dump valves easier and allows both to be vented more effectively and the Backup wing is very well protected.
- The design of the BAT wing places the position of the dump valve and the inflator elbow in a well protected low profile position between the Side Mount tanks and the diver's body.
- In addition the outside material of the wing is not placed between a hard object such as the dump valve and the ceiling of a cave, or a sharp object in a wreck for example where it may be more prone to damage.
- In the very unlikely event that the dump valve or inflator elbow or large diameter inflation hose should be damaged these components are easily and cheaply replaced which is not the case if the wing material is damaged.
- The BAT Wing is supplied with a 19" long large diameter inflation hose and a short LPI hose.
- This configuration should fit just about everyone but shorter large diameter inflation hoses of 16" or 13" and LPI hoses of 8" or 4" can be purchased separately in order to customize hose lengths if required.



1.2 Overview

The dump valve and the large diameter inflator hose elbow have compatible fittings and can be positioned on either the left or right hand side of the BAT wing according to diver preference.

1.2 Overview

Normally when using a Drysuit the dump valve will be positioned on the left hand side of the wing with the large diameter Inflator hose on the right hand side of the wing. The large diameter inflation hose will deliver in front of the diver across the chest from the right hand side with the LPI hose delivering from the regulator on the right SM tank.

1.2 Overview

When using a wetsuit normally the fittings should be switched so that the large diameter inflator hose is on the left hand side and the LPI hose can deliver from the regulator on the left hand Side Mount tank.

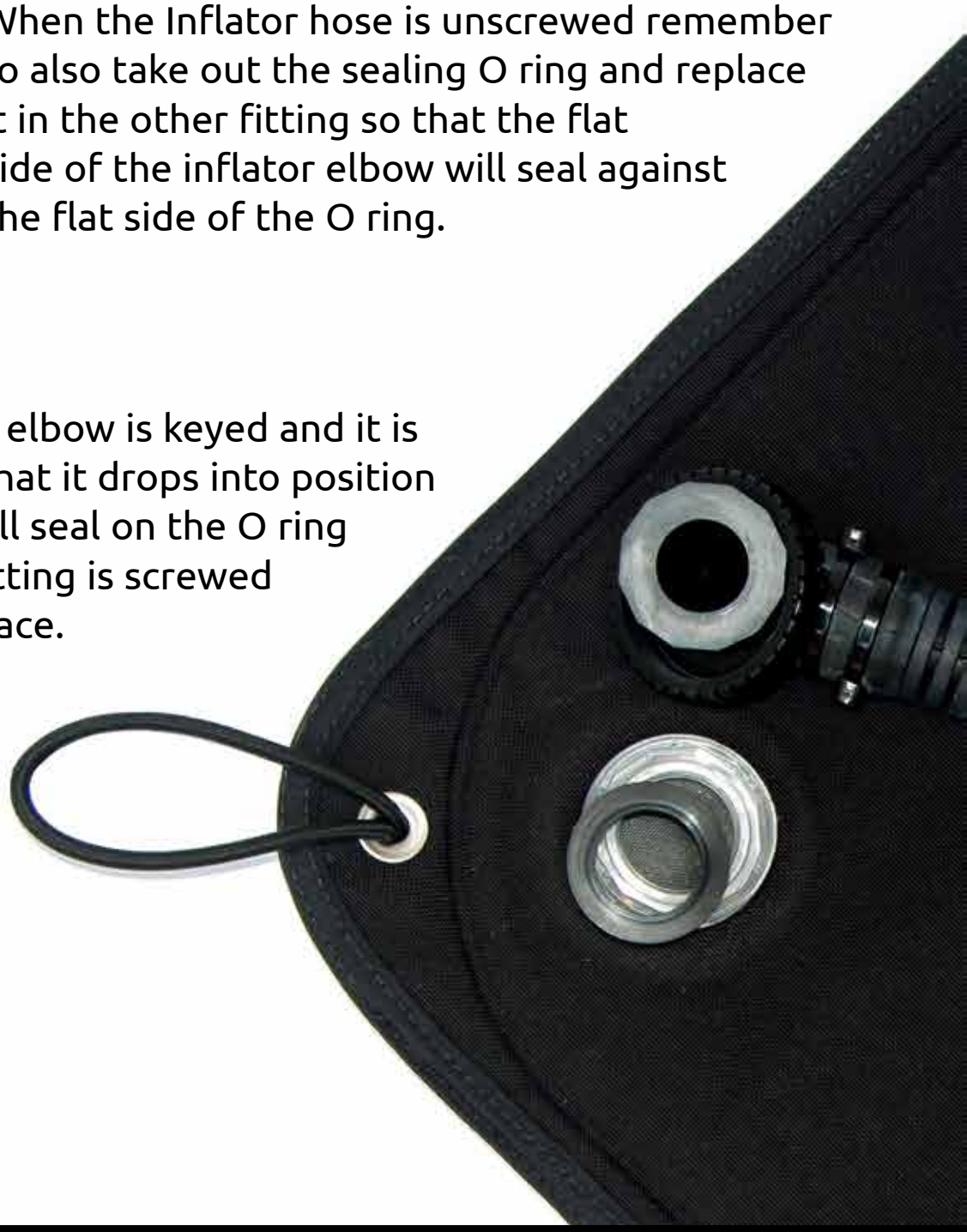
The BAT wing is supplied
already set up in this configuration.

