SERVICE BULLETIN

Classification:	Reference:	Date:
AT19-006	NTB19-044	June 13, 2019

ENGINE SUPPORT TOOLS

APPLIED VEHICLES: 2016-2019 Maxima (A36)

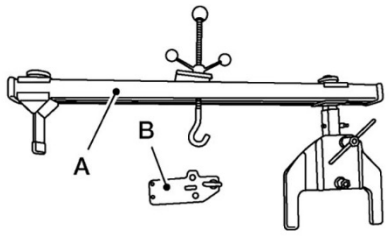
SERVICE INFORMATION

A new Engine Support Tool and Engine Support Bracket are now available to allow the CVT to be removed from the Applied Vehicles without having to remove the engine.

The procedure in this bulletin is different from the procedure currently in the Electronic Service Manual (ESM), which will be updated with this information at a later date.

Please refer to the SERVICE PROCEDURE on page 2 to use these new tools.

A.
—
(J-52389)
Engine support tool
B.
—
(J-52604)
Engine support bracket

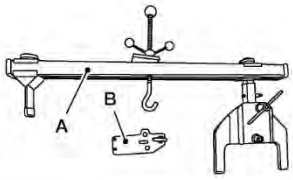
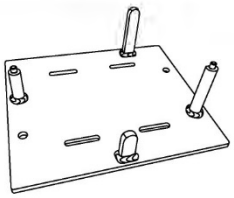


SERVICE PROCEDURE

Maxima

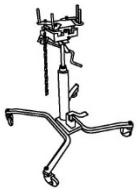
Special Service Tools

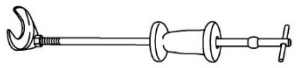
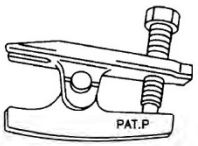
INFOID:RDE-001249940

Tool number (TechMate No.) Tool name		Description
A. — (J-52389) Engine support tool B. — (J-52604) Engine support bracket	 RDE-001249940-01-DIA0481ZZ	Supporting engine
— (J-51307) CVT transmission jack adapter	 RDE-001249940-02-DIA0537ZZ	Removing CVT

Commercial Service Tool

INFOID:RDE-001249941

Tool number **Tool name**		**Description**
Power tool	 RDE-001249941-01-IIB1407E	Loosening nuts, screws and bolts
Hydraulic lift table	 RDE-001249941-02-DIA0077ZZ	Removing front suspension member
Transmission jack	 RDE-001249941-03-DIA0078ZZ	Removing transaxle assembly

Tool number Tool name	Description
Drive shaft joint puller  RDE-001249941-05-DIA0439ZZ	Removing drive shaft
Ball joint remover  RDE-001249941-04-T146	Removing steering outer socket

Removal and Installation

REMOVAL

WARNING:

Do not remove the radiator cap when the engine is hot. Serious burns could occur from high pressure engine coolant escaping from the radiator. Wrap a thick cloth around the cap. Slowly turn it a quarter turn to allow built-up pressure to escape. Carefully remove the cap by turning it all the way.

CAUTION:

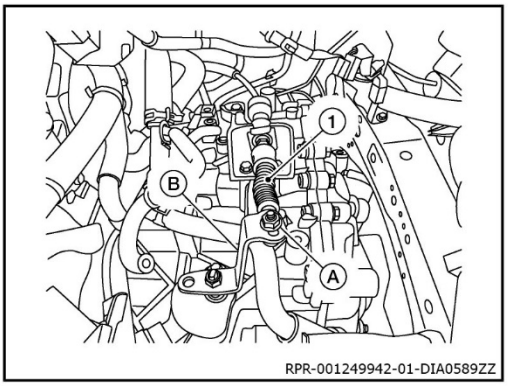
- **Perform when the engine is cold.**
- **When replacing the TCM and transaxle assembly as a set, replace the transaxle assembly first and then replace the TCM. Refer to "Description" in the Transaxle and Transmission section of the ESM.**
- **When replacing the transaxle assembly, perform "ADDITIONAL SERVICE WHEN REPLACING TRANSAXLE ASSEMBLY." Refer to "Description" in the Transaxle and Transmission section of the ESM.**

NOTE:

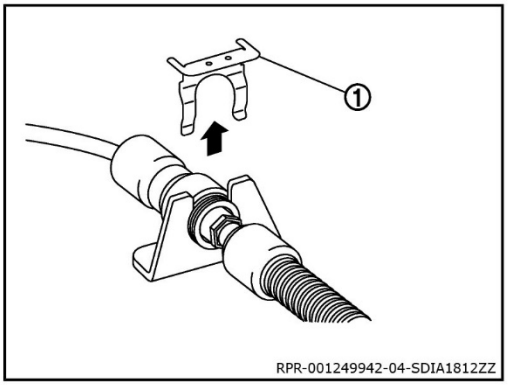
When removing components such as hoses, tubes/lines, etc., cap or plug openings to prevent fluid from spilling.

1. Remove engine cover. Refer to "Removal and Installation" in the Engine Mechanical section of the ESM.
2. Remove starter motor. Refer to "Removal and Installation" in the Starting System section of ESM.

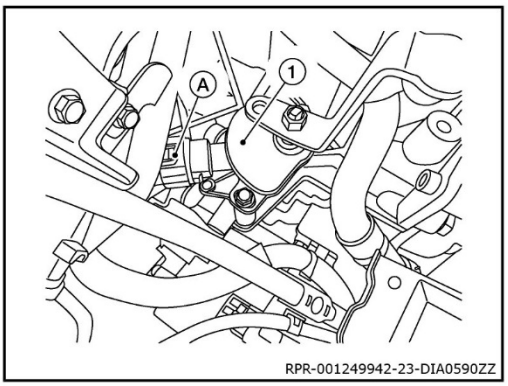
3. Remove control cable nut (A) and separate control cable (1) from the manual lever (B).



4. Remove lock plate (1) as shown.



5. Disconnect the harness connector (A) from the transmission range switch (1).

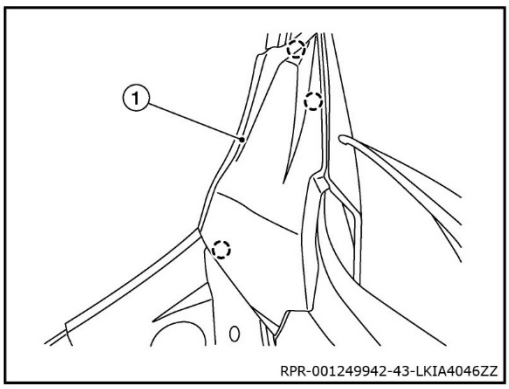


6. Remove wiper arms (LH/RH). Refer to Wiper Arm "Removal and Installation" in the Wiper & Washer section of the ESM.

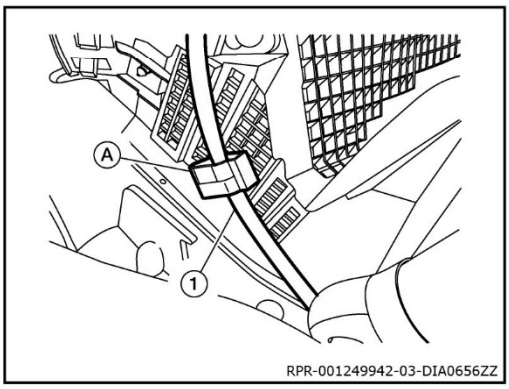
7. Release the pawls, then remove the front fender covers (1) (LH/RH).

