

AUTOMATIC TRANSAXLE REMOVAL/INSTALLATION [GW6A-EL]

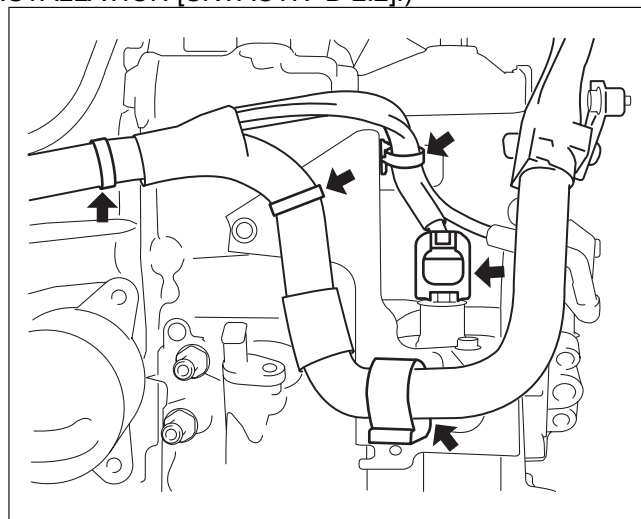
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Caution

- If the automatic transaxle has been replaced, perform initial learning. (See INITIAL LEARNING [GW6A-EL, GW6AX-EL].)
- Performing the following procedures without first removing the front ABS wheel-speed sensor may possibly cause an open circuit in the harness if it is pulled by mistake. Before performing the following procedures, disconnect the front ABS wheel-speed sensor (axle side) and fix it to an appropriate place where the sensor will not be pulled by mistake while servicing the vehicle.
- Secure the steering wheel using tape or a cable to prevent the steering shaft from rotating after disconnecting the steering shaft. If the steering wheel rotates after the steering shaft and the steering gear and linkage are disconnected, the internal parts of the clock spring could be damaged.

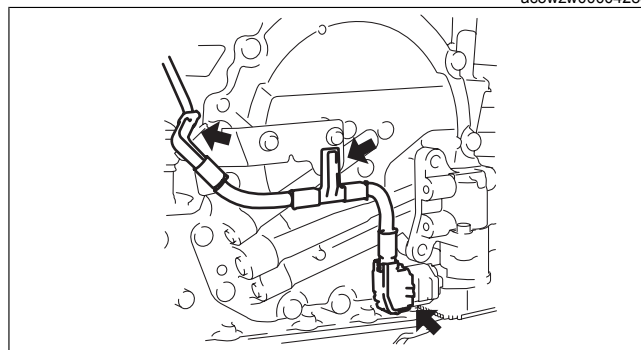
Removal

1. Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].)
2. Remove the air cleaner and air hose as a single unit. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
3. Remove the battery tray. (See BATTERY REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
4. Disconnect the wiring harness clip from the transaxle.
5. Remove the splash shield. (See SPLASH SHIELD REMOVAL/INSTALLATION.)



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6. Disconnect the electric AT oil pump connector and electric AT oil pump harness from the transaxle.

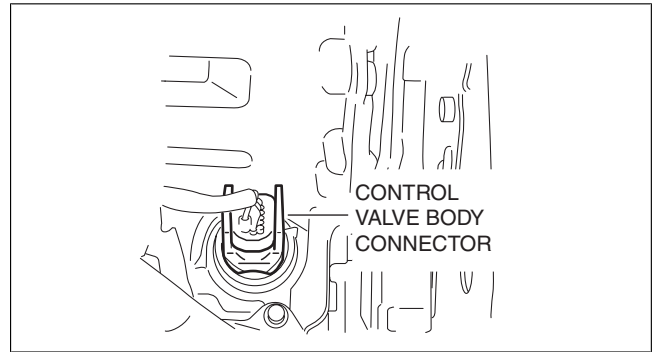


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7. Disconnect the control valve body connector.

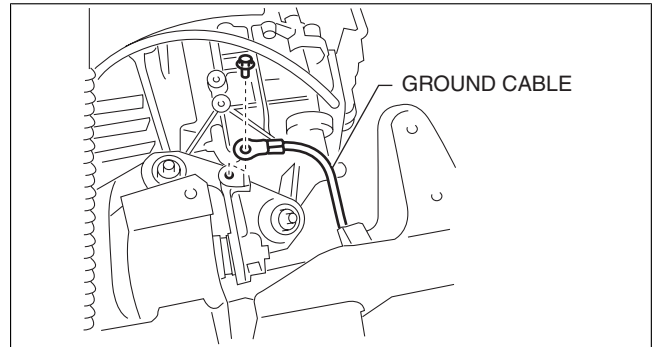
Caution

- Make sure that your hand does not touch the terminal as the connector terminal could be damaged.
- Water or foreign matter entering the connector can cause a poor connection or corrosion. Be careful not to allow water droplets or foreign matter to get on the connector when disconnecting it.



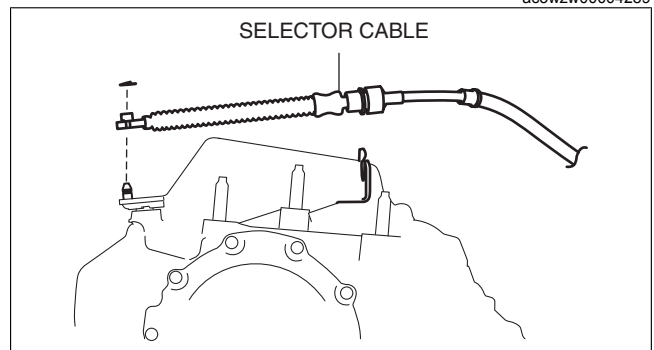
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8. Disconnect the ground cable.



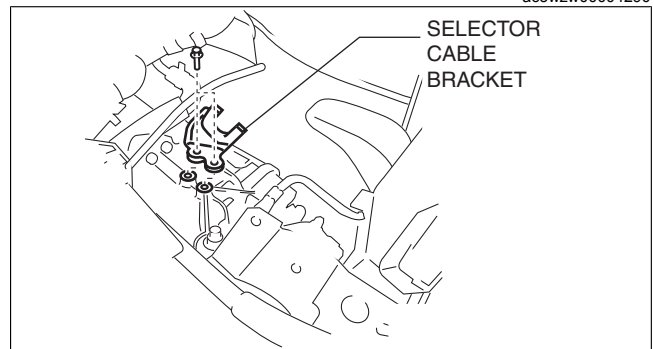
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9. Disconnect the selector cable from the transaxle.



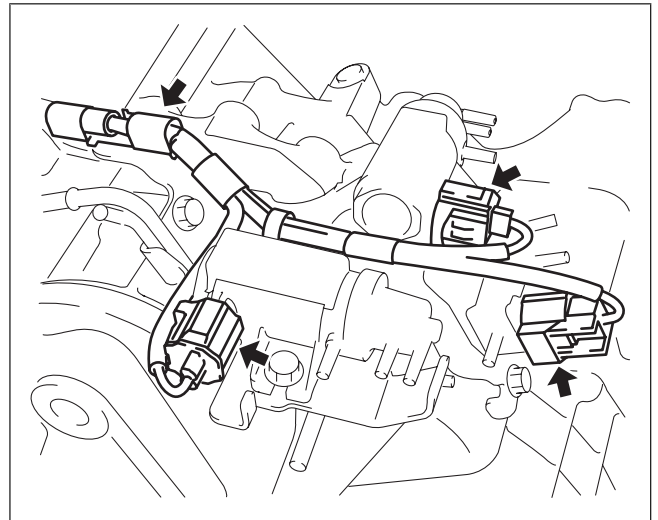
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10. Remove the selector cable bracket.
11. Remove the EGR cooler. (See EGR COOLER REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)



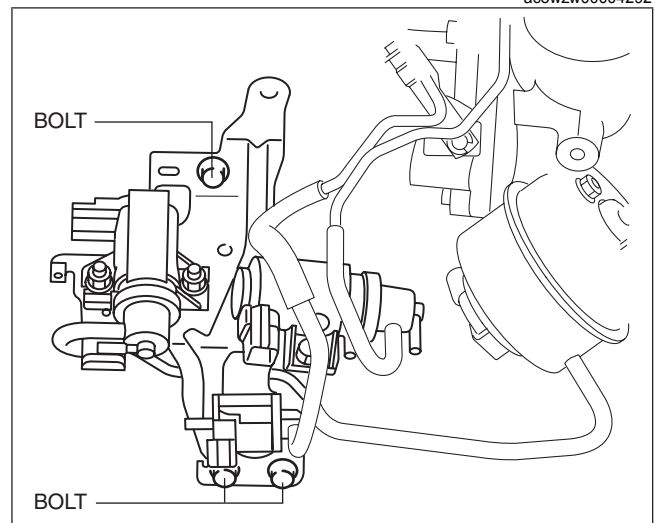
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12. Disconnect the solenoid valve connectors and the wiring harness from the solenoid valve component.
(See COMPRESSOR BYPASS SOLENOID VALVE REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
(See REGULATING SOLENOID VALVE REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
(See WASTEGATE SOLENOID VALVE REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

