

**Part Number: Mounting Kit: PT546-48080**  
**Tuner Assy: 86180-0W031**

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

**Tuner Assy Kit Contents (86180-0W031)**

Item #	Quantity Req'd.	Description
1	1	Tuner Assy, Stereo Component

**Mounting Kit Contents (PT546-48080)**

Item #	Quantity Req'd.	Description
1	1	Ground Cable
2	1	Wire, to Radio Installation
3	2	Tuner Bracket
4	2	Base Bracket
5	1	Template (to locate base bracket)
6	2	Cushion A (Butyl)
7	2	Cushion B (Butyl)
8	1	Antenna
9	3	Hardware Bag
10	1	XM Satellite Radio Brochure

**Hardware Bag Contents – 1 (PT546-48080)**

Item #	Quantity Req'd.	Description
1	4	Nut (M6)
2	4	Screw (M5 × L8)

**Hardware Bag Contents – 2 (PT546-48080)**

Item #	Quantity Req'd.	Description
1	28	Lock Tie A
2	1	Protective Sheet
3	1	Cushion Tape (cord styling)

**Hardware Bag Contents – 3 (PT546-48080)**

Item #	Quantity Req'd.	Description
1	1	Ground Plate
2	1	Lock Tie B (to fix antenna cable)
3	6	Sheet Tape (to fix antenna cable)

**Additional Items Required For Installation**

Item #	Quantity Req'd.	Description
1		

**Conflicts**

iPod Interface, Sirius Satellite Radio
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**Recommended Tools**

<b>Personal &amp; Vehicle Protection</b>	<b>Notes</b>
Safety Goggles	
Seat Covers	
Floor Protectors	
<b>Special Tools</b>	<b>Notes</b>
Arch (Carpet) Punch	5/16" Hole Diameter
<b>Installation Tools</b>	<b>Notes</b>
Ratchet	
Extension	
Socket	10 mm, 14 mm
Torque Wrench	4.1 N•m (36 lbf•in.): Battery Cable, 37 N•m (27 lbf•ft.): Front Seat 10 N•m (7 lbf•ft): Knee air bag ass.
Screw driver	Philips #2
Panel Removal Tool	e.g. Panel Pry Tool #1 Toyota SST # 00002-06001-01
Masking Tape	(2" wide)
Mallet	
Needle-Nose Pliers	
Side Cutter	
<b>Special Chemicals</b>	<b>Notes</b>
Cleaner	3M™ Prep Sol-70

**General Applicability**

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**Recommended Sequence of Application**

Item #	Accessory

\*Mandatory

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

Item #	Quantity Req'd.	Description
1	1	Clip P/N 90950-08005

**Legend**



**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.

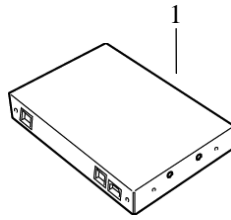


**REVISION MARK:** This mark highlights a change in installation with respect to previous issue.



**SAFETY TORQUE:** This mark indicates that torque is related to safety.

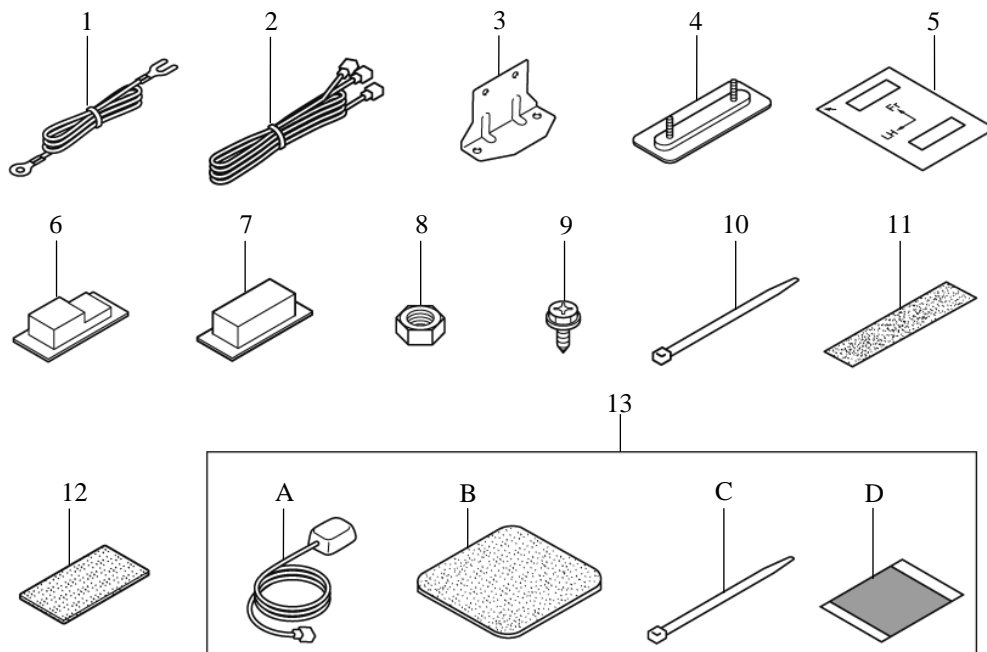
**Parts Description of Tuner Assembly (86180-0W031)**



Item #	Parts Name	Parts No.	Qty
1	Tuner Assy, Stereo Component* <sup>1</sup>	86180-0W030	1

\*<sup>1</sup>: In the installation instructions and figures, this is referred to as “Tuner”.

**Parts Description of Mounting Kit (PT546-48080)**



Item #	Parts Name	Qty
1	Ground Cable	1
2	Wire, to Radio Installation* <sup>2</sup>	1
3	Tuner Bracket	2
4	Base Bracket	2
5	Template (to locate base bracket)	1
6	Cushion A (Butyl)	2
7	Cushion B (Butyl)	2
8	Nut (M6)	4
9	Screw (M5 × L8)	4
10	Lock Tie A	28
11	Protective Sheet	1
12	Cushion Tape (cord styling)	1
13	A Antenna	1
	B Ground Plate	1
	C Lock Tie B (to fix antenna cable)	1
	D Sheet Tape (to fix antenna cable)	6

\*<sup>2</sup> In the installation instructions and figures, this is referred to as “Tuner Cable”.

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.

## NOTES



Removed Parts: -  
Place all removed parts on a protected surface.



Connectors: -  
When disconnecting electrical connectors, do not pull on the wires; pull on the connectors.



Lock Ties: -  
When using lock ties to secure harness, clip the lock ties after securing them.



Machine Screws: -  
Start all machine screws by hand.

## 1. Vehicle Protection

- (a) Set parking brake.
- (b) On the gasoline engine model, disconnect the negative battery cable of the battery installed on the left side of the engine compartment. (Fig. 1-1)

**NOTE:** On the hybrid model, disconnect the negative battery cable of the auxiliary battery installed on the right side of the engine compartment. (Fig. 1-2)

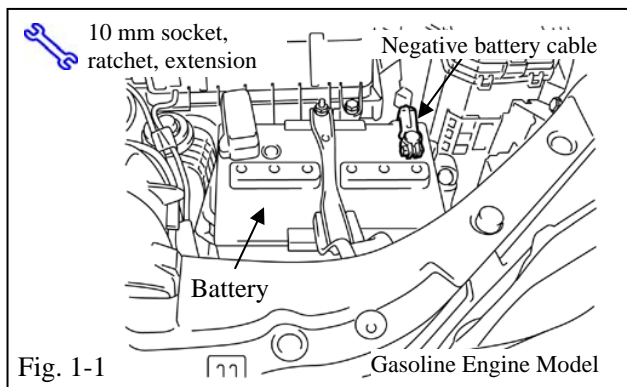


Fig. 1-1

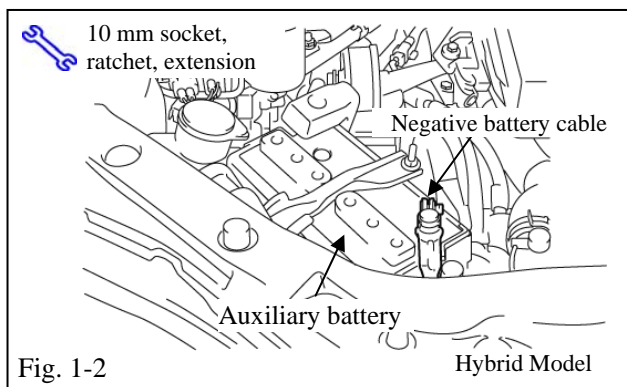


Fig. 1-2



- (1) Protect the fender before starting.



