



# *Signal*<sup>®</sup> Mirror Installation Instructions

Toyota Rav4 2001-2003



***THE safety accessory of the 21<sup>st</sup> Century.™***

P/N 210-0067-0

Rev D2 (7-2-04), GG

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# Note: Professional Installation Recommended

Warranty does not cover damage to the vehicle or mirror housing due to improper installation. The following installation instructions are to be considered as a guide only. Door removal procedures, indicator wire color and location may have changed since publication of these instructions. The installer is responsible for any damage that may occur during installation.

## **INCLUDED ITEMS:**

- 1 left and 1 right *Signal*<sup>®</sup> mirror
- 1 left and 1 right wire harness
- 2 blue T-taps
- 2 blue spade terminals
- 2 ring connectors
- 2 foam adhesive pads
- 2 finishing plugs
- 1 instruction manual
- 1 information card
- 1 warranty card
- 1 sticker
- 8 cable ties & dielectric grease (Not Required)

## **REQUIRED TOOLS:**

- Ratchet with extension or ratcheting screwdriver
- 10mm socket
- Small slotted screwdriver
- Medium Philips screwdriver
- Small pry bar
- Gopher wire
- Drill
- $\frac{5}{32}$ " drill bit
- $\frac{3}{8}$ " drill bit
- Wire crimper and stripper
- Masking tape
- Electrical tape
- Multimeter
- Sturdy gloves
- Safety glasses or goggles
- 90° pick

Please read instructions prior to installation.

## **PROBLEMS OR QUESTIONS?**

Technical Assistance is available by calling  
Muth Mirror Systems Technicians at:

1-800-844-6616

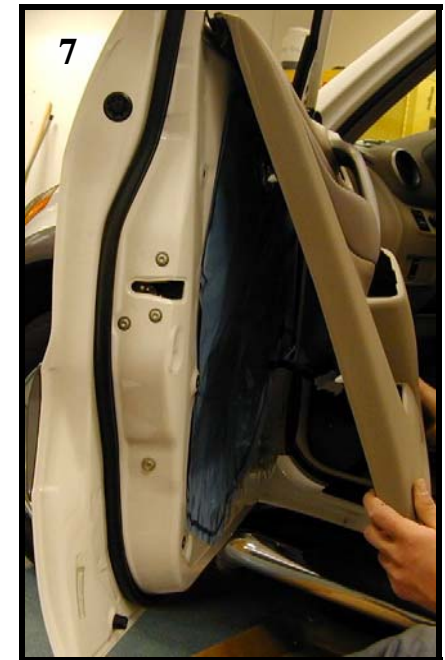
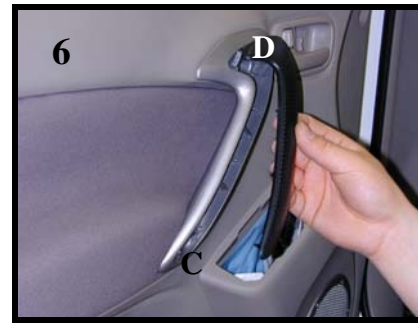
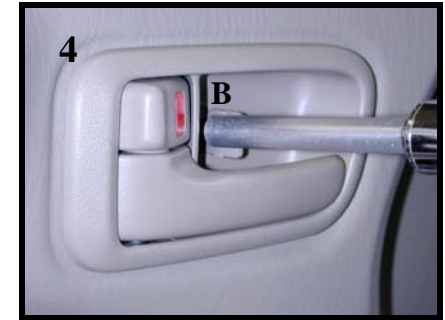
Monday through Friday  
Between 8:00 a.m. and 5:00 p.m. CST

Or through the Muth web site:

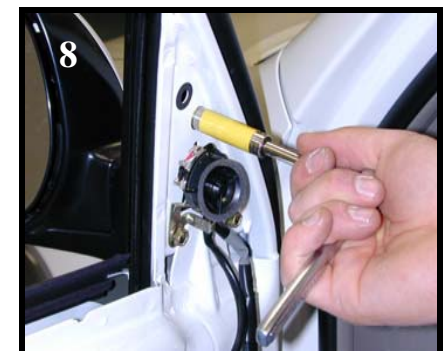
[www.muthco.com](http://www.muthco.com)

