

# MANUAL

## RAZOR HARNESS 2.5



# RAZOR

SIDE MOUNT SYSTEM

 [WWW.GOSIDEMOUNT.COM](http://WWW.GOSIDEMOUNT.COM)

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# 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 General Information

## 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.



### WARNING

**THE RAZOR SIDE MOUNT SYSTEM IS NOT A LIFEJACKET.**

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



### WARNING

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](mailto:info@gosidemount.com).



Test according to DIN EN 1809:1998-1 buoyancy compensator

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# 1 General Information

## 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 General Information

## 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 General Information

## 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 General Information

## 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 General Information

## 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 The Razor Side Mount System

### 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 The Razor Side Mount System

### 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

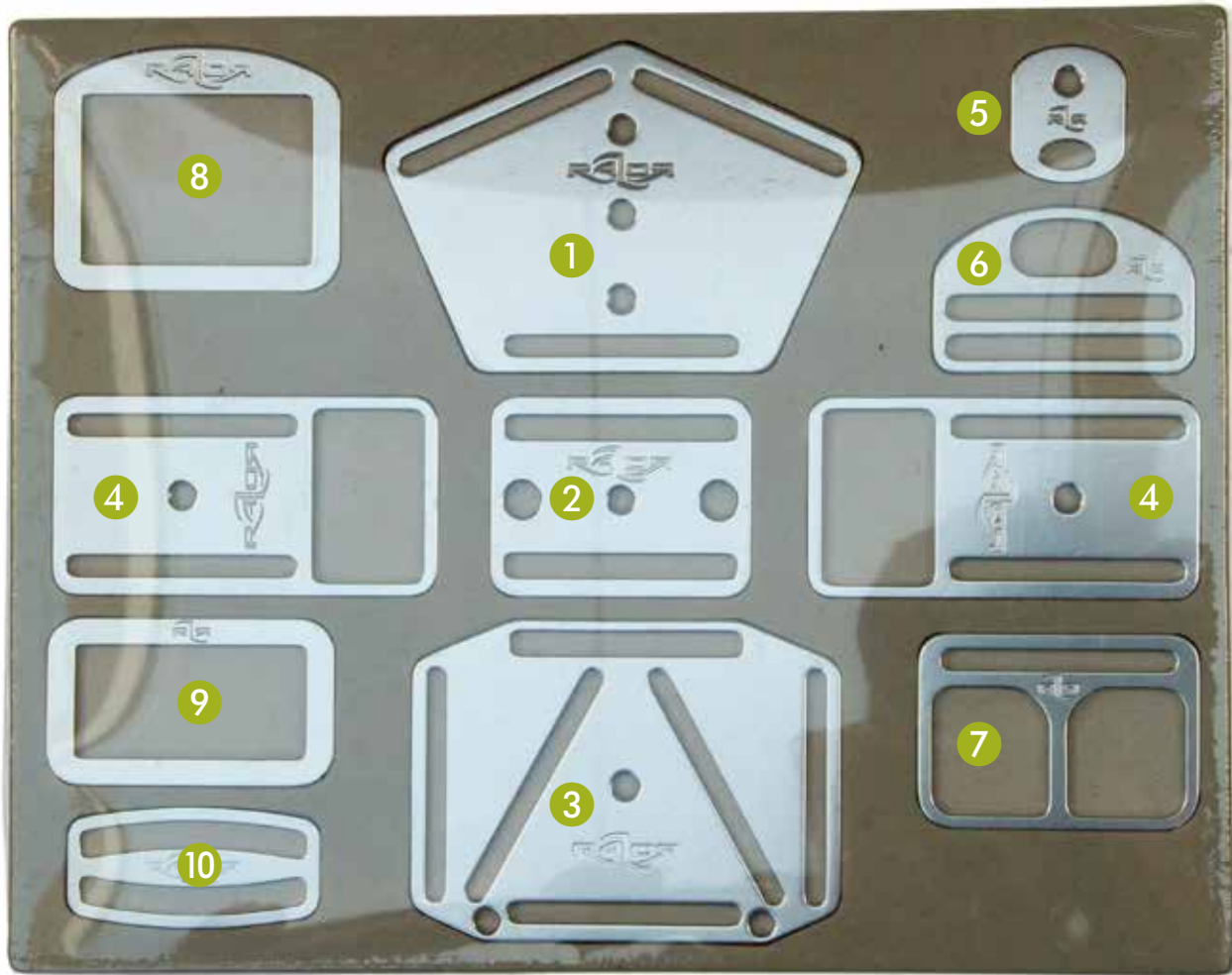
All hardware is heavy duty passivated stainless steel



# 3 The Razor Harness 2.5

## 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 Attachment 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 The Razor Harness 2.5