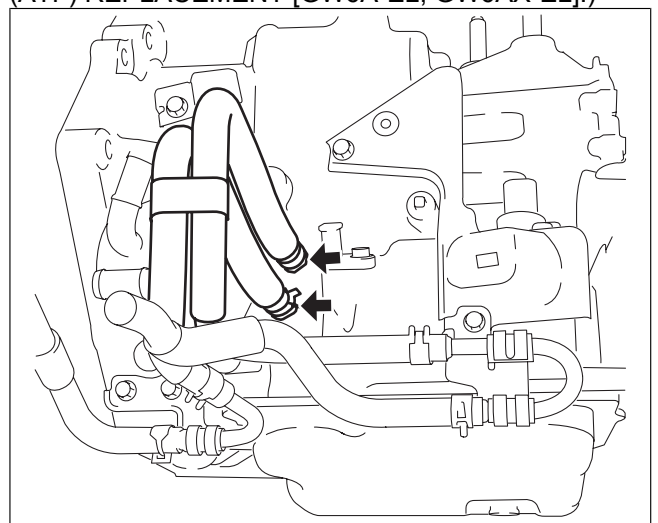


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13. Disconnect the solenoid valve component from the ATX with the hose still connected, and set it out of the way. (See COMPRESSOR BYPASS SOLENOID VALVE REMOVAL/INSTALLATION [SKYACTIV-D 2.2].) (See REGULATING SOLENOID VALVE REMOVAL/INSTALLATION [SKYACTIV-D 2.2].) (See WASTEGATE SOLENOID VALVE REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
14. Disconnect the breather hose from the transaxle.
15. Remove the joint cover. (See STEERING WHEEL AND COLUMN REMOVAL/INSTALLATION.)
16. Disconnect the intermediate shaft from the steering gear and linkage. (See STEERING WHEEL AND COLUMN REMOVAL/INSTALLATION.)
17. Remove the front tires. (See GENERAL PROCEDURES (SUSPENSION).)
18. Remove the front under cover No.2. (See FRONT UNDER COVER No.2 REMOVAL/INSTALLATION.)
19. Remove the front under cover No.1. (See FRONT UNDER COVER No.1 REMOVAL/INSTALLATION.)
20. Drain the ATF. (See AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [GW6A-EL, GW6AX-EL].)
21. Disconnect the oil hose from the transaxle. (With oil cooler No.2) (See OIL COOLER REMOVAL/INSTALLATION [GW6A-EL, GW6AX-EL].)

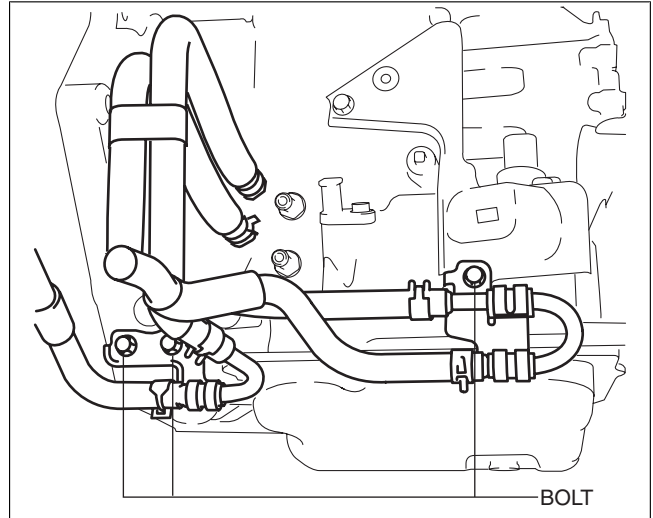


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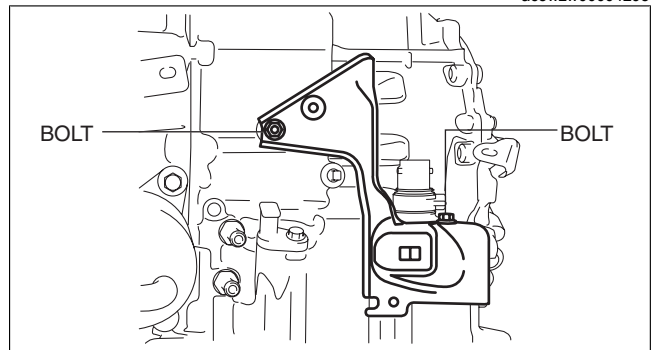
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22. Set the oil pipe component in a place which does not interfere with the servicing. (With oil cooler No. 2) (See OIL COOLER REMOVAL/INSTALLATION [GW6A-EL, GW6AX-EL].)



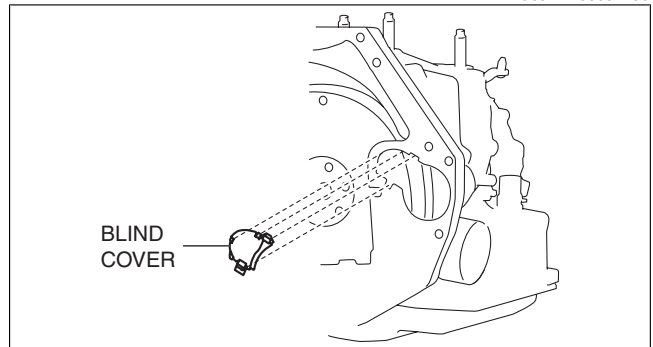
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23. Remove the bracket from the transaxle.
24. Disconnect the oil cooler from the transaxle with the hose connected. (Except Automatic Transaxle Replacement) (See OIL COOLER REMOVAL/INSTALLATION [GW6A-EL, GW6AX-EL].)
25. Disconnect the water hose from the oil cooler. (Automatic Transaxle Replacement) (See OIL COOLER REMOVAL/INSTALLATION [GW6A-EL, GW6AX-EL].)
26. Remove the starter. (See STARTER REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)



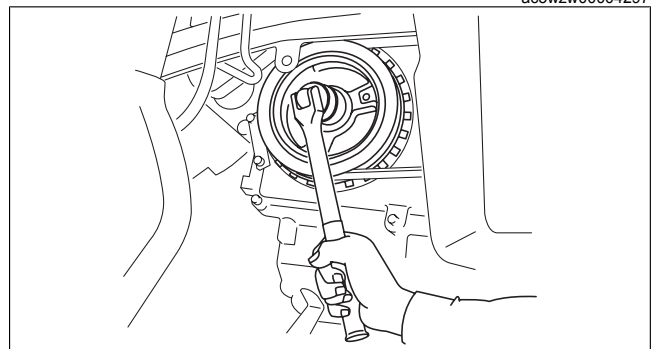
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27. Remove the blind cover.



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28. Hold the crankshaft pulley to prevent drive plate from rotating.



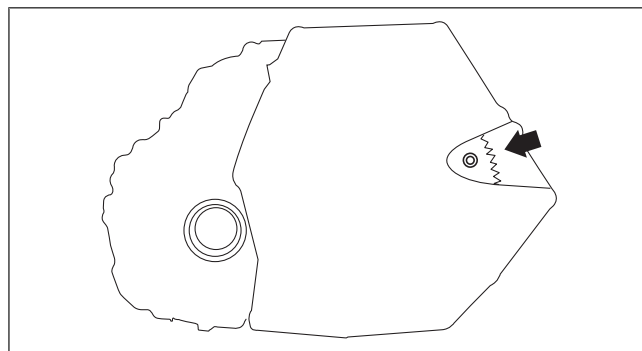
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29. Remove the torque converter nuts from the starter installation hole.

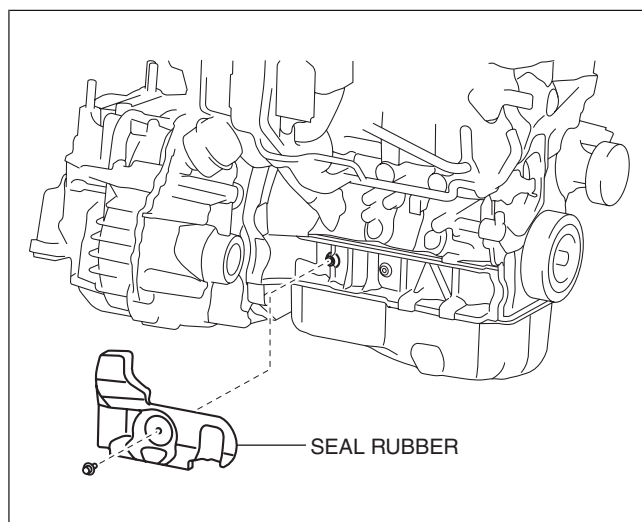
Note

- There are six installation nuts.