Or via E-mail: [techsupport@muthco.com](mailto:techsupport@muthco.com)

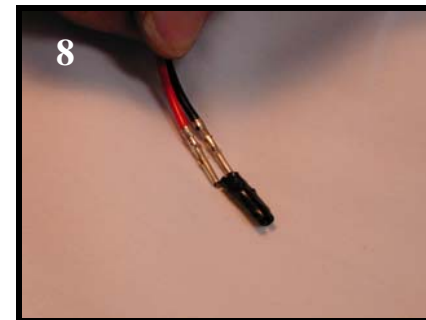
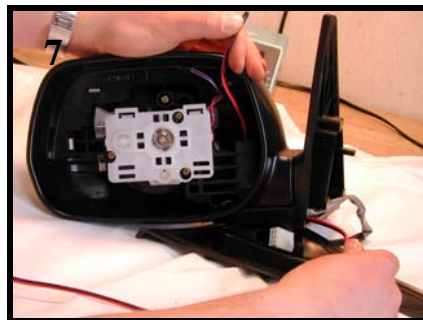
# Mirror Housing Removal



1. Open the driver side door and lower the window. Remove the screw at location A.
2. Remove mirror mounting cover.
3. Pry open the control panel from the front as shown. Disconnect the power locks and window harness.
4. Remove the screw at location B.
5. Carefully pry open door handle cover from both top and bottom. Unsnap door handle cover from door.
6. From the bottom of the grab bar, pry off trim piece to expose the two mounting bolts. Remove bolts C and D. A total of 4 bolts/screws will have been removed.
7. Carefully unsnap fasteners and pull the door panel out as shown.
8. Remove nuts, disconnect power mirror harness, and remove mirror housing from door.



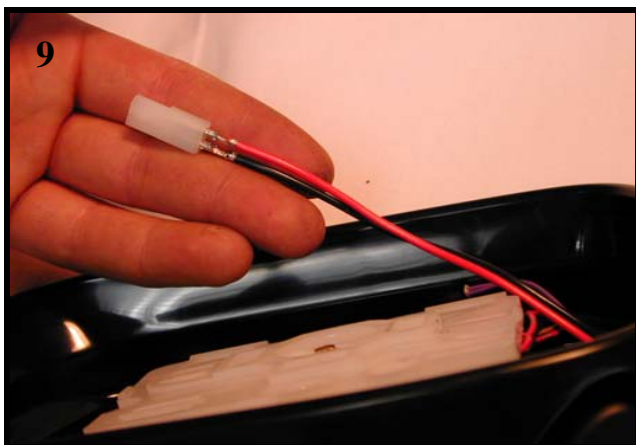
# Mirror Replacement



1. On a cloth covered bench top, lay the housing on its side. Unwrap the electrical tape on the OE cable.
2. Unscrew the screw harness strain relief holding the OE cable in place.
3. **\*\*STARTING AT THE BOTTOM OF THE MIRROR\*\*** Use a small pry bar and unsnap the mirror from the motor. It is only possible to do so from the bottom of glass. The glass is mounted using a "hinge & snap" type of backing plate.
4. If you have a heated mirror, disconnect the heater connectors and remove OE mirror from housing.
5. Turn the housing over until you see the (3) screws. Draw a line from center to center between the (2) screws that are the furthest apart. Find the midpoint of the line that was just drawn and center punch it. Using a drill and a  $\frac{5}{32}$ " drill bit, slowly drill until you just pass through. **WARNING: Be careful not to drill into the OE cable inside.**

6. Use a  $\frac{23}{64}$ " drill bit, slowly enlarge the hole that was just drilled. **WARNING: Be careful not to drill into the OE cable inside.**
7. Guiding the harness from the outside into the housing: With the housing upside down, push the OE harness (on door mounting side) down with a flat screwdriver to make room for the *Signal*<sup>®</sup> mirror harness. Starting with the protected terminals side, push the *Signal*<sup>®</sup> mirror harness until visible through the "new" access hole. Once visible, steer the wrapped terminals through and along side OE harness until visible inside of housing. A small pick with a very short 90° head may be helpful to grab and route harness. Plug the "new" access hole with a finishing plug.
8. Change "electrical tape" to "protective plastic." Carefully cut the electrical tape and remove it as shown.

