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**SIDE 16 AVENGER**  
**Sidemount System**

**User Manual**

Version 1.0, August 10th, 2015

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## **Introduction**

Scubatech gear is the result of many years of research and development, and Scubatech has utilized proven materials and design to maximize reliability and performance.

This manual is intended as a guide for the end user.

The sidemount system described here is designed and intended for divers who have successfully completed a special training course for sidemount diving and who are aware of the distinctive features of this product.

This system must NOT be used by untrained persons, not familiar with sidemount diving or diving in general.

Should you have any further questions, please contact your dealer, the distributor in your country or Scubatech Sp. z. o.o.




## Safety Precautions

This manual provides an overview on the usage of the Scubatech SIDE 16 **AVENGER** Sidemount System.

Please read each section completely and carefully PRIOR to using this system. This will familiarize you with the product features.

Pay close attention to all WARNINGS, CAUTIONS, and NOTES that are intended to draw your attention to items of importance.

### Definition of Notes, Warnings and Cautions

	<b>Note</b> Emphasizes important information and hints.
	<b>Warning</b> Indicates any situation or technique that may result in potential damage to the product, or that renders the product unsafe, if instructions are not followed correctly.
	<b>Caution</b> Indicates a procedure or situation, that may result in serious injury or death for the user, if instructions are not followed correctly.

## General Warnings



Please read the following carefully!

- The Scubatech SIDE 16 **AVENGER** Sidemount System is intended for divers trained in sidemount diving. If you are not trained, please refer to a local or national diving association, offering such training courses.
- As with all diving equipment, improper use or misuse of this system can lead to injury or death.
- This system is not a life jacket. It will not stabilize the person wearing it on the surface. It will not provide a head-up position for unconscious persons.
- Don't use the system as your sole way of buoyancy compensation.
- This system is intended for temperature conditions between 1 °C and 40 °C.
- Always inspect this system before diving.  
Should it not function properly, **DO NOT DIVE**.
- Always adapt your choice of tanks to the maximum lifting capacity of this system (16 l). The manufacture recommends using 2 x 80 cft aluminium cylinders.

## Technical data

- Buoyancy: 16 kg/35 lbs
- 4 Integrated weight pockets and 2 external weight pockets on the waist belt
- Max. weight pocket capacity: 19 kg
- Flexible stitched harness plate
- Adjustable waist belt and shoulder straps
- Adjustable crotch strap
- 5 D-Rings (stainless steel)
- 2 sliding D-rings
- dump valve left or right, depending on inflator mounting
- rear dump valve
- K-type inflator (33 cm/13") standard. Extra 50cm inflator hose in set.
- Inflator can be mounted left or right
- Detachable beaver tail
- Material: Cordura 2000
- Ready to use with all hardware and bungees needed

EC type examination by:

Polski Rejestr Statków S. A.

([www.prs.pl](http://www.prs.pl))

Notified body no. 1463

Certificate CW/PPE/218/2013

This product complies with

- PN-EN 1809:2001

- PN-EN 250:2003/A1:2007

## Overview

This chapter describes the general setup and the features of the SIDE 16 **AVENGER** Sidemount System.

### Front view



- 1 – Shoulder straps
- 2 – Inflator bungee mount
- 3 – Tank bungees
- 4 – Inflator (positioned right or left)
- 5 – Extra dump valve (inter changeable with the inflator)
- 6 – 4 integrated weight pockets (2.5 kg each)
- 7 – 2 sliding D-rings
- 8 – Flexible stitched harness plate



## Back view



- 1 – Fixed D-rings on waist belt
- 2 – Detachable beaver tail (4 SS bolts and delrin nuts)
- 3 – Crotch strap
- 4 – Battery mount on crotch strap

## Configuring the SIDE 16 AVENGER



### Overview

The SIDE 16 AVENGER Sidemount System is delivered pre-assembled and only needs to be adapted to your size and diving gear.



#### Note

The proper configuration for your individual needs might take some time, but it is worth it. With a thorough configuration, you will gain a perfect trim, so you can enjoy all the advantages of sidemount diving.

### Adapting the harness

- Wearing your diving suit, put on the SIDE 16 AVENGER.
- Tighten the shoulder belts by adapting their length. Do not over-tighten – they should fit comfortably, but close to the body. The shoulder straps can be adjusted on top or on the flexible harness plate. Easy and quick adjustment can best be made on top, e.g. for teaching purposes etc.




Adjusting the shoulder straps on top of the bladder.

Adjusting the shoulder straps at the flexible harness plate.




- Adapt the position of the waist belt buckle. The waist strap can be made out of 1 continuous piece of webbing (as it comes standard) or can be made out of 2 separate pieces of webbing connected at the flexible harness plate.

