



Signal[®] Mirror Installation Instructions

2007 - 2010 Toyota Tundra (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

Or via E-mail: techsupport@muthco.com

DOOR PANEL WIRING CONNECTION – SEE PAGE 8
KICK PANEL WIRING CONNECTION – SEE PAGE 9

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 21st 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	Wire taps

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)
Needle nose pliers	
Gopher wire (rod)	
Electrical Tape	
Utility knife	
Wire crimper/stripper	
Clip Removal [Snap-On] Tool	PN: YA331
Multimeter (wire tester)	

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



STOP: Damage to the vehicle may occur. Do not proceed until process has been complied with.



OPERATOR SAFETY: Use caution to avoid risk of injury.



CAUTION: 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.



TOOLS & EQUIPMENT: Used in Figures calls out the specific tools and equipment recommended for this process.



REVISION MARK: This mark highlights a change in installation with respect to previous issue.

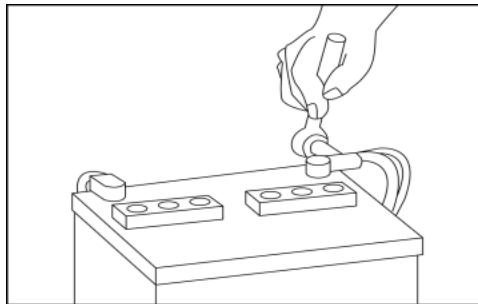
Care must be taken when installing this accessory to ensure damage does not occur to the vehicle. The installation of this accessory should follow approved guidelines to ensure a quality installation.

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

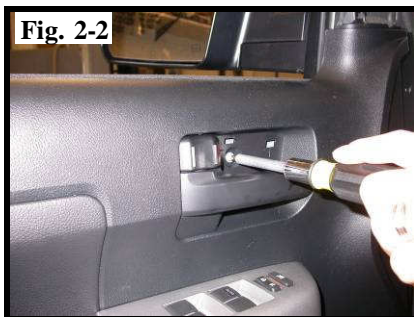


DOOR PANEL REMOVAL




1. Open door, lower windows, remove upper triangular trim panel by prying off from the top down. We suggest an anti-scratch nylon type tool to minimize any nicks, scratches, etc. (Fig. 2-1)

Fig. 2-2



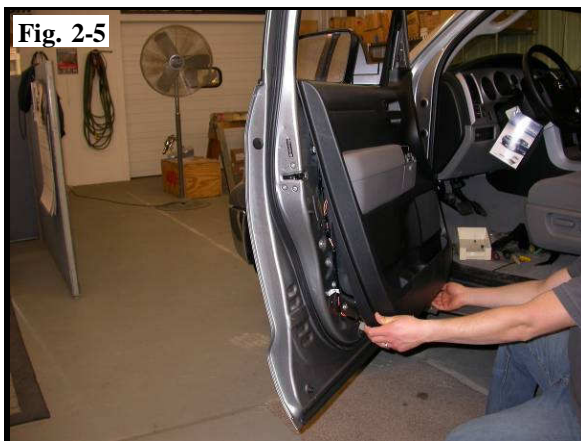
2. Remove plastic cover within door release lever. Remove screw behind plastic cover. (Fig. 2-2)




-  3. Remove trim piece from bottom of door handle to expose screw, remove screw. (Fig. 2-3)



-  4. Unsnap control panel from door, disconnect all connectors. (Fig. 2-4)



-  5. Starting at bottom of panel, gently pull on panel to release all push pin connections which are around the perimeter of panel. (Fig. 2-5)





6. Pull door panel out slightly, disconnect wiring behind door panel light [located on the lower left hand corner]. (Fig. 2-6)



7. Lift door panel and pull it out partially. Unsnap door lever cable behind door panel. Remove door panel and set it aside. (Fig. 2-7)



8. 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. 2-8)

 **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 clip removal tool (small pry bar) on the bottom between mirror backing plate and mirror housing. Slowly push-up (pry) mirror backing plate until the (4) snap tabs disengage. Disconnect heater terminals (if heated). Remove mirror from mirror housing. (Fig. 3-1)

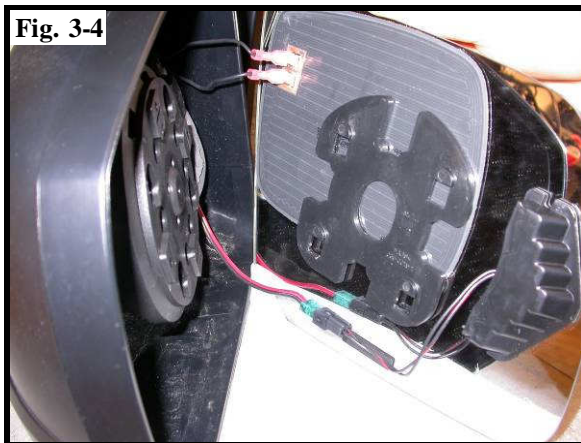
Fig. 3-2

2. Using a slotted screwdriver, carefully remove the plastic cover from beneath the mirror housing. (Fig. 3-2)

**Fig. 3-3**

3. With a utility knife, cut a small access hole in grommet for Signal® mirror wire harness. **WARNING:** Take care not to damage OEM wires. (Fig. 3-3)