## Mirror Replacement Continued



9  
Connect the gold plated end of the wires to the white connector. Insert the red wire end to pinhole 1 and the black wire end to pinhole 2. NOTE: The “chamfered edges of male molex need to be out to plug into female molex. Check *Signal*<sup>®</sup> mirror plug if unsure.



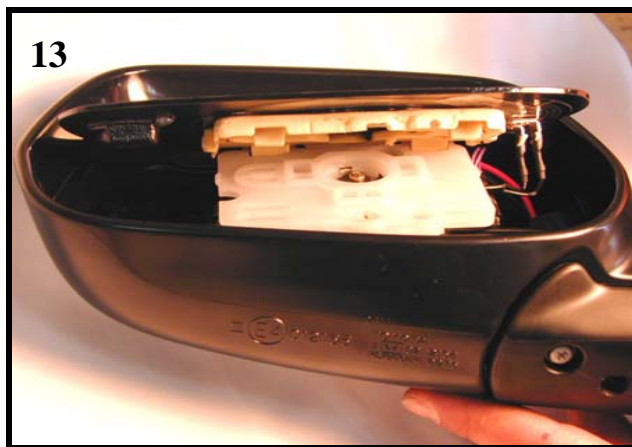
10  
Using a utility knife, lightly cut the silicone around the connectors from the OE mirror. **WARNING: Be careful not to cut into the heater behind the silicone.** Gently pull connectors off of OE heater terminals using a pliers.