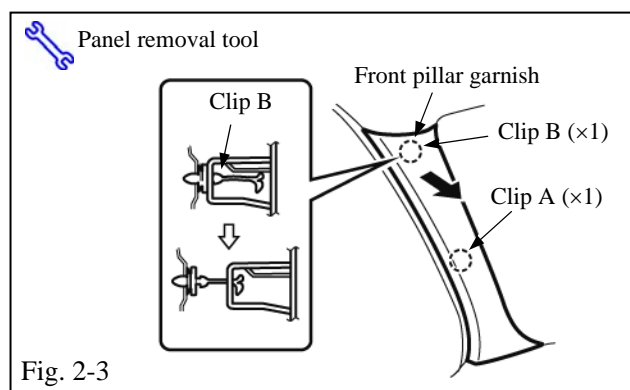
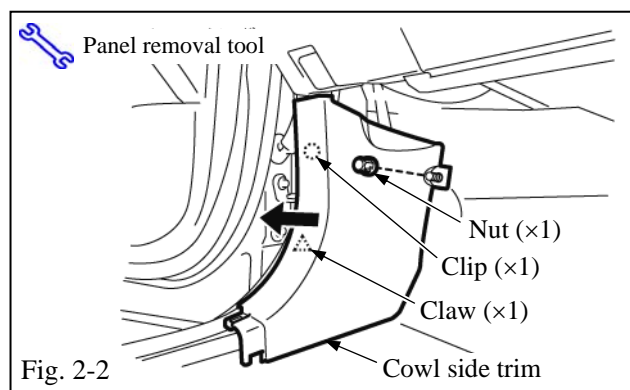
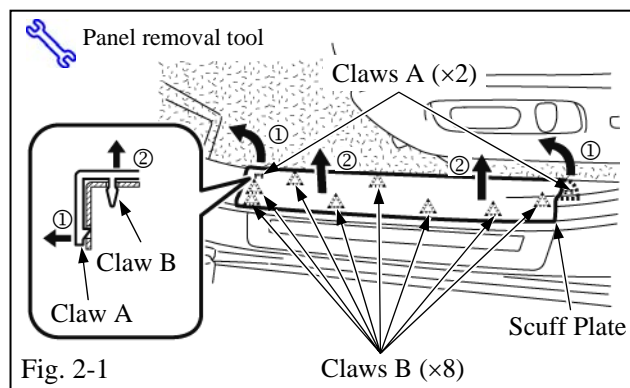
- (2) Do not touch the positive terminal with any tool when disconnecting negative battery cable.



- (c) Cover front seat, rear No. 1 seat, interior of vehicle, and center console.

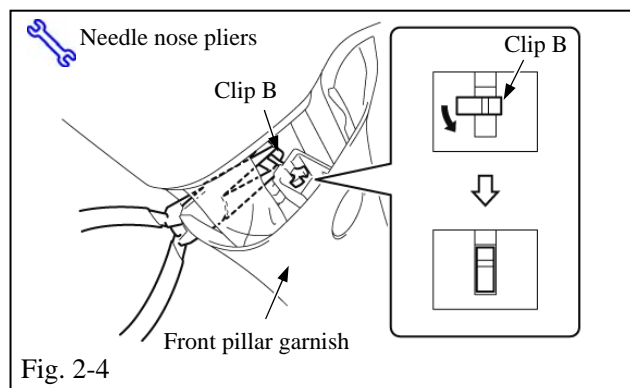


- (d) Wait 90 seconds before proceeding to disassemble vehicle.

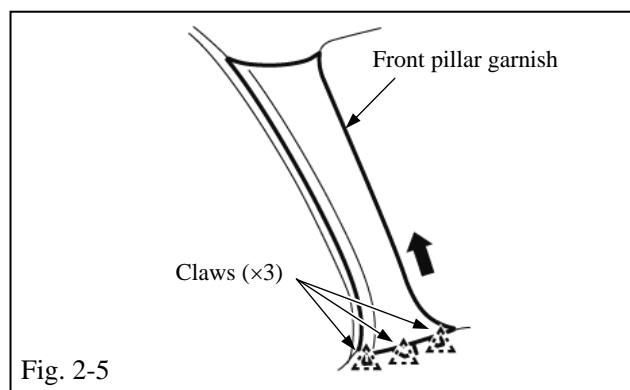


## 2. Disassembly of Vehicle.

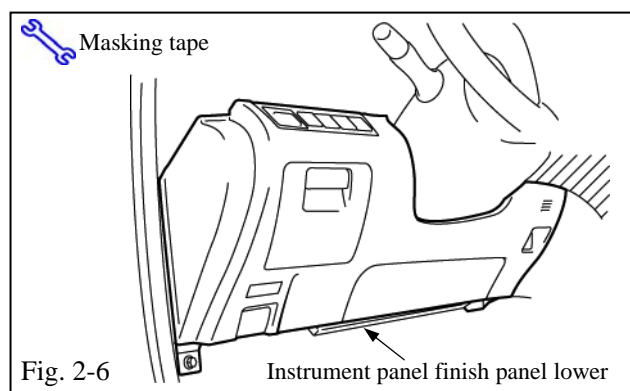
- (a) Pull the front driver side scuff plate in the direction of the arrow, and disengage two (2) claws A and eight (8) claws B. (Fig. 2-1)
- (b) Remove the front driver side cowl side trim in the following steps.
  - (1) Remove one (1) plastic nut. (Fig. 2-2)
  - (2) Pull the front driver side cowl side trim in the direction of the arrow, and disengage one (1) clip and one (1) claw. (Fig. 2-2)
- (c) On the power seat model, connect the negative battery cable.
- (d) Slide the driver seat forward.
- (e) On the power seat model, disconnect the negative battery cable.
- (f) Remove the front door opening trim weatherstrip from the vehicle.
- (g) Remove the driver side front pillar garnish in the following steps.
  - (1) Disengage one (1) clip A from the vehicle. (Fig. 2-3)
  - (2) Pull the front pillar garnish so that the tip of clip B locks in the front pillar garnish hole. (Fig. 2-3)



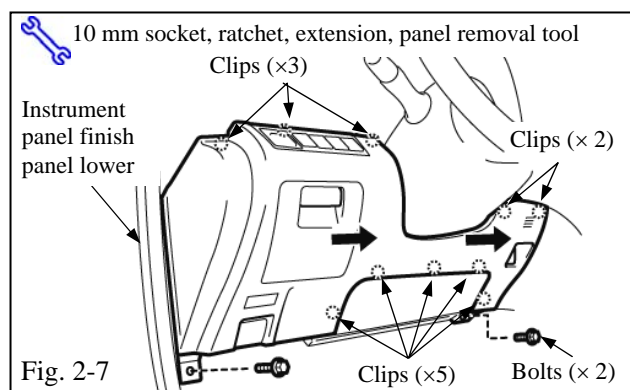
- (3) Using needle-nose pliers, rotate clip B 90°. (Fig. 2-4)



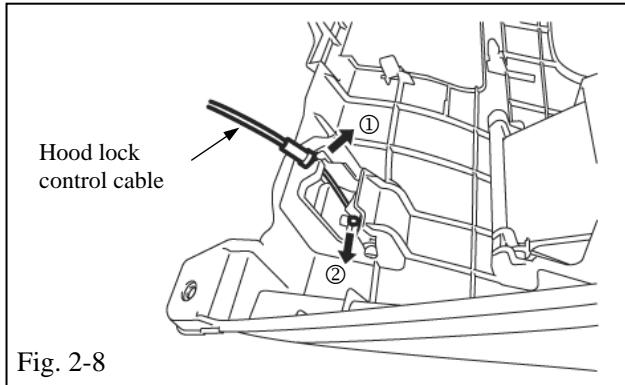
- (4) Pull the front pillar garnish in the direction of the arrow, and disengage three (3) claws. (Fig. 2-5)
- (5) If there is damage to clip B, follow steps (6) and (7); otherwise, proceed to step (h).
- (6) Remove clip B from vehicle. Perform this step only if there is damage to clip B.
- (7) Install a new clip B (P/N 90950-08005) on the front pillar garnish.



