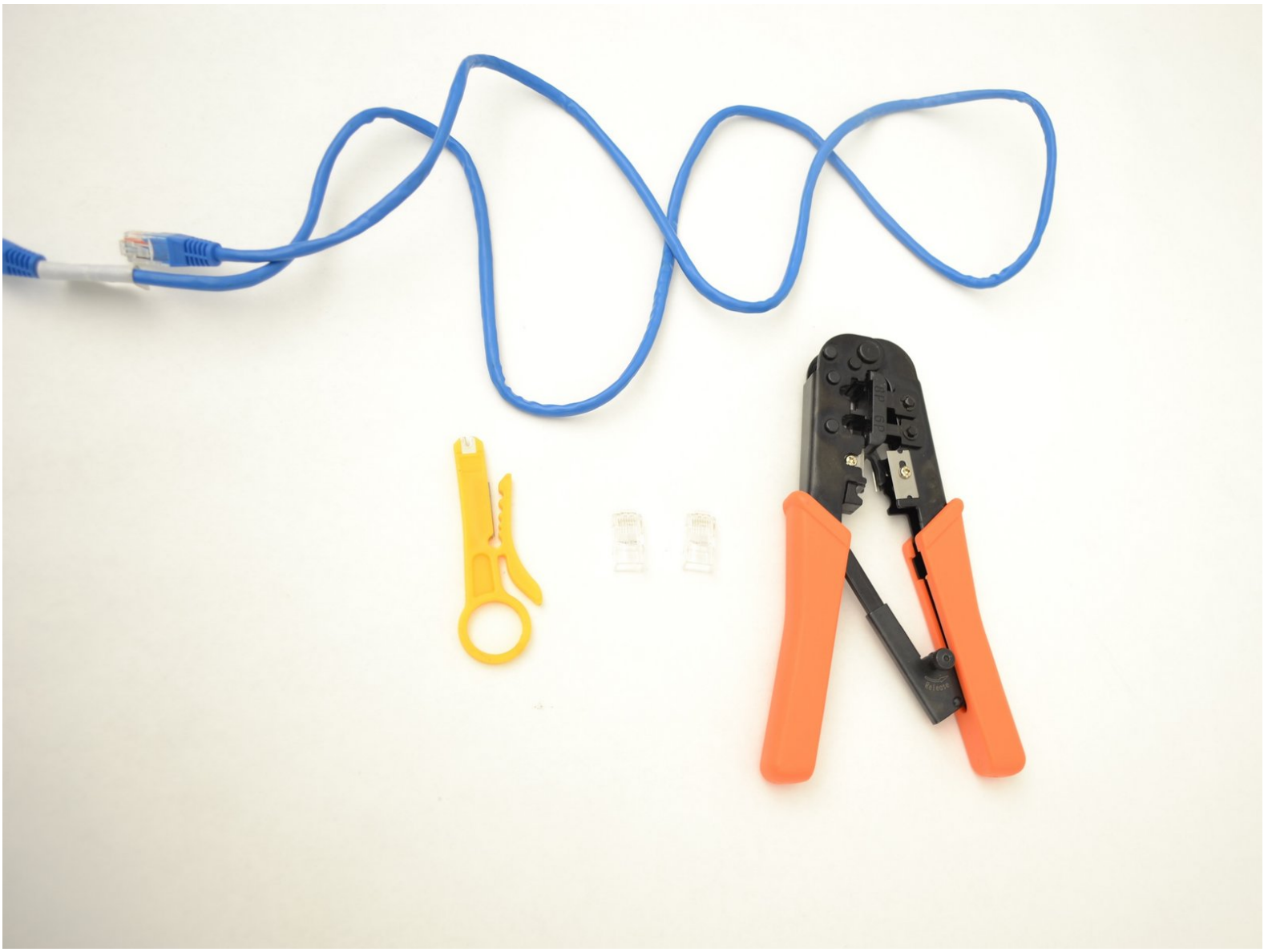
OpenROV

How to Make the OpenROV RJ45 Connector

This guide will show you how to make the RJ45 male-male connector for OpenROV 2.5 and 2.6.