11  
Reconnect the connectors to the *Signal*<sup>®</sup> mirror heater terminals as shown.



12  
Reconnect the heater wire harness and the *Signal*<sup>®</sup> mirror wire harness.

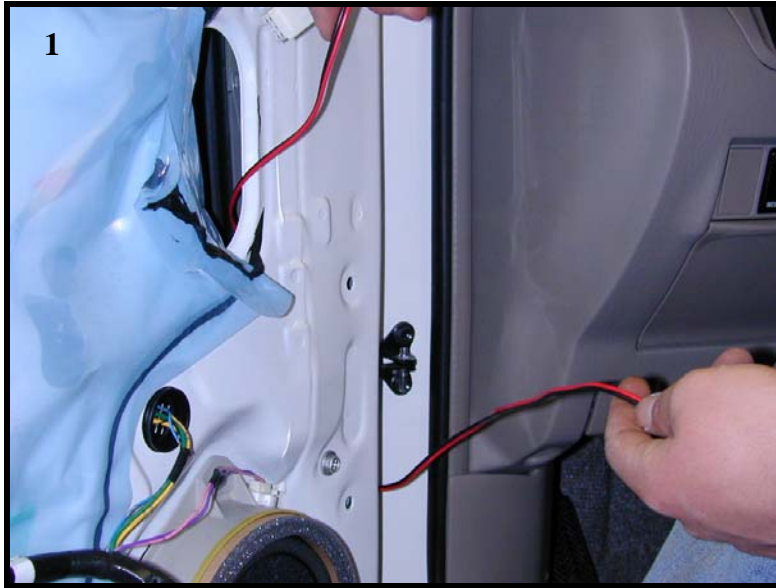


13  
Insert the *Signal*<sup>®</sup> mirror into the housing using the two hinges as shown.

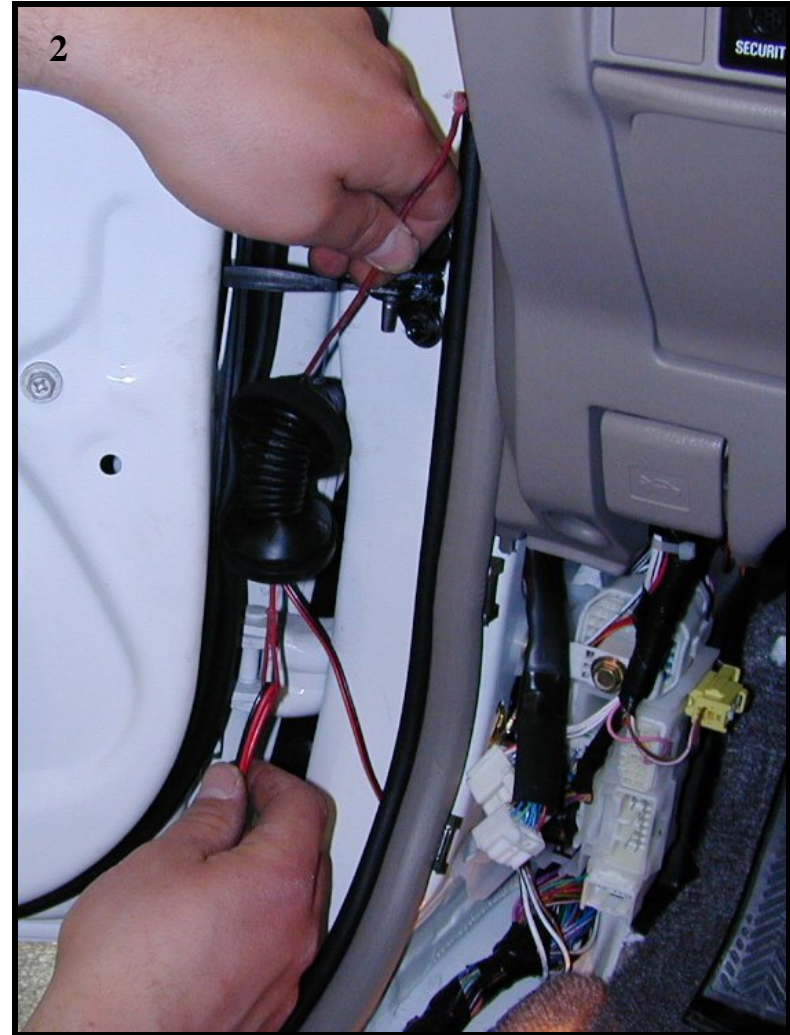


14  
With a sturdy glove and your fingers, firmly press down on the *Signal*<sup>®</sup> mirror until it snaps into position. Press down on all sides of the *Signal*<sup>®</sup> mirror to ensure proper engagement. Rotate in every direction to ensure proper fit, form, and function.

