

**The Anatomy
of The
Anderson PowerPole
Connector**

What is an Anderson PowerPole Connector?

The Anderson PowerPole Connector is the new, standard, DC power connector for ARES[®] organizations.

It is a genderless connector design, capable of handling significant current, and capable of being plugged and unplugged many hundreds of times (operations) without deterioration.

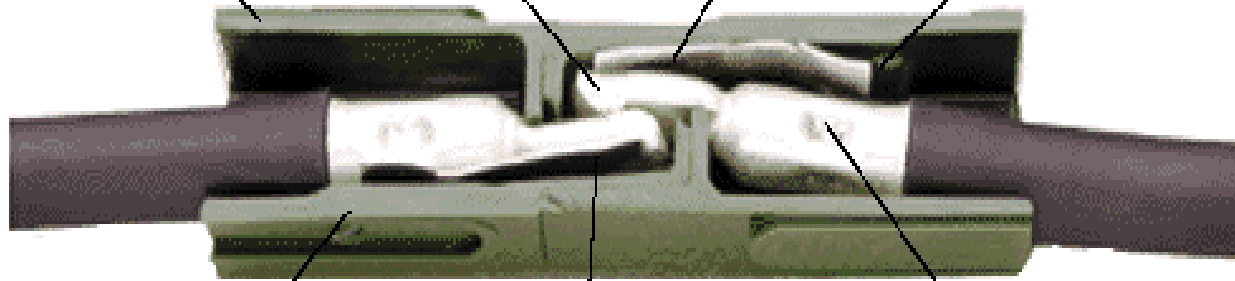
Key Features

Molded-in dovetails lock modules into multipole units

If broken under load arcing is confined to tip, a non-conducting area

Detent keeps connectors mated and provides quick break snap action upon disconnect

Stainless steel leaf spring provides constant contact pressure



Rugged lightweight polycarbonate housing

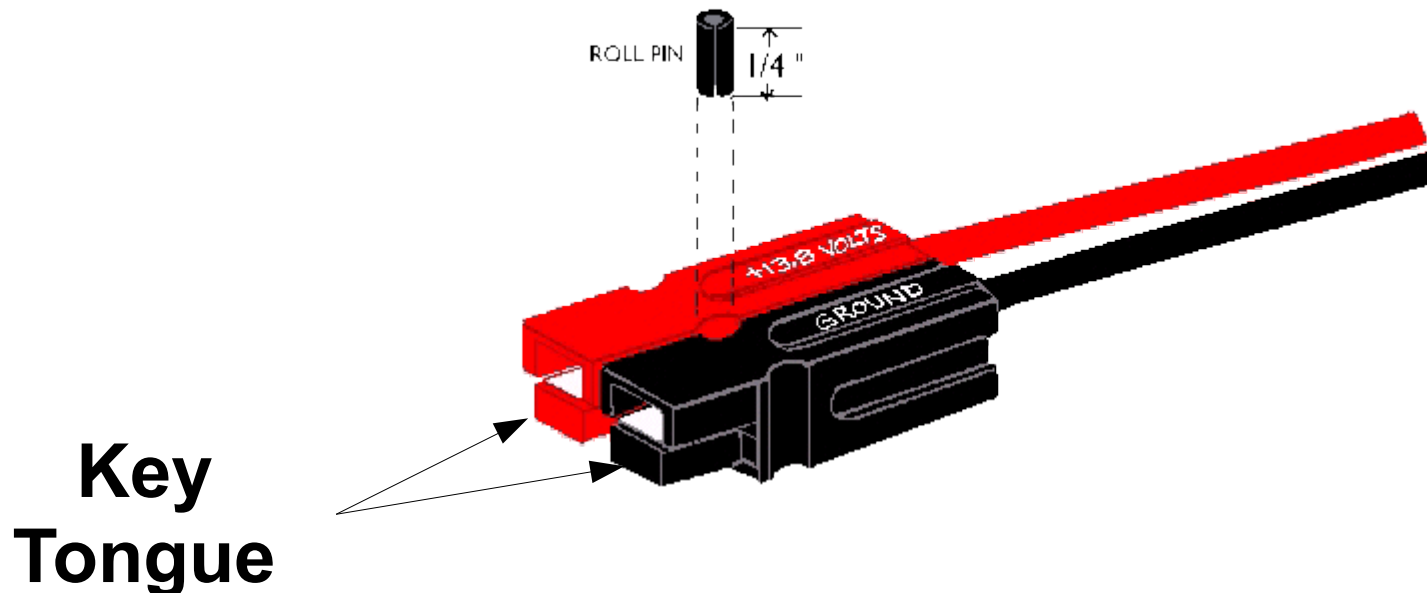
Wiping action on make and break keeps conducting surfaces clear

