



RAV4

TNS310 (Traffic) Plus

RHD installation instructions



Model year: 2005

Vehicle code: **A3***-*****W

Part number TNS310 Plus: • Sub wire harness No 1: 08673-64801
• Sub wire harness No 2: 08673-64800

Part number TNS310 Traffic Plus: • RDS-antenna kit: PZ445-T9281-00
• RDS-tuner kit: PZ445-T9331-00

Manual ref. n°: AIM 000 552-0

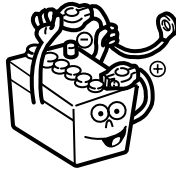
Revision Record

Rev. N°	Date	Page	Picture	Update	New	Deleted steps

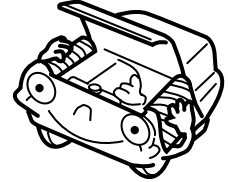
PRECAUTIONS

PLEASE READ THOROUGHLY THESE PRECAUTIONS BEFORE THE INSTALLATION

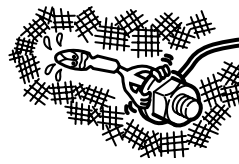
- Be sure to disconnect the negative (-) lead from the battery terminals.



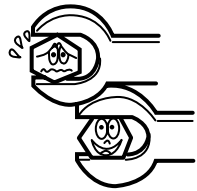
- Protect your car with fender covers, seat and so on.



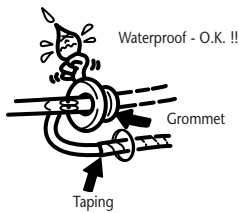
- Do not pinch the rear wiring or harness in the tightened part.



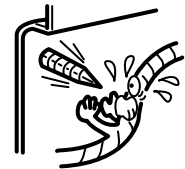
- Use the correct tool when tightening bolts or nuts.



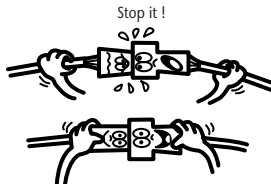
- When passing the wires through the dashboard or other panels, use a grommet to ensure waterproofing.
- Protect the wiring with tape when it is passed through a hole.



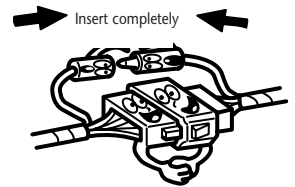
- Before drilling a hole, check that the rear of the mounting wall is clear.



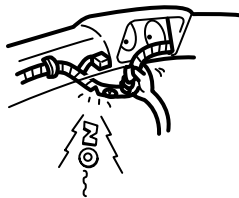
- When disconnecting the connectors, be sure to grip the connector body. Do not tug on the wiring.



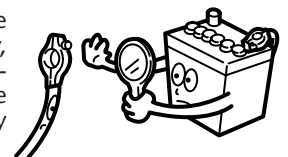
- Be sure to firmly tighten connectors and terminals.



- Do not forcibly pull any car wiring harness. Rough tugging may result in opened connections, or a broken wire or harness.



- Before connecting the power wiring to the battery, check the wiring connections, harness, etc. to see that they are properly secured.



- Confirm that lamps, horn, wiper and other car accessories operate normally.



- Check body and trim near area of installation to be certain no dirt or scratches resulted from the installation.

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REMARK:

Be sure to read the General Installation Instructions (Common Section) before installing TNS310.

APPLICATION CHART



(LHD+RHD)

RAV4 **A3***_*-*****W

AUDIO & NAVIGATION APPLICATION CHART
TNME-C3GDP - December 9th, 2005

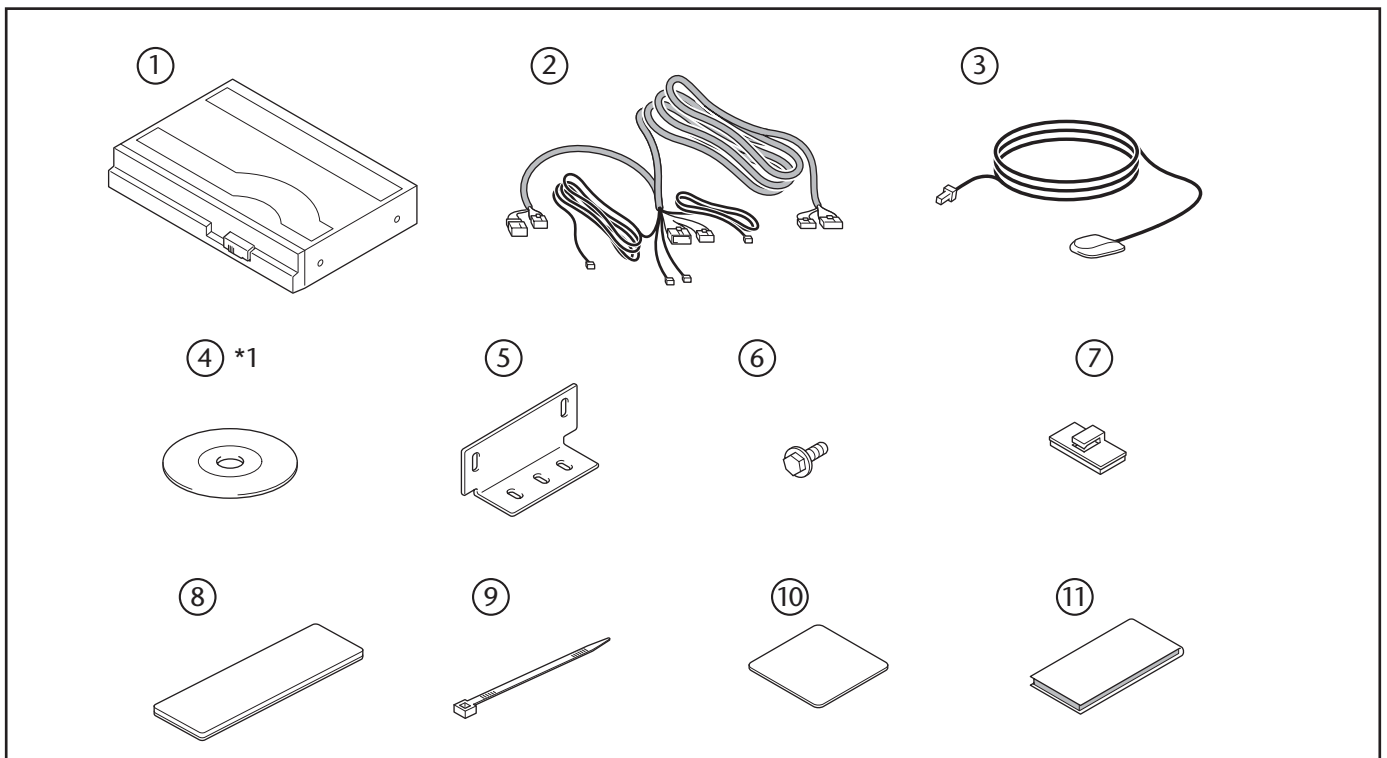
+ ADD-ON UNIT(S)

		Subwoofer (08691-00634) Hide-Away CD-Changer TMO461 (08607-00911)		Navigation System TNS310 PLUS (08545-52802) Navigation System TNS310 TRAFFIC PLUS (PZ445-00300-00)		REQUIRED ADDITIONAL PARTS	
COMBINATION		HEAD UNIT					
1	CD-Tuner (only)	86120-42140				"	
2	CD-Tuner + H/A CD changer	86120-42140	● (1)			"WH 08695-00370"	
3	CD-Tuner + Subwoofer	86120-42140	● (3)			"Bracket PZ425-X0240-60 LHS OR Bracket PZ425-X0241-60 R+S"	
4	CD-Tuner + H/A CD changer + Subwoofer	86120-42140	● (1) ● (2)			"WH 08695-00370 + Bracket PZ425-X0240-60 LHS"	
5	CD changer-Tuner (only)	86120-42220*				"	
6	CD changer-Tuner + Subwoofer	86120-42220*	● (3)			"Bracket PZ425-X0240-60 LHS OR Bracket PZ425-X0241-60 R+S"	
7	UDA + TNS310 PLUS or TNS310 TRAFFIC PLUS	86120-42140 or 86120-42220 86120-42140 or 86120-42220	● (2) ● (2)	● (2)	● (2)	"WH 08673-64800 + WH 08673-64801" "WH 08673-64800 + WH 08673-64801"	
8	UDA + H/A CD-Changer + TNS310 PLUS or TNS310 TRAFFIC PLUS	86120-42140 or 86120-42220 86120-42140 or 86120-42220	● (1) ● (1)	● (2) ● (2)	● (2)	"WH 08695-00370 + WH 08673-64801" "WH 08695-00370 + WH 08673-64801"	
9	UDA + Subwoofer + TNS310 PLUS or TNS310 TRAFFIC PLUS	86120-42140 or 86120-42220 86120-42140 or 86120-42220	● (1) ● (1)	● (2) ● (2)	● (2)	"WH 08695-00370 + WH 08673-64801 + Bracket PZ425-X0241-60 R+S" "WH 08695-00370 + WH 08673-64801 + Bracket PZ425-X0241-60 R+S"	

(1) Located under the RH seat
 (2) Located under the LH seat
 (3) Free choice to locate under RH or LH seat
 * Not compatible with hide-away CD-changer

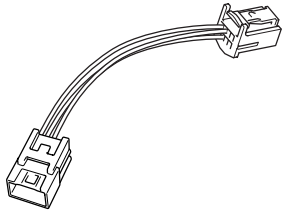
TNS310 PLUS SYSTEM ASSEMBLY


08545-52801



N°	Description	Qty
①	NAVIGATION-ECU	1
②	WIRE HARNESS	1
③	RDS ANTENNA	1
④	NAVIGATION DISC (*1)	1
⑤	NAVIGATION-ECU BRACKET	2
⑥	BOLT (M5 x 8)	4
⑦	WIRE CLAMP	2
⑧	FOAM TAPE	2
⑨	WIRE TIE	5
⑩	EARTH PLATE	1
⑪	ADHESIVE TAPE	4

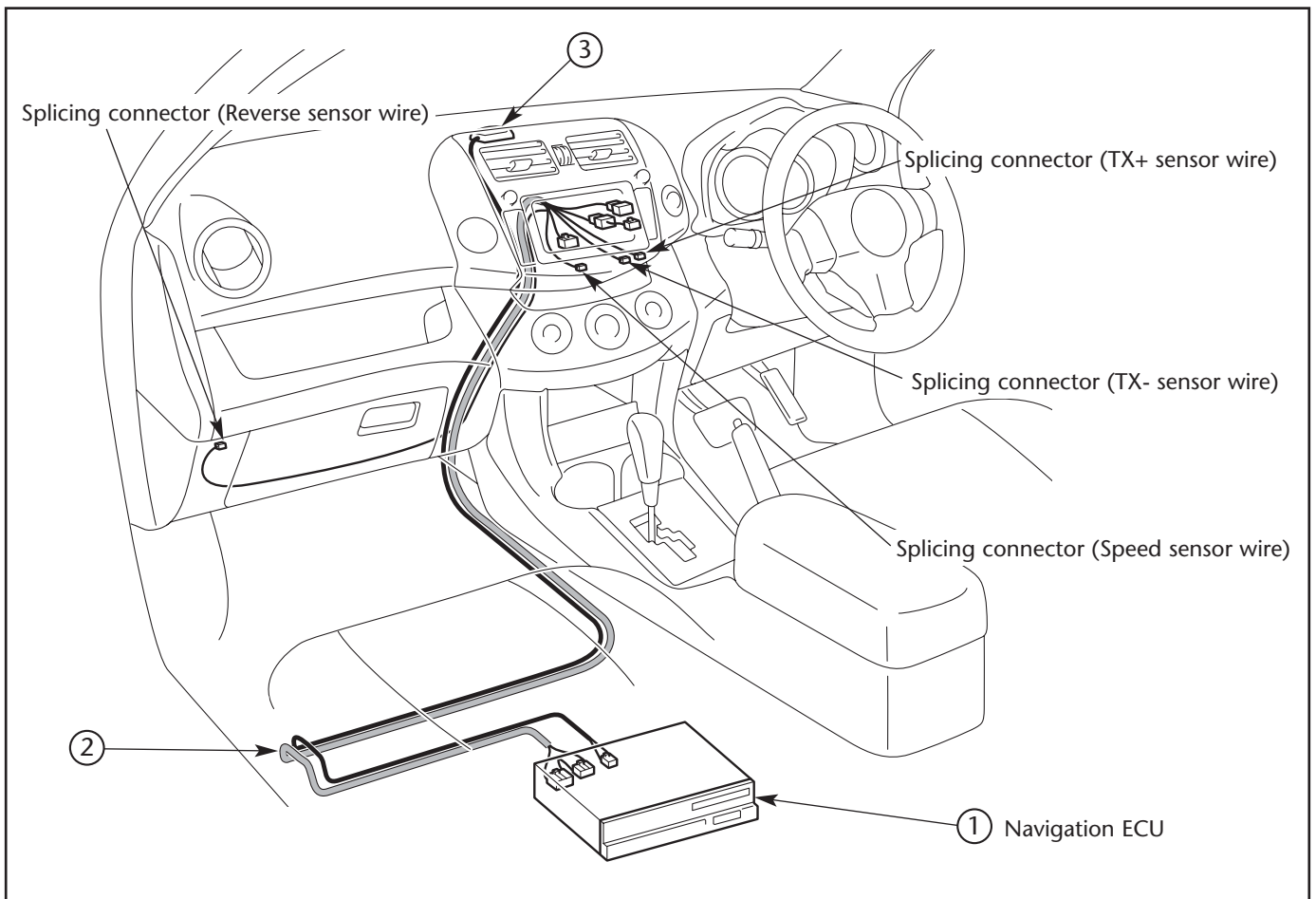
*1: NAVIGATION DISC (DVD-ROM) ④ is not included in the navigation kit.