# Wiring

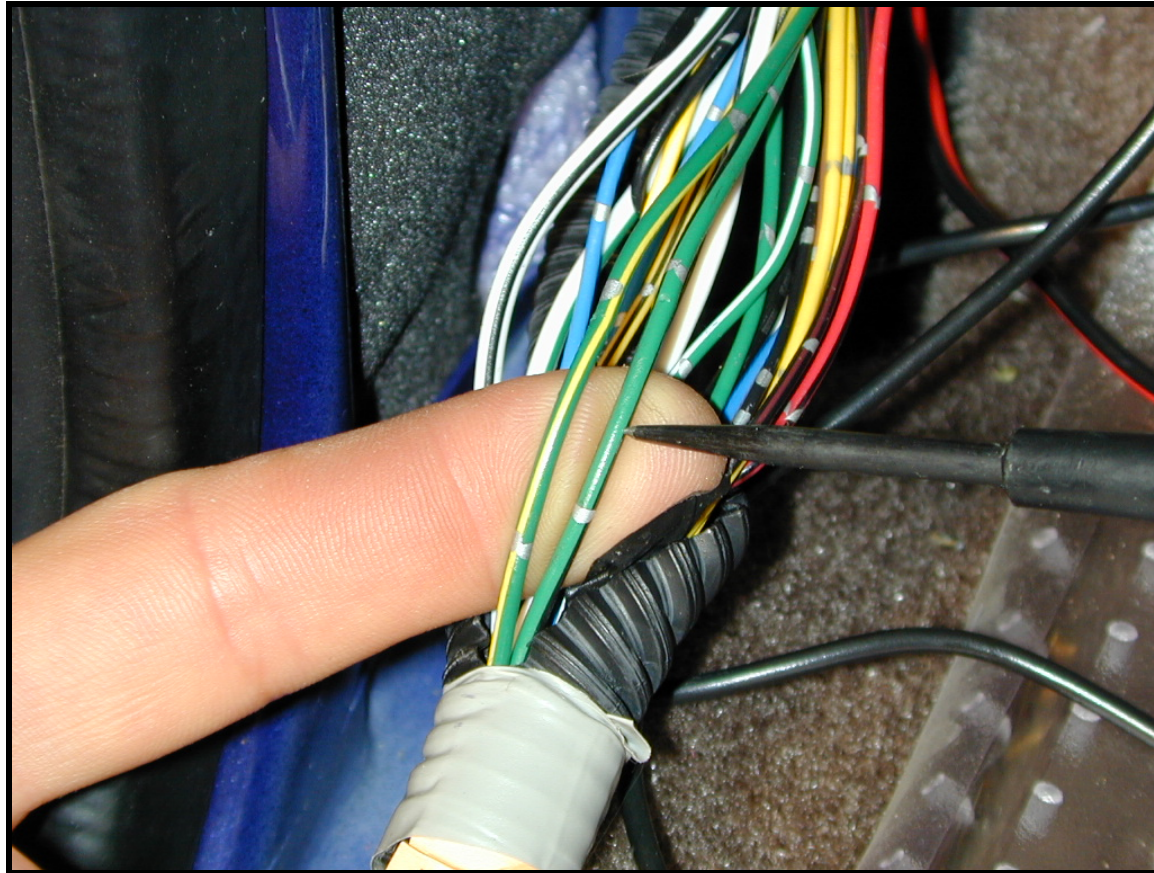


Starting from step #2 (mirror replacement section), reverse the steps until you reach step #8 (mirror housing removal section) to reattach the housing to the door. Reconnect factory mirror harness. At the door jam, locate harness boot. Push boot into door then pull out. Carefully guide *Signal*® mirror harness through door. **IMPORTANT: Be sure to run harness around window track. Not doing so could result in a cut or damaged wire. Also watch for any rough edges, moving parts (i.e. Parking brake). If insulation is damaged during installation, it could result in a short, which could cause a number of problems.**



