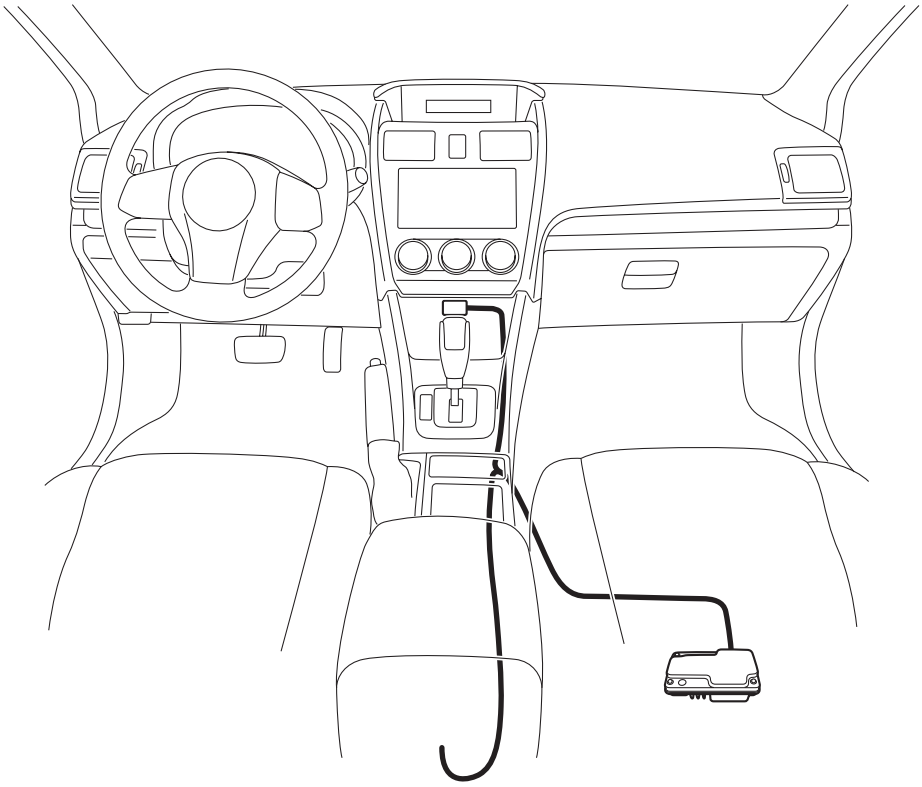
SUBARU AC 120V POWER OUTLET

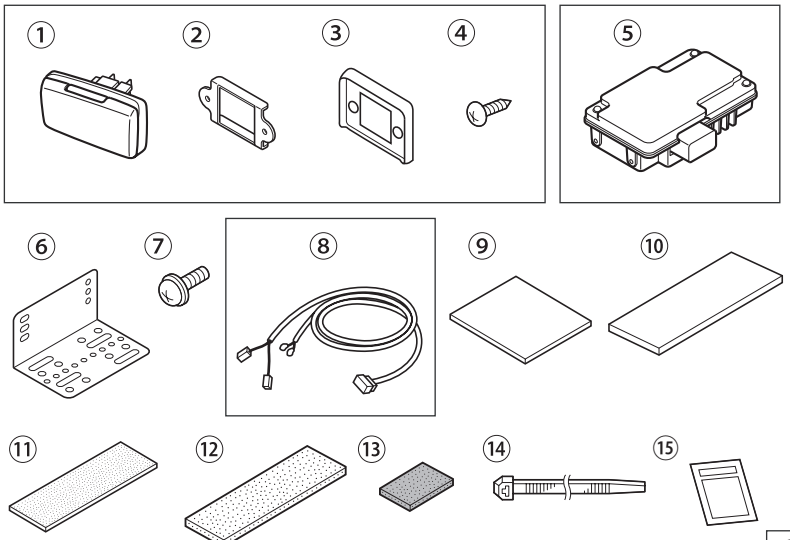
INSTALLATION INSTRUCTIONS

Part Number : H7110VA100
Description : STI / WRX AC 120V Power Outlet

1. PRE INSTALLATION / INSTALLATION OVERVIEW



2. KIT CONTENTS



No.	Part Name	Q'ty
①	OUTLET	1
②	BRACKET	1
③	RUBBER GASKET	1
④	TAPPING SCREW	2
⑤	INVERTER	1
⑥	BRACKET	2
⑦	SCREW (M4)	4
⑧	HARNESS	1
⑨	DOUBLE SIDED TAPE	1
⑩	ALUMINUM TAPE	5
⑪	FOAM TAPE(GRAY)	1
⑫	FOAM TAPE(BLACK)	5
⑬	PROTECT TAPE	1
⑭	TIE WRAP (150mm / 250mm)	6／2
⑮	OWNERS MANUAL	1

OUTLET KIT	H7110VA120	①,②,③,④
INVERTER	H7110AJ130	⑤,⑨
HARNESS	H7110VA110	⑧

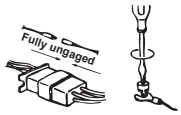
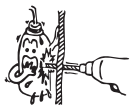
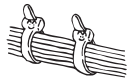
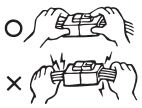
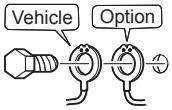
3. TOOLS REQUIRED

PHILLIPS SCREWDRIVER
FLAT BLADE SCREWDRIVER
10mm,12mm,14mm SOCKET WRENCH
TORQUE WRENCH
PLIERS
ϕ24mm (15/16") HOLE SAW
ϕ3.5mm (1/8") DRILL
VOLT METER (or CIRCUIT TESTER)
SIDE CUTTERS
SCISSORS
UTILITY KNIFE
CENTER PUNCH
CHALK
MASKING TAPE
ELECTRICAL TAPE
TRIM REMOVAL TOOL
ISOPROPYL ALCOHOL
CLEANING TOWEL

4. PRECAUTIONS FOR INSTALLATION

⚠CAUTION	This product requires removal of the passenger 's seat. As a result of the removal of the passenger 's seat it will be necessary to re-calibrate the Occupant Detection System. If not properly calibrated the Occupant Detection System may not operate as designed which may result in injuries to the front seat passenger. Therefore, it is strongly recommended that the product be installed at an authorized Subaru dealer.
⚠CAUTION	Please follow the Instructions for your safety. If these Instructions are not followed. Personal injury. Vehicle damage or degraded performance of the 110V Outlet may result.

