The beginning scuba diver has a bewildering array of equipment to choose from, masks, snorkels, fins, regulators and BCDs all come to mind. Perhaps the most confusing choices of first time scuba purchases are in the areas of the buoyancy compensation device (BCD) and regulators. In this article we will examine the three basic types of BCDs and hopefully clarify which would be best for the type of diving the beginning scuba diver will be doing.

**Types of BCDs**

BCDs come in three basic flavors: Vest, Back inflate, and Back plate and wing. Now you will see many different versions of each of these, with the backplate and wing having the least number of variations and the vest and back inflate styles having the most.

**Basic BCD Components**

All BCDs will have:
• Air or gas inflated bladder for buoyancy control
• Some form of attachment device(s) for either single or double air tanks
• Straps or harness to allow the diver to wear the BCD comfortably

Depending on the type a BCD may also have:
• Pockets
• Chest straps
• Cummerbund
• Integrated weights

Next we look at the various types and compare their features. Not that depending on the actual design, amount of padding, pockets and weight integration the actual feel and dive experience with a given model of BCD may be entirely different than expected.

**Vest BCD**
In a vest style BCD the air bladder(s) that provide buoyancy wrap around the diver like an inflatable armchair. Vest type BCDs tend to be very stable on top of the water with little rollover or pitch over issues. However, underwater they can produce large amounts of drag, and, excessive amounts of “static” buoyancy that must be compensated for with extra weight.

![Figure 2: Vest Type BCD (Calypso Model)](image)

Some divers complain about BCD squeeze when their vest type BCD is inflated.

**Back Inflate BCD**
A back inflate BCD eliminates the wrap around bladder and instead concentrates the bladder around the air tank area in the back of the BCD (hence the name.) The back
inflate BCD can produce the frontward pitch on the surface but usually this is mild and easily compensated for. The back inflate BCD tends to be more streamline and provides less static buoyancy than a vest type BCD generally speaking. In addition a back inflate BCD tends to be smaller and more easily packed than a comparable vest type BCD.

![Figure 3: Aeris-Atmos LX Back=Inflate BCD](image)

Due to the back inflation, a back inflate BCD usually doesn’t cause BCD squeeze.

**Similarities between Vest and Back Inflate Models**

Most vest or back inflate BCDs will also have chest straps, padding, integrated weights and pockets. The shoulder straps will have plastic quick disconnects to allow ease in donning and removal. The integrated weights will usually consist of either a set of ditchable weight pouches or a combination of ditchable and fixed weights.

Usually the back inflate model will appear more streamline and compact. Both the vest and back inflate models will provide a safe dive experience for beginning divers and it is mostly a question of which makes you feel more comfortable in the water, both at the surface and underwater as too which you should choose.

**Back Plate and Wing**

The Back plate and wing (BP/W) tends to be a minimalist form of a BCD and generally doesn’t have integrated weights, pockets, chest straps or cummerbunds. The BP/W usually consists of a metal back plate, of aluminum or stainless steel, a single, continuous webbing harness with a waist belt, a crotch strap and a wing type bladder. The BP/W is
modular in that you can utilize any wing with any backplate and by adding a single tank adapter, you can dive single or double tanks with the same setup. Of the three type of BCD the BP/W usually is easier to pack and provides the most flexibility. The BP/W is usually seen with divers preferring the Hogarthian and/or the DIR approaches to diving. It is generally felt that due to its minimalist design the BP/W has fewer possible points of failure and is easier to use in tight areas such as caves or wrecks.

Most beginning divers feel the BP/W is a more advanced form of BCD requiring better skills than the standard BCD, however, if adjusted properly the BP/W can be just as comfortable and easy to use (if not easier) than the more traditional BCDs. However, a BP/W usually will not have pockets, a chest strap, a cummerbund, padding or weight integration, of these the lack of pockets and weight integration may the top reason that most beginning divers won’t like the BP/W.

The BP/W combination can be used with both double tank configurations and single tank configurations. Usually with a single tank a single tank adapter (STA) is utilize to stabilize the single tank and keep it from pitching side-to-side and to prevent the wing from “taco-ing” around the tank.
So What to Choose?

For most recreational, open water divers who aren’t going to be doing deep, cave or wreck diving, either the vest or back inflate BCD is a good choice. The individual diver has to decide what features such as size and style of pockets, amount of lift, and type of weight integration to use before choosing a BCD. It is suggested that the diver test dive a BCD before buying it.

For the more serious diver who plans to do deep, wreck or cave diving or diving where there may be tight passages or the need to carry extra air/gas bottles, then the BP/W would be a better choice over the more conventional BCDs. A BP/W is designed for the more technical diver and provides numerous attachment points and D ring locations to attach additional gear required in more demanding diving situations. Another point to consider is that BP/W BCDs usually are not available off-the-shelf at your standard local dive shop and must be special ordered.