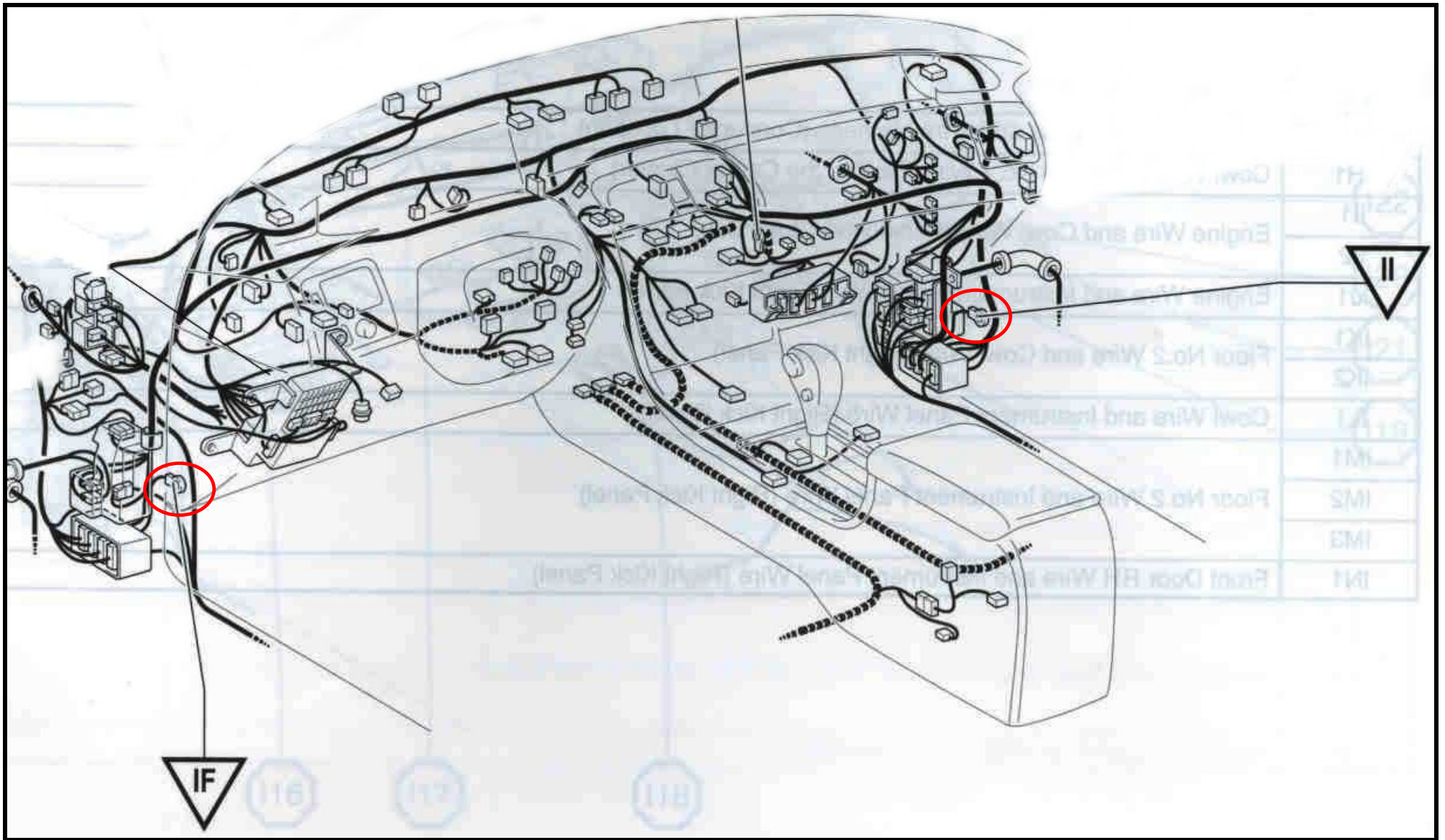
Remove kick panel for easier access. Disconnect the OE wire harness from within the kick panel. Pull on the OE wire harness to get the other end of the boot to come out. Pass the *Signal*® mirror wire harness through the rubber boot as shown. Pass the *Signal*® mirror wire harness into the vehicle. Remove any slack in the wire and replace the rubber boot on the door frame. Reconnect factory wire harness from within the kick panel.

