



SERVICE BULLETIN

Classification: EM12-014a	Reference: NTB12-071a	Date: December 17, 2013
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2009 – 2014 MAXIMA; ENGINE KNOCK FROM #1 MAIN BEARING

This bulletin has been amended to add additional models years.
Please discard the previous version.

APPLIED VEHICLES: 2009 – 2014 Maxima (A35)

IF YOU CONFIRM

A knock noise coming from the # 1 crankshaft main bearing:

NOTE: Refer to No.1 Main Bearing Knock Noise Confirmation on the next page.

ACTION

1. Remove the # 1 main bearing (upper and lower halves), per the Service Procedure in this bulletin.
2. Select and install a new # 1 main bearing that is one grade higher (thicker) than the one removed.

NOTE: Do not replace the engine for this issue.

IMPORTANT: The purpose of ACTION (above) is to give you a quick idea of the work you will be performing. You MUST closely follow the entire SERVICE PROCEDURE as it contains information that is essential to successfully completing the repair.

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.

No.1 Main Bearing Knock Noise Confirmation

Use the following criteria and symptoms to confirm the knock noise is coming from the No. 1 crankshaft main bearing.

Knock noise from No.1 main bearing is confirmed if **all** of the following symptoms exist:

- Not heard at cold start.
- Can be heard at warm idle (not a cold start condition).
- Heard best from under the engine with the vehicle lifted.
- Using stethoscope, the knock can be isolated to the lower front of the engine (near the # 1 or # 2 main bearing).
- Cannot be heard driving at highway speeds.
- Cannot be heard sitting in the vehicle with the radio on.

Other symptoms that **may** be evident with a knock noise from the No.1 main bearing:

- May hear the knock noise while sitting in the passenger side front seat with the doors closed, windows rolled up, and the radio off.
- Knock noise can be decreased (made quieter) or eliminated by removing tension or adding tension to the accessory drive belt.

NOTE: If an engine has a knock noise from the # 1 main bearing (confirmed by the above symptoms), the noise will not be eliminated by changing the oil grade or type, or by installing new oil.

SERVICE PROCEDURE

WARNING:

- Make sure the cooling system has cooled before opening. Hot coolant can cause severe burns.
- Make sure all engine parts (e.g. exhaust components, engine block, etc.) have cooled before touching. Hot engine parts can cause severe burns.



Figure 1

NOTE:

- When removing components such as tubes, hoses, and lines; cap the opening to prevent fluid from dripping/spilling.
- If needed, additional details (line art images, system descriptions, etc.) for the removal and installation of components in this bulletin can be found in the appropriate Service Manual.

1. Write down all radio station settings.

Presets	1	2	3	4	5	6
A						
B						
C						
SAT						
Fade:	Balance:		Bass:		Treble:	

2. If equipped, write down / record the following customer settings for the ATC (Automatic Temperature Control) system. (Refer to the Service Manual as needed):
 - Temperature Setting Trimmer
 - Foot Position Setting Trimmer
 - Inlet Port Memory Function (FRE and REC)

