

# OpenEVSE

## How to build SAE J1772 cable assembly

This guide provided assembly procedures for SAE J1772 EV charging cables built from parts available from OpenEVSE.

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## PARTS:

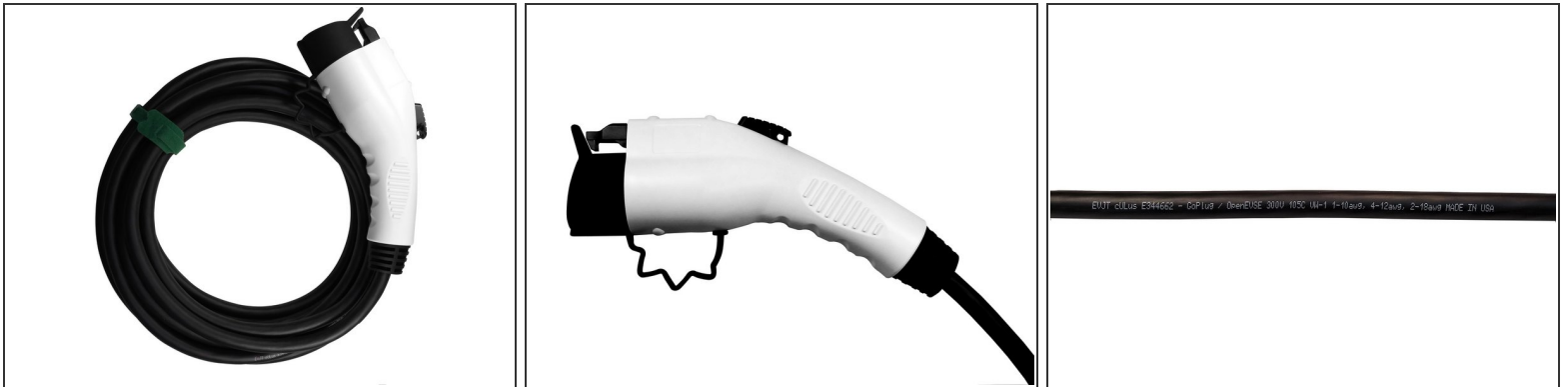
- [OpenEVSE J1772 \(1\)](#)

SAE J1772 Plug

- [OpenEVSE Bulk Cable \(25\)](#)

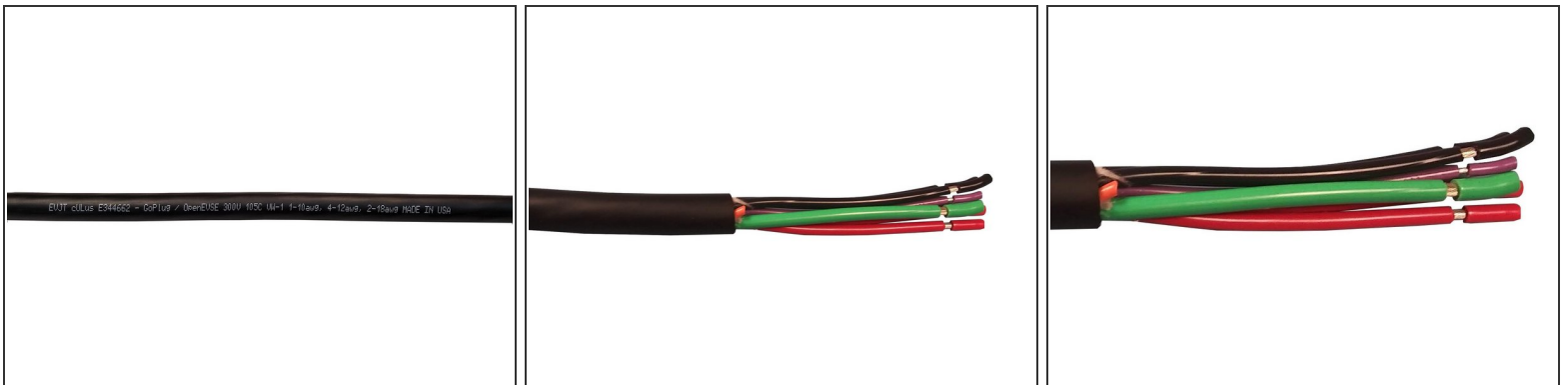
UL Listed EVJT

## Step 1 — SAE J1772 Cable Assembly



- This guide provides the assembly procedure for SAE J1772 cable from parts available from at OpenEVSE.

