

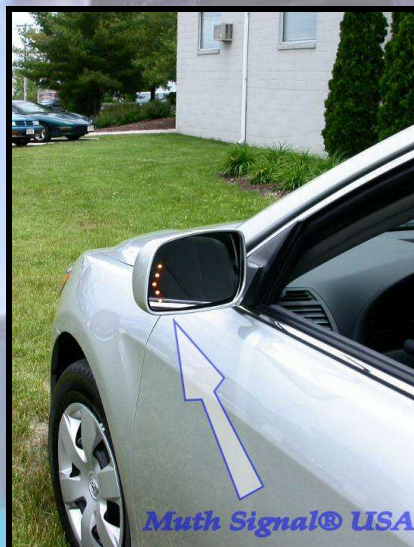


## Signal<sup>®</sup> Mirror Installation Instructions

2007-2008 Toyota Camry (USA built model only)

**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 am 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)



**PROFESSIONAL INSTALLATION RECOMMENDED:**

Warranty does not cover damage to the vehicle or mirror housing due to improper installation.

Muth Mirror Systems, LLC (MMS) assumes no responsibility with regard to the accuracy of this information.

MMS assumes no liability or responsibility resulting from improper installation, even in reliance upon this information. Proper installation is the responsibility of the installer. It is your responsibility to verify any circuit before interfacing with it using a digital multimeter.

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

**NOTE:** Part number of this accessory may not be the same as the part number shown.

### Kit Contents

Item #	Qty Req'd.	Description
1	1	LH <i>Signal</i> ® mirror assembly
2	1	RH <i>Signal</i> ® mirror assembly
3	1	LH Wire harness
4	1	RH Wire harness
5	1	Hardware bag
6	1	Installation instruction manual

### Hardware Bag Contents

Item #	Qty Req'd.	Description
1	4	T-Taps
2	4	Spade terminals
3	4	Foam adhesive pads
4	1	6" Heat shrink
5	1	Ring connectors
6	8	Cable ties (not required)
7	1	Dielectric grease (not required)

### Recommended Tools

Personal/Vehicle Protection	Notes
Blankets or towels	
Sturdy gloves	
Safety glasses (goggles)	
Installation Tools	Size/Description
Ratchet	With extension
Screwdrivers	Slotted & Phillips
Sockets	10mm
Pry bar	Small (plastic)
Torx head driver	T-25
Needle nose pliers	
Gopher wire (rod)	
Wire crimper/stripper	
7/16" T-Handle	
Drill	Cordless or Electric
1/4" drill bit	
Multimeter (wire tester)	

### Recommended Tools Continued

Installation Tools	Size/Description
Heater Gun (hair dryer)	
Electrical Tape	
Angular pliers	
Utility knife	

### Recommended Tools Continued

Item #	Qty Req'd.	Description

Special Tools	Notes
None	

Special Chemicals	Notes
Cleaner	Household Windex

### General Applicability

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### Conflicts

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### Recommended Sequence of Application

Item #	Accessory

\*Mandatory

### Vehicle Service Parts (may be required for reassembly)

Item #	Qty Req'd.	Description

 <b>STOP:</b> Damage to the vehicle may occur. Do not proceed until process has been complied with.
 <b>OPERATOR SAFETY:</b> Use caution to avoid risk of injury.
 <b>CAUTION:</b> A process that must be carefully observed in order to reduce the risk of damage to the accessory/vehicle and to ensure a quality installation.
 <b>TOOLS &amp; EQUIPMENT:</b> Used in Figures calls out the specific tools and equipment recommended for this process.
 <b>REVISION MARK:</b> This mark highlights a change in installation with respect to previous issue.

*Signal*® and *Signal Mirror*® are registered trademarks of K.W. Muth Company, Inc. and must be identified as such on all promotional materials



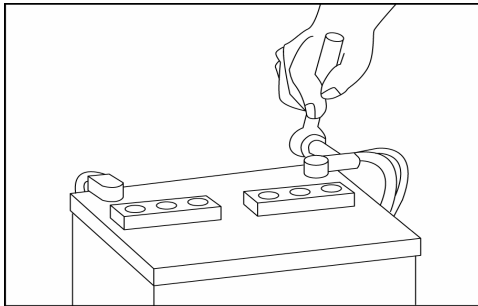
Care must be taken when installing this accessory to ensure damage does not occur to the vehicle. The installation of this accessory should follow approved guidelines to ensure a quality installation.