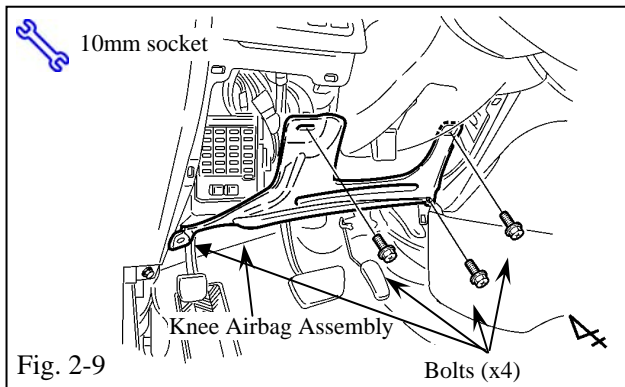
- (h) In order to prevent scratches, apply masking tape around the instrument panel finish panel lower (shaded areas in the figure) before performing the next step. (Fig. 2-6)




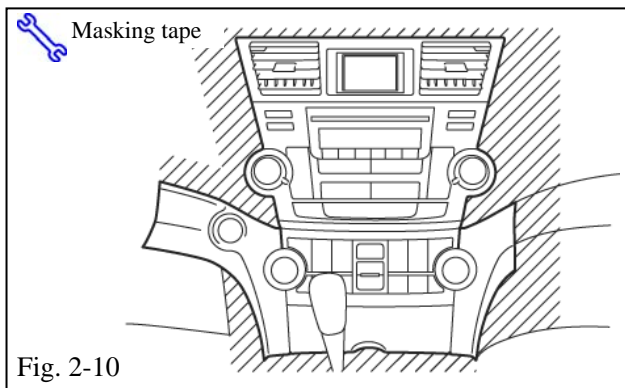
- (i) Remove the instrument panel finish panel lower in the following steps.
- (1) Remove two (2) bolts. (Fig. 2-7)
- (2) Pull the instrument panel finish panel lower in the direction of the arrow, and disengage ten (10) clips. (Fig. 2-7)
- (3) Disconnect electrical connectors.




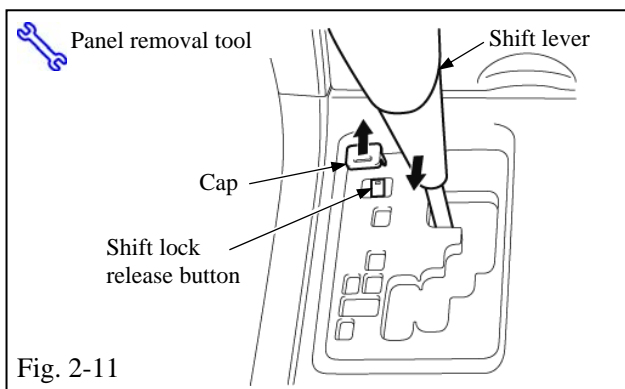
- (4) Disengage the hood lock control cable.  
(Fig. 2-8)




-  (5) Remove knee air bag assembly  
(Fig. 2-9). Torque on reassembly 10  
N·m (7 lbf·ft).
- (6) Support knee air bag assembly with  
cardboard box so as to not put stress on  
cables.

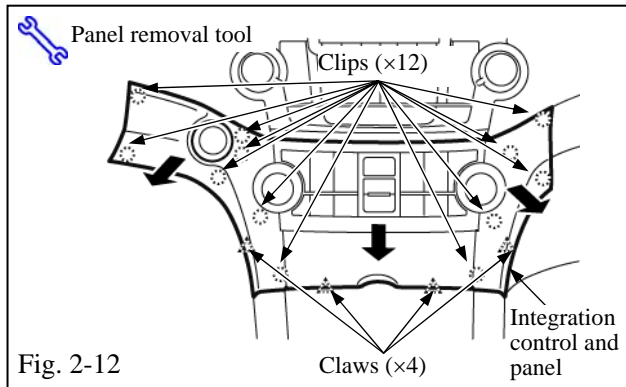


-  (j) In order to prevent scratches, apply  
masking tape around the center cluster  
(shaded areas in the figure) before  
performing the next step. (Fig. 2-10)



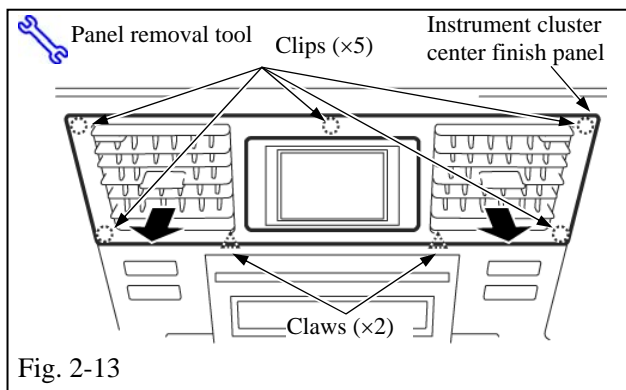
- (k) Remove the cap of the shift lock release  
button. (Fig. 2-11)
- (l) Press the shift lock release button and  
move the shift lever to position D.  
(Fig. 2-11)

-  (1) Protect gear shift knob with towel.

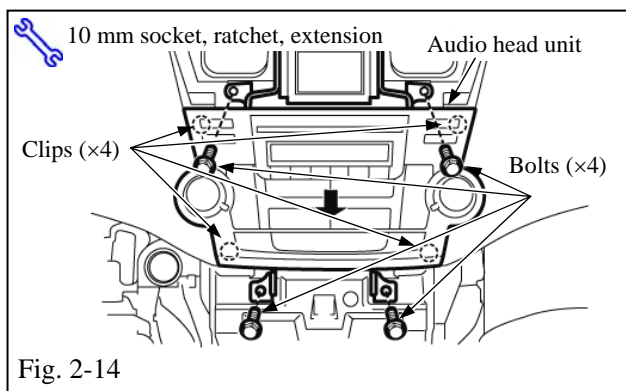


(m) Remove the integration control and panel in the following steps.

- (1) Pull the integration control and panel in the direction of the arrow, and disengage twelve (12) clips and four (4) claws. (Fig. 2-12)
- (2) Disconnect electrical connectors.



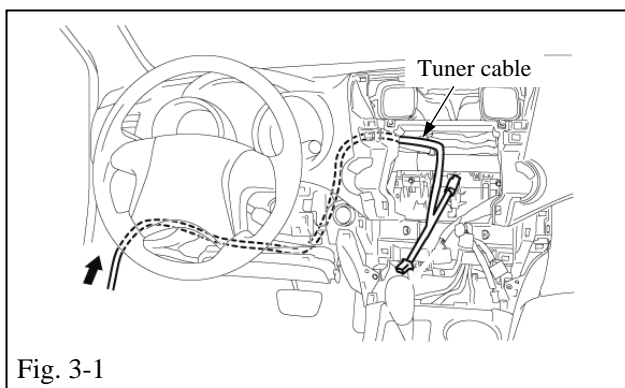
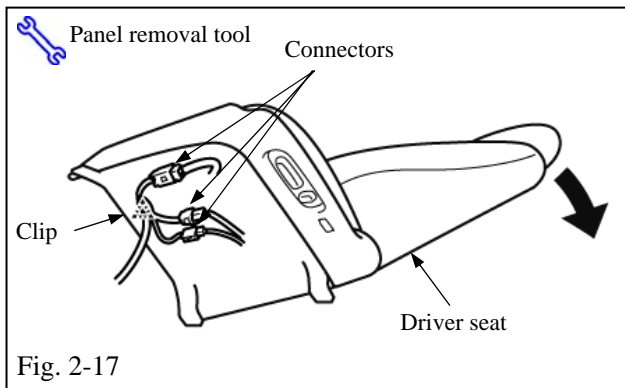
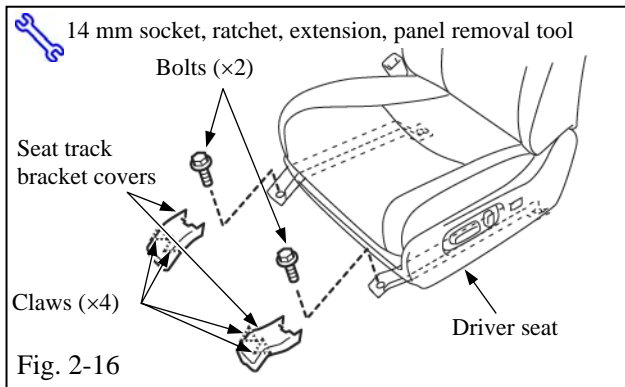
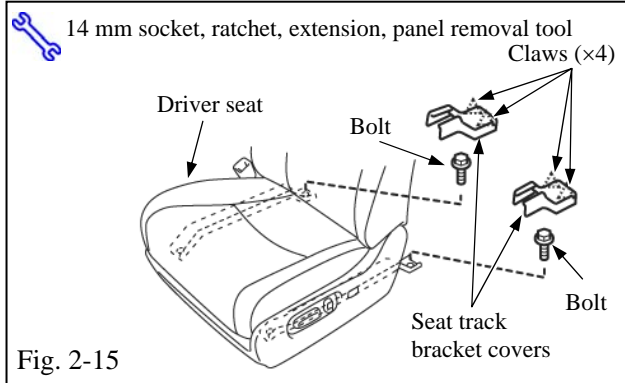
(n) Pull the instrument cluster center finish panel in the direction of the arrow, and disengage five (5) clips and two (2) claws. (Fig. 2-13)



(o) Remove the audio head unit in the following steps.