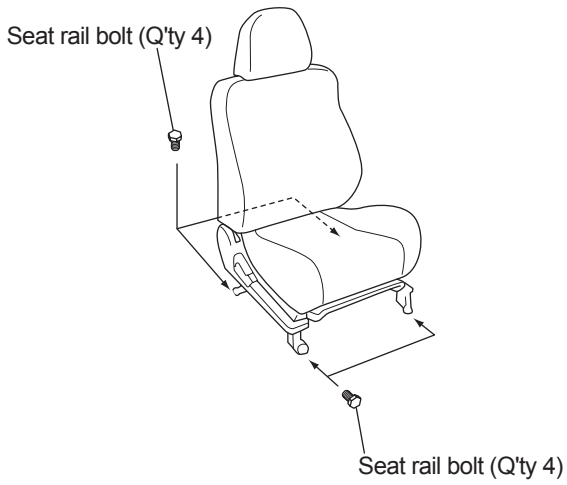
⚠CAUTION

 Always perform installation in a building or a room. Venlilate air to avoid exhaust gas-filled almosphere when checking aclivalion.	 Make sure to fully ungage and connect all wire plugs & receptacles and connectors to their individual mating parts. Use screws or other similar fasteners to secure all lead wire terminals in order to prevent connection failure and/or looseness caused by vibration or oscillation.
 To prevent potential damage to your vehicle during installation, use reasonable protective covers to cover the passenger compartment and body surface around the engine.	 Use a proper tool of correct size to tighten bolts and nuts. Fully tighten bolts and nuts with specified tightening torque as required. Inobservance of this instruction will cause a potential risk of damage to bolts and nuts or.
 Remove the negative battery terminal before start of wiring work. With the battery kept connected, wiring work will lead to a potential risk of failure or of electric shock or inlury due to short circuit.	 Do not apply an excessive force to pull off a vehicle wire harness, to prevent loose connectors, disconnection and/or damage.
 Check that all electrical systems of your vehicle are properly operative. Back up all memories of a radio and other electrical systems, to avoid any possible loss during recovery checks after installation.	 When installing parts and/or removed finishers, avoid dragging or pinching wires in order to prevent a potential risk of accident, electric shock or fire due to disconnection and/or short circuit.
 If the vehicle body needs to be drilled for installation, check the positions of pipings, tanks and electrical wirings before drilling and avoid any interference or contact with them.	 Use appropriate cleaner or mild detergent to remove all dirt and old grease before attaching one-sided and/or double-sided tapes during installation. Tapes applied onto an unclean area cannot demonstrato desirable.
 After removing clips and screws from your vehicle, sort them by individual components for subsequent reinstallation work to prevent use of wrong clips and screws.Use of wrong clips and screws will cause looseness and coming-off.	 When harnessing,follow all instructions provided in the Installation Instruction. Use reasonable bands or other similar materials to tack and secure wiring to prevent entrapment into the steering, shift lever and/or brake pedal.
 When disconnecting vehicle connectors, hold connectors (do not hold lead wires) to unlock them, to prevent disconnection in lead wires.	 After harnessing, check activations of all parts installed before recovery, to prevent wrong wiring.
 To secure an optional GND terminal together with a vehicle GND terminal, fasten them in a correct order (bolt → vehicle GND → optional GND → body panel).	

Note Do not coat the surfaces of the sensor units to avoid degrading designed performance.

5. INSTALLATION PROCEDURE

1. REMOVAL OF INTERIOR TRIM COMPONENTS



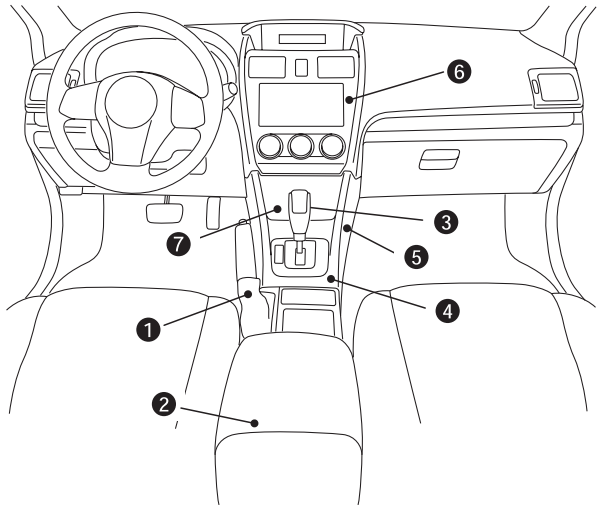
1-1 Passengers Seat Removal:

1. Remove two rear seat rail covers and four seat rail bolts.
2. Disconnect electronic components under the seat.
3. Protect seat frame rail legs with towel to avoid scratching.
4. Remove seat.

【Tightening torque should read 53 Nm (5.4 kgfm, 39ft-lbs)】

⚠ CAUTION

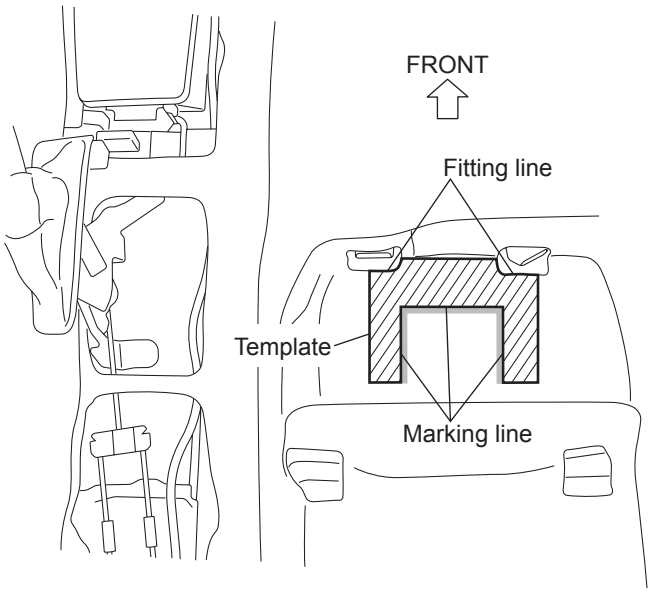
1. Before disconnecting any yellow (air bag) connectors, turn off ignition and disconnect (-) battery terminal for at least 20 seconds.
2. Be careful when working on the vehicle interior not to damage / scratch components.
3. Be careful when working to avoid injury.



1-2 Remove the following components:

❶ Cover of Parking brake lever
❷ Console box
❸ Shift knob (only the manual)
❹ Front cover
❺ Side cover
❻ Center panel or Audio
❼ Center pocket back panel

2. TRIM FLOOR CARPET

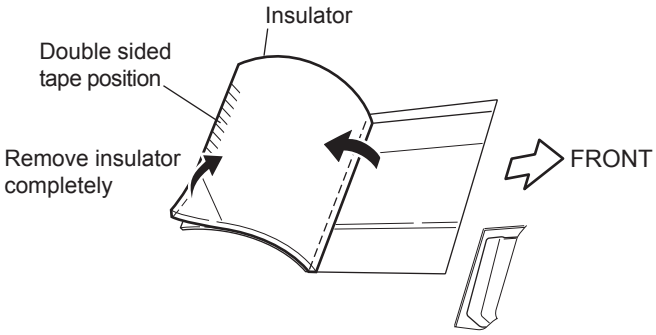


(Passenger side,under seat area)

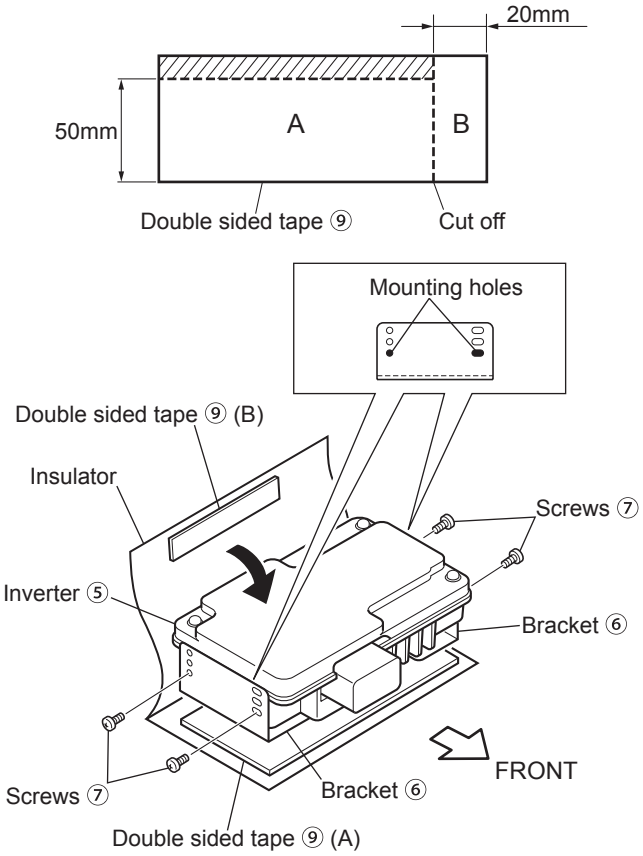
1. Cut out template located at the back of this instruction for the specific vehicle installation. Fit the template on floor carpet of the place as shown.
2. Draw use the chalk along the marking line of the template.
3. Remove the template and cut along the marking line as shown.