1.2 Overview

When changing the fittings make sure that they are not cross threaded when screwing them in. The best way to do this is to turn anti clockwise until the threads drop into position and then tighten gently. No force should be used to get the threads started.

When the Inflator hose is unscrewed remember to also take out the sealing O ring and replace it in the other fitting so that the flat side of the inflator elbow will seal against the flat side of the O ring.

The inflator elbow is keyed and it is important that it drops into position so that it will seal on the O ring when the fitting is screwed back into place.



1.2 Overview

The orientation of the elbow can be adjusted so that the large diameter inflation hose routes comfortably under the arm and across the chest.

To do this start the threads a couple of turns but do not tighten them until the correct orientation of the elbow is achieved making sure the keyed flange drops into place to ensure a seal and then tighten fully.

Once fitted pressure test the seal by inflating the wing and making sure it is airtight.

1.2 Overview

When replacing the dump valve it is important that the spring is located in the right position in the center and can move freely so that the valve does not stick in the closed position.

Hold the dump cord and spring under a little tension as you screw the fitting back into place.

After tightening the dump valve fully check to make sure that it operates correctly and that the spring moves freely when the cord is pulled.

Check correct operation of the wing by inflating and deflating it and making sure there are no leaks from either of these fittings before going diving.

2 Rigging the Razor BAT Wing

2.1 Tools

You will need the following tools to rig your Razor BAT Wing:

- A hex wrench to fasten the button head screws. (included with the complete system in the Universal Spares Kit.)

- A lighter to burn and seal the ends of the cut webbing and elastic bungee cord.

- A knife or scissors to cut the harness webbing and the elastic bungee cord.

Step 1: Adjusting and Attaching the top of the BAT Wing to the DSP of the Razor Harness

- The top of the BAT Wing bolts into the DSP of the Razor Harness and should be positioned so that the waist bungee cord and dump valve / inflator elbow are at the height of your belly button just above the waist strap of the Razor Harness.
- Depending on the individual setup the top of the wing can be bolted directly into the DSP or into the Bungee Triglide if required to get a perfect fit.
- Ideally the top hole in the DSP should be used to leave the bottom hole free to attach the Lumbar Strap of the T Weight System but you can attach both the BAT Wing and the T Weight System to the same hole either at the top or bottom of the DSP using the longer button head screw provided if required.

Step 2: Attaching and Adjusting the BAT Wing Waist Bungee

The BAT Wing Waist Bungee is designed to secure the sides of the BAT Wing in a low profile streamlined position even when the wing is inflated and still give easy unrestricted access to all of the Razor Harness attachment points.

The waist bungee on the right hand side of the BAT wing should have a long loop with a small snap bolt attached to it. This will feed across the waist and through the loop of the crotch strap of the Razor Harness and clip into the short bungee loop attached to the left hand side of the BAT wing.