## 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 webbing 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

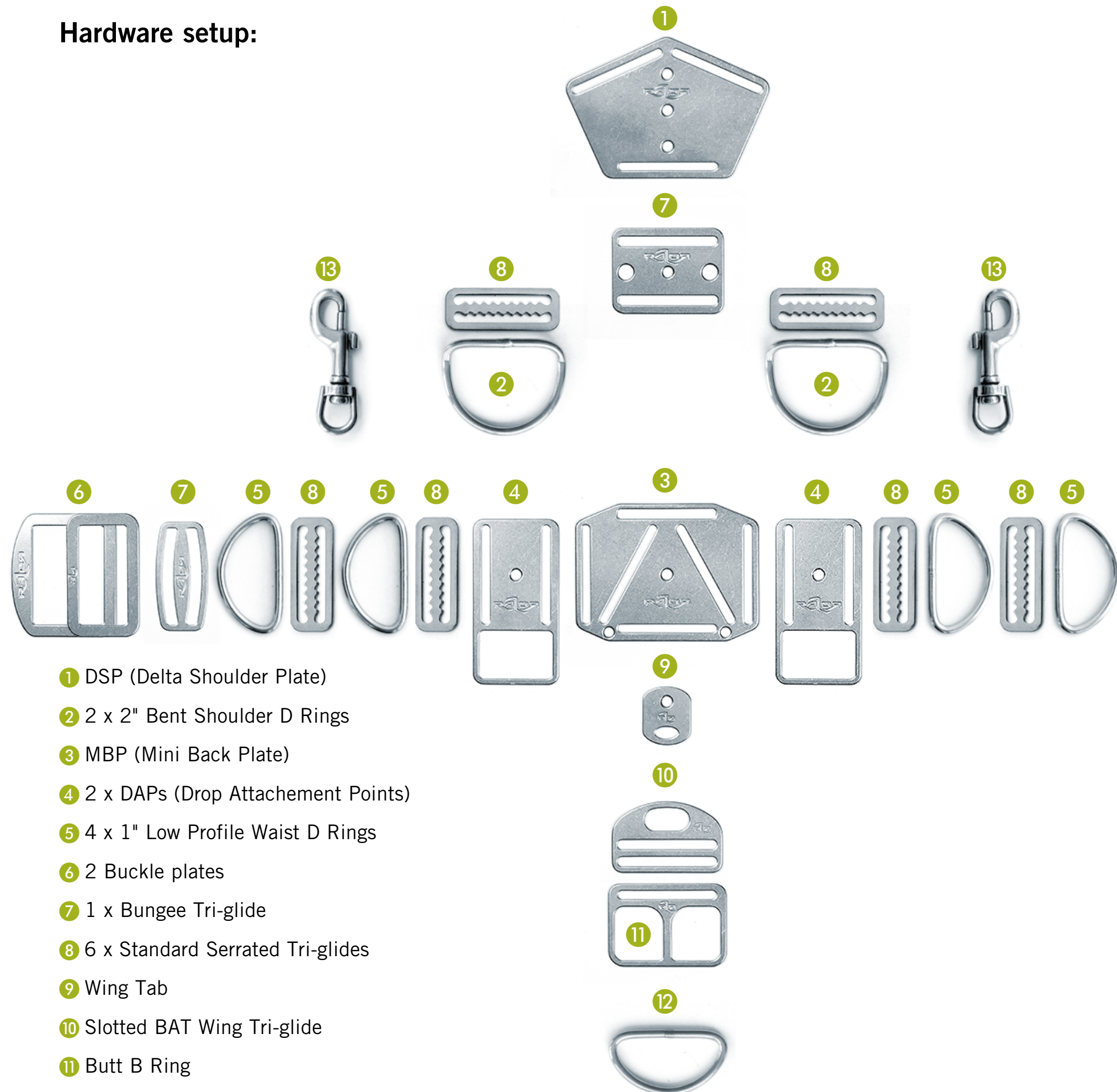
All hardware is heavy duty passivated stainless steel



# 3 The Razor Harness 2.5

## 3.2 Hardware layout

Hardware setup:



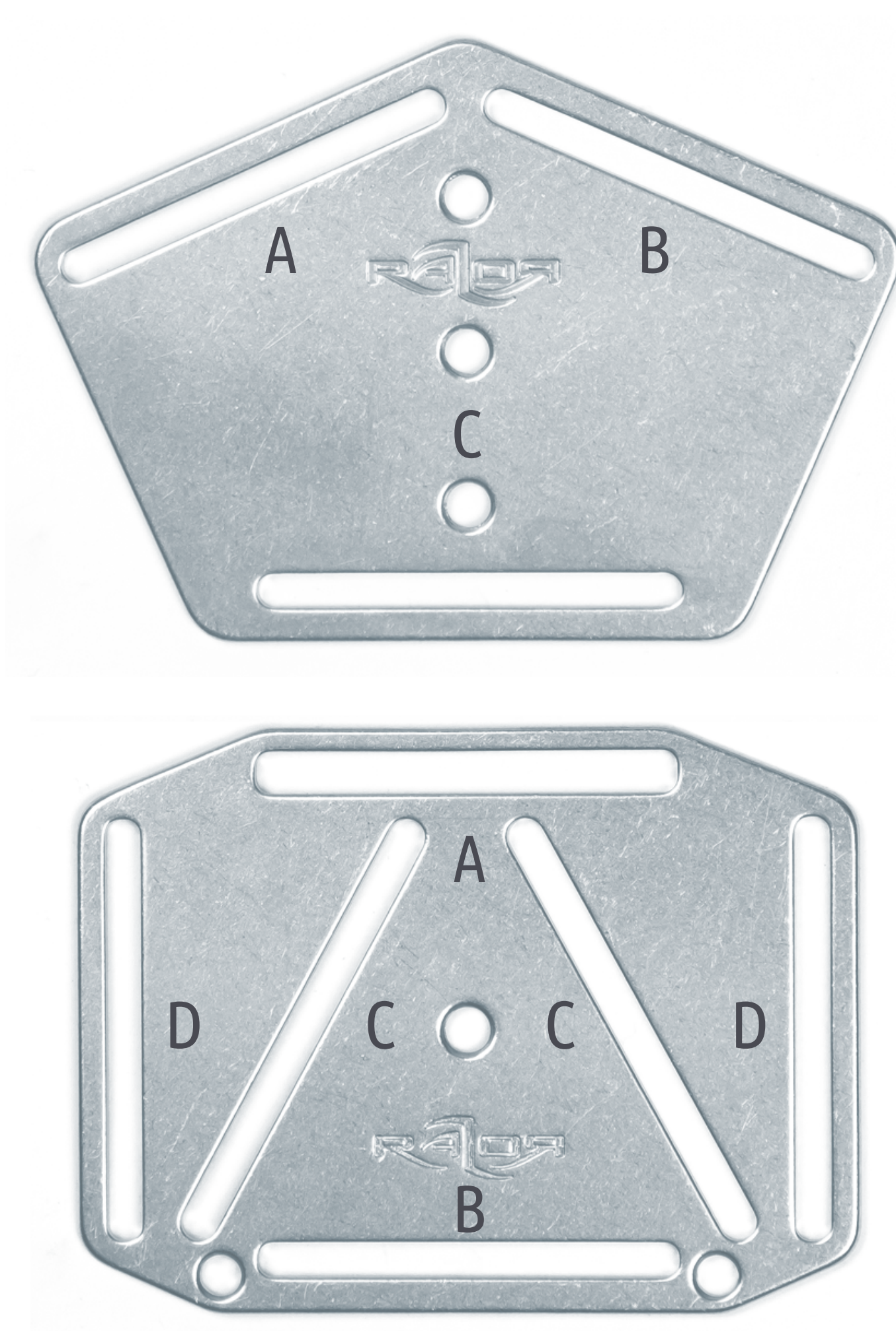
All hardware is heavy duty  
passivated stainless steel