## ***Wire Identification***



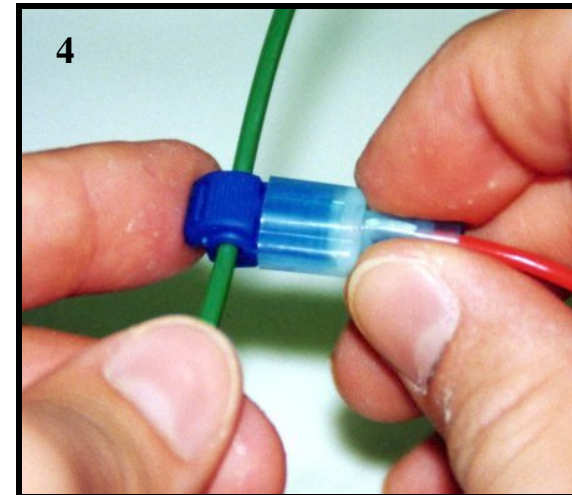
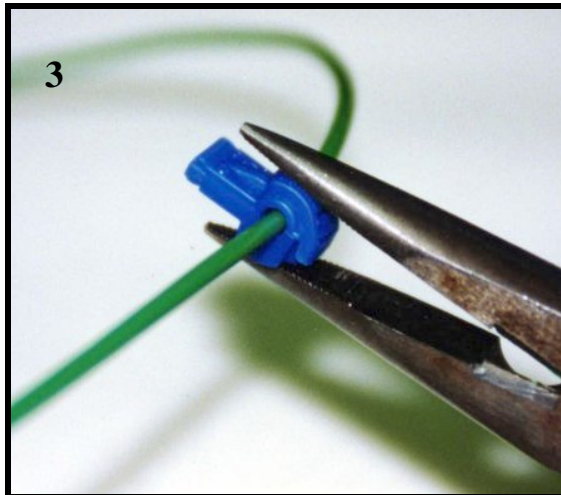
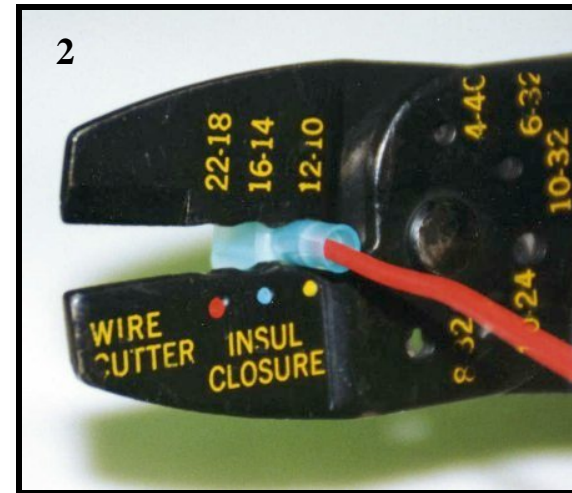
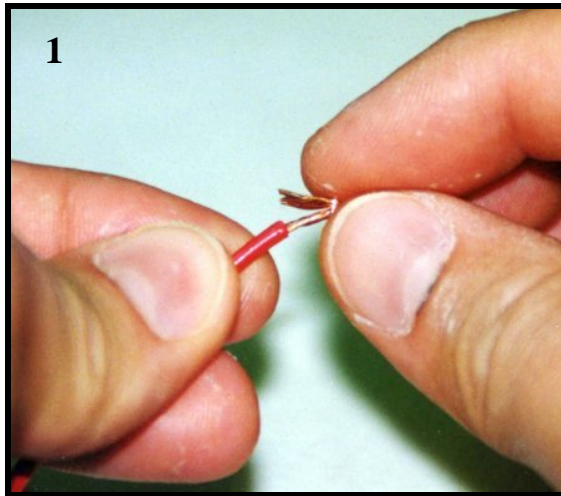
1. Repeat all of the previous steps to replace the factory mirror on the passenger side door with the new *Signal*<sup>®</sup> mirror. Wiring for driver side turn indicator is located under carpet, along side of driver seat by floorboard. Carefully slice the tape that covers the large bundle of wires which are routed to the back of the vehicle. Locate a **GREEN WIRE WITH A BLACK STRIPE/TRACE** and test to make sure it is the turn/hazard only. You should read a pulsing overload that is consistent with the vehicles front, rear, and interior turn indicators. Label that wire as 'driver side turn'
2. Wiring for the passenger side turn indicator is located under the carpet, along side of the passenger seat by the floorboard. You should notice wires, coming from the back of the vehicle, come to a 'T' intersection right on the side of the passenger seat. Here you will locate a **GREEN WIRE WITH A YELLOW STRIPE/TRACE**. Test that wire to ensure it is the correct wire. Label that wire as 'passenger side turn'.

## Grounding Wires



Use a ring connector to make the ground connection on the passenger side mirror to connection II located in the kick panel. On the driver side mirror, use a ring connector to make the ground connection to connection IF located in the kick panel.





**USE THE INCLUDED BLUE T-TAPS AND FOLLOW THE 4 STEPS ABOVE TO SPLICE INTO THE TURN INDICATOR AND GROUND WIRES**

1. Make sure the harnesses are routed securely to the wire bundle(s) and enough slack is left for splicing.
2. Tap the RED wire from the driver side harness into the vehicle wire previously labeled 'driver side turn'.
3. Tap the RED wire from the passenger side harness into the vehicle wire previously labeled 'passenger side turn'.
4. Activate each turn indicator to verify that the *Signal*<sup>®</sup> mirrors are working.
5. Wrap an adhesive foam pad around each t-tap connection.
6. Replace both door panels, door accessories, insulation, plastic moldings, and trim pieces.