These guidelines can be found in the "Accessory Installation Practices" document.

This document covers such items as:

- Vehicle Protection (use of covers and blankets, cleaning chemicals, etc.).
- Safety (eye protection, rechecking torque procedure, etc.).
- Vehicle Disassembly/Reassembly (panel removal, part storage, etc.).
- Electrical Component Disassembly/Reassembly (battery disconnection, connector removal, etc.).

Please see your Toyota dealer for a copy of this document.

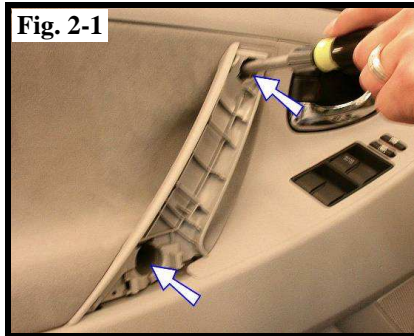


### REMOVE BATTERY CABLE



1. Protect fender before starting. Do not touch the positive terminal with any tool when removing cable. Remove the negative battery cable.

**Fig. 2-1**



### DOOR PANEL REMOVAL



1. Open driver side door. Lower window. Remove plastic cover on door handle. Remove (2) screws revealed by the removal of the handle cover. (Fig. 2-1)

**Fig. 2-2**



2. Remove plastic cover within door release lever. Remove screw behind plastic cover. Remove upper right hand corner cover plate. (Fig. 2-2)



Fig. 2-3

3. With a 7/16 T-Handle, slowly push in the center of the rivet to disengage rivet from door frame (rivets located around the perimeter of the door panel). **CAUTION: These rivets are fragile and break easily. Be very gentle in disengaging and removing these rivets.** (Fig. 2-3)

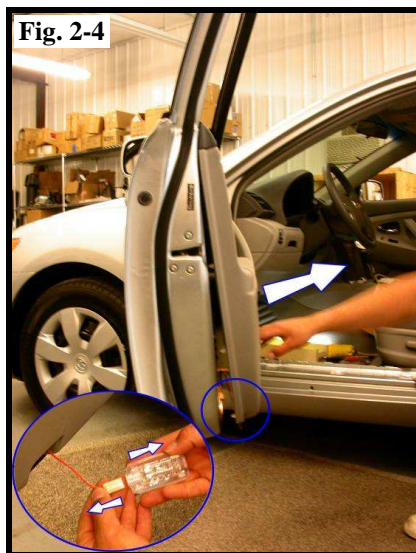


Fig. 2-4

4. Slowly pull to disengage the door panel. Pull door panel out slightly, disconnect wiring behind door panel light [located on the lower left hand corner]. (Fig. 2-4)

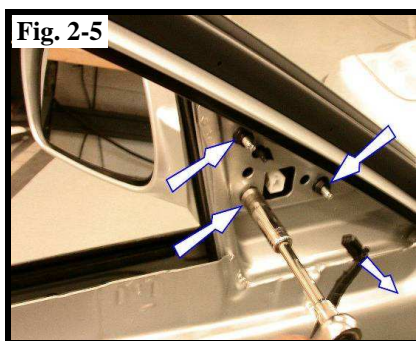


Fig. 2-5

5. Lift door panel and pull it out partially. Unsnap door lever rod behind door panel. Remove door panel and set it aside. Disconnect mirror harness. Secure the mirror housing with one hand, remove the (3) nuts holding the mirror housing to the door frame using a 10mm socket. **WARNING: Not securing mirror housing with one hand before loosening the nuts could cause the mirror housing to fall and become damaged.** Carefully remove mirror housing from door frame and set mirror housing on a cloth covered surface. (Fig. 2-5)