# 3 The Razor Harness 2.5

## 3.2 Hardware layout

Figure 2:

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



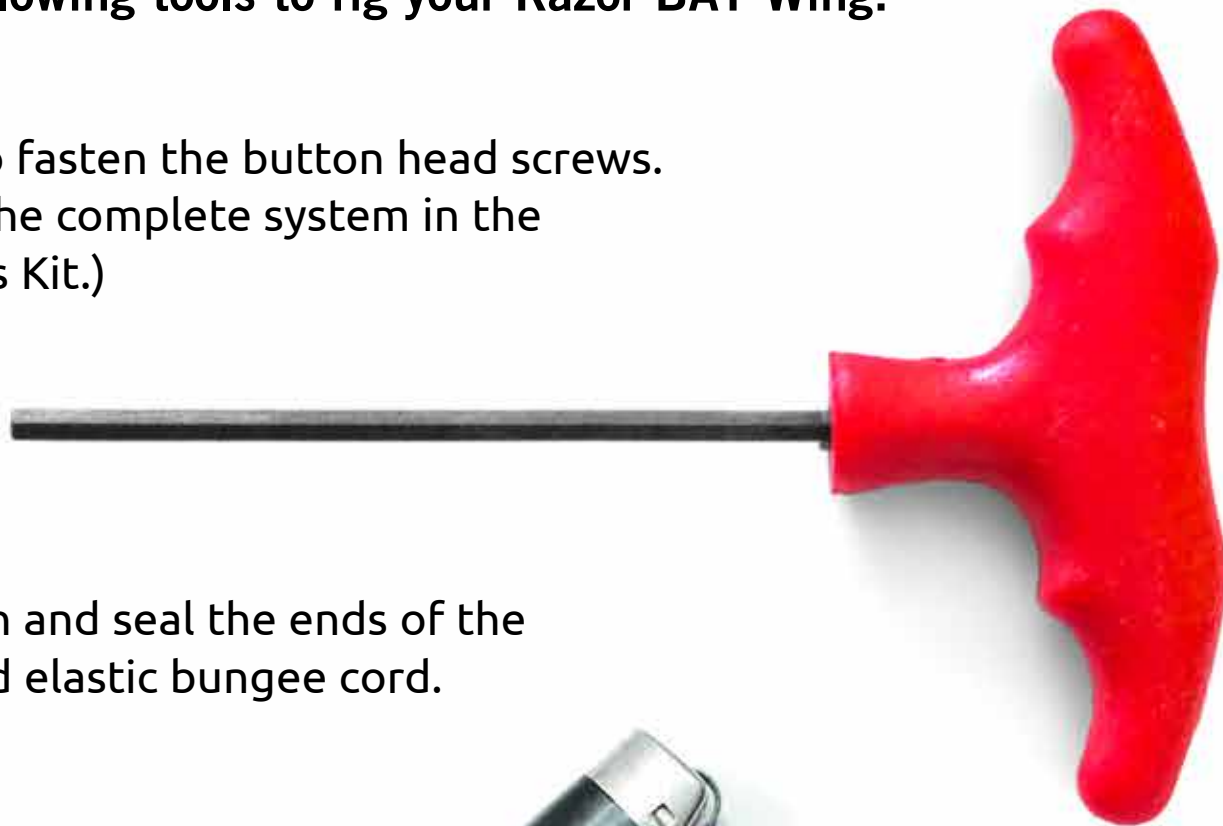


# 4 Rigging the Razor Harness 2.5

## 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 Rigging the Razor Harness 2.5

## 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).

## 4 Rigging the Razor Harness 2.5

### 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.



## 4 Rigging the Razor Harness 2.5

### 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.





## 4 Rigging the Razor Harness 2.5

### Step 1: Rigging the Razor Harness

Bungee Tri-glide with two attachment 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.



