



Sidemount

Rigging for Success: Sidemount Configuration

By Lamar Hires

By side mounting scuba cylinders, divers are exploring places that are inaccessible with a more conventional back-mounted configuration.

British and some European divers have been using side-mount transport of gear. Two cylinders configured as back-mounted twi being lugged deep into dry caves to explore sumps, so single cyl hardware.

British explorers have been known to use a wide belt with tank cam belts attached to it to attach the cylinders at a point on the hip. Although functional, this arrangement allows the tank to become perpendicular to the body as breathing reduces the air pressure in the cylinders and makes them more buoyant. In spite of the additional drag in the water, the style is acceptable for low to zero-visibility diving, where trim and body positioning is secondary to the objective of swimming, or sometimes walking, through the sump.

Manifolded twin back-mounted cylinders were standard among U.S. divers through the 1970s. This arrangement was used in concert with staging extra cylinders through a cave and using diver propulsion vehicles to extend penetrations deep into caves. Confronted with smaller passages, divers such as U.S. cave-diving pioneer Woody Jasper began to use side mounting. In the beginning, the rigging was adapted from whatever was available, slinging a couple of cylinders on a back plate and allowing them to hang off the plate like stage bottles. However, the long-range explorations forced a rethinking of this arrangement.

Whatever the reason for the configuration, there are some potential hazards that must be considered. By removing the cylinder from the back, the diver is more exposed. A feeling of claustrophobia can increase in tight areas; the diver can feel a ceiling pressing directly against his back. In addition, using the cylinders as bumpers must be avoided, as damage to the cylinders can put the diver at risk of injury or death. Nevertheless, side mounting can ease the transport of gear to caves and enable passage through restricted openings.

Side-mounting arrangements can increase the task loading for the diver. All the hoses are forced onto the chest area, where they compete for space with lighting, reels, backup systems and other gear. This makes proper management of equipment and positioning critical.

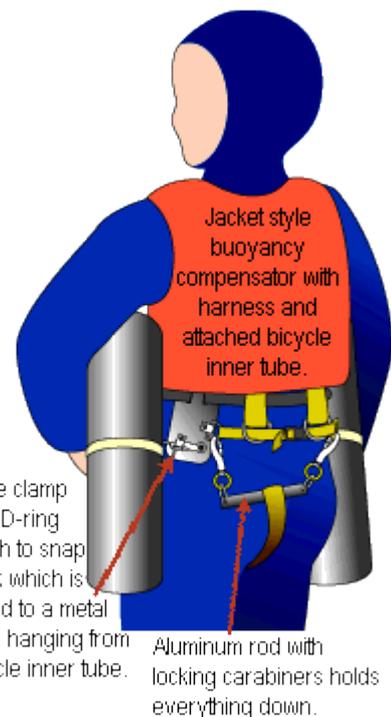


Illustration: Ming-Yen Tung

The Equipment



Cylinder Connection

One of the most critical points is the primary connection of the cylinder to the harness. Some divers affix the cylinder to the harness using a bolt snap on a short leash attached midway down a cylinder. An alternative is attaching a D-ring on the cylinder, which can be secured with a clip on the harness. A new method is to outfit the cylinder with an anchor pin that slips into a receiver tube on the harness. All of these methods require the neck of the cylinder to be attached to the chest area via a bicycle inner tube across the back and held to the chest area with D-rings. This arrangement helps hold down the BC.

Air Cell

Jacket-style buoyancy compensators can be modified by taking the hard plate out and adding the bottle attachments to the waist belt.

Wing-style buoyancy compensators must have tie-downs added to keep them from butterflying on the divers back. Wings need to be combined with a harness to provide a platform for the gear.

Backup Equipment

Wearing cylinders on the side interferes with the most logical places to store lights, reels and other accessories, and reduces access to pockets for dive tables. Divers often clip off these items anywhere they can. If worn on the harness on the chest area, access is limited and difficult. Reels wind up clipped off behind the cylinders on the waist area.

Hoses and Valves

Regulators should be as streamlined as possible with short hoses. High-pressure hoses should be limited to 6 inches / 15 centimeters, and second-stage hoses to 28 inches / 71 centimeters. Because the hoses are on the chest area, this becomes a very busy area and air management is more complicated. Selecting a regulator that allows three hoses to come off one side makes it easy to manage hoses and reduces task loading. Standard K valves with left- and right-hand on-off knobs are easier to work with. The inner tube goes over the on-off knobs to pull the valves into the body and act as the secondary tie-in point.

One major concern that should be addressed is the continuity of changing from using a side-mounted arrangement, to doubles, to singles and any combination of these rigs. This must be approached individually, with the diver learning three different rigs. This creates a task loading that distracts the diver, to some degree, from the goal of the mission. By combining all the needed tools onto one harness with interchangeable air cells, all backup equipment can stay in the same location, regardless of cylinder placement. The harness can carry up to six cylinders and still be comfortable. An advantage of this while traveling is that it reduces the number of rigs that must be transported into remote areas.

Side mounting is an alternative to back mounting cylinders, but it entails a higher level of equipment management. It is not as streamlined as back mounting, but may be more convenient, although side mounting actually presents more equipment drag. If you decide to utilize this technique, make certain that it is appropriate for the mission, and that you are adequately prepared for the additional challenge.

Lamar Hires is president of Dive Rite Manufacturing Inc., Lake City, Fla.