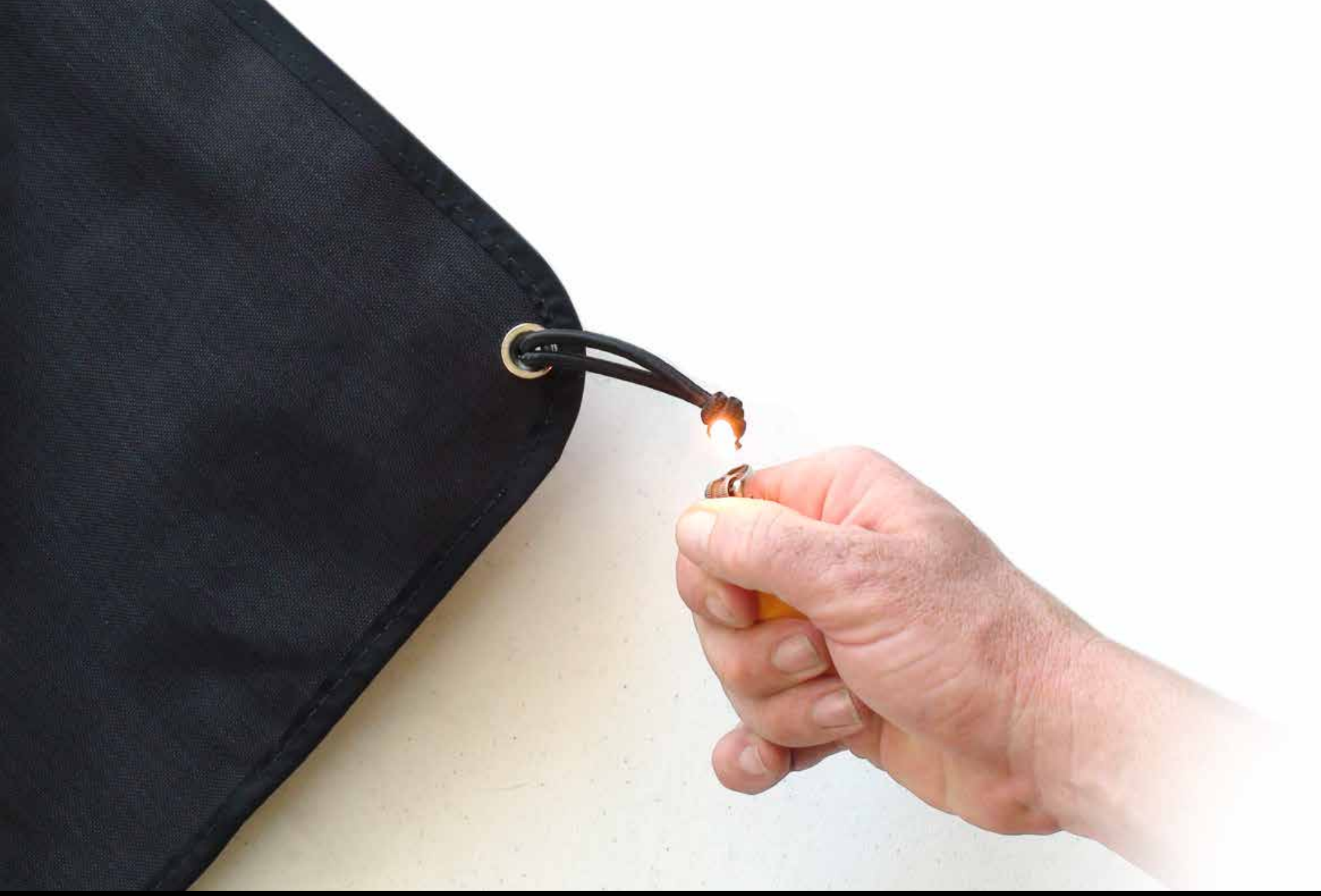
BUNGEES

1. A simple overhand knot tied into the end of the bungee cord will hold the right hand side bungee in place. This knot should be on the inside of the wing.

2. On the left hand side of the wing a short waist bungee cord is held in place with 2 overhand knots tied either side or the wing grommet to secure it.

Step 2: Attaching and Adjusting the BAT Wing Waist Bungee

- The waist bungee should be fairly snug with the wing completely deflated and both bungee cords will need to be adjusted to achieve the correct length and tension to keep the BAT wing in a nice low profile position when it is inflated and to prevent it from floating away from the divers body.
- It will take a little bit of trial and error to get the length/tension correct so leave the bungee cords long to begin with and do not tie the knots too tight so that they can be released and moved easily if necessary.
- Once the correct length is achieved then any excess bungee can be cut off and the ends of the cords burnt to seal them and the knots snugged tight.



Step 3: Attaching and Adjusting the BAT Wing Rear Bungee to the Razor Harness

- The BAT Wing Rear Bungee is designed to secure the bottom of the BAT Wing in a low profile streamlined position even when the wing is inflated and still give easy unrestricted access to all of the Razor Harness attachment points.
- The Rear Bungee is secured to the BAT Wing with the Wing Tab and the BAT Wing can be quickly and easily removed from the Razor Harness by undoing the button head screw leaving just the Wing Tab and bungee cord still attached to the MBP.
- The bungee cord is attached to the Wing Tab with a Lark's Head Hitch (aka Lanyard Hitch). The bight of the Larks Head should be on the outside of the wing tab.