**⚠ WARNING: Safety glasses and sturdy gloves are required for mirror replacement.**



Fig. 3-1

### MIRROR REPLACEMENT



1. Place the mirror housing on a cloth covered, level surface. Slide one of the supplied foam pads in between the mirror backing plate and mirror housing to prevent scratching the mirror housing. Insert the slotted screwdriver between the foam and mirror backing plate, slowly pry until the mirror backing plate unsnaps from mirror housing. Unhinge mirror backing plate and disconnect heater terminals (if heated). Remove mirror from mirror housing. (Fig. 3-1)



Fig. 3-2



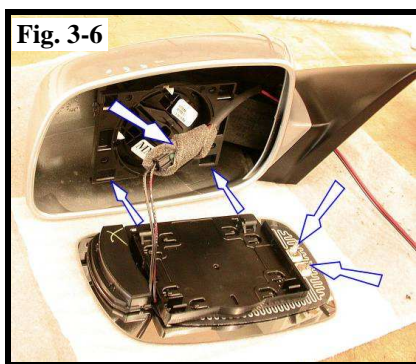
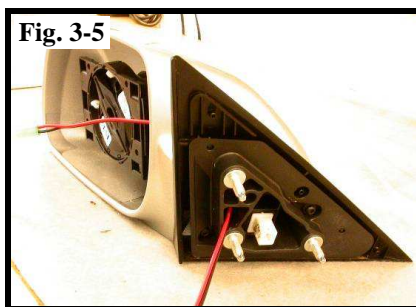
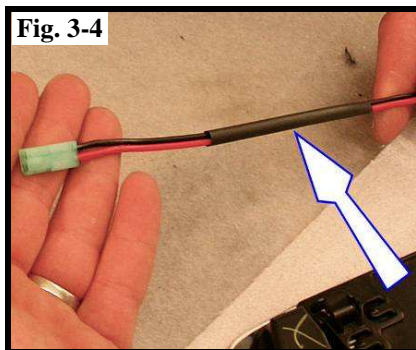
2. Remove rubber insulation from housing sail. Using a 1/4" drill bit, carefully drill an access hole thru housing sail into mirror housing using the slot shown. **⚠ CAUTION: When drilling the access hole, make sure to avoid drilling into any wiring harnesses behind sail and/or mirror housing.** (Fig. 3-2)



Fig. 3-3



3. With an angular pliers, cut out [notch] a small pathway in the sail for the *Signal*® mirror wire harness to be routed. (Fig. 3-3)



4. Cut the supplied heat shrink tubing into (2) 3" pieces. Slide (1) 3" piece of tubing over the shorter of the two *Signal*® mirror wire harnesses. (Fig. 3-4)

5. Start with the shorter of the two *Signal*® mirror wire harnesses, route the wire from inside housing thru the drilled access hole leaving about 4-6 inches of wire within the mirror housing. Slide the heat shrink tubing along the *Signal*® mirror wire harness to within the drilled access hole. **NOTE: Position and measure to make sure the heat shrink tubing is directly within the drilled access hole [the heat shrink tubing serves as an insulation for the *Signal*® mirror wire harness going thru the drilled access hole].** Pull the heat shrink tubing with the *Signal*® mirror wire harnesses back. With a heat gun, heat the heat shrink tubing into place. Continue pulling the *Signal*® mirror wire harnesses thru the drilled access hole in the sail leaving about 4-6 inches of wire within the mirror housing for connection. (Fig. 3-5)

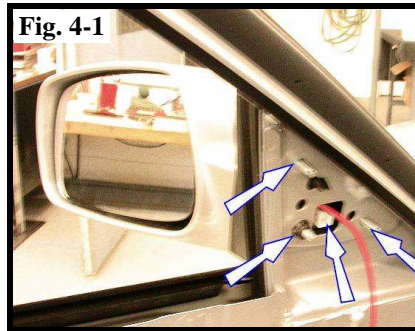


6. Connect the mating connectors on the new *Signal*® mirror and the *Signal*® mirror wire harness. Wrap one of the supplied foam pads on the *Signal*® mirror mating connectors. **If heated**, reconnect the heater wires to the heater terminals on the back of the new *Signal*® mirror. **NOTE: There is no polarity so the heater wires may be interchanged.** Carefully tuck all wiring behind motor actuator. **CAUTION: Not doing so, could result in wiring interfering with mirror travel.** Align and insert the tongues on the motor mount with its corresponding slots on the motor actuator. If anti-vibration tab is present, carefully tuck anti-vibration tab inside mirror housing. Press down on the upper portion of the *Signal*® mirror with your thumbs, until it snaps into place. Press down on all sides to ensure proper fit, form, and function. Route the *Signal*® mirror wire harness thru the sail rubber insulation and position the rubber insulation onto the housing sail. (Fig. 3-6)





