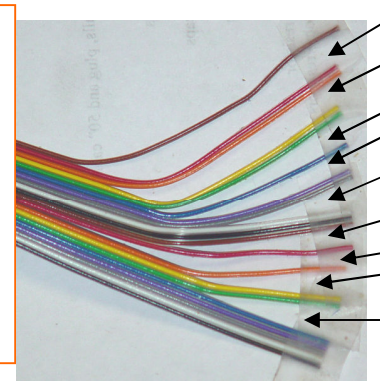
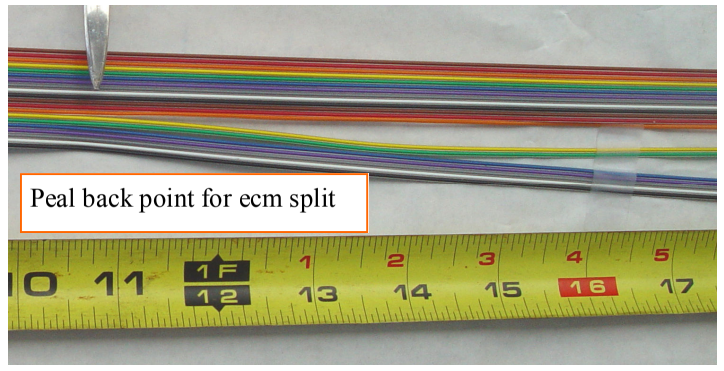
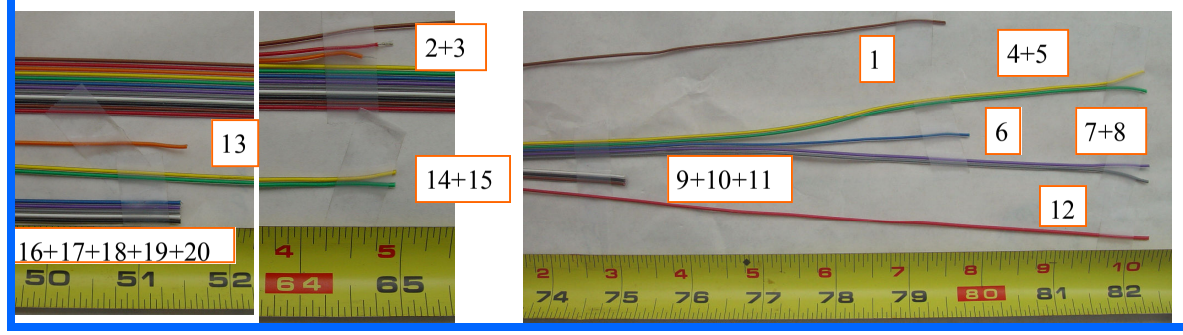
MIMA harness construction instructions

Main 20 cond cable:

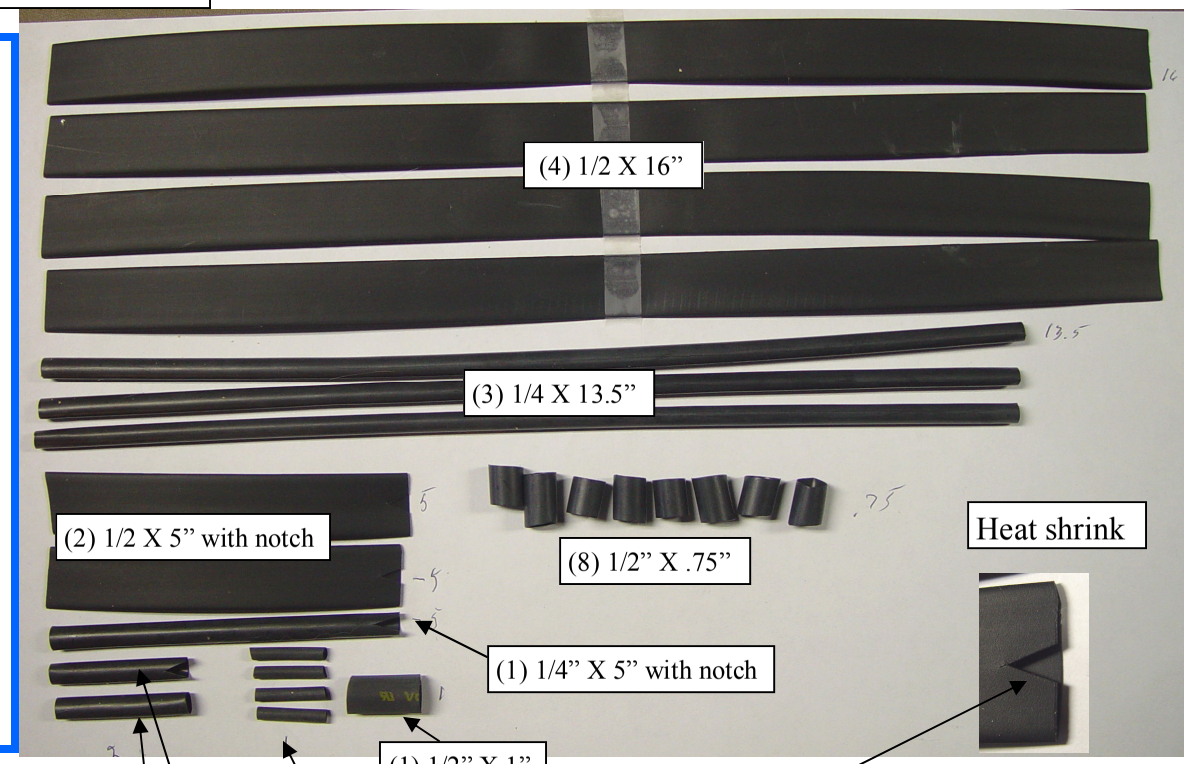
1 - brown	80.5”	2 - red	65”
3 - orange	65”	4 - yellow	82.5”
5 - green	82.5”	6 - blue	80”
7 - violet	82.5”	8 - grey	82.5”
9 - white	75”	10 - black	75”
11 - brown2	75”	12 - red2	82.5”
13 - orange2	51.5”	14 - yellow2	65”
15 - green2	65”	16 - blue2	51.5”
17 - violet2	51.5”	18 - grey2	51.5”
19 - white2	51.5”	20 - black2	51.5”





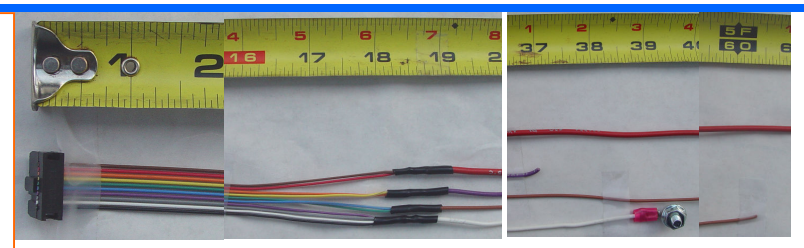


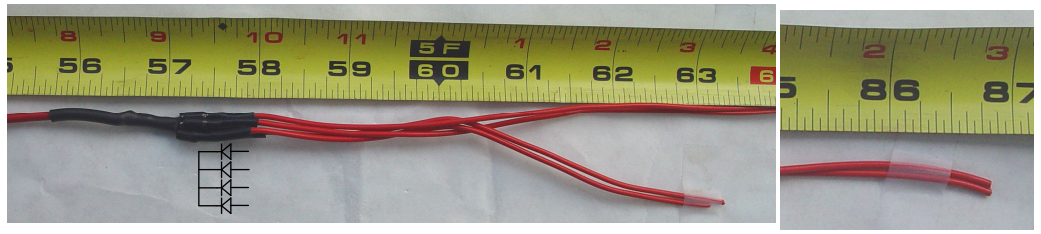
20 conductor main harness



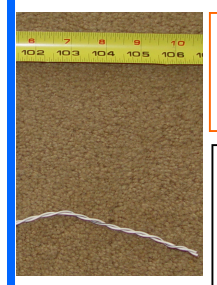
Aux 10 conductor cable:

1- brown	18.5”	---------red 57”---------diodes---2-red 6”
2 - red	18.5”	--2 red 11”
**********		
3 - orange	18.5 ‘	--------violet 18.5”
4 - yellow	18.5”	
**********		
5 - green	18.5”	--------brown 18.5”
6 - blue	18.5”	
**********		
7 - violet	18.5”	-------white 21” #10 ring terminal
8 - grey	18.5”	
9 - white	18.5”	
10 - black	18.5”	

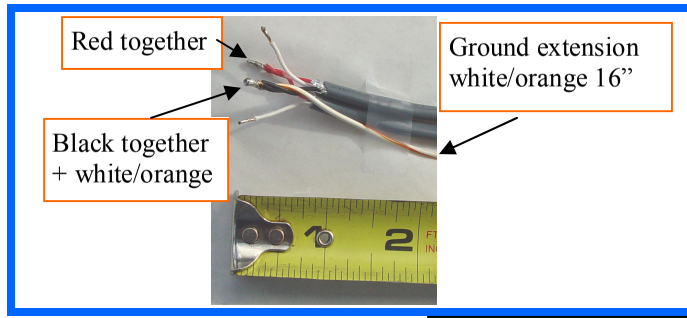


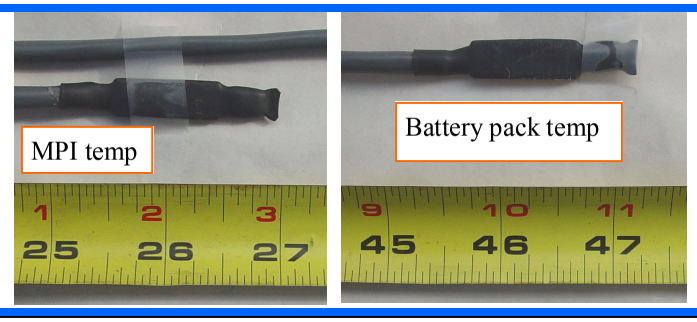


10 conductor Aux harness



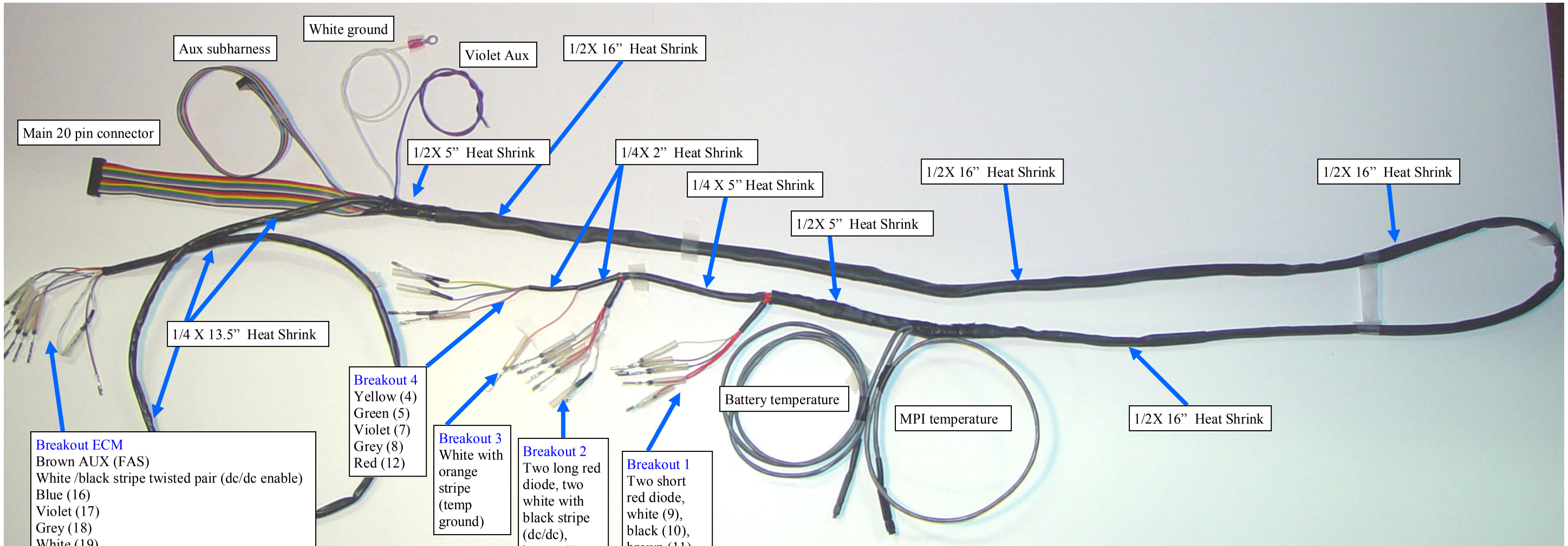
DC/DC enable Twisted pair





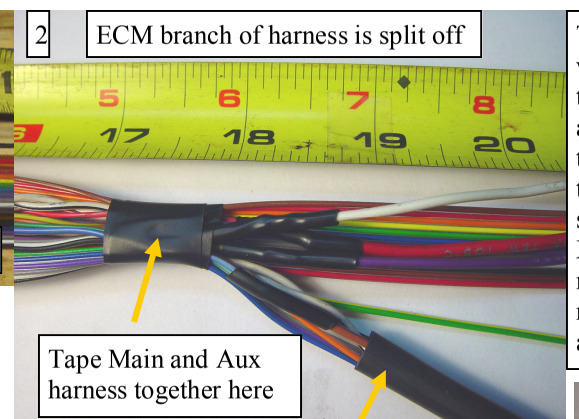
Temp probe harness

Fabricate the sub harnesses and cut out the heat shrink, then proceed to the assembly

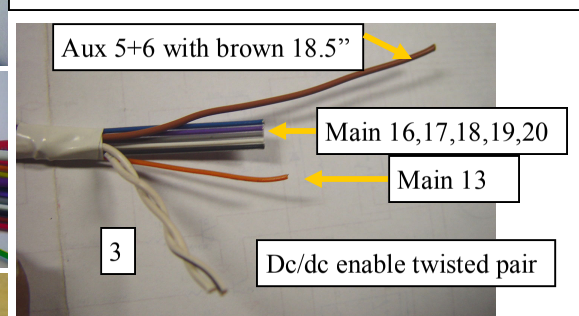

White ground
Aux subharness
Violet Aux
1/2X 16” Heat Shrink
Main 20 pin connector
1/2X 5” Heat Shrink
1/4X 2” Heat Shrink
1/4 X 5” Heat Shrink
1/2X 16” Heat Shrink
1/2X 5” Heat Shrink
1/2X 16” Heat Shrink
1/4 X 13.5” Heat Shrink
Breakout 4
Yellow (4)
Green (5)
Violet (7)
Grey (8)
Red (12)
Battery temperature
MPI temperature
1/2X 16” Heat Shrink
Breakout ECM
Brown AUX (FAS)