NOTE:
LH shown, RH similar

◌ : Pawl

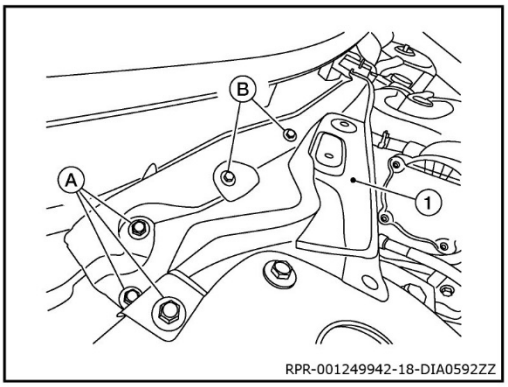


8. Remove washer tube (1) from retainer (A).

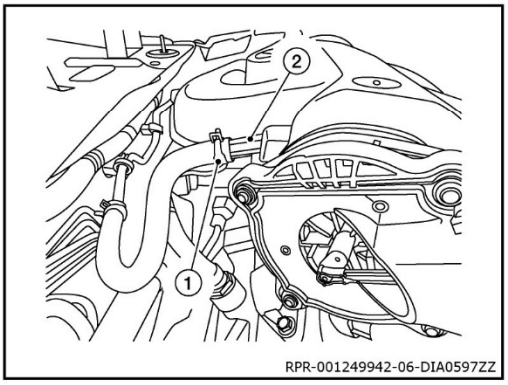


9. Remove cowl top cover. Refer to Cowl Top "Exploded View" in the Exterior section of the ESM.
10. Using a suitable tool, release wiper motor harness clip.
11. Remove top cowl extension. Refer to Cowl Top "Exploded View" in the Exterior section of the ESM.

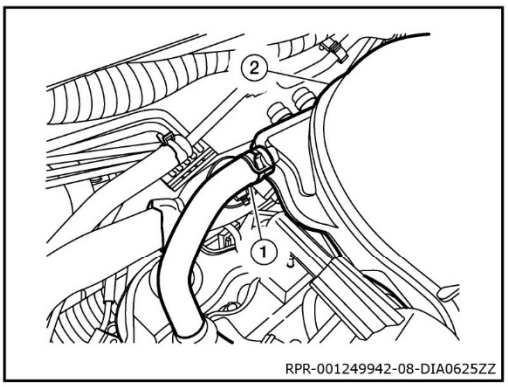
12. Remove bolts (A) and (B) and remove cowl top brace (RH) (1).



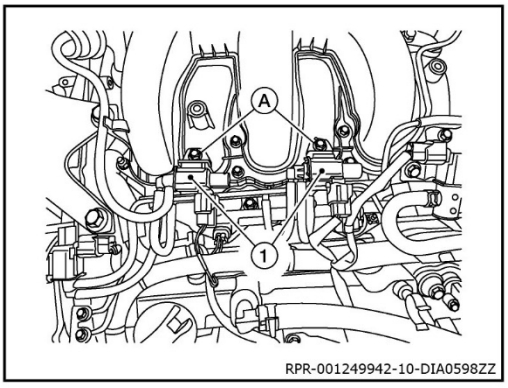
13. Release the clamp and disconnect brake booster vacuum hose (1) from intake manifold collector (2).



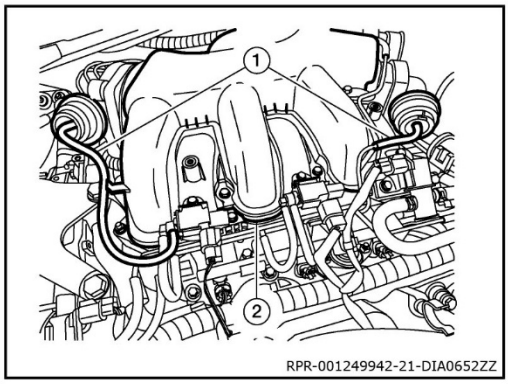
14. Release the clamp and disconnect the PCV hose (1) from intake manifold collector (2).



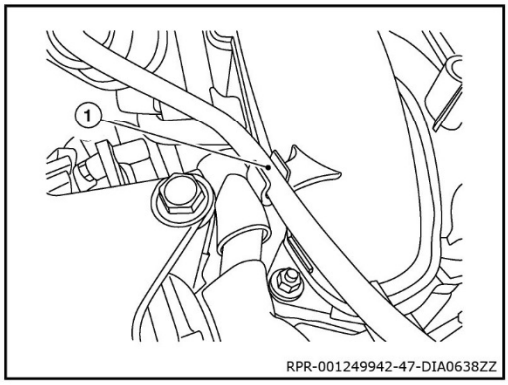
15. Remove bolts (A) and set VIAS control solenoid valves (1) aside.



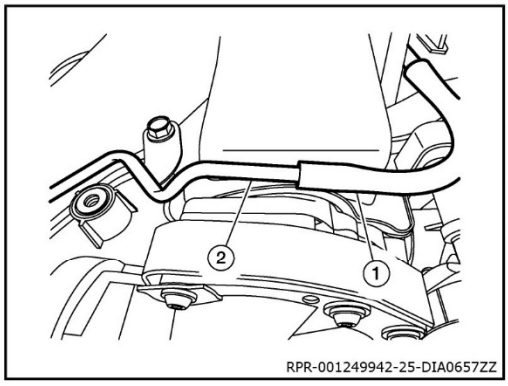
16. Disconnect vacuum hoses (1) from intake manifold collector (2).



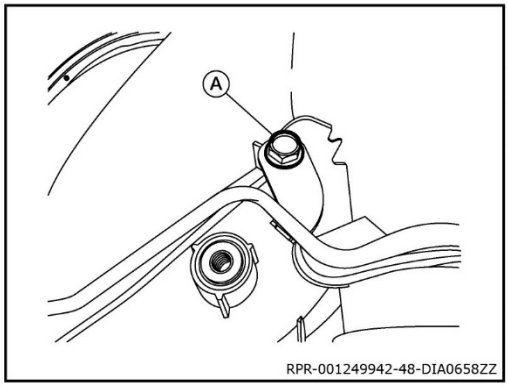
17. Remove vacuum hose (1) from retainer.