Low resistance silver-plated copper contacts

ARES Standard Polarity

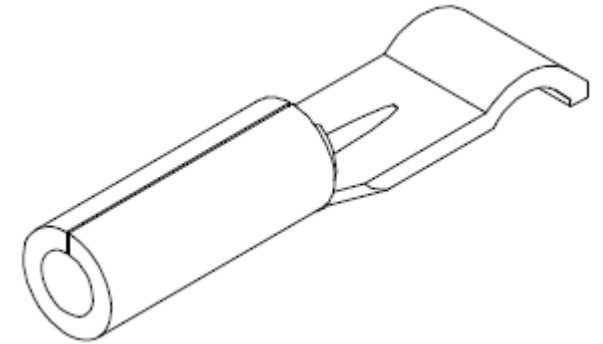
The ARES Standard for PowerPole polarity is to place the Positive connection (Red housing and preferably red wire) to the right when looking at the plug end of the connector pair with the key tongue down.

It is desirable to lock the housings from separating with a roll pin, small tyrap or Super Glue.



Contacts

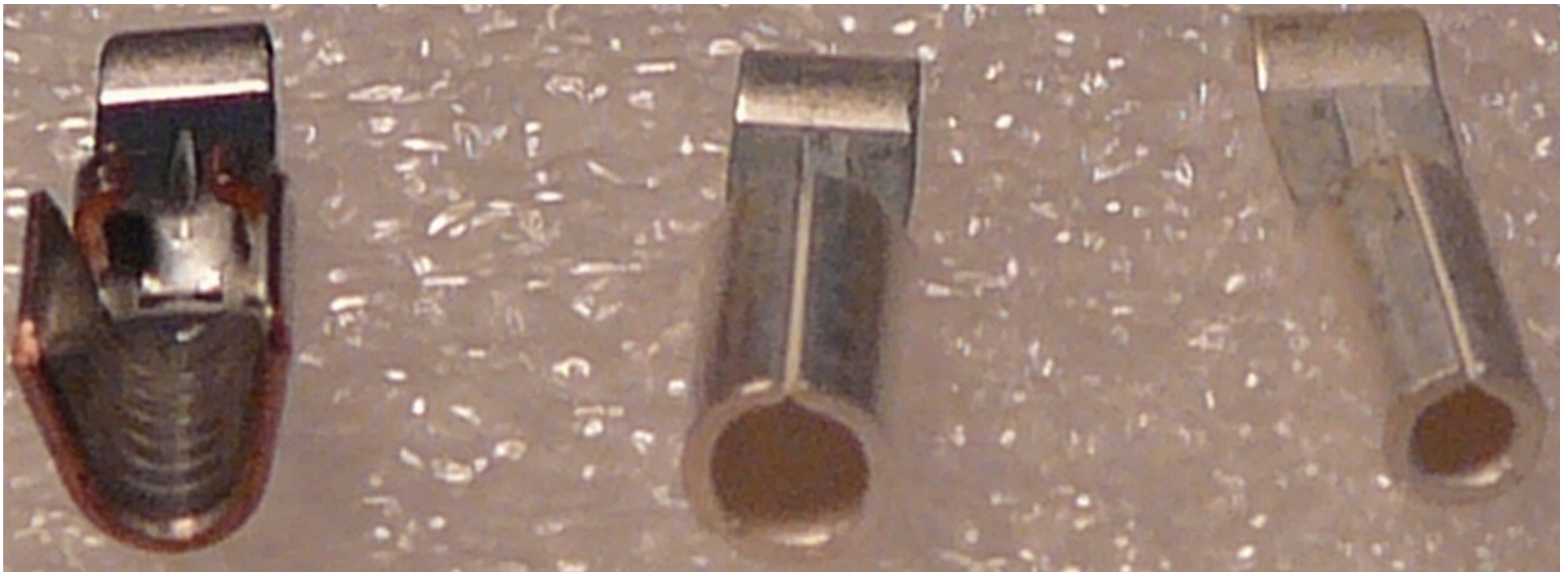
All contacts have the same size mating surface – the difference is in the crimped barrel