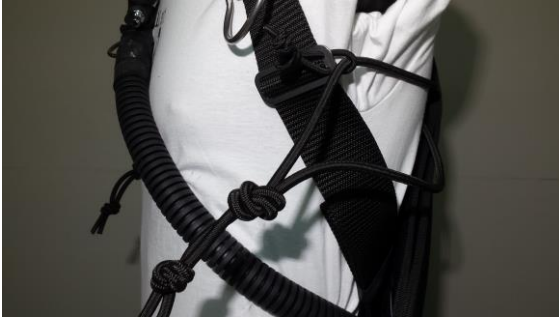
	<p><b>Note</b> Do not shorten the waist belt by cutting it, if you are not sure about the fit or when you are not the only person using the SIDE 16 <b>AVENGER</b>. If you want to cut the waist belt, make sure the cut end is sealed with a lighter or similar, to avoid fray.</p>
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- Adapt the length of the crotch strap. It is recommended to keep a snug fit, in order to hold down the rear end of the SIDE 16 **AVENGER** while in a horizontal position.
- Closely observe the harness adaption during the first dives and change it, when necessary.
- The 2 D-rings on the shoulder straps should be positioned just above the nipple line.
- The tri-glide with bungee on the right shoulder strap is intended to hold the inflator head. Adjust the position of the tri-glide and length of the bungee in a way that the inflator hose crosses the chest and has a snug fit but not too tight. When repositioning the inflator to the other side, also reposition the tri-glide and the bungee accordingly.



- The battery mount on the crotch straps should be positioned, putting the battery pack just beneath the butt cheeks.
- The 2 tank bungees provide a twisting motion of the tanks in order to make them fit snugly next to the body. The length of these bungees determine the degree of twisting and how snug the tanks will fit to the body. This is a personal choice and should be tried out during a few test dives.

	<p><b>Note</b> Start with putting knots in the bungees and do some test dives until you have the desired length, before you cut them. 10cm (between the knot and shoulder strap, when wearing the harness) is a good starting point.</p>
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Tank bungees in fixed position with retainer bungee on tri-glide.

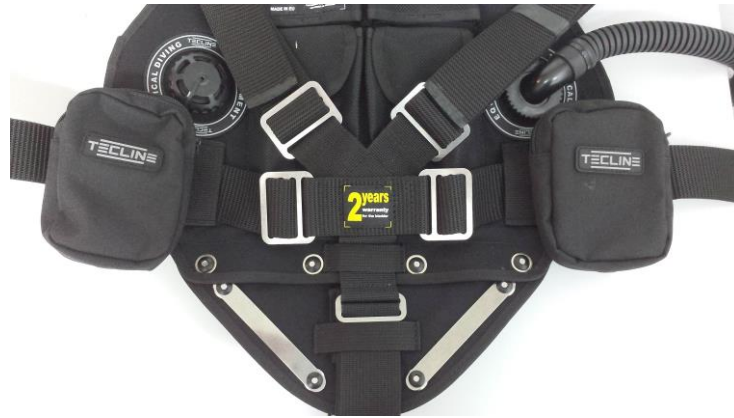
Tank bungee held in place with floating retainer bungee.



- The tank bungees can be held in place with either a fixed retainer bungee (fixed with a tri-glide) or with a floating bungee around the shoulder straps. The position of the fixed retainer bungee partially helps positioning the tank valve in the ideal place: just under the armpits.
- The sliding D-rings can either be positioned with the D-ring facing forward (preferred for aluminium tanks) or with the D-ring facing backwards (preferred for heavier steel tanks). During the dive these sliding D-rings can be moved forward to compensate for the tanks getting lighter during the dive because of gas consumption. This will avoid the tanks sticking out too much above or below the body line.



- When the 4 integrated weight pockets or not sufficient, 2 more trim pockets can be added to the waist belt. The kit comes standard with 2 trim pockets of each 2.5 kg. Bigger trim pockets (4.5 kg) can be purchased as accessory.



- The beaver tail can be detached by unscrewing the 4 SS bolts and delrin nuts. This beaver tail can be replaced with 2 Avenger rear D-rings (available as accessory).



## Recommendations for tank rigging

It is recommended to use 80 cft aluminium tanks with expendable mono valve (or any other valve with a small extension on the opposite side of the tank knob). Use a right and left valve.



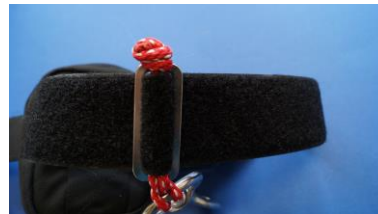
### Rigging using standard nylon mono tank belts:

To prepare your tanks, you need 2 standard tank belts, 2 big bolt snaps (stainless steel), 2 tri-glides, some nylon rope and optionally 4 bungees or MDS tank bands.



Attach the nylon rope to the bolt snap as shown.

Attach the bolt snap to the tank belt by using the tri-glide.



Attach the tank belt with the bolt snap to the tank.



#### **Note**

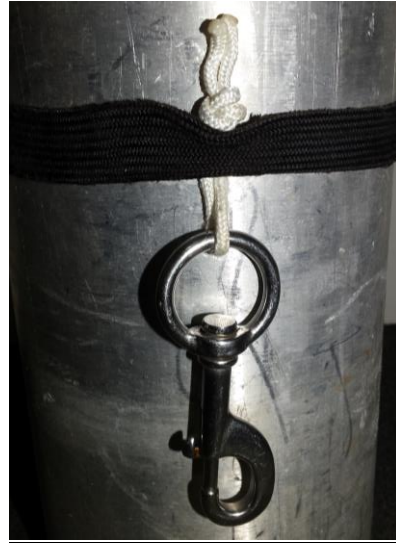
The distance from the top of the valve to the bolt snap determines the position of the tank. The ideal position is just under the armpits. Do some test dives to determine the desired distance of the bolt snap.

