



SERVICE BULLETIN

Classification: AT18-004	Reference: NTB18-061	Date: September 4, 2018
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2013-2018 SENTRA; ENGINE SUPPORT TOOLS

APPLIED VEHICLES: 2013-2018 Sentra (B17)
APPLIED TRANSMISSION: CVT
APPLIED ENGINE: MRA8DE

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 than those that are currently in the Electronic Service Manuals (ESMs), which will be updated with this information at a later date.

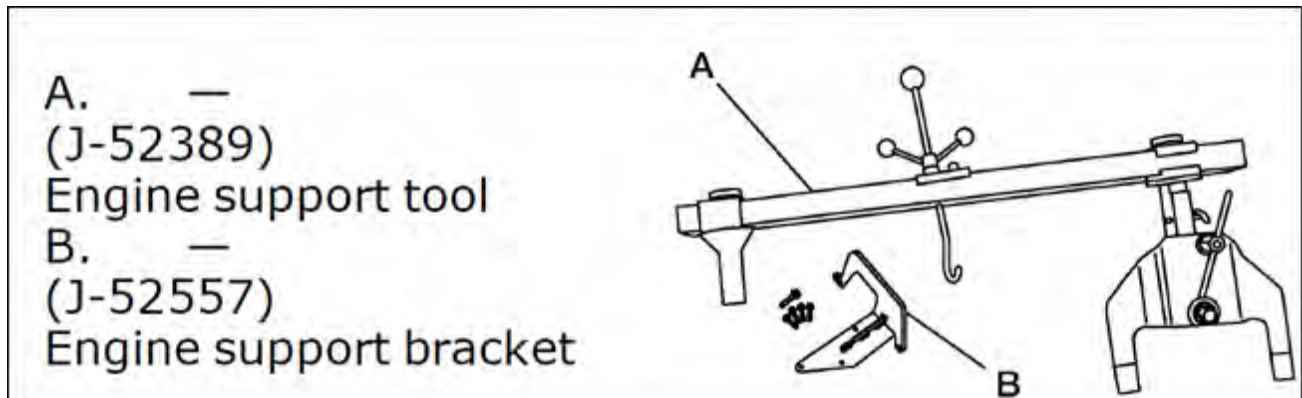


Figure 1

Nissan Bulletins are intended for use by qualified technicians, not 'do-it-yourselfers'. Qualified technicians are properly trained individuals who have the equipment, tools, safety instruction, and know-how to do a job properly and safely. NOTE: If you believe that a described condition may apply to a particular vehicle, DO NOT assume that it does. See your Nissan dealer to determine if this applies to your vehicle.

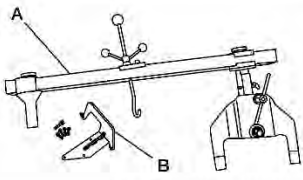
SERVICE PROCEDURE

Sentra CVT R&I

REMOVAL AND INSTALLATION

Special Service Tool


Tool number (TechMate No.) Tool name	Description
A. — (J-52389) Engine support tool	Supporting engine
B. — (J-52557) Engine support bracket	




RPR-000827533-09-DIA0246ZZ

Commercial Service Tool


Tool number Tool name	Description
Power tool	Loosening nuts, screws, and bolts
Hydraulic lift table	Removing front suspension member
Transmission jack	Removing transaxle assembly



RPR-000827533-01-III1407E



RPR-000827533-03-DIA0077ZZ



RPR-000827533-05-DIA0078ZZ

REMOVAL

WARNING:

Do not remove the radiator cap when the engine is hot. Serious burns could occur from high pressure coolant escaping from the radiator. Wrap a thick cloth around the cap. Slowly turn 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 transaxle assembly, perform "ADDITIONAL SERVICE WHEN REPLACING TRANSAXLE ASSEMBLY". Refer to "Description" in the Transaxle and Transmission section of the ESM.
- When replacing TCM and transaxle assembly simultaneously, perform "ADDITIONAL SERVICE WHEN REPLACING TCM AND 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 the column hole cover. Refer to "Exploded View" in the Interior section of the ESM.
2. Remove the lower pinch bolt from lower joint. Refer to "Exploded View" in the Steering System section of the ESM.

CAUTION:

With the steering linkage disconnected, the spiral cable may snap by turning the steering wheel beyond the limited number of turns. Secure the steering wheel during removal of the front suspension member.