45AMP

30AMP

15AMP



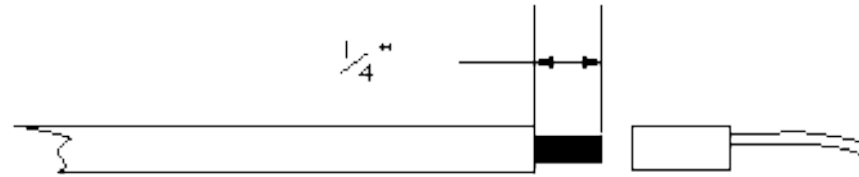
The rating of the connectors is by the wire gauge that the connector pins accept, and not the rating of the pins themselves.

A 15, 30 or 45 amp Powerpole® connector pin will actually withstand well over 100 amps without damage and close to 200 amps before actually causing permanent damage. The voltage drop of a Powerpole® 30 amp connector is approximately .016 volts at 37 amps.

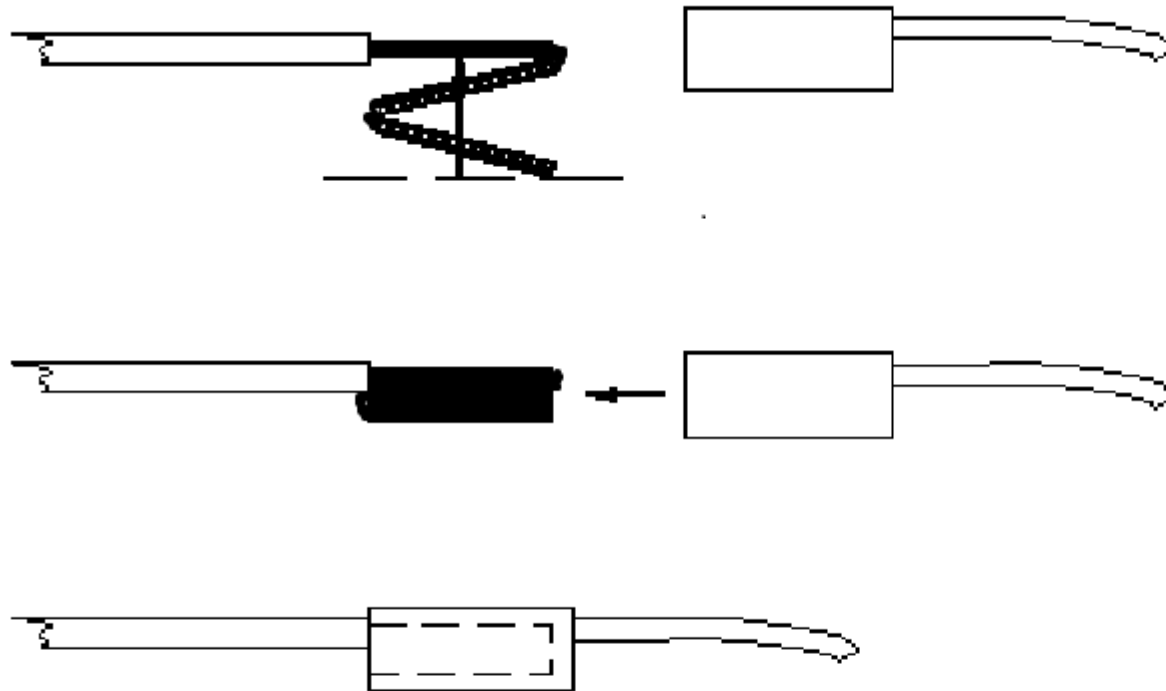
The most commonly used Powerpole® is the 30 amp. Even though a 30 amp connector is rated for 12-14 gauge wire they will accept 10 gauge wire. Smaller wire may be used by doubling over the wire.