## Step 2 — Prepare Cable



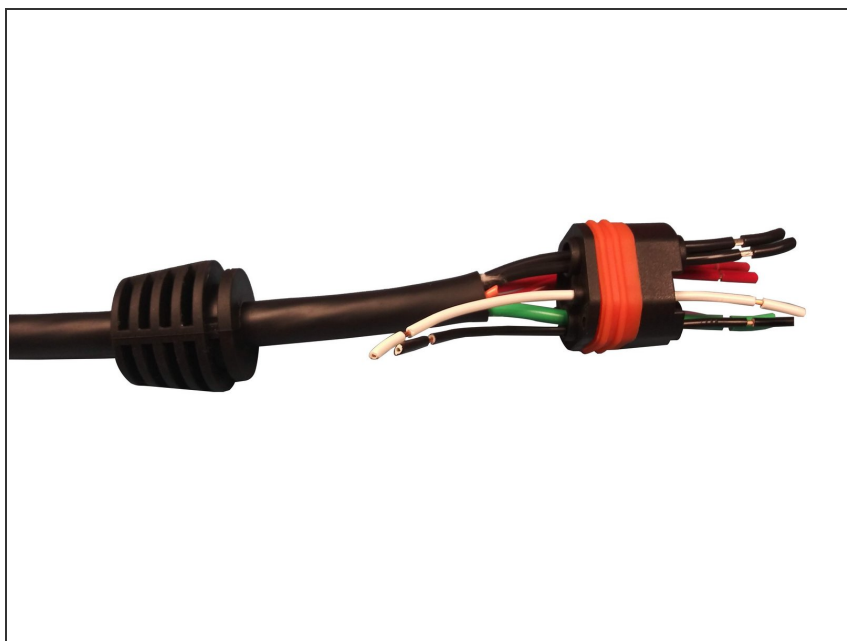
- This guide uses 40A EVJT cable available from OpenEVSE.
- Remove 3.25 inches of the outer jacket.
- Strip and retain insulation from RED, BLACK and GREEN wire 1/2 inch (0.50").
- Strip and retain insulation from Purple wire 3/8 inch (0.375")
- Cut orange wire flush with outer jacket.