- (1) Remove four (4) bolts. (Fig. 2-14)
- (2) Pull the audio head unit in the direction of the arrow, and disengage four (4) clips. (Fig. 2-14)
- (3) Disconnect electrical connectors.





(p) Disassemble the driver seat as follows:

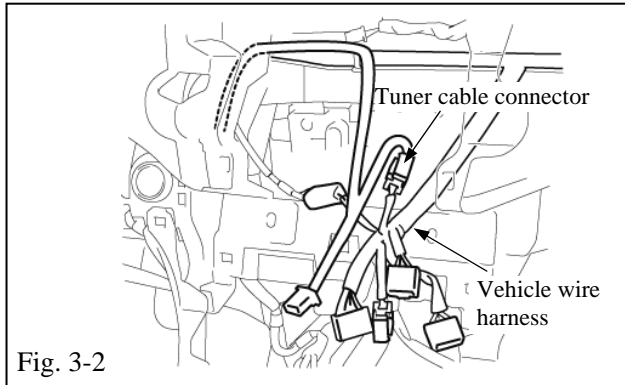


- (1) Protect the center console, floor, and rear No. 1 seat area.
- (2) On the power seat model, connect the negative battery cable.
- (3) Slide the driver seat forward.
- (4) Pull the seat track bracket covers on the rear side, and disengage four (4) claws. (Fig. 2-15)
- (5) Remove two (2) bolts on the rear side. (Fig. 2-15)
- (6) Slide the driver seat rearward.
- (7) Pull the seat track bracket covers on the front side, and disengage four (4) claws. (Fig. 2-16)
- (8) Remove two (2) bolts on the front side. (Fig. 2-16)
- (9) On the power seat model, disconnect the negative battery cable.
- (10) Tilt seat back and remove clip under seat. (Fig. 2-17)

### 3. Route the Tuner Cable

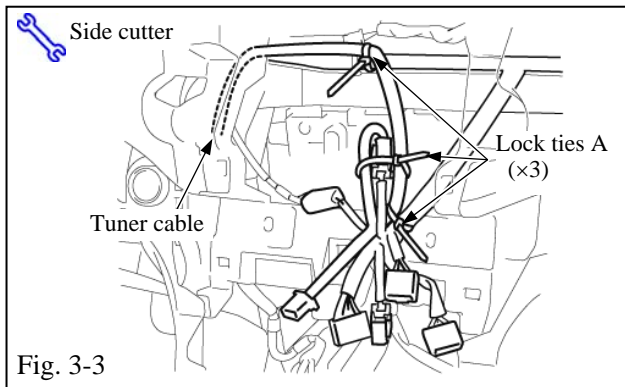
- (a) Tilt up the steering wheel to the highest position.
- (b) Route the tuner cable from the instrument panel through the center cluster as shown. (Fig. 3-1)



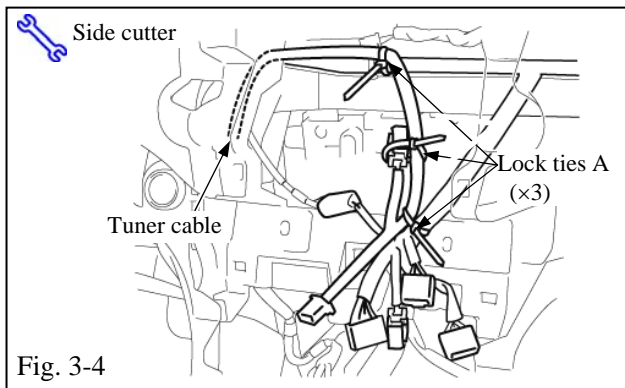


- (c) Connect the vehicle wire harness connector (12-pin) that was connected to the audio head unit to the tuner cable connector. (Fig. 3-2)

**NOTE:** Some models don't have the 12-pin connector for the vehicle wire harness.

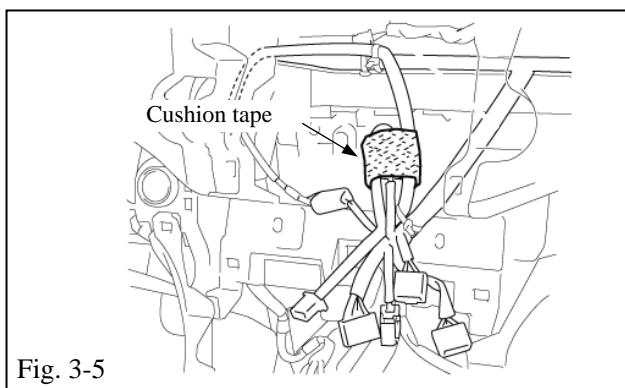


- (d) Secure the tuner cable with three (3) lock ties A. (Fig. 3-3)

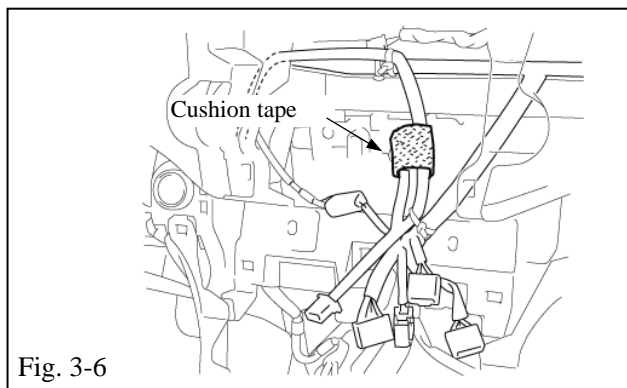


**NOTE:** On the model without the 12-pin connector for the vehicle wire harness, secure the tuner cable as shown in the figure. (Fig. 3-4)

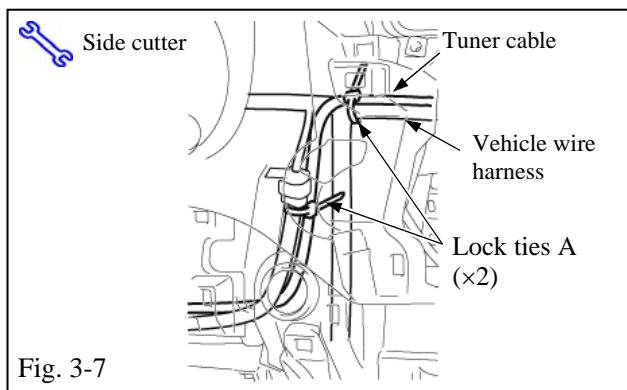
- (e) Use a side cutter to cut off the excess lock ties length.



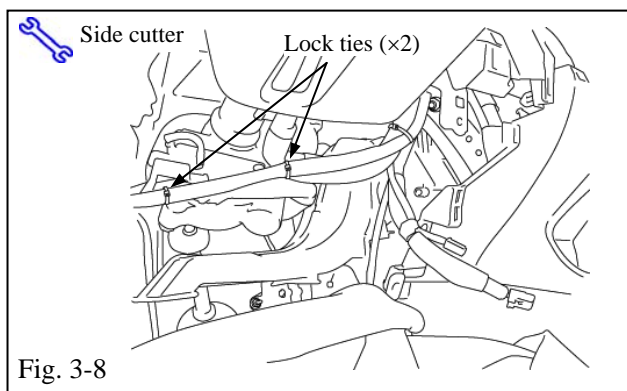
- (f) Apply cushion tape to the connector. (Fig. 3-5)



**NOTE:** On the model without the 12-pin connector for the vehicle wire harness, apply cushion tape as shown in the figure. (Fig. 3-6)



- (g) Secure the tuner cable with two (2) lock ties A. (Fig. 3-7)
- (h) Use a side cutter to cut off the excess lock ties length.

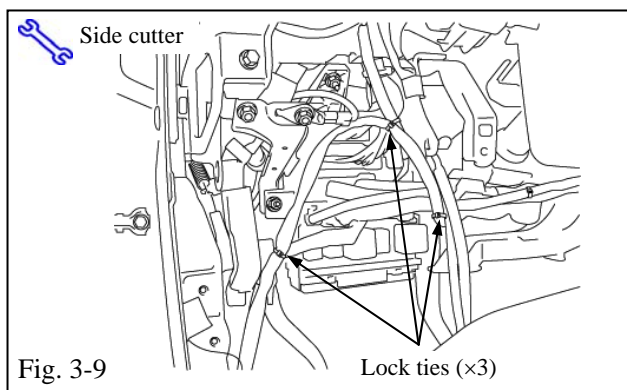


- (i) Secure the tuner cable with two (2) lock ties A. (Fig. 3-8)

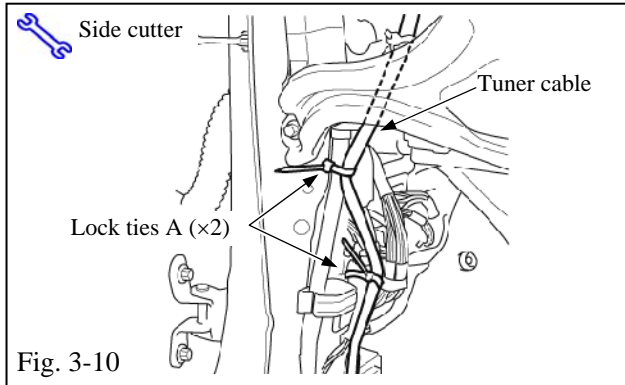


**NOTE:** Secure the tuner cable behind the vehicle wire harness to avoid interference by the edge of the instrument panel reinforcement tray.