Preparing Wire for Crimping

Correct Size Wire



Under-Size Wire



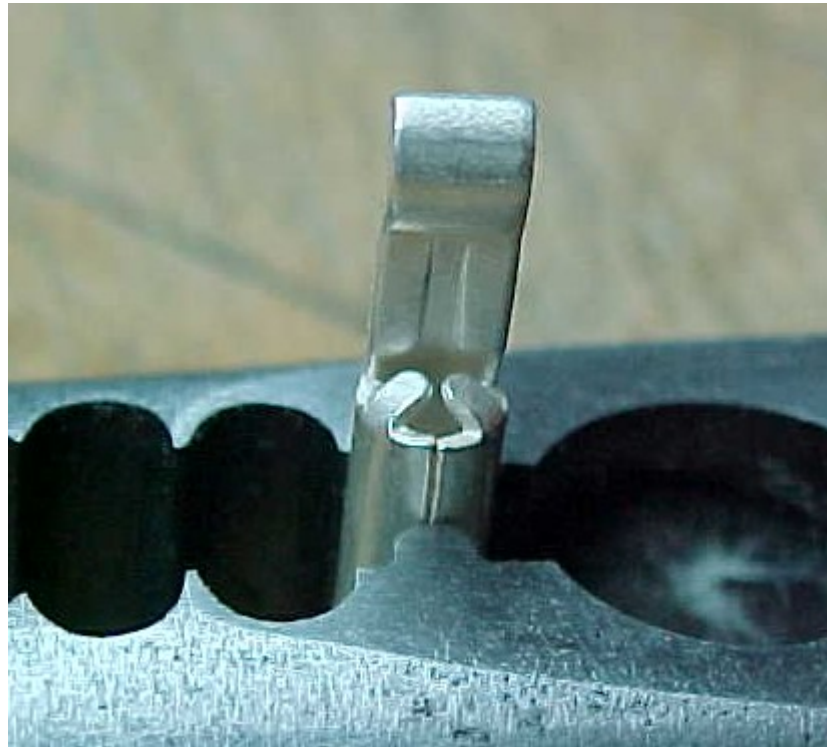
Crimping Tools

There are two commonly used crimping tools for PowerPoles – the die formed, ratcheting tool (preferred) and the simple plier type tool. Both tools have specific usage techniques.



Contact Placement

NOTE: This is the WRONG way to place a contact into the simple plier type crimping tool!!!



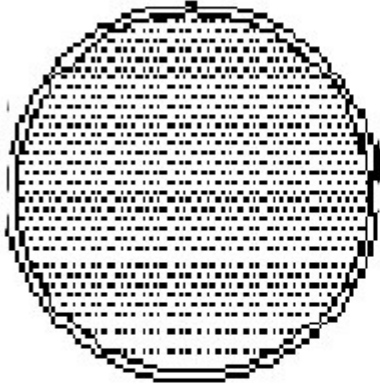
This is the first crimp of a 30A contact. Notice it is in the first die #1 and that the seam of the contact is against the half-moon rounded side of the tool. Make sure the end of the contact's crimp section is just below flush on the side of the tool.



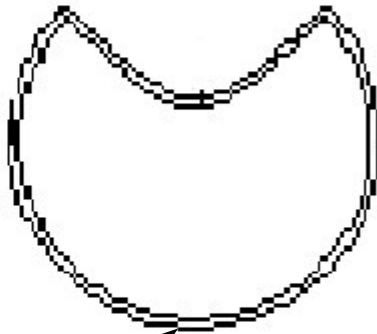
On the second step, the contact is inserted into the back # 3 die and is turned 90 degrees. Do not crimp very hard in this die -- just enough to make the width of the crimped section back to round and slightly less in diameter than before crimping.