30. Disconnect the front ABS wheel-speed sensors from the steering knuckles. (See FRONT ABS WHEEL-SPEED SENSOR REMOVAL/INSTALLATION.)
31. Disconnect the clips securing the brake hose from the front shock absorbers. (See BRAKE HOSE (FRONT) REMOVAL/INSTALLATION.)
32. Disconnect the tie-rod end ball joints from the steering knuckles. (See STEERING GEAR AND LINKAGE REMOVAL/INSTALLATION.)
33. Disconnect the front lower arms from the steering knuckles. (See FRONT LOWER ARM REMOVAL/INSTALLATION.)
34. Disconnect the front stabilizer control links from the front stabilizer. (See FRONT STABILIZER REMOVAL/INSTALLATION.)
35. Disconnect the front drive shaft (LH) from the transaxle. (See FRONT DRIVE SHAFT REMOVAL/INSTALLATION.)
36. Disconnect the front drive shaft (RH) from the transaxle. (See FRONT DRIVE SHAFT REMOVAL/INSTALLATION.)
37. Remove the seal rubber.
38. Remove the front crossmember component and No. 1 engine mount rubber as a single unit. (See FRONT CROSSMEMBER REMOVAL/INSTALLATION.)

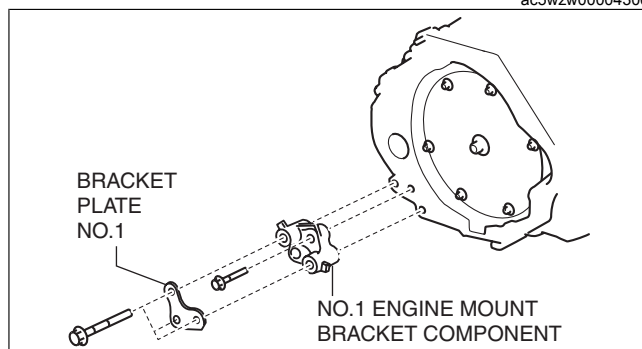


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39. Remove the bracket plate No.1 and No.1 engine mount bracket component from the transaxle.



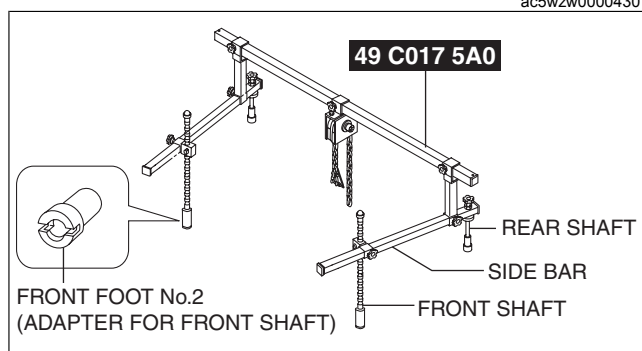
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40. Install the **SST** using the following procedures.

Caution

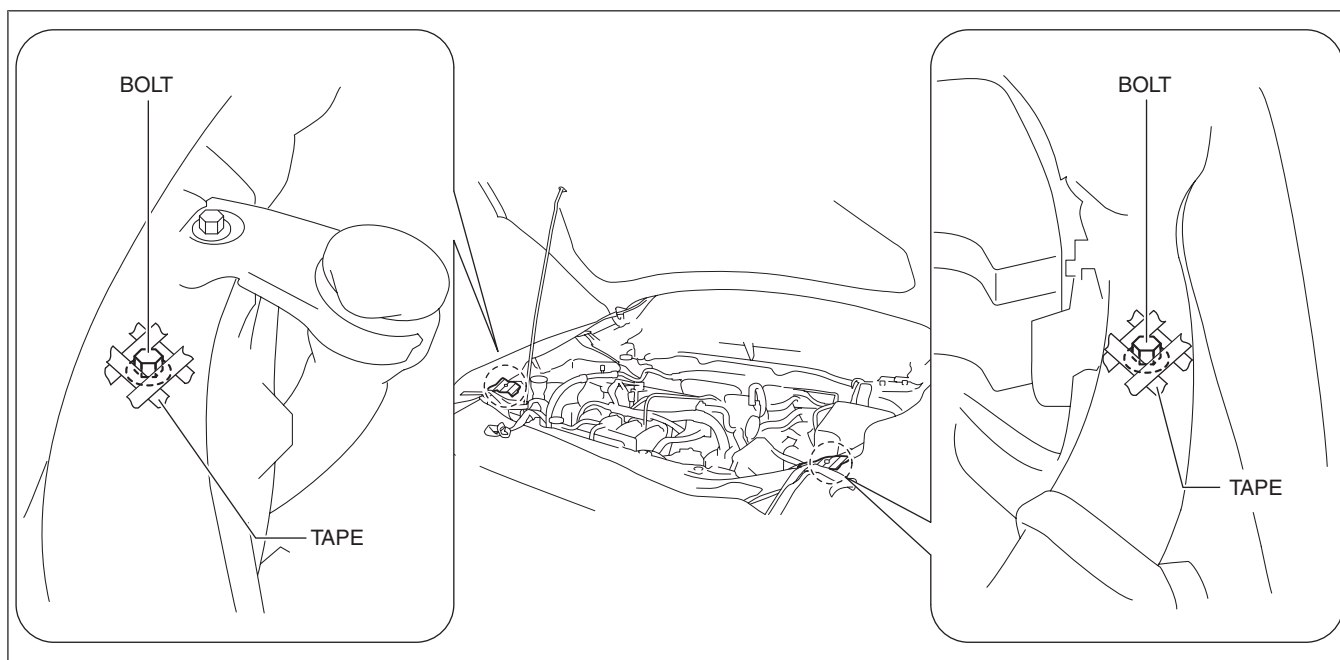
- Refer to the **SST** instruction manual for the basic handling procedure.

- (1) Install one front foot No.2 to each of the left and right front shafts of the **SST**.

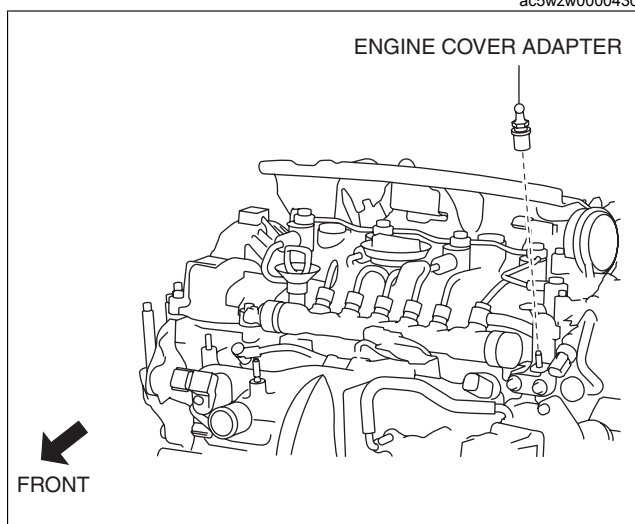


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- (2) Protect the positions shown in the figure using tape.



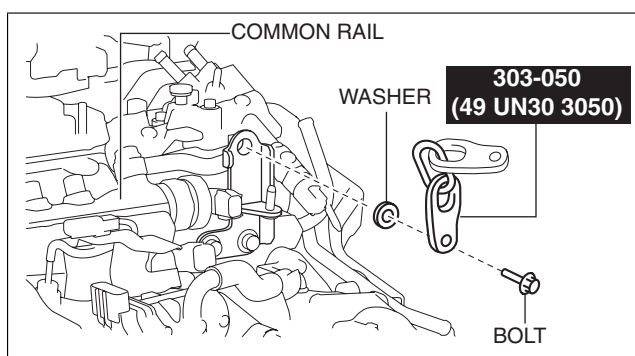
(3) Remove the engine cover adapter.