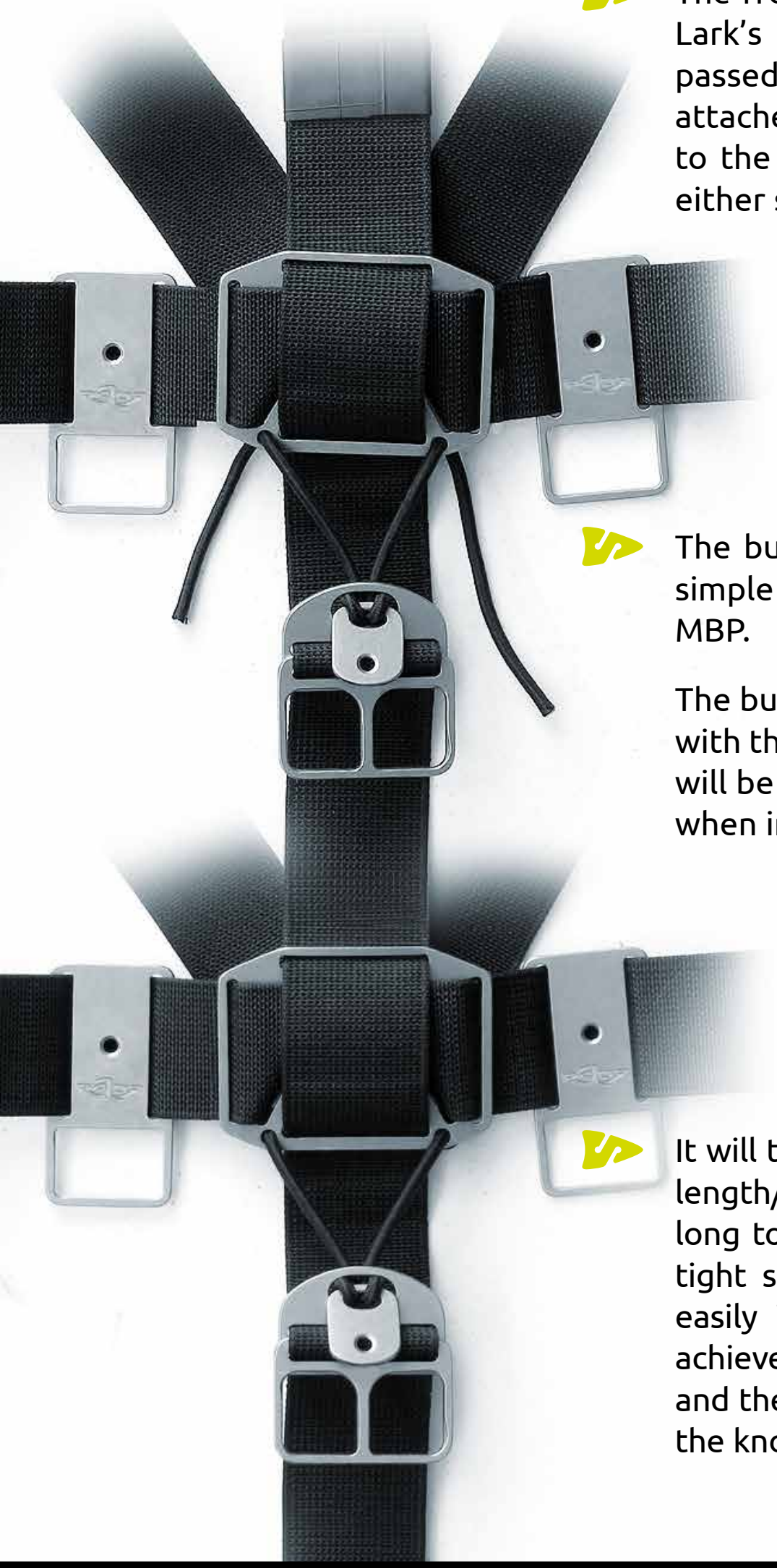
Step 3: Attaching and Adjusting the BAT Wing Rear Bungee

- The Wing Tab can also be removed from the bungee cord if required by passing the hitch of the Lark's Head Hitch back over the body of the Wing Tab which will just leave the bungee cord attached to the MBP.

- The bottom of the BAT Wing with the Wing Tab attached should line up with the slot of the Wing Tri-glide of the Razor Harness that holds the Butt B ring in position. The Wing Tri-glide can be moved up or down the crotch strap webbing of the Razor Harness to achieve the desired location.

- This ensures that the Butt B ring will not be covered by the BAT Wing and will remain accessible at all times even with the wing fully inflated.

Step 3: Attaching and Adjusting the BAT Wing Rear Bungee



- The free ends of the bungee cord coming from Lark's Head Hitch on the Wing Tab should be passed through the slot of the Wing Tri-glide attached to the Razor Harness and then run up to the MBP and passed through the two holes either side of slot B.

- The bungee cord can be locked in place with a simple overhand knot tied on the inside of the MBP.

The bungee cord should have some tension on it with the BAT Wing completely deflated so that it will be held in a streamlined low profile position when inflated and will pull tight when deflated.

- It will take a little bit of trial and error to get the length/tension correct so leave the bungee cords long to begin with and do not tie the knots too tight so that they can be released and moved easily if necessary. Once the correct length is achieved then any excess bungee can be cut off and the ends of the cords burnt to seal them and the knots snugged tight.

Step 4: Adjusting and Attaching the Inflation Hose

With the BAT Wing now attached to the Razor Harness the harness should be put on so that the large diameter inflation hose and power inflator can be correctly positioned. The large diameter inflation hose with the power inflator can be configured to use from either the right or left hand side.

The BAT Wing is supplied with the large diameter inflation hose and power inflator delivering from the right hand side but it can be easily changed to deliver from the left hand side if required as previously noted.

The “clocking” of the power inflator is also supplied with a right hand delivery orientation with the oral inflation mouthpiece facing up towards the diver with the power inflator button and Schrader valve on the underside.

This can be changed easily to a left hand delivery orientation if required by removing the 2 cable ties locking the power inflator in place and then rotating it 180 degrees before fastening with 2 new cable ties to resecure it in place.

Step 4: Adjusting and Attaching the Inflation Hose

- The oral inflator mouthpiece should now face up towards the diver along with the power inflator button and Schrader valve.
- The large diameter inflation hose will run over the kidney area under the arm and across the lower chest. The end of the Power inflator will be attached to the D ring on the opposite shoulder with a loop of bungee cord tied with a Fisherman's knot through the loop of a small swiveling snap bolt.