White /black stripe twisted pair (dc/dc enable)
Blue (16)
Violet (17)
Grey (18)
White (19)
Black (20)
Orange (13)
Breakout 3
White with orange stripe (temp ground)
Breakout 2
Two long red diode, two white with black stripe (dc/dc), brown (1), blue (6)
Breakout 1
Two short red diode, white (9), black (10), brown (11)

1

2 ECM branch of harness is split off

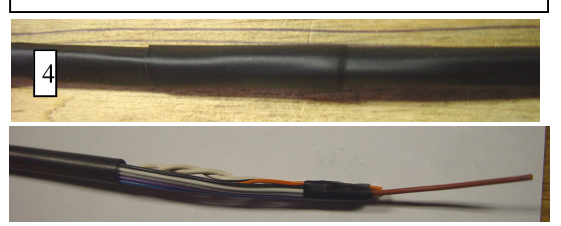


The Main harness with the connector holes up, and the Aux harness with the holes down are located as shown in photo 1. The wires for the ECM branch of the harness are split off from the two harnesses, and the dc/dc enable twisted pair and the other ECM wires are taped together at the far end of the ECM split. Then the dc/dc twisted pair, the Main and auxiliary harnesses are taped together as shown in photo 2, The ECM wired are fed through one of the 1/4" X 13.5" heat shrink tubes to the point where the split leaves the main harness and is shrunk, then the ECM split is folded toward the ribbon connector end of the harness and taped again, with the white and violet aux and ground wires as shown.