(4) Install the SST to the position shown in the figure using the following bolt and washer.
Engine front side

Bolt: part number 99794 1025 or an M10—1.25, length 25 mm {0.98 in}
Washer: approx. 3 mm {0.1 in} thickness

Tightening torque
 38—51 N·m {3.9—5.2 kgf·m, 29—37 ft·lbf}

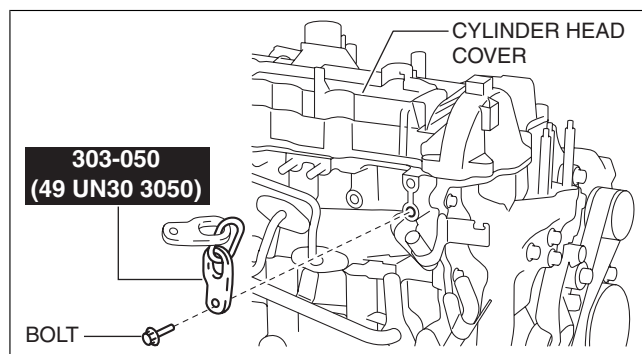


Engine rear side

Bolt: part number 99794 1025 or an M10—
1.25, length 25 mm {0.98 in}

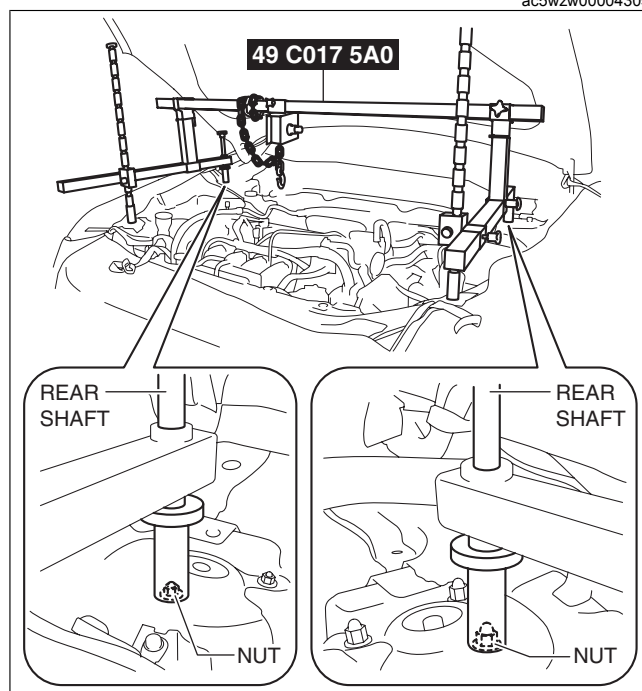
Tightening torque

38—51 N·m {3.9—5.2 kgf·m, 29—37 ft·lbf}



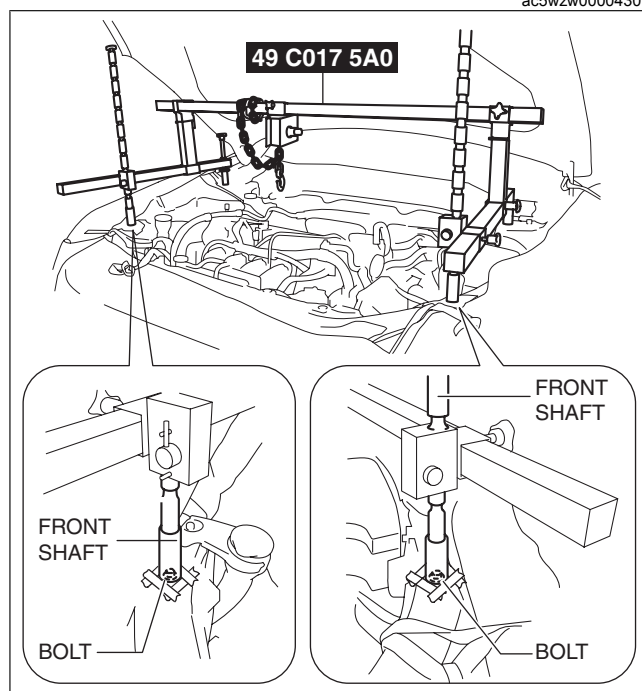
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- (5) As shown in the figure, set the rear shafts of the **SST** to the left and right shock absorber nuts.



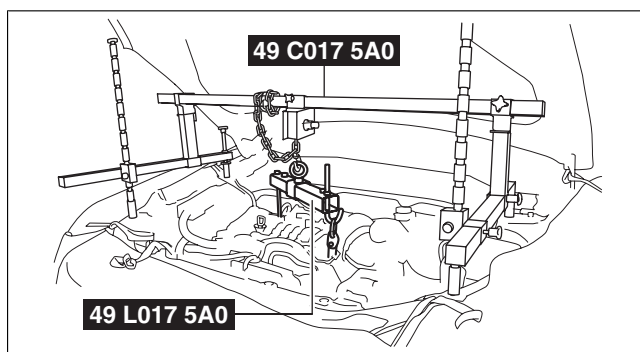
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- (6) As shown in the figure, set the front shafts of the **SST** to the left and right bolts.



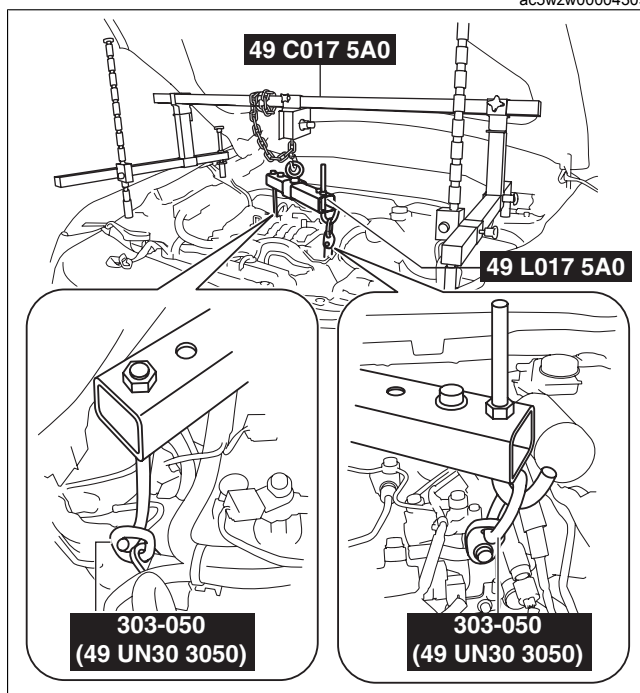
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- (7) Install the **SST** (49 L017 5A0) to the **SST** (49 C017 5A0) as shown in the figure.



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- (8) Install the **SST** (49 L017 5A0) to the **SST** (49 UN30 3050) with the hook of the **SST** (49 L017 5A0) facing outward.
- (9) Adjust the height of the left and right side bars so that they are leveled, then tighten each part of the **SST**.
- (10) Apply tension to the chain to secure the engine.



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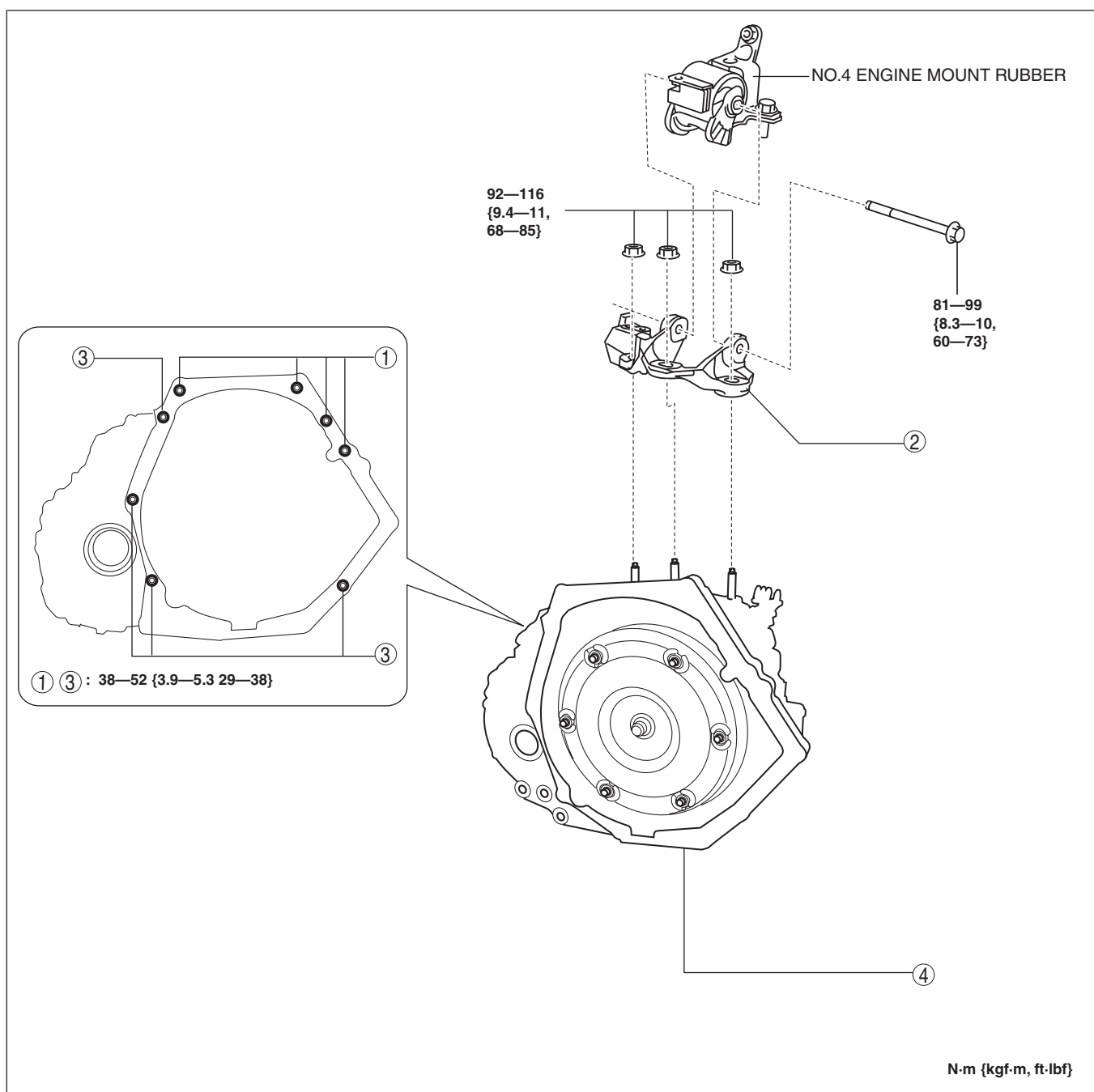
41. Remove in the order shown in the figure.