3. Remove engine room cover. Refer to "Exploded View" in the Engine Mechanical section of the ESM.
4. Remove the battery and battery tray. Refer to "Removal and Installation" in the Power Supply, Ground & Circuit Elements section of the ESM.
5. Remove the air duct inlet (upper). Refer to "Exploded View" in the Engine Mechanical section of the ESM.
6. Disconnect the harness connector from the mass air flow sensor and remove the harness clip from the air cleaner body assembly. Refer to "Exploded View" in the Engine Mechanical section of the ESM.
7. Remove the air duct (suction side). Refer to "Exploded View" in the Engine Mechanical section of the ESM.

NOTE:

Add matching marks if necessary for easier installation.

8. Remove the air cleaner cover and the air cleaner body as an assembly. Refer to "Exploded View" in the Engine Mechanical section of the ESM.
9. Remove the air breather hose. Refer to "Removal and Installation" in the Transaxle and Transmission section of the ESM.
10. Remove the electric throttle control actuator bolts and position the electric throttle control actuator aside. Refer to "Exploded View" in the Engine Mechanical section of the ESM.

CAUTION:

Handle carefully to avoid any shock to electric throttle control actuator.

11. Pull out oil level gauge. Refer to "Exploded View" in the Engine Mechanical section of the ESM.

CAUTION:

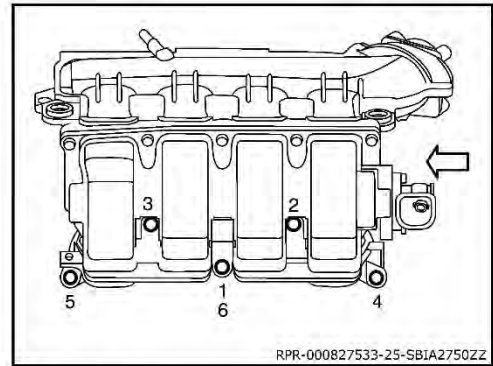
Cover the oil level gauge guide openings to avoid entry of foreign materials.

12. Disconnect vacuum hose and EVAP hose from the intake manifold. Refer to "Exploded View" in the Engine Mechanical section of the ESM.
13. Remove the brake booster hose from the intake manifold. Refer to "Exploded View" in the Brake System section of the ESM.
14. Disconnect PCV hose from intake manifold. Refer to "Exploded View" in the Engine Mechanical section of the ESM.
15. Disconnect harness connectors from the runner control valve, runner control valve position sensor and the tuning valve. Refer to "Exploded View" in the Engine Mechanical section of the ESM.

16. Loosen intake manifold nuts and bolts in the reverse order as shown.

← : Engine front

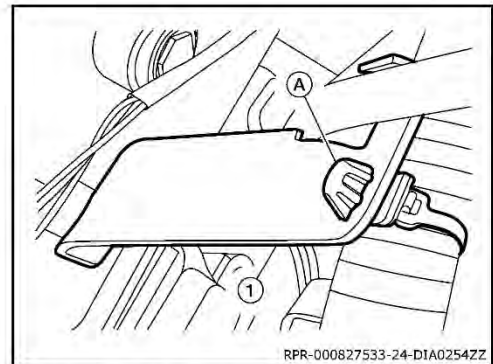
CAUTION:
Cover the engine openings to avoid the entry of foreign materials.



17. Remove the intake manifold and intake manifold gasket. Refer to "Exploded View" in the Engine Mechanical section of the ESM.

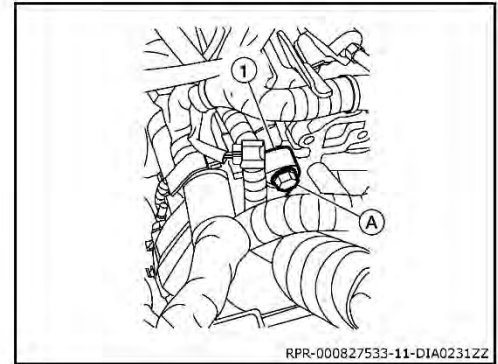
CAUTION:
Do not reuse the intake manifold gasket.

18. Using a suitable tool release harness retainer and position knock sensor harness aside.
19. Using a suitable tool release the electrical harness retainer (A) from the oil level gauge guide bracket (1).



