

RALOR
4

BAT WING

MANUAL

EDITION 1.2 / 22.06.2022

CONTENT

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1 THE RAZOR 4 BAT WING

1.1 Package Content



Heavy duty 3 layer Double Redundant Wing with 35lbs / 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. The Elbow of the power inflator has new a dump function as well.

③ Large Razor 4 Logo Wrap for large diameter inflation hose

④ 6" LPI Hose*

⑤ Heavy Duty Low Profile 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 Wing Weight Pockets between the wing and the layer

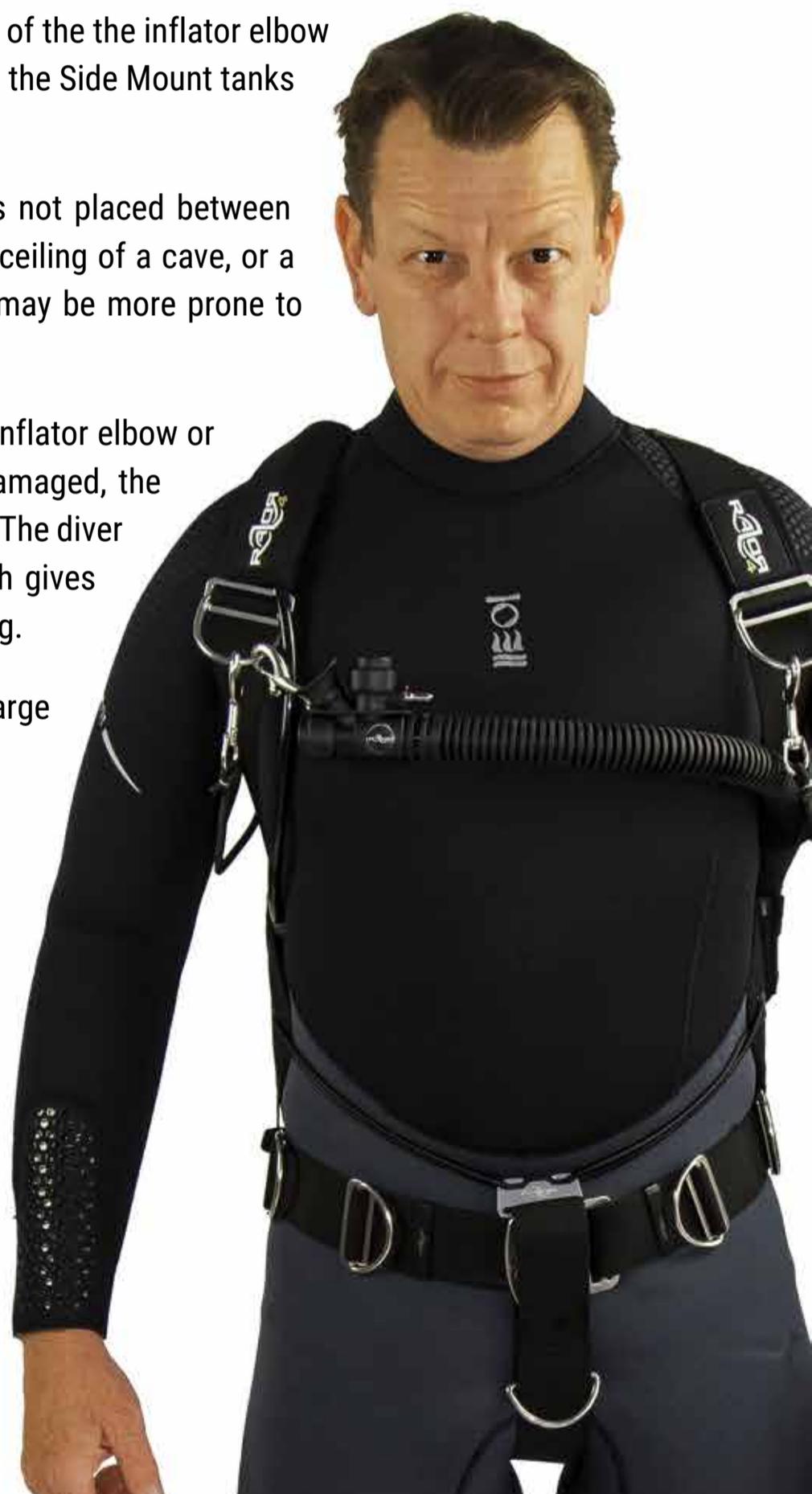
⑩ 2 x looped Waist Bungee

* the 6" LPI hose will only be delivered with the Complete Razor 4 System

1 THE RAZOR 4 BAT WING

1.2 Overview

- Once your Razor 4 Harness and the Pocket Weight System have been set up, then you can attach the BAT Wing to the Harness.
- The BAT Wing must be worn with the Primary Wing on the outside and the Backup Wing on the inside. This makes venting the Primary wing easy on either side and keeps the Backup wing very well protected.
- The design of the BAT Wing places the position of the 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, inflator elbow or the large diameter inflation hose should be damaged, the primary wing still can hold the air that is inside. The diver would just loose a small amount of gas, which gives him plenty of time to switch to the Backup Wing.
- The BAT Wing is supplied with a 19" long large diameter inflation hose.



1 THE RAZOR 4 BAT WING

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 THE RAZOR 4 BAT WING

1.2 Overview



Normally when using a dry suit 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 run in front of the diver across the chest from the right hand side with the LPI hose delivering from the first stage on the right Side Mount tank.



1 THE RAZOR 4 BAT WING

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 first stage on the left hand Side Mount tank.

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



1 THE RAZOR 4 BAT WING

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 counter 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 THE RAZOR 4 BAT WING

1.2 Overview



➤ To open or tighten either the power inflator or the dump valve you can use the Razor 4 Multitool. Please notice the deepenings on the power inflator ring and on top of the dump valve which fit the inner circle of the Razor 4 Multitool.