⚠ CAUTION

1. If floor carpet is not cut as shown, temperature of power inverter will increase during use and could negatively impact the operation of the power inverter.
2. When cutting the floor carpet, be carefull not to cut into any wire harnesses located beneath carpet.



3. INVERTER UNIT INSTALLATION

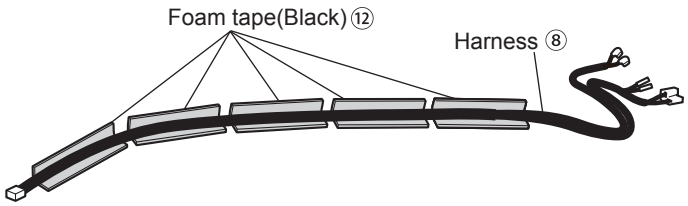


1. Cut off Double sided tape ⑨ as shown in left picture.
2. Fix the Brackets ⑥ on Inverter ⑤ with four Screws ⑦.
3. Apply the Double sided tape ⑨ (A) on the bottom of Bracket ⑥.
4. Locate position where Inverter ⑤ will be installed.
5. Pull up carpet and de-grease floor surface with Isopropyl alcohol where Inverter ⑤ will be installed.
6. Remove release liner from Double-sided tape ⑨ and apply on bottom of both Brackets ⑥.
7. Install Inverter ⑤ to center of cut area with connector facing forward.

⚠ CAUTION

1. Make sure that inverter is placed in correct direction and position.
2. Vehicle must be at room temperature.

4. HARNESS

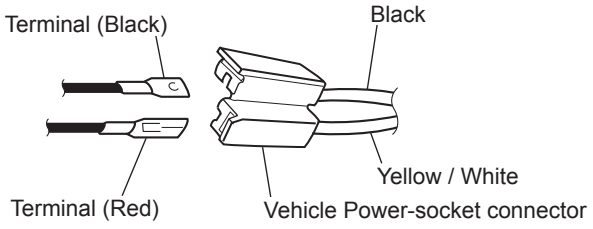


1. Apply the 5 Foam tapes ⑫ as shown.

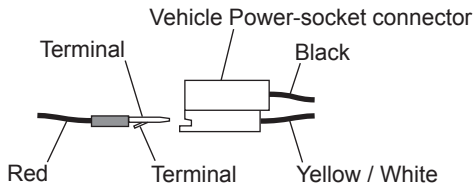
5. WIRE HARNESS INSTALLATION (In the case of hand brake car)

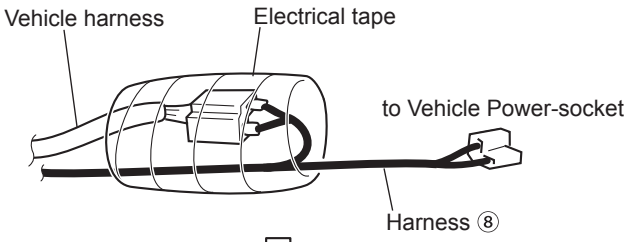
(If installing to the EPB car,please read from P.8)

5-1. CONNECT HARNESS TO VEHICLE HARNESS

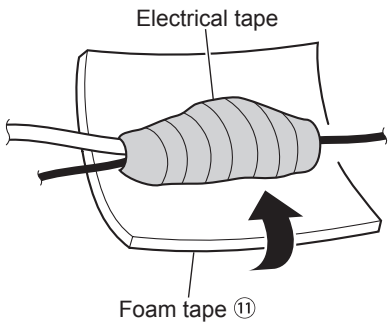


1. After disconnecting vehicle harness from 12V Power outlet, insert red spade terminal into yellow / white wire side of vehicle connector as shown. Insert black wire side of vehicle connector as shown.