### Step 3 — Prerequisites



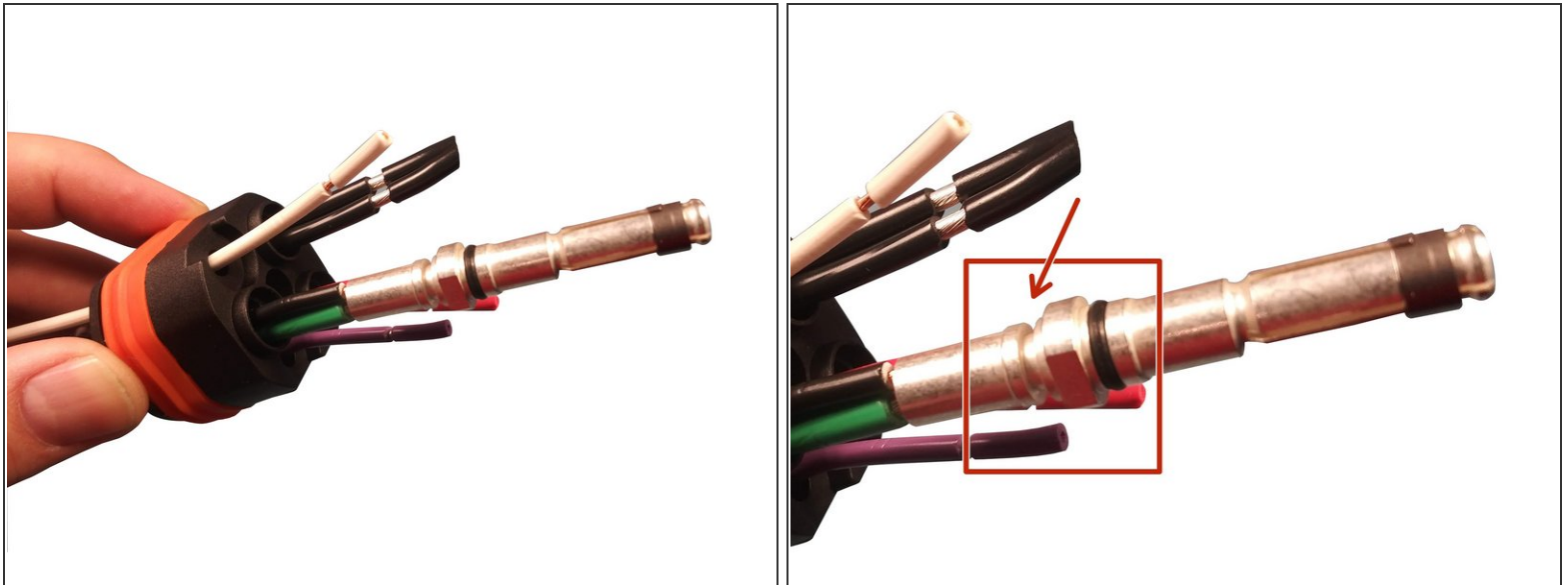
- Slide gland onto the cable. The notched end should face toward the stripped conductors.
  - Assemble the pin guide/seal.
- ⚠ The plastic parts should make contact all the way around the orange rubber seal. If not check that the parts are in the correct orientation.
- Insert conductors into the guide/seal, abbreviations are molded into the plastic part. PE = GREEN, CP = PURPLE, N - RED, L - BLACK

### Step 4 — Proximity



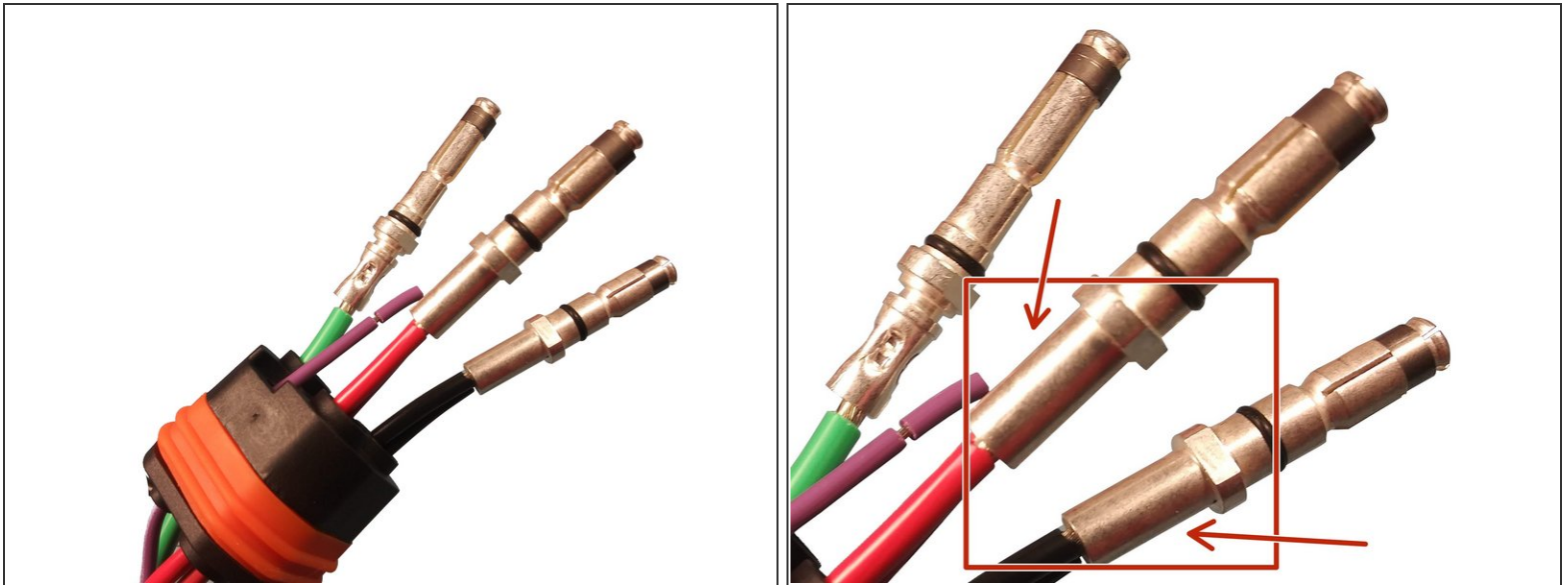
- Cut 6" each of BLACK and WHITE 18AWG stranded wire.
- Strip and retain 0.50" of insulation off both ends of the BLACK and WHITE wires.
- Insert the 18AWG BLACK wire in the PE position in addition to the GREEN wire.
- Insert a 18AWG WHITE wire in the hole labeled PP.