➤ Press the Razor 4 Multitool down on the deepenings and then slowly turn the tool in the direction you want to. Clockwise is closing and counter clockwise is opening.



1 THE RAZOR 4 BAT WING

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. Make sure the keyed flange drops into place to ensure a seal. Then tighten fully with the Razor 4 Multitool.

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



1 THE RAZOR 4 BAT WING

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 4 BAT WING

2.1 Tools

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

 The Razor 4 Multitool to fasten the button head screws (included with the basic and the complete system). In addition you will need the tool to switch the power inflator and the dump valve of the wing if needed.



 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.



2 RIGGING THE RAZOR 4 BAT WING

Step 1: Adjusting and Attaching the top of the BAT Wing to the DSP of the Razor 4 Harness

- ▶ The top of the BAT Wing bolts into the Delta Shoulder plate 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 Triglode if required to get a perfect fit.
- ▶ You can use either of the 3 holes on the Delta Shoulder plate to screw the wing down at the top.



2 RIGGING THE RAZOR 4 BAT WING

Step 2: Attaching and Adjusting the BAT Wing Waist Bungee

Version 1: Attaching the BAT Wing with 2 Bungee loops

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.

You can just attach the 2 bungee loops on both sides of the wing to the Wing Bungee Plate on the loop of the crotch strap. Make sure to get a tight fit so that the wing stays close to your body while diving.



2 RIGGING THE RAZOR 4 BAT WING

Step 2: Attaching and Adjusting the BAT Wing Waist Bungee

Version 2: Attaching the wing with a bolt snap

If you still prefer the way the wing was attached on Razor 2.5, you still can do this of course by using a bolt snap on one side of the wing.

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 run 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.



BUNGEEES

- 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.



2 RIGGING THE RAZOR 4 BAT WING

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.



2 RIGGING THE RAZOR 4 BAT WING

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.



2 RIGGING THE RAZOR 4 BAT WING

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.



2 RIGGING THE RAZOR 4 BAT WING

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.

