

### Instructions for installing the 10 lb or 22 lb ABWs

You will need an A&P to sign off placement of the ABW, but if you are pretty handy and you have an A&P that will review your installation and approve it for you, then you might want to install the unit(s) yourself and have your work reviewed by an A&P. You will also need to calculate your new EWCG and have you're A&P sign off on that paperwork as well or have the aircraft reweighed .

I am not an A&P but I installed this two part ABW in about an hour and I removed 100 lbs of ballast that is not needed anymore on the aircraft. The EWCG result will be very similar to having 100 lbs of ballast in the rear of the cargo area.

Before you install the ABW get an accurate weight of the complete unit with all of the hardware. The unit that I installed today weighed 22.9 pounds but most weigh 22.5 pounds.

The first thing that I did was remove the side panel on the 1980 Sundowner there is two side panels that can be removed but removal of one is all that was required. Other models including older Musketeers may have differences but the ABWs will fit in any of these aircraft. I sprayed all of the bolts that I removed with some lubricant so they are reinstalled easily and no rust develops on the clips.



I loosened the fiberglass tail cone cover, and disconnected the arm that is attached to the horizontal stabilizer trim. I never removed this part previously but with a little manipulation it comes right out. You

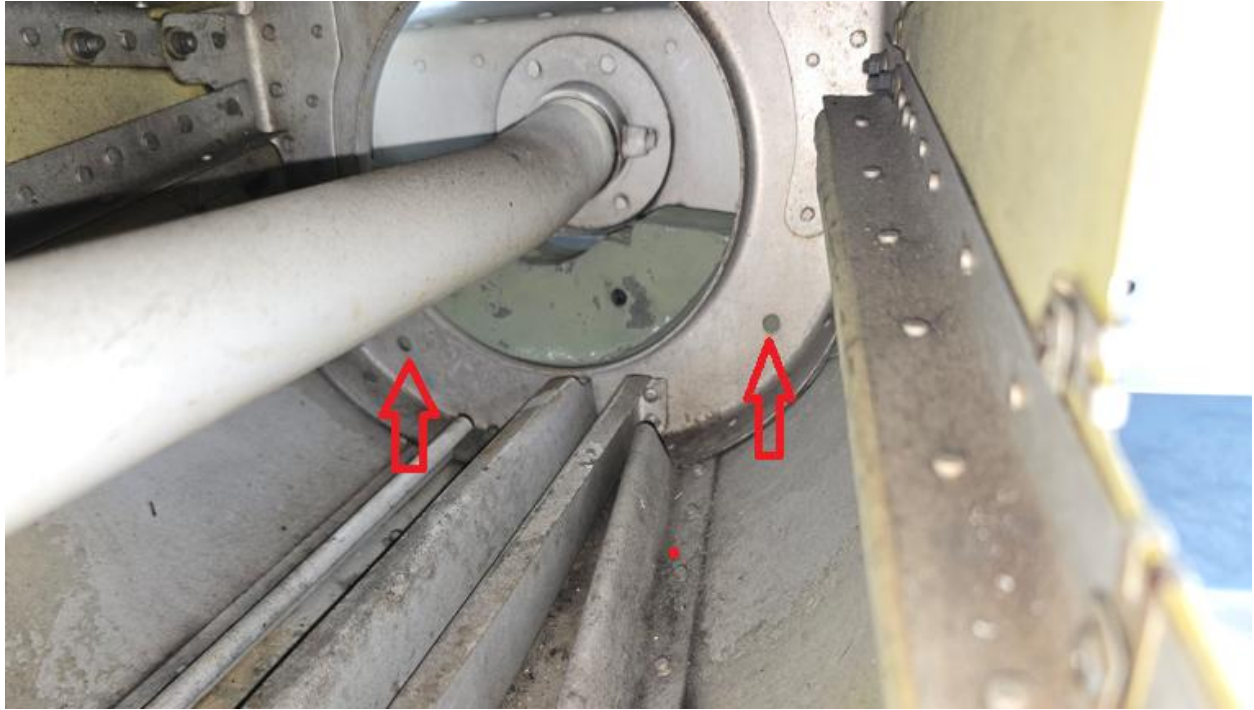
may find some areas that need a little corrosion work, if you do spot any just take photos of the areas, so it can be addressed at a later date.



You can actually place the 10 lb ABW into the tail without fully removing the tail cone cover, but the cover really needs to be removed, when you use a drill.



The 10 pound ABW is just rested in place, at its prescribed location at station 288. At different stages of the installation it is a good idea to check the horizontal stabilizer counterweight arm clears all of the new components, and check that the horizontal stabilizer does not contact anything on the ABWs including the hardware. No issues were observed on this particular installation.



Looking inside of the tail thru the access panel you can see the two tooling holes that are used to bolt the 10# assembly to the aircraft frame.



The holes lined up very close on the right side, but after temporary installing the nut on the left, then the right bolt was removed and the hole was "cleaned up" with a  $\frac{1}{4}$ " drill bit and the right bolt was installed.





After the left and right bolts were installed, the hole for the center bolt was drilled with a  $\frac{1}{4}$ " drill bit and the third bolt was inserted. The center bolt hole needs to be drilled and it is easy to use the 10 lbs ABW unit as a template for where the specific location where the hole is drilled. The three bolts were reversed and installed with the nuts facing to the rear of the aircraft according to the paperwork for the original Beech ABWs. The bolts supplied with the ABWs are the same bolts that were specified when installing the Beech ABWs. The ABW contacts several rivets and these rivets will form indentations into the ABW from the rivet heads. Initially you may not be able to fit the two washers and have room to tighten the nut until the ABW is pressed into place against the rivets. Tighten it with one washer at first and then reinstall the nut with the two washers. Do not use AN-4 14A bolts the AN-4 13A bolts work out just fine and were included with the ABW.



If you are installing a **10 pound ABW** the unit is installed after installing these three bolts and the cone tail cover and access panel just need to be reinstalled. The placard that came with you ABW should be applied to the unit in a location that would be visible. I stopped tightening the three bolts when the tip of the bolt was flush with the top of the nut. Since the ABWs are made from soft lead only a minimal torque can be reached but these are high quality lock nuts and will not loosen up.

If you are installing a 22 pound ABW you would place the two AN4-50A bolts for the supplementary weight facing forward at this point. You will need to hold the washer in place and then slide the bolt all the way back. A very small hammer may be required when installing the supplemental weight but the long bolts went in smoothly when I installed this unit.



The two nuts for the supplemental weight are installed thru the access panel and the **22 ABW is installed at this point**, and then the removable panels are reinstalled. A magnetic pick up tool might be handy if a nut or washer was to fall into the series of aluminum channels running along the bottom of the tail.

Any temporary ballast that may have been placed in the aircraft should be removed so that you do not accidentally fly with ABWs and ballast installed at the same time!