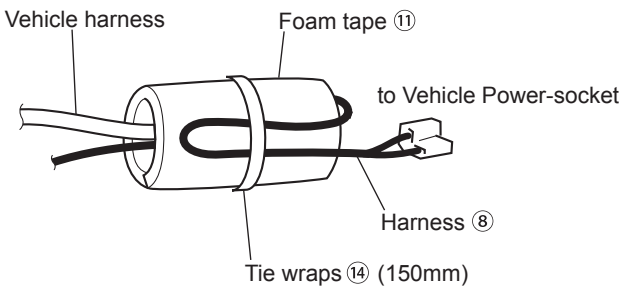




2. After all connections are made, wrap harness in Electrical tape as shown.

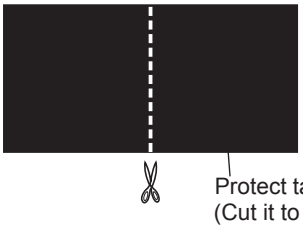


3. After wrapping harness in Electrical tape, overwrap in Foam tape ⑪ as shown.

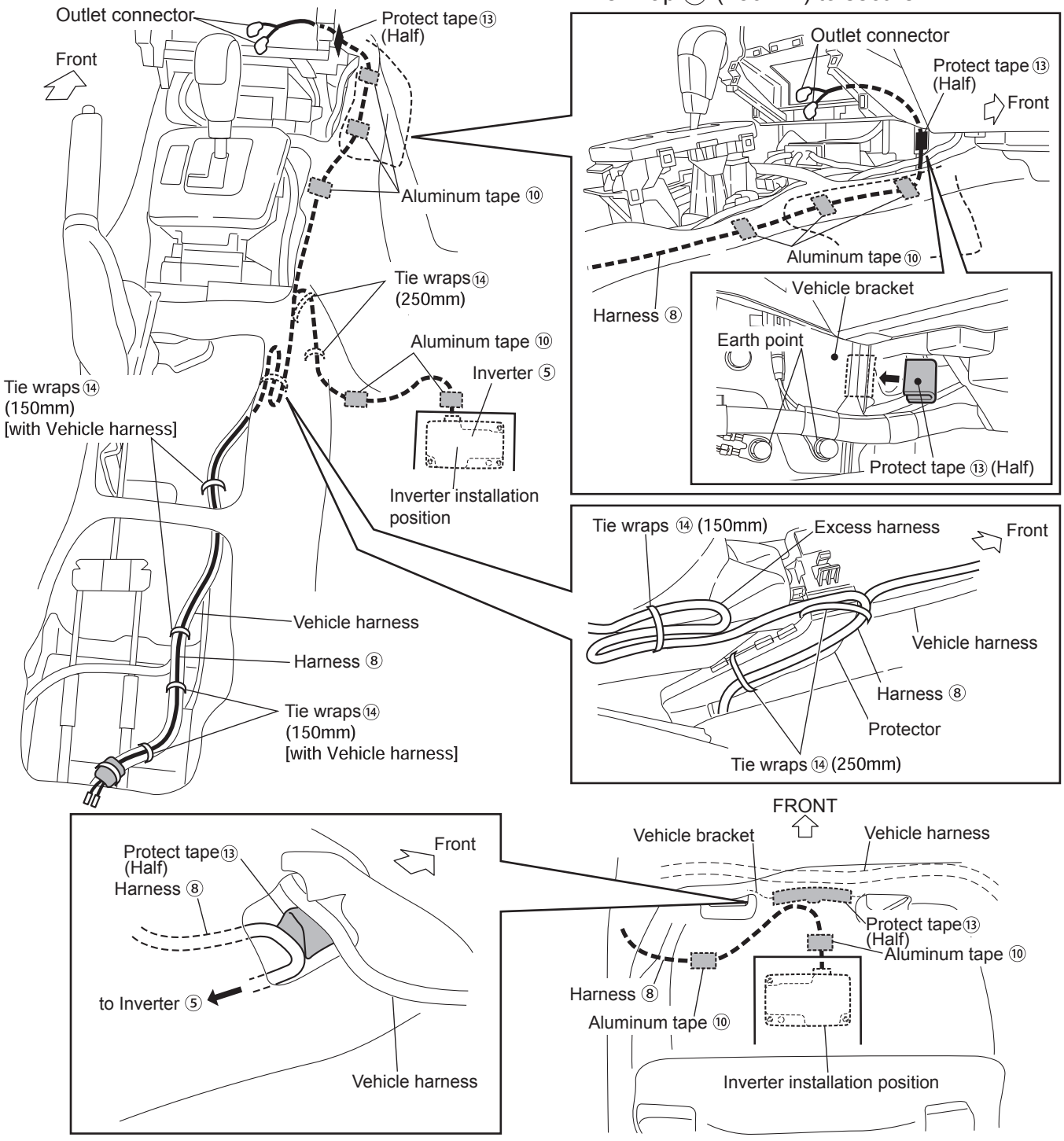


4. Use Tie wrap ⑭ (150mm) to secure vehicle harness of vehicle power outlet on Foam tape ⑪ as shown.

5-2. WIRE HARNESS INSTALLATION

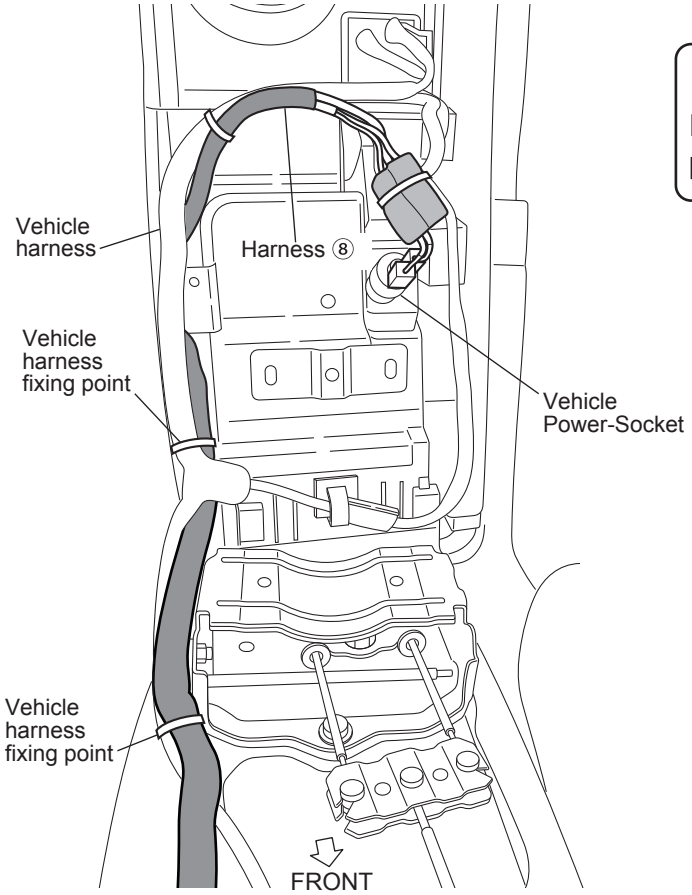


1. Cut protect tape ⑬ to half.
2. Route the harness to the floor carpet cutout area as shown.
3. Connect Harness ⑧ to the Inverter ⑤.
4. Apply the Protect tape ⑬ as shown.
5. From Inverter ⑤ to the remainder length, in place with 2 Aluminum tapes ⑩ and 2 Tie wraps ⑭ (250mm) to secure as shown.
6. From Outlet ① connector to the Harness ⑧ remainder length, use 3 Aluminum tapes ⑩ and 4 Tie wraps ⑭ (150mm) to secure.
7. Bundle up the excess Harness ⑧ and use Tie wrap ⑭ (150mm) to secure.



5-3. TEMPORARY RECONSTRUCTION OF CONSOLE BOX

WRX (BASE)

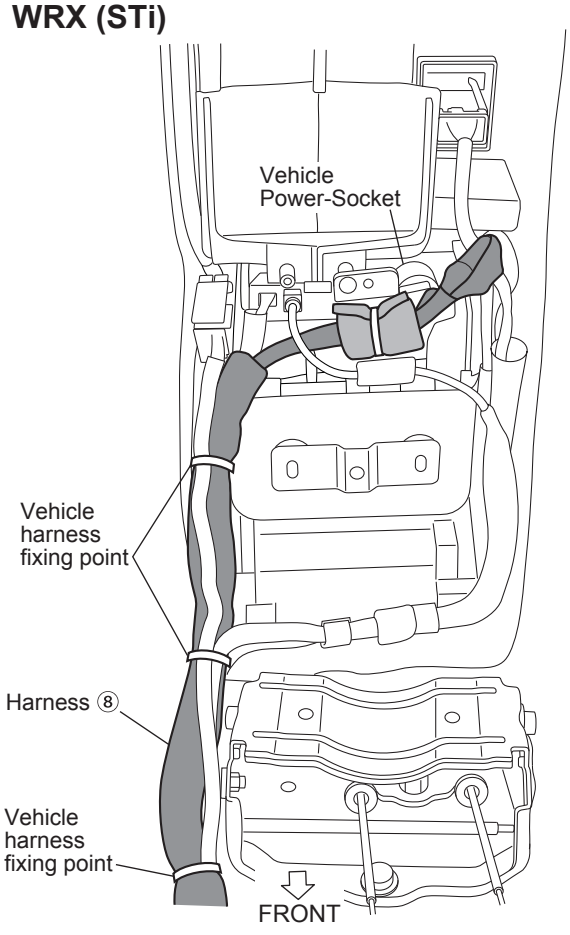


1. Restore the Vehicle harness and Harness ⑧ to the console box as shown.

⚠ CAUTION

In Order to avoid disconnection of the harness, please go to ensure the restoraction.