## 4 Rigging the Razor Harness 2.5

### 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.



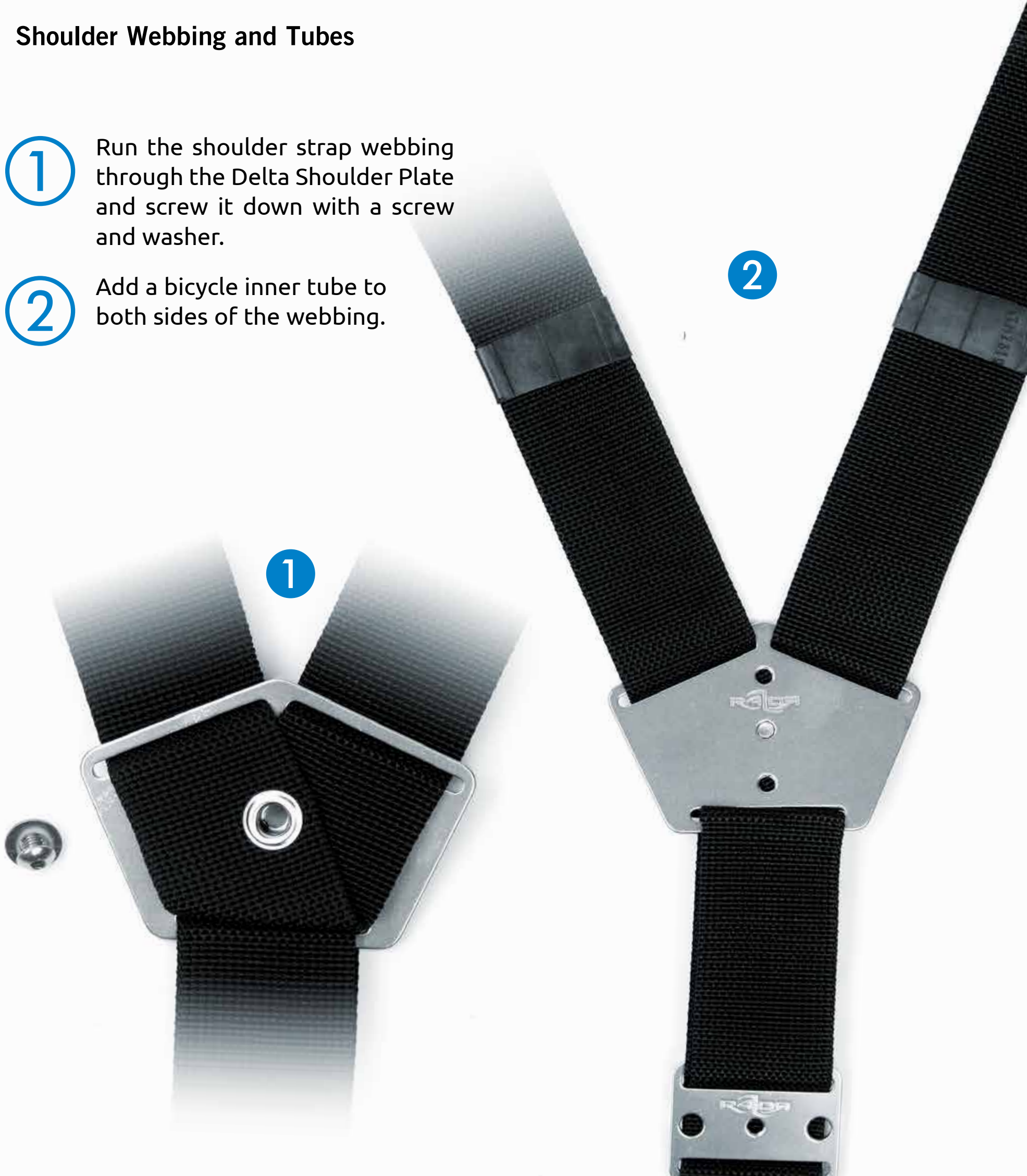


## 4 Rigging the Razor Harness 2.5

### 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.





## 4 Rigging the Razor Harness 2.5

### 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.

1

## 4 Rigging the Razor Harness 2.5

### 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.

1

## 4 Rigging the Razor Harness 2.5

### 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.



## 4 Rigging the Razor Harness 2.5

### 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**.



## 4 Rigging the Razor Harness 2.5

### 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.



## 4 Rigging the Razor Harness 2.5

### 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.