Written By: Zack

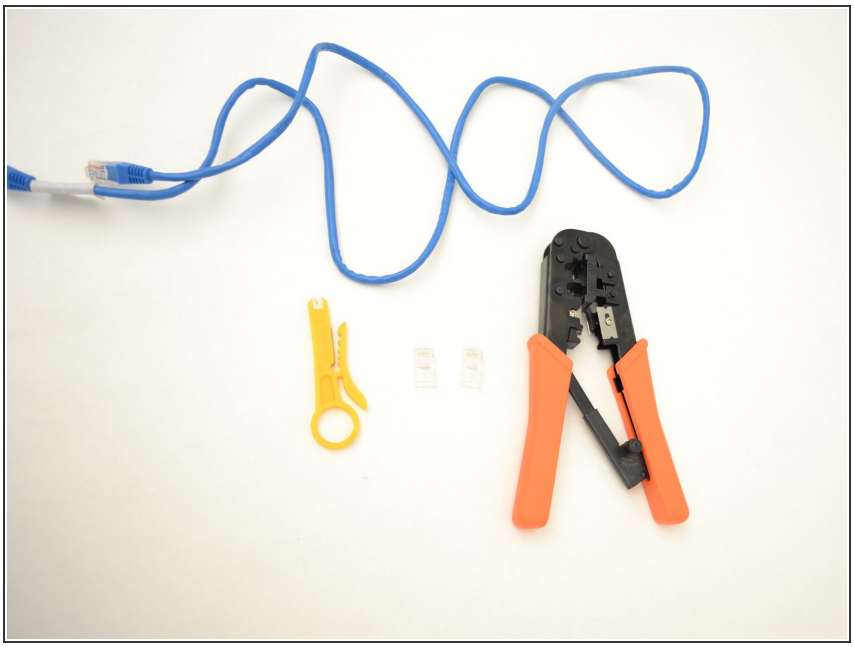


INTRODUCTION

The RJ45 male-male connector runs from the BeagleBone Black to the Tenda Homeplug adapter. A regular Ethernet cable isn't ideal because it is too large and doesn't bend sharply enough for the turns necessary in the tight space of the OpenROV electronics tube. Additionally, it is difficult to find these cables short enough as well. The solution is to make one. This cable also doesn't use all 8 connectors that a regular Ethernet cable does, we only need 4.

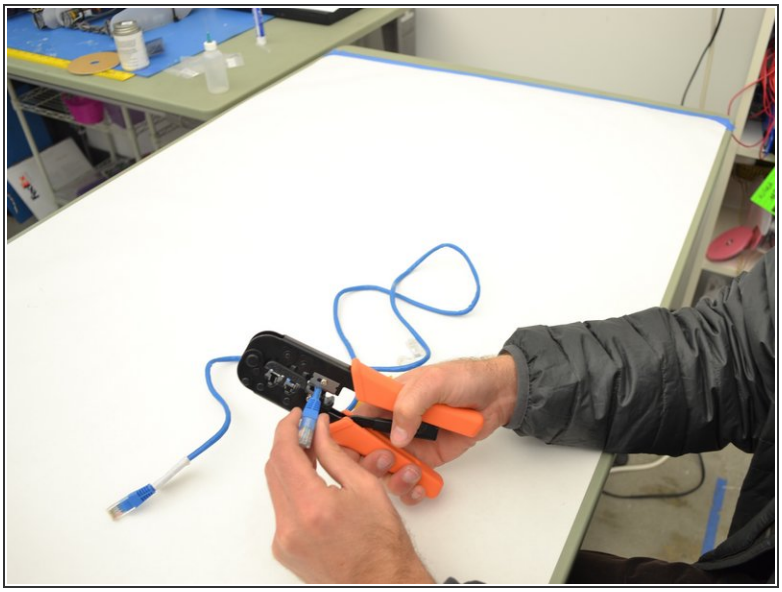
Please note: If you purchased an OpenROV kit from our website, it will include a pre-made RJ45 male-male connector.