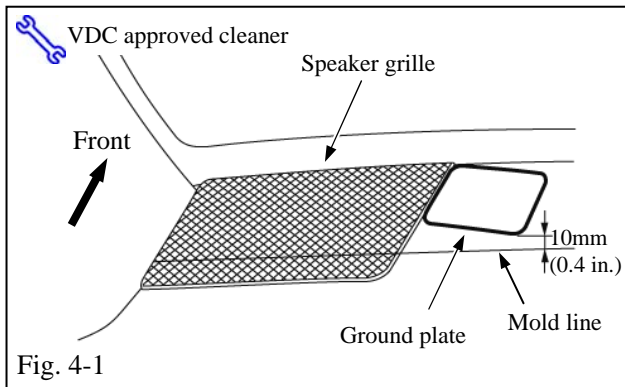
- (j) Use a side cutter to cut off the excess lock ties length.



- (k) Secure the tuner cable with three (3) lock ties A. (Fig. 3-9)
- (l) Use a side cutter to cut off the excess lock ties length.



- (m) Secure the tuner cable with two (2) lock ties A. (Fig. 3-10)
- (n) Use a side cutter to cut off the excess lock ties length.



#### 4. Install the Antenna

- (a) Clean the ground plate mounting area with 3M™ Prep Sol-70. (Fig. 4-1)

- (b) When cleaning with 3M™ Prep Sol-70.



- (1) Always use a clean (lint-free, scratch resistant) soft cloth (or wipe), and clean a small area at a time (~ 3 ft. × 3 ft. max.).

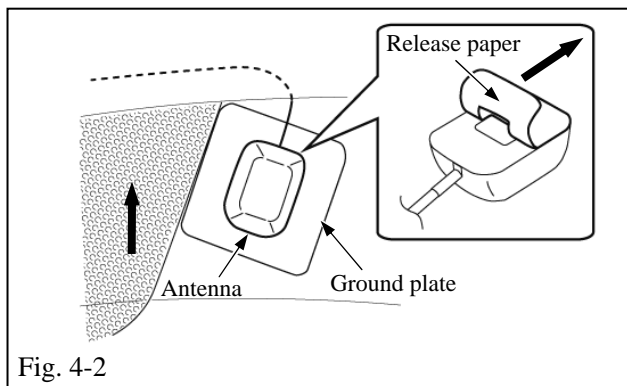
- (2) Shake cleaner well.



- (3) Apply 3M™ Prep Sol-70 to cloth or wipe. Do not spray cleaning solution directly on any vehicle surfaces.

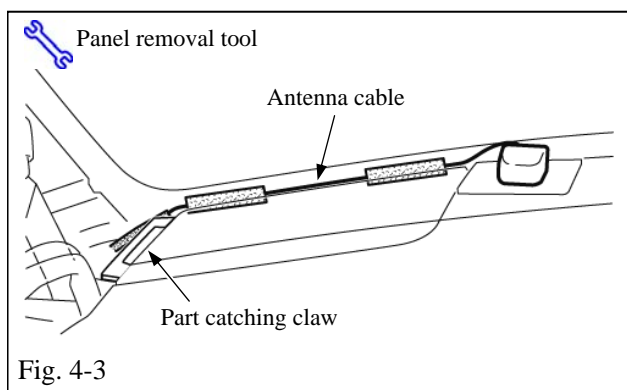
- (4) Clean surface thoroughly and wipe dry immediately with a new clean cloth. Do not allow cleaner to air dry.

- (c) Remove the release paper from the back of ground plate, and then affix the ground plate according to the edge of the speaker grille. (Fig. 4-1)



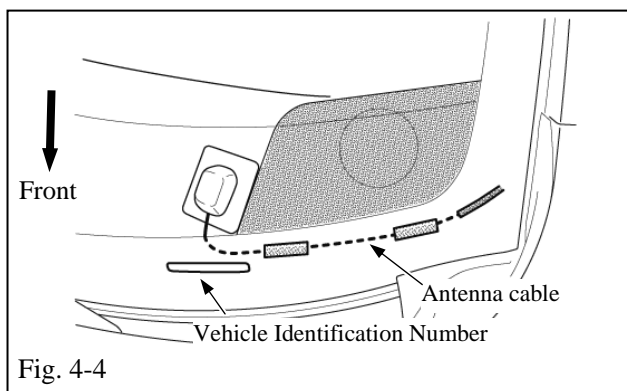
(d) Remove the release paper from the back of antenna, and then affix the antenna onto the ground plate. (Fig. 4-2)

(1) Once attached, the antenna cannot be easily removed.

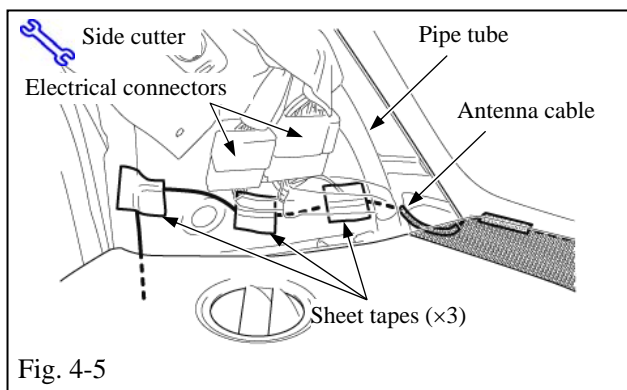


(e) Route the antenna cable between the instrument panel and the windshield using the panel removal tool to press the cushions into place. (Fig. 4-3)

**NOTE:** Route the antenna cable under the part that catches the claws of the front pillar garnish in the instrument panel. (Fig. 4-3)

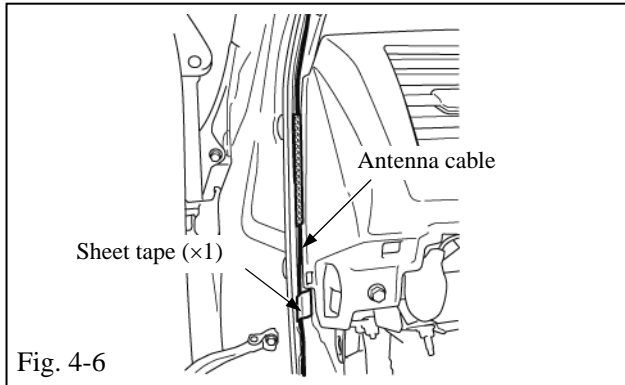


**NOTE:** When routing, be careful that the antenna cable does not protrude over the window for confirming the vehicle identification number. (Fig. 4-4)

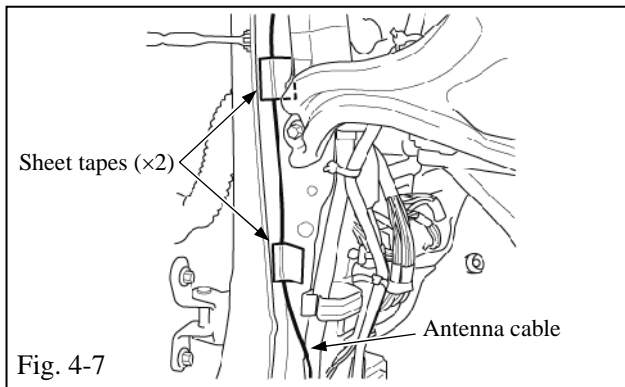


(f) Route the antenna cable, and then use three (3) sheet tapes to install the antenna cable. (Fig. 4-5)

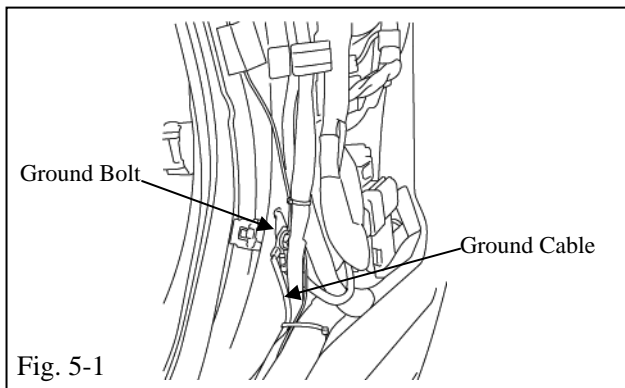
**NOTE:** When applying the sheet tapes, be careful not to pull or stress the pipe tube and electrical connector.



