Cam Band Assembly

Lacing webbing bands through Scuba cam buckles

Many people find lacing cam buckles… less than intuitive. Several manufacturers offer cam bands with injection molded plastic, investment cast, and stamped stainless steel buckles. These instructions apply to buckles that have three slots and a bale that attaches the buckle to the webbing.

Legal Stuff

An improperly secured Scuba cylinder is dangerous for the diver, and all people and property within blast range. The diver has ultimately responsibility to ensure safe use of all equipment.

Continued on next page

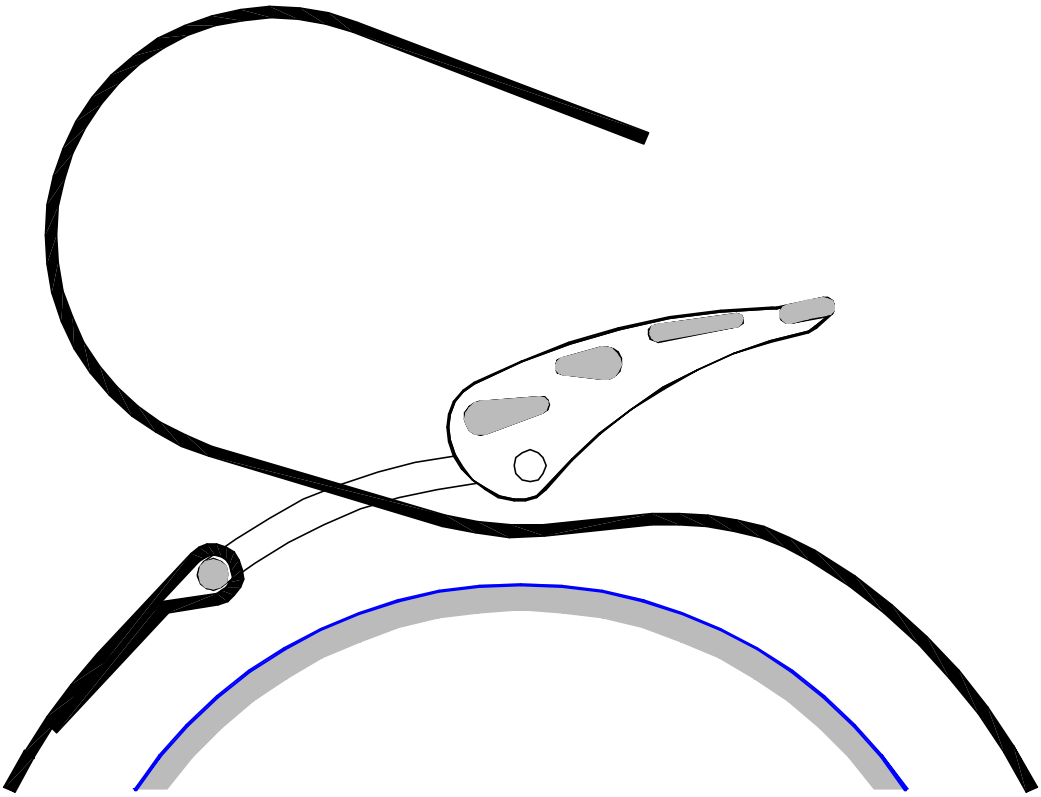
Nomenclature

Names and identification of cam band slots vary by manufacturer, if provided at all. The following image illustrates terms used in this document.

- The assembly including one or more cam bands, a jacket or wing buoyancy compensator, back pack or plate, and/or a webbing harness will be referred to as a BC.
- Cylinder refers to a Scuba cylinder or tank
- Illustrations are section views and solid light gray areas represent the “cut” through the buckle, bale, and Scuba Cylinder.