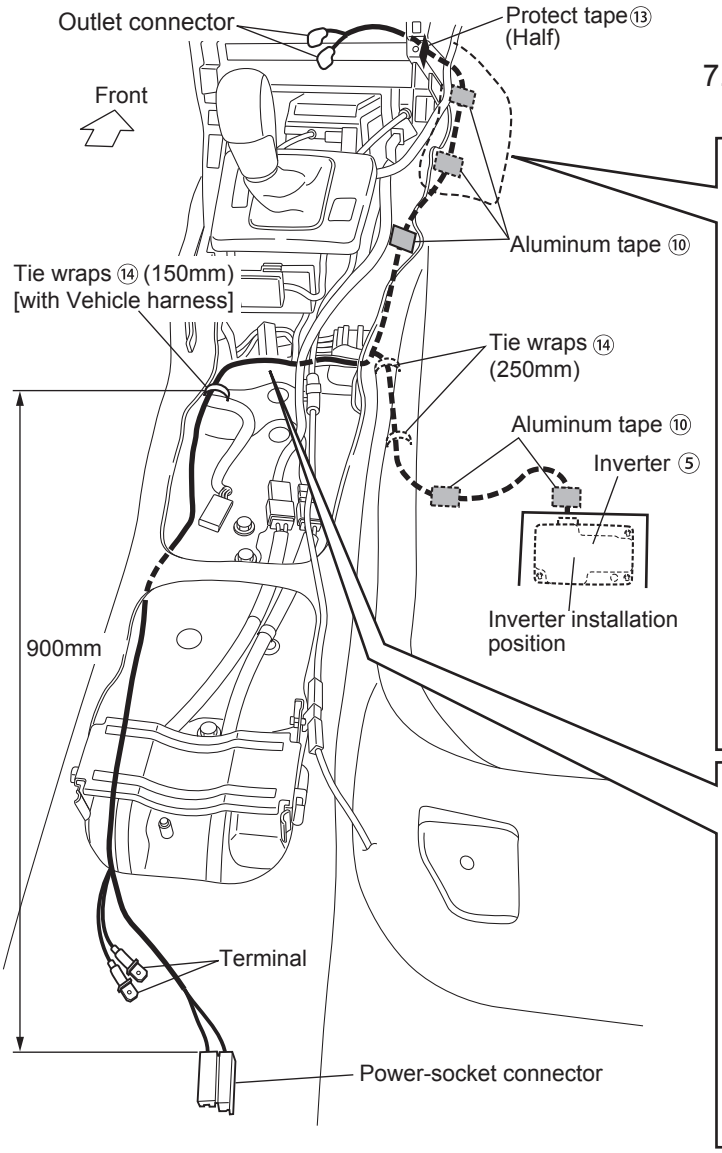
WRX (STi)

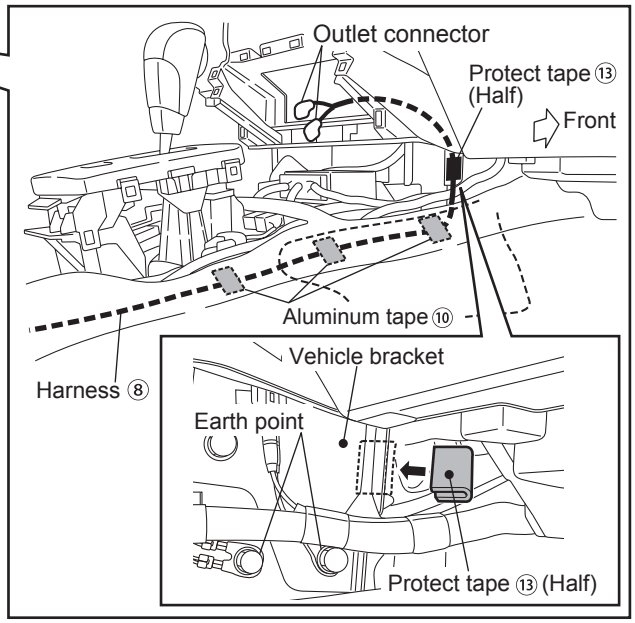


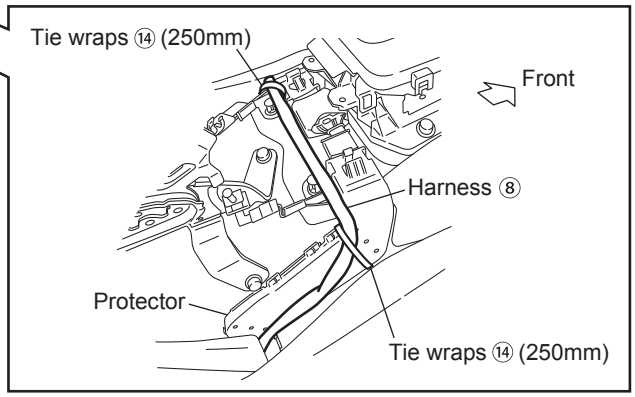
6. WIRE HARNESS INSTALLATION (In the case of EPB car)

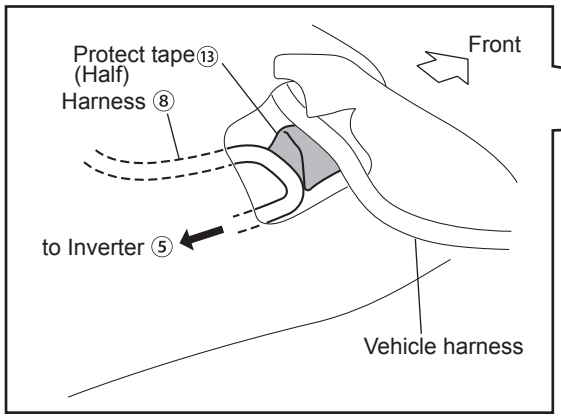
6-1. WIRE HARNESS INSTALLATION

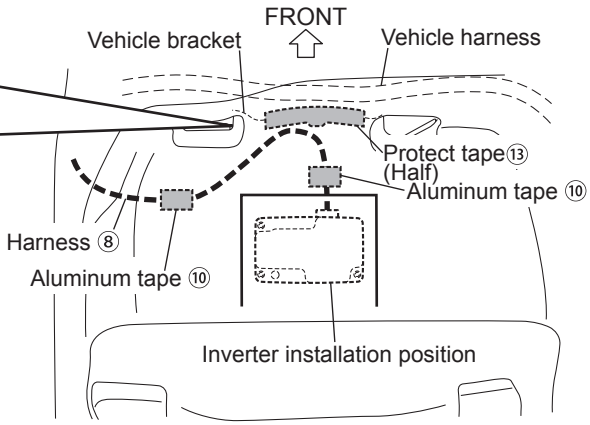
1. Cut protect tape ⑬ to half.
2. Route the harness to the floor carpet cutout area as shown.
3. Connect Harness ⑧ to the Inverter ⑤.
4. Apply the Protect tape ⑬ as shown.
5. From Inverter ⑤ to the remainder length, in place with 2 Aluminum tapes ⑩ and 2 Tie wraps ⑭ (250mm) to secure as shown.
6. From Outlet ① connector to the Harness ⑧ remainder length,use 3 Aluminum tapes ⑩ and 4 Tie wraps ⑭ (150mm) to secure.
7. Bundle up the excess Harness ⑧ and use Tie wrap ⑭ (150mm) to secure.



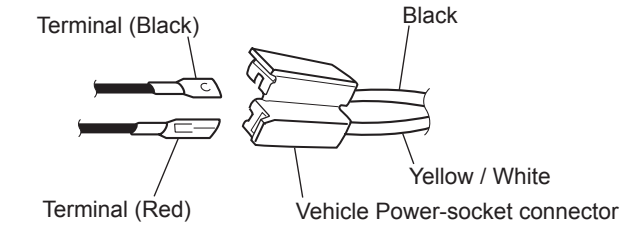




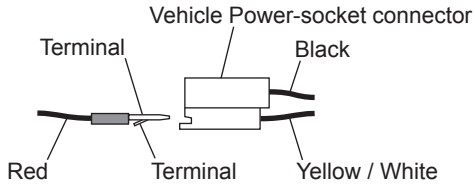


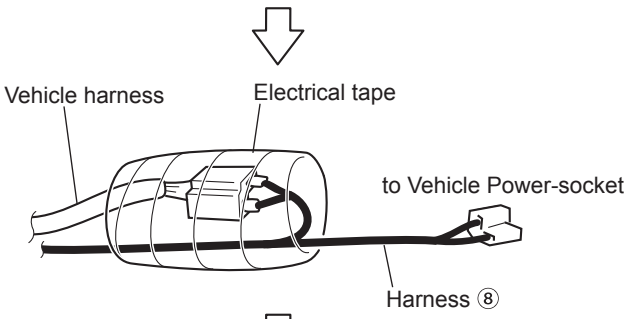


6-2. CONNECT HARNESS TO VEHICLE HARNESS

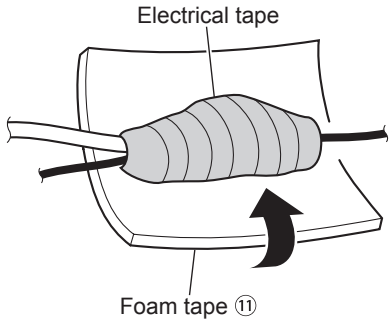


1. After disconnecting vehicle harness from 12V Power outlet, insert red spade terminal into yellow / white wire side of vehicle connector as shown. Insert black wire side of vehicle connector as shown.