FOR SUB WIRE HARNESS			08673-64801	
N°	Description	Qty	<div style="border: 1px solid black; padding: 5px; display: flex; align-items: center;"> <div style="border: 1px solid black; width: 20px; height: 20px; text-align: center; margin-right: 5px;">1</div>  </div>	
1	SUB WIRE HARNESS NO.1	1		

FOR SUB WIRE HARNESS			08673-64800	
N°	Description	Qty	<div style="border: 1px solid black; padding: 5px; display: flex; align-items: center;"> <div style="border: 1px solid black; width: 20px; height: 20px; text-align: center; margin-right: 5px;">2</div>  </div>	
2	SUB WIRE HARNESS NO.2	1		



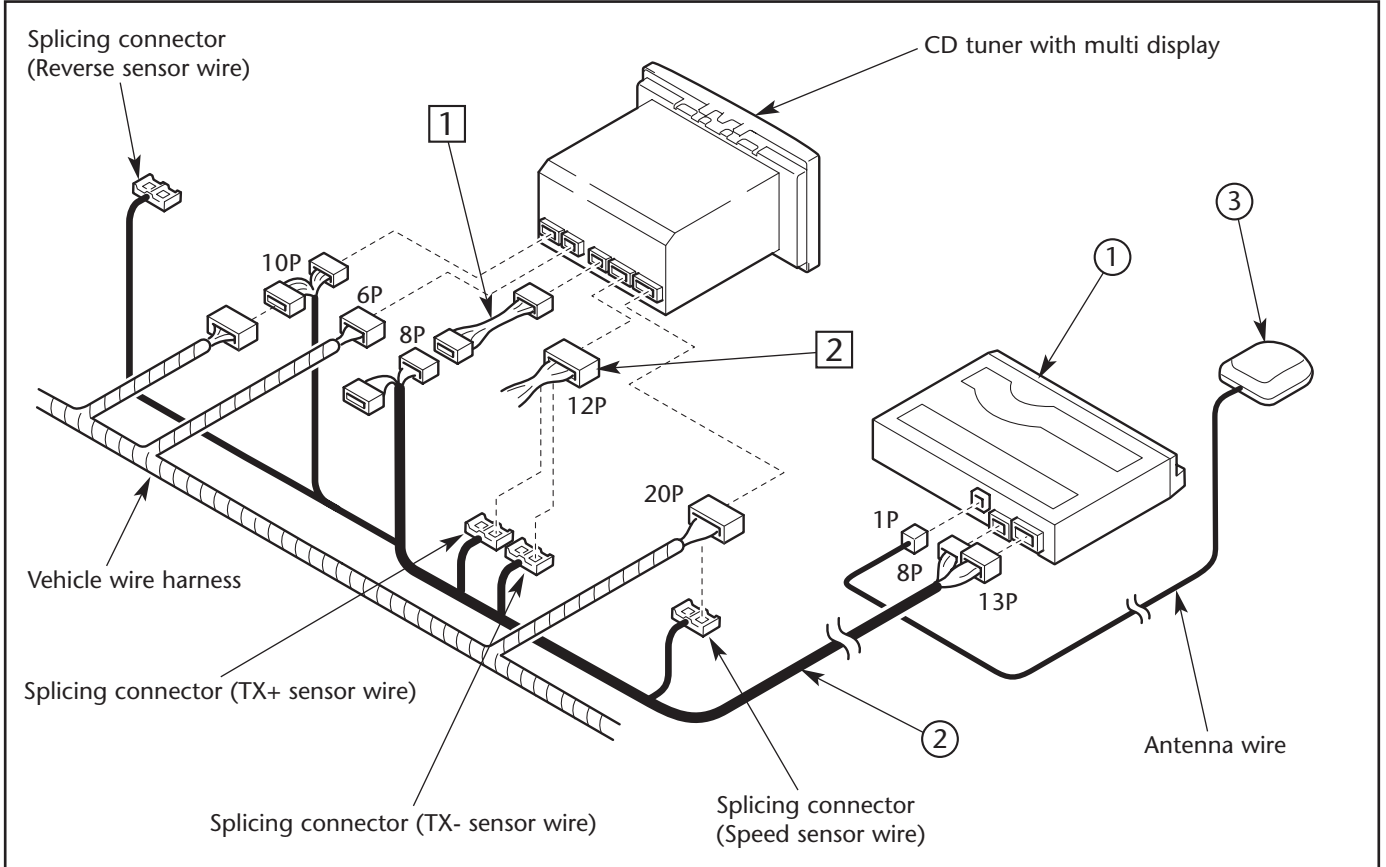
TNS310 PLUS SYSTEM LAYOUT



N°	Description	Qty
①	NAVIGATION ECU	1
②	WIRE HARNESS	1
③	RDS-ANTENNA	1

HOW TO CONNECT

CONNECTION METHOD : CD TUNER WITH MULTI DISPLAY



Refer to the repair manual for information on removal of vehicle parts, installation methods, tightening torque and so forth.

N°	Description	Qty
①	NAVIGATION ECU	1
②	WIRE HARNESS	1
③	RDS-ANTENNA	1
1	SUB WIRE HARNESS NO.1	1
2	SUB WIRE HARNESS NO.2	1

TNS310 PLUS INSTALLATION INSTRUCTIONS



• VEHICLE DISASSEMBLY

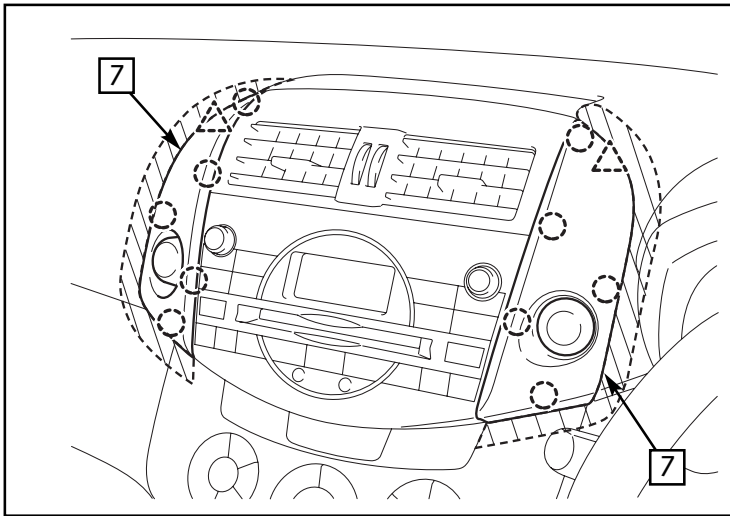


Fig. 1

1. Remove the center cluster panel (L) 7 and (R) 7.

○ : Clip (2x5)

△ : Hook (2x)

CAUTION

Put protective tape on the shaded areas. Be sure to remove the parts carefully so you do not damage the panels.

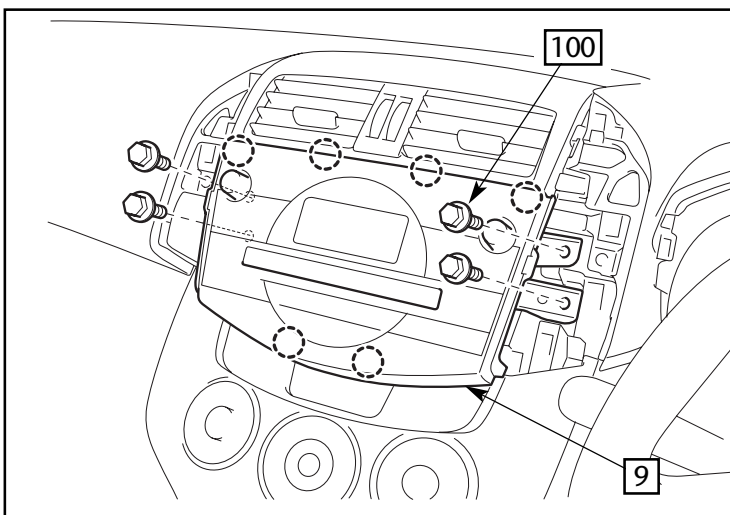


Fig. 2

2. Remove the CD tuner with multi-display 9.

○ : Clip (6x)

100 : Screw (4x)

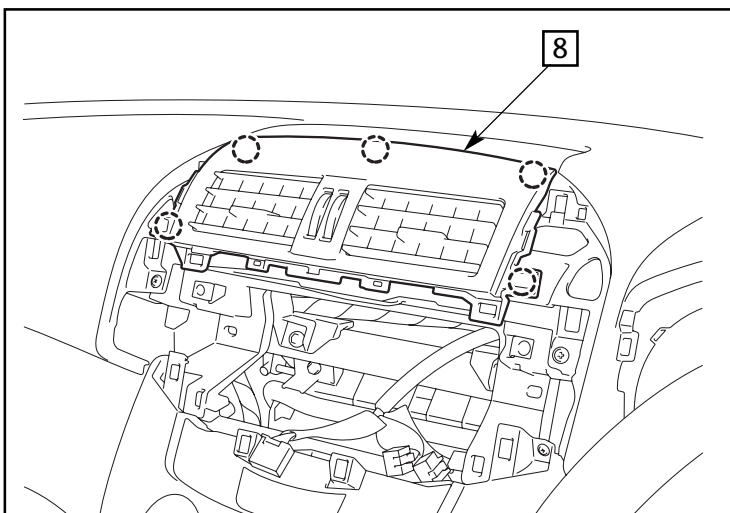


Fig. 3

3. Remove the center register 8.

○ : Clip (5x)

