

Comparing Powerpole Crimp Tools

Doug Stuard, NVNTRAK

Although soldering Powerpole contacts will provide excellent results, Anderson Powerpole contacts were designed for crimp attachment, and Anderson offers a range of high end attachment tools for industrial use with prices to match. For low volume and hobbyist work however, there are a number of alternatives that provide good results at low-cost. These can be categorized as hand-crimpers and ratchet crimpers. At prices ranging from \$6 to \$50, excellent results can be obtained with only a minimum of practice.

This paper evaluates the performance of three common crimp tools offered to the hobbyist market. The tools evaluated were:

- Gardner-Bender GS88 6" hand crimp tool (\$9)
- HarborFreight 36411 9-1/2" hand crimp tool (\$6)
- West Mountain Radio PWRcrimp ratchet crimp tool (\$50)

Not evaluated was the 1309G2 ratchet crimp tool from Anderson Power Products (\$160) or the Klein 1005 (\$18), available at Ace Hardware, Home Depot and elsewhere.

When crimping or soldering Powerpole contacts, it is important that the outline of the contact barrel not be exceeded, otherwise the contact will not insert properly (i.e., "click") into the connector shell. Therefore, any contact barrel deformation resulting from the crimp process must be easily correctable.

Gardner-Bender GS88 (\$10)

This is a 6" hand crimper sold by many of the Powerpole vendors for "low volume" use. It includes wire cutters (limited usefulness on stranded wire), two sizes of crimp dies and a contact former.



Figure 1 - Gardner-Bender GS88

For Powerpoles, the contact is placed in the smaller crimp die with the seam facing the concave portion. Due to the 6" handle size, leverage is limited, so a good strong squeeze is required to crimp the contact fully. Because the die is a tad oversized, some contact barrel distortion will result, so the contact barrel should be rotated 90 degrees and placed in the contact former (the die closest to the hinge), where a moderate squeeze (or two)

will round things out. (See http://www.w5fc.org/pse_docs/KNOWLEDGE/anderson_powerpole_instructions.htm for details). If the contact doesn't insert into the Powerpole shell and click in easily, you will need to work it a bit more with the contact former. With practice, you should be able to get a proper shape with one or two squeezes.

HarborFreight 36411 (\$6)

This is a 9-1/2" hand crimper by Pittsburgh (Harbor Freight's internal brand), and available via Harborfreight.com. It is similar in design to the Gardner-Bender, however the crimp die is deeper and better sized for Powerpole contacts.



Figure 2 - Harbor Freight 36411

Usage is similar to the G-B, however with the greater leverage afforded by the 9-1/2" handles, less force is required to achieve a solid crimp. I found though, that the depth of the die tended to cause the crimped contact to stick in the die, requiring a firm push to pop it out. There is some barrel distortion (although not as much as with the G-B), and the contact former allows "trim up" to be done quickly.

West Mountain Radio "PWRcrimp" (\$50)

This is a full cycle ratchet crimper which is similar to the \$160 professional unit offered by Anderson Power Products. It has separate crimp dies for 15, 30 and 45 Amp Powerpole contacts, with guides to ensure proper contact placement in the tool.



Figure 3 - West Mountain Radio PWRcrimp

Operation is clean and smooth. With the contact placed in the proper contact guide and the stripped wire inserted, the ratchet action ensures that the proper crimp force is applied, and will not release until the crimp is complete. No barrel distortion was experienced, so “trim up” is not necessary and the contact clicked easily into the Powerpole housing. While more expensive than the hand tools, it is not out of reach for the individual, and would certainly make sense as a club asset.

This tool is also sold by Powerwerx as the “TRCrimp” (\$47)

Summary

Although the trials were not extensive, it was clear that the PWRcrimp ratchet tool gave the best performance, but at a price. If you do plan on implementing Powerpoles on your modules (and you haven't spent all your money on locos or rolling stock), it would be a good addition to your toolbox.

For those of us for whom tools are a necessary evil, either hand crimper will give good results, however I would recommend the Harbor Freight tool for its extra leverage and less post-crimp “futzing” to get the contact barrel properly shaped.

Start Crimping!!