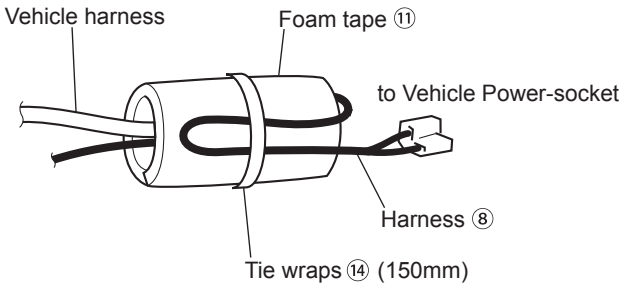




2. After all connections are made, wrap harness in Electrical tape as shown.

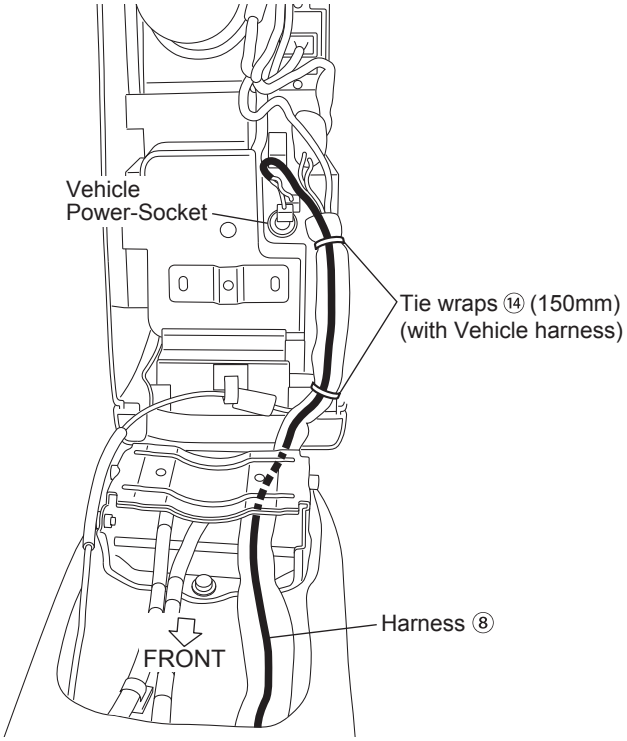


3. After wrapping harness in Electrical tape, overwrap in Foam tape ⑪ as shown.



4. Use Tie wrap ⑭ (150mm) to secure vehicle harness of vehicle power outlet on Foam tape ⑪ as shown.

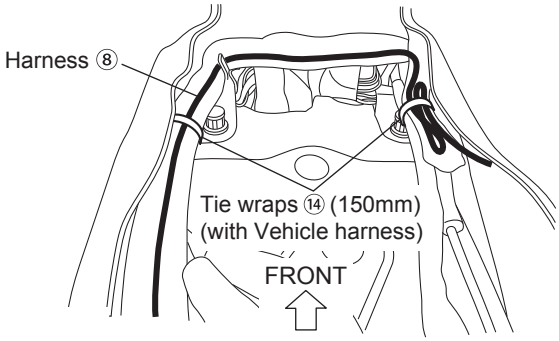
6-3. TEMPORARY RECONSTRUCTION OF CONSOLE BOX



1. Restore the Vehicle harness and Harness ⑧ to the console box as shown.

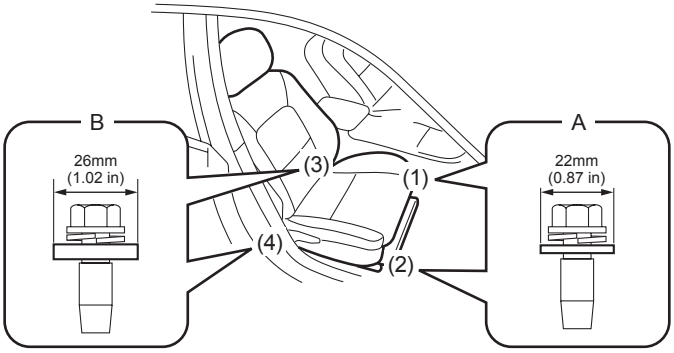
⚠ CAUTION

In Order to avoid disconnection of the harness, please go to ensure the restoraction.



2. Restore the console box,and bundle up the excess harness and use Tie wraps ⑭ (150mm) to Vehicle harness as shown.

7. PASSENGER SEAT INSTALL



⚠ CAUTION

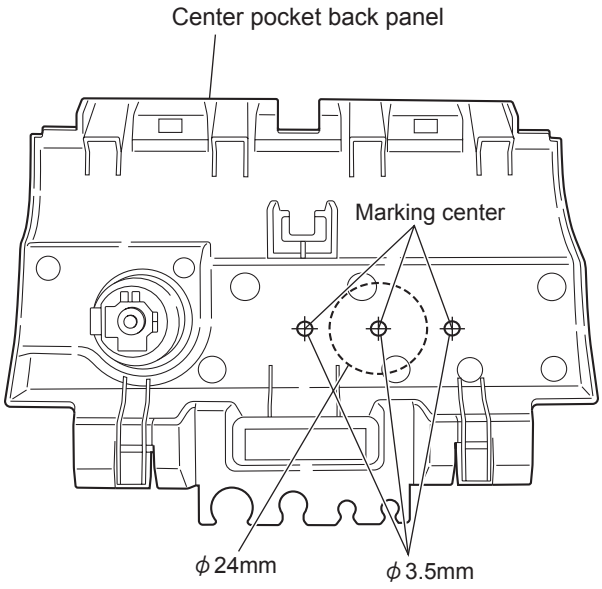
1. The seat mounting bolts differ between the front mounting points and the rear mounting points. Make sure that you are using correct bolts at correct positions.
2. Tighten the slide rail installing bolt gradually in several steps to the specified torque in the order as shown in the figure.

- Front (bolt A) : Washer diameter 22mm (0.87 in)
- Rear (bolt B) : Washer diameter 26mm (1.02 in)
- Tightening torque : Front seat assembly : 53N • m (5.4 kgf-m, 39.1 ft-lb)

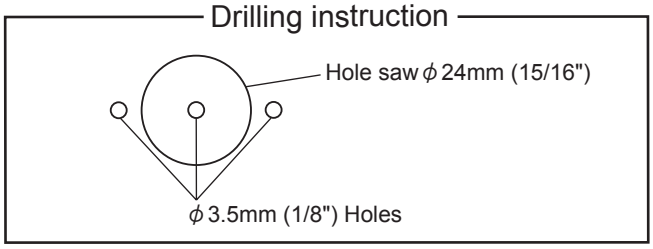
⚠ CAUTION

This product requires removal of the passenger 's seat. As a result of the removal of the passenger 's seat it will be necessary to re-calibrate the Occupant Detection System. If not properly calibrated the Occupant Detection System may not operate as designed which may result in injuries to the front seat passenger. Therefore, it is strongly recommended that the product be installed at an authorized Subaru dealer.