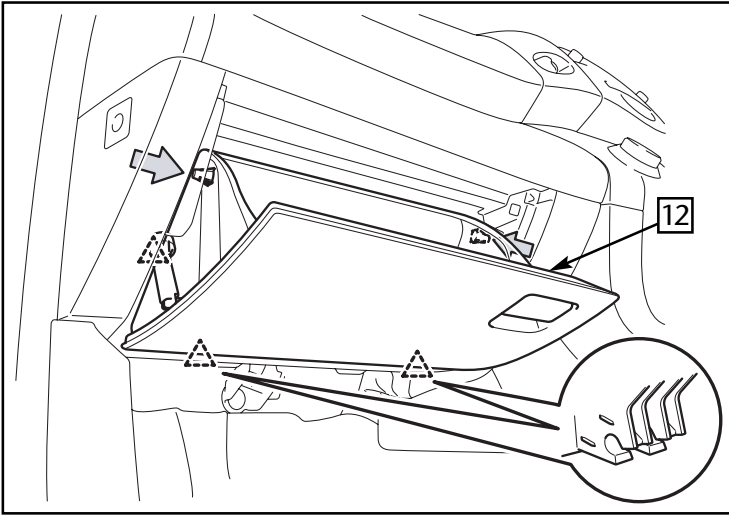


Fig. 4

4. Remove the glove box **12**.
 △ : Hook (3x)

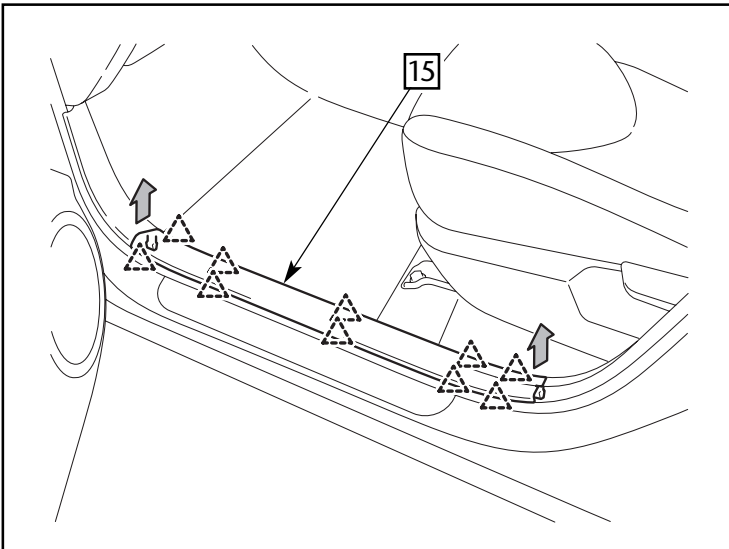


Fig. 5

5. Remove the front door scuff plate (L) **15**.
 △ : Hook (10x)

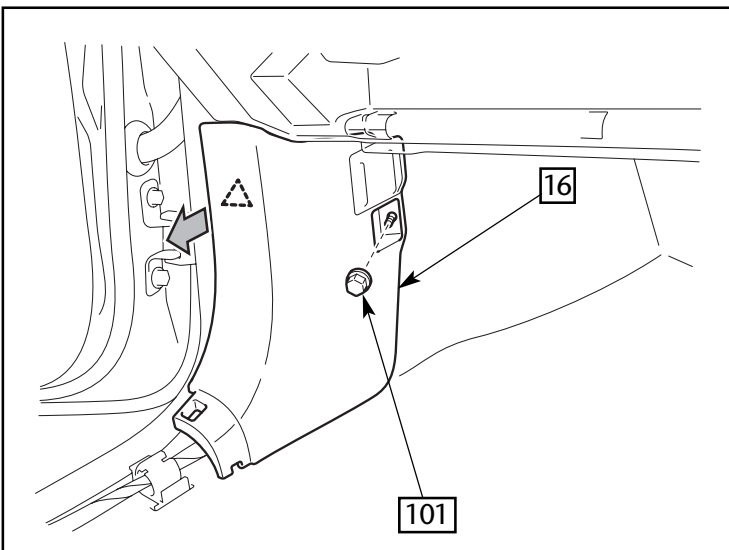


Fig. 6

6. Remove the cowl side trim (L) **16**.
101 : Nut (1x)
 △ : Hook (1x)

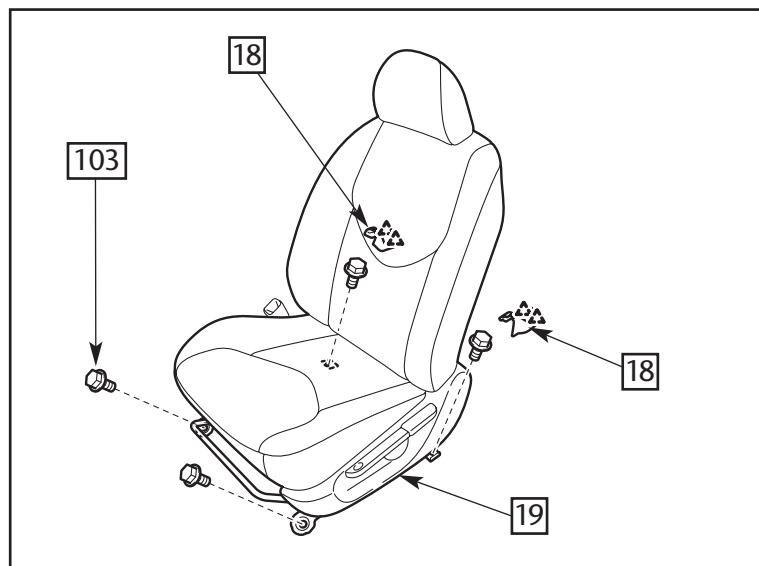


Fig. 7

7. Remove the passenger's seat **19**.

△ : Hook (2x2)

18 : Cover (2x)

103 : Bolt (4x)

CAUTION

Fasten the bolt with specified torque (37 Nm) when reassembling.

• RDS-ANTENNA INSTALLATION

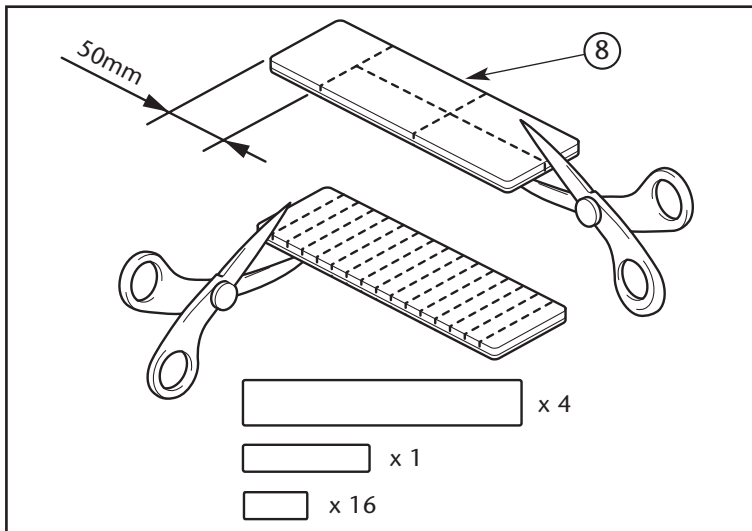


Fig. 1

FOAM TAPE CUT PROCEDURES

1. Cut the foam tape ⑧ into 4 large pieces, 1 medium-sized piece and 16 small pieces as shown in the illustration.

'Large pieces'

- For excess length of wire harness & antenna wire

'Medium-sized piece'

- For under body panel

'Small pieces'

- For wire harness & antenna wire routing
- For reverse sensor wire routing
- For excess length of reverse sensor wire
- For speed sensor wire routing
- For excess length of speed sensor wire

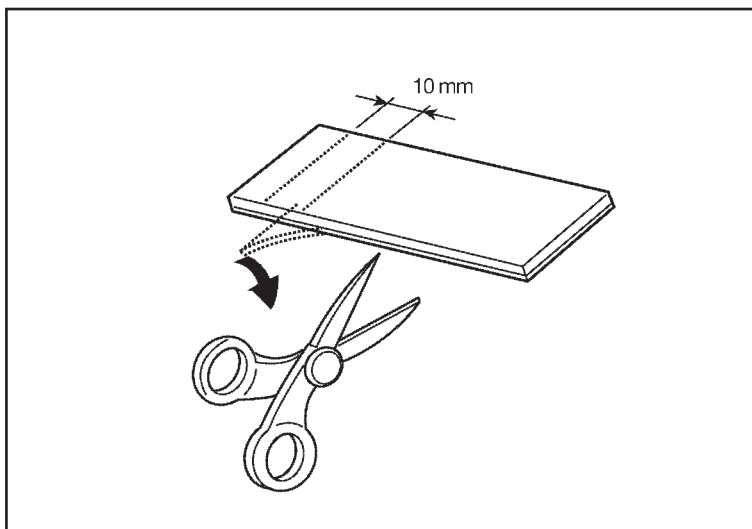


Fig. 2

2. Cut two pieces of 10 mm from the adhesive tape.

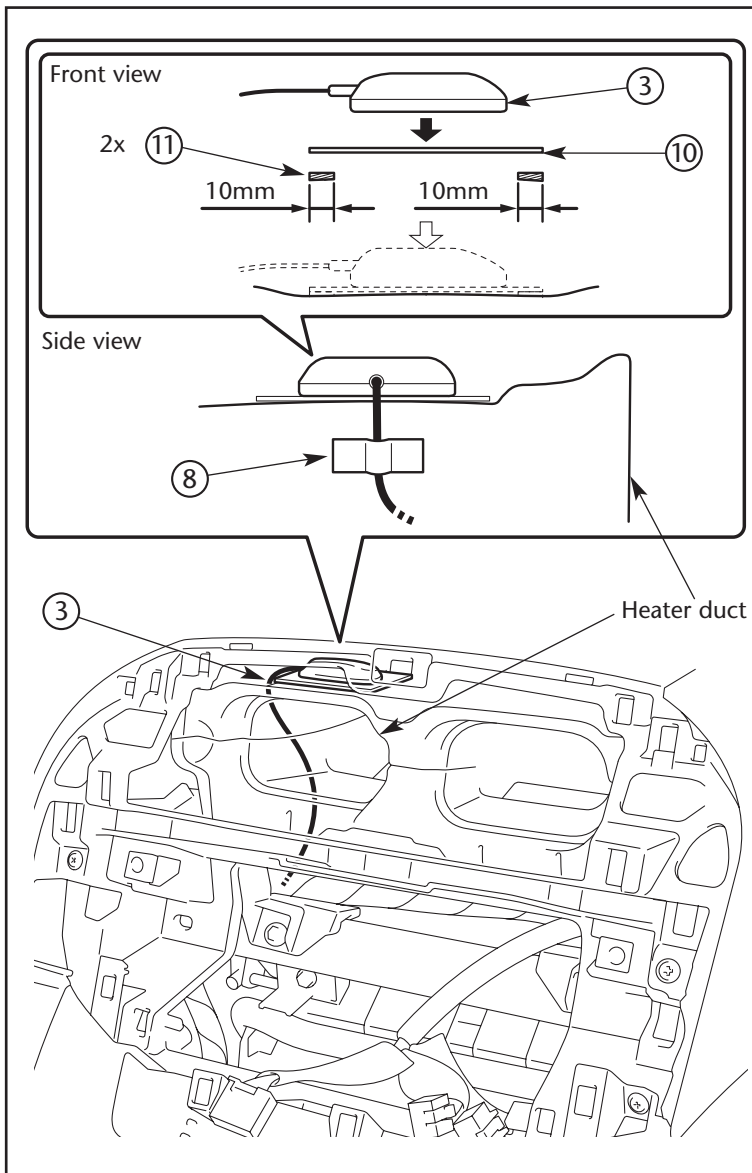


Fig. 3

3.
 - a) Remove the release paper of the earth plate ⑩ and apply the adhesive tape ⑪.
 - b) Attach the earth plate ⑩ on to the heater duct as shown and mount the RDS antenna ③ on the earth plate ⑩.

CAUTION

Clean the installation position before attaching the earth plate ⑩.

- c) Fix the antenna wire ③ using the foam tape ⑧.

• WIRE HARNESS INSTALLATION

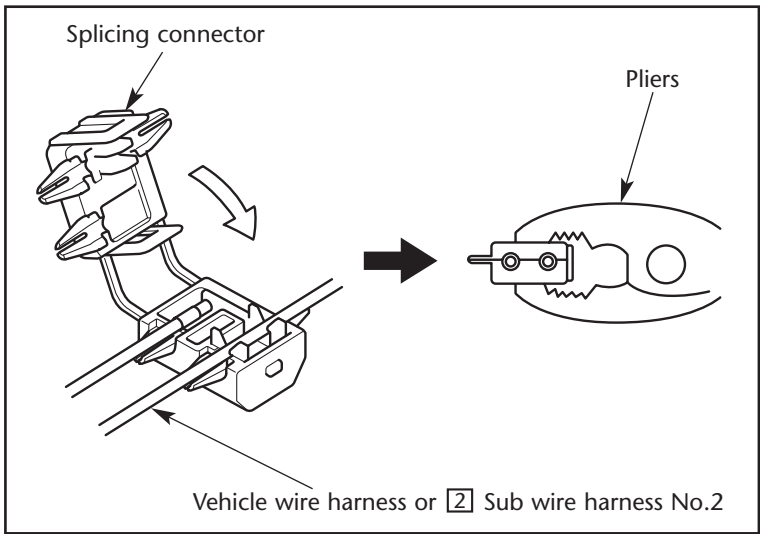


Fig. 1

CONNECTING PROCEDURES OF SPLICING CONNECTOR

1.
 - a) Remove the vinyl tube or wrapping tape from the length of the vehicle wire harness or sub wire harness No. 2 2 to be connected.
 - b) Insert the vehicle wire harness to be connected securely into the guide slit.
 - c) After inserting the vehicle wire harness into the guide slit, lock the splicing connector securely using a pair of pliers or the equivalent until the connector clicks.

PREPARATION BEFORE WIRING

2.
 - a) Connect 8P connector (white) of the sub wire harness No.1 1 to 8P connector of wire harness 2.

CAUTION

Fix 8P (Male) of wire harness 2 with adhesive tape.

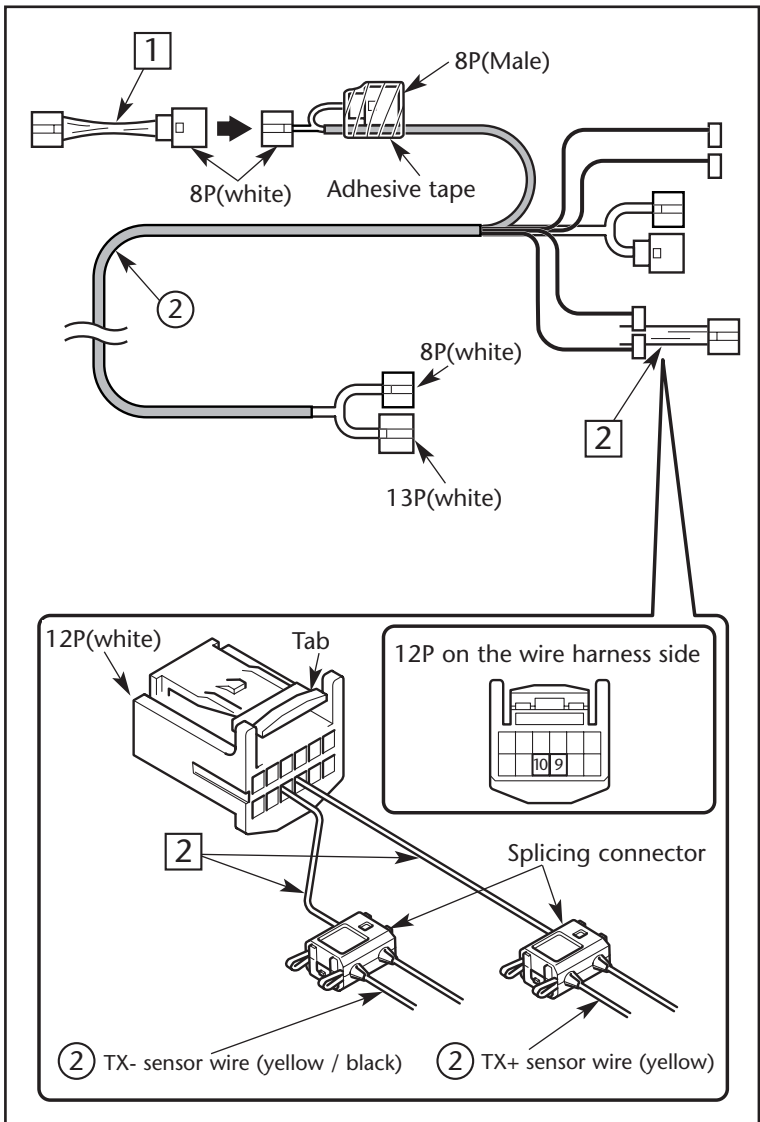


Fig. 2

- b) Connect the TX+ sensor wire (yellow) 2 to terminal 9 of 12P connector (white) on the sub wire harness No.2 2 side.
- c) Connect the TX- sensor wire (yellow / black) 2 to terminal 10 of 12P connector (white) on the sub wire harness No.2 2 side.