Warning

- Improperly jacking a transaxle is dangerous. It can slip off the jack and may cause serious injury.

Caution

- To prevent the torque converter and transaxle from separating, remove the transaxle without tilting it toward the torque converter.



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1	Transaxle mounting bolts (upper side)
2	No.4 engine mount bracket (See No.4 engine mount bracket removal note.)
3	Transaxle mounting bolts (lower side) (See Transaxle mounting bolt removal note.)
4	Transaxle (See No.4 engine mount bracket removal note.) (See Transaxle mounting bolt removal note.)

No.4 engine mount bracket removal note

Caution

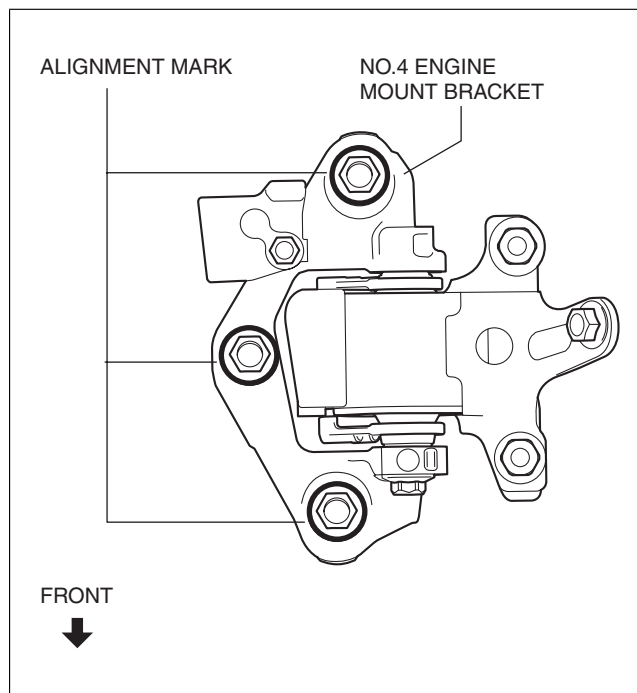
- A slot has been adopted for the No.4 engine mount bracket installation hole. If the No.4 engine mount bracket is deviated from the original position when installing the No.4 engine mount, engine noise or vibration could increase. When removing the No.4 engine mount, place alignment marks on the No.4 engine mount bracket so that they can be assembled to the same positions as before removal.

1. Place alignment marks on the locations shown in the figure so that they can be assembled to the same positions as before removal.

Note

- Paint so that the outline of the nut is framed on the bracket side.

2. Remove the No.4 engine mount bracket.



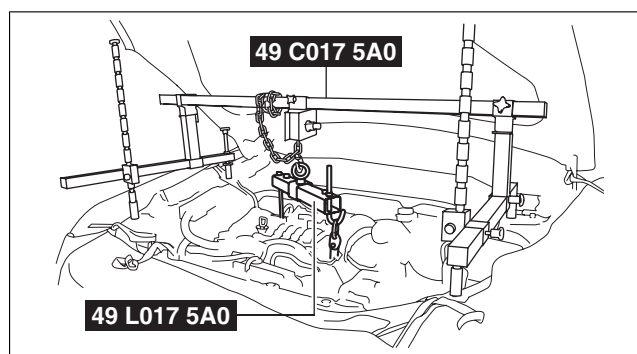
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Transaxle mounting bolt removal note

Warning

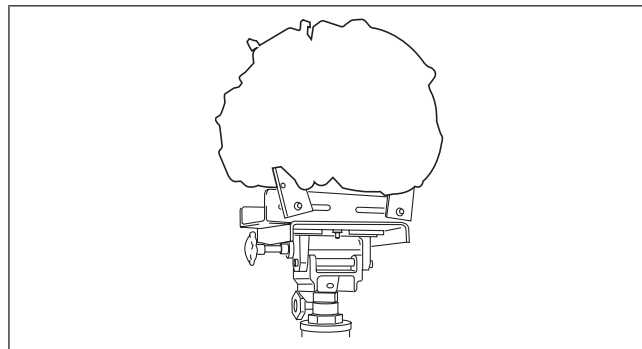
- Remove the transaxle carefully, holding it steady. If the transaxle falls it could be damaged or cause injury.

1. Adjust the **SST** and lean the engine toward the transaxle.



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2. Support the transaxle on a jack.
3. Remove the transaxle mounting bolts (lower side).
4. Remove the transaxle.



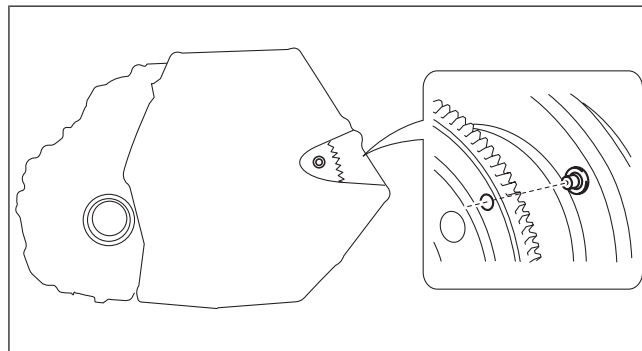
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Installation

Caution

- Verify that the torque converter stud bolts are inserted into the drive plate bolt holes, and install the transaxle installation bolts. Otherwise, the drive plate could be damaged.

1. Verify that the torque converter stud bolts are inserted into the drive plate bolt holes from the starter installation hole.

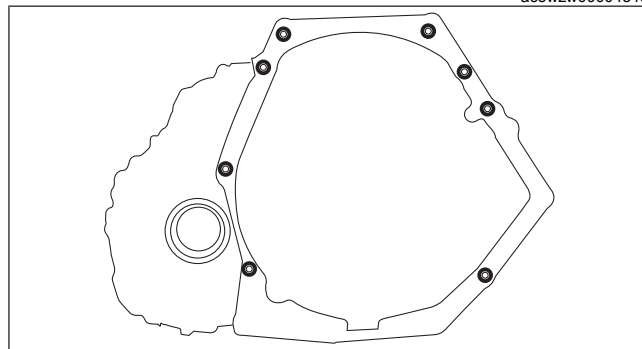


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2. Install the transaxle mounting bolts.

Tightening torque

38—52 N·m {3.9—5.3 kgf·m, 29—38 ft·lbf}



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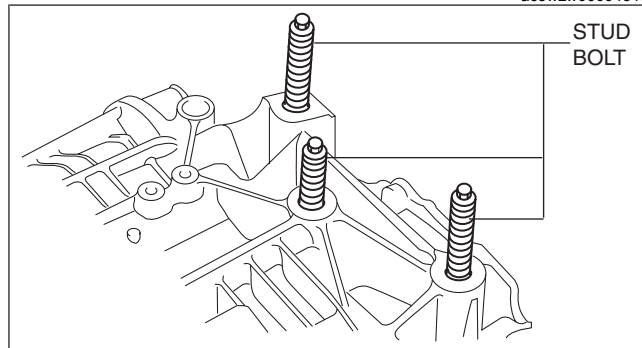
3. Tighten the stud bolts for the transaxle.

Note

- If the No.4 engine mount bracket nut is loosened, tighten the stud bolts for the transaxle because they may be loosened.