Continued on next page

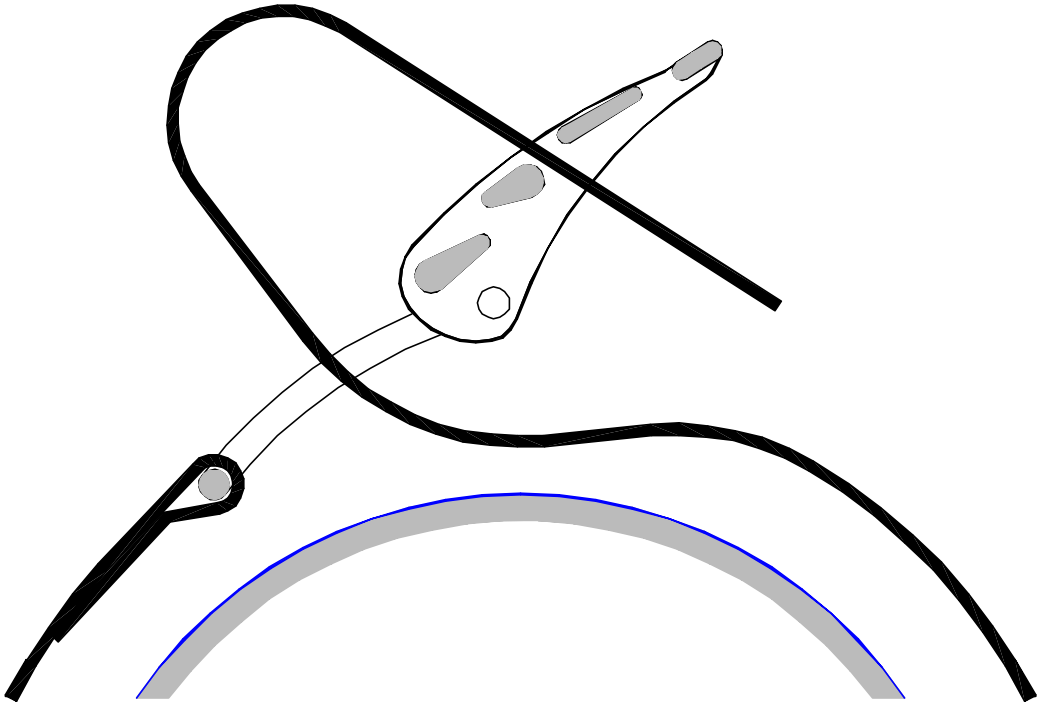
Step 1



Pass the webbing end through the bale from back to front.

Continued on next page

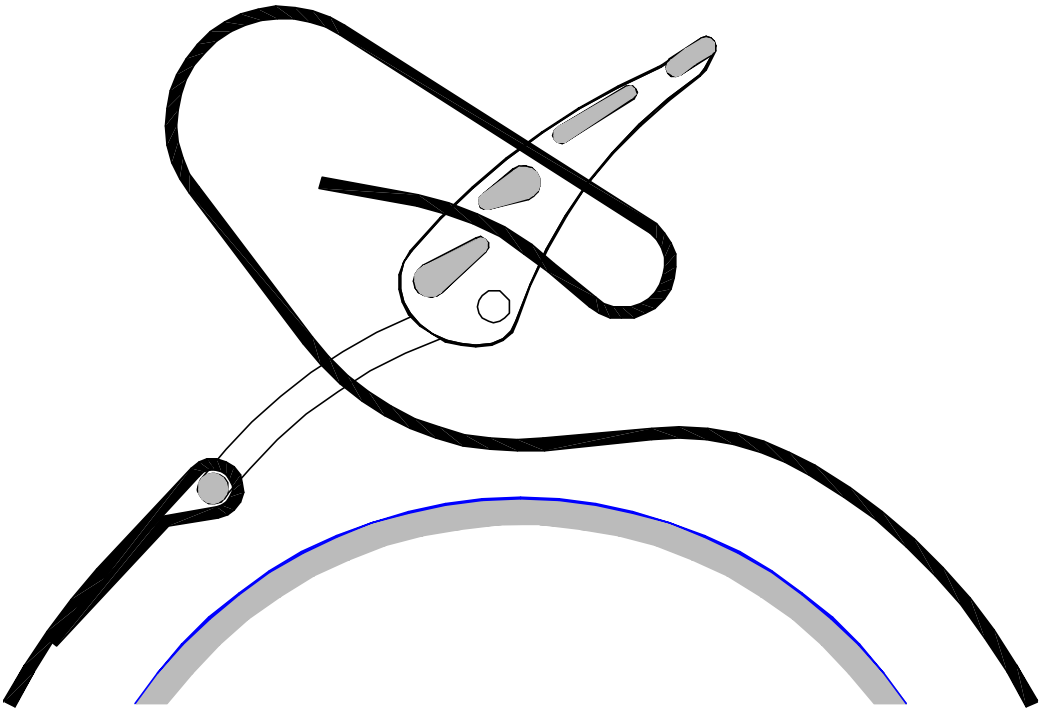
Step 2



Pass the end through the middle slot from front to back.