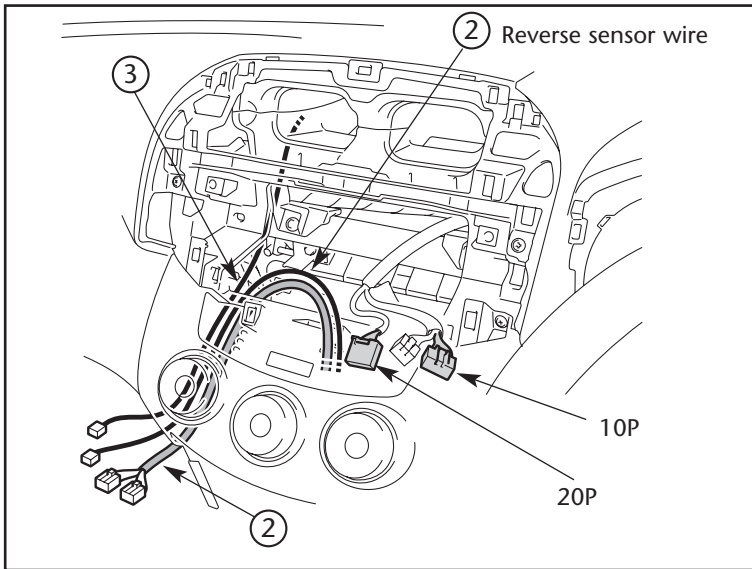


Fig. 3

3.
 - a) Route the wire harness ② and antenna wire ③ as shown in the illustration.
 - b) The connectors shown in the illustration are the vehicle side connectors to be spliced.

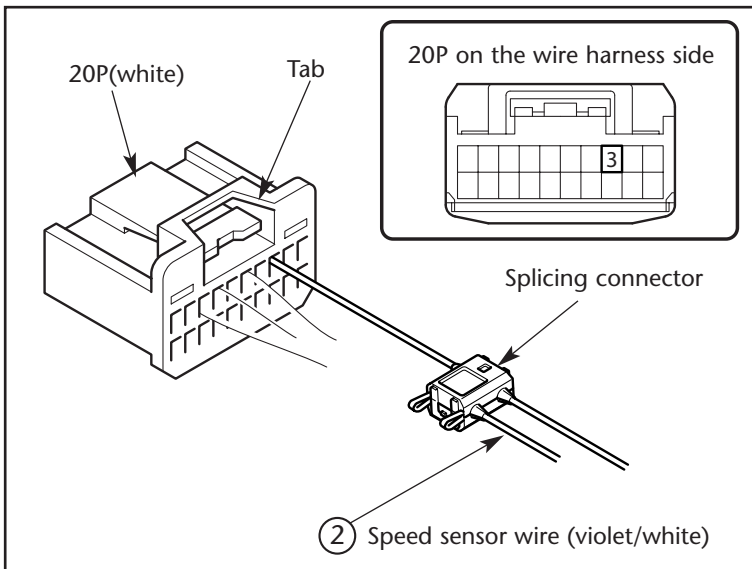


Fig. 4

4.
 - a) Connect the speed sensor wire (violet/white) ② to terminal 3 of the 20P connector (white).
 - b) Reconnect the 20P connector (white).

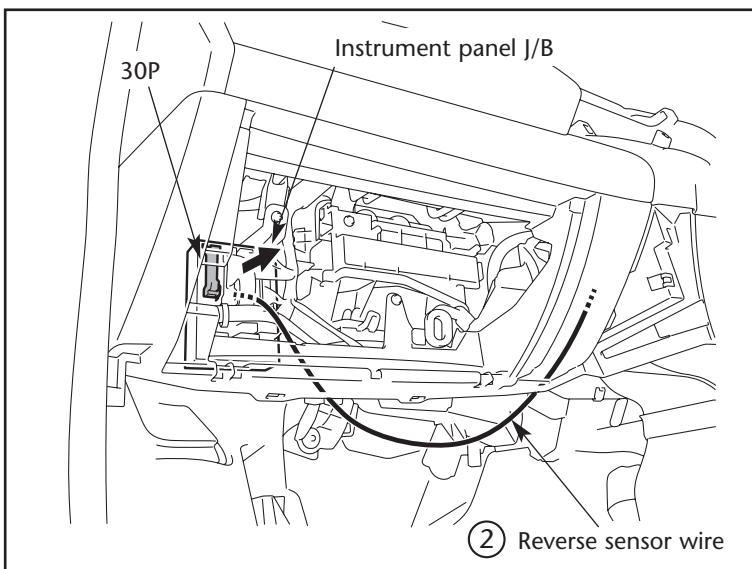


Fig. 5

5.
 - a) Route the reverse sensor wire ② as shown in the illustration.
 - b) Disconnect the 30P connector.

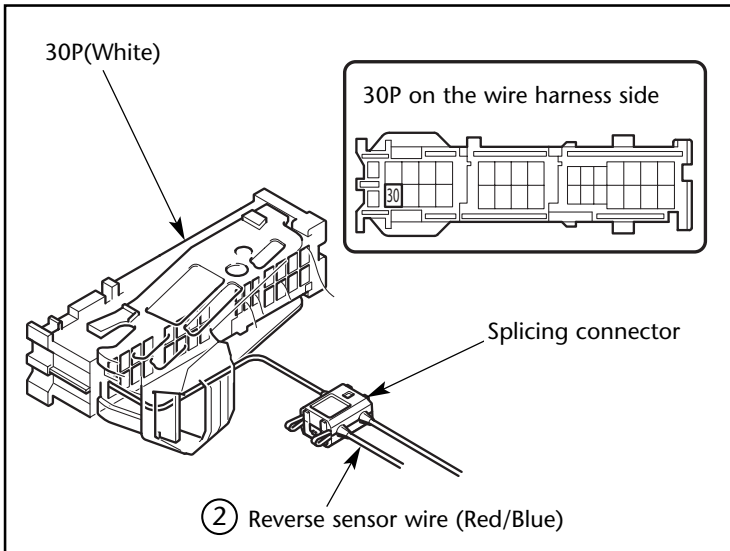


Fig. 6

6.
 - a) Connect the reverse sensor wire (Red/Blue) ② to terminal 30 of the 30P connector (White).
 - b) Reconnect the 30P connector (White).

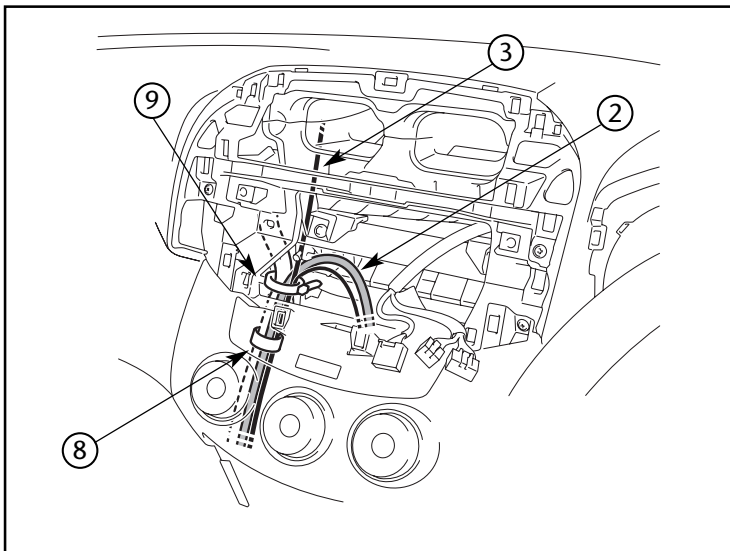


Fig. 7

7. Secure the wire harness ② and antenna wire ③ to the vehicle wire harness using the wire tie ⑨ and foam tape ⑧.

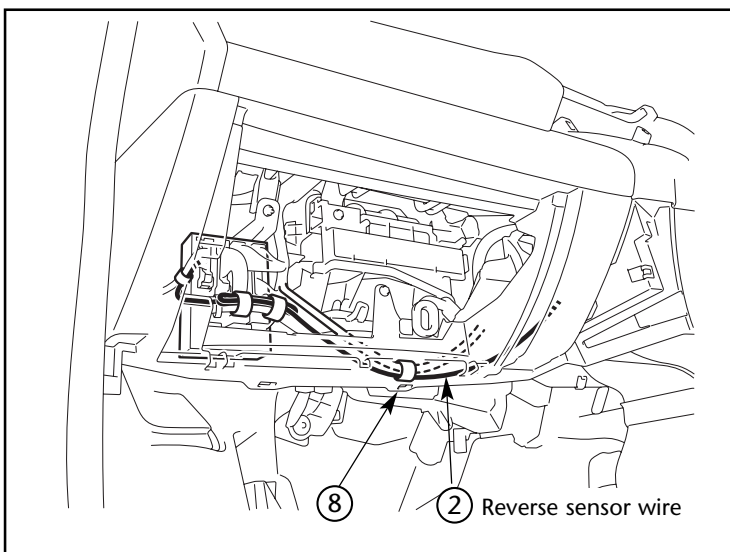


Fig. 8

8. Secure the reverse sensor wire ② as shown in the illustration using the foam tape ⑧.

⑧ : Foam tape (4x)

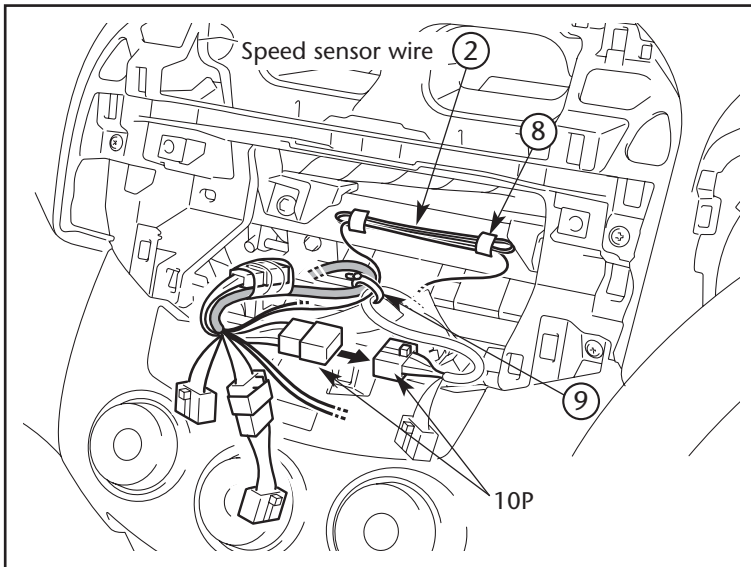


Fig. 9

9.
 - a) Connect 10P connector on the wire harness (2) side to 10P connector on the vehicle side.
 - b) Secure the excess speed sensor wire (2) as shown in the illustration using the foam tape (8).

(8) : Foam tape (2x)

 - c) Secure the wire harness (2) as shown in the illustration using the wire tie (9).

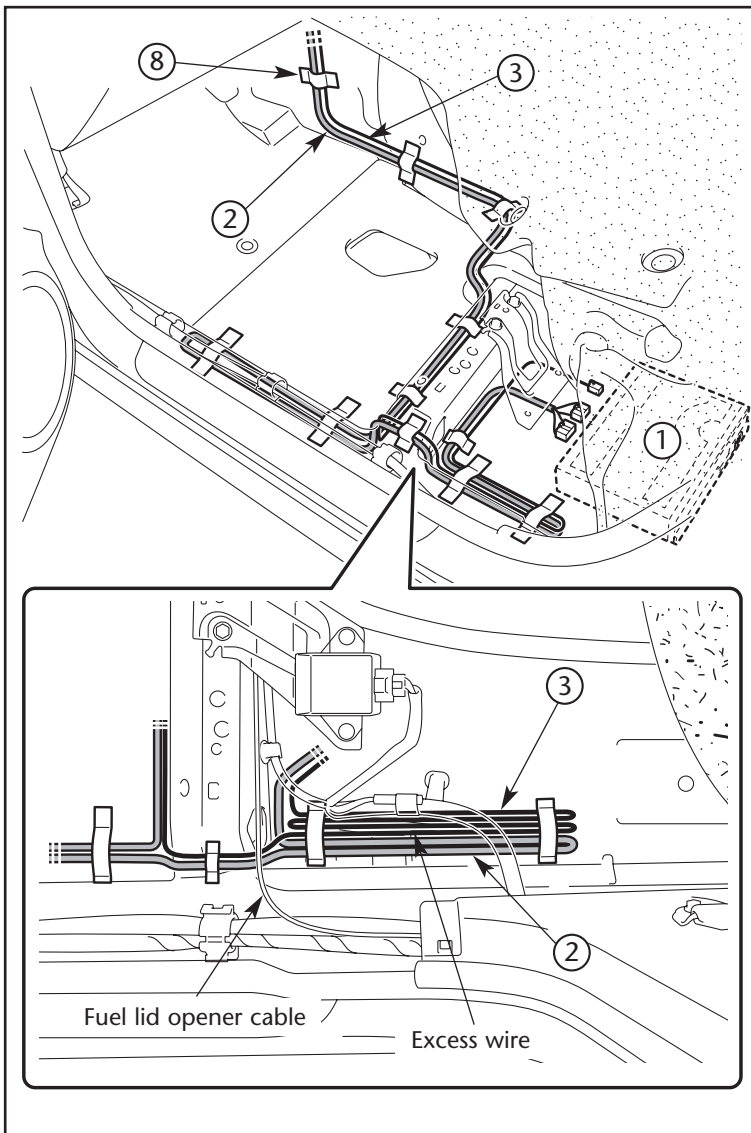


Fig. 10

10.
 - a) Route the wire harness (2) and antenna wire (3) to the navigation ECU (1) installation area and attach them with foam tape (8).
 - b) Secure the extra length of the wire harness (2) and antenna wire (3) as shown in the illustration using the foam tape (8).

