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# Make a Y Harness

**T**here are many applications with larger radio control aircraft (airplanes and helicopters) where you need to supply more voltage to the power system than a single battery can supply. The largest common battery pack size is usually 6S, or 22.2 volts and in the case of 700-size helicopters, they often require a 12S, or 44.4 volt battery to supply the large motor. Electric conversions of giant scale airplanes (50cc or larger) can also require more voltage than a single battery pack can supply. Other applications might require a 4S to 6S battery, but because of space constraints or CG positioning, it is necessary to connect two 2S or 3S batteries together to get the required voltage and proper positioning for the model. In any of the above mentioned cases it is necessary to connect the batteries in series and to do this a Y harness is needed. While you can purchase a Y harness already assembled, in many cases they are much more expensive than simply making one yourself.

I recently acquired some wire from Summit Aerospace Supply for the purpose of lengthening power lines in my models and it is also perfect for creating my own Y harness. I needed to make a Y harness that utilized E-flite EC5 connectors for my 700-size helicopter. The process is not that difficult and can be done in less than 10 minutes.



You begin by stripping about 3/16-inch of casing from the ends of the wires. I pre-cut my wires to four inches each (three required total). Then I tinned the wires by applying heat to the bare wire and applying enough solder to coat the entire copper end. Don't apply too much; you should still be able to see all the strands of wire, they will just be silver now instead of copper.



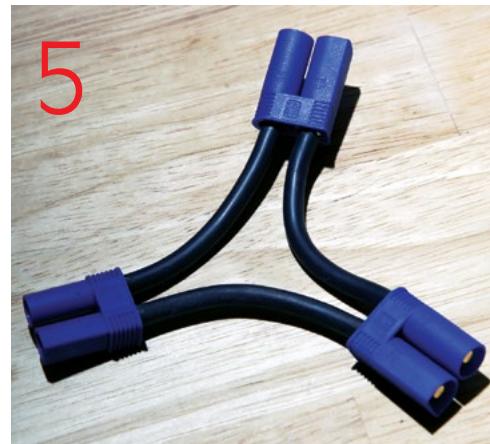
Next, I applied solder to the ends of the EC5 connectors. This is where the soldering helper comes in handy. With the connector firmly placed in the holder, apply heat to the outside of the connector and apply solder to the inside. Fill the connector about half way with solder.



I then reapply heat to the outside of the connector until the solder becomes liquid again and then I place the tinned wire end into the connector. While heat is still applied I like to spin the wire back and forth a little to be sure the solder is completely covering it. Don't spin the wire without heat applied or you risk cracking the solder joint. When you are satisfied, remove the heat and hold the wire in place. If you don't work fast the wire will get hot and could burn your hand so use pliers as you are learning to hold the wire.

## Items You Will Need

- Variable heat soldering station
- Rosin core solder
- A soldering helper, clips or block to hold the connector while you apply solder
- Three lengths of 10AWG wire. I used Summit Aerospace Supply 10AWG 105 strand silicone wire which was very flexible and easy to work with.
- Two EC5 device connectors (part no. EFLAEC501)
- One EC5 battery connector (part no. EFLAC502)



While the connector is still hot, press it into the appropriate end of the blue plastic EC5 housing. You will feel it click into place. When soldering a Y harness for a series connector, the battery connector is what attaches to your ESC. The positive wire from the battery connector goes to the positive of one of the device connectors and the negative wire goes to the negative side of the other device connector. Then to complete the series circuit, you place the last wire from the negative terminal of one EC5 device connector to the positive terminal of the other EC5 connector.

That is all there is to it. In less than 10 minutes you made yourself an EC5 Y harness that has the exact wire lengths that you need; and you did it for a fraction of the cost to purchase a completed one. ☀

## CONTACTS

**E-FLITE** [e-fliterc.com](http://e-fliterc.com)

**SUMMIT AEROSPACE SUPPLY**

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