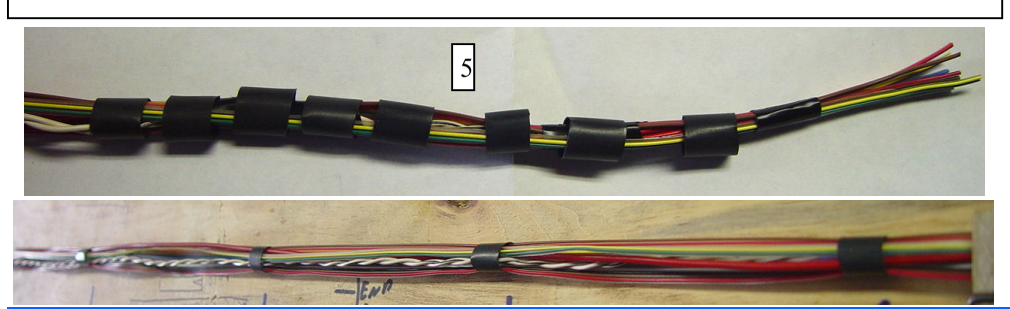
Next the ECM branch is fed into another one of the 1/4" X 13.5" heat shrink tubes. This second tube will overlap the first by an inch or so, and is shrunk, and the last is again passed over the middle section end to leave about 4" of the ECM end exposed.