A Proper Crimp

Uncrimped
Contact



Properly Crimped
Contact

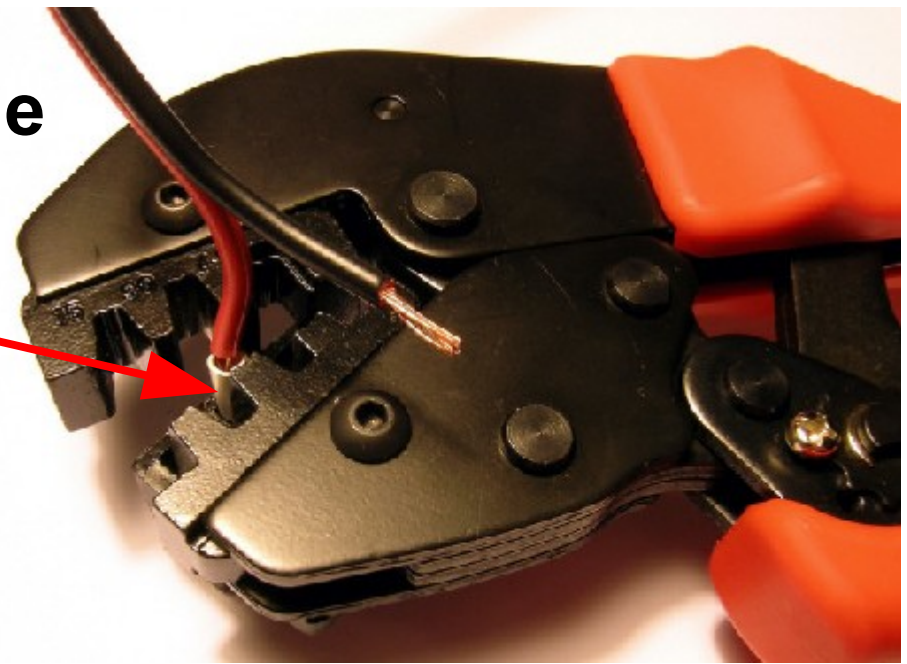


Seam

Improperly
Crimped
Contact



The contact is oriented so the seam is towards the top die



Squeeze the handles until the ratchet releases and NO FURTHER



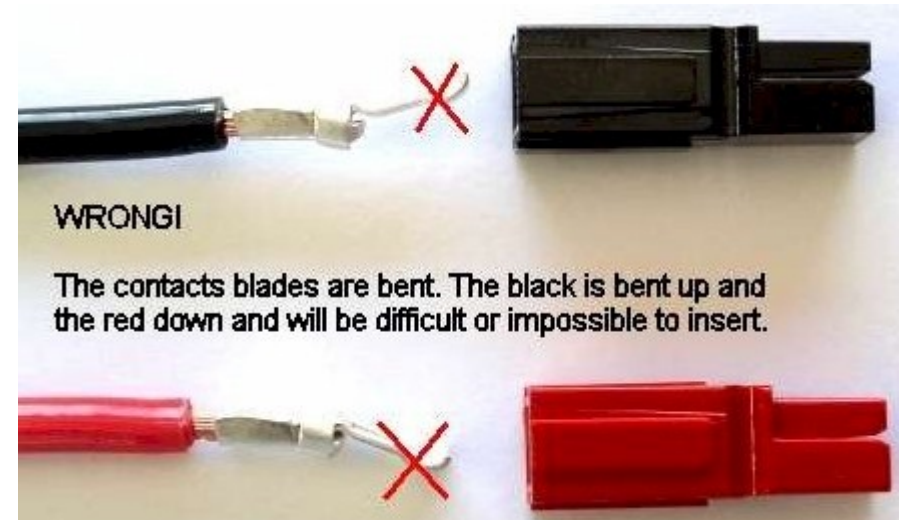
A Properly crimped contact



Contact Insertion

CORRECT!