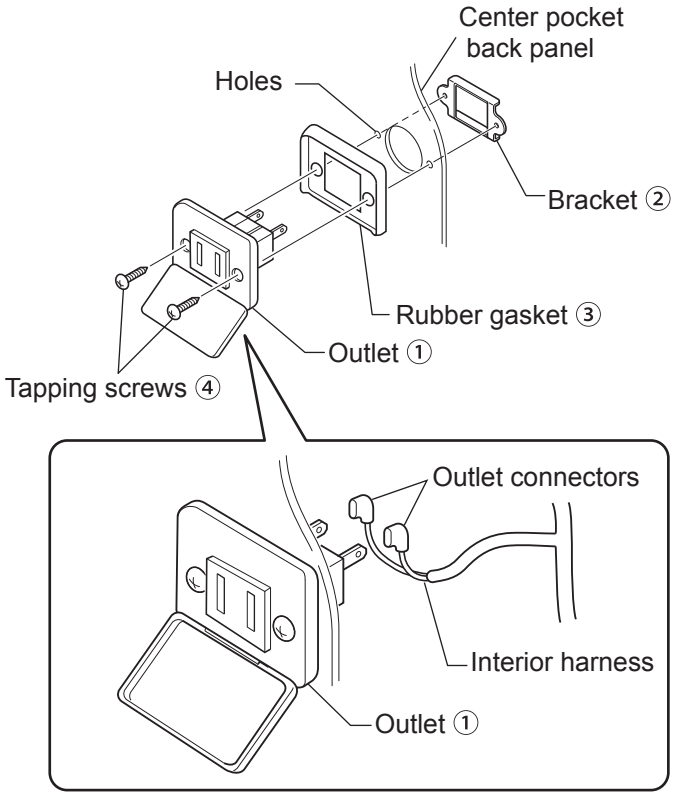
8. OUTLET MOUNTING HOLE PROCESSING



1. Drill three ϕ3.5mm (1/8") holes and then enlarge center hole ϕ24mm (15/16") with hole saw.



9. OUTLET INSTALLATION



1. Fit Rubber gasket ③ onto Outlet ① and position
   Outlet ① over holes drilled from the above step.
2. Place Bracket ② on the other side of the center console and mount the Outlet ① with the two supplied self Tapping screws ④.

3. Place console back in position and connect female receptacle connectors to back of Outlet ① as shown and verify that the rubber caps are firmly secured.

⚠ CAUTION

When connecting the female receptacle connectors to the back of the Outlet. it does not matter which wire (color) is connected to each terminal.

6. CHECK THE OPERATION

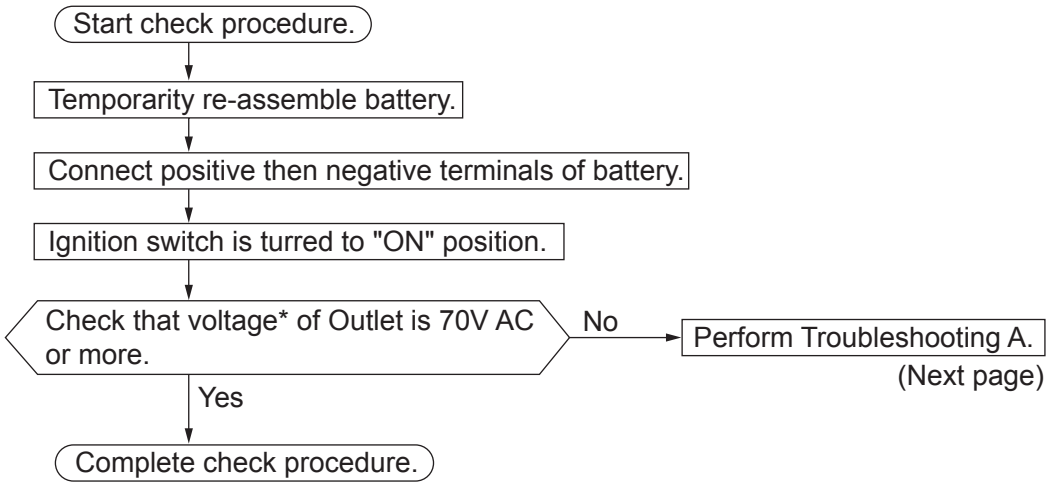
⚠ CAUTION
Verify that all yellow (Air bag) connectors are connected firmly.

1. POST-INSTALLATION CHECK

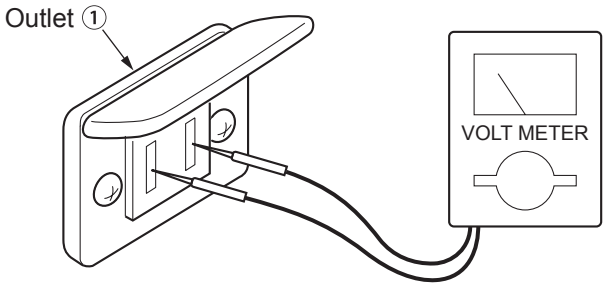
1. Check that all wiring and attaching points are correct.
2. Be careful not to pinch, strain, or crush wires during reassembly.
3. Be careful not to damage vehicle parts during reassembly.

2. CHECK VOLTAGE

1. Use a volt meter to measure voltage. Strictly keep the volt meter set at range of "250V AC or more" for measuring any power supply of 115V AC or more.



* The volt meter voltage reading may be less than 115V AC depending on tester types.
* Output waveform is rectangular.
* When the battery voltage is low, the voltage of outlet may not maintain the rated 70V AC or more.



7. TROUBLESHOOTING

This section describes the inspection procedure for malfunction which may take place after installation is completed. Use a circuit tester for continuity and/or voltage testing.

Checking Procedure A

Checking connectors of the main body

Check the continuity and/or voltage of connector terminals connected to the main body (with all other connectors still connected).

Terminal		Test parameter	Conditions	Tolerance	When outside the tolerance
Tester +	Tester -				
1	4	Voltage	Ignition key should be changed from OFF to ACC or ON position.	0V to 10V or more	Perform Checking Procedure C
3	Ground	Continuity	All the time	No continuity	Replace the harness with new one.
7	Ground	Continuity	All the time	No continuity	Replace the harness with new one.

Ⓐ

3			2	1
8	7	6	5	4

(Female)

Everything is within the tolerance.

Are Female Receptacles B and C connected? — No → Connect it.

Yes

Is the output voltage of Outlet * 70V AC or more? — No → Replace Inverter with new one.

Yes

Is the output voltage of Outlet 70V AC or more? — Yes → (The original inverter was defective.)

No

Proceed to next step.

Replace harness with new one since it is defective.

* The voltmeter voltage reading may be less than 115V AC depending on tester types.
* Output waveform is rectangular.
* When the battery voltage is being decreased, the voltage of outlet might not keep the rated 70V AC or more.

Checking Procedure B

Is the wire tap connected at the correct position (E)? — No → Connect it.

Yes

Is the connecting procedure of the wire tap (page 17) correct? — No → Connect the wire tap at the correct position.

Yes

Is the vehicle connector connected? — No → Connect it.

Yes

Does the internal relay of the cabin harness make "click" sound when the ignition key is turned to "ON" position? — No → Inspect the Cigerette lighter fuse in the fuse box.

Yes

Did the connector terminals serve as the reference? — No → Replace the harness because it is defective.