(8) : Foam tape (11x)

CAUTION

Route the wire harness (2) and antenna wire (3) so as not to interfere with the movement of the fuel lid opener cable.

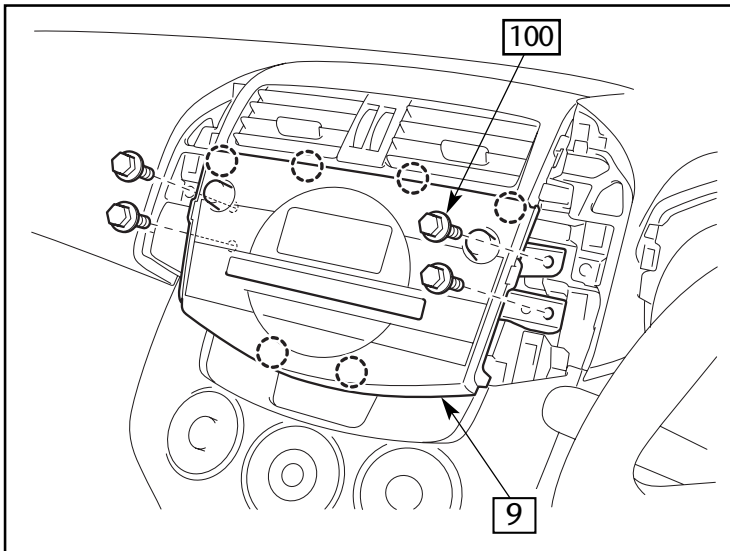


Fig. 11

11. Refit the CD tuner with multi display **9**.

○ : Clip (6x)

100 : Bolt (4x)

• NAVIGATION ECU INSTALLATION

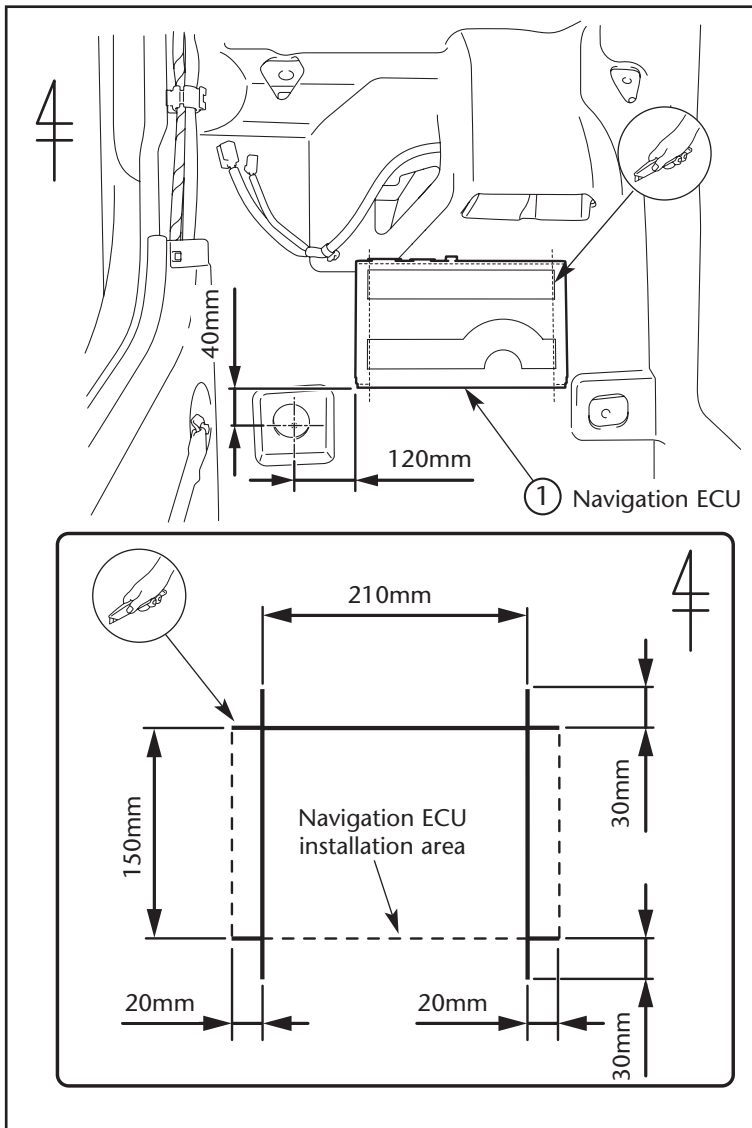


Fig. 1

1. Cut the floor carpet in the navigation ECU ① installation area as shown in the illustration.

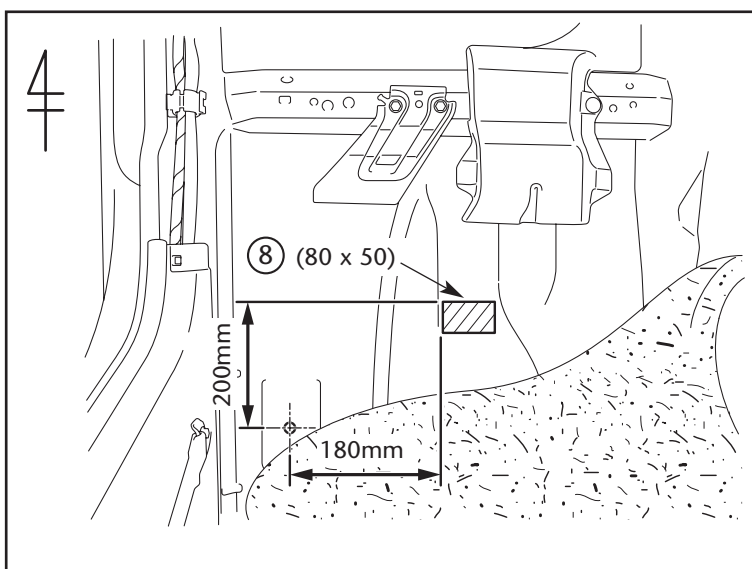


Fig. 2

2. Attach foam tape ⑧ to the under body panel on the passenger's side as shown in the illustration.

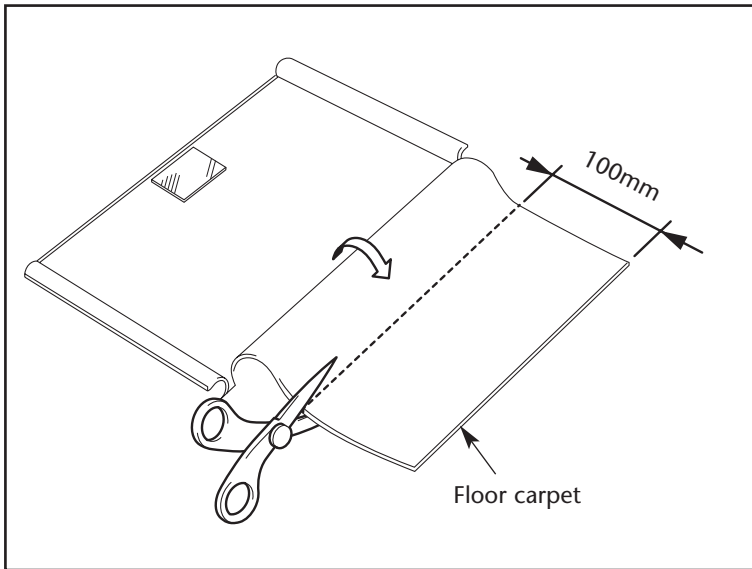


Fig. 3

3. Cut the floor carpet as shown in the illustration.

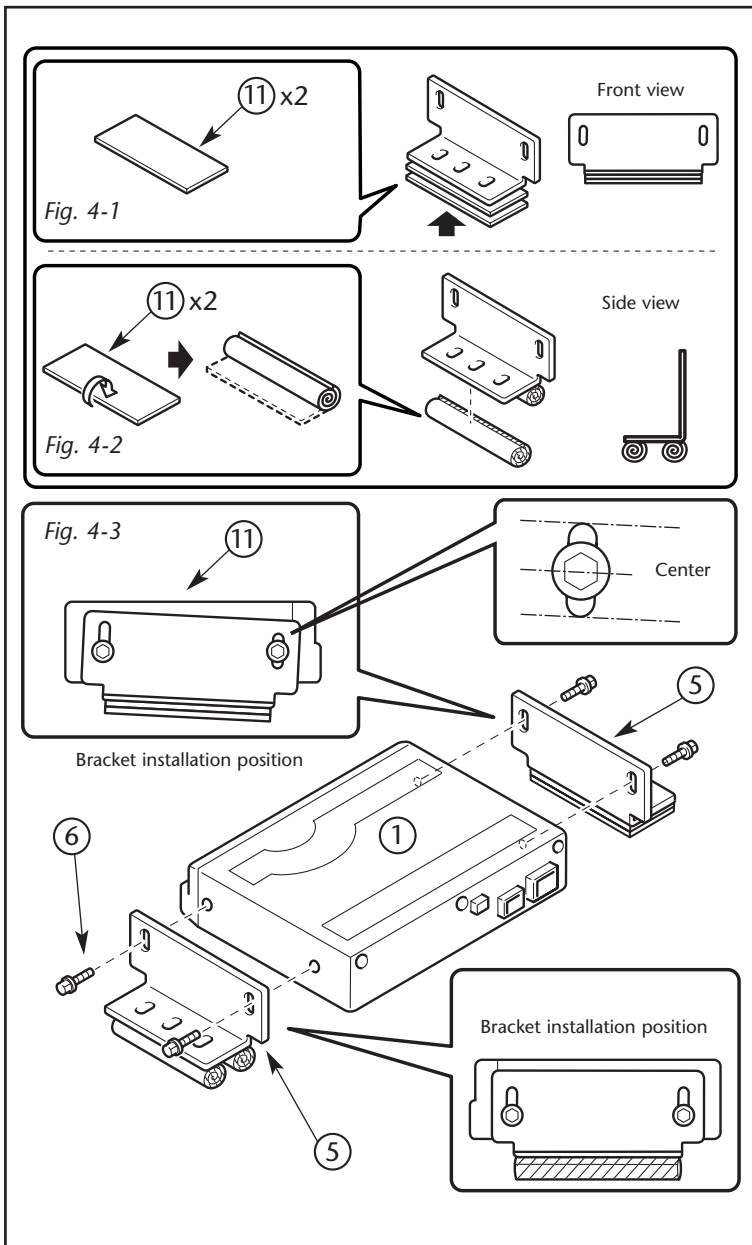


Fig. 4

4.
 - a) Find 4 pieces of adhesive tape in the kit. As shown in Fig. 4-1, place 2 pieces underneath the bracket.
 - b) As shown in Fig. 4-2, roll 2 of the 4 pieces.
 - c) Attach the rolled pieces to the navigation ECU bracket in the positions shown in the illustration.
 - d) Fit the navigation ECU brackets (5) to the navigation ECU (1) using the bolts (6) and position the bracket as shown in Fig. 4-3.

(5): Bracket (2x)

(6): Bolt (4x)

CAUTION

Be sure to put the rolled adhesive tape (11) appropriately on the back of the navigation ECU bracket (5) so that the tape (11) can absorb shocks from the rough floor.

If they are located in inappropriate positions, the navigation ECU (1) will not be fixed properly.