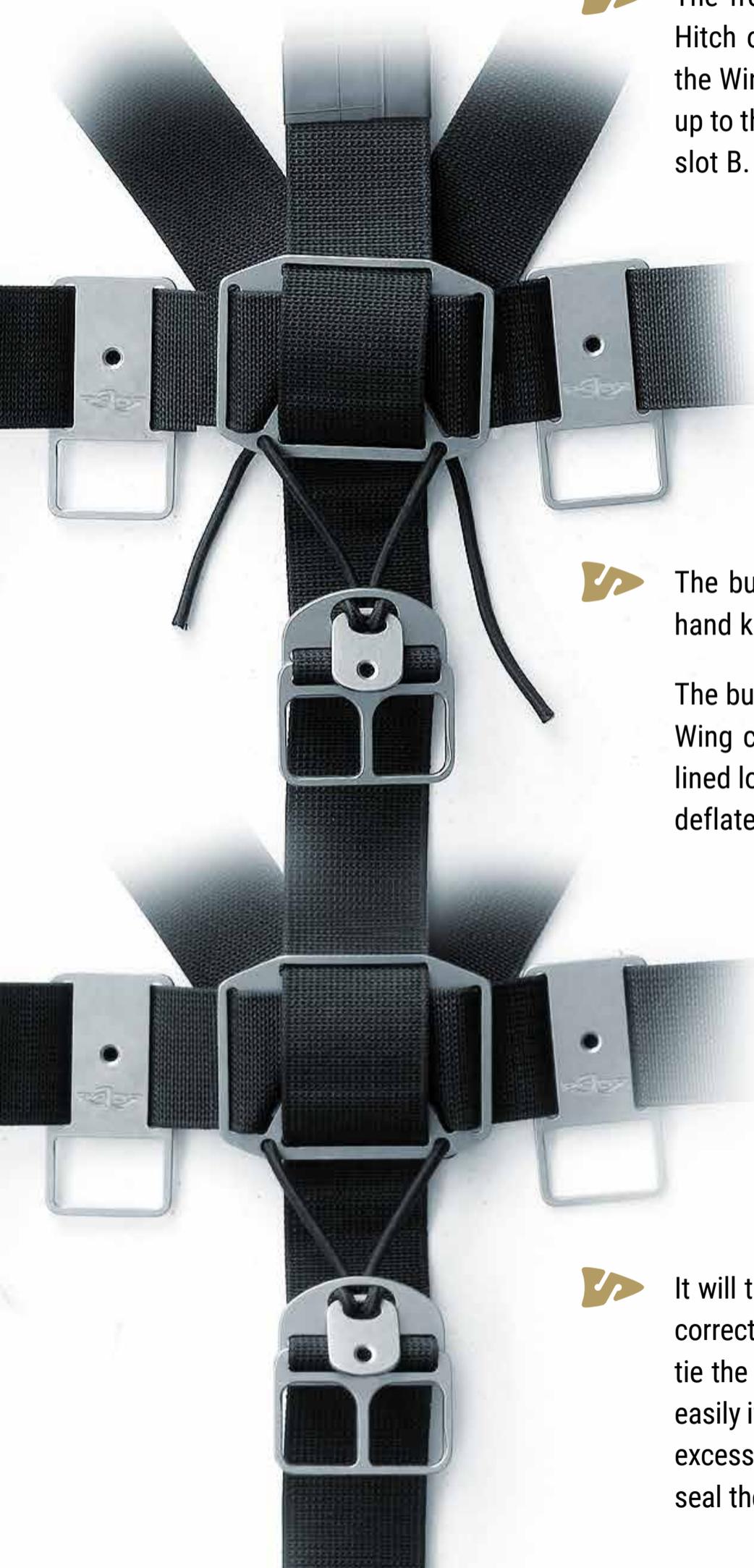


The bungee cord can be locked in place with a simple over-hand knot tied on the inside of the MBP.

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.



