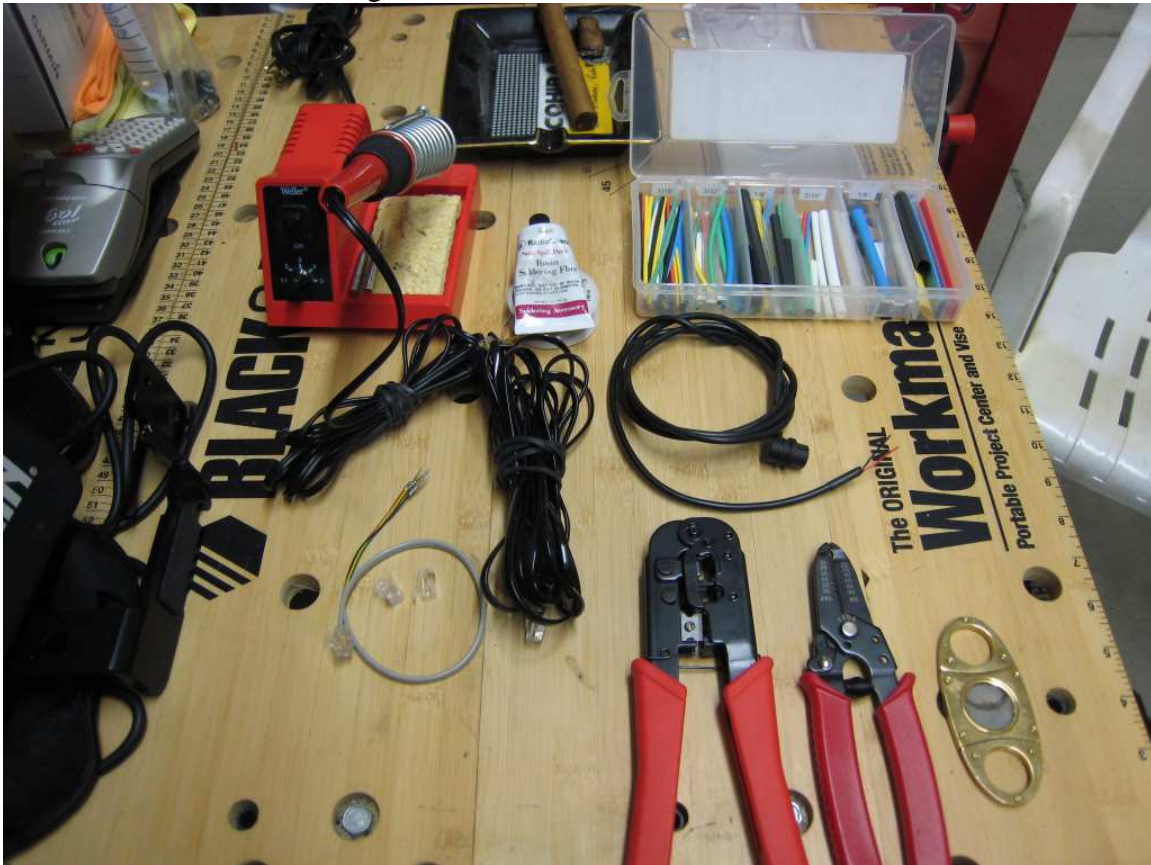


## Wiring up a V1 and GPS Circuit

We have learned how to properly size wire and make a simple circuit and add a power block (Fuse Box) to our motorcycles. Now I want to move onto some of the most popular Farkles the Long Distance Riders want to add to their motorcycles.

One of the first additions that most riders make is a GPS and a V1 (radar detector). We can argue all night about which Radar Detector is the best but make no mistake about, when you show up at a rally you are going to find most with a V1. That is what I use so that is what we are wiring up!

Here is what we will be using:



Note the special telephone line crimper next to the wire stripper and on the other side is the special clipper to snip off the end of the cigar.

Note also the wires. That Garmin cable is for an old Streetpilot but any Garmin is wired the same as they come with two pigtails, a red and a black lead. Remember our conventions, red is power and black is ground. Garmin uses those conventions.

The hardest part of this whole exercise is getting the connector right for the V1. It uses a standard telephone connector and there are a couple of ways to make this.