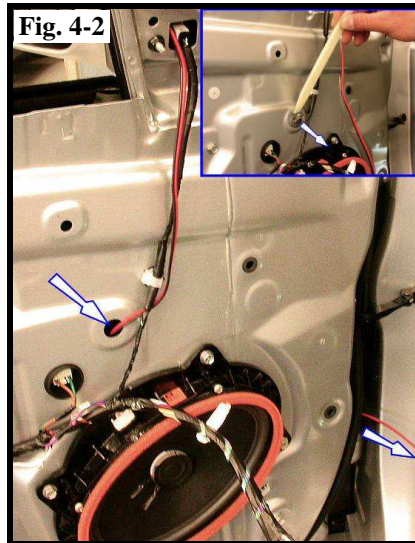
**WARNING:** When routing wire into vehicle, it is extremely important to not let wire get pinched or crushed at any time. Avoid window track and sharp edges at all times. Not doing so may cause circuit shortage problems in the long run.



### WIRE ROUTING



1. Guide the *Signal*® mirror wire harness thru the hole in the door frame and position the mirror housing assembly onto the mirror mount. Attach the mirror housing to the mirror mount with (3) mirror mounting nuts and torque to 71 in.lbf. **(A).** **WARNING:** Do not over tighten the mirror mounting nuts. Reconnect mirror harness **(B).** (Fig. 4-1)



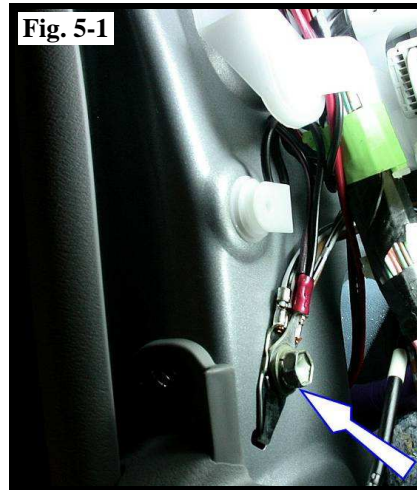
2. Start by removing the rubber plug on door frame access hole. Remove floor trim and kick panel. Find the rubber boot located between the door frame and vehicle frame. Push in and pull out on both ends of the rubber boot. Guide the *Signal*® mirror wire harness alongside original wire harness into the door frame access hole, thru the hole vacated by the removal of the rubber boot [door frame side], thru rubber boot and thru the hole vacated by the removal of the rubber boot [vehicle frame side] into the vehicle. **NOTE:** A gopher wire [rod] may be used to assist in the wire routing process. Replace both ends of the rubber boot in between the door frame and vehicle frame. Gently pull the *Signal*® mirror wire harness thru, removing any slack in the *Signal*® mirror wire harness. Using a utility knife, slice between the red and black wire on the *Signal*® mirror wire harness. Gently and carefully pull on each wire to separate the two. (Fig. 4-2)

\* Before proceeding, please read remainder of instructions for information regarding wiring identification and options.

\*\* Repeat all of the previous steps to replace the factory mirror on the passenger side door with the new *Signal*® mirror.