## 4 Rigging the Razor Harness 2.5

### 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.



## 4 Rigging the Razor Harness 2.5

### 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.



## 4 Rigging the Razor Harness 2.5

### 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.



## 4 Rigging the Razor Harness 2.5

### Step 5: Fitting the Chest D Rings

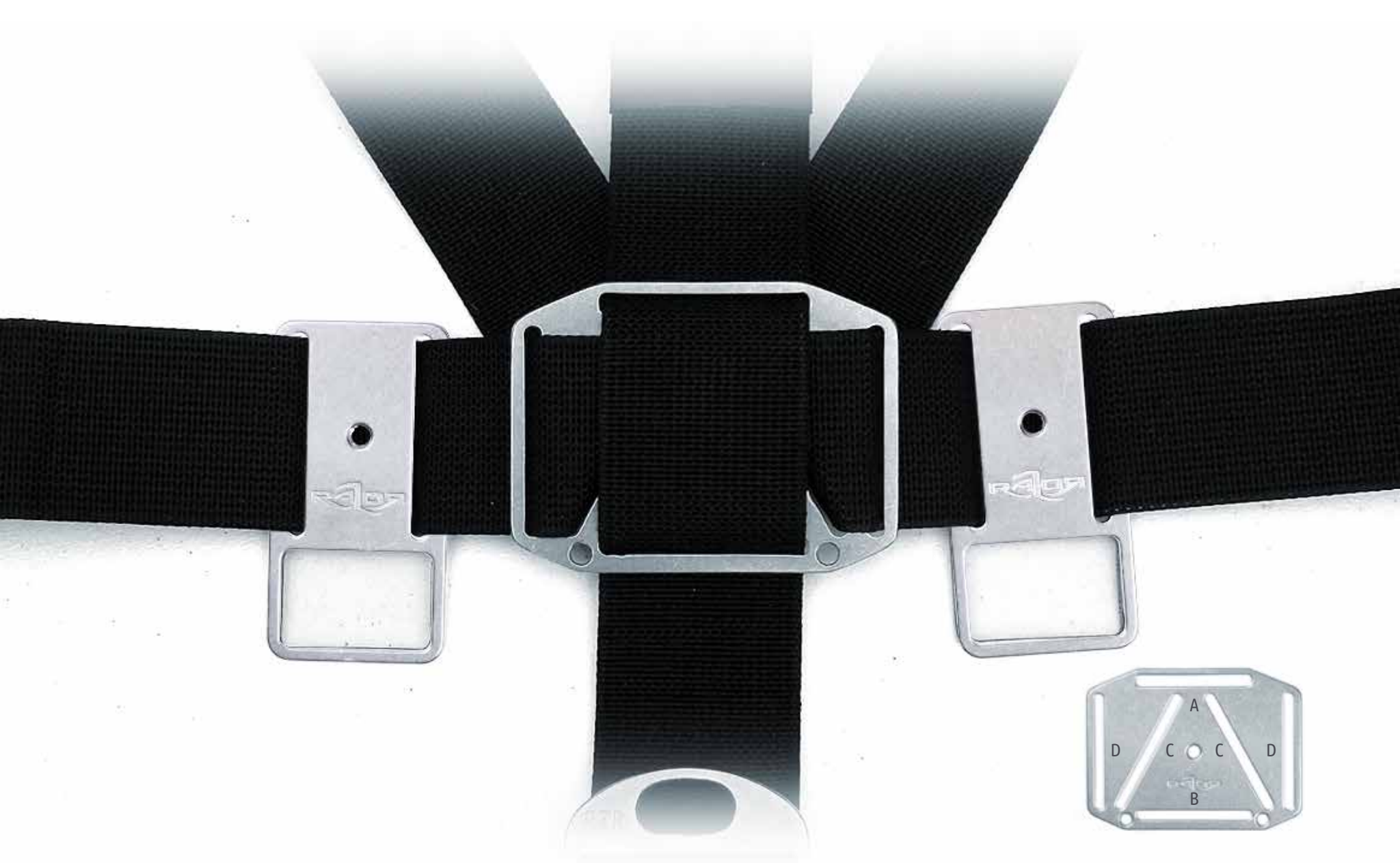
- ▶ Making sure the DSP remains in the correct position the shoulder D Rings should be positioned at the same approximate height as the ends of the clavicle.
- ▶ To fine tune this position stand with both arms straight out from the shoulders palms facing down and thumbs extended then bend at the elbows 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.