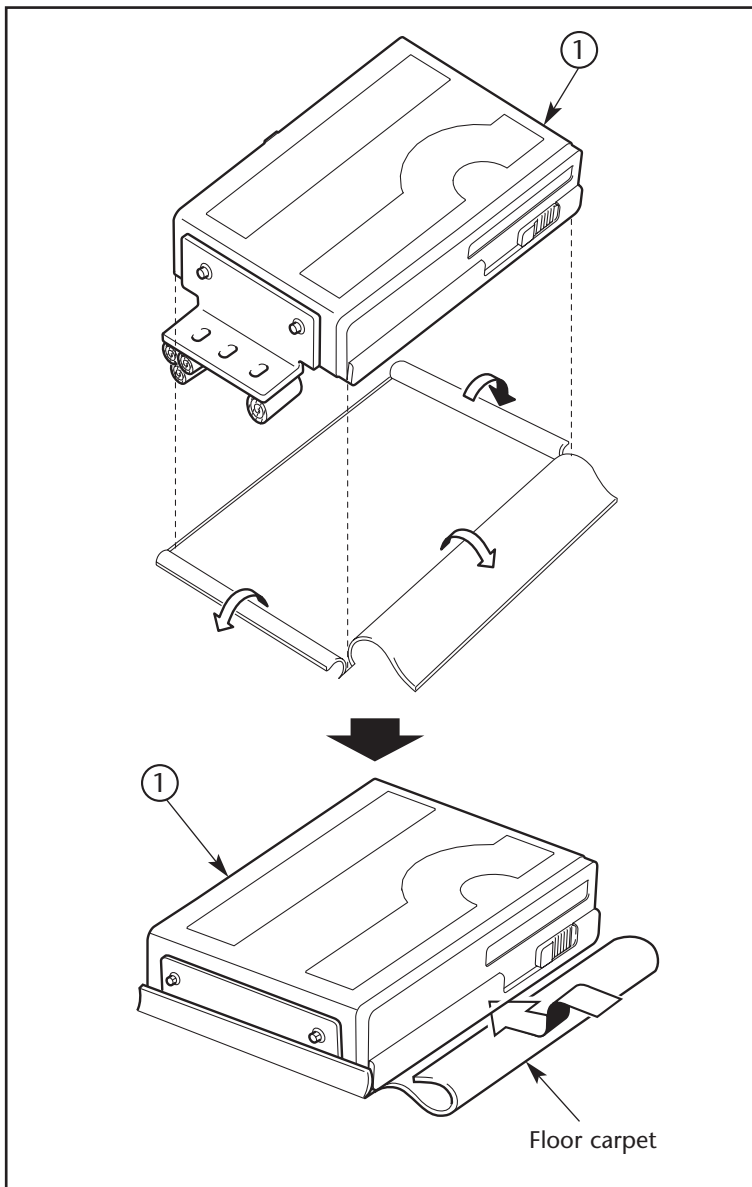


Fig. 5

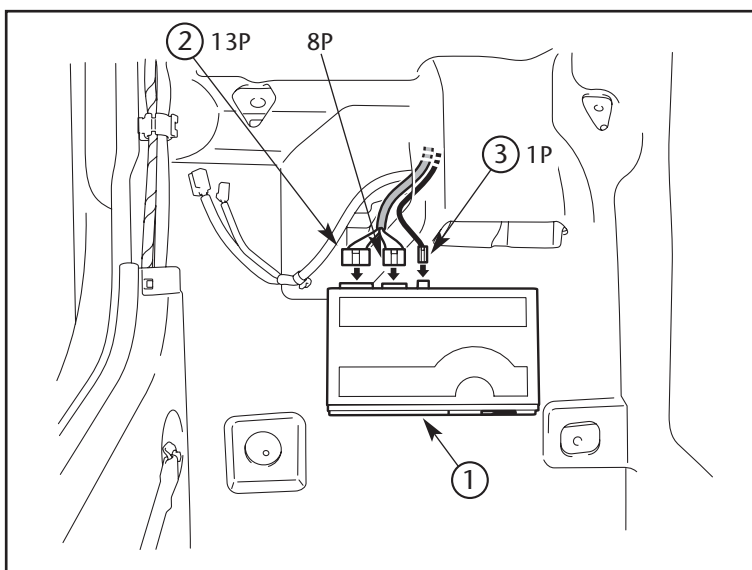


Fig. 6

CAUTION

Install the navigation ECU ① temporarily to check that it is level. If not, adjust it using the bolts and slits of the brackets.

- 5.
- Flip up the slit floor carpet and carefully install the navigation ECU in the predetermined position.

CAUTION

When installing the navigation ECU ①, make sure that the surface of the installation position is free from dirt, moisture and oil.

- Push the slit floor carpet into the space between the navigation ECU ① and the under body panel.

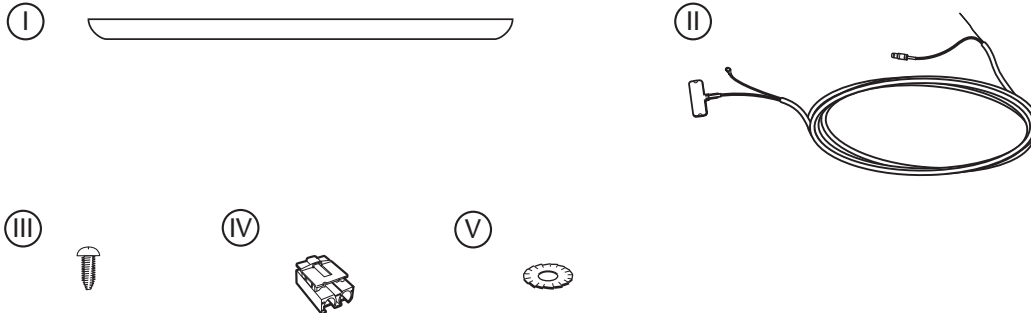
6. Connect 1P connector (RDS-antenna ③), 8P connector and 13P connector (wire harness ②) to the navigation ECU ①.

TNS310 TRAFFIC PLUS SYSTEM ASSEMBLY



RDS-ANTENNA KIT

PZ445-T9281-00



N°	Description	Part N°	Qty
(I)	RDS-ANTENNA STRIP	PZ445-E9281-01	1
(II)	RDS-ANTENNA WIRE	PZ445-E9281-00	1
(III)	GROUND BOLT	-	1
(IV)	FAKRA CONNECTOR	PZ445-E9330-01	1
(V)	TOOTHED WASHER	-	1

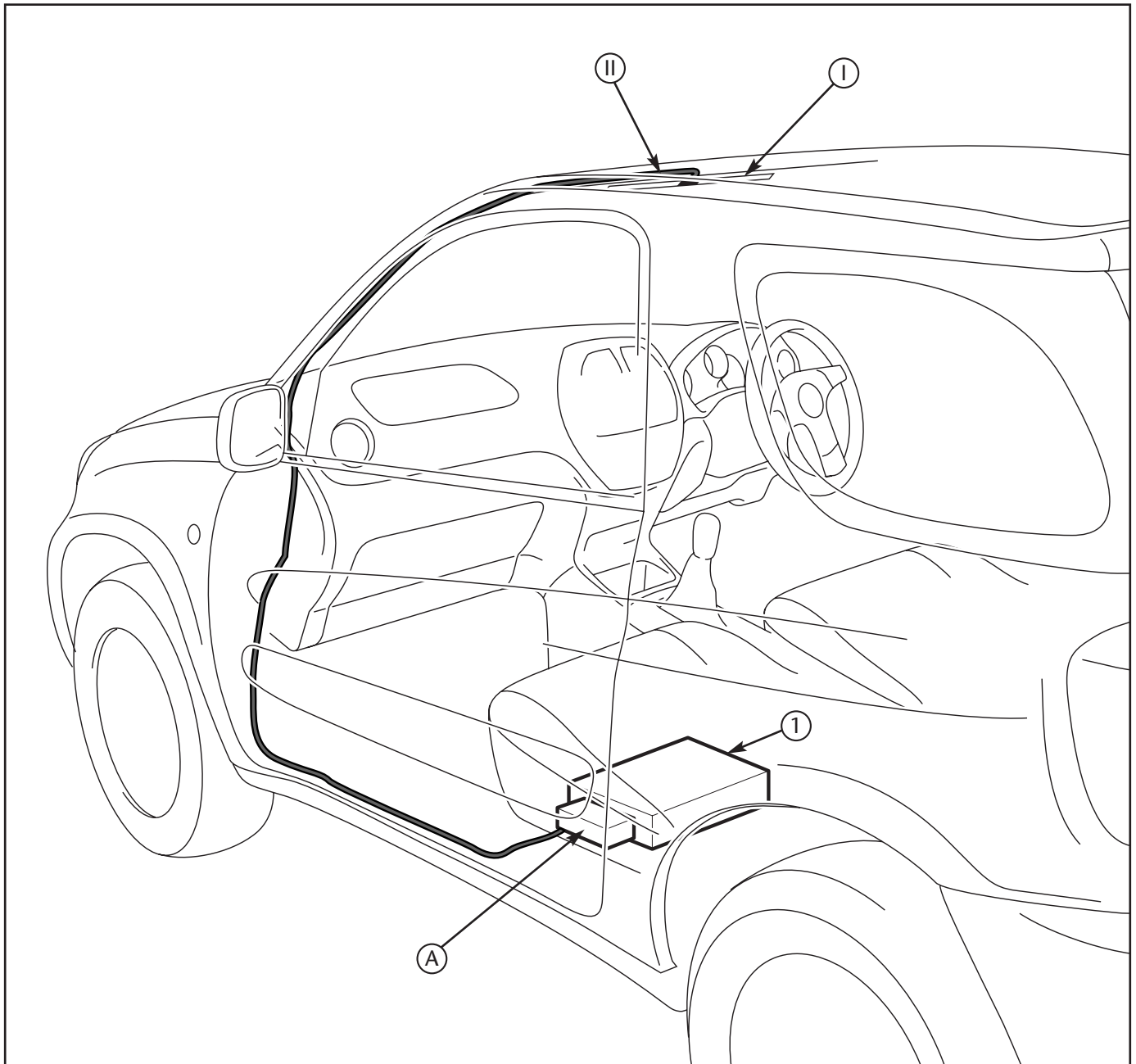
RDS-TUNER KIT

PZ445-T9331-00



N°	Description	Part N°	Qty
(A)	RDS-TUNER	PZ445-E9331-02	1
(B)	SUBWIRE HARNESS	PZ445-E9330-03	1

TNS310 TRAFFIC PLUS SYSTEM LAYOUT



N°	Description	Qty
①	NAVIGATION ECU	1
Ⓐ	RDS-TUNER	1
①	RDS-ANTENNA STRIP	1
②	RDS-ANTENNA WIRE	1

TNS310 TRAFFIC PLUS INSTALLATION INSTRUCTIONS



• VEHICLE DISASSEMBLY

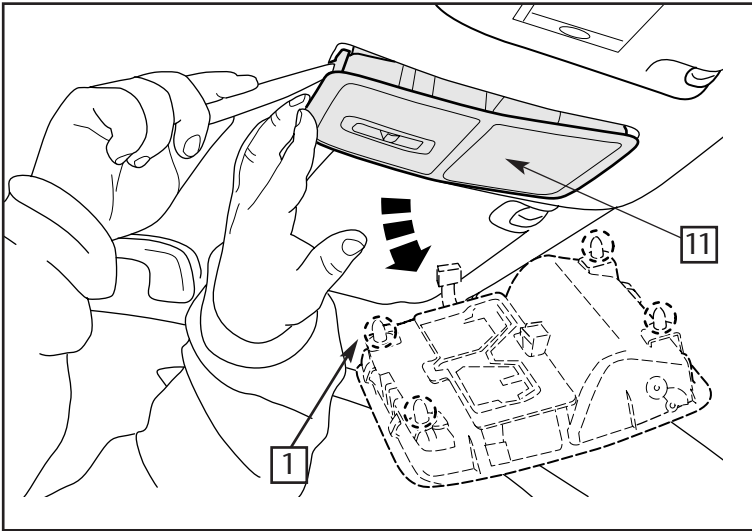



Fig. 1

1. Remove the cover of the map lamp **11**.
 : Clip (4x)

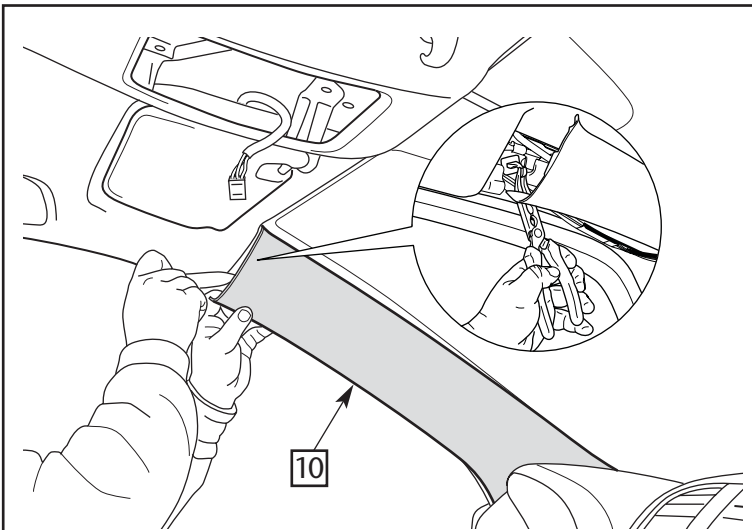


Fig. 2

2.
 - a) Loosen the passenger's side front pillar garnish **10**.
 - b) Turn the air bag clip 90° to remove the pillar garnish **10** as shown in the picture.