## Step 5 — Crimp Ground pin



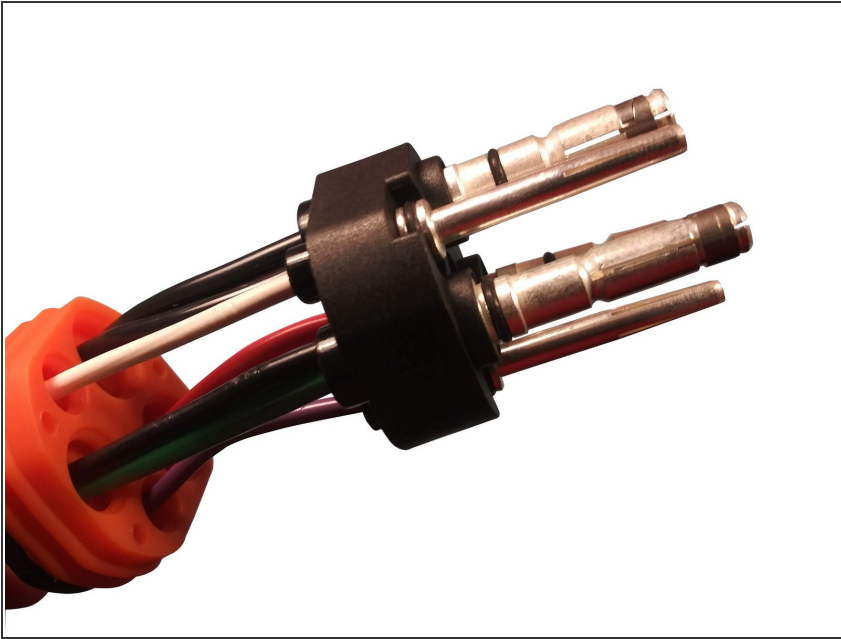
- ✦ Remove insulation from the GREEN and BLACK wire.
  - Insert the ground pin on the 10AWG GREEN wire and the 18AWG BLACK Proximity wire.
- ⚠ Note the Ground pin is different from the power pins. Note the notch near the area where the wire is inserted.
  - Crimp Ground pin with Pico Corporation 400B pneumatic crimping tool at 80PSI.
    - ✦ Recommended Die Pico 414DA-8N
    - ✦ Recommended locator - OpenEVSE J1772 Power/Ground
- ⚠ Soldering the pins is possible but requires a lot of heat to get solder to flow throughout. Crimping is recommended.

