

Adirondack Craftworks

“How To” Mini Instruction Packs

Build Your Own Trend Airshield Battery Pack

Packet Number 100

Copyright ©2006, Adirondack Craftworks

This document may be freely distributed provided it is done so in its entirety.

I. Introduction and Disclaimer

I hope that you find the information presented in this packet useful, and that it helps you extend your woodworking knowledge.

I have attempted to clearly document the topic with both words and pictures. Keep in mind, I'm not a professional. I'm just an average hobbyist woodworker who likes to share ideas. I have made every effort to be sure processes are clear and understandable.

Before proceeding with this article, be sure that you continue to observe proper safety procedures. In an attempt to clearly show an operation, you may see a picture without proper guards or safety equipment in place. Be sure to always have guards in place whenever possible at your own shop, and always wear proper eye protection.

The author of this article will be held harmless in the event of personal injury, damage to property or personal items is experienced. Do not proceed with any portion of this document if you do not feel it is not within your expertise. Information is provided for reference only, and no claims are made as to accuracy or outcome.

Please feel free to notify me if you discover any errors, or have additional comments:

mail@adirondackcraftworks.com

II. Packet Overview

In this packet I demonstrate how to create your own low cost replacement battery packs for the Trend Powered Airshield.

I have started to turn more on the mini lathe. Unfortunately, I also suffer from some pretty good allergy problems. As a result, I decided to purchase the Trend Airshield to use in the shop. I was not happy with the battery pack that was supplied, so I decided to pick up a few parts to put my own together.

The pack supplied with my unit was a NiMh three cell pack, rated at about 1000 mAH. Older airshields, as I have seen described on the net, were supplied with NiCd batteries.

NiCd batteries are the older style technology, and tend to have a memory effect. The newer style NiMh batteries can be re-charged even if they are not fully drained, and have no memory effect.

I use NiMh in my digital cameras, so I thought I would go for the same setup on the airshield. In this packet, I provide the sources and procedures to build the pack itself. As the batteries are replaceable, I will leave the shopping for that part up to you.

What to look for (Target, Walmart or Camera Supply Store)

- NiMh AA Batteries (3 required per set – most are supplied in sets of 4)
- Look for a rating of 2000 mAH or greater – printed on side of battery
- Charger of your choice – from 1 hour to overnight
- Should be from \$15.00 to \$30.00

As I already had a charger for my camera, I just purchased some additional AA cells. The style I picked up were 2200 mAH, or over twice the capacity of the stock battery pack.

I generally only turn for a few hours, and have never run my homemade pack down fully. I usually pop out the cells and re-charge so I always have a fresh set.

AA cells are 1.2 volts, so three cells makes 3.6 volts – same as the stock battery pack.

III. Materials

Mouser Electronics

www.mouser.com

Part #: 12BH331-GR Three slot AA battery pack w/lead ends \$0.89 each

Part #: 1710-2111 DC plug (2.1mm x 5.5mm x 14 mm) \$0.92 each

Note: Radio Shack does NOT have available a 3 slot AA battery holder. I was able to get the DC connectors their, however. They are a Type M DC plug. That's actually the one shown later. I did a cross at Mouser, and the 1710-2111 part number is close.

For those who have some electronics knowledge, you most likely have a soldering iron. For those who do not, stop at Radio Shack for the following:

Part #: 64-010 Solder Strips \$0.97

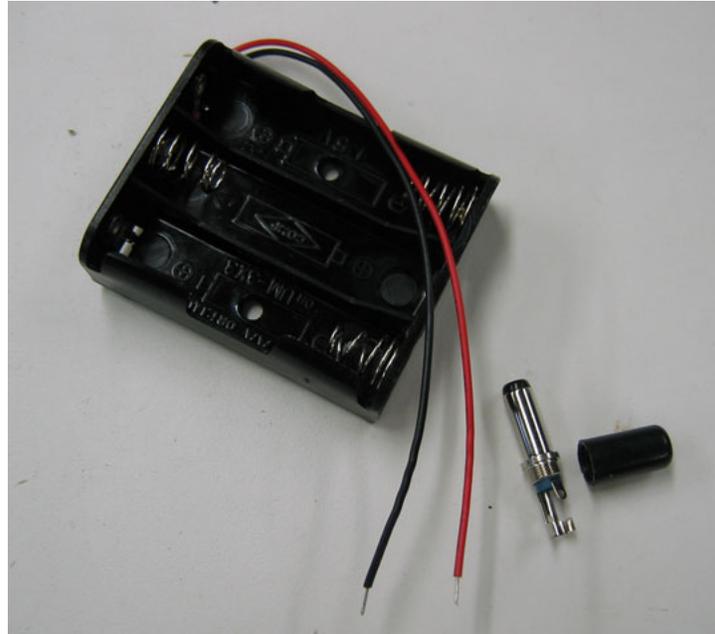
These are little strips of solder that you can wrap on the connection, and simply melt with a match. Nifty!!



Part #274-1569

IV. Assembly

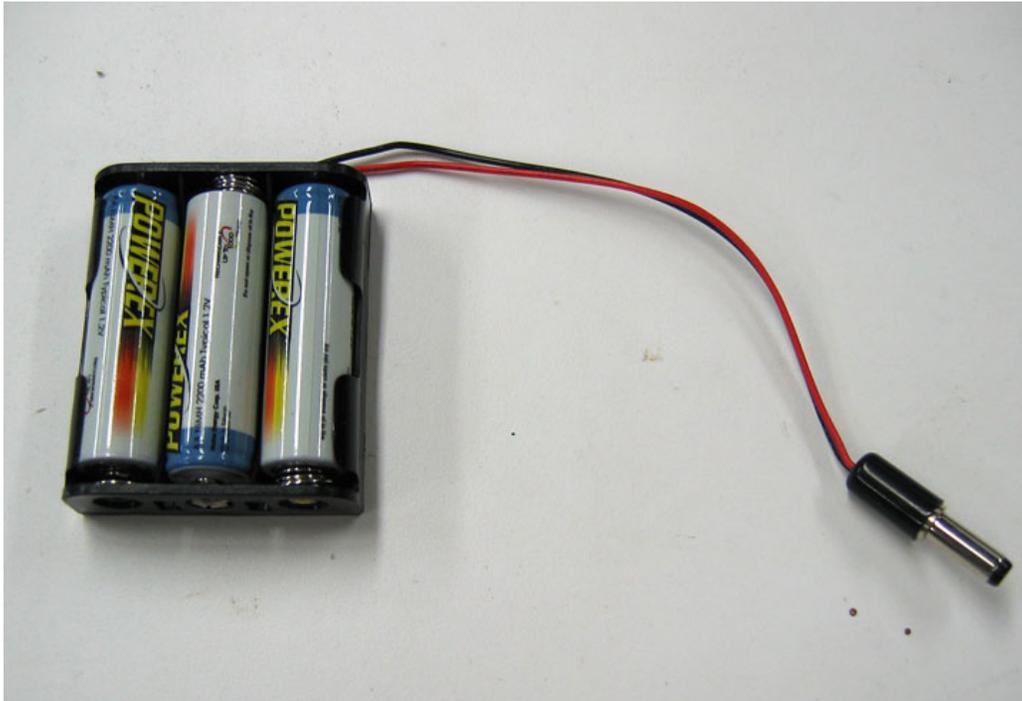
Here are the parts:



Here is a picture showing the connector installed:



Everything assembled:



Installed into the shield:



Here is the poor fit of the original battery pack:



Nothing to fancy, but I'm pretty happy with the operation. The fit of my replacement is much better than the original, and I get much more run time from the new batteries.