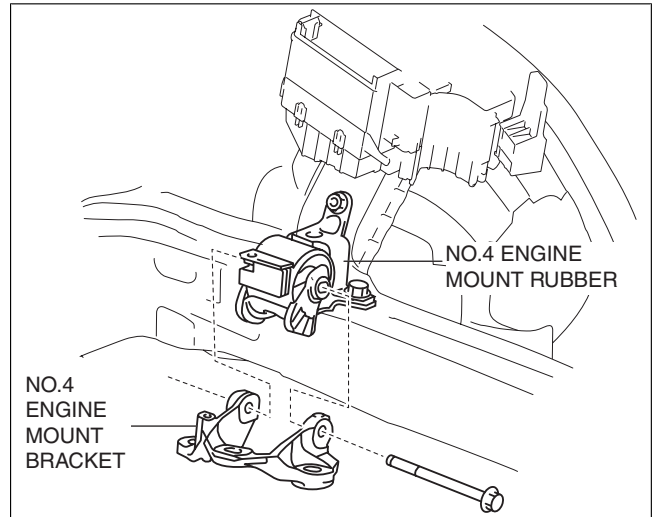
Tightening torque

15—25 N·m {1.6—2.5 kgf·m, 12—18 ft·lbf}

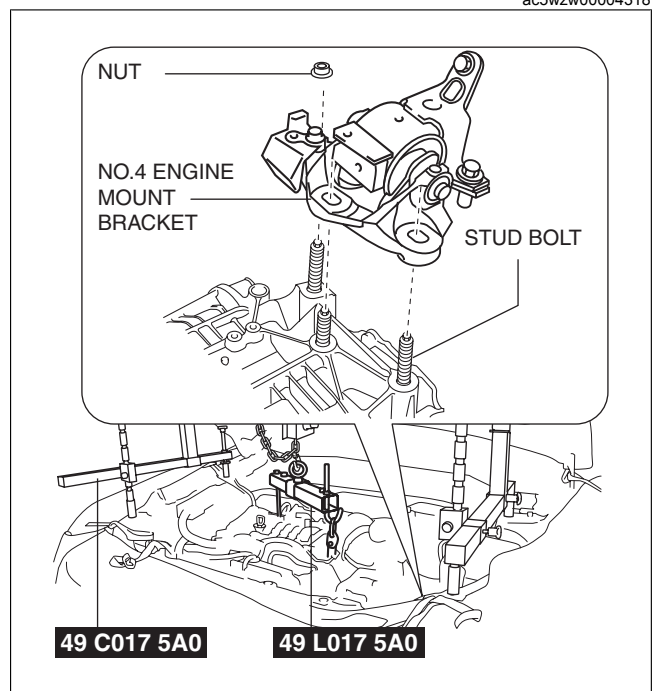


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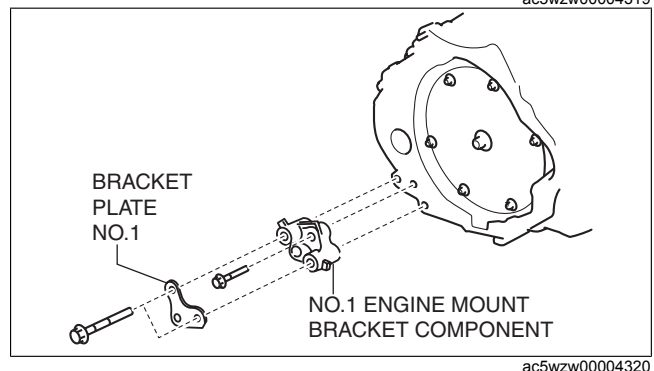
4. Install the No.4 engine mount bracket to No.4 engine mount rubber, and temporarily tighten the installation bolt.



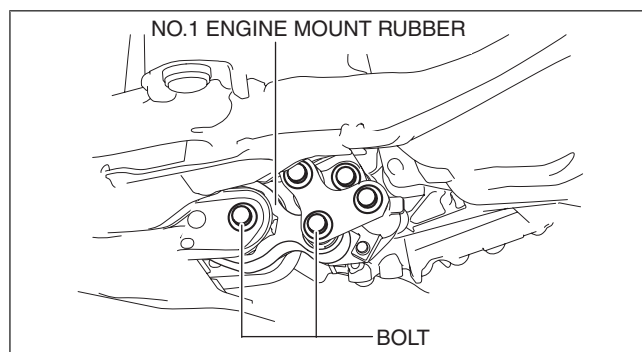
5. Pull up the transaxle using the **SSTs**, pass the transaxle stud bolts through the No.4 engine mount bracket, and temporarily tighten the No.4 engine mount installation nuts.



6. Install the No.1 engine mount bracket component and the bracket plate No.1 to the transaxle, and temporarily tighten the installation bolts.
7. Install the front crossmember component and No.1 engine mount rubber as a single unit. (See FRONT CROSSMEMBER REMOVAL/INSTALLATION.)

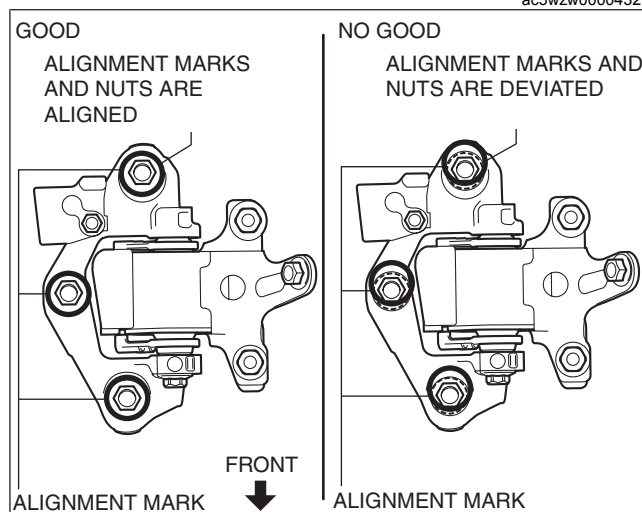


8. Temporarily tighten the No.1 engine mount rubber installation bolts.



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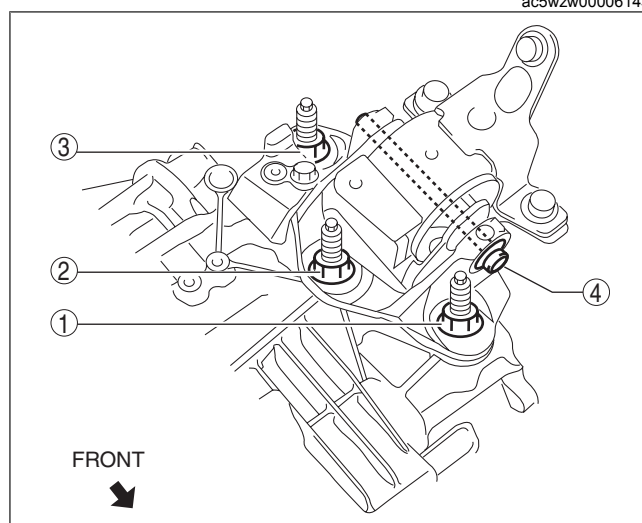
9. Align the alignment marks on the No.4 engine mount bracket and nuts, and temporarily tighten the nuts shown in the figure.



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10. Tighten the No.4 engine mount bracket installation nuts and bolt in the order shown in the figure.

No.	Tightening torque
1, 2, 3	92—116 N·m {9.4—11 kgf·m, 69—85 ft·lbf}
4	81—99 N·m {8.3—10 kgf·m, 60—73 ft·lbf}

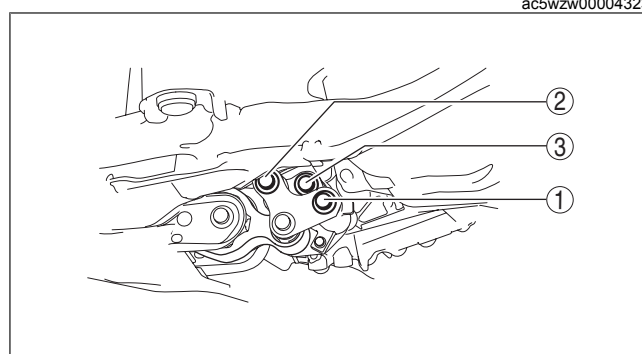


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11. Tighten the No.1 engine mount bracket and bracket plate installation bolts in the order shown in the figure.

Tightening torque

84—98 N·m {8.6—9.9 kgf·m, 62—72 ft·lbf}



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12. Tighten the No.1 engine mount rubber installation bolts in the order shown in the figure.

No.	Tightening torque
1	130—151 N·m {14—15 kgf·m, 96—111 ft·lbf}
2	130—164 N·m {14—16 kgf·m, 96—120 ft·lbf}

13. Remove the **SST (49 C017 5A0)**.

14. Fix the crankshaft pulley to lock the torque converter against rotation.

Caution

- After temporarily tightening the torque converter installation nut uniformly, tighten it to the specified torque.

15. Tighten the torque converter installation nut.

Note

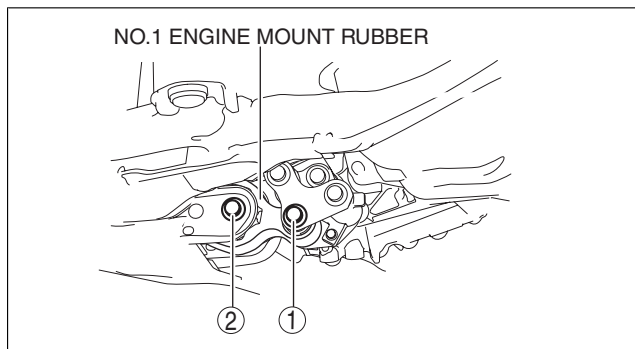
- There are six installation nuts.