3. Disconnect the negative battery cable.

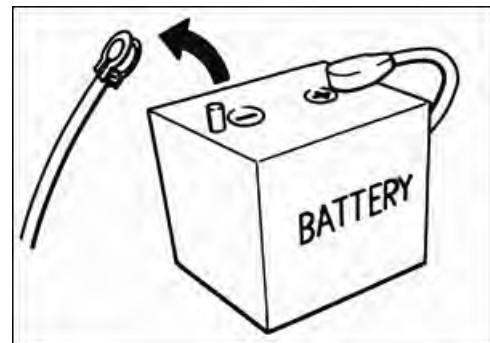


Figure 2

4. Remove the oil dip stick.

5. Remove the engine cover.

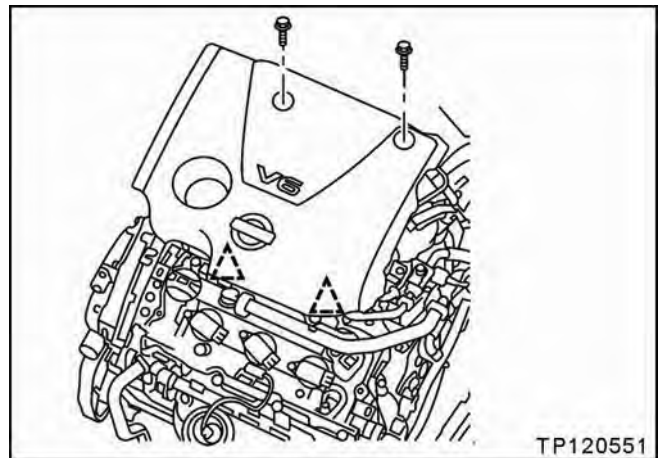


Figure 3

6. Remove the engine under cover.

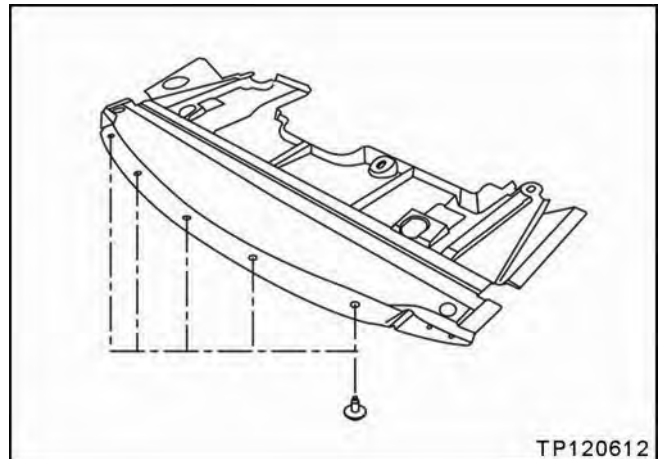


Figure 4

7. Drain the engine coolant into a clean container as follows:

- a. CAUTION: Make sure the cooling system has cooled.
- b. Place a clean container under the radiator drain plug.
- c. Remove the radiator drain plug.
- d. Remove the radiator cap.
- e. Store the coolant in a covered clean container (**coolant will be reused**).

8. Remove the front air duct.

- Front air duct is held on with 3 bolts.

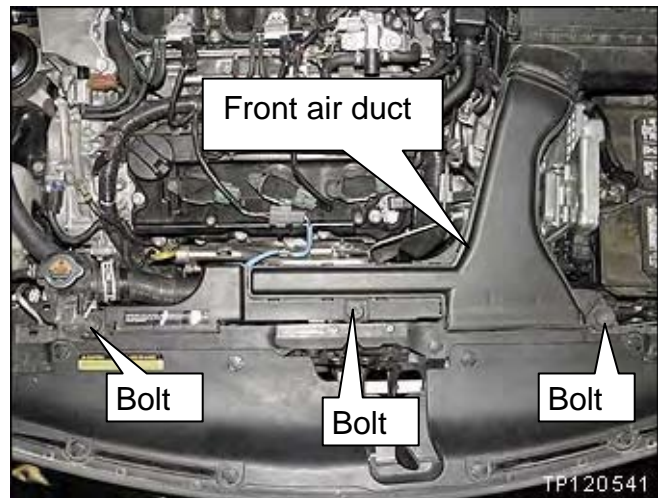


Figure 5

9. Remove the air cleaner case:

- Remove 1 bolt.
- Loosen clamp.
- Disconnect transmission vent hose.

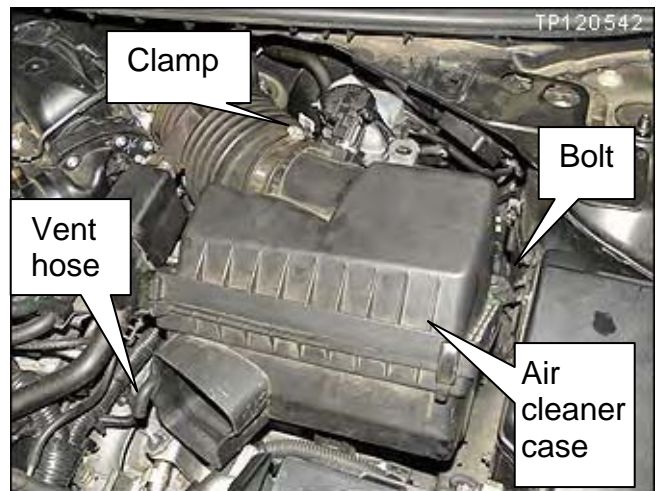


Figure 6

10. Attach an engine support bar to the transmission as shown.

- Transverse Engine Support Bar 16-1725 from Tech-Mate can be used (or equivalent).

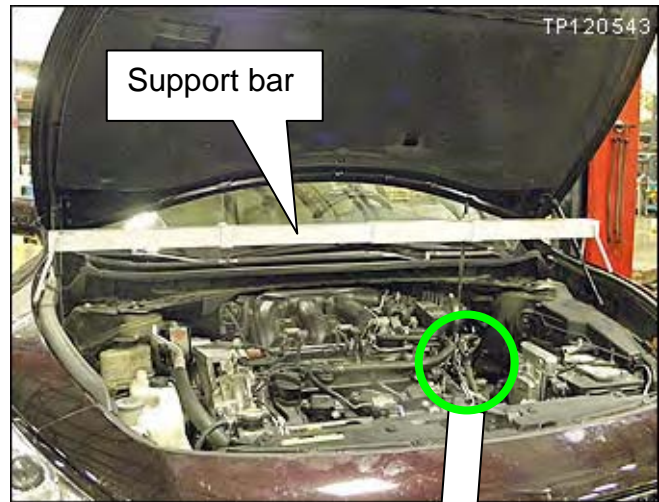


Figure 7

Hook from support bar

- Use a bolt to attach the chain from the support bar hook to the top of the transmission as shown.
- Adjust / tighten the hook and chain so the support bar is supporting the weight of the transmission.