20. Remove the oil level gauge guide bracket bolt and position aside the oil level gauge guide bracket. Refer to "Exploded view" in the Engine Mechanical section of the ESM.
21. Remove the nuts and remove the terminal "S" and terminal "B" harnesses from starter motor. Refer to "Exploded View" in the Starting System section of the ESM.
22. Remove bolts and remove starter motor. Refer to "Exploded View" in the Starting System section of the ESM.

23. Remove the upper transaxle bolt (A) from the transaxle assembly (1).

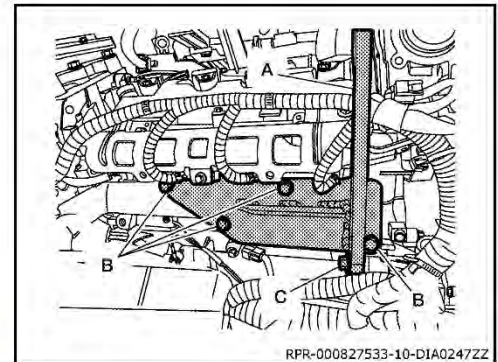


24. Install Tool (A) using bolts (B) and (C). Tighten bolts to specification. Refer to Engine Support Tool Operating Instructions.

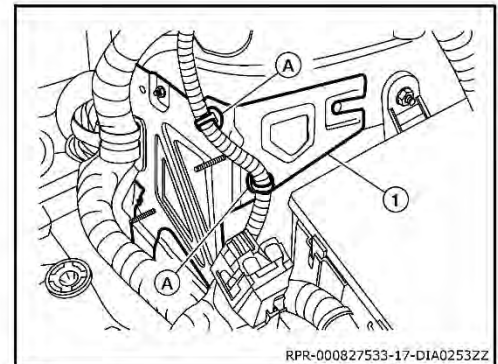
NOTE:

- Tool (A), bolts (B) and (C) are part of J-52557.
- Bolts (B) are installed into intake manifold bolt holes.
- Bolt (C) is installed into the transaxle bolt hole.

Tool number : (J-52557)
Bolts (B) : 20.33N.m (2.1 kg-m, 15 ft-lb)
Bolts (C) : 47.45N.m (4.8 kg-m, 35 ft-lb)

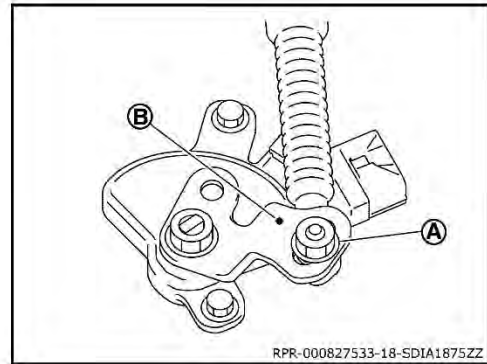


25. Disconnect the harness connector from the transmission range switch.
26. Disconnect the harness connector from the TCM.
27. Remove the nuts and remove the TCM. Refer to "Exploded View" in the Transaxle and Transmission section of the ESM.
28. Using a suitable tool release harness retainers (A) from bracket (1).

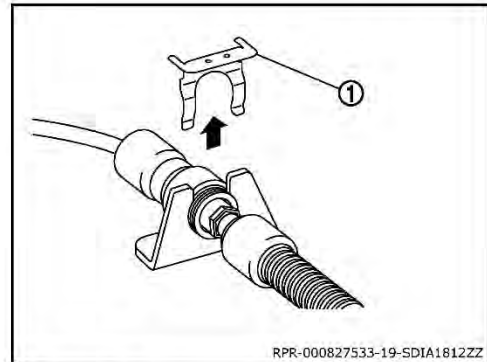


29. Remove the nuts and remove the TCM bracket. Refer to "Exploded View" in the Transaxle and Transmission section of the ESM.

30. Remove nut (A) from the manual lever (B).



31. Remove the lock plate (1).

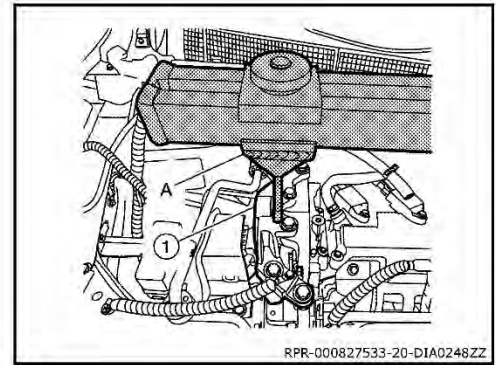


32. Separate control cable from manual lever and set control cable aside.

33. Remove the water hose from the CVT oil warmer. Refer to "Exploded View" in the Transaxle and Transmission section of the ESM.