- (g) Remove the front door opening trim weather strip. (Fig. 4-6)
- (h) Route the antenna cable, and then use one (1) sheet tape to install the antenna cable. (Fig. 4-6)

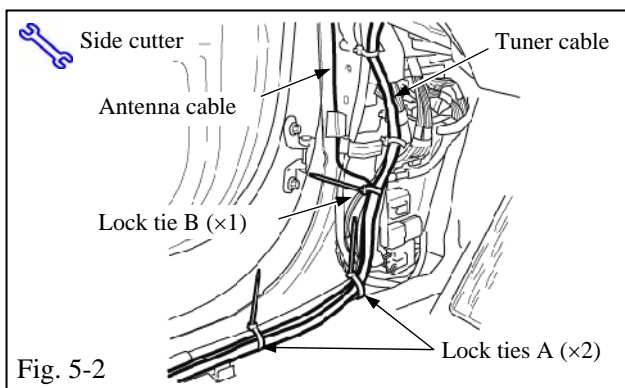


- (i) Route the antenna cable, and then use two (2) sheet tapes to install the antenna cable. (Fig. 4-7)

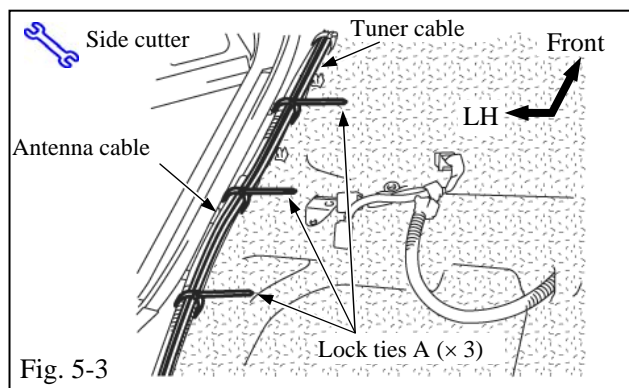


## 5. Install the Ground Cable

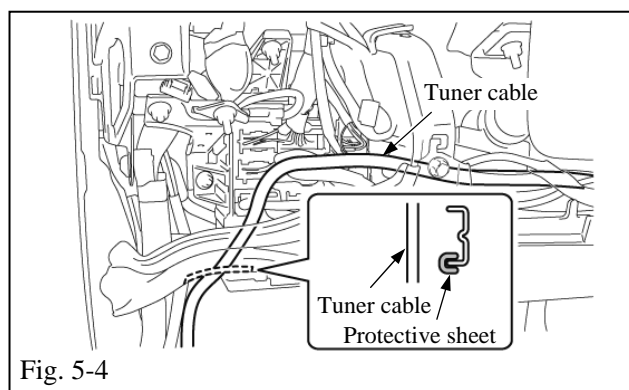
- (a) Install the spade end of the ground cable onto the ground bolt located in the driver side cowl area. (Fig. 5-1)



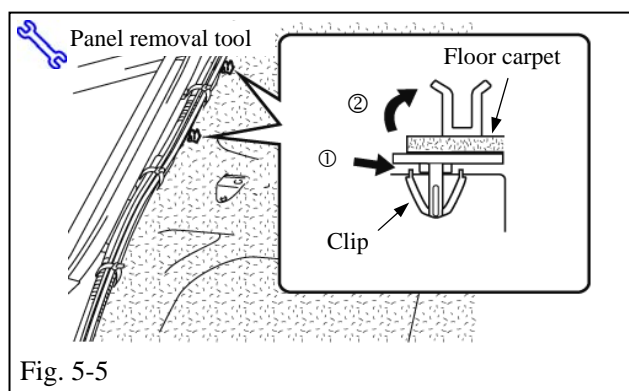
- (b) Route the tuner cable, the ground cable, and the antenna cable, and then secure them with two (2) lock ties A and one (1) lock tie B. (Fig. 5-2)
- (c) Use a side cutter to cut off the excess lock ties length.



- (d) Route the tuner cable, the ground cable, and the antenna cable, and then secure them with three (3) lock ties A. (Fig. 5-3)
- (e) Use a side cutter to cut off the excess lock ties length.
- (f) Reassemble the knee air bag assembly to the lower instrument panel.



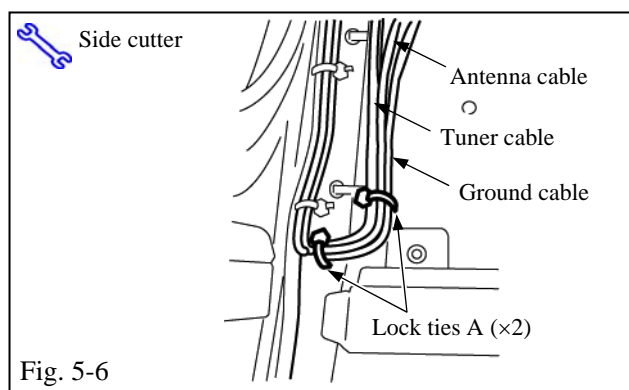
- (g) Put protective sheet on the area as shown in Fig. 5-4.



- (h) Peel back the floor carpet and felt.

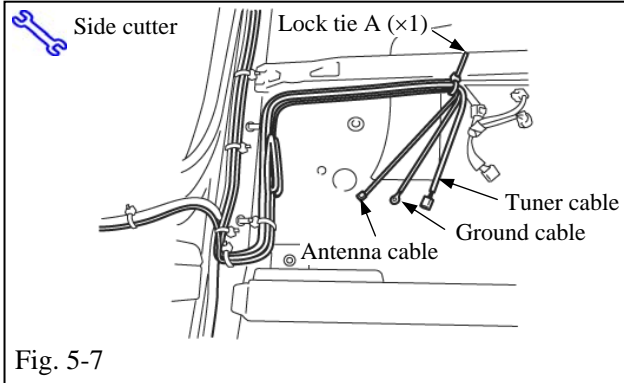


- (1) Carefully disengage the clips of the floor carpet. (Fig. 5-5)

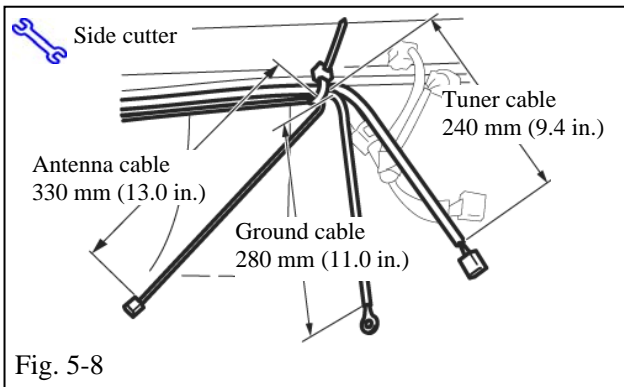


- (i) Route the tuner cable, the antenna cable, and the ground cable, and then secure them with two (2) lock ties A. (Fig. 5-6)
- (j) Use a side cutter to cut off the excess lock ties length.

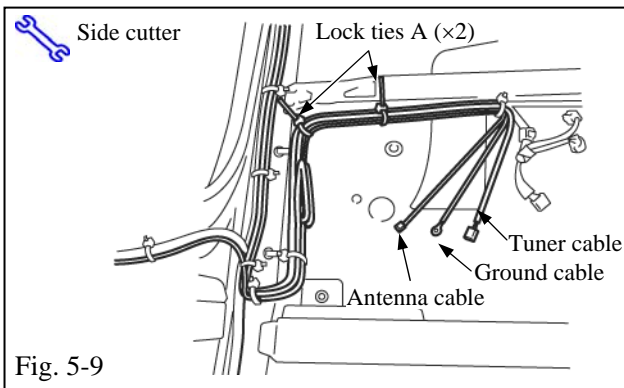




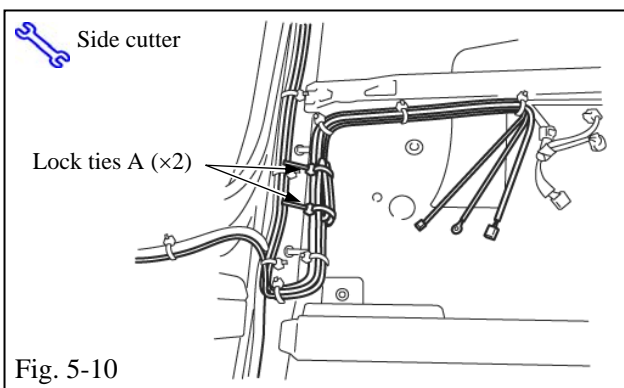
- (k) Route the tuner cable, the antenna cable, and the ground cable, and then secure them with one (1) lock tie A. (Fig. 5-7)