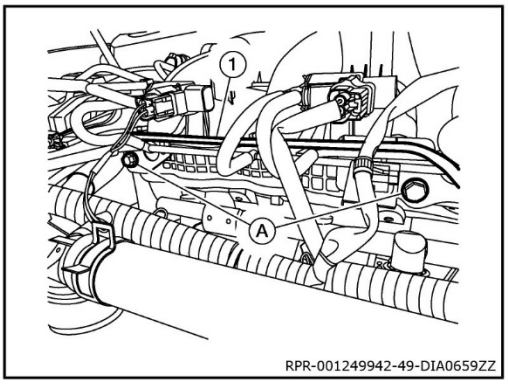
18. Disconnect vacuum hose (1) from vacuum pipe (2).



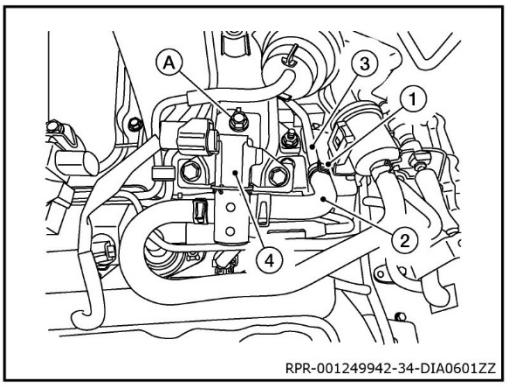
19. Remove vacuum pipe bracket bolt (A).



20. Remove bolts (A) and position vacuum gallery (1) aside.

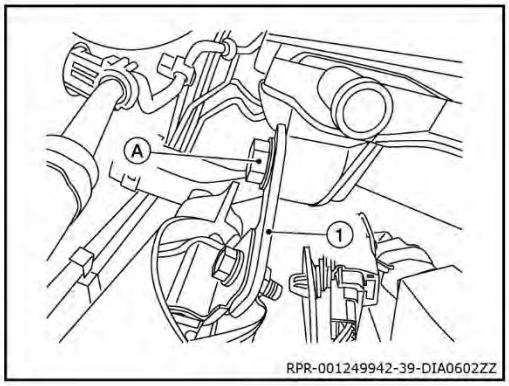


21. Remove clamp (1) and disconnect hose (2) from pipe (3).



22. Remove bolt (A) and set EVAP canister purge volume control solenoid (4) aside.

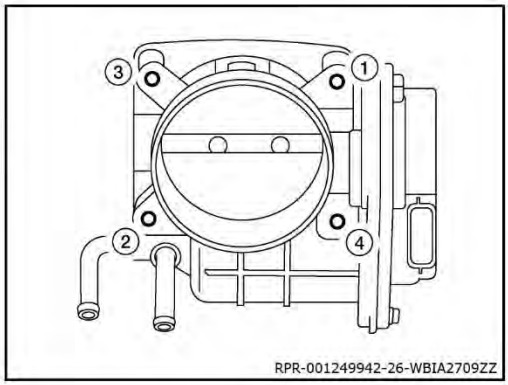
23. Remove bolt (A) and position the EPS line bracket (1) aside.



24. Loosen bolts in reverse of sequence shown and remove electric throttle control actuator bolts, then remove electric throttle control actuator and position aside.

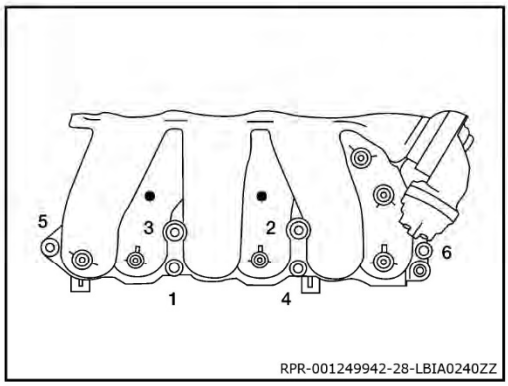
CAUTION:

- **Handle carefully to avoid any shock to the electric throttle control actuator.**
- **Do not disassemble electric throttle control actuator.**

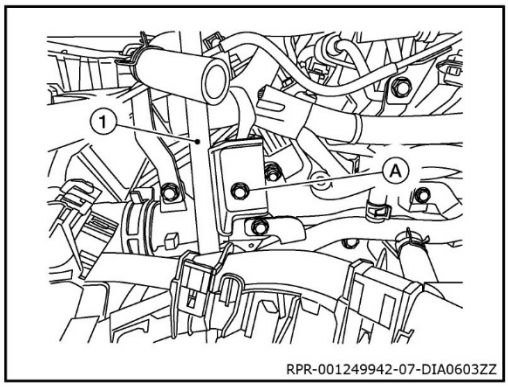


25. Loosen the intake manifold collector bolts and nuts in reverse of the sequence shown, then remove the intake manifold collector and gasket.

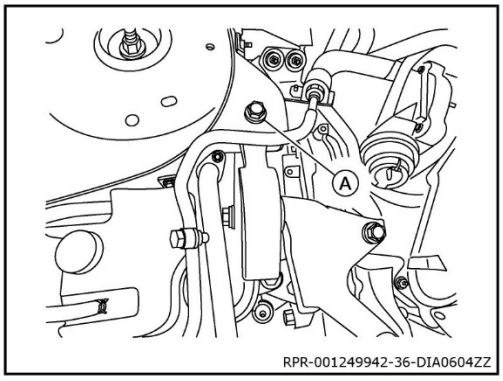
CAUTION:
Do not reuse intake manifold collector gasket.



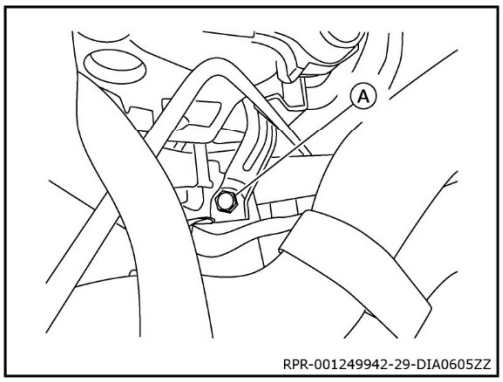
26. Remove bolt (A) from CVT charge pipe (1).



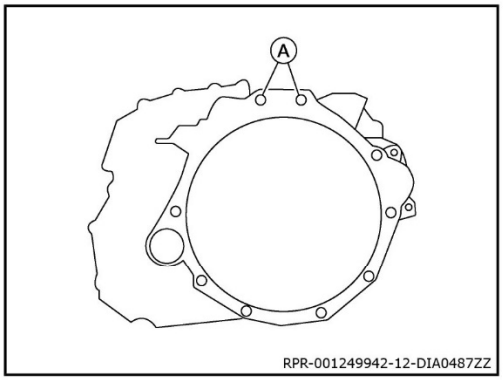
27. Remove bolt (A) from upper torque rod.



