

Splicing to Avoid Corrosion in the 7-Way Harness

If done improperly, repairs to the 7-way harness can expose the wiring to moisture and corrosion causing contaminants that can wick their way throughout the electrical system in a short matter of time. This can create costly downtime for further repairs, and/or lead to lighting failure, making a driver more susceptible to CSA violations, or worse, possible accidents on the road. To ensure corrosion free repairs are made when splicing into the 7-way harness, the following steps should be taken:

Items Needed to Make this Repair

Heat Shrink Tubing, approx. 1" - 1.25" O.D. x 10" - 12" (length)
Heat Shrink Butt Connectors (Qty 7 - specific to wire gauge size for each circuit/wire).

Tools Needed to Perform Repair

- Heat Gun
- Wire Stripper/Cutter
- Crimping Tool
- Cable Cutters

STEP 1: Remove approximately 5" of the outer jacketing from the end of each cable. Make sure there is no corrosion present on any of the wires. (fig. 1)

STEP 2: Slide the heat shrink tubing over one side of the cable. (It does not matter which side.) (fig. 2)

STEP 3: Using the example below, assigning each letter to a circuit/wire, cut the wires on each side so they are staggered in length but come together to create approximately 7 inches (each) when connected together. Staggering the connections will eliminate the bulk that would occur from the butt connectors being gathered together in one area. (fig. 3)

**Note: Each letter below, A-F, should be assigned to represents the same colored circuit/wire for both SIDES 1 & 2. For example, if you choose to assign "A" to the WHT/Ground wire on SIDE 1, "A" should also represent the WHT/Ground wire on SIDE 2.*

SIDE 1:

Do not cut any length off circuits A and B. They will remain at approximately 5 inches in length.

Cut 1" off circuits C and D, making them approximately 4 inches in length.

Cut 2" off circuits E and F, making them approximately 3 inches in length.

Cut 3" off circuit G making it approximately 2 inches in length.

SIDE 2:

Cut 1" off circuits E and F, making them approximately 4 inches in length.

Cut 2" off circuits C and D, making them approximately 3 inches in length.

Cut 3" off circuits A and B making them approximately 2 inches in length.

Do not cut any length off circuit G. It will remain at approximately 5 inches in length.

STEP 4: Strip 5/16" off the end of each circuit/wire and insert the corresponding colored circuits/wires into opposite ends of the butt connectors and crimp together. (White to white, red to red, etc.) (fig. 4)

STEP 5: Inspect all connections for good contact and then apply heat with the heat gun to shrink the butt connectors and make a permanent connection between each circuit/wire. (fig. 4)

STEP 6: Slide the black heat shrink tubing over the exposed circuits/wires and apply heat with the heat gun to shrink the tubing. (fig. 5)

Fig. 1



Fig. 2

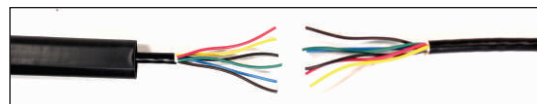


Fig. 3



Fig. 4

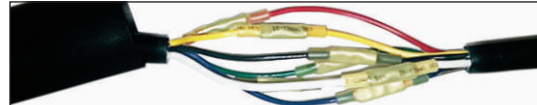


Fig. 5



TIPS

- While its possible to make completely sealed repairs to the electrical system when splicing, wires should never be pierced for testing. Even the tiniest pin hole will open up a gateway to allow corrosion causing contaminants to wick their way into the electrical system.
- When making repairs to the electrical system, heat shrink terminals and heat shrink tubing should be used to seal the repair and lock out moisture and corrosion causing contaminants.

Have technical questions? Get the latest tips from a skilled Phillips engineer!
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