**\*\*\*Wiring locations are the installer's/customer's responsibility\*\*\***

**\*\*\* RE-CONNECT THE BATTERY CABLE PRIOR TO TURNING THE IGNITION KEY TO 'ON' FOR WIRE TESTING.\*\*\***

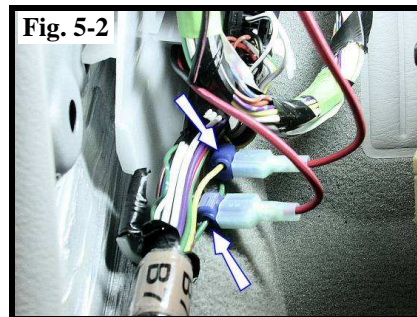


**Fig. 5-1**

### WIRE IDENTIFICATION

Route both *Signal*® mirror wire harnesses to the wiring location located on the left (driver) side kick panel.

1. Cut and strip the black wires on each of the *Signal*® mirror harnesses. Crimp both black wires onto the supplied grounding ring terminal and ground it to a factory ground point within the kick panel area. (Fig. 5-1)



**Fig. 5-2**

2. Peel back the insulating wrap on the wiring harness at the base of the kick panel area. Locate the YELLOW wire within the wire bundle. Turn the ignition key so that electrical power is on and activate the left turn indicator. Probe the wire with the wire tester to verify that flashing turn directional power is present. Label that wire as 'DRIVER SIDE INDICATOR'.

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 Locate the GREEN wire and activate the right turn indicator. Probe the wire with the wire tester to verify that flashing turn directional power is present. Label that wire as 'PASSENGER SIDE INDICATOR'. (Fig. 5-2)



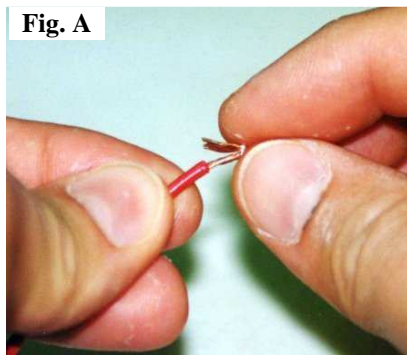


Fig. A

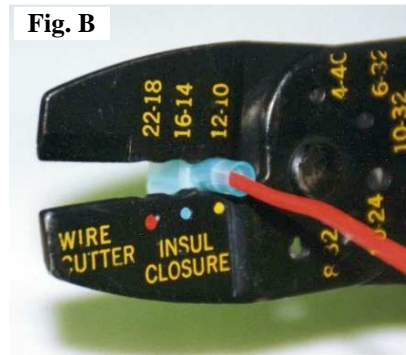


Fig. B

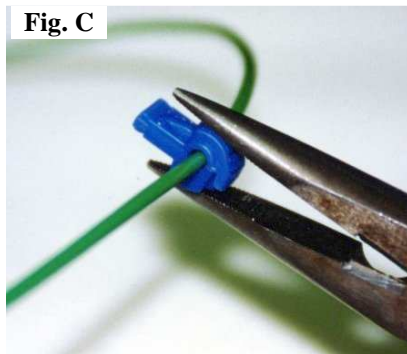


Fig. C

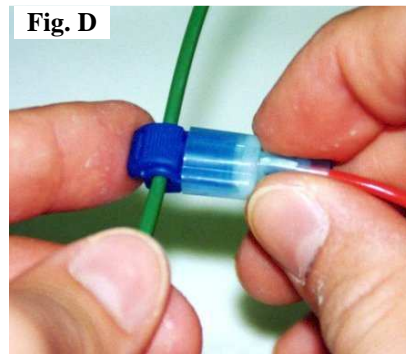




Fig. D

**USE THE INCLUDED T-TAPS AND FOLLOW THE FOUR STEPS (TO THE LEFT) TO SPLICE INTO THE TURN INDICATOR WIRES. (Fig A - D)**

A. Make sure the harnesses are routed securely and enough slack is left for splicing.

 B. Splice the RED wire from the driver side harness into the wire previously labeled 'driver side indicator'.

 C. Splice the RED wire from the passenger side harness into the wire previously labeled 'passenger side indicator'.

D. Turn ignition key to the "ON" position and activate each turn indicator to verify proper operation and illumination of Signal<sup>®</sup> mirror.

E. Reconnect all original wiring. Turn the ignition power to on, check to verify all features are working properly.

F. Replace the plastic door frame moldings, trim, door panels, and all accessories.

**Muth products are protected by these, and other pending, United States Patents**

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