## Step 6 — Crimp Power Pins




- ✦ Remove the insulation on all the RED and BLACK power wires.
  - Insert the power pin on the BLACK wire(s) and crimp.
  - Insert the power pin in the RED wire(s) and crimp.
- ⚠ Note the power pins are different from the ground pin. Note the smooth surface along the crimp area where the wire is inserted.
  - Crimp Power pins with Pico Corporation 400B pneumatic crimping tool at 80PSI.
    - ✦ Recommended Die Pico 414DA-8N
    - ✦ Recommended locator - OpenEVSE J1772 Power/Ground
- ⚠ Soldering the pins is possible but requires a lot of heat to get solder to flow throughout. Crimping is recommended.

## Step 7 — Crimp Signal Pins



- Insert the signal pin on the PURPLE wire and crimp.
- Insert the signal pin on the WHITE wire and crimp.
- Crimp Ground pin with Pico Corporation 400B pneumatic crimping tool at 80PSI.
  - Recommended Die Pico 414DA-12N
  - Recommended locator - OpenEVSE J1772 Signal

 Soldering the pins is possible but requires a lot of heat to get solder to flow throughout. Crimping is recommended.

- Slide up the pin guide onto the pins.

## Step 8 — Assemble housing



- Insert pins into the connector housing.
- Screw pin guide to the connector housing using 16 mm screw.
- Slide orange seal and black plastic retainer down.
- Screw retainer in with three 20 mm retainer screws.



## Step 9 — Push Button



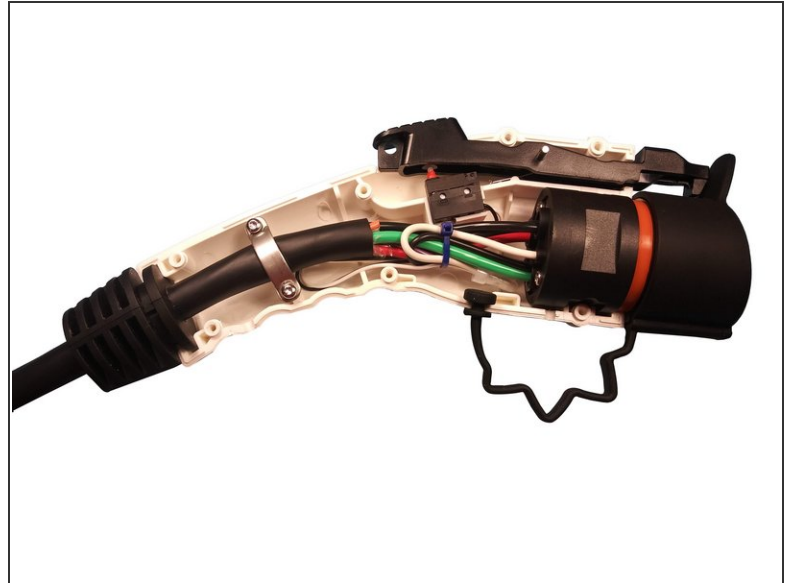
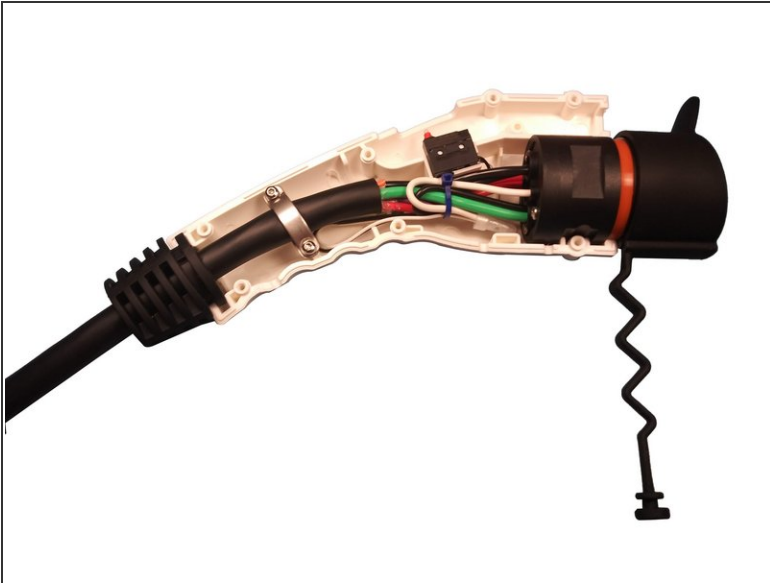
- Strip 0.50" off both the BLACK and WHITE wires from the push button switch assembly.
- Remove the insulation off all BLACK and WHITE wires.
- Twist WHITE wires together from bottom to top and crimp.
- Twist BLACK wires together from bottom to top and crimp.