Yes

End of inspection

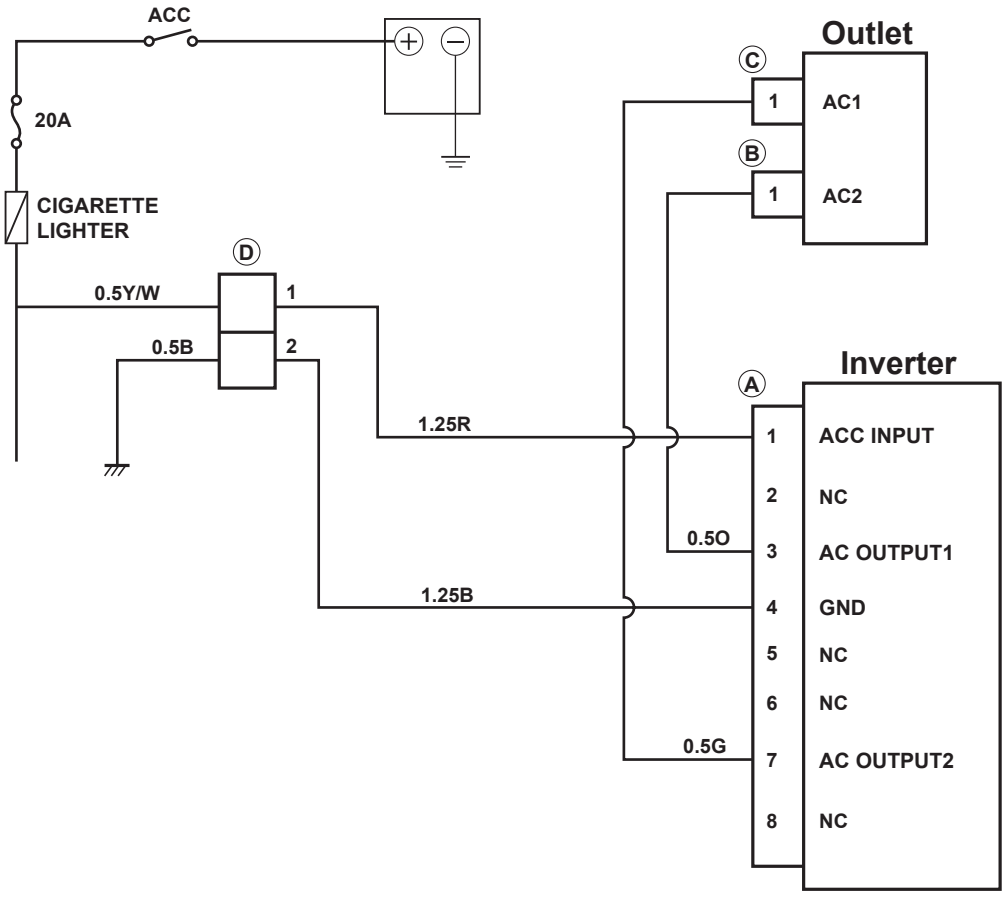
8. RE-ASSEMBLY

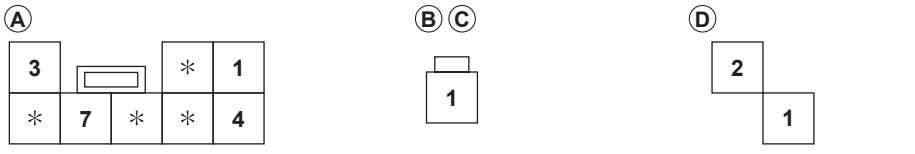
After the check procedure is completed, re-assemble all removed vehicle parts and components paying attention not to damage them.

⚠ CAUTION

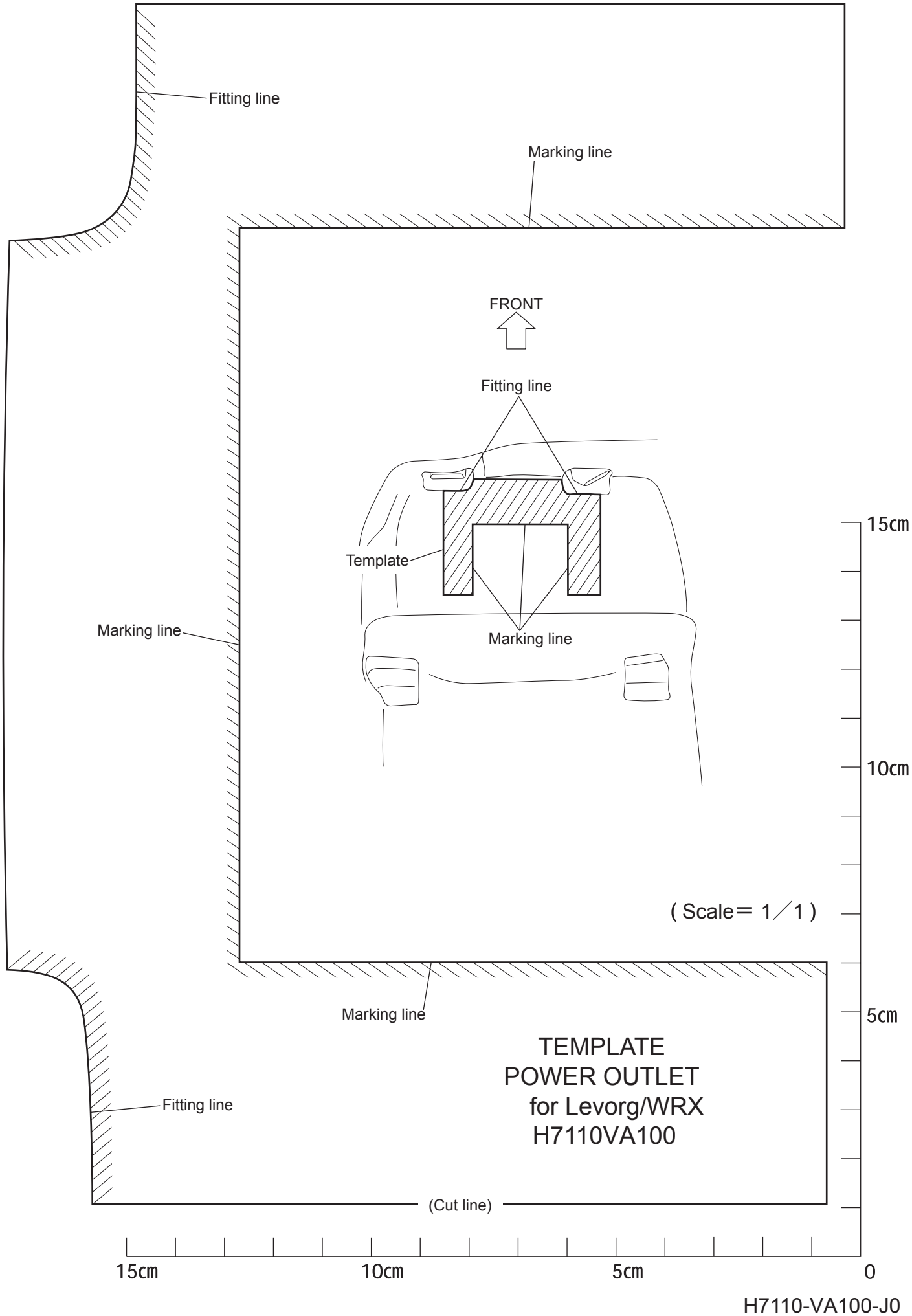
1. Be careful to avoid pinching the harness or any vehicle harness , or damaging any vehicle parts when reassembling parts and/or components.

9. CIRCUIT DIAGRAM





AC output power (max continuous)	100W
AC output surge capacity (peak)	120W
AC output voltage (nominal)	120V
AC output frequency	60 Hz
AC input waveform	Modified Sine
Low input shutdown voltage (inverter)	DC11V



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