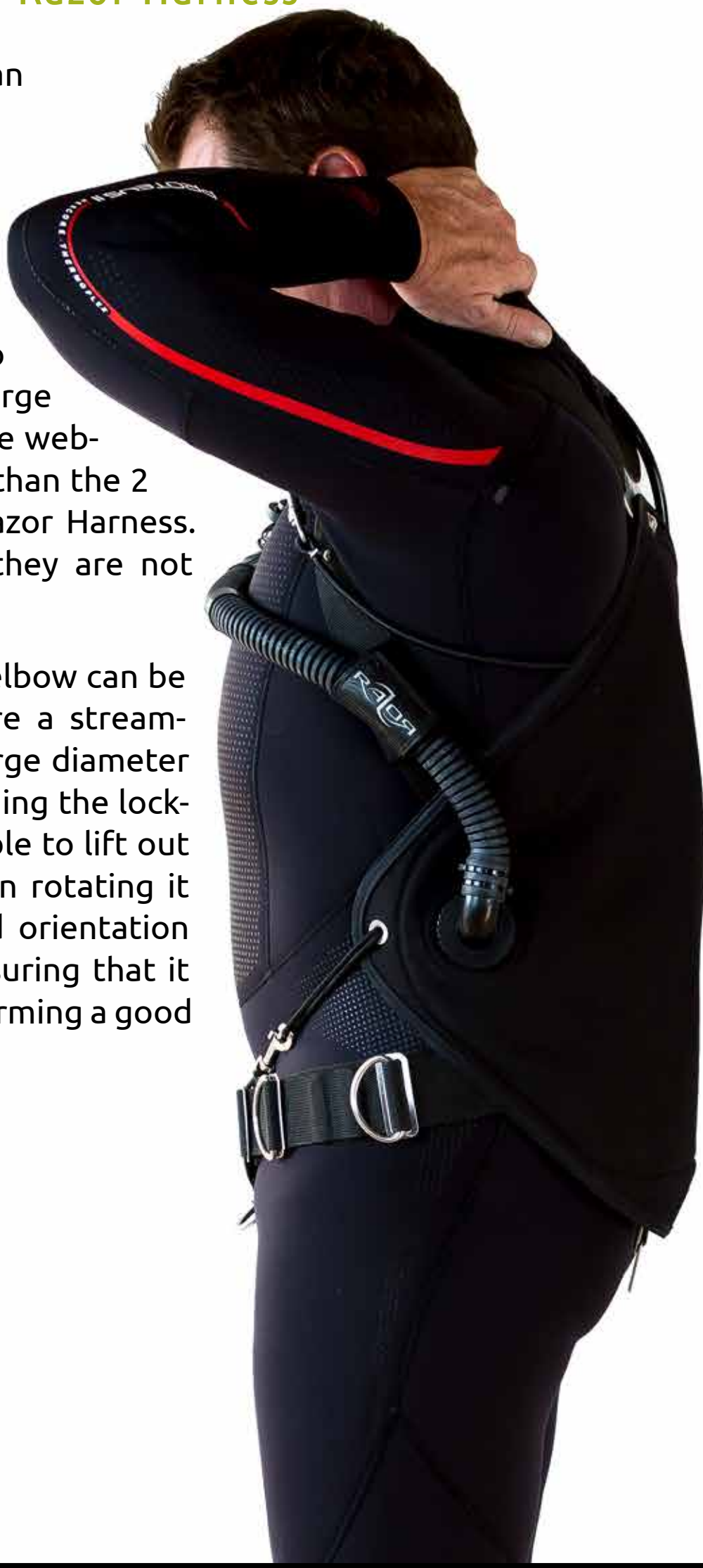
- The bungee loop can be positioned between the large diameter inflation hose and LPI hose while diving so that it is securely retained.
- The LPI hose to the power inflator should route directly across the chest from the 5th port in the end of the swiveling turret of the regulator first stage.
- It will run under the large diameter inflation hose.

Step 4: Adjusting and Attaching the Large Diameter Inflation Hose of the Primary wing to the Razor Harness

- The large diameter inflation hose can be secured to the lower shoulder strap of the Razor Harness below the shoulder D ring using the wide Neopren Logo Wrap provided with the BAT Wing.

- Please note that the BAT Wing Logo Wrap which has to go around the large diameter inflator hose as well as the webbing of the Razor Harness is larger than the 2 Logo Wraps that come with the Razor Harness. They should not be confused as they are not interchangeable.

- The orientation of the keyed hose elbow can be adjusted as noted earlier to ensure a streamlined comfortable routing of the large diameter inflator hose. This is done by loosening the locking ring a few turns until it is possible to lift out the locking plate of the elbow then rotating it until it locks back into the desired orientation and tightening the locking ring ensuring that it has bottomed out properly and is forming a good seal.



Step 5: Positioning the Oral Inflator Hose of the Backup Wing

- The oral inflator of the Backup wing should be routed over the right shoulder and can be held securely in place by passing it under the long neoprene logo wrap and the bycicle inner tube on the right hand shoulder of the Razor Harness webbing.
- The hose should bend towards the center of the chest just above the right shoulder D ring and should be long enough to reach the mouth comfortably.
- It can be held in place in a clean streamlined fashion by passing it through a couple of bicycle tire inner tubes placed around the large diameter inflation hose spaced a few inches apart.
- Any excess hose can be cut off to customize the length. Remove the bite on mouthpiece, cut the hose to the desired length and then replace the mouth-piece.