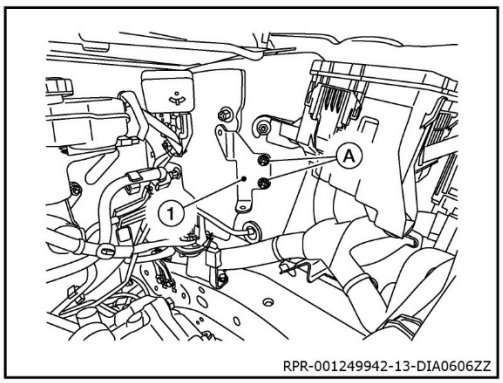
28. Remove CVT gusset bolt (A).



29. Remove bolts (A).

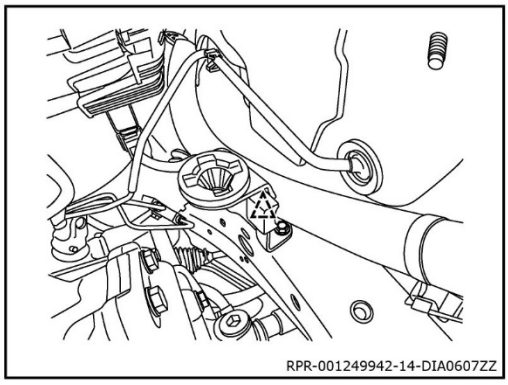


30. Remove nuts (A) and bracket (1).



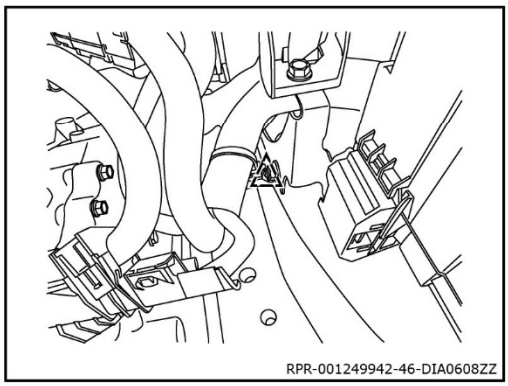
31. Using a suitable tool, release clip.

△ : Clip

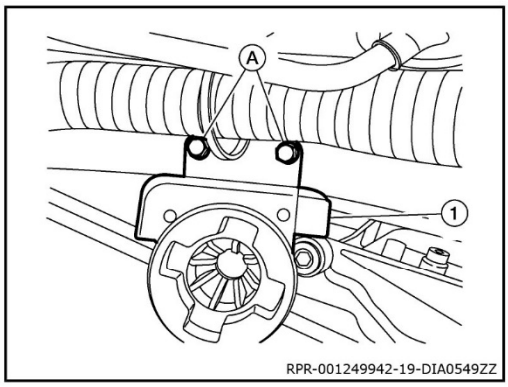

RPR-001249942-14-DIA0607ZZ

32. Using a suitable tool, release the harness retainer.

△ : Clip

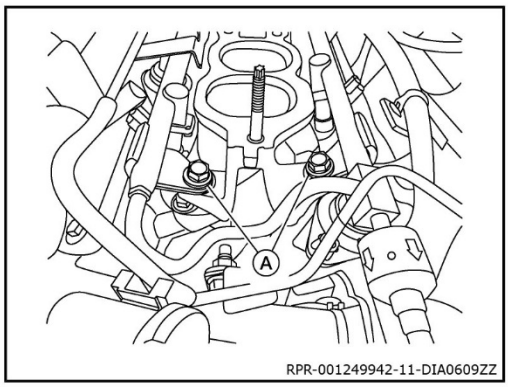

RPR-001249942-46-DIA0608ZZ

33. Remove bolts (A) and remove bracket (1).



RPR-001249942-19-DIA0549ZZ

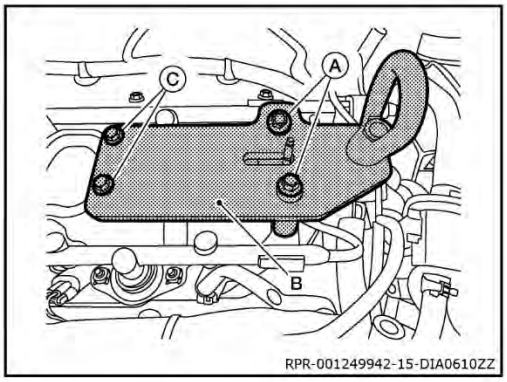
34. Remove fuel tube bolts (A).



RPR-001249942-11-DIA0609ZZ

35. Install Tool (B) using bolts (A) and (C) supplied with Tool. Tighten bolts to specification. Refer to Engine Support Tool Operating Instructions.

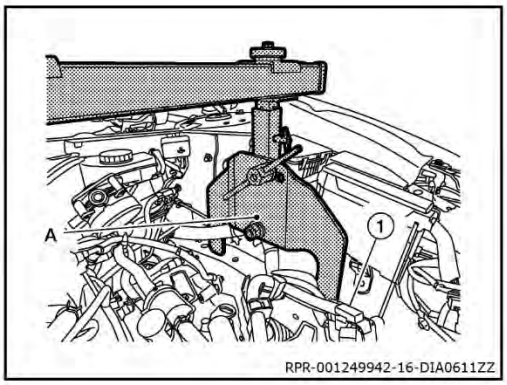
Tool (B)	: (J-52604)
Bolts (A)	: 20 N·m (2.0 kg-m, 15 ft-lb)
Bolts (C)	: 11 N·m (1.1 kg-m, 8 ft-lb)



RPR-001249942-15-DIA0610ZZ

36. Install Tool (A) to drivers side frame rail (1) as shown. Refer to Engine Support Tool Operating Instructions.

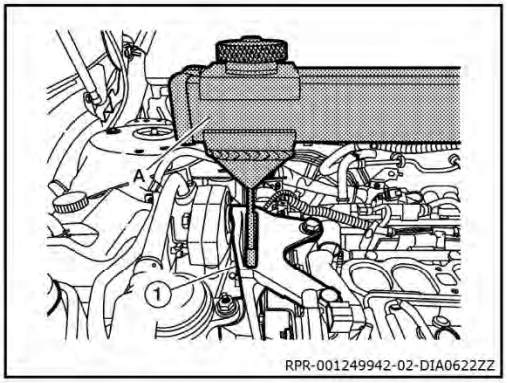
Tool (A)	: (J-52389)



RPR-001249942-16-DIA0611ZZ

37. Install Tool (A) on top of engine mounting insulator [RH (1)] as shown. Refer to Engine Support Tool Operating Instructions.