- (l) Secure the tuner cable with 240 mm (9.4 in.) of length, antenna cable with 330 mm (13.0 in.) of length, and ground cable with 280 mm (11.0 in.) of length, to the wire harness with a lock tie A. (Fig. 5-8)

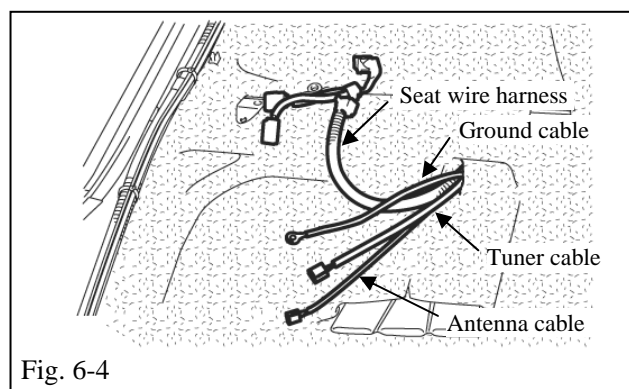
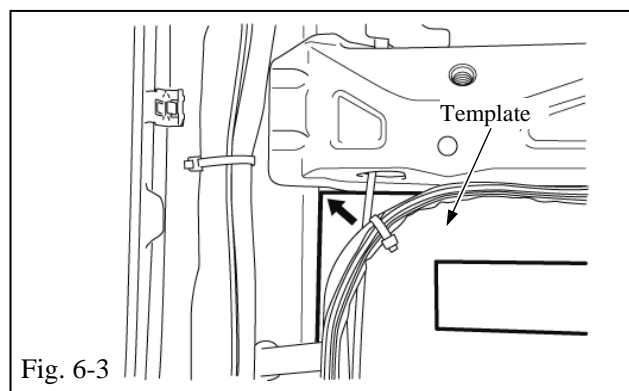
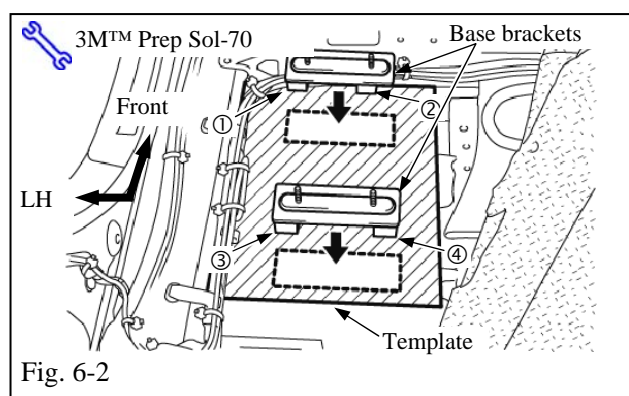
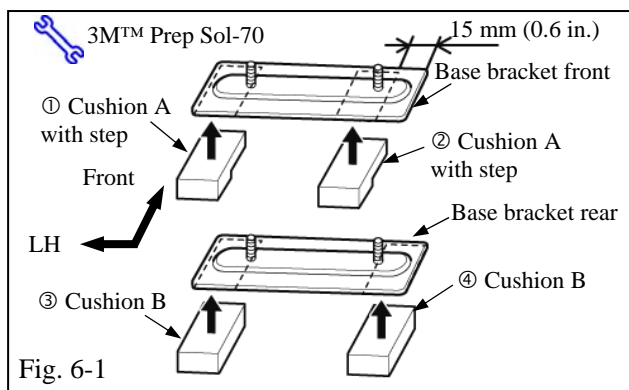


- (l) Use a side cutter to cut off the excess lock tie length.
- (m) Route the tuner cable, the antenna cable, and the ground cable, and then secure them with two (2) lock ties A. (Fig. 5-9)
- (n) Use a side cutter to cut off the excess lock ties length.



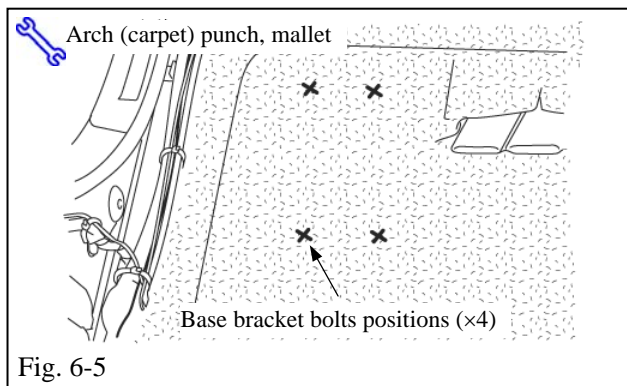
- (o) Even out the length of the cables and secure the excess tuner cable, the excess antenna cable, and the excess ground cable with two (2) lock ties A. (Fig. 5-10)
- (p) Use a side cutter to cut off the excess lock ties length.



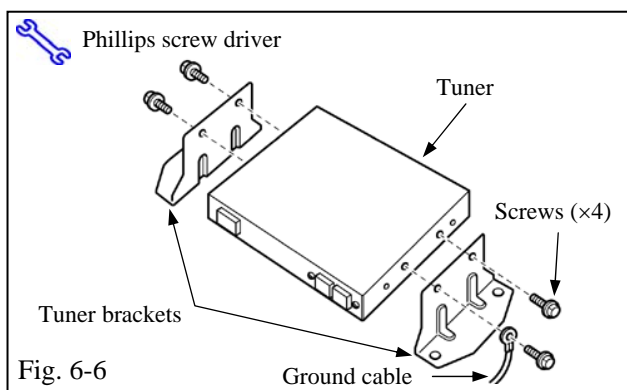


## 6. Install the Tuner

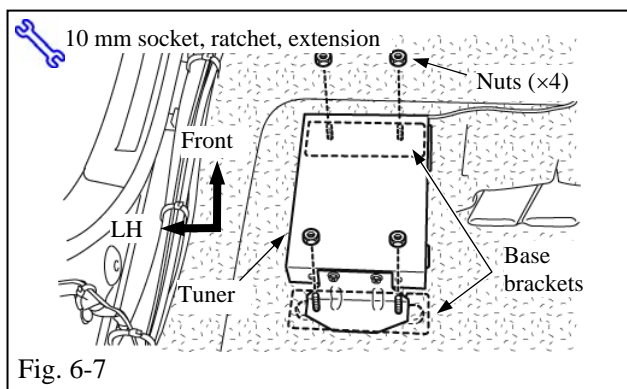
- (a) Clean the base bracket mounting surface with 3M™ Prep Sol-70 using the method defined in Step 4(b). (Fig. 6-1)
- (b) Install two (2) cushions A (butyl) and two (2) cushions B (butyl) onto the bottom of each base bracket. (Fig. 6-1)
- (c) Clean the base bracket mounting surface of the vehicle floor pan with 3M™ Prep Sol-70 using the method defined in Step 4(b). (Fig. 6-2)
- (d) Position template (to locate base bracket) under the driver seat as shown. (Fig. 6-2, Fig. 6-3)
- (e) Remove the release paper from the four (4) cushions (butyl), and then secure the base brackets over template as shown. (Fig. 6-2)
- (f) Remove the template.
- (g) Route the tuner cable, the antenna cable, the ground cable, and the seat wire harness through the floor carpet hole; then reinstall the floor carpet. (Fig. 6-4)



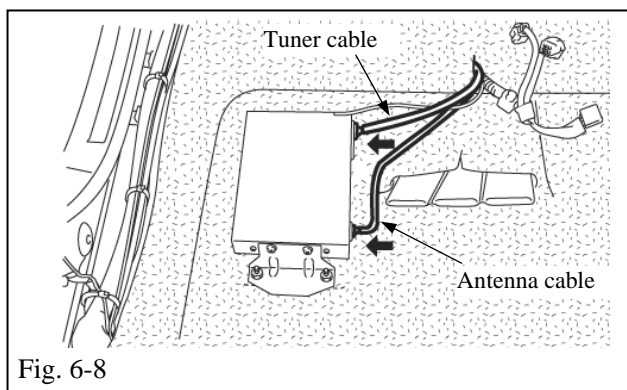
- (h) Verify the base bracket bolt positions.  
Transfer each bolt location onto the floor carpet using arch (carpet) punch and mallet to cut four (4) holes in floor carpet.  
(Fig. 6-5)
- (i) Pass the base bracket bolts through the floor carpet.



