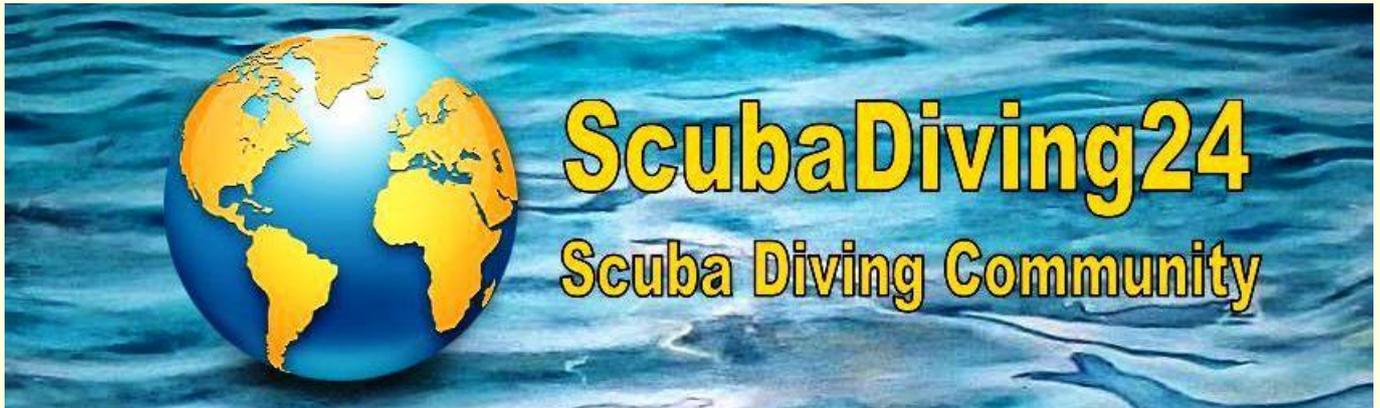


How To Use Less Air and Get Longer Bottom Times While Scuba Diving



It's the underwater equivalent to huffing and puffing during a weekend run while your friend bounds ahead of you — ending a dive because you're low on air while your buddy still has plenty. What's his or her secret? If you finish the dive with less in your cylinder than your buddy, does it really mean you aren't as physically fit or as skilled as he or she is? Not necessarily.

Other considerations impacting your gas consumption are fairly benign: If you follow a slightly deeper profile or don't get as generous a tank fill as your buddy, you'll probably burn through air quicker than he or she does. But you're surfacing with 500 psi (pounds per square inch) in your tank and your buddy has 1,400, we've got some tips for closing that gap.

Most pressure measurements in scuba diving are given in units of atmospheres (ATA). The pressure you experience as you descend comes from both the water and the air above you. The deeper you descend, the greater the pressure exerted on your body, and the air you breathe from your tank compresses. If you dive to 33 feet, or 2 ATA of pressure, the air you breathe is compressed to half its original volume.

At 33 feet, each time you inhale, it takes twice as much gas for the same breathing volume as at the surface; at 100 feet, it takes four times as much gas. This is something you can't control. What are the things you can do to stretch your tank and bottom time?

1. Breathe Slowly and Deeply

While diving, it's helpful to be conscious of your inhalations and exhalations, similar to thinking about your breathing while practicing yoga. Slow, deep breaths is key to conserving air. Pause for just a second after inhalation. Do not hold your breath, but pause; keep the throat open. Deep breathing brings more fresh oxygen into the lungs and promotes better gas exchange. Shallow breathing — the bane of novice divers trying to conserve air — carries more CO₂ from the dead-air spaces. For students: Slowly count to a number as they inhale and do the same on the exhalation. Get into a rhythm at the beginning of each dive.

2. Swim Slowly

Here's some more easy math to remember: "Doubling your speed takes four times the energy, and that boils down to using more air. Of course, there are times when kicking hard is required — a negative descent to get to a wreck when current is heavy, for example. In those cases, whenever possible — such as swimming to the bow of the boat and down to a wreck — use a line. A hand-over-hand descent without finning conserves energy and air. Most of the time, however, what's your hurry? Think of your tour of the reef as an old-fashioned Sunday drive.

3. Maintain Your Position

Look around at your fellow divers the next time you're in the water. Don't maneuver through the water like a seahorse. Horizontal positioning, with minimal BC inflation (and proper kicking) will allow you to swim forward with the least amount of effort. Being neutrally buoyant is also crucial. If you're not, you'll constantly have to add and vent air from your BC, and use fin power to maintain your depth.

4. Kick Properly

Try to work on your finning form too. Keep your knees straight and kick from the hips. Try to avoid the bicycle kick, where your fins slice through the water rather than nice long kicks where your fins actually push the water. Consider asking an experienced instructor to evaluate your form. Administer the swim test utilizing the 300-meter mask, snorkel and fins swim rather than the 200-meter freestyle, as it allows me an early opportunity to observe the use of fins and kicking techniques.

5. Get Streamlined

Try to stay within your body's slipstream while moving through the water: arms close to your sides or held out in front, hands clasped together. It's important to keep your arms still. The more you move, the more energy it requires, leading to higher air consumption. And don't forget your gear. "Equipment dangling from every possible D-ring might impress the novice and the uninitiated. But it's unnecessary drag that reduces streamlining.

6. Take the Lead Off

If you're overweighted, you have to put more air into your BC to be neutral. An inflated BC is larger and requires more energy and oxygen to push it through the water. It makes you more upright and increases drag.

7. Stay Shallow

Just like finning easy, there are times when staying shallow isn't an option, such as exploring a deep wreck. But if you're diving on a wall that starts in 40 feet of water, is it really necessary to drop down to 100 feet? A lungful of air at 99 feet (4 atmospheres) takes twice as much as at 33 feet. There's absolutely nothing you can do about that except avoid being deeper than you have to be. If you're making a transit over an uninteresting sand flat to get to the edge of the dropoff, do it at 15 feet instead of at 40 feet.

8. Stay Calm

The No. 1 culprit in using up air too fast is anxiety. Divers who haven't been diving for a while, have had a bad experience or not a lot of experience tend to breathe down their tanks quicker than others. Anxious divers might not be aware of their state, and if not monitoring the pressure in their gas tank, they might run out of gas unexpectedly. A slow, steady, deep breathing rhythm can help. "Finding and sticking to a breathing pattern is an easy fix here.

9. Do a Gear Check

Any part of the kit not in 100 percent working order is not just inefficient, it's dangerous. If an O-ring is leaking at the surface, replace it. If your reg is drawing too hard, have it serviced. And make sure your equipment is right for you and your type of diving. Put all these tips together, and we think you'll notice your gas-consumption rate improving. And like anything else in life. What it really comes down to is practice makes perfect.

A simple pre-dive checklist can set you up for a great dive. Extraneous and dangling techie equipment doesn't make you look like a pro — perfect trim does. Be a Relaxed Diver.