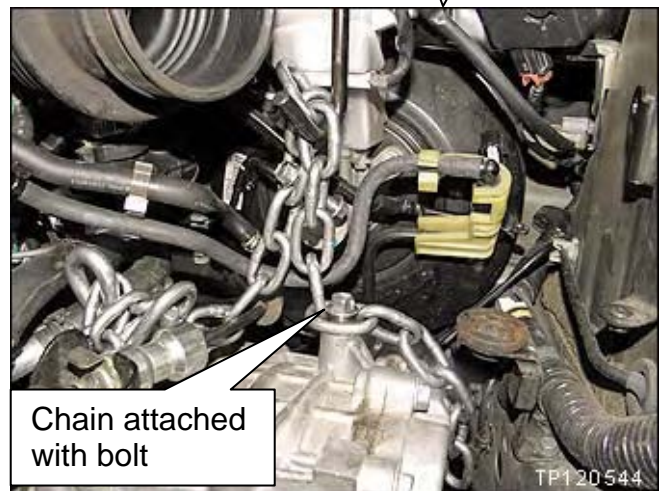


Figure 8

NOTE: Later in this procedure the front suspension member (engine cradle) will be removed / lowered from under the engine. The engine and transmission will be held in place by the engine mount at the front of the engine and the support bar that was just installed.

11. Remove the upper radiator hose:
- Remove / reposition 2 clamps.
 - Remove bolt from center support.

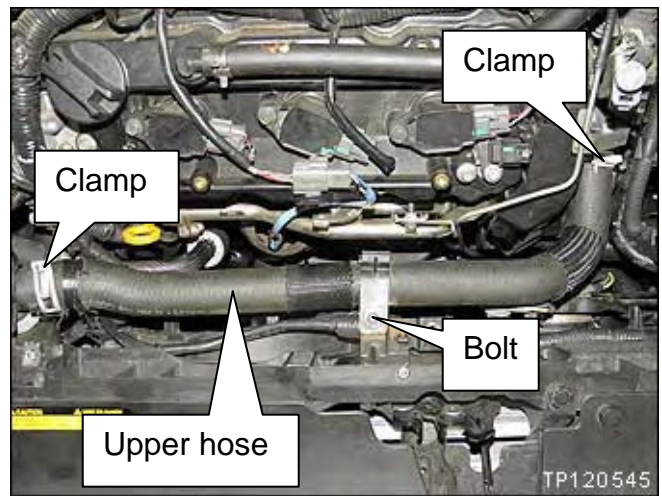


Figure 9

12. Remove the nut for the front engine mount.

Reassembly torque:
103 N•m (11 kg-m, **76 ft-lb**)

13. Disconnect the front engine mount vacuum hose.

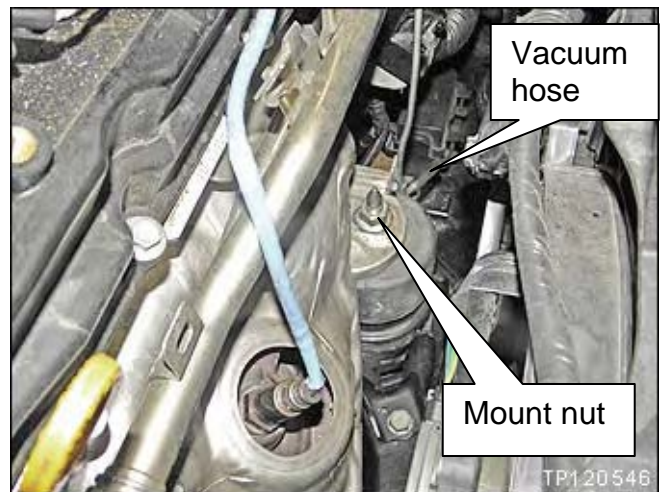


Figure 10

14. Remove the 4 bolts holding the exhaust manifold heat shield LH.

Reassembly torque:
5.8 N•m (0.59 kg-m, **51 in-lb**)

NOTE: The heat shield will not be completely removed. Later in the procedure the loose heat shield will allow access to the catalyst mounting bolts.