The contacts are in proper alignment and ready to push in. Listen for a click on each one to make sure they are fully inserted.



WRONG!

The contacts blades are bent. The black is bent up and the red down and will be difficult or impossible to insert.

Cutaway view of a Powerpole connector.

Note that the contact must fit through the gap between the housing and the spring and that the contact is snapped over the end of the spring.



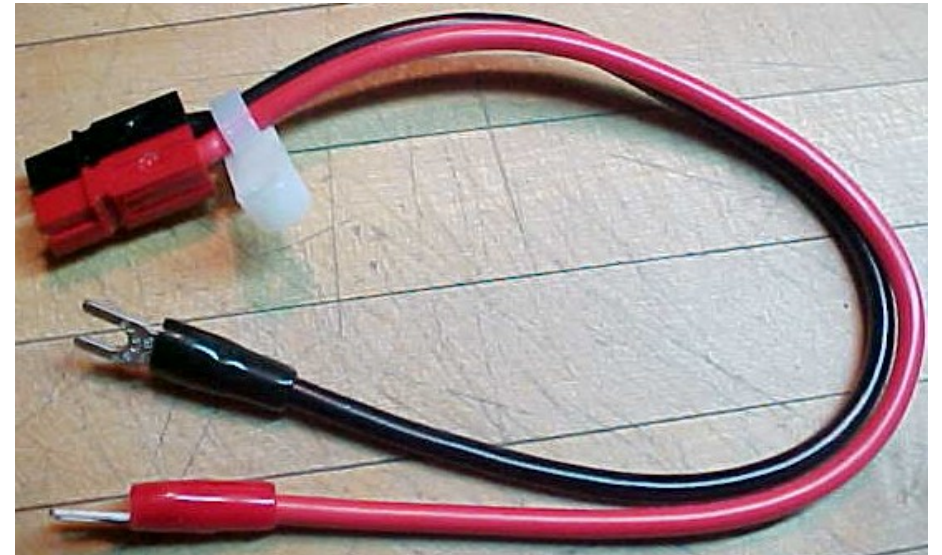
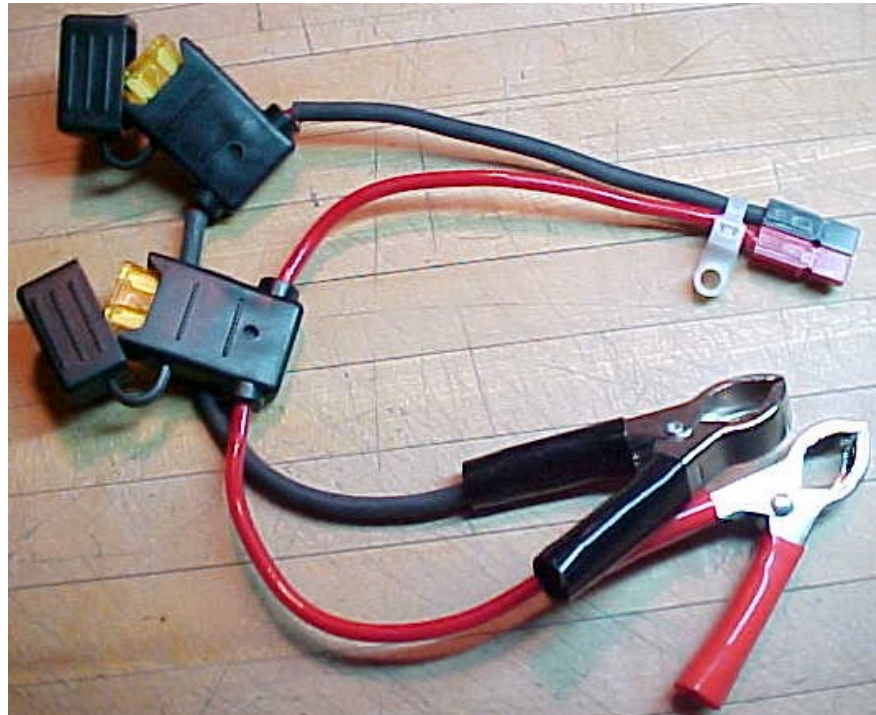
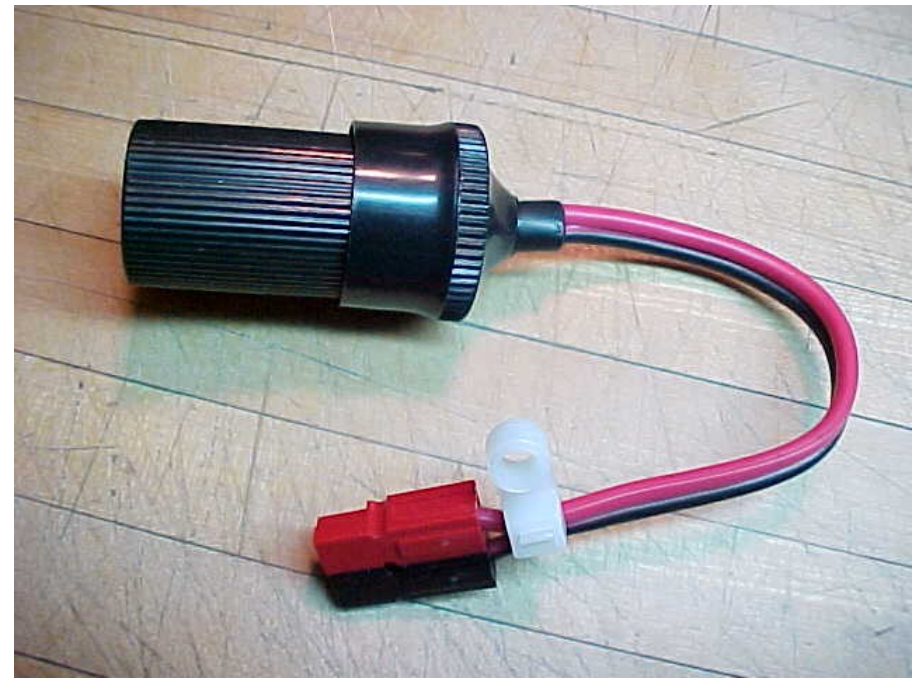
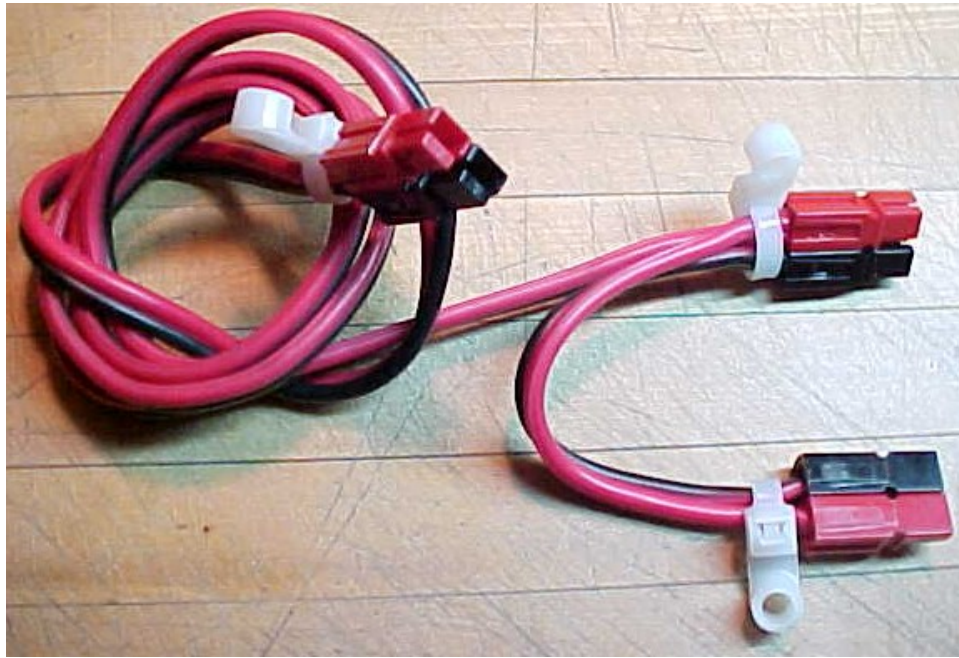
NOTE: This is what happens when you squeeze too hard