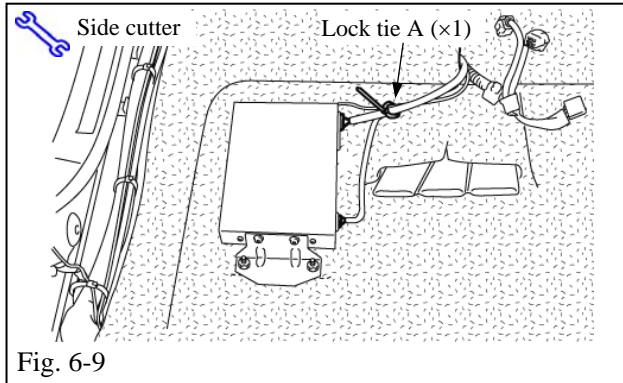
- (j) Install the tuner brackets and ground cable onto the tuner. (Fig. 6-6)



- (k) Secure the tuner onto the base brackets so the connectors face toward the right of the vehicle. (Fig. 6-7)

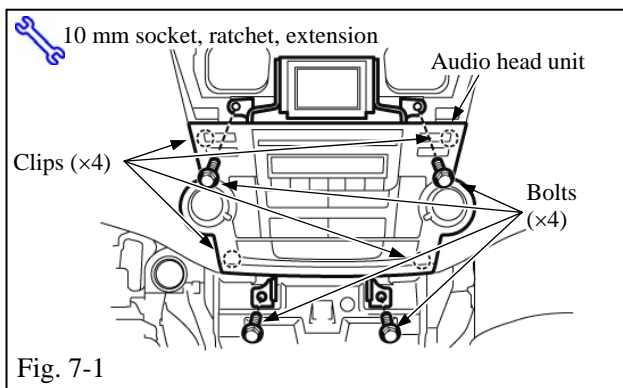


- (l) Plug the tuner cable and the antenna cable into the tuner. (Fig. 6-8)
- (1) Connect the antenna cable connector to the tuner.
- (2) Connect the tuner cable connector to the tuner.



(m) Secure the tuner cable, antenna cable, and ground cable with one (1) lock tie A.  
(Fig. 6-9)

(n) Use a side cutter to cut off the excess lock ties length.



## 7. Reinstall the Audio Head Unit

- (a) Connect the tuner cable connector and the electrical connectors removed in Step 2(o)(3) into the rear of the audio head unit.
- (b) Insert audio head unit into opening and reinstall the four (4) bolts. (Fig. 7-1)

## 8. In Process Functional Test

- (a) On the gasoline engine model, temporarily reconnect the negative battery cable of the battery installed on the left side of the engine compartment.

**NOTE:** On the hybrid model, temporarily reconnect the negative battery cable of the auxiliary battery installed on the right side of the engine compartment.

- (b) Turn the engine/power switch to ON (ACC).
- (c) Press the power button on the audio head unit. Verify that backlighting illuminates.

(d) Press and release the “SAT” button on the audio head unit.

(1) Verify that a satellite channel is received, or a “NO SIGNAL” message appears on the display.

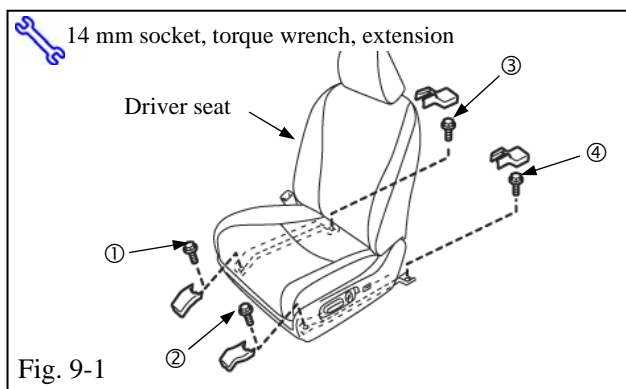
**NOTE:** If “ANTENNA” appears (flashing) on the display, then the antenna cable is disconnected from the tuner.

**NOTE:** If the audio head unit will not tune or go into satellite mode, then the tuner cable is disconnected from the tuner.

(e) Turn the engine/power switch to OFF.

(f) On the gasoline engine model, disconnect the negative battery cable of the battery installed on the left side of the engine compartment.

**NOTE:** On the hybrid model, disconnect the negative battery cable of the auxiliary battery installed on the right side of the engine compartment.



## 9. Complete the Reassembly of Vehicle



(a) Reconnect any disconnected electrical connectors.

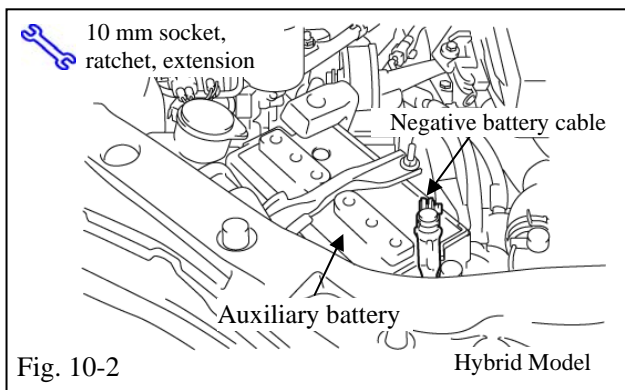
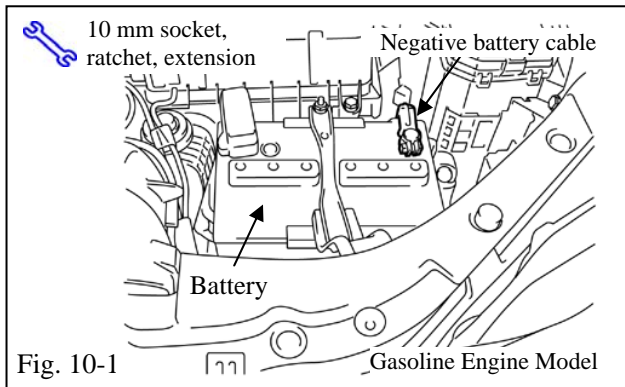


(b) Verify the panels fit together properly with no uneven gaps between them.

(c) Reinstall the front seat. (Fig. 9-1)

(1) Reinstall the four (4) bolts loosely, then tighten them in the following order:

Front inner side bolt  
Front outer side bolt  
Rear inner side bolt  
Rear outer side bolt



(2) Tighten bolts to 37 N•m (27 lbf•ft.)

(d) Clean up and remove any trash.

(e) Place the “XM Satellite Radio” owner brochure in the glove box.



(f) Reinstall the knee air bag assembly. 10 N•m (7 lbf•ft).

### 10. Reconnect Negative Battery Cable

(a) On the gasoline engine model, reconnect the negative battery cable of the battery installed on the left side of the engine compartment. (Fig. 10-1)

**NOTE:** On the hybrid model, reconnect the negative battery cable of the auxiliary battery installed on the right side of the engine compartment. (Fig. 10-2)



(1) Tighten the nut to 4.1 N•m (36 lbf•in.).



(2) Do not touch the positive terminal with any tool when installing the negative battery cable.

Checklist - these points **MUST** be checked to ensure a quality installation.

Check:

Look For:

Accessory Function Checks

- ☐ Satellite radio
- ☐ Audio head unit
- ☐ Navigation system

Verify the proper operation of the satellite radio.\*

Verify the proper operation of the audio head unit.\*

\*: Refer to the XM Satellite Radio Brochure and audio head unit owner's manuals.

Execute DTC check, and confirm there is no error. (Refer to the HIGHLANDER Repair Manual.)

Vehicle Function Checks

- ☐ Hazard switch
- ☐ Navigation
- ☐ Driver's seat belt reminder light
- ☐ Removed seat
- ☐ Seat lock mechanism
- ☐ SRS warning light
- ☐ HVAC (heating ventilation and air conditioning) system
- ☐ SSP function
- ☐ Hood lock control cable
- ☐ Instrument panel finish panel lower functions (Any electrical connector removed in step 2(i)(3). Fig 2-9)

Proper operation of the hazard switch.

Verify that GPS icon appears on NAV display.

Proper operation of the driver's seat belt reminder light.

Verify the removed seat is securely fastened.

Verify the proper operation of the removed seat lock mechanism.

Verify the SRS warning light illuminates for approximately 6 seconds with the engine/power switch ON, and then goes out.

Proper operation of the air conditioning system.

Verify the radio SSP function is set to "HIGHLANDER" by pressing the "SSP" button on the audio head unit for 5 seconds. (If not, press the volume control and set to "HIGHLANDER".)

Proper operation of the hood lock control cable.

Verify the proper operation of the instrument panel finish panel lower functions.