## Step 10 — Prepare assembly for closeout



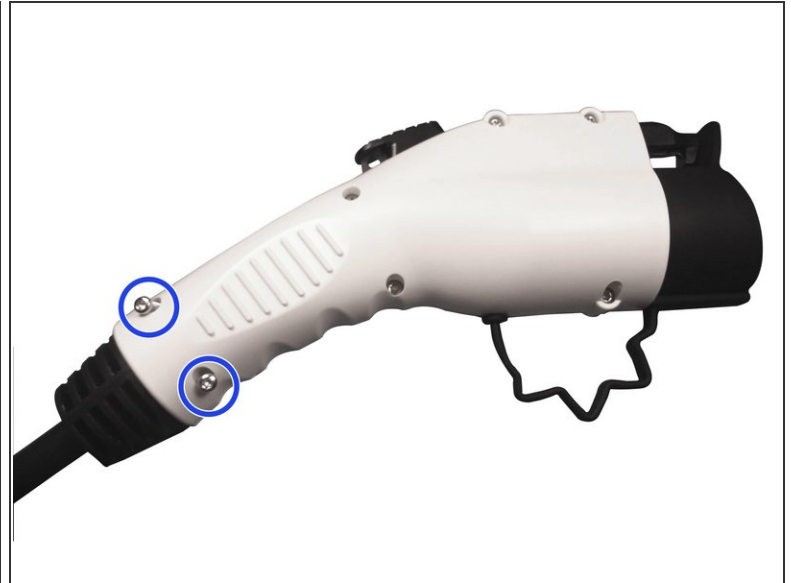
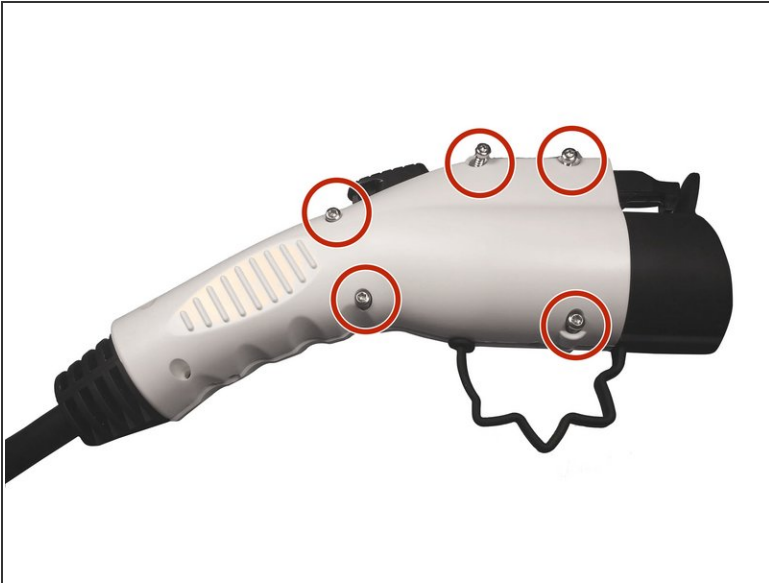
- Position switch under the power and ground conductors as shown in the photo.
- Fold WHITE and BLACK 18AWG wires in half.
- Loosely tighten a tie wrap to keep the wires closely bunched.