Now the tough part. We have to make sure we get the correct colors for power and ground for our V1. Telephone cord ends are not all the same but are actually opposite of each other in a cord.

eg: Looking at the end of the connector with the tab down you can see (look at the end) that one connector is right to left:

1. Black
2. Red
3. Green
4. Yellow

And the other end will be (looked at in the same manner)

1. Yellow
2. Green
3. Red
4. Black

Now if you look at the V1 input you can see that the tab on the plug goes down. The contacts left to right looking into the hole are like this:

1. Unused
2. Ground
3. Power

#### 4. Unused

The connector on the end of the telephone like that I kept will connect like this:



This is tricky and you do not want to get it wrong so look carefully how your connector will go into the V1 and look at the colors. The second wire from the left will be Red (as in this case) or Green. That will be your ground lead and the other will be your power (third wire from the left). This is one time that convention is not followed at all.

In my case with the connector I kept you can see that Red is my second wire and the ground while green is the third so my power lead.

I cut of the Black and Yellow leads. Here we are with our telephone leads that are red and green along with our GPS leads that are Red and Black.



Now I strip off the insulation for a good inch on each end. The telephone cord is 24 gauge while the GPS is 22 gauge. These are small wires and more difficult to crimp so I am going to do something real scary

**I'm gong to Solder them together (oh no, Help me Mr. Wizard)**

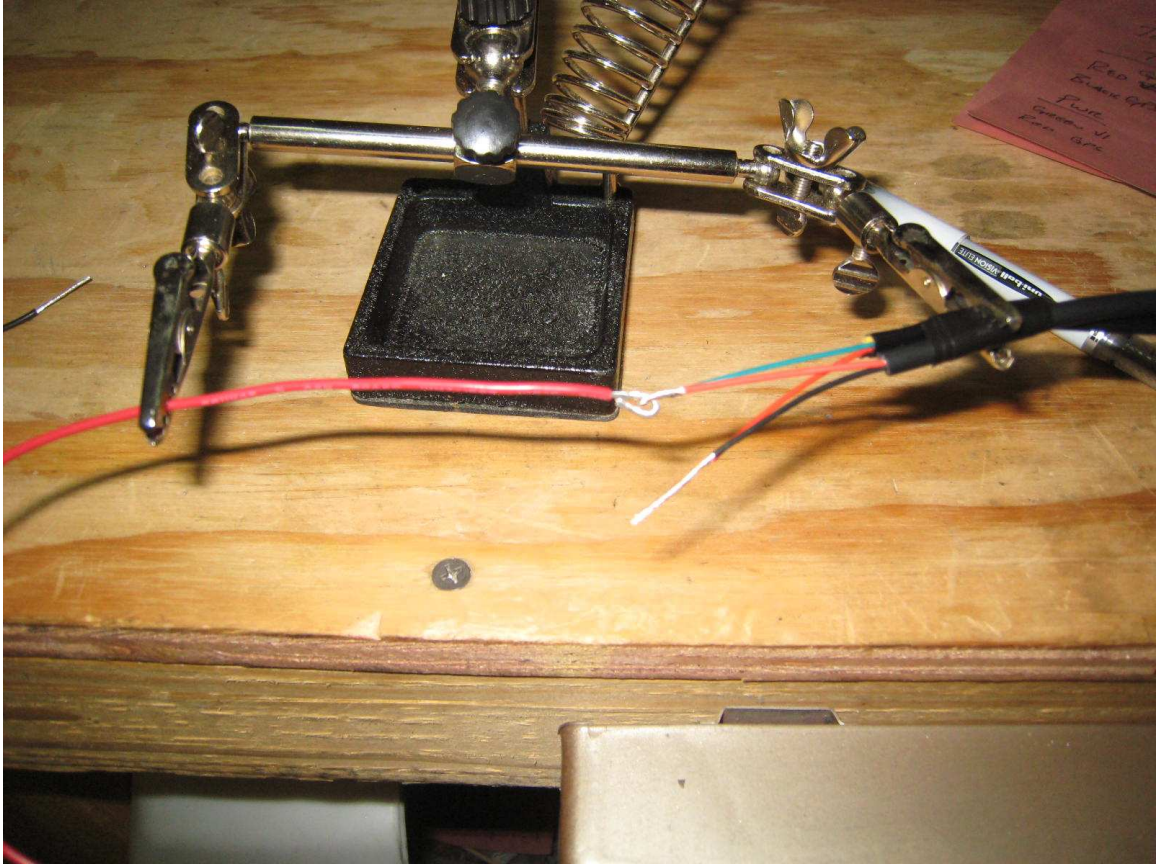
I've stripped the ends and I twist the appropriate ends together:

Red from GPS twist together with Green from V1 (Power)

Black from GPS twist together with Red from V1 (Ground)



It is hard to see but I taped the two wires together so the twists will not get pulled apart.