Continued on next page

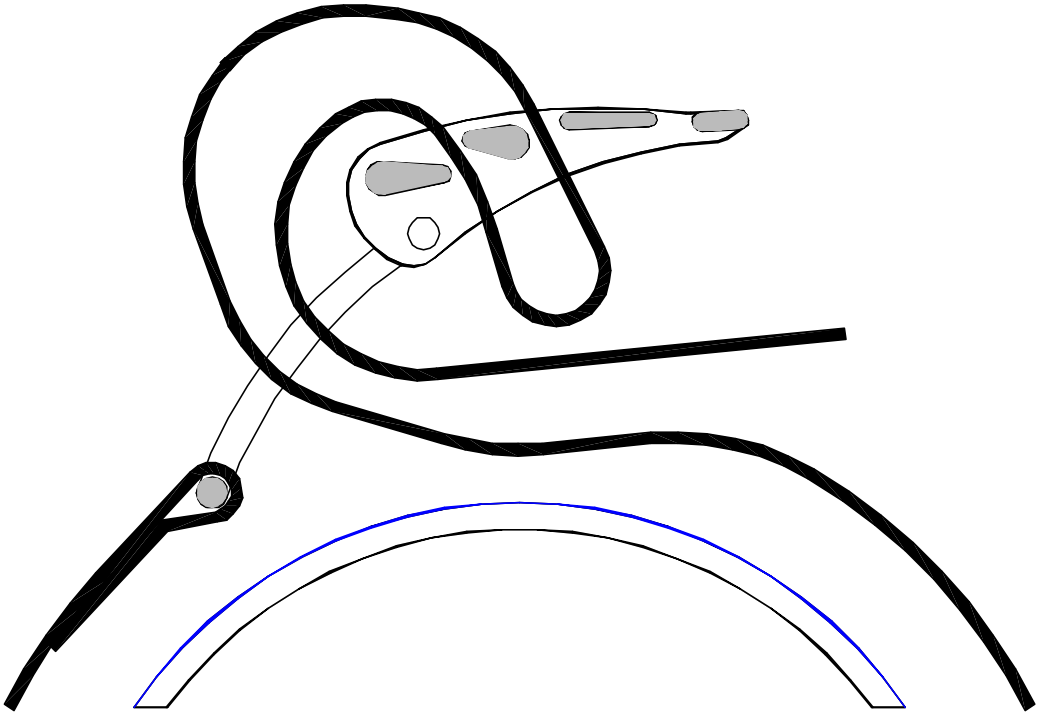
Step 3



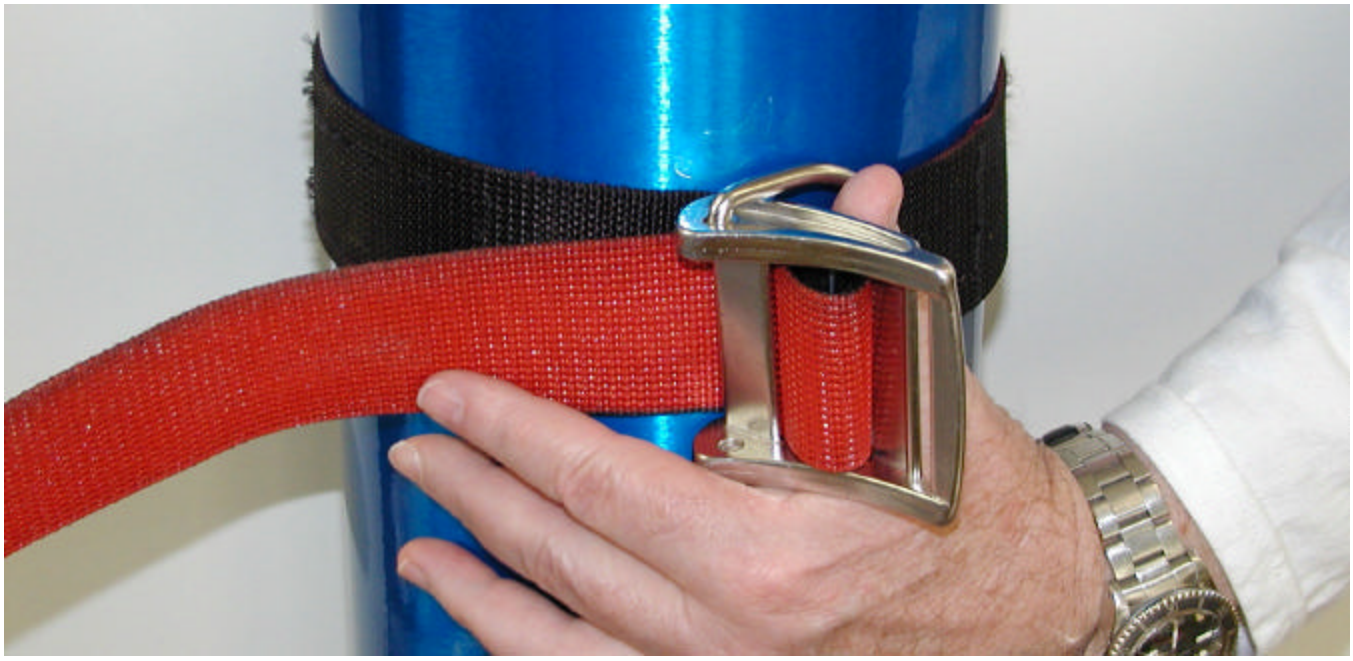
Pass the end through the inner slot from back to front