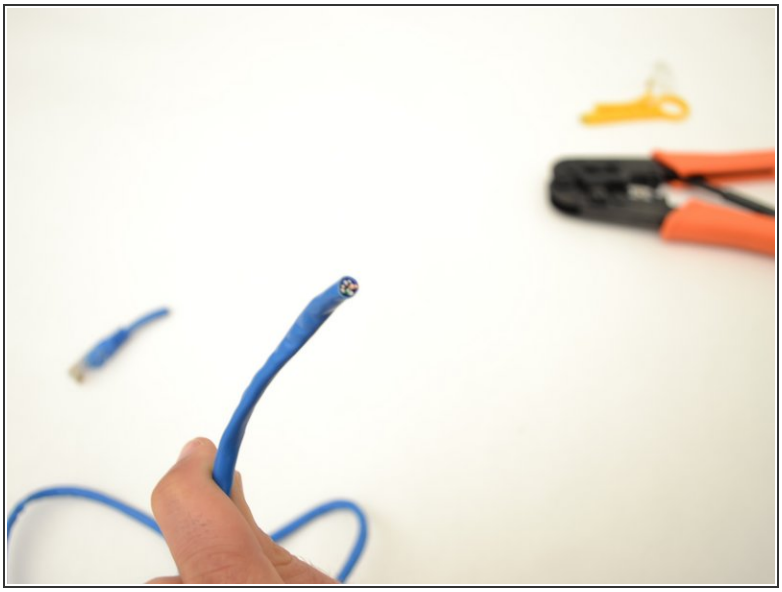
Step 1 — How to Make the OpenROV RJ45 Connector



- RJ45 connectors like these (2x) [from Jameco]
- RJ45 crimp tool
- RJ45 jacket removal tool
- Length of ethernet cable
- Metric ruler or tape measure