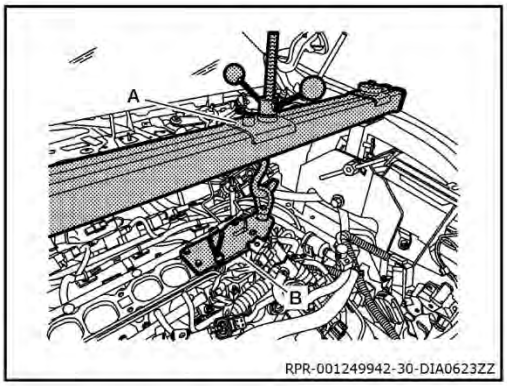
Tool (A)	: (J-52389)



RPR-001249942-02-DIA0622ZZ

38. Install Tool (A) to Tool (B). Refer to Engine Support Tool Operating Instructions.

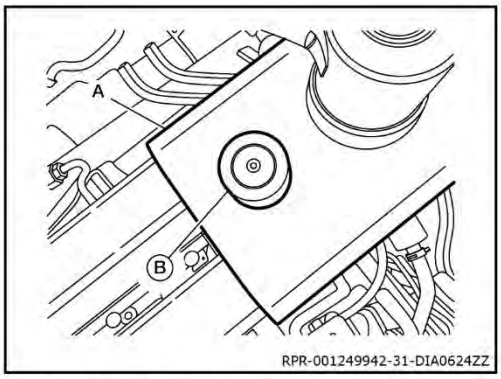
Tool (A)	: (J-52389)
Tool (B)	: (J-52604)



RPR-001249942-30-DIA0623ZZ

39. Using bubble level (B) on Tool (A) level Tool as shown. Refer to Engine Support Tool Operating Instructions.

Tool (A) : (J-52389)



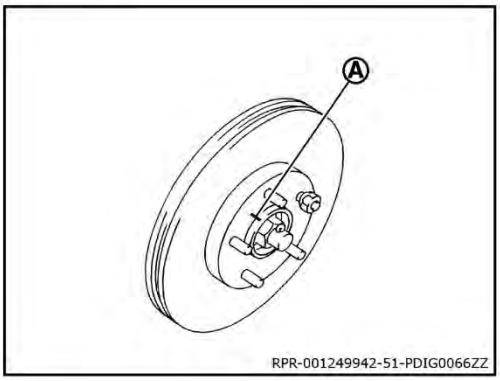
40. Remove nut from engine mounting insulator (front). Refer to Engine Assembly "Exploded View" in the Engine Mechanical section of the ESM.
41. Remove nut from engine mounting insulator (rear). Refer to Engine Assembly "Exploded View" in the Engine Mechanical section of the ESM.
42. Remove the front wheels and tires using power tool (LH/RH).
43. Remove brake hose retaining clip and brake hose from strut (LH/RH).
44. Remove brake caliper torque member bolts using power tool, leaving hydraulic hose attached to the brake caliper. Position the brake caliper aside with wire (LH/RH). Refer to Brake Caliper Assembly "Exploded View" in the Brake System section of the ESM.

CAUTION:

- **Do not twist or stretch the brake hose.**
- **Do not depress brake pedal while brake caliper is removed.**

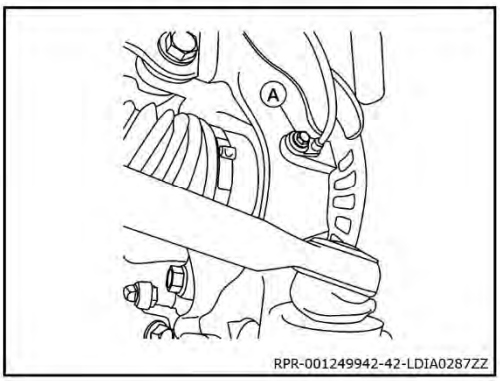
45. Put alignment marks (A) on the disc brake rotor and on the wheel hub and bearing, then remove disc brake rotor (LH/RH).

CAUTION:
Do not drop the disc brake rotors.



46. Remove wheel sensor bolt (A) and position wheel sensor aside (LH/RH).

CAUTION:
Do not pull on wheel sensor harness.



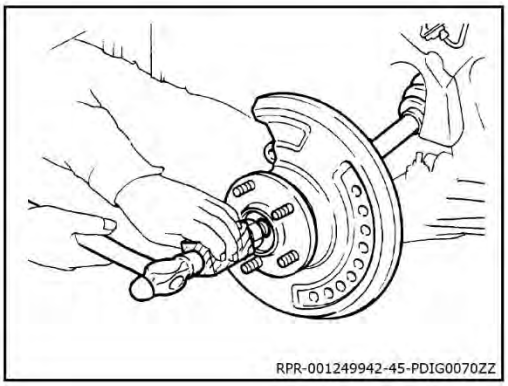
47. Remove and discard cotter pin from front drive shaft (LH/RH).

CAUTION:
Do not reuse cotter pins.

48. Remove nut retainer from drive shaft (LH/RH).
49. Loosen the wheel hub lock nut from the drive shaft using power tool (LH/RH).

CAUTION:
Do not reuse wheel hub lock nuts.

50. Remove front strut to steering knuckle bolts and nuts, then separate front strut from steering knuckle (LH/RH). Refer to Front Coil Spring and Strut "Exploded View" in the Front Suspension section of the ESM.
51. Using a piece of wood and a suitable tool, tap on the wheel hub lock nut to disengage the drive shaft from the wheel hub and bearing (LH/RH).



CAUTION:

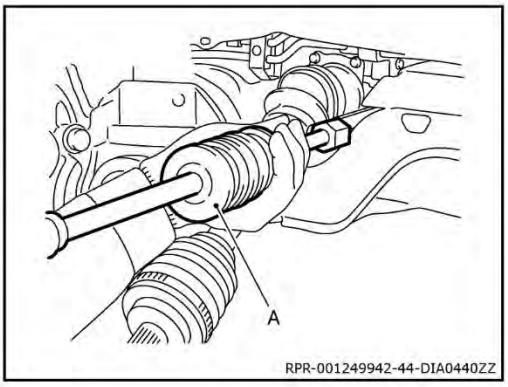
- **Do not place drive shaft joints at an extreme angle. Be careful not to over extend slide joints.**
- **Do not allow drive shafts to hang without support.**

NOTE:
Use suitable puller if drive shafts cannot be separated from wheel hub and bearings.

52. Remove the wheel hub lock nut (LH/RH).

CAUTION:
Do not reuse wheel hub lock nuts.

53. Remove bearing retainer to support bearing bracket bolts and remove bearing retainer (RH only).
54. Insert suitable tool (A) between the drive shaft and transaxle. Remove the drive shaft from the transaxle (LH/RH).