Continued on next page

Step 4

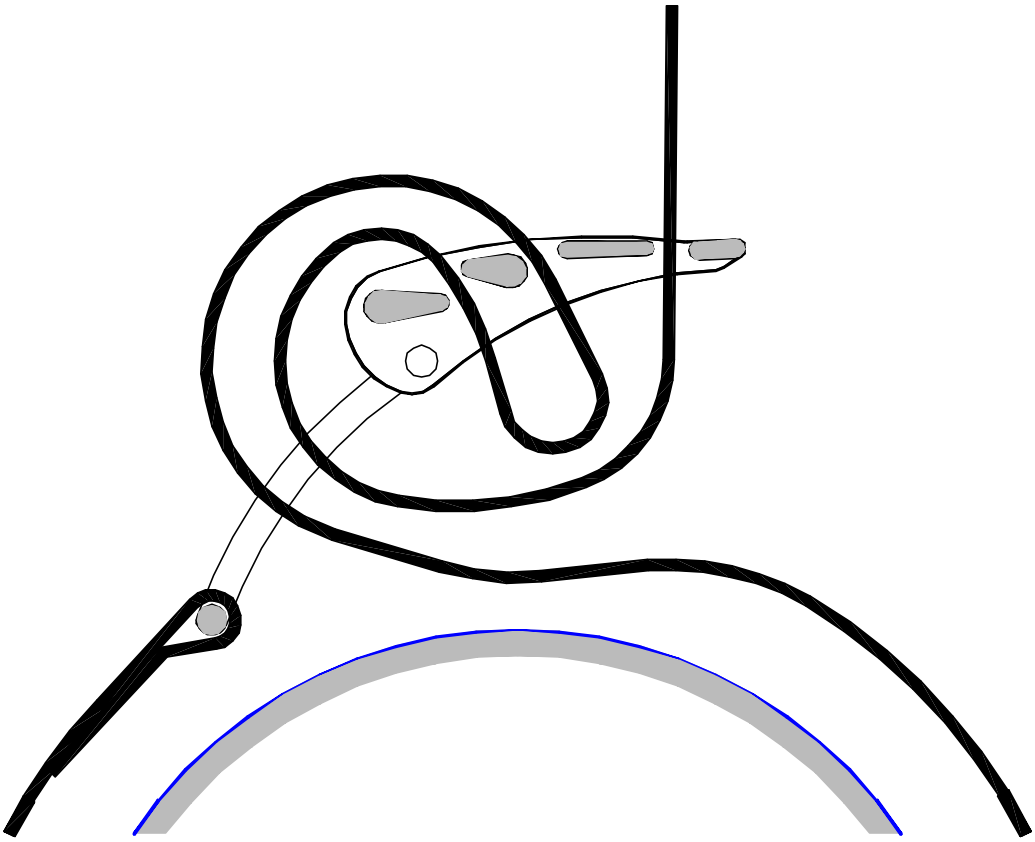


Pass the end through the bale between the buckle and webbing from front to back

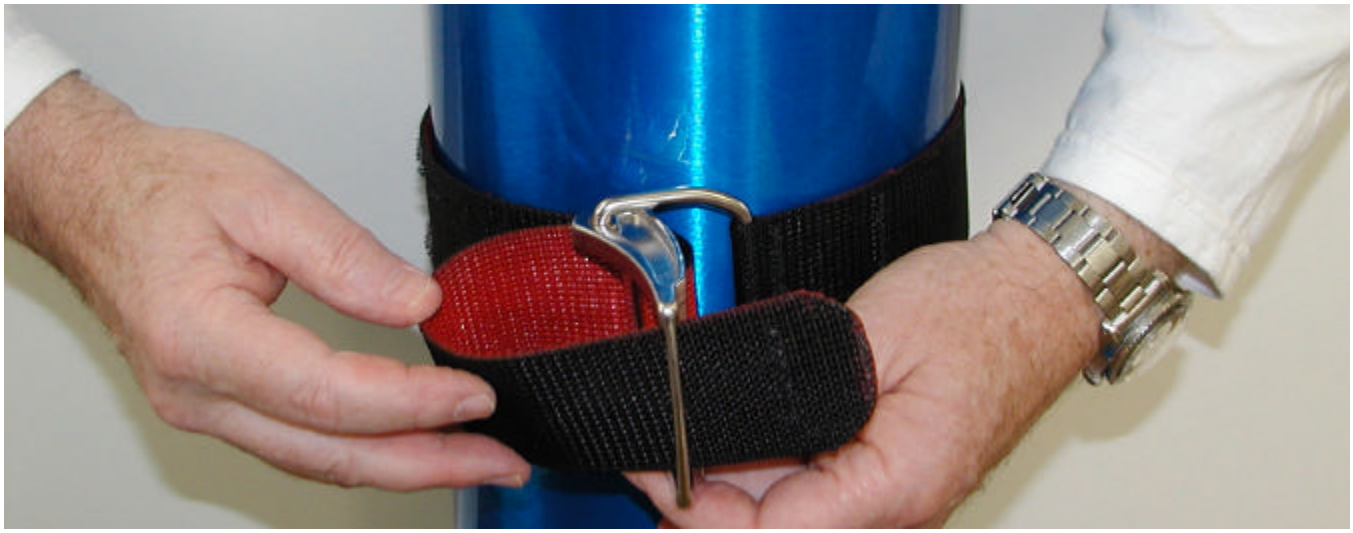


Continued on next page

Step 5

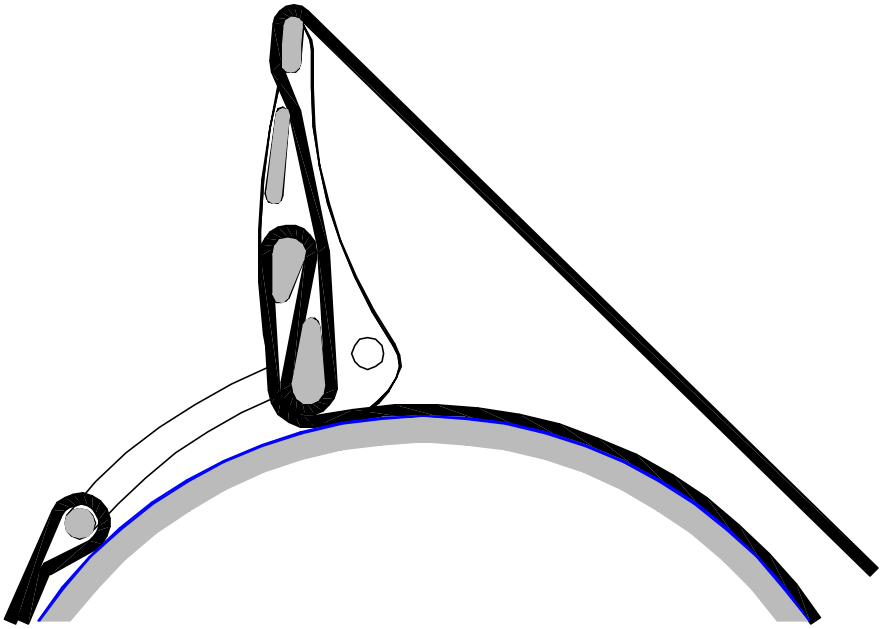


Pass the end through the end slot from back to front



Continued on next page

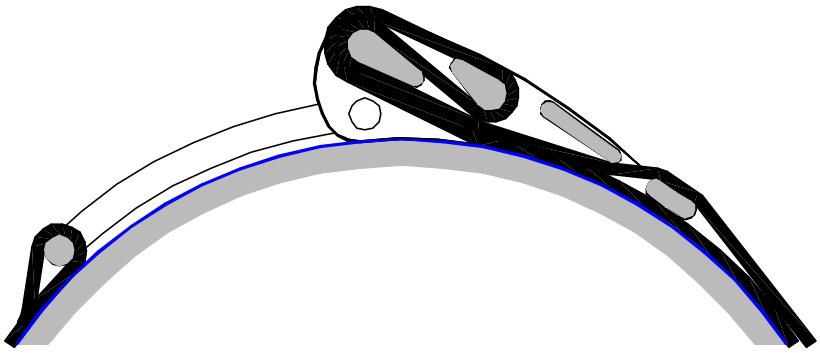
Step 6



Position the BC on the Scuba cylinder with the band perpendicular and pull the slack through so the band is snug when the buckle is approximately vertical.

Continued on next page

Step 7



Rotate the cam closed. It should require a fair amount of force, but don't over-tension. Ask a dive professional if you are not sure of proper tightness. Aggressive jerking on harness can test for secure assembly. Don't get body parts caught in the cam; it can cause serious injury. Secure the end of the webbing with Velcro or lace through a keeper.

Caution: One or more of the following can compromise holding power:

- ❑ Stretching of webbing under tension
- ❑ Reduced friction between the Scuba cylinder and webbing when wet or from thin oil films floating on the surface the diver may swim through
- ❑ Materials in the back pack, back plate, protective pads and/or the BC may "relax" under tension
- ❑ The cylinder will shrink in diameter as it cools and pressure reduces
- ❑ The band was not installed perpendicular to the cylinder.

Each of these factors can be small, but their cumulative effect can result in cylinder slippage.

Two cam bands minimize the risk of these factors, inadequate tension, and mechanical failure.

Helpful Technique

Divers who find it awkward, difficult, or uncomfortable to install the BC on a vertical tank may prefer this method, especially in rough seas:

- ❑ Position the BC on the Scuba cylinder while it is vertical
- ❑ Lay the cylinder flat on the deck so the BC is on the bottom and the cam buckles are on top.
- ❑ Position yourself above the buckles and use body weight to rotate the cam home with your hand(s), knee, or foot.

Accessories

Non-compressible resilient rubber or synthetic pads can prevent marring of cylinders, especially aluminum. Pads also provide limited "spring" to absorb slack and increase friction. They can also reduce the minimum tension required for reliable assembly. Cushion and tension pads are available as accessories, may come with the cam band, or can be made from solid resilient sheet or a heavy-duty truck inner tube. Make sure you do not use foam sheet material that will compress at depth.

Breaking Gear In

Cam bands, BCs, and back packs get worn-in similar to comfortable shoes. Materials bend, stretch, and relax over time while under tension, taking on a new memory. Clamping cam bands and BC onto a cylinder can help set a new material memory, especially on new equipment. Assemble and leave for 8 hours or more. Re-tension and repeat until loosening is no longer detected.

End of document