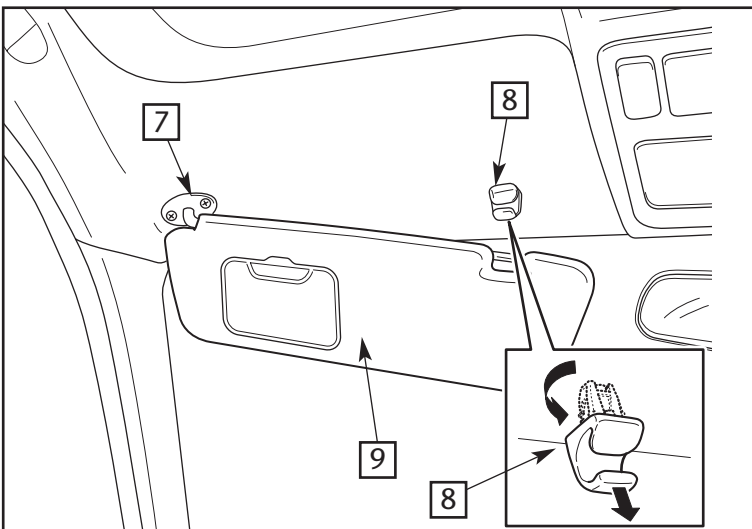


Fig. 3

3. Lift the sun visor **9** on the driver's and the passenger's side out of the sun visor holders **8**. Turn the sun visor holders 90 degrees counterclockwise and pull down to loosen roof panels.

• INSTALLATION OF THE RDS-ANTENNA WIRE

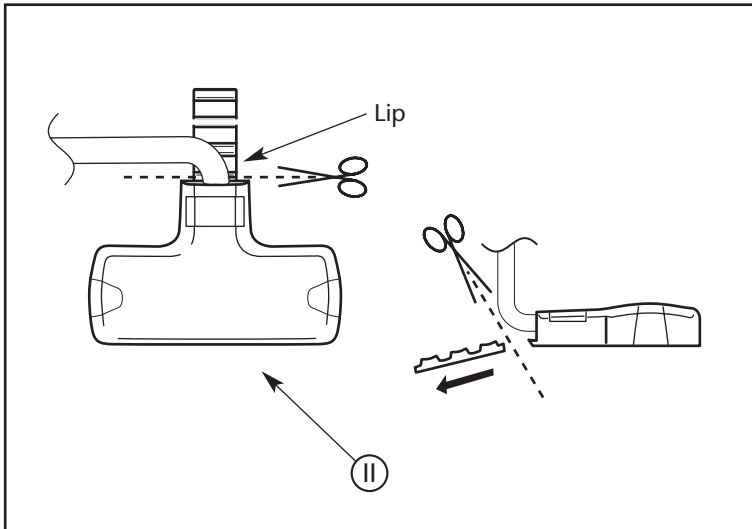


Fig. 1

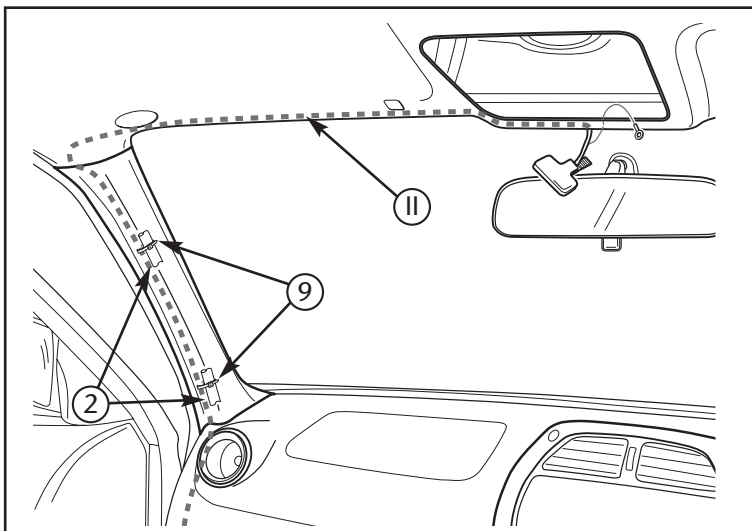


Fig. 2

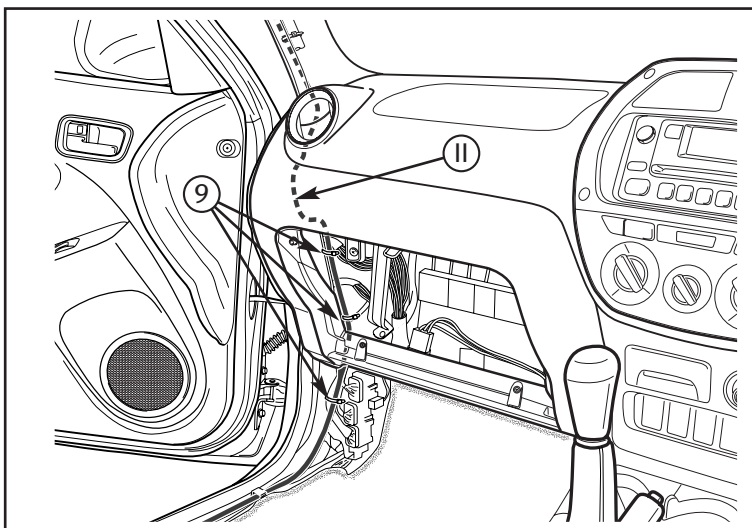


Fig. 3

1. Cut off all lips of the RDS-antenna (II) by using scissors.

2.
 - a) Tuck the RDS-antenna wire (II) through the space between the roof headliner and windshield and earth wire through to roof lamp hole.
 - b) Route and attach the RDS-antenna wire (II) along the vehicle wire harness (2) using wire ties (9)(*) (3x).

(9) : Wire tie (3x) (*)

(*) Included in the navigation kit.

CAUTION

Be sure you attach the RDS-antenna wire as far as possible against the border of the roof headliner.

3. Route and attach the antenna (II) wire down the instrument panel into the left kick panel section of the vehicle using wire ties (9).

(9) : Wire tie (3x)

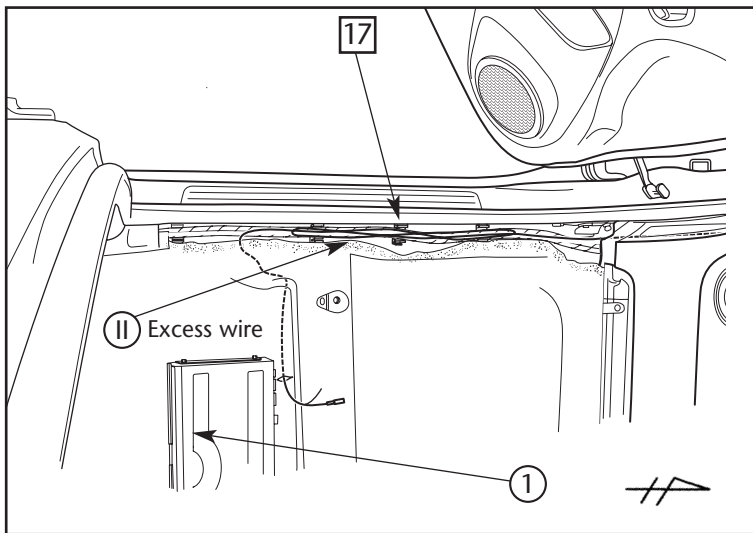


Fig. 4

4.
 - a) Route the RDS-antenna wire ② along the front door scuff plate area and then under the carpet to the navigation ECU ① location.
 - b) Bundle up the excess RDS-antenna wire ② and press into the cable clamps ⑬ as shown in the picture.
⑬: Cable clamp (3x)

• INSTALLATION OF THE RDS-ANTENNA

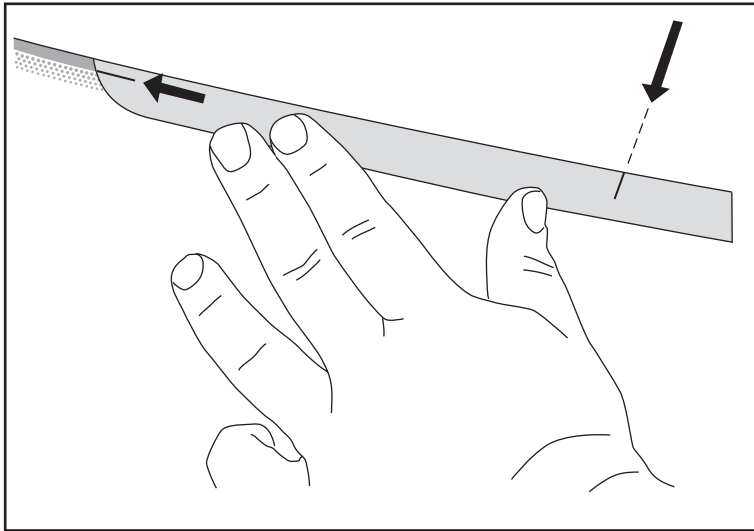


Fig. 1

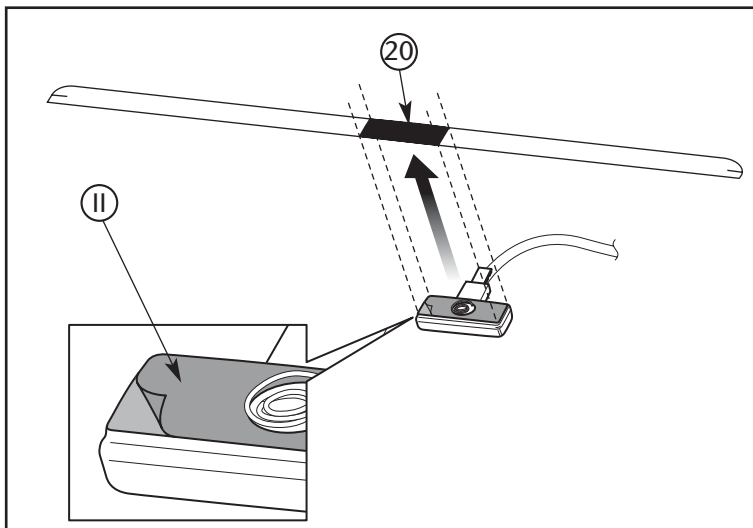


Fig. 2

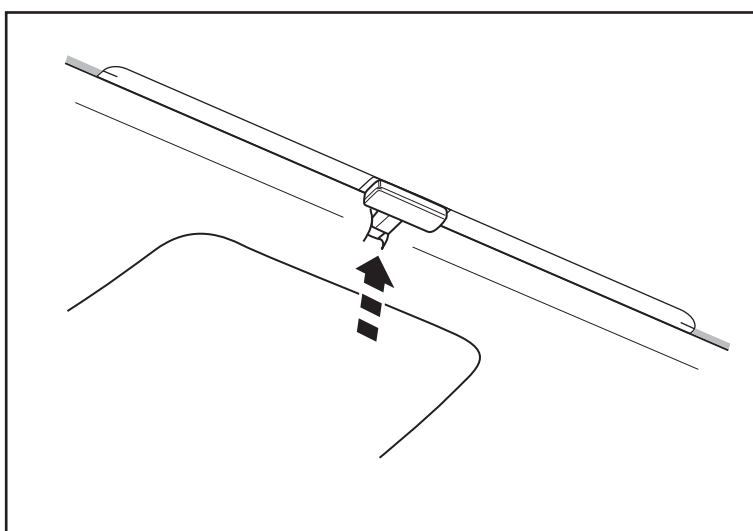


Fig. 3

1. Fit the RDS-antenna strip horizontally making sure the center of the RDS-antenna strip aligns with the coated area of the front window.

2.
 - a) Peel off the white protection (20) paper covering the conductive area on the antenna strip.
 - b) Peel off the protection paper at the back side of the RDS-antenna (11) and attach the RDS-antenna to the black conductive area of the antenna strip.