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

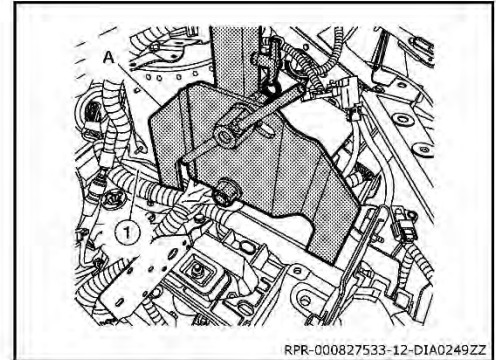
Tool number : (J-52389)



35. Install Tool (A) on top of driver's side frame rail (1) as shown. Refer to Engine Support Tool Operating Instructions.

CAUTION:
Do not damage harness when installing Tool.

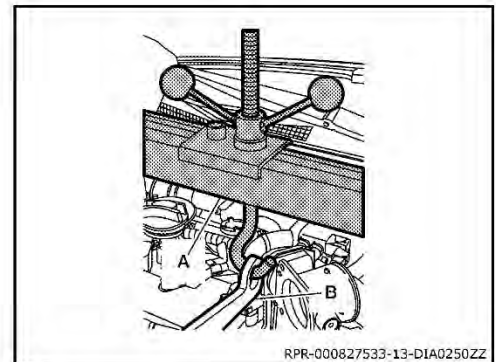
Tool number : (J-52389)



36. Install Tool (A) to Tool (B) as shown. Refer to Engine Support Tool Operating Instructions.

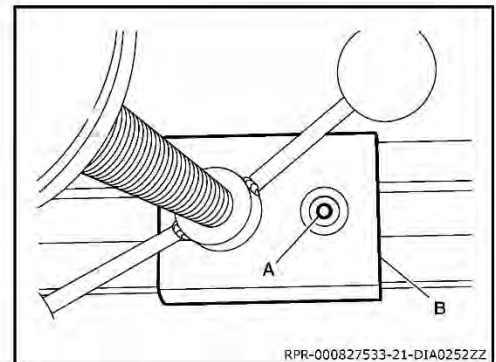
Tool (A) : (J-52389)

Tool (B) : (J-52557)



37. Using bubble level (A) on Tool (B) level Tool as shown.

Tool number : (J-52389)



38. Tighten handle of Tool to support the weight of the engine and transaxle assembly.

Tool number : (J-52389)

CAUTION:
Before removing engine or transaxle mount bolts, ensure the engine support tool is properly installed and supporting the weight of the engine and transaxle assembly, otherwise damage could result.

39. Drain the coolant. Refer to "Draining" in the Engine Cooling System section of the ESM.

40. Remove the wheel and tire assembly (LH/RH). Refer to "Removal and Installation" in the Road Wheels and Tires section of the ESM.
41. Remove bolts and clips and position aside the front half of the fender protectors (LH/RH). Refer to "Exploded View" in the Exterior section of the ESM.
42. Remove nut and separate stabilizer connection rod from strut (LH/RH). Refer to "Exploded View" in the Front Suspension section of the ESM.

CAUTION:

Do not reuse nuts.

43. Loosen the outer socket nut and separate outer socket from the steering knuckle using suitable tool (LH/RH).

CAUTION:

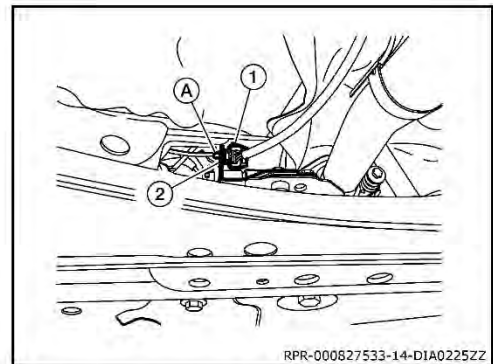
Leave the outer socket nut half threaded on the outer socket to prevent damage to the threads and to prevent the suitable tool from coming off suddenly.