4. Start with the shorter of the two *Signal*® mirror wire harnesses, route the wire from inside housing, along side OEM wire, leaving about 4-6 inches of wire within the mirror housing. Connect the mating connectors on the new *Signal*® mirror and the *Signal*® mirror wire harness. **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.** (Fig. 3-4)



5. Carefully tuck all wiring behind motor actuator. **CAUTION:** **Not doing so, could result in wiring interfering with mirror travel.** Align (4) snap tabs and set *Signal*® mirror against motor mount. Push down with clip removal tool (pry bar) until (4) snap tabs are in place. Press down on all sides to ensure proper fit, form, and function. (Fig. 3-5)



6. Route *Signal*® mirror wire harness through cut hole made in the grommet. Pull wire harness through removing any slack in the *Signal*® mirror wire harness. Replace rubber grommet in the sail. Re-install bottom plastic cover. 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. (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.

Fig. 4-1



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

WIRE IDENTIFICATION

Wiring location is located on each side of the door panel area.

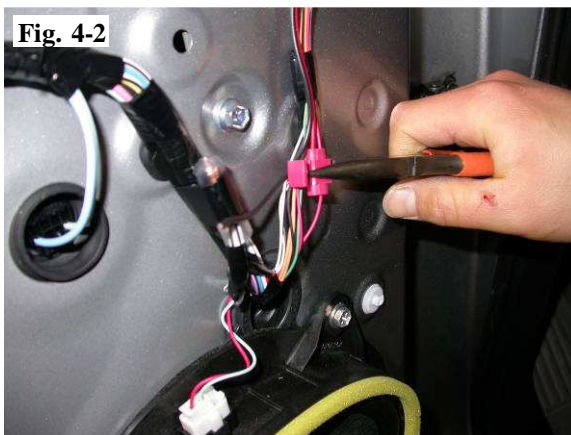


1. Wiring location for the driver side turn indicator is located on the driver side door panel area. Locate the RED wire on the bottom row of the connector next to a white w/ black stripe wire. Turn the ignition key so that electrical power is on and activate the left turn indicator. Probe the RED wire with the wire tester to verify that flashing turn directional power is present. Label that wire as 'DRIVER SIDE INDICATOR'. Locate the WHITE w/ BLACK STRIPE wire and label that wire as 'DRIVER GROUND'.

Wiring location for the passenger side turn indicator is located on the passenger side door panel area. Locate the PINK 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'. Locate the WHITE w/ BLACK STRIPE wire and label that wire as 'PASSENGER GROUND'. (Fig. 4-1)

NOTE: If turn indicators are not found in the door panel area, see next page (page 9) for details.

Fig. 4-2



2. Route *Signal*® mirror wire harness to open area suitable to make the connection. Cut wires to length making sure enough slack is available for splicing. Follow the procedures on page 10 to splice wires together. (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.



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.

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

WIRE IDENTIFICATION – DRIVER SIDE



Fig. 4-3



1. Wiring location for the driver side turn indicator is located on the driver side kick panel area.
2. Remove the screws securing the speaker to the door panel. Disconnection speaker wires and remove speaker.
3. Remove kick panel. Continue routing the *Signal*® mirror wire harness inside speaker's access hole thru rubber boot and into vehicle. **For easier routing of the *Signal*® mirror wire harness, rubber boot may be disengaged and a gopher wire may be used.**
4. Locate the DARK PINK wire as shown on Fig. 4-3. Turn the ignition key so that electrical power is on and activate the left turn indicator. Probe the DARK PINK wire with the wire tester to verify that flashing turn directional power is present. Label that wire as 'DRIVER SIDE INDICATOR'.
5. Route *Signal*® mirror wire harness to the wiring location. Cut and split the RED wire from the bonded BLACK wire. Route the RED wire to the 'driver side indicator' wire. Make sure enough slack is left for splicing, cut the RED wire to length.
6. Locate a suitable grounding bolt near the driver side kick panel area. Route the BLACK wire to the grounding bolt location. Make sure enough slack is left for splicing, cut the BLACK wire to length.
7. Follow the procedures on the next page to splice wires together.