3. Make two cuts in roof panel and fold flap inwards to make room for antenna wire.

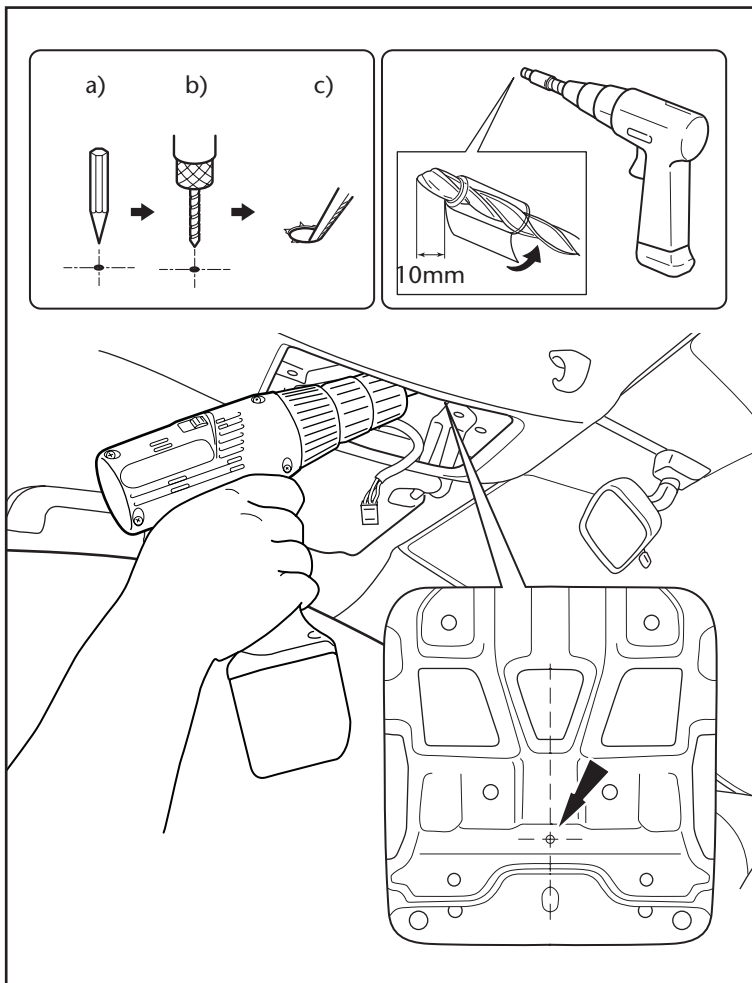


Fig. 4

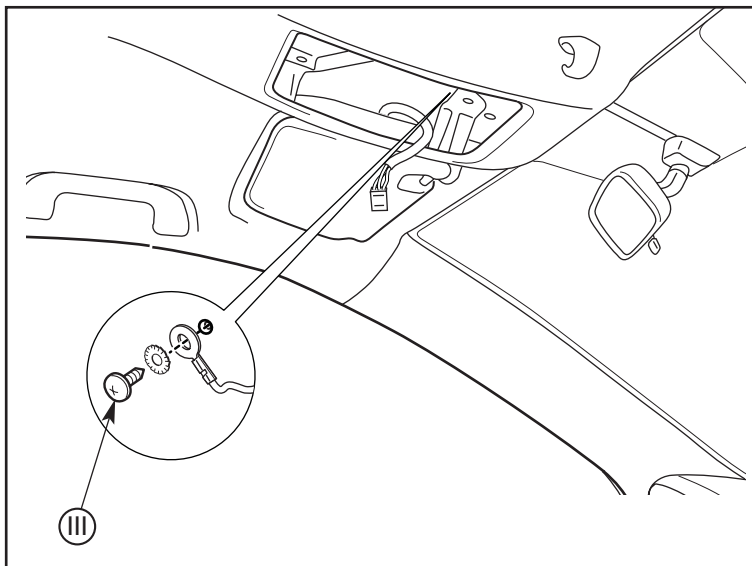


Fig. 5

4. Drill a hole for the ground bolt at a suitable place using the following procedure:

- a) Punch
- b) Drill, diameter 3mm
- c) File

5. Attach the ground wire with the ground bolt (III).

CAUTION

Make sure to route the ground wire in such a way that it will not cause short circuit.

• INSTALLATION OF THE RDS-TUNER

FOR INSTALLATION OF NAVIGATION, PLEASE REFER TO THE NAVIGATION INSTALLATION MANUAL N2RA2-0-300.

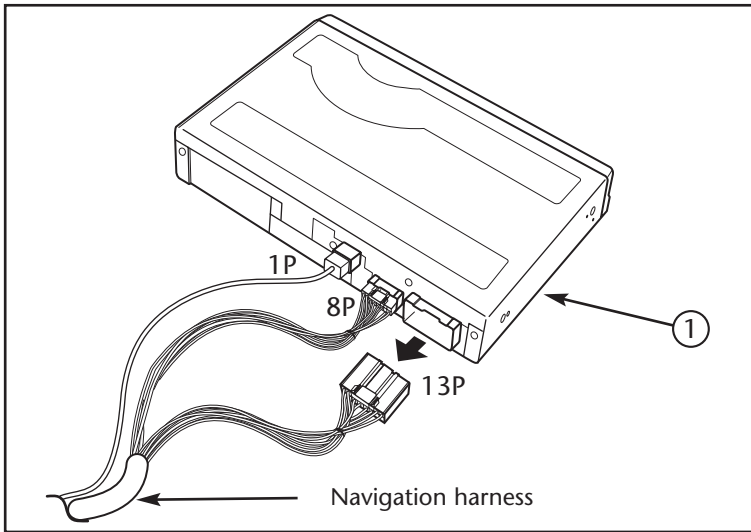


Fig. 1

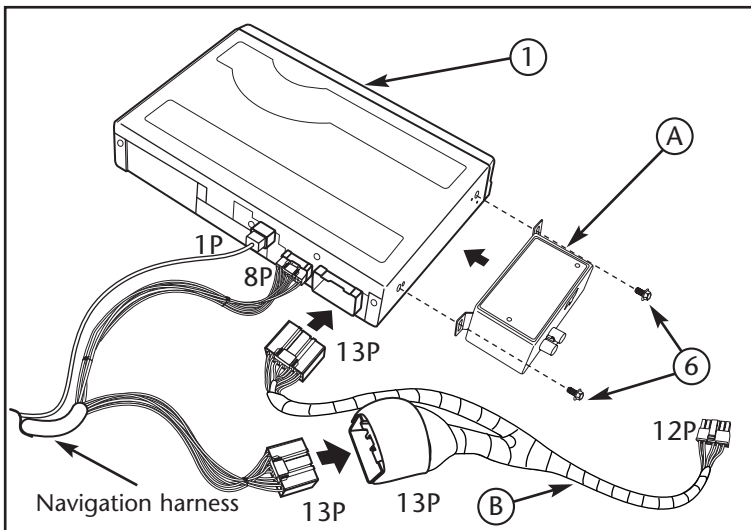


Fig. 2

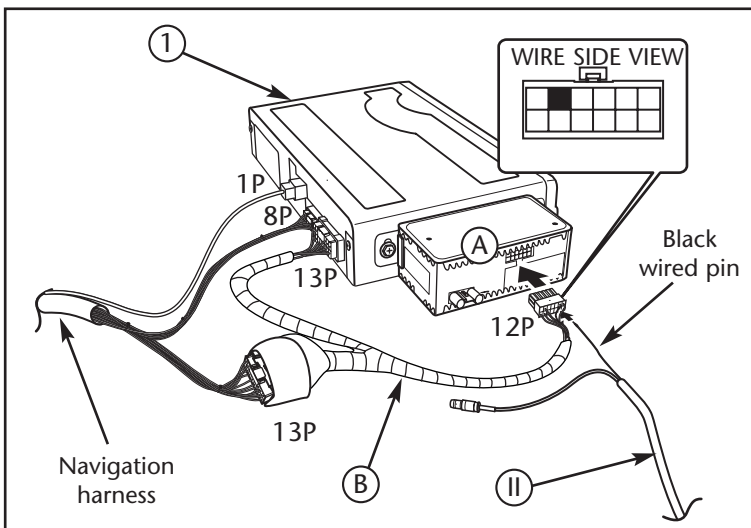


Fig. 3

1. Disconnect the 13P connector from the navigation ECU (1).

2.
 - a) Fit the RDS-tuner (A) to the navigation ECU (1) using bolts (6).
 - b) Connect the navigation 13P female connector to the subwire harness (B) 13P male connector.
 - c) Connect the subwire harness (B) 13P female connector to the navigation ECU (1).

(*) Included in the navigation kit.

3.
 - a) Locate the RDS-antenna (II) black wired pin.
 - b) Connect the RDS-antenna (II) black wired pin to the subwire harness (B) 12P connector to the second position from the left on the top row (wires face you and tab is on top).
 - c) Connect the subwire harness (B) 12P connector to the RDS-tuner (A).

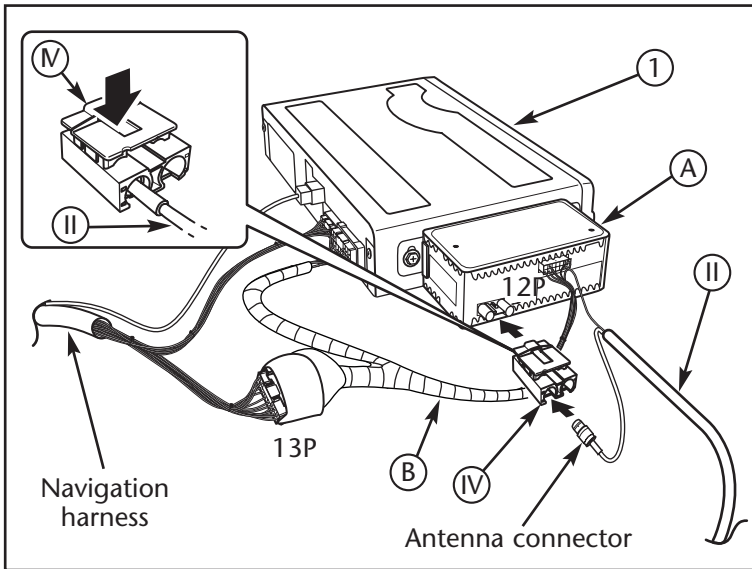


Fig. 4

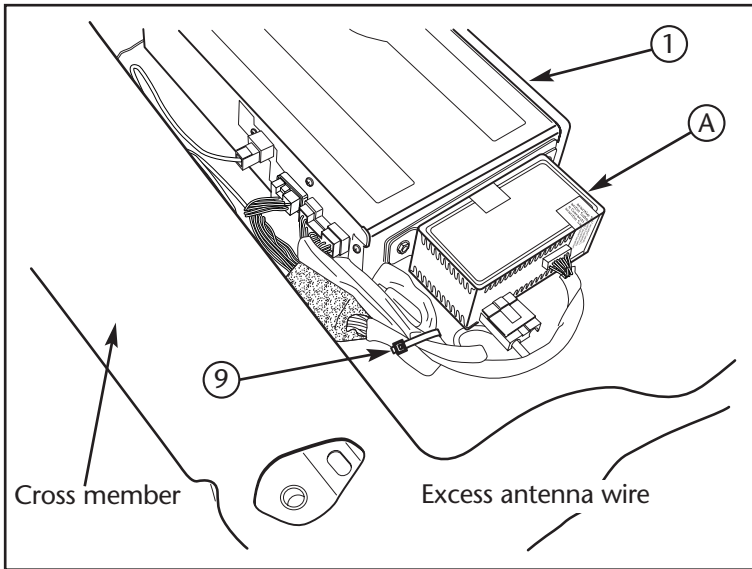


Fig. 5

4.
 - a) Connect the RDS-antenna (II) connector to the fakra connector (IV) as shown.

ATTENTION

Be careful not to close the fakra connector (IV) before the RDS-antenna connector (II) is inserted till it clicks.

- b) Insert the fakra connector (IV) with antenna (II) to the RDS-tuner (A).

5. Fit the cables of the navigation-ECU (1) and the RDS-tuner (A) between the cross member and the navigation-ECU by using a wire tie (9).

(9): Wire tie (1x)(*)

(*) Included in the navigation kit.

SYSTEM START UP

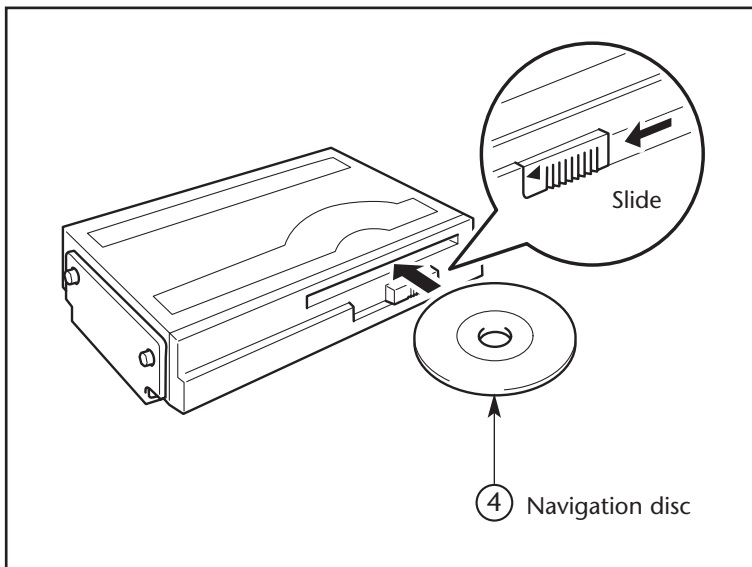


POST-INSTALLATION INSPECTION

1. Inspect the wiring and installation for abnormalities.
2. Check with close attention for any locations where the vehicle harness, wire harness or divergence harness is being pushed, pulled or pinched with excessive force. Also check if clamps and bands are shifted out of the position and if all parts are tightened properly.

OPERATION CHECK

1. Connect the (-) terminal of the battery and turn the ignition key to the ACC or ON position to start the engine.



DVD-ROM INSERTION INTO THE NAVIGATION-ECU

- a) Connect the battery and turn the ignition switch to ACC position.
- b) Slide the eject switch of the navigation-ECU to the left to open the disc insertion slot.
- c) With the label side of the disc facing up, insert the disc into the disc insertion slot.
*The disc will be pulled into the navigation-ECU automatically.
- d) Slide the eject switch of the navigation-ECU to the right to close the disc insertion slot.

2. Press the NAVI switch and confirm that the navigation screen is displayed.
3. Adjust the volume by following the section of "Adjusting the Volume of the Guide Voice" in the TNS310 Owner's Manual, and confirm that the sound from the speakers changes.
4. Perform the "auto-compensation" procedure by following the section of "When Tires are Replaced" in the TNS310 Owner's Manual.

When an abnormality is suspected, perform trouble-shooting by following "Toyota Genuine Navigation System Service Manual".

FINAL CHECK



REASSEMBLING

Return all removed vehicle parts to their original locations. In particular make sure that trims and other interior parts are reinstalled properly so that they do not have any detrimental effects on the function of the vehicle. During reassembly, make sure that wires are not pinched and all bolts and screws are tightened properly.

FINAL CHECK

1. Check that the harnesses are not pinched and that there are no abnormalities in the installation of vehicle parts.
2. Confirm that there are no abnormalities in vehicle functions, including light switches, front wiper and washer switches, meters, indicator light and warning light.