44. Remove outer socket nut (LH/RH).

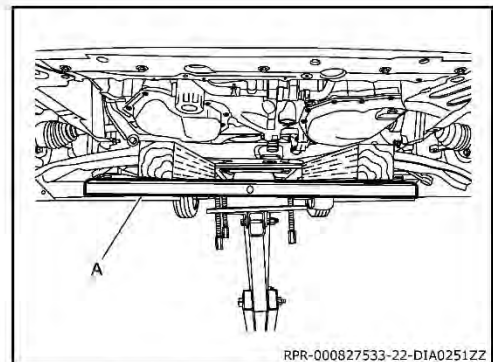
CAUTION:

Do not reuse nuts.

45. Remove the nut and lower pinch bolt from the steering knuckle (LH/RH). Refer to "Exploded View" in the Front Suspension section of the ESM.
46. Separate the transverse link from the steering knuckle (LH/RH).
47. Using a suitable tool release harness retainer (A) and separate heated oxygen sensor 2 (1) from bracket (2).



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



50. Remove front suspension member bolts and front suspension member stay.
51. Slowly lower hydraulic lift table (or equivalent tool) to remove the front suspension member from the vehicle.

CAUTION:

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

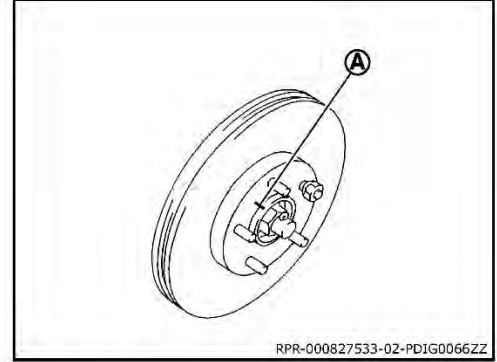
52. Remove the brake caliper torque member bolts, leaving the brake hose attached. Position the brake caliper aside and support with wire. Refer to "Exploded View" in the Brake System section of the ESM.

CAUTION:

- Do not depress the brake pedal while the brake caliper is removed.
- Do not allow the brake caliper to hang by the brake hose or damage could result.

53. Put alignment marks (A) on the disc brake rotor and on the wheel hub and bearing. Remove the disc brake rotor (LH/RH).

CAUTION:
Do not drop the disc brake rotor.



54. Remove the cotter pin from the front drive shaft (LH/RH). Refer to "Exploded View" in the Front Axle section of the ESM.

CAUTION:
Do not reuse cotter pin.

55. Loosen the wheel hub lock nut (LH/RH). Refer to "Exploded View" in the Front Axle section of the ESM.

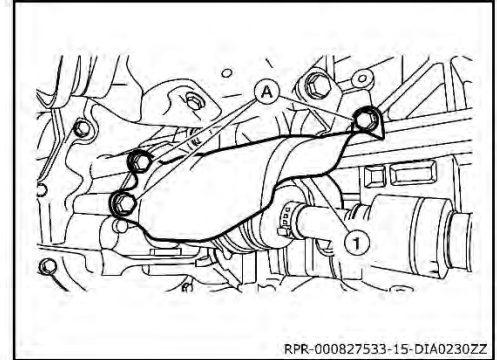
CAUTION:
Do not reuse wheel hub lock nut.

56. Remove the front wheel sensor bolt (LH/RH). Position the front wheel sensor and the wheel sensor harness aside. Refer to "Exploded View" in the Brake Control System section of the ESM.

CAUTION:

- **Do not damage front wheel sensor or sensor rotor.**
- **Pull out front wheel sensor being careful to turn it as little as possible. Do not pull on front wheel sensor harness.**

57. Remove the bolts (A) and remove the shield (1).

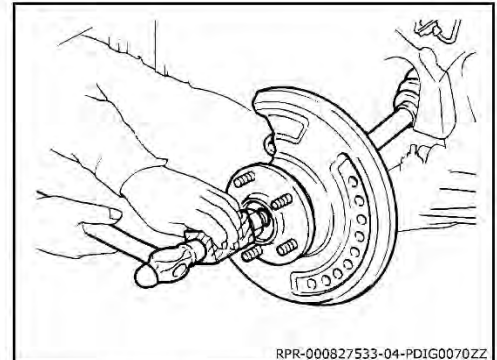


58. Using a piece of wood and suitable tool, tap on the wheel hub lock nut to disengage the drive shaft from the wheel hub and bearing (LH/RH).