## Step 11 — Bottom Shell



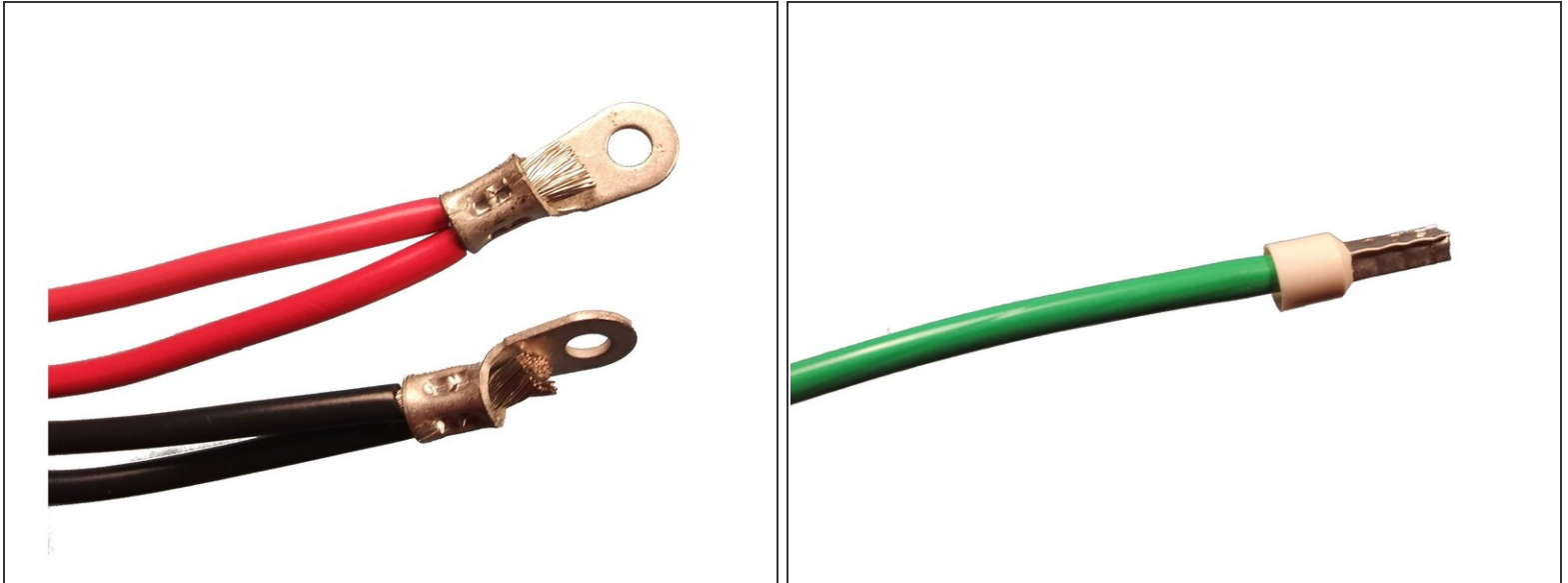
- Insert nose in bottom shell.
- Insert cable gland in bottom shell, adjust position if necessary.
- Insert switch in position in the bottom shell.
- Secure cable in the strain relief.
- ⚠ Position tie wrap to avoid pinching wires in the shell seam during closeout.
- Tension button spring and install button/spring/pin. Slid pin into the molded bushing.

## Step 12 — Closeout



-  Insert dust cap end in shell halves.
-  Insert and tighten 16 mm screws in holes marked in RED.
-  Insert and tighten 12 mm screws in positions marked in BLUE.

## Step 13 — Finish cable end



- Remove insulation and crimp ring terminal on BLACK wires.
- Remove insulation and crimp ring terminals on RED wires.
- Remove insulation and Crimp Sleeve ferrule on GREEN wire.