WIRE IDENTIFICATION – PASSENGER SIDE

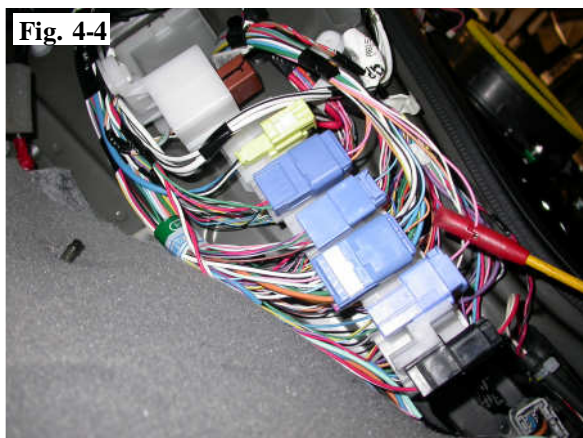


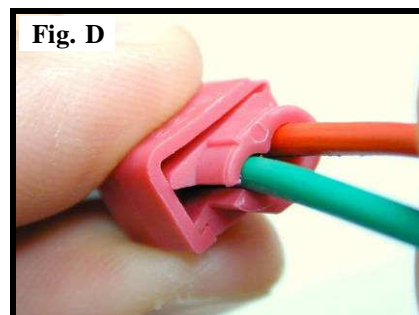
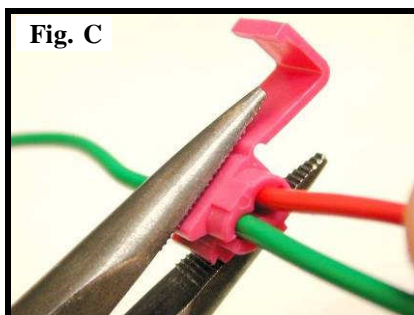
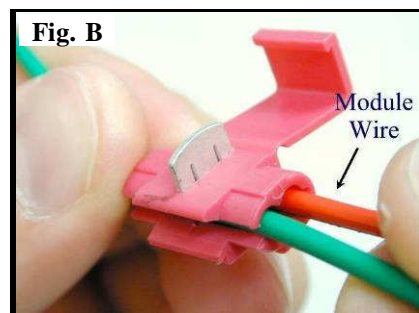
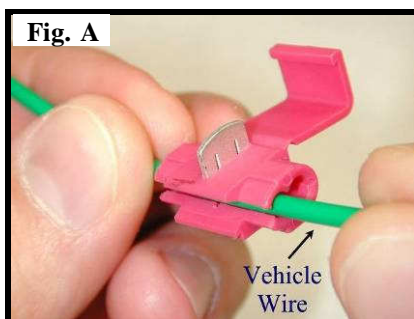
Fig. 4-4



1. Wiring location for the passenger side turn indicator is located on the passenger side kick panel area.
2. Remove the screws securing the speaker to the door panel. Disconnection speaker wires and remove speaker.
3. Remove kick panel. Continue routing the *Signal*® mirror wire harness inside speaker's access hole thru rubber boot and into vehicle. **For easier routing of the *Signal*® mirror wire harness, rubber boot may be disengaged and a gopher wire may be used.**
4. Locate the LIGHT PINK wire as shown on Fig. 4-4. Turn the ignition key so that electrical power is on and activate the left turn indicator. Probe the LIGHT PINK wire with the wire tester to verify that flashing turn directional power is present. Label that wire as 'PASSENGER SIDE INDICATOR'.
5. Route *Signal*® mirror wire harness to the wiring location. Cut and split the RED wire from the bonded BLACK wire. Route the RED wire to the 'passenger side indicator' wire. Make sure enough slack is left for splicing, cut the RED wire to length.
6. Locate a suitable grounding bolt near the passenger side kick panel area. Route the BLACK wire to the grounding bolt location. Make sure enough slack is left for splicing, cut the BLACK wire to length.
7. Follow the procedures on the next page to splice wires together.

* 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.



USE THE INCLUDED WIRE TAPS AND FOLLOW THE FOUR STEPS (TO THE LEFT) TO SPLICE INTO THE TURN INDICATOR AND GROUNDING 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 *Signal*® mirror wire harness into the wire previously labeled 'driver side indicator'.

C. Splice the BLACK wire from the driver side *Signal*® mirror wire harness into the wire previously labeled 'driver ground' or grounding bolt.

D. Splice the RED wire from the passenger side *Signal*® mirror wire harness into the wire previously labeled 'passenger side indicator'.

E. Splice the BLACK wire from the passenger side *Signal*® mirror wire harness into the wire previously labeled 'passenger ground' or grounding bolt.

F. Turn ignition key to the "ON" position and activate each turn indicator to verify proper operation and illumination of *Signal*® mirror.

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

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

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

3,075,779	5,005,009	5,014,167	5,128,659	5,207,492	5,355,284	5,361,190	5,481,409	5,528,422	5,619,374	5,619,375
5,788,357	6,005,724	6,045,243	6,076,948	6,257,746	6,700,123	6,749,325	6,918,685	7,008,091	7,015,642	7,104,676
D394,833	D409,540	D425,466	D426,506	D426,507	D427,128	D428,372	D428,373	D428,842	D429,202	D430,088