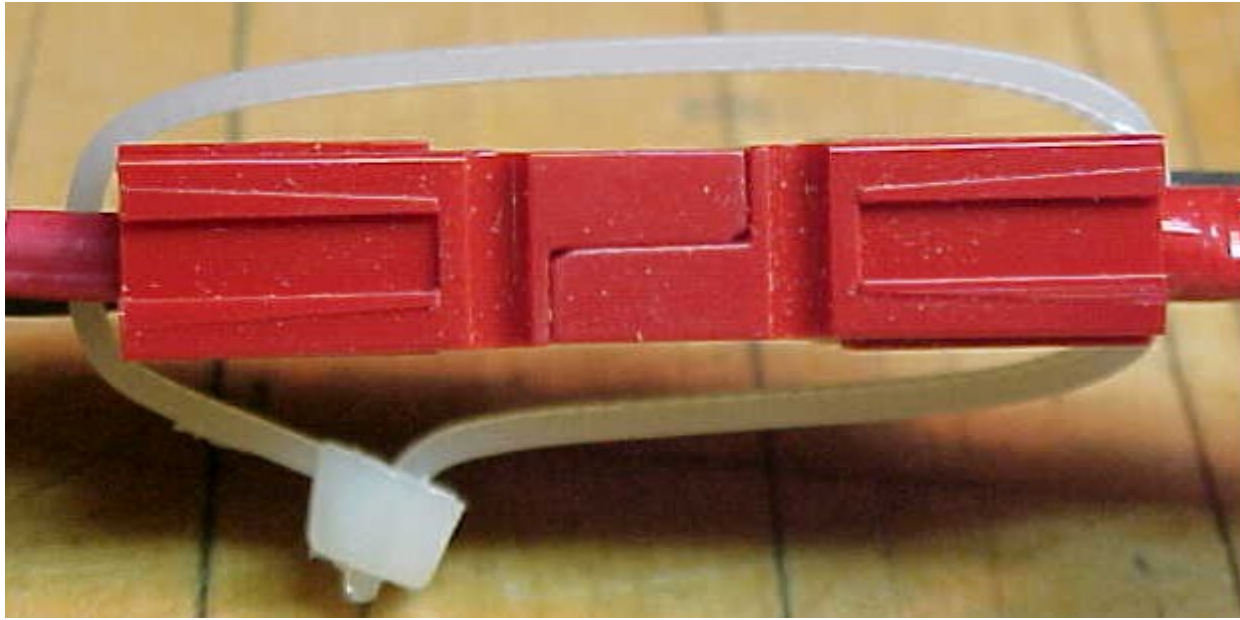
To remove a contact from the housing, use a very small blade (jewelers screwdriver or X-acto knife) to depress the spring, allowing the contact to be removed.

How Can We Use Power Poles?

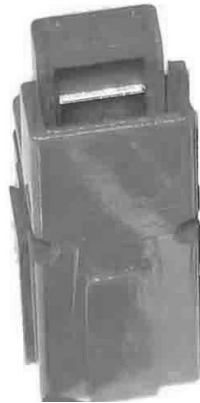




Keeping It Together



AND – They Come in Nine Lovely Colors



SUPPLIERS

Saratoga Amateur Radio Products

<http://www.saratogaham.com/powerpanel/>

MFJ Enterprises

<http://www.mfjenterprises.com/Catergories.php?sec=11>

<http://www.mfjenterprises.com/Product.php?productid=MFJ-4125P>

West Mountain Radio

<http://www.westmountainradio.com/content.php?page=dc-power>

PowerWerx

<http://www.powerwerx.com/>

Anderson Power Products

<http://store.andersonpower.com/>

Questions?