

ANDERSON POWERPOLE® CONNECTORS

The Anderson PowerPole® housings conform to the ARES and RACES standard and are designated 15, 30, and 45 amps. 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.

You can easily install PowerPole® Connectors on your cables by soldering or by using an inexpensive crimp tool such as the Gardner Bender GS388.

HOUSING INSTRUCTIONS

Assemble the Red and Black plastic housings together. When looking at the connector side of the PowerPoles® (not the wire side), the Red connector should be on your left, and the Black to your right as shown in the picture below, for ARES /RACES standard orientation. And, the metal spring inside the housing should be on the bottom.



It is easier to put the connector housings together before putting the connector pins in, especially when using heavy paired wire. The plastic housings are held together with dovetail joints. Always slide these joints together! They will be damaged if you try to snap them together or apart. They ONLY slide together in one direction. This should be obvious by looking at them carefully. And, normally the dovetail joints in the housings hold well on their own. If you find it necessary to secure them in a stronger fashion you can glue them. If you use a roll pin, gluing is recommended as they can fall out. Anderson recommends using a cyanocrylic glue, (like Crazy Glue). Before soldering or crimping the contacts on to heavy paired wire, orient the contacts so that they are both facing the correct direction so that they go in the housings without twisting the wire.

USING THE GARDNER BENDER TOOL (GS388)

Looking at the Gardner Bender tool you will see it has three crimping dies and a cutter. The number one die is the one closest to the cutting blade, and the number three is the one closest to the handle side. You can use the built in cutter to cut the wire but you will still need wire strippers to strip the wire insulation back 5/16", trying not to cut or nick any strands.

Put the contact over the wire making sure that all of the strands are inside the contact and the insulation is not. You will find it is possible to use up to 10 gauge wire in a 30 amp contact even though they are made for 12 to 14 gauge. Smaller than 14 gauge will have to be doubled or tripled over to fill the contact recess and get a good crimp. If you are using paired wire, orient the wire with the red/plus wire on your left with the end of the wire facing you. Place the contact on the wire so that the sharp edge of the contact tip is down.

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Put the contact into the smaller number one die. Center the crimp portion (seamed) of the contact in the die with the rounded portion of the die up against the half moon side of the die. Make sure that the wire is fully inserted in to the contact and crimp down firmly. Crimp carefully without too much force, as you will now notice that the crimped contact is now slightly wider than it was to begin with. Rotate the crimp 90 degrees and squeeze it again but this time place it in the number 3 with only enough force to get it back to round. The idea is to make the width of the crimp just slightly less that it was before crimping. Return the contact to the front number one die and repeat the first crimp, but with less pressure.



This is the first crimp of a PowerPole 30 amp 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..

CONTACT ALIGNMENT

The contacts go in the housings in only one way. Insert the contacts with their sharp edge down against the flat spring that is in the housing. They should slide in and click. If you do not hear a click or they are not fully seated. When they are inserted fully you should notice that the contact and its wire "floats" slightly inside its housing. If it feels tight it may not be snapped in fully or you have made the contact wider than it originally was during crimping or soldering.

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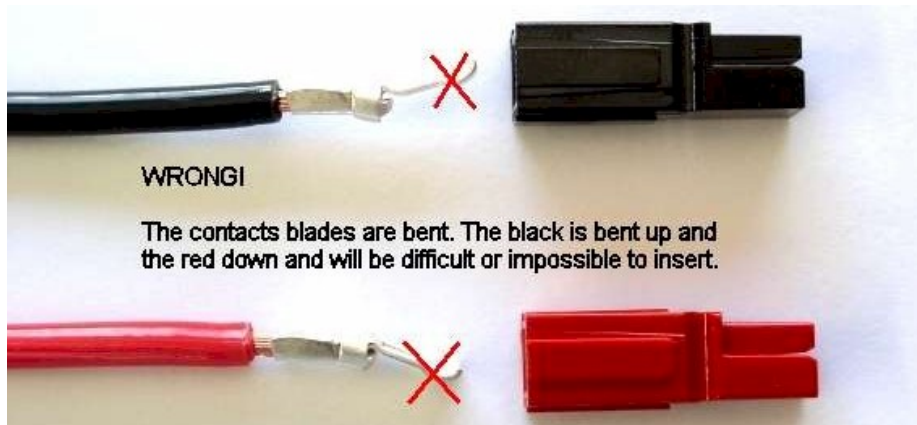
Cutaway view of a Powerpole connector.

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.



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.

Tug slightly on the assembled connector to make sure the contacts are locked in place. If you have trouble getting the contact to lock in to the housing you may have crimped the contact wider than its original size, or deformed it some other way. Look at the side profile of the contacts before and after crimping, you may have to bend it back straight before inserting it in to the housing. When crimping the contact pins use a crimp that contains the wire completely inside the pin and doesn't spread the connector apart. A good crimp is one where the dimensions of the crimped portion are no more than an uncrimped pin. If the crimp is flattened out you will not be able to easily push the pin in to the body. If you bend the contact blade in relation to the crimp area you should straighten it before putting it in to the

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body. A properly crimped contact should have a minimum hold on the wire of more than 25 pounds. A pair of connectors should snap together with 6 to 8 pounds force.

If you are soldering the contact pins instead of crimping them, be careful not to use too much solder. Keep the solder inside, where the wire goes. If a blob of solder gets on the outside of the connector body you may have trouble putting the contact into the housing. If you get solder on the contact surface area you will not make a good contact.

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