4

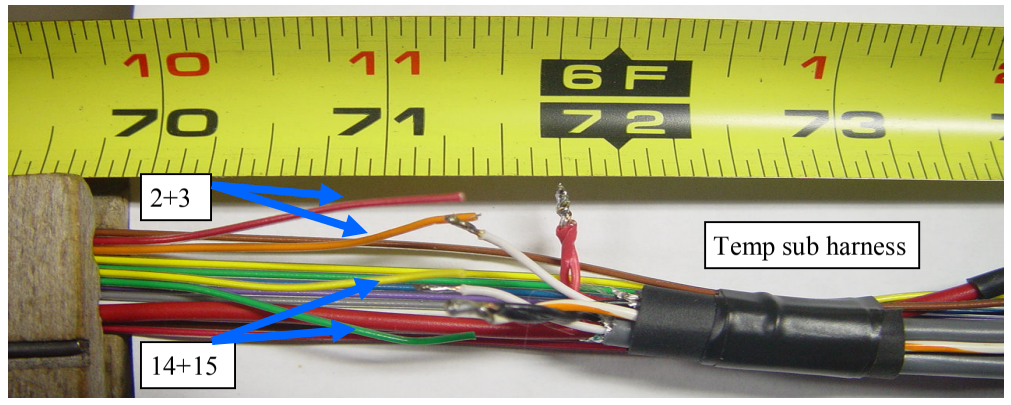


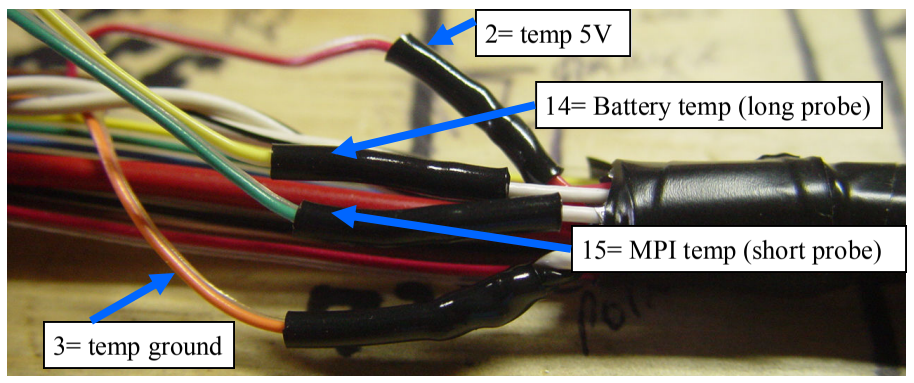
Slide the 8- 1" X .75 " tubes down the harness, and space them about 6-7 " apart. Carefully hold the wires in position and shrink the shore tubes to keep it together. Then slide one of the 1/2" X 16" shrink tubes down the harness and over the ECM split, and shrink to finish the split area. Slide two more of the tubes down the harness and overlap the ends by 1-1.5" and shrink.

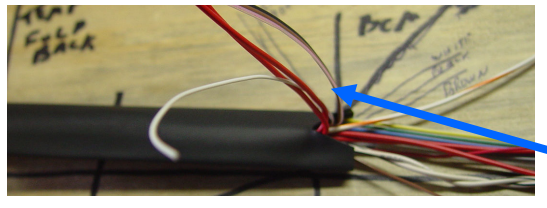
5

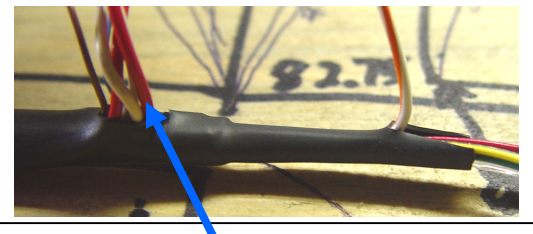


Slide the last 1/2X 16" shrink tubes onto the harness, but do not shrink. Slide it down so the temperature sub harness attachment point is exposed. Securely tape the temp sub harness to the main harness, and slide the 4 - 1/8 X 1 " shrink tubes over 2,3,14,15 of the main harness. Solder the wires to the temp sub harness, then slide the shrink tubes over the connections and shrink. The harness wires should be loose, so there is no danger of the small wires getting pulled out. Slide one of the 1/2" X 5" shrink tubes down from the end of the harness, so it is right against the point where the temp subharness is taped to the main harness, and shrink. Then pull the final 1/2" X 16" shrink tube from the connector end of the harness over the temp attachment point, and shrink down.



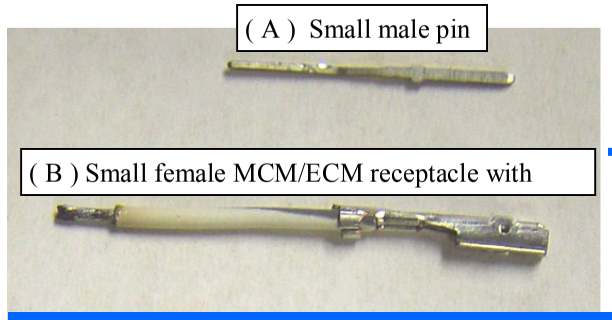






First breakout is the two shorter red diode wires, as well as white (9), black (10), brown (11). The wires to be broken out are pulled into the notch, then the tube is shrunk. The tails of the notched tube are folded over, then the 1/4" X 5" shrink tube is slid down over the folded notch and the next breakout , with two white with black stripe(dc/dc enable), two long red diode wires, brown (1), and blue (6), are pulled into the notch and the tube is shrunk, with the notch tails again folded over. The next shrink tube is a 1/4" X 2" with notch., and the breakout is only the white with orange stripe (temp ground). Same shrink procedure, and finish with the 1/4"X 2" shrink tube that has no notch, with yellow (4), green (5), violet (7), grey (8), and red (12). The harness is now ready for the plug in terminals to be soldered on.