## 4 Rigging the Razor Harness 2.5

### 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.



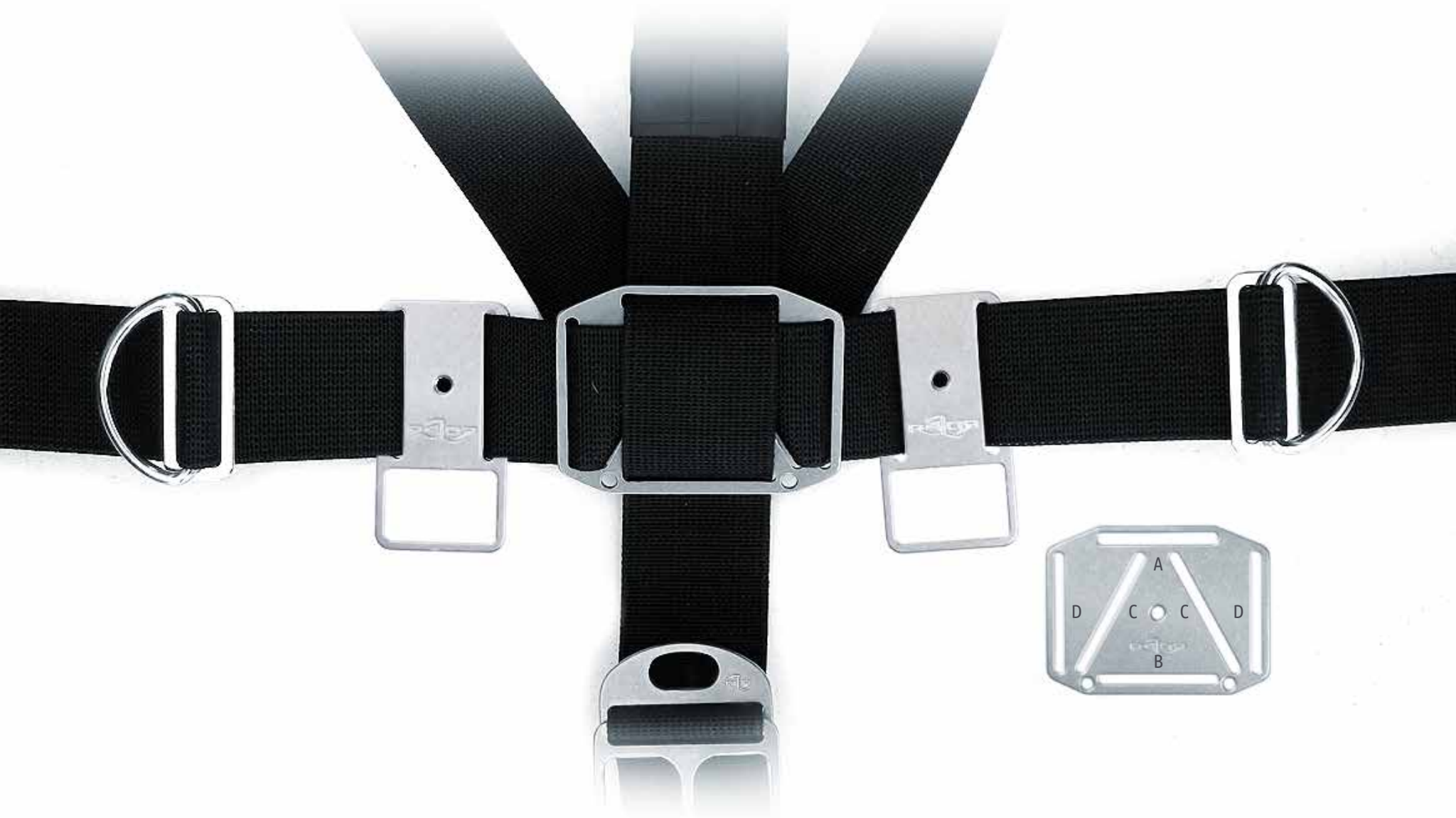
- ▶ The DAP's should be close to the MBP so that anything clipped to them will not hang too far to the sides and get between the body and the SM tanks.
- ▶ If required the loop of the DAP can be placed in a vice and bent gently to have them stand off slightly from the body to make clipping in easier.
- ▶ 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.