Tightening torque

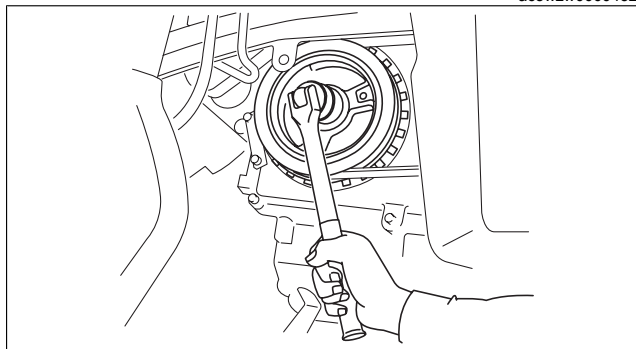
41—54 N·m {4.2—5.5 kgf·m, 31—39 ft·lbf}

16. Install the blind cover.

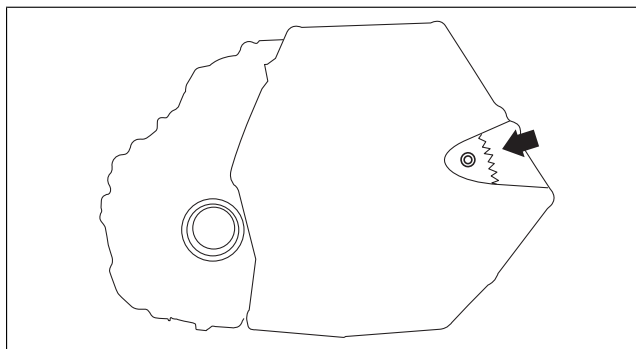
17. Install the starter. (See STARTER REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)



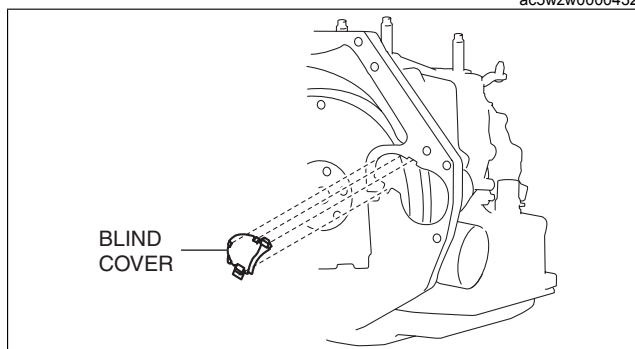
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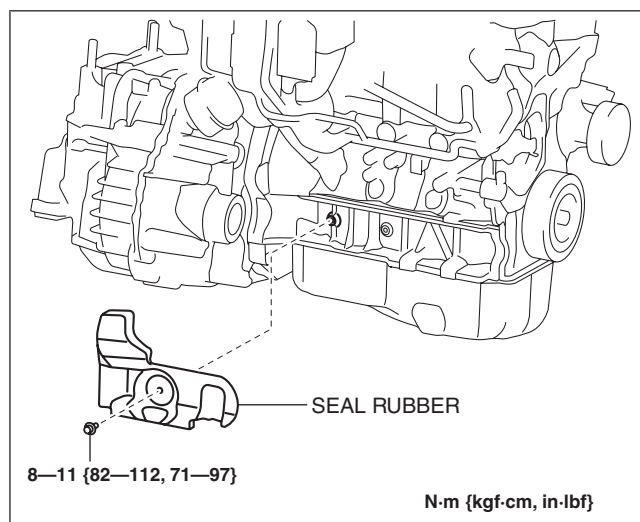


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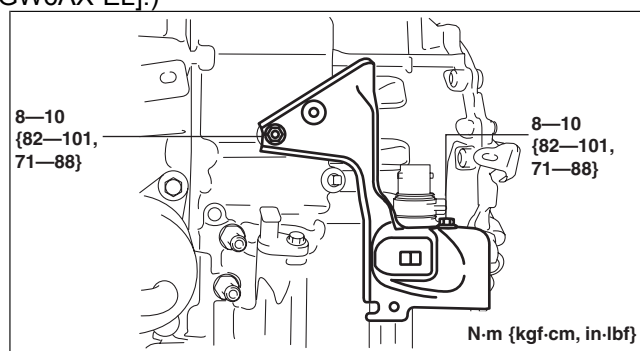


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18. Install the seal rubber.
19. Install the front drive shaft (RH) to the transaxle.
(See FRONT DRIVE SHAFT REMOVAL/INSTALLATION.)
20. Install the front drive shaft (LH) to the transaxle.
(See FRONT DRIVE SHAFT REMOVAL/INSTALLATION.)
21. Install the front stabilizer control links to the front stabilizer. (See FRONT STABILIZER REMOVAL/INSTALLATION.)
22. Install the front lower arms to the steering knuckles.
(See FRONT LOWER ARM REMOVAL/INSTALLATION.)
23. Install the tie-rod end ball joints to the steering knuckles. (See STEERING GEAR AND LINKAGE REMOVAL/INSTALLATION.)
24. Install the clips securing the brake hose to the front shock absorbers. (See BRAKE HOSE (FRONT) REMOVAL/INSTALLATION.)
25. Install the front ABS wheel-speed sensors to the steering knuckles. (See FRONT ABS WHEEL-SPEED SENSOR REMOVAL/INSTALLATION.)
26. Connect the water hose to the oil cooler. (Automatic Transaxle Replacement) (See OIL COOLER REMOVAL/INSTALLATION [GW6A-EL, GW6AX-EL].)
27. Install the oil cooler to the transaxle with the hose connected. (Except Automatic Transaxle Replacement) (See OIL COOLER REMOVAL/INSTALLATION [GW6A-EL, GW6AX-EL].)
28. Install the bracket to the transaxle.

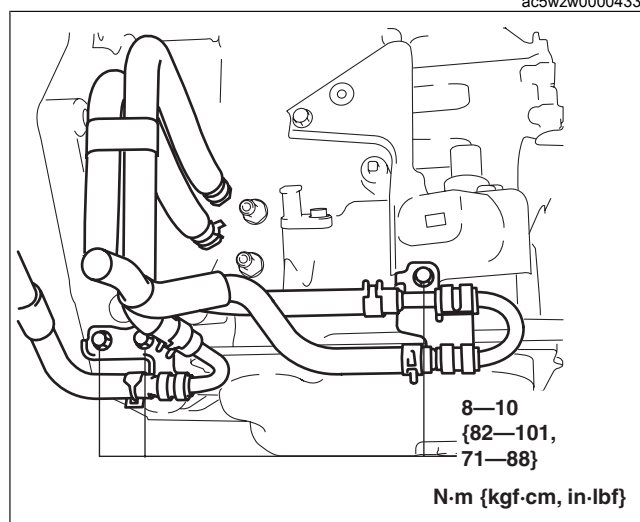


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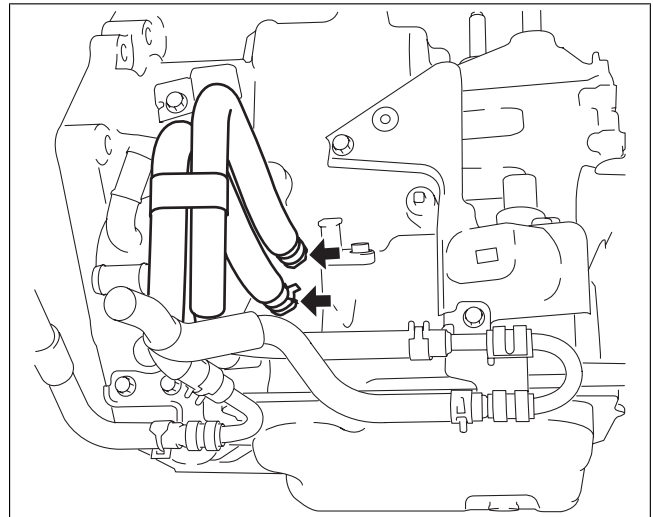
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29. Install the oil pipe component. (With oil cooler No.2)
(See OIL COOLER REMOVAL/INSTALLATION [GW6A-EL, GW6AX-EL].)