CAUTION:

- **Confirm that the circular clips are attached to the drive shafts.**
- **Do not place drive shaft joints at extreme angles when removing drive shafts. Also be careful not to overextend slide joints.**
- **Do not reuse circular clips.**

Tool (A)	: Drive shaft joint puller (Commercially available)

55. Remove the differential side oil seal (LH/RH).

CAUTION:
Do not reuse differential side oil seals.

56. Remove outer socket cotter pin (LH/RH). Refer to Steering Gear and Linkage "Exploded View" in the Steering System section of the ESM.

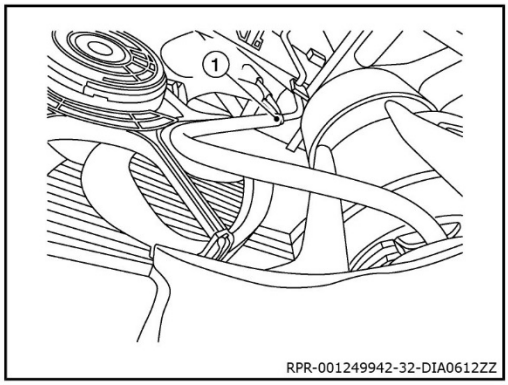
CAUTION:
Do not reuse outer socket cotter pins.

57. Loosen the outer socket nut and separate outer socket from the steering knuckle (LH/RH) using ball joint remover (commercially available).

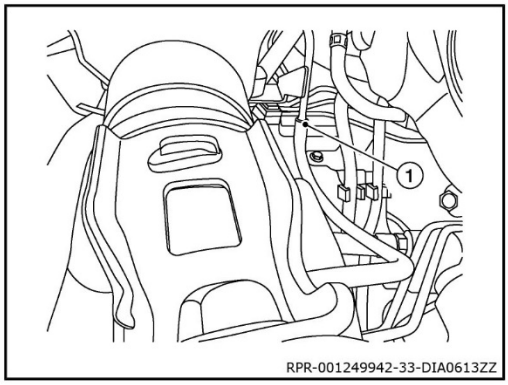
CAUTION:
Leave the outer socket nut half threaded on the outer sockets to prevent damage to threads and to prevent the tool from coming off suddenly.

58. Remove the outer socket nut and separate the outer socket from the steering knuckles (LH/RH).
59. Remove nut and separate stabilizer connecting rods from struts (LH/RH). Refer to Front Stabilizer "Exploded View" in the Front Suspension section of the ESM.
60. Remove front under cover. Refer to Under Cover "Removal and Installation" in the Exterior section of the ESM.
61. Remove the fender protector (LH/RH). Refer to Fender Protector "Removal and Installation" in the Exterior section of the ESM.
62. Remove the front exhaust tube. Refer to Exhaust System "Exploded View" in the Exhaust System section of the ESM.

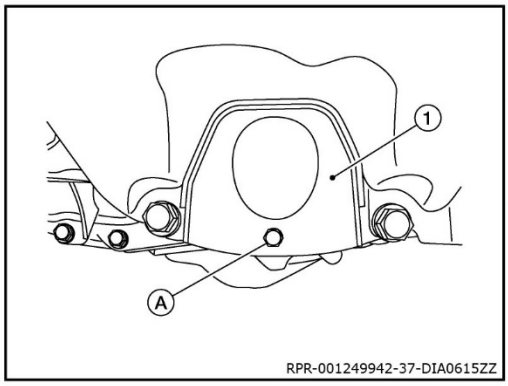
63. Disconnect the front engine mount insulator vacuum hose (1).



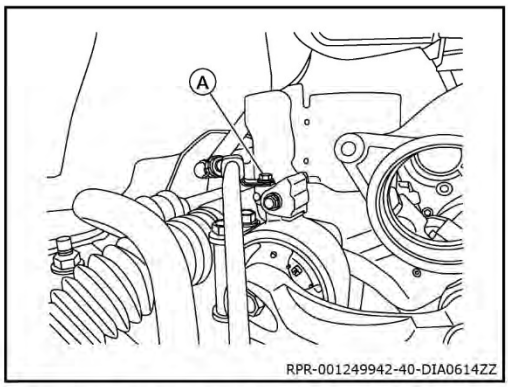
64. Disconnect the rear engine mount insulator vacuum hose (1).



65. Remove bolt (A) and remove rear cover plate (1).



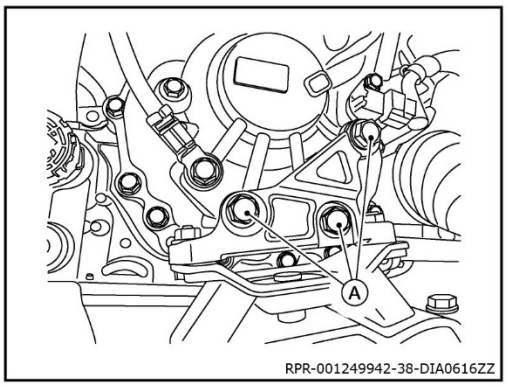
66. Remove torque converter nuts. Refer to Transmission Assembly "Exploded View" in the Transaxle and Transmission section of the ESM.
67. Release clips and separate low pressure piping from front suspension member assembly. Refer to Hydraulic Line "Exploded View" in the Steering System section of the ESM.
68. Remove low pressure piping (lower) bracket bolt (A).



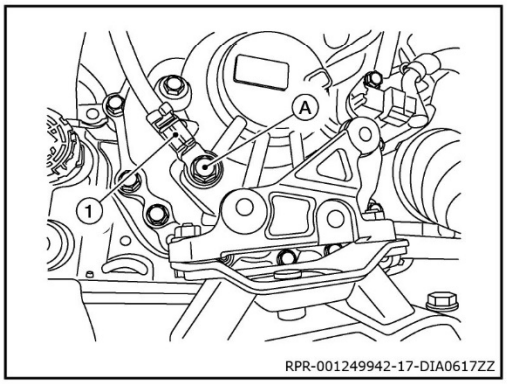
69. Remove the bolts and nuts from the steering gear. Refer to Steering Gear and Linkage "Exploded View" in the Steering System section of the ESM.
70. Secure the steering gear using suitable wire.

CAUTION:
The steering gear will remain in vehicle. Secure steering gear using suitable wire.

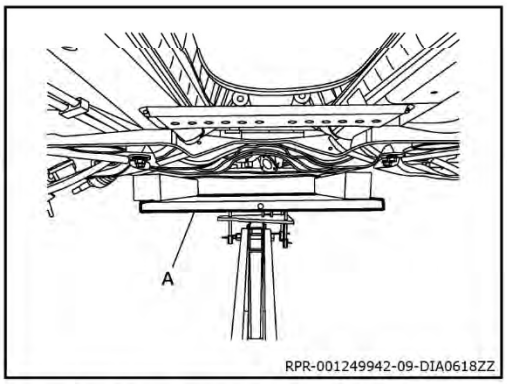
71. Remove bolts (A) from transaxle mount.