Start with the bolt snap in the same line as the extension on the tank valve. The position of the bolt snap on the outline of the tank determines the amount of twisting of the tank. The twisting should position the tank valves (tank knobs facing outwards) in a more or less horizontal position when diving. Do a few test dives to determine the desired twisting motion.

Optionally, attach 2 bungees or MDS tank bands to the tank, in order to stow away the regulator hoses during transport.

Rigging using SS tank belts:

To prepare your tanks, you need 2 SS tank belts, 2 big bolt snaps (stainless steel), some nylon rope and optionally 4 bungees or MDS tank bands.




Attach the nylon rope to the bolt snap as shown. The rope is clamped between the SS tank band and the tank itself.

Optionally, attach 2 bungees or MDS tank bands to the tank, in order to stow away the regulator hoses during transport.

## Tank configuration

There are numerous ways to configure your diving tanks. Different diving organisations and instructors have different opinions and strategies regarding this topic. Hence, the following configuration is just an example.

	<p><b>Note</b> Sidemount diving requires a special adapted set of regulators, e.g. the Scubatech R2 Tec Sidemount set.</p> <p>These regulators include special swivel adapters, matching hose lengths and small SPGs.</p>
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**Left tank**



**Right tank**



## How to attach a tank to the SIDE 16 AVENGER



### Note

Normally, sidemount tanks are attached in the water. Hence, deposit your tanks carefully in the water or nearby, so you can easily grab them.

Please note that even an empty aluminium tank DOES NOT FLOAT!

### Left tank

- In the water, attach the bolt snap of the left tank to the left sliding D-ring of your SIDE 16 AVENGER.
- Lead the left SIDE 16 AVENGER tank bungee from the outside over the valve and over the extension of the valve.
- Connect the inflator hose.
- Lead the regulator hose behind your neck to your right and put the regulator necklace around your neck.

### Right tank

- Attach the bolt snap of the right tank to the right sliding D-ring of your SIDE 16 AVENGER.
- Lead the right SIDE 16 AVENGER tank bungee from the outside over the valve and over the extension of the valve.
- Connect the dry suit hose (if any).
- If you use a long hose on the right side, lead it in front of you to the left, then around your neck, so it comes from the right. Make sure the long hose is not trapped by the dry suit inflation hose.



### Note


During the dive, pay attention to your trim (your horizontal position in the water). If necessary, adjust your trim for the next dive by changing the weight positions and the positions of bolt snaps on the tank belts.

## Instructions for maintenance and care

Due to its quality, your SIDE 16 **AVENGER** Sidemount System will function reliably for many years. Nevertheless, a certain maintenance and care is required, to keep the system in this condition.

### Before the dive

Please observe the following, to prepare your SIDE 16 **AVENGER** Sidemount System for a safe dive.

	<p><b>Caution</b> Do not dive with your SIDE 16 <b>AVENGER</b> Sidemount System, if you are not convinced about its safety.</p>
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- Connect a pressurized inflator hose to the inflator and make sure, that the inflator is working properly (manual inflation, automatic inflation, deflation).
- Make sure that the inflator clip is undamaged and working properly.
- Check the inflator connection and the corrugated inflator hose for leaks (e.g. by holding it under water).
- Inflate the SIDE 16 **AVENGER** and make sure that there are no leaks.
- Check the quick release valve and make sure that it works properly.
- Check the belts and bungees for signs of wear and tear.
- Make sure, that the SIDE 16 **AVENGER** Sidemount System has been adapted to your size and your diving suit.
- Make sure, that the weight pockets hold the correct amount of weight.

## After the dive

To keep your SIDE 16 **AVENGER** Sidemount System in optimal condition, please carry out the following steps after each day of diving (especially after diving in salt water).

- Use the inflator mouthpiece to fill the SIDE 16 **AVENGER** at least 1/3 with clean fresh water.
- Inflate the SIDE 16 **AVENGER** fully (manually or via an inflator hose) and disperse the water in the bladder by rotating, turning and shaking it.
- Hold the SIDE 16 **AVENGER** upside down, detach the inflator clip, hold the inflator straight down, and drain the water by pressing the inflator release button.
- Externally rinse the SIDE 16 **AVENGER** with clean fresh water.

**Note**

It is recommended to add some disinfectant fluid to the rinsing water every now and then. This special kind of cleaning product is available in diving stores.

- Inflate the SIDE 16 **AVENGER** partially and let it dry outside the direct sunlight.
- Store the SIDE 16 **AVENGER** in a cool, dry place outside the direct sunlight.
- Transport the SIDE 16 **AVENGER** in a separate case or bag, away from sharp items, that might damage it. Do not put heavy objects on the SIDE 16 **AVENGER** .