Step 5: Positioning the Oral Inflator Hose of the Backup Wing

- The mouthpiece can be glued in position when you are happy that you have the correct length. Spare mouthpieces are available and it is recommended to carry one in your Razor Expandable Pouch in case you should lose it while diving.
- In the event it should be lost while diving and you have no replacement it will have no effect at all unless you are actually using the Backup wing.
- The only problem then will be that the hose will tend to vent gas when you are in a head up position such as when ascending. This can be prevented by placing your finger over the end of the hose and releasing it when you wish to vent gas to adjust buoyancy or slow an ascent.

Step 6: Adding weights to the Pocket Weight Layer

- Additional to the weights on the T Weight System you can add weights easily to the system by adding weight pockets to the pocket weight layer on the BAT wing.
- The pouches can be bought seperately at our online shops or along with our dealers
- Detailed information on how to juggle with weights you will find in the "Razor Pocket Weight System" manual

Step 6: Adding weights to the Pocket Weight Layer

- Place the pockets against your back if you want ...
- ... to easy adjust the weights of your students even in the water by adding some more weights left and right top find out the right amount to use

... if you want to find out the right amount of weight to use for yourself an easy and quick way.

Step 6: Adding weights to the Pocket Weight Layer

- After you know the exact weight place the pockets between the weight layer and the wing itself.
- You can distribute the weight pockets depending on your needs of horizontal trim or comfort.

Step 6: Adding weights to the Pocket Weight Layer

Once you placed the pockets on the wing and for example you have to leave the weights after a day of diving on the boat, then just open the pouches and take the weights out, ready to just fill them in the next day.

Step 7: Correct Use of the BAT Wing

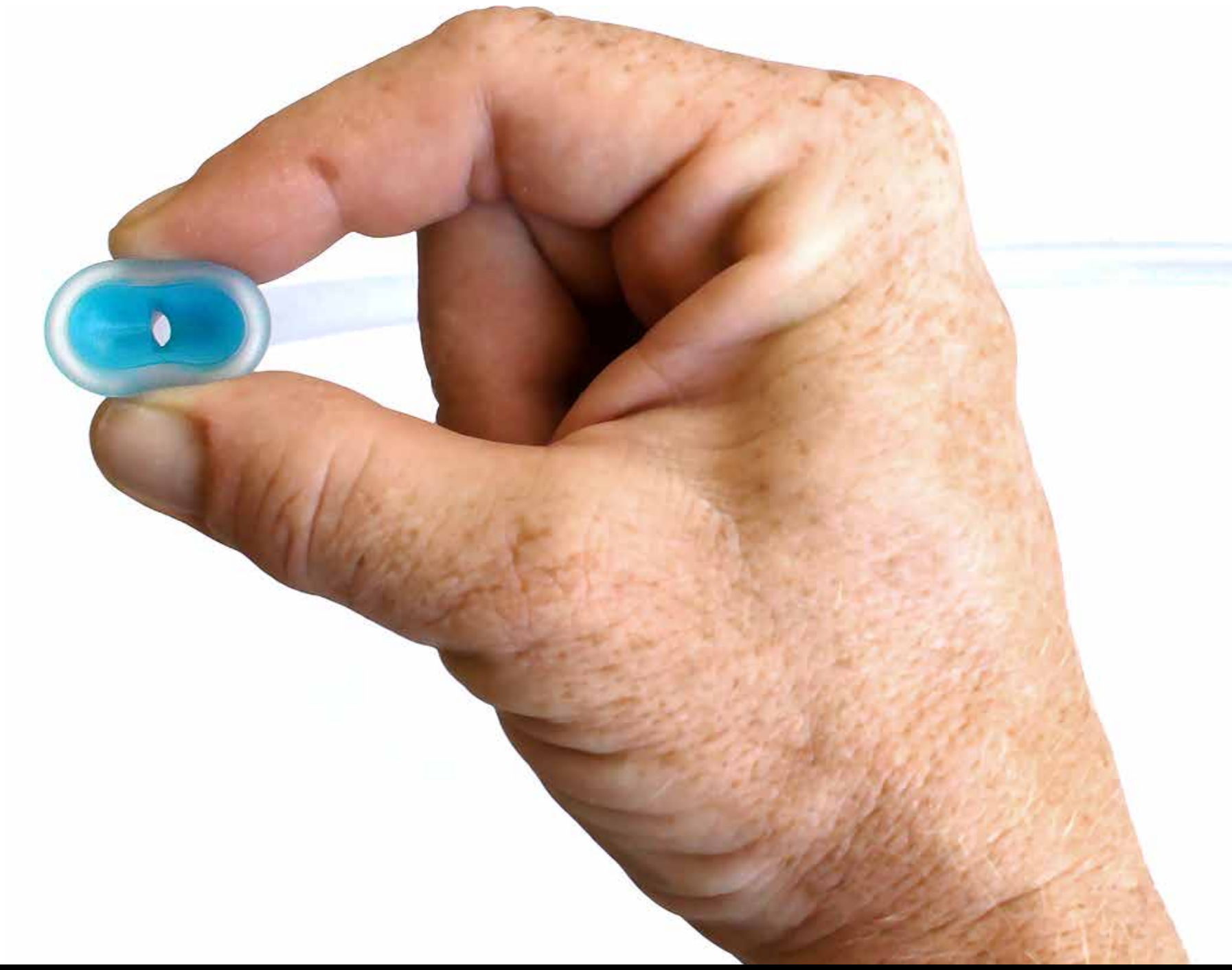
- Only use one wing at a time either the Primary or the Backup.
- Make sure the wing you are not using is completely empty while diving so that you only have 1 air space to control.
- **The Primary wing can be inflated in the following ways:**
  - By using the power inflator connected to a tank with an LPI hose
  - By oral inflation by holding down the dump button of the power inflator and blowing into the mouthpiece
- **The Primary wing can be vented in the following ways:**
  - By using the pull dump while rolling the body to the opposite side when in a horizontal position to get the dump valve to the highest position of the wing
  - By using the dump valve on the power inflator when in a head up position
- **The Backup wing can only be inflated orally using the bite on mouthpiece.**