72. Remove bolt (A) and position ground (1) aside.



73. Remove rear torque rod bolt. Refer to Engine Assembly "Exploded View" in the Engine Mechanical section of the ESM.
74. Set hydraulic lift table (A) or equivalent tool under front suspension member.



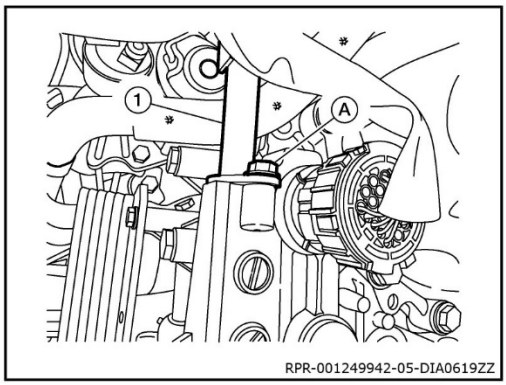
75. Remove front suspension member bolts and front suspension member stays. Refer to Front Suspension Member "Exploded View" in the Front Suspension section of the ESM.

CAUTION:
Secure front suspension member to hydraulic lift table (or equivalent tool) while removing it.

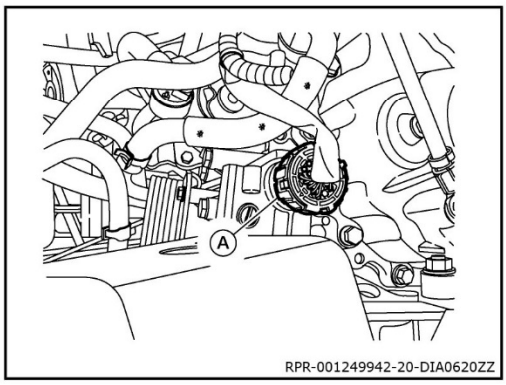
76. Lower the front suspension member.
77. Remove bolt from heater thermostat bracket. Refer to Water Hose "Exploded View" in the Transmission and Transaxle section of the ESM.
78. Drain coolant. Refer to "Changing Engine Coolant" in the Engine Cooling System section of the ESM.
79. Remove CVT fluid cooler hose A and CVT fluid cooler hose B from the CVT oil warmer. Refer to CVT Fluid Cooler System "Exploded View" in the Transaxle and Transmission section of the ESM.
80. Remove CVT water hose A and CVT water hose B from CVT oil warmer. Refer to Water Hose "Exploded View" in the Transaxle and Transmission section of the ESM.
81. Using Tools lower engine and transaxle assembly until the transaxle assembly is low enough to clear driver's side frame rail.

Tool numbers : (J-52389, J-52604)

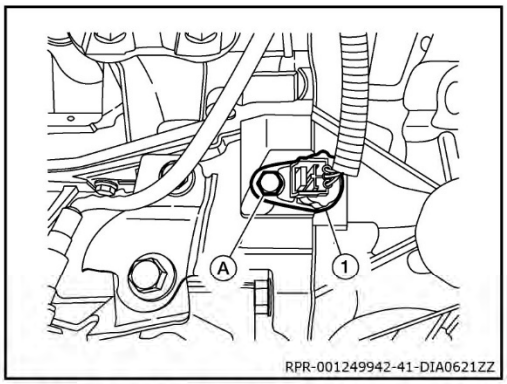
82. Remove bolt (A) and remove CVT fluid charging pipe (1).



83. Separate the harness retainers from the transaxle assembly.
84. Disconnect the harness connector (A) from the transaxle assembly.



85. Remove bolt (A) and position crankshaft position sensor (1) aside.



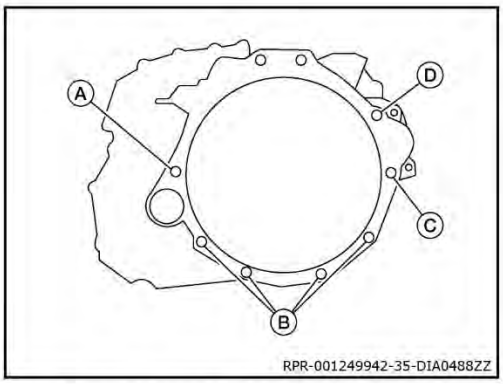
86. Disconnect the harness connector from the output speed sensor. Refer to Output Speed Sensor "Exploded View" in the Transaxle and Transmission section of the ESM.
87. Disconnect the harness connector from the primary speed sensor. Refer to Primary Speed Sensor "Exploded View" in the Transaxle and Transmission section of the ESM.
88. Disconnect the harness connector from the input speed sensor. Refer to Input Speed Sensor "Exploded View" in the Transaxle and Transmission section of the ESM.
89. Support transaxle assembly using a suitable transmission jack and Tool.

Tool number : (J-51307)

CAUTION:

- **Always secure transaxle assembly to transmission jack.**
- **Do not lift or support transaxle assembly using the bottom of oil pan or damage can occur.**