## 4 Rigging the Razor Harness 2.5

### 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.

## 4 Rigging the Razor Harness 2.5

### 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.

## 4 Rigging the Razor Harness 2.5

### 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 ;)



## 4 Rigging the Razor Harness 2.5

### 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.





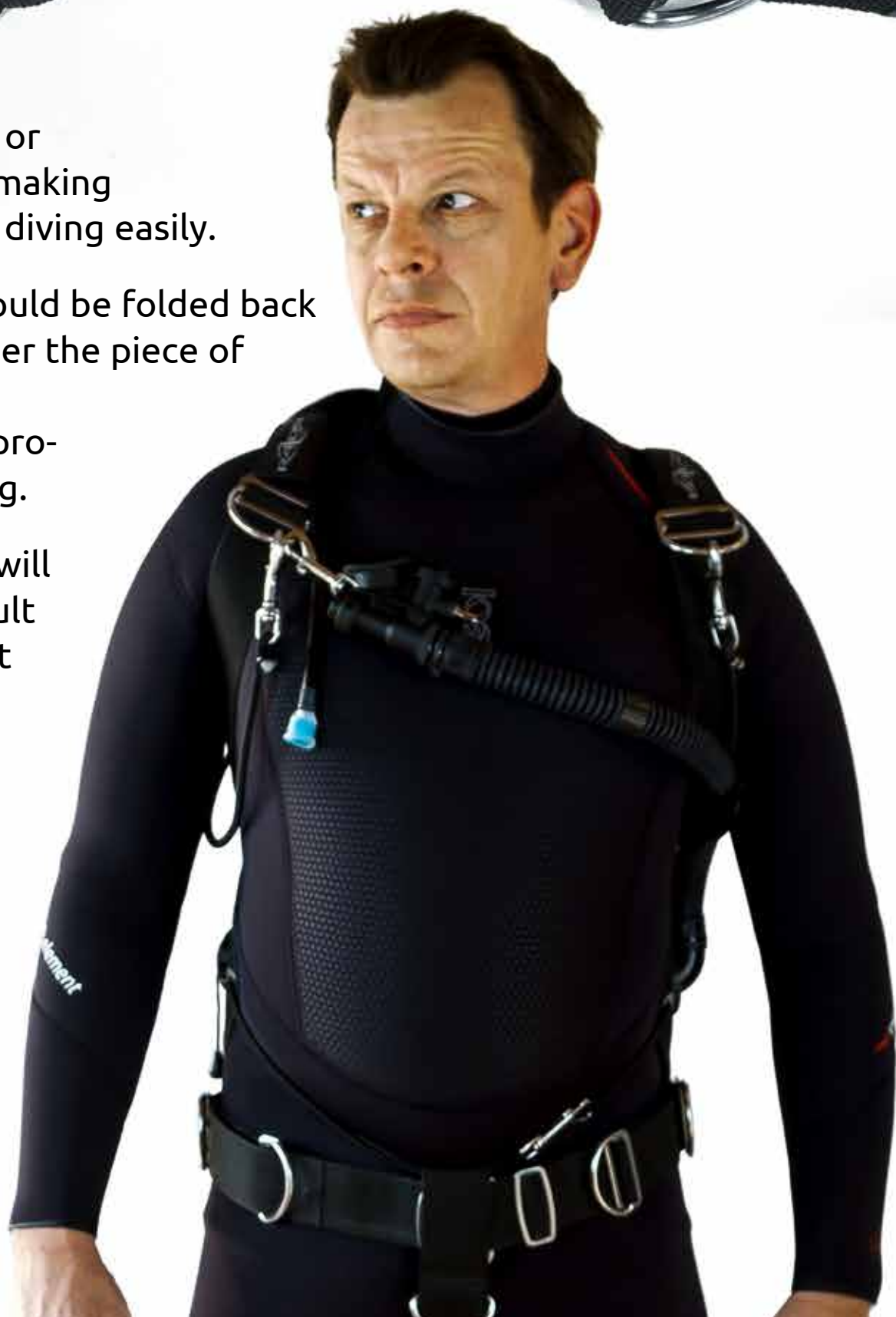
## 4 Rigging the Razor Harness 2.5

### 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.



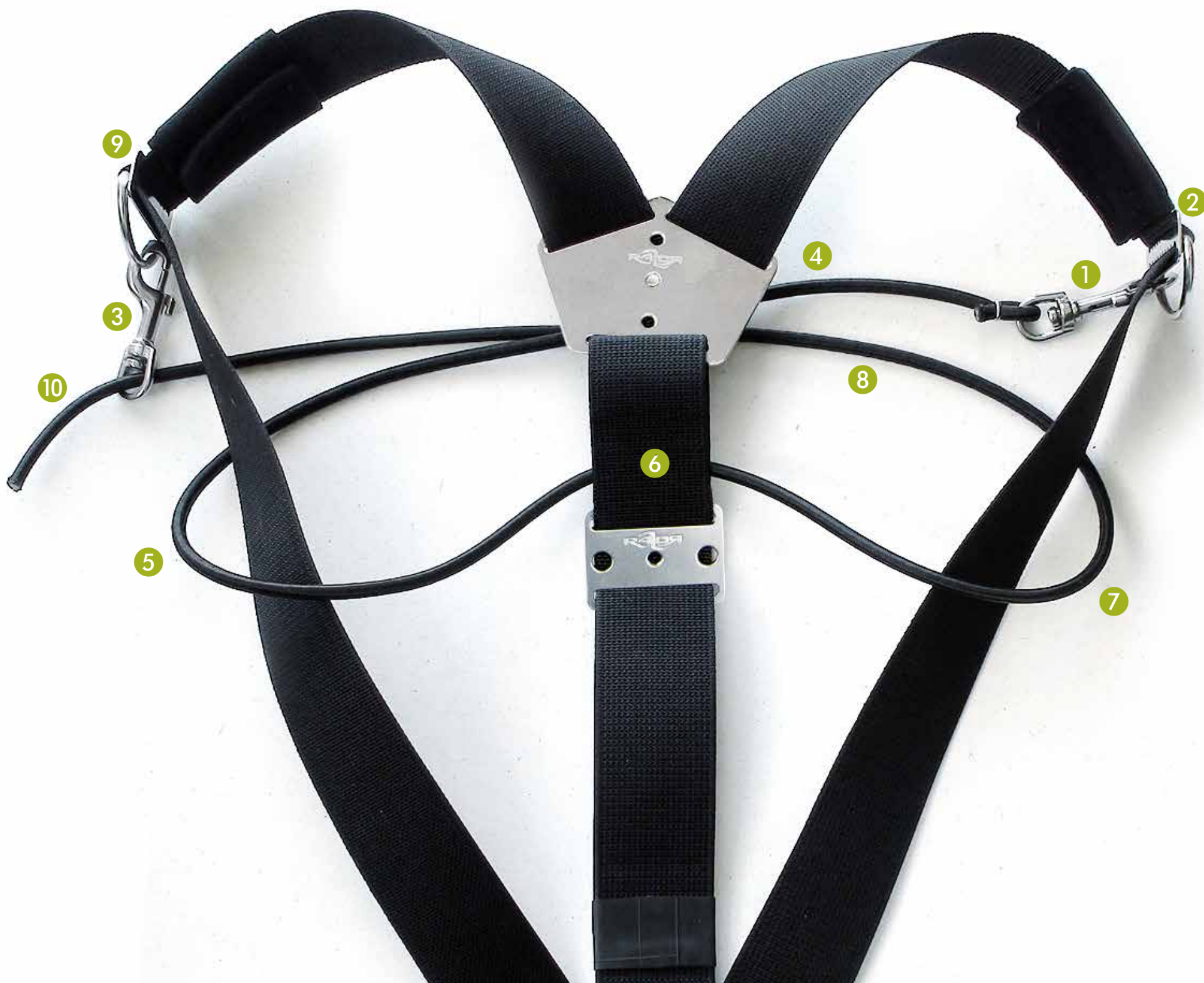
- ▶ The buckle can be tensioned or released with just one hand making adjustments on the fly while diving easily.
- ▶ The free end of the strap should be folded back on itself and also tucked under the piece of inner tube on the right hand side webbing that has been provided to stop it from dangling.
- ▶ 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.