  Not having a power inflator connected to the Backup wing avoids any problems associated with a mechanical failure or accidental inflation of the wing resulting in a potential buoyant ascent.

  To use the oral inflation hose place check the next page.
- **The Backup wing can be deflated in the following way:**
  - By holding the oral inflation hose at the highest point and pinching gently on the bite valve between thumb and forefinger to open it.
- If you are having trouble venting air from the oral inflation tube check that this dump valve is at the highest position of the wing, that you are pinching it in the correct orientation across the horizontal axis and that you are pinching at the very end.

Step 7: Correct Use of the BAT Wing

- To use the oral inflation hose place the very end of the bite on mouthpiece between your teeth horizontally and make a seal around it with your lips.
- Now bite down gently to open it and blow into the hose. No force should be required.
- If you are having difficulty inflating the wing check the orientation of the bite on mouthpiece as it will only open when you bite on it in the horizontal axis.
- Also make sure that you are biting at the very end of the mouthpiece as it will not open if you are biting further up.
- You should practice doing this before you go diving until you become familiar and comfortable with the technique.



Step 7: Correct Use of the BAT Wing

- After diving both the Primary and Backup wings should be drained of any water that is inside and partially inflated to dry.

- Both Primary and Backup wings can be drained of water in exactly the same way air is vented from them although it is easier if you orally inflate them a little first so that you can force any water out under pressure.

MANUAL

RAZOR EXPANDABLE POUCH

SIDE MOUNT SYSTEM

WWW.GOSIDEMOUNT.COM

Table of contents

1 The Razor Expandable Pouch (REP)

1.1 Package Content

1. Double Enders (only with the complete system)
2. Large Heavy Duty Top Zipper
3. 2 Internal Lanyards
4. 2 Internal Pockets
5. Velcro Expandable Sides
6. 1 Inch Stainless Steel D Rings
7. Mesh Pocket for Slates / Wetnotes

1.2 Overview

- The completely new REP has been specifically designed to be butt mounted which is the most streamlined and easiest to access location in SM configuration.
- Pockets on the waist are difficult to access due to the placement of the SM tanks and become an entanglement hazard in low areas.
- Thigh pockets are also difficult to access due to the placement of the SM tanks and will also have the tendency to push the bottom of the tanks away from the diver's body resulting in “A Framing” and a greater risk of the tanks getting ratcheted in small areas.
- The REP should be clipped off to both of the DAPs with the 2 double ender’s provided and will hang just below the BAT Wing with the Butt B Ring positioned between the bottom of the wing and the top of the pouch allowing easy unobstructed access to the B Ring as well.
- The pouch will rest on top of a butt mounted primary light if one is being used and anything clipped off to the Butt B Ring will be lie on top of it.
- The way that the REP is attached with a double ender clipped off to each of the small stainless steel D Rings sewn into the REP and then each double ender clipped to the DAPs on the Razor Harness provides a very solid secure attachment which will prevent accidental loss of the pouch.
- Although this is a metal to metal connection each double ender can easily be removed at either the DAP or the Pouch D Rings in the very unlikely event that one side of either double ender should jam closed. In addition the D Ring can be cut free if required as a last resort.

1.2 Overview

- This position also prevents the REP from swinging from side to side while swimming or getting caught between the diver's body and the SM tanks.
- The REP can be either used in situ or unclipped and brought to the front so that the diver can see exactly what they are removing or replacing from the pouch which is not possible with thigh or waist mounted pockets.
- The REP can also be clipped off temporarily to both the Shoulder D Rings while working with the contents if required which allows the diver to keep both hands free and allows easy access to and good visibility of the contents.
- The REP can be clipped off temporarily using just 1 double ender to the Butt B Ring or either of the DAPs if required but will tend to swing in this position while swimming.
- The REP can be kept as flat and streamlined as possible or expanded considerably by pulling open the Velcro closures around all four edges.
- Even squashed flat the pouch has quite a large volume and will hold a considerable amount.
- The back of the REP has a large mesh pocket with Velcro closure and a center tab to make opening it easier when wearing thick gloves. This was specifically designed to carry slates/wet notes and dive tables/laminated deco plans.
- The top zip of the REP is very robust and has a large tab to make operation with gloves easier and it opens across the full length to the pouch giving easy access to the contents.