CAUTION:

- **Do not place the drive shaft joint at an extreme angle. Also be careful not to overextend slide joint.**
- **Do not allow the drive shaft to hang down without support.**

NOTE:
Use a suitable puller if the drive shaft cannot be separated from the wheel hub and bearing even after performing the above procedure.



59. Remove the wheel hub lock nut and washer (LH/RH). Refer to "Exploded View" in the Front Axle section of the ESM.

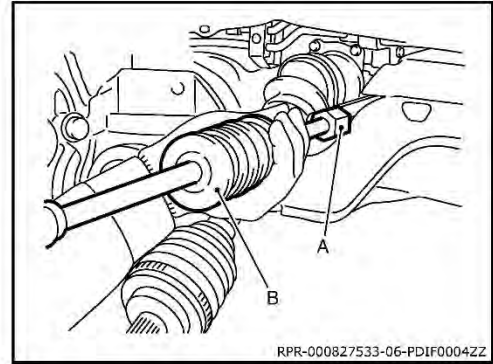
60. Remove the drive shaft from the wheel hub and bearing (LH/RH).

61. Insert the Tool (A) between the shaft and transaxle. Install a suitable tool (B) to the Tool (A). Remove the drive shaft from the transaxle (LH/RH).

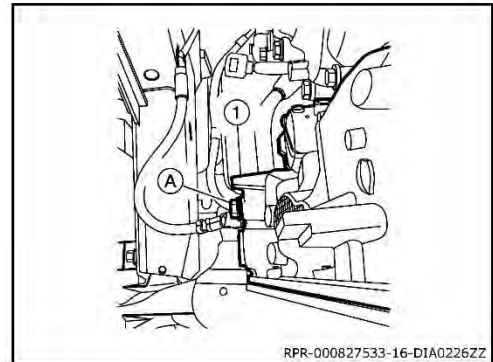
CAUTION:

Confirm that the circular clip is attached to the drive shaft.

Tool (A) number : KV40107500 (—)



62. Remove bolt (A) and remove ground from transaxle (1).



63. Remove the heater thermostat assembly hose from the CVT oil warmer. Refer to "Exploded View" in the Transaxle and Transmission section of the ESM.
64. Remove the heater thermostat assembly bracket bolt and position aside the heater thermostat assembly. Refer to "Exploded View" in the Transaxle and Transmission section of the ESM.
65. Remove the torque converter nuts. Refer to "Exploded View" in the Transaxle and Transmission section of the ESM.
66. Remove the upper nut securing transaxle assembly to engine mounting insulator (LH). Refer to "Exploded View" in the Engine Mechanical section of the ESM.
67. Disconnect the harness connector from the output speed sensor.
68. Disconnect the harness connector from the primary speed sensor.
69. Disconnect the harness connector from the secondary speed sensor.
70. Disconnect the harness connector from the transaxle assembly and release harness retainers using a suitable tool. Refer to "Removal and Installation Procedure for CVT Unit Connector" in the Transaxle and Transmission section of the ESM.
71. Using Tools lower engine and transaxle assembly until the transaxle assembly is low enough to clear the driver's side frame rail.

Tool numbers : (J-52389, J-52557)

72. Remove the remaining bolts securing the engine mounting insulator (LH) to the transaxle assembly and remove engine mounting insulator (LH). Refer to "Exploded View" in the Engine Mechanical section of the ESM.
73. Raise vehicle on hoist.
74. Support transaxle assembly using a suitable transmission jack.

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.**

75. Remove the remaining bolts from the transaxle to engine assembly. Refer to "Exploded View" in the Transaxle and Transmission section of the ESM.

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

CAUTION:

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

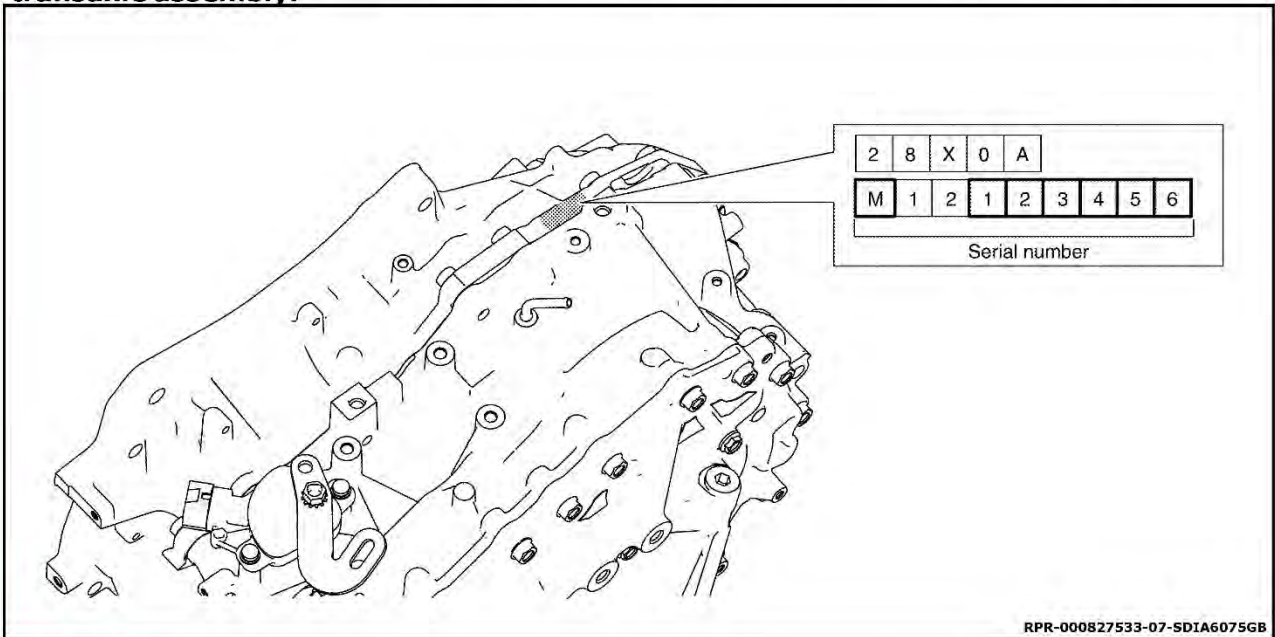
INSTALLATION

Installation is in the reverse order of removal.

Perform inspection before installation. Refer to "Inspection Before Installation" below.

NOTE:

If a new transaxle assembly is being installed, write down the serial number of the new transaxle assembly.



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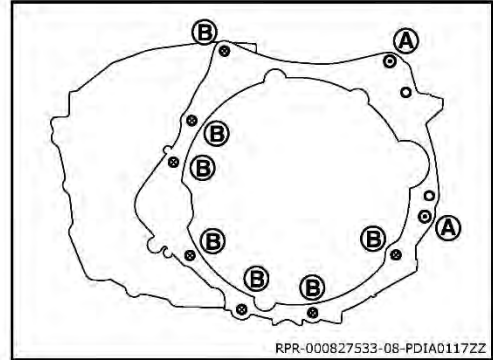
CAUTION:

- 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 drive train 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 "Removal and Installation" in the Engine Mechanical section of the ESM.
- After 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.

NOTE:

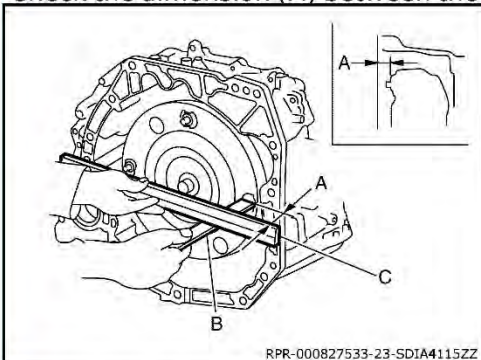
Install the transaxle assembly and engine assembly mounting bolts according to the following standards.

Bolt position	(A)	(B)
Direction of insertion	Transaxle to engine	Engine to transaxle
Quantity	2	7
Nominal length [mm (in)]	50 (1.97)	
Tightening torque N·m (kg·m, ft·lb)	62 (6.3, 46)	



INSPECTION BEFORE INSTALLATION

Check the dimension (A) between the converter housing and torque converter.



- B : Scale
C : Straightedge

Dimension (A) : Refer to "Torque Converter" in the Transaxle and Transmission section of the ESM.

ADJUSTMENT AFTER INSTALLATION

- Adjust CVT position. Refer to "Adjustment" in the Transaxle and Transmission section of the ESM.
- Check and adjust the engine coolant level. Refer to "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 "ADDITIONAL SERVICE WHEN REPLACE CONTROL VALVE OR TRANSAXLE ASSEMBLY". Refer to "Description" in the Transaxle and Transmission 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

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

(1) The new procedure in this 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.