Now I make two leads with 20 gauge wire (Red for Power and Black for Ground). I set these up with my little alligator clip holder. You will notice what I do is form the ends into hooks and then hook the leads together. Once hooked onto each other, I bend the leads over so that they are captured and press them as flat as I can. A better and more skilled craftsman should position the leads together and make their solder, I am not that skilled!





Here we are all soldered up.

Now since these are very thin leads I want to do some extra for protecting them.

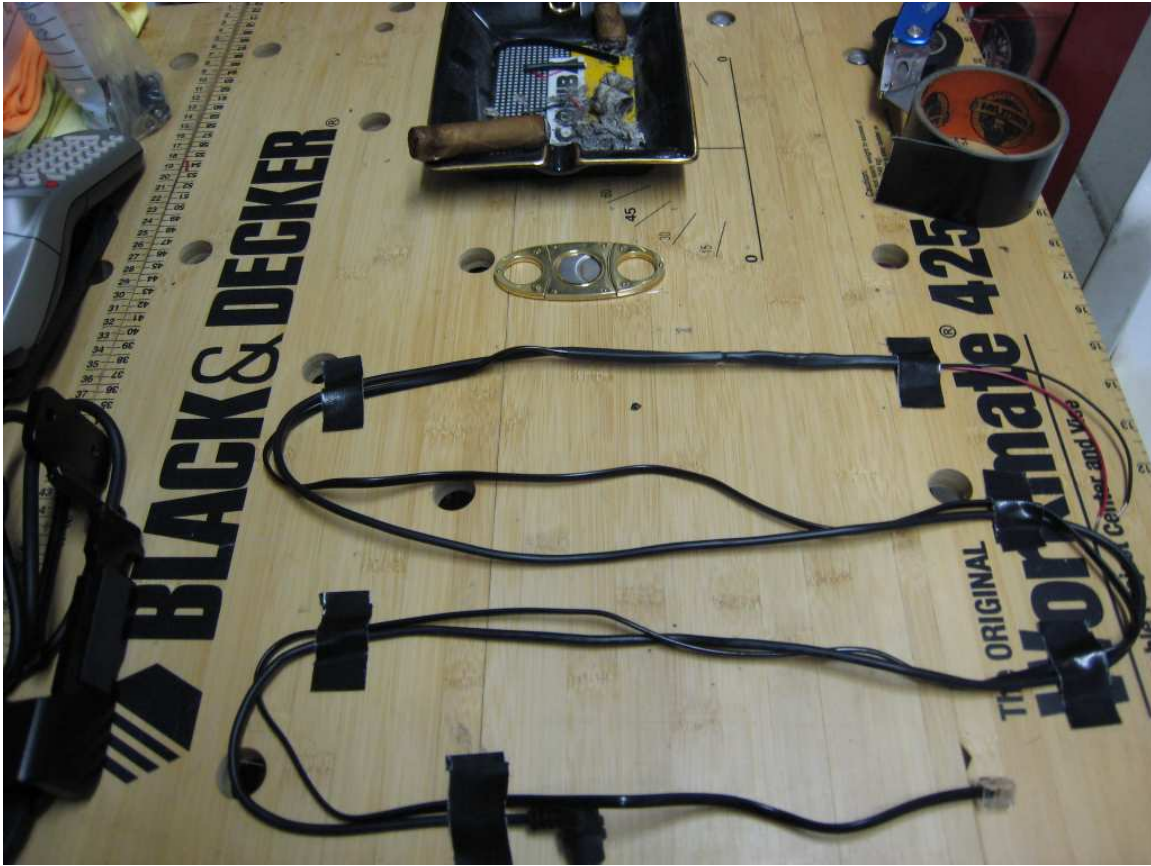
1. I put a shrink sleeve on each wire and shrink it down.
2. Then I put ANOTHER shrink sleeve over that one.
3. Finally I put a shrink tube over both wires and shrink it down.



Here we are putting the second layer of shrink tubing on each of the leads.



As a final step I am checking continuity and polarity on the harness. Here I have the multimeter clamping the red lead from the harness and with the probe will check the connector ends. Once this is done I know my harness is correct and ready for installation on the motorcycle.



Look at this – here is my completed GPS/V1 harness. You can see the red (Power) and Black (Ground) leads and the connector ends for the GPS and V1 on the opposite end. Notice that the wire does not split until after the second piece of tape (upper left). That is shrink tubing covering the joint we soldered along with a portion of the leads and the two wires too keep stress off the joint.

That didn't take too long – I still have ½ of a cigar to enjoy!

Brian R.