1.2 Overview

- The REP has 2 internal Velcro closure pockets on the inside of the front panel which were designed to carry small items such as a backup cutting tool like the EZZYCUT or your Spare SM Bungee.
- In addition there are internal fixing points on both sides of the REP and a length of bungee cord for a lanyard which can be set up in any of the following ways depending on diver preference:

  1. one loop tied between both attachment points
  2. two small loops tied either side of the pouch
  3. one large loop tied just to an attachment point on one side of the pouch

- The bungee lanyard can be secured to the attachment point by passing one end of the bungee cord through the webbing loop and then tying both ends together with a Fisherman's Knot.
- The Spare SM Bungee can also be clipped off to one of these internal attachment points if desired.

Go Diving!

- There is no substitute for time spent in the water.
- Take it easy to begin with while you get used to your new Razor Side Mount System.
- Please contact Go Side Mount directly if you have any questions or problems with your Razor BAT Wing.

Best Wishes

HP Hartmann

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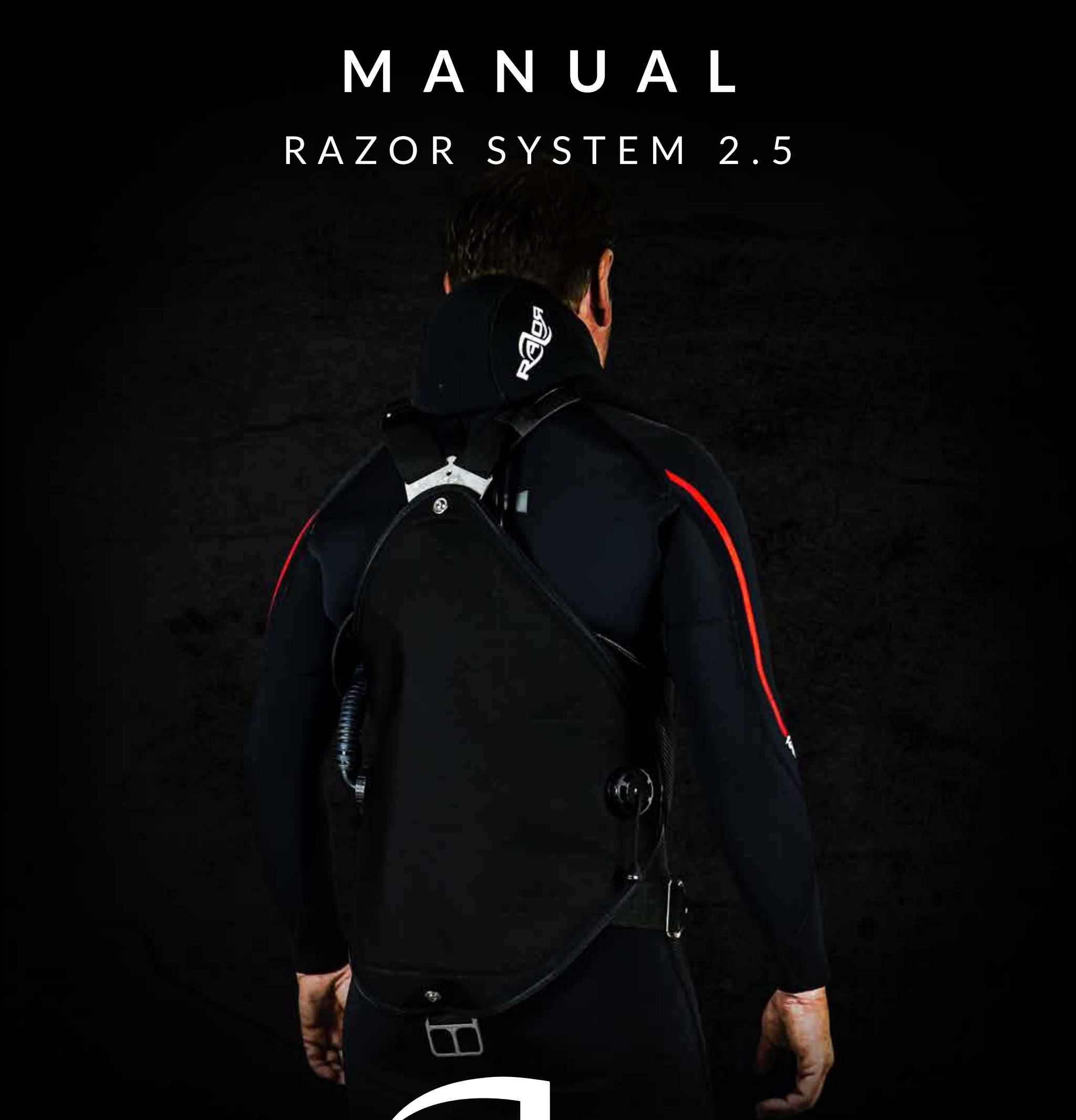
www.gosidemount.com

MANUAL

RAZOR SYSTEM 2.5



RAZOR

SIDE MOUNT SYSTEM

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