

Using 4mm Connectors

I use 4mm connectors in all my boats and must have soldered quite a few over the years. Here are a some tips on using these connectors:-



The connectors are usually one of three main types:-

Type A – Wire passes through centre of plug. The hole in the centre of the plug is only about 2.5mm in diameter so is not suitable for larger wire sizes, unless you want to trim some of the copper strands. They are very light so are good for smaller models.

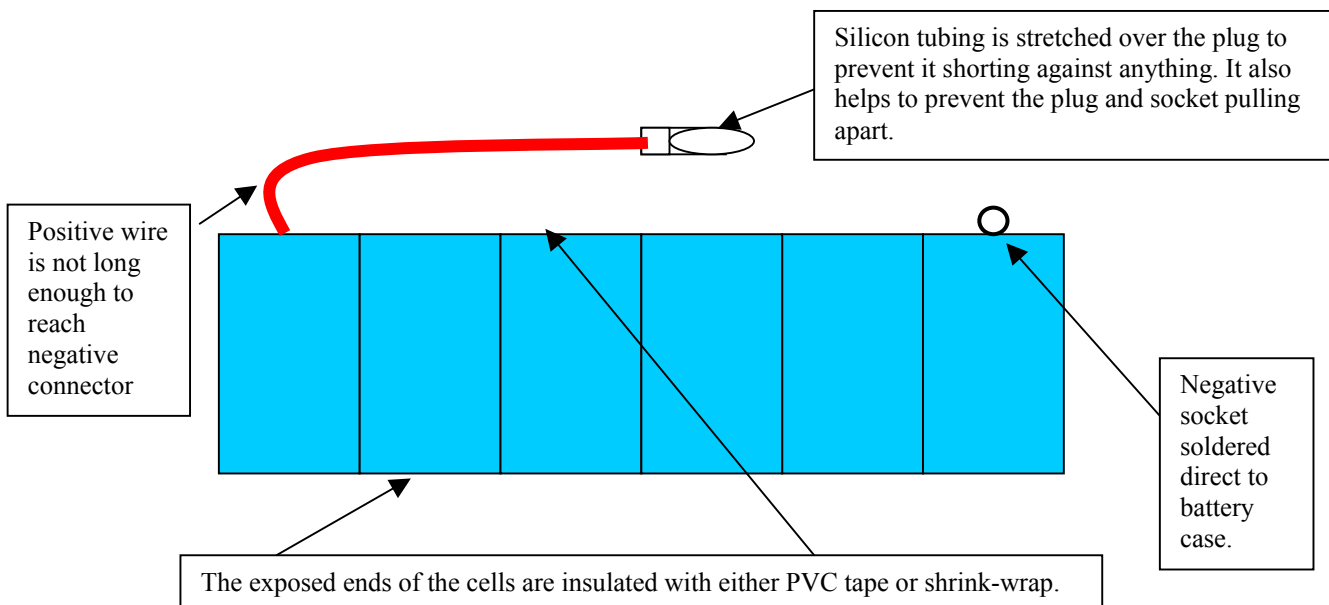
Type B – Wire soldered into a cup on the end of the connector. This type of plug is physically bigger and will solder to wires of a larger diameter.

Type C – Wire soldered into a groove on the end of the connector. With these connectors the wire exits at right angles, which can be an advantage if space is tight in a particular model

Always choose the connector that has the correct current rating for your application.

Battery Connectors

It can be very easy to plug a battery into itself using this type of connector with disastrous consequences. For my own models I use this method of termination.



Soldering

Always use a good quality flux cored solder and make sure that all surfaces are clean and shiny before attempting to solder.

Type A connectors are soldered at the tip and type B&C at the base. Take care when soldering, as any stray solder that ends up on the surface of the plug can be very difficult to remove. On type A connectors strip back sufficient insulation from the wire so that the central conductor passes right through the plug. Trim the wire so it is flush with the end of the connector.

I use a 25 watt Antex iron for the job. The Antex 25w iron is very efficient and can produce as much heat as many 40w irons.

To tin the wire, heat it with the soldering iron and apply the solder. Allow it to flow into the wire so that you are left with bright shiny conductor. Do not apply too much solder or the conductor will not fit into the connector receptacle. I do not usually tin the connector. Place the wire in the required position and apply the iron. Heat the joint for a few seconds before applying the solder. A little solder on the tip of the iron will assist the transfer of heat to the joint.

The connector will be extremely hot during and after soldering. A good way to avoid burnt fingers is to drill some 4 – 6mm diameter holes in a block of wood. Place the plug or socket in one of these holes during soldering. It will hold the connector steady and give you a free hand.

Heat the joint and apply the solder. Allow the solder to flow into the joint. Allow the connection to cool naturally and leave a bright, shiny solder joint. When cold, pull on the wire/connector to check that the joint forms a good mechanical bond.

A dull joint indicates that the connection may be bad. This can be due to a number of factors:

Too much or too little heat during soldering.

Movement of the joint during cooling.

Blowing on the joint or using other methods to speed the cooling process.

Poor quality solder/flux.

Items to be soldered are not clean.

Insulate the connection using silicon tubing or heat shrink sleeving. Sit back and admire a job well done.

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