90. Remove bolts (A), (B), (C), and (D).



91. Separate the transaxle assembly from the engine assembly and lower transaxle assembly.

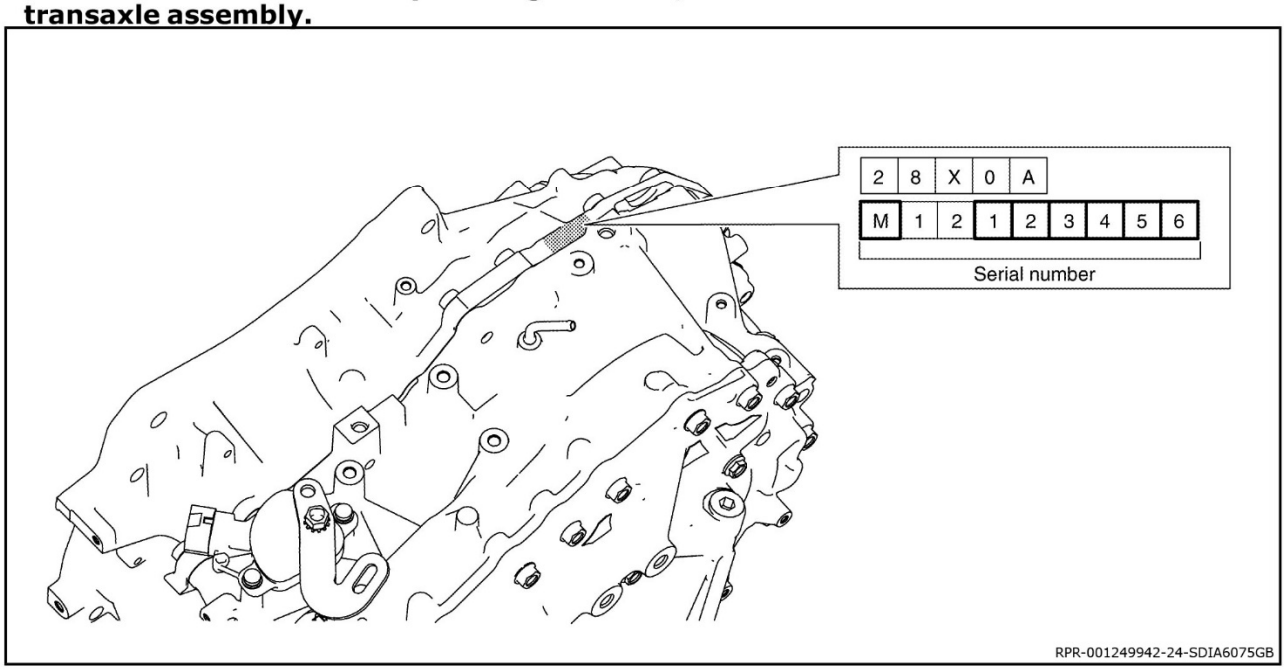
CAUTION:
Secure the torque converter to the transaxle while removing transaxle to prevent torque converter from falling.

INSTALLATION

Installation is in the reverse order of removal.
Perform inspection before installation. Refer to "Inspection Before Installation" below.

NOTE:

- **If the same transaxle assembly will be reinstalled, replace differential side oil seals (LH/RH). Refer to Differential Side Oil Seal "Exploded View" in the Transaxle and Transmission section of the ESM.**
- **If a new transaxle assembly is being installed, write down the serial number of the new transaxle assembly.**



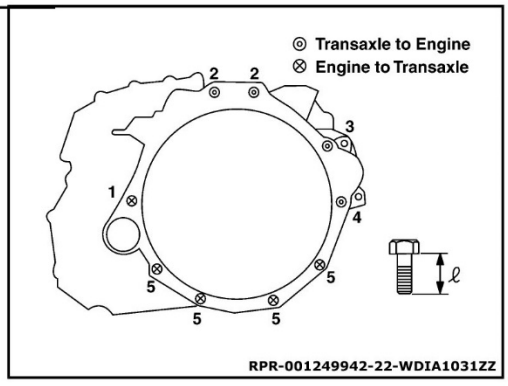
CAUTION:

- **When replacing an engine or transaxle you must make sure any dowels are installed correctly during re-assembly**
- **Improper alignment caused by missing dowels may cause vibration, oil leaks or breakage of drivetrain components.**
- **Do not reuse O-rings or copper sealing washers.**
- **When turning crankshaft, turn it clockwise as viewed from the front of the engine.**
- **When tightening the nuts for the torque converter while securing the crankshaft pulley bolt, be sure to confirm the tightening torque of the crankshaft pulley bolt. Refer to front timing chain case "Removal and Installation" in the Engine Mechanical section of the ESM.**
- **After torque converter is installed to drive plate, rotate crankshaft several turns to check that CVT rotates freely without binding.**
- **When installing the CVT to the engine, align the matching mark on the drive plate with the matching mark on the torque converter.**
- **Do not reuse differential side oil seals.**
- **When installing the CVT to the engine, align the matching mark on the drive plate with the matching mark on the torque converter.**

NOTE:

- **When installing the drive plate to torque converter nuts, tighten them temporarily. then tighten the nuts to the specified torque. Refer to "Exploded View" in the Transaxle and Transmission section of the ESM.**
- **Install the transaxle assembly and engine assembly mounting bolts according to the following standards.**

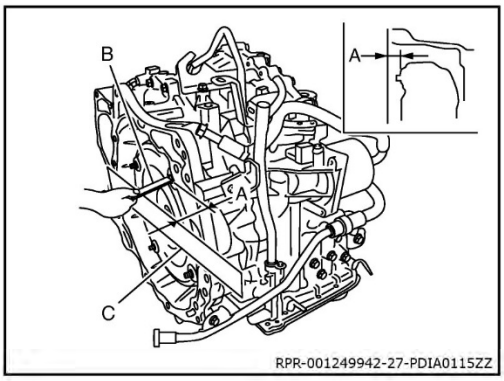
Bolt No.	1	2	3	4	5
Number of bolts	1	2	1	1	4
Bolt length "ℓ"mm (in)	55 (2.17)	39 (1.54)	35 (1.38)	50 (1.97)	45 (1.77)
Tightening torque N·m (kg-m, ft-lb)	74.5 (7.6, 55)				50.0 (5.1, 37)



- **Perform adjustment after installation. Refer to "Adjustment After Installation" below.**
- **Perform inspection after installation. Refer to "Inspection After Installation" below.**

INSPECTION BEFORE INSTALLATION

After inserting a torque converter to the CVT, check that dimension (A) is with in the reference value limit.



B : Scale

C : Straightedge

Dimension (A) : Refer to "Service Data and Specifications (SDS)" in the Transaxle and Transmission section of the ESM.

ADJUSTMENT AFTER INSTALLATION

Perform the following:

- Adjust CVT position. Refer to "Adjustment" in the Transaxle and Transmission section of the ESM.
- Check and adjust the engine coolant level. Refer to "Changing Engine Coolant" in the Engine Cooling System section of the ESM.
- Adjust the CVT fluid level. Refer to "Adjustment" in the Transaxle and Transmission section of the ESM.
- Perform accelerator pedal released position learning. Refer to "Description" in the Engine Control section of the ESM.
- Perform throttle valve closed position learning. Refer to "Description" in the Engine Control section of the ESM.
- Perform front wheel alignment. Refer to "Wheel Alignment" in the Front Suspension section of the ESM.
- Perform adjustment of steering angle sensor neutral position. Refer to "Description" in the Brake Control System section of the ESM.

INSPECTION AFTER INSTALLATION

Check the following items:

- CVT fluid leakage, refer to "Inspection" in the Transaxle and Transmission section of the ESM.
- For CVT shifter position, refer to "Inspection" in the Transaxle and Transmission section of the ESM.
- Start the engine and check for coolant leaks.

CLAIMS INFORMATION

DESCRIPTION	OP CODE	FRT
CVT R&I	JD01AA	(1)

(1) The new procedure in the bulletin will alter the Flat Rate Time (FRT) for operations involving removal of the CVT from the vehicle. Refer to the current Nissan Warranty Flat Rate Manual for current FRTs.

AMENDMENT HISTORY

PUBLISHED DATE	REFERENCE	DESCRIPTION
June 13, 2019	NTB19-044	Original bulletin published.