## 4 Rigging the Razor Harness 2.5

### 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.





## 4 Rigging the Razor Harness 2.5

### 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.

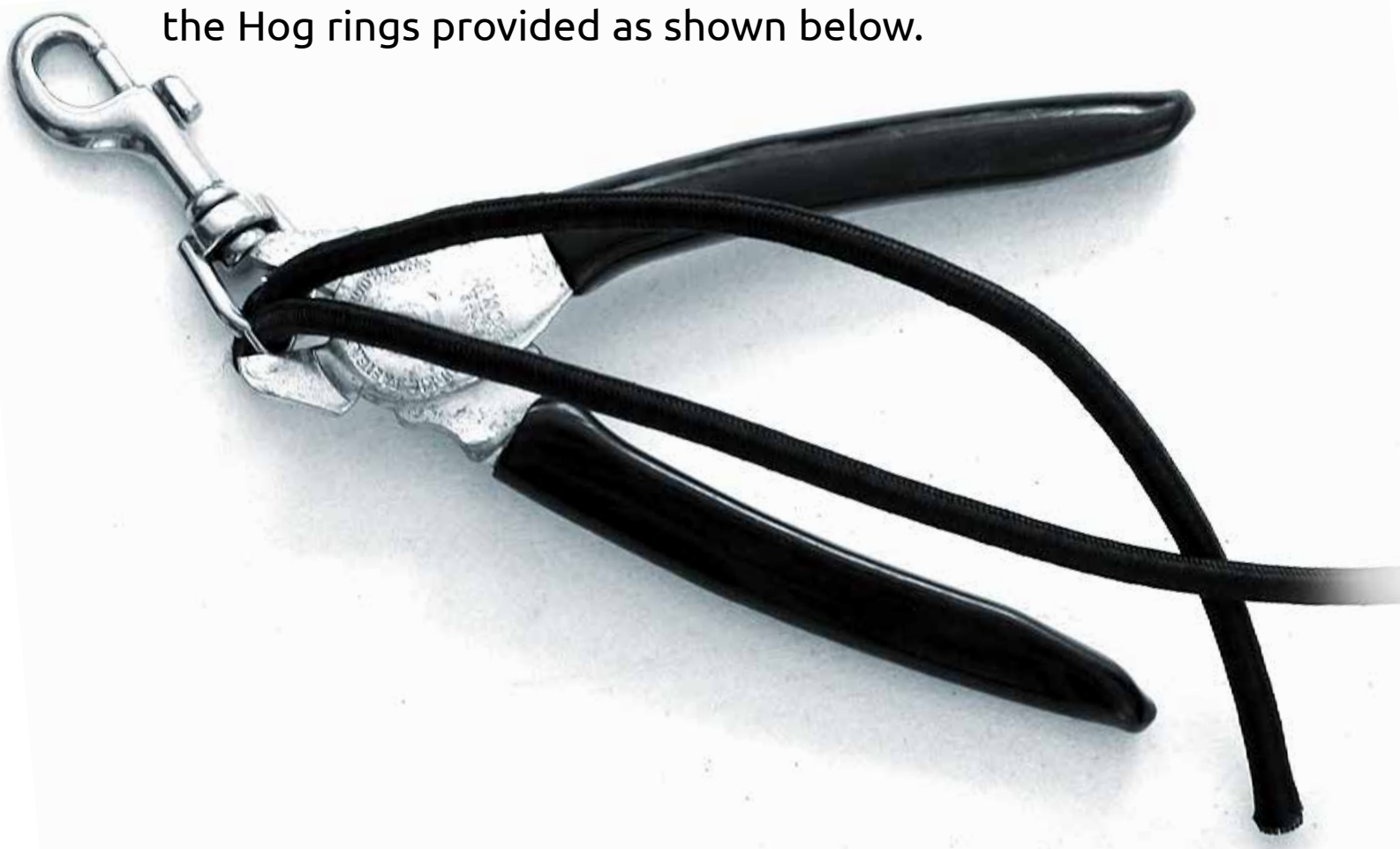
- ▶ The elastic bungee cord runs across the back, under the arms and attaches to the outside of the shoulder D rings when the Razor Harness is worn.



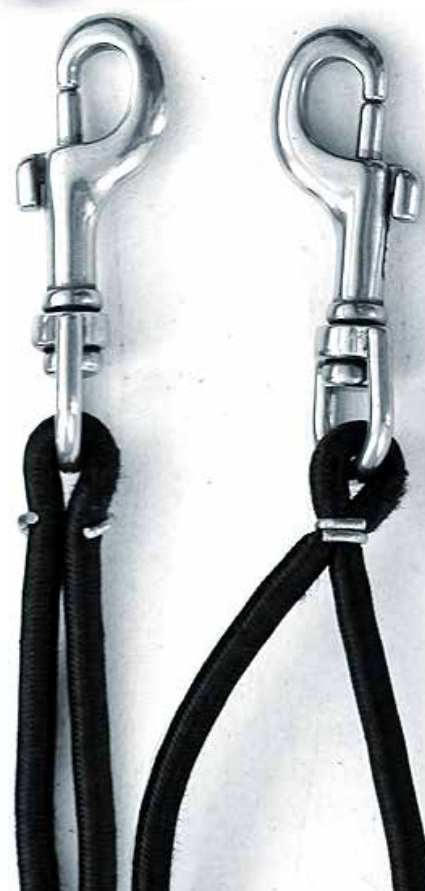
## 4 Rigging the Razor Harness 2.5

### 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.





# 4 Rigging the Razor Harness 2.5

## 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.

## 4 Rigging the Razor Harness 2.5

### 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

## 4 Rigging the Razor Harness 2.5

### 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



## 4 Rigging the Razor Harness 2.5

### 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.

## 4 Rigging the Razor Harness 2.5

### Step 10: Final Adjustments



## Last Step: 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 Side Mount System.

Best Wishes



HP Hartmann

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# MANUAL

## RAZOR HARNESS 2.5



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SIDE MOUNT SYSTEM

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## RAZOR SYSTEM 2.5



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