2 RIGGING THE RAZOR 4 BAT WING

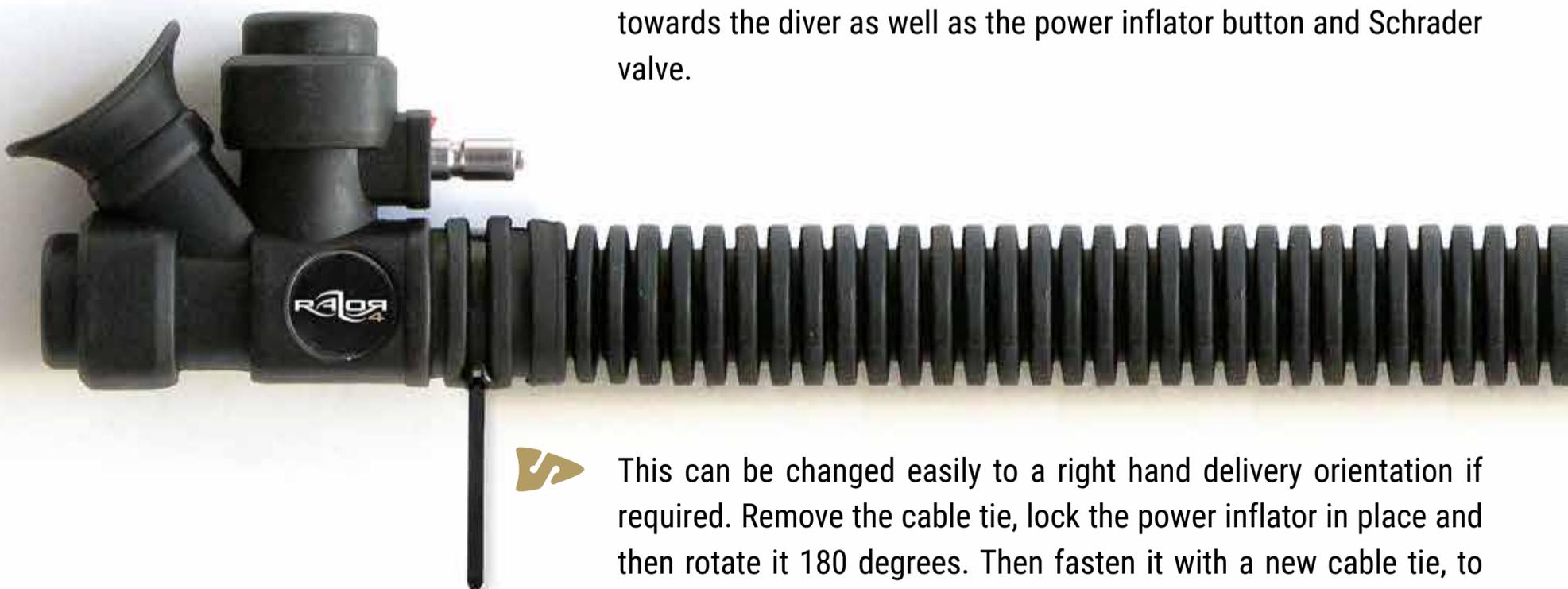
Step 4: Adjusting and Attaching the Inflation Hose

➤ With the BAT Wing now attached to the Razor Harness the system should be put on so that the large diameter inflation hose and the 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 the left hand side.



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

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



➤ This can be changed easily to a right hand delivery orientation if required. Remove the cable tie, lock the power inflator in place and then rotate it 180 degrees. Then fasten it with a new cable tie, to resecure it in place.

2 RIGGING THE RAZOR 4 HARNESS:

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 eye of the swiveling Razor bolt snap.