(A) Small male pin



(B) Small female MCM/ECM receptacle with

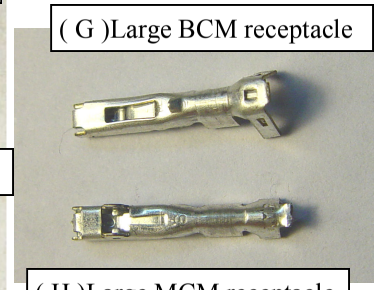
(C) Small male/female MCM/ECM combo

(D) Large male/female MCM/ECM combo

(E) Small male/female BCM combo

(F) Large male/female BCM combo

(G)Large BCM receptacle

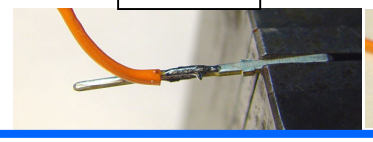


(H)Large MCM receptacle

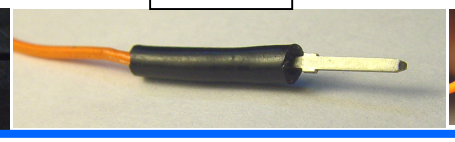
(I) Small BCM receptacle

(J) Small MCM receptacle

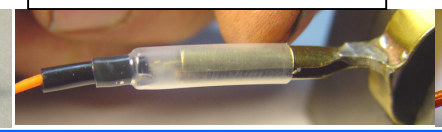
Solder wire



Heat shrink



Use fixture to shrink clear end

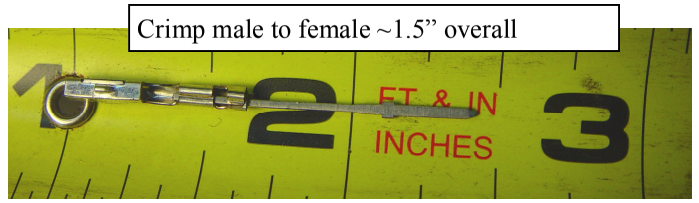


Final male end with clear insulation

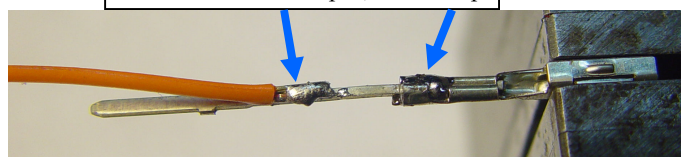
Normal crimp on 22ga wire soldered to ribbon wire and heat shrink

All combo assemblies are built this way

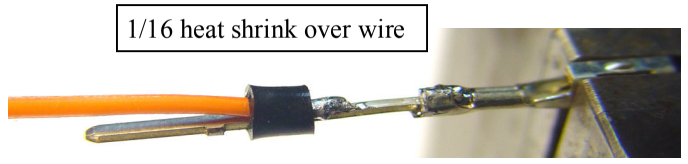
Crimp male to female ~1.5" overall



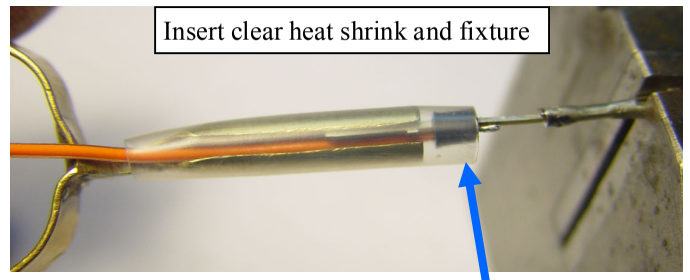
Solder wire to male pin, and crimp



1/16 heat shrink over wire

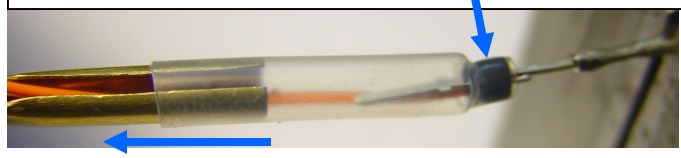


Insert clear heat shrink and fixture



Shrink clear end at black heat shrink area

After it cools slide out the fixture



Final combo for all pin types