

# ProScuba Diving College

## One or two tanks?

### Why two Tanks?

The main reason people opt to go onto twin tanks is to increase volume of gas for a dive. It also adds a safety factor of redundancy (bail out) if proper configuration and skill development is completed. There is one other reason, trim and weighting issues can also be helped by twining cylinders together.

If tanks have a manifold (i.e. joined together) then training in basic skills of shutdowns and air management is vital.



### Pros & Cons

This list is subjective depending on who you talk to, but from my point of view, here are a few.

Pros of twin set	Cons of twin set
<p>More gas for dive</p> <p>Complete Redundancy if the training of gas management is learnt and rehearsed.</p> <p>Often better horizontal trim and buoyancy control</p> <p>Better streamlining – more efficient</p> <p>Less fills required if tank size and gas allows</p> <p>Often a lot less lead is required</p> <p>Independency (<i>if trained beyond recreational</i>)</p>	<p>Over twice more expensive to buy &amp; set up</p> <ul style="list-style-type: none"> <li>• Two tanks + bands + manifold valve</li> </ul> <p>Over twice the expense at servicing intervals</p> <ul style="list-style-type: none"> <li>• Twins are dearer because of the strip down and re-building, as well as the two tanks to be serviced a well.</li> </ul> <p>More training and skill development</p> <ul style="list-style-type: none"> <li>• Shut downs for gas management</li> <li>• Configurations and set up</li> </ul> <p>More expensive to fill each time</p> <ul style="list-style-type: none"> <li>• Smaller twin tanks usually require topping off for dive 2<sup>nd</sup> dives, which can cost twice as much as a single fill.</li> </ul> <p>Heavy and bulky</p> <p>Poor surface buoyancy and head forward tendencies</p> <p>Often require different equipment to enable the use of twin tanks. i.e. a wing and extra regulators.</p> <p>Official training is only available to those over 18</p>

## What size?

Single tanks normally come in a wide range of sizes and could all be twined together.

Tank size	Single tanks 200 bar fill total liters of air	Twin tanks 200 bar fill total liters of air
7	1400	2800
10	2000	4000
12	2400	4800
15	3000	6000

So here is an example of a typical good long dive.

### **Dive to 20m for 40mins. (Breathing rate just below average at 20ltrs per min)**

So gas needed:      20 (ltr/p/min) x 40 (time) = 800ltrs (surface)  
                              3 (depth ata) x 800 (breathing volume) = 2400 ltrs  
Reserve emergency of (5 mins of ascent from 20m) 300ltrs  
TOTAL gas needed for dive **2700ltrs**

For this dive you would be cutting it very fine with a single 12 or you could use a 15, but the best option would be to have two tanks, twined together.

## Wing configuration or BCD?

Most standard BCD's can accommodate twin sets, but often is quite a faff around. The normal route for twin set diving is to use a modular (wing) system.



This consists of a back plate harness and a shaped bladder. All these components are reasonably universal and can be adjusted to the requirements of the user. A lot of divers have different bladders depending on the kind of dive and buoyancy required. The back plate can be stainless steel, plastic or aluminum, but are nearly all the same size, and configuration. The thing here, is to choose for weight issues and preferences. The harness can be simple, just once piece of webbing with a buckle at the waist. There are many variations to choose. In my opinion the simpler the better. Underwater the set up does not weigh anything, why have padding! And in fact padding normally is buoyant, so means you have to put more lead to offset that!

**Some manufactures make wing style BCD's that are not modular, but look similar.**

## Size of bladder (wing) to use?

This depends a lot on the dive and diver. The smaller the less drag in the water, but it will need to support you and the twinset you are using at the surface.

Bladders are doughnut or winged in shape and sit behind the diver. There is a choice of bungeed bladders or flat open style. This is really down to personal preference. Some divers will argue for and against. I use both styles depending on the dive!



Sizes of bladders are normally,

**30lbs** – perfect for single tank diving or twin 7's but in the latter surface buoyancy can be compromised.

**40lbs** – as above, but better for twin 7's

**60lbs** – will support a diver with twin 10's and twin 12's, but again buoyancy can be compromised.

**100lbs** – this is the biggest off the shelf bladder. All twins and stages can be used for most dives.

For absolute reassurance of buoyancy bladders can be added together. Or you can buy a double bladder set up to start. But these are for the more extreme diving and not really a concern in recreational diving. At the end of the day most of your diving already will have been on a BCD which is only single.

## Valves and manifolds?

- Single valves
- Manifold
- Isolator Manifolds

## Regulators – single or dual?

One or two regulators is the question. Basically a complete redundant set sits on the left valve. This is in case the first set up fails. The second then can be used to allow safe return to the surface. The second set needs to be just as good as the first; if not better. Free flowing regulators means loss of air, with two regulators the air can be managed to allow shut down of the leak, i.e. gas management. This also allows for more independence during any dives.



## Hose configuration?

So there are many options to take here. But I will say most divers start with what is known as the 'Holgarthian Rig' this is the standard configuration of hoses. Long hoses often seen by tec divers are complicated, often get in the way. If used correctly they can help in emergencies. But be careful, some agencies do not allow the use of these in their standards.

Interested then this is all covered in our  
**INTRO to TWINSET DIVING and  
Tec40 courses**