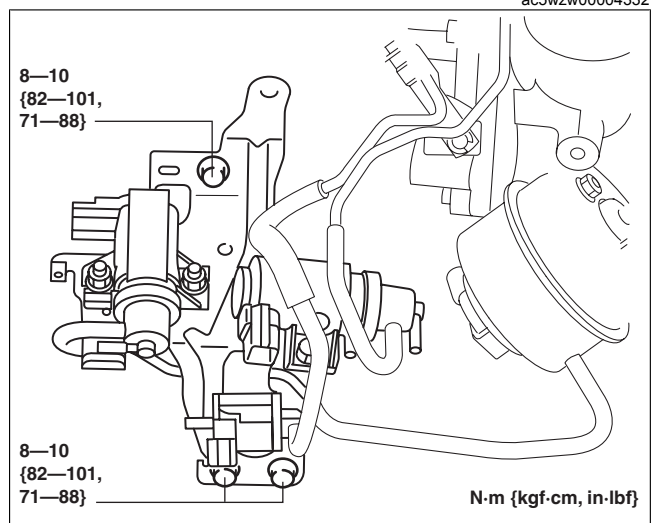
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30. Connect the oil hose to the transaxle. (With oil cooler No.2) (See OIL COOLER REMOVAL/INSTALLATION [GW6A-EL, GW6AX-EL].)
31. Install the front under cover No.1. (See FRONT UNDER COVER No.1 REMOVAL/INSTALLATION.)
32. Install the front under cover No.2. (See FRONT UNDER COVER No.2 REMOVAL/INSTALLATION.)
33. Install the front tires. (See GENERAL PROCEDURES (SUSPENSION).)
34. Install the intermediate shaft to the steering gear and linkage. (See STEERING WHEEL AND COLUMN REMOVAL/INSTALLATION.)
35. Install the joint cover. (See STEERING WHEEL AND COLUMN REMOVAL/INSTALLATION.)
36. Connect the breather hose to the transaxle.



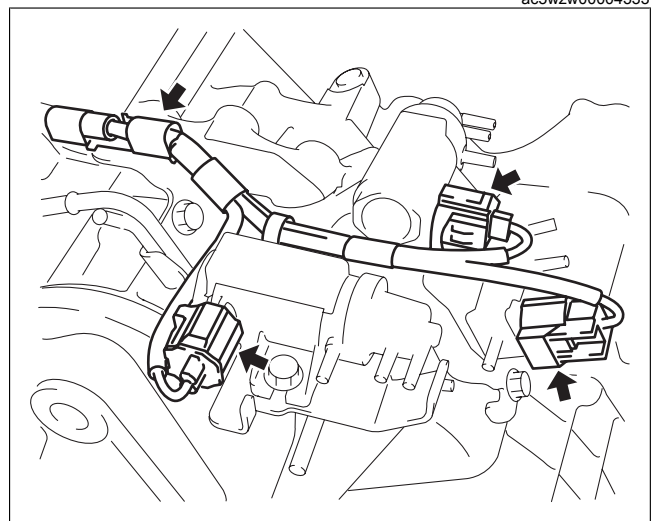
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37. Install the solenoid valve component. (See COMPRESSOR BYPASS SOLENOID VALVE REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
(See REGULATING SOLENOID VALVE REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
(See WASTEGATE SOLENOID VALVE REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)



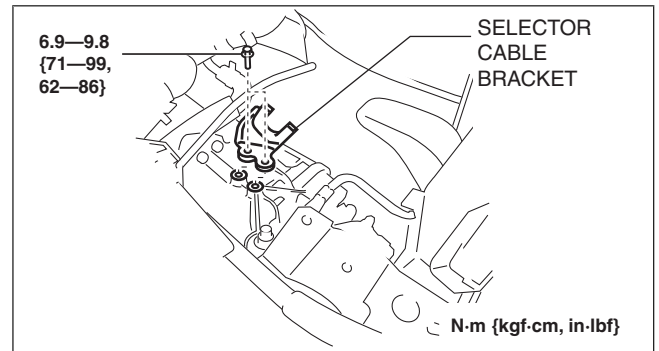
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38. Connect the solenoid valve connectors and the wiring harness to the solenoid valve component. (See COMPRESSOR BYPASS SOLENOID VALVE REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
(See REGULATING SOLENOID VALVE REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
(See WASTEGATE SOLENOID VALVE REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
39. Install the EGR cooler. (See EGR COOLER REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)



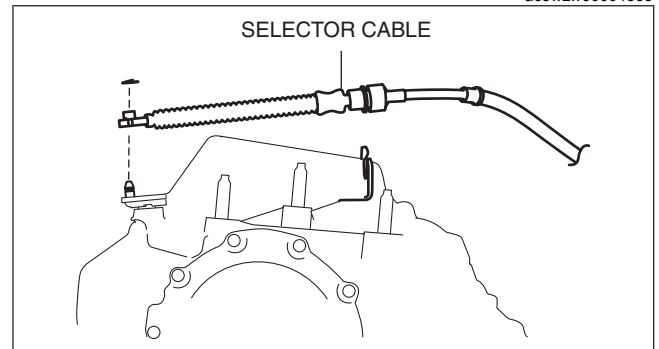
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40. Install the selector cable bracket.



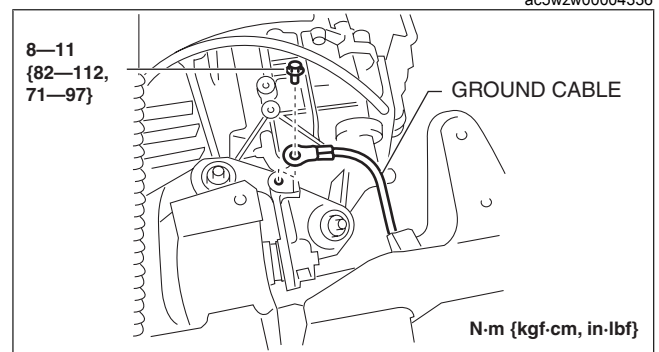
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41. Connect the selector cable to the transaxle.



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42. Install the ground cable.

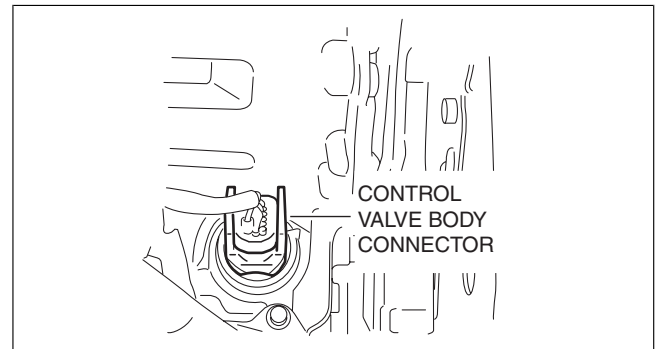


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43. Connect the control valve body connector.

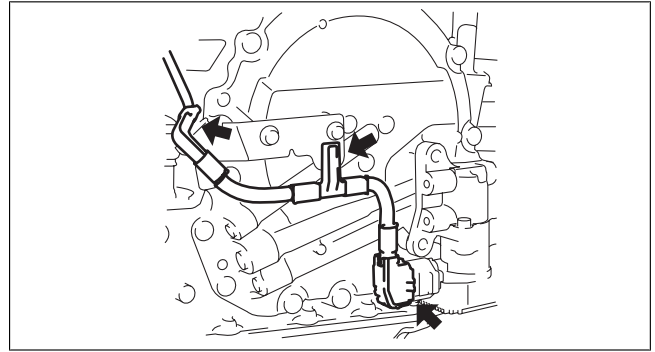
Caution

- Make sure that your hand does not touch the terminal as the connector terminal could be damaged.
- Verify that there is no fluid or foreign matter adhering to the connector before connecting the connector.
- Insert the connector straight as the connector terminal could be damaged.
- Rotate the connector lever until a click is heard.



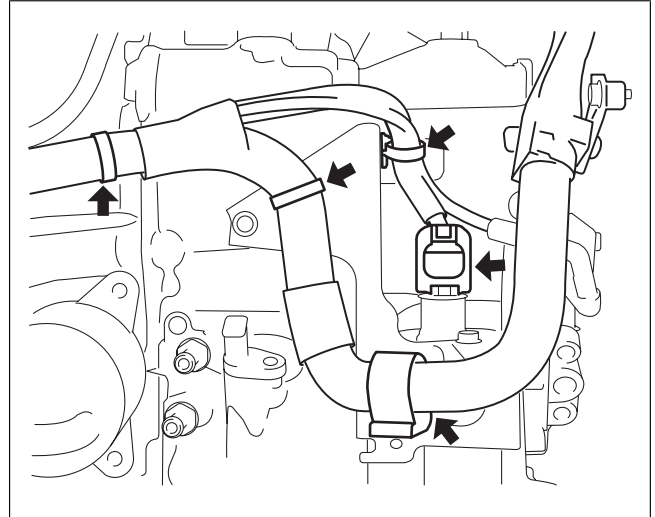
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44. Connect the electric AT oil pump connector and electric AT oil pump harness from the transaxle.
45. Install the splash shield. (See SPLASH SHIELD REMOVAL/INSTALLATION.)



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46. Connect the wiring harness from the transaxle.
47. Install the battery tray. (See BATTERY REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
48. Install the air cleaner and air hose as a single unit. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
49. Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].)
50. Add the ATF. (See AUTOMATIC TRANSAXLE FLUID (ATF) REPLACEMENT [GW6A-EL, GW6AX-EL].)
51. Perform the "Initial Learning" (automatic transaxle replacement). (See INITIAL LEARNING [GW6A-EL, GW6AX-EL].)
52. Perform the "Mechanical System Test". (See MECHANICAL SYSTEM TEST [GW6A-EL, GW6AX-EL].)



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