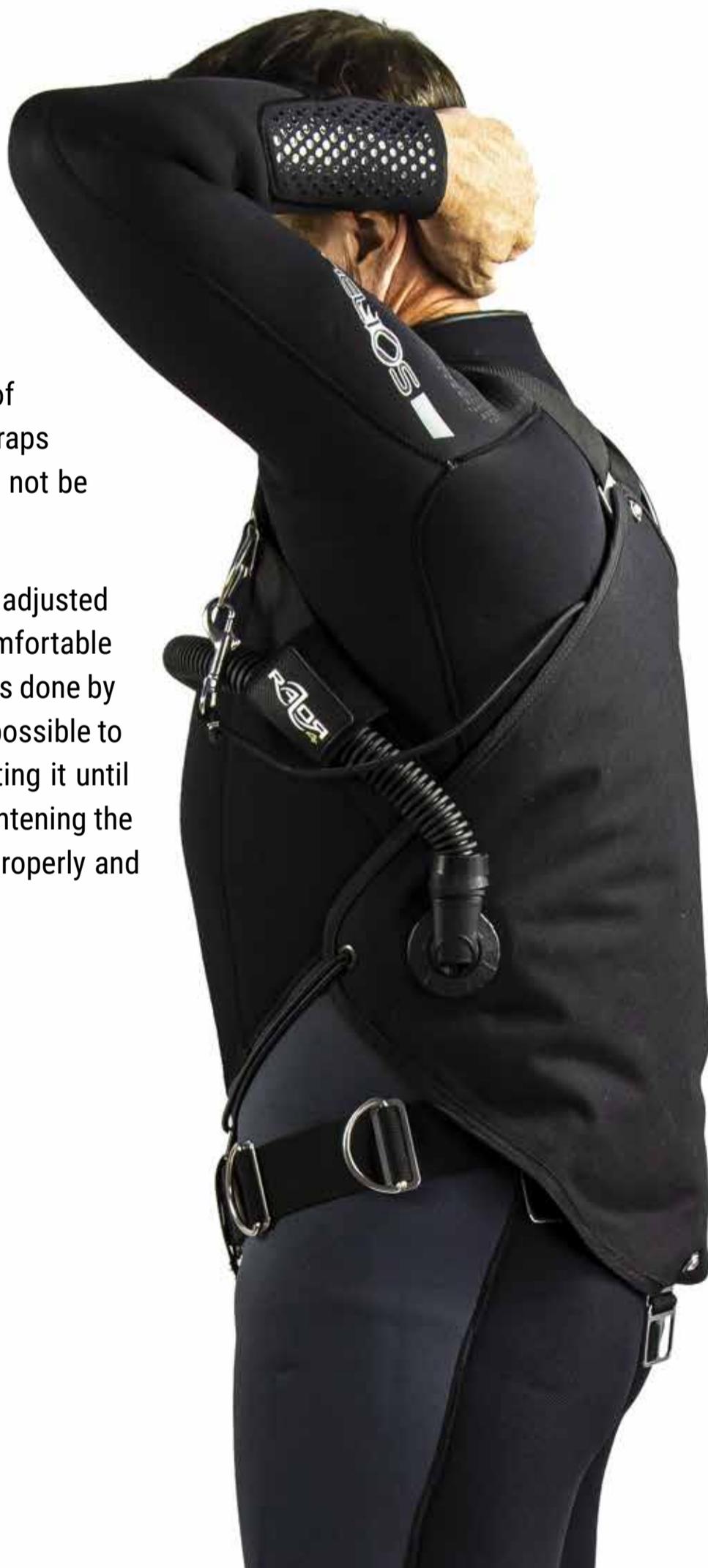
- ▶ The bungee loop can be positioned between the large diameter inflation hose and LPI hose while diving so that it is securely retained.
- ▶ The LPI hose should route directly across the chest from the 5th port in the end of the swiveling turret of the regulator first stage to the power inflator.
-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



2 RIGGING THE RAZOR 4 BAT WING

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.



2 RIGGING THE RAZOR 4 BAT WING

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 Razor 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 Razor 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 mouthpiece.



2 RIGGING THE RAZOR 4 BAT WING

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 4 Expandable Pouch in case you should lose it while diving.
-  In the event of losing it 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.

2 RIGGING THE RAZOR 4 BAT WING

Step 6: Adding weights to the Pocket Weight Layer

- ▶ Additional to the weights on the Pocket Weight System you can add weights easily to the system by adding Wing Weight Pockets to the pocket weight layer on the BAT Wing.
- ▶ The Wing Weight Pockets can be bought separately at our online shops or along with our Razor Dealers.
- ▶ You can find detailed information on how to juggle with weights in the "Razor 4 Weight System" manual.



2 RIGGING THE RAZOR 4 BAT WING

Step 6: Adding weights to the Weight Layer

Place the pockets against your back if you want:

- 1 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
- 2 to find out the right amount of weight to use for yourself an easy and quick way.



2 RIGGING THE RAZOR 4 BAT WING

Step 6: Adding weights to the Pocket Weight Layer

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



2 RIGGING THE RAZOR 4 BAT WING

Step 6: Adding weights to the Pocket Weight Layer

 In case you have to remove weights after a day of diving on a boat, open the pockets, remove the weights and just refill them on the next day again.



2 RIGGING THE RAZOR 4 BAT WING

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 mouth-piece.
-  The Primary wing can be vented in the following ways:
 - By pulling on the power inflator hose with either hand.
 - 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.

The advantage of not having a power inflator connected to the Backup wing is to avoid any problems associated with a mechanical failure or accidental inflation of the wing resulting in a potential buoyant ascent.

For how to use and place the oral inflation hose 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.

2 RIGGING THE RAZOR 4 BAT WING

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.



2 RIGGING THE RAZOR 4 BAT WING

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.
-  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.

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 BAT Wing.

Best Wishes



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RAJORA 4

EXPLORATION

OPEN WATER

CAVE

TEC

CCR

YOU