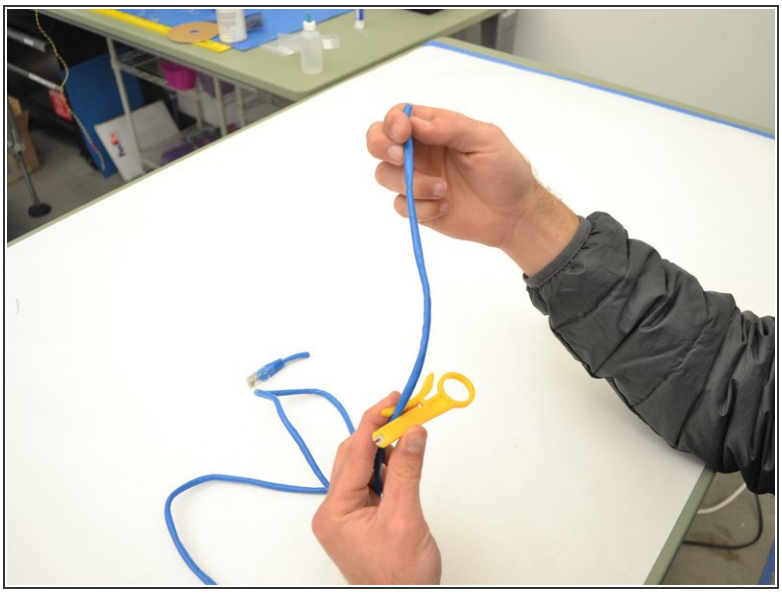
Step 2

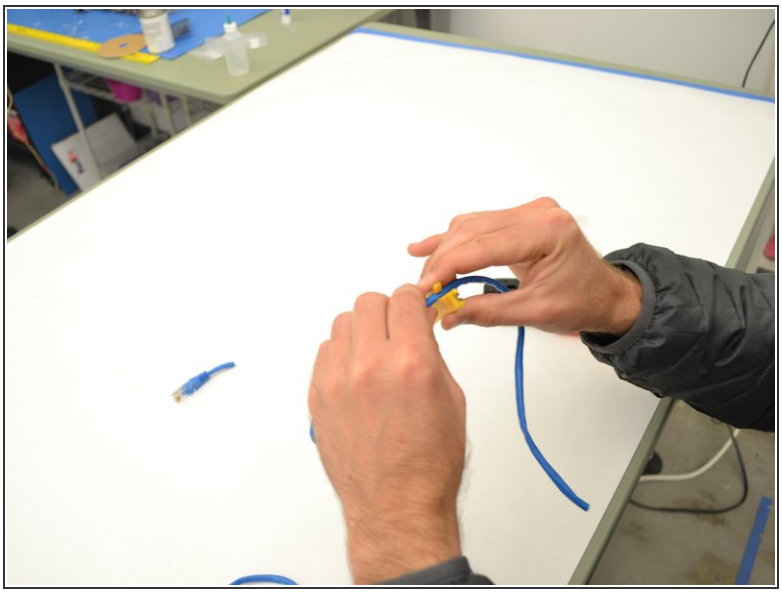




- Cut one end of the Ethernet cable using cable snips or the razors on the crimp tool.

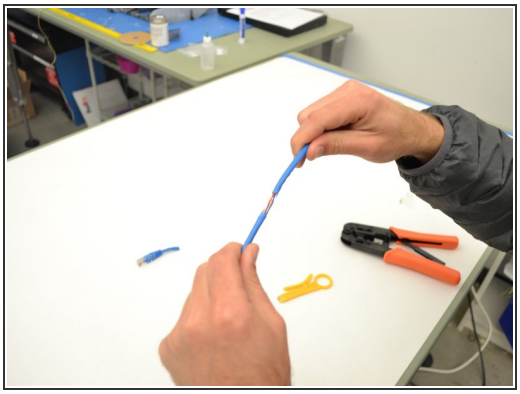
Step 3

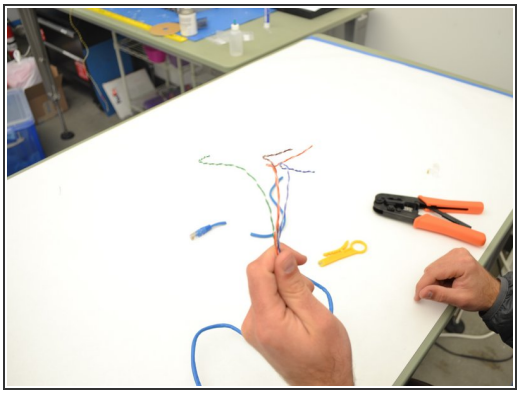


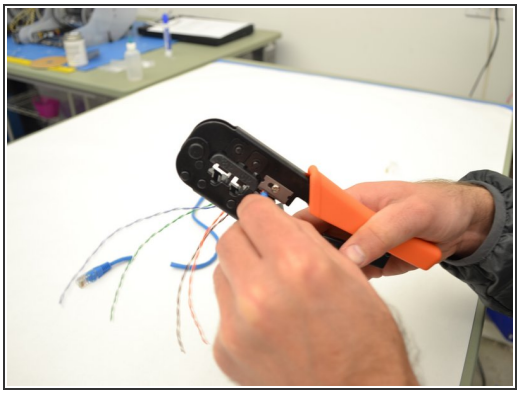


- Measure about 30cm from the cut end and place the jacket removal tool around the Ethernet cable.
- Spin the tool all the way around to cut the jacket away from the twisted pairs inside.

Step 4

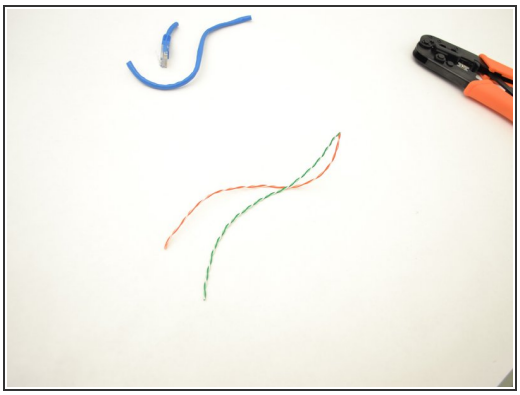


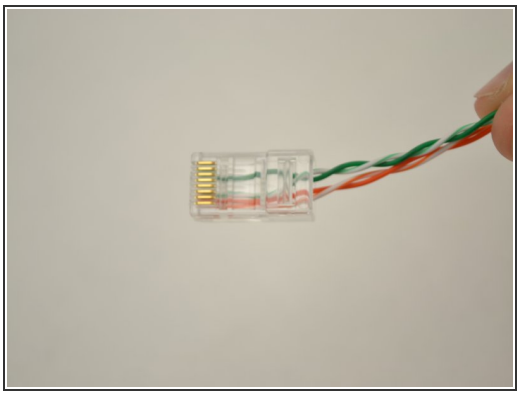


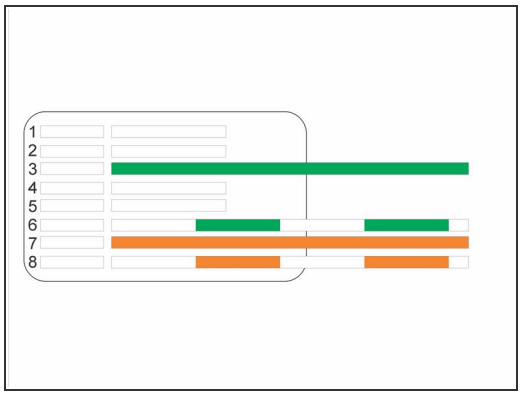


- Pull the jacket away and cut the twisted pairs **at exactly 24cm.**
- Version 2.5 uses a shorter (10cm) cable.

Step 5

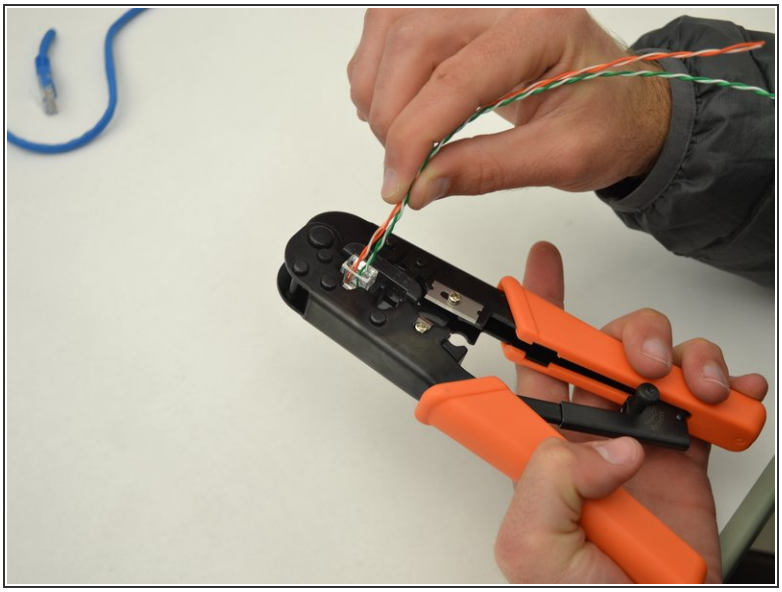


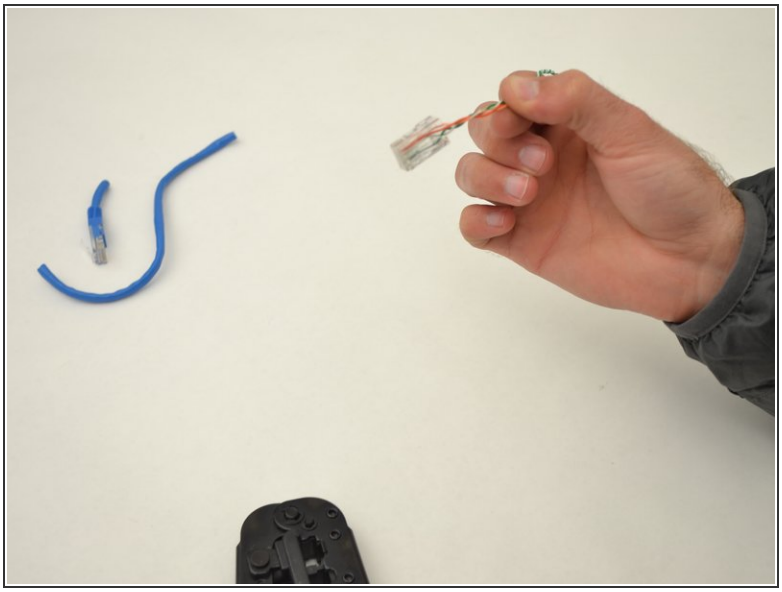




- Grab two twisted pairs. I chose white/orange-orange and white/green-green.
- Hold the RJ45 facing to the left with the contacts up.
- From bottom to top, insert the ends of the twisted pairs in order.
- Bottom: White/Orange, Orange, White/Green, (space), (space), Green
- As shown

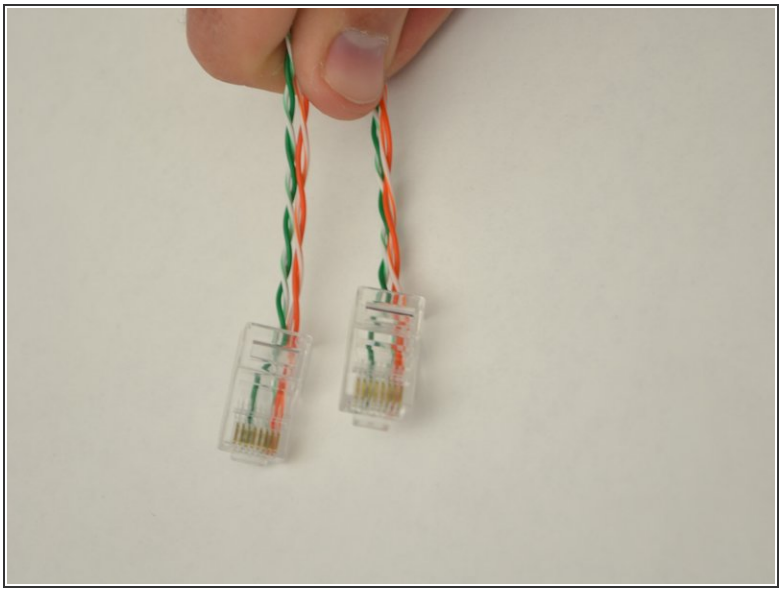
Step 6

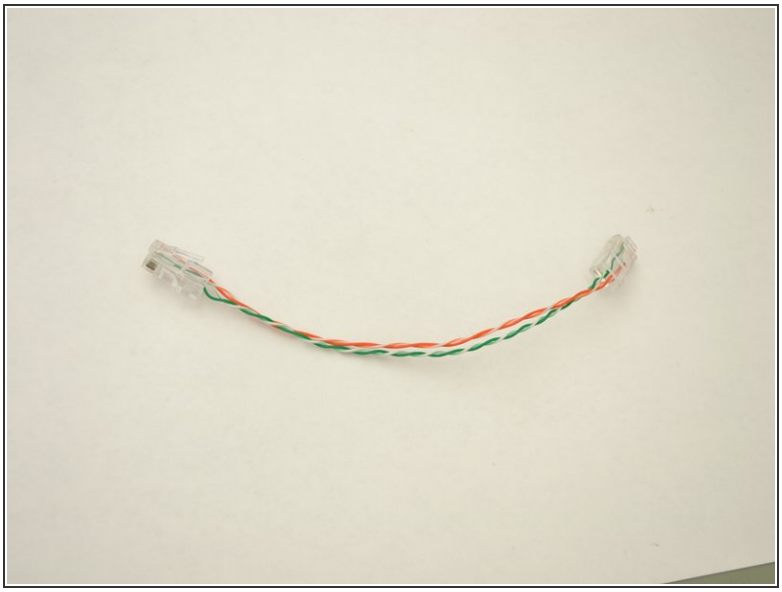




- Keeping tension on the twisted pairs as to keep them pushing all the way in the connector, place them in the crimp tool and crimp.

Step 7





- Do the same to the other side. Do not mirror the wires...look at the diagram if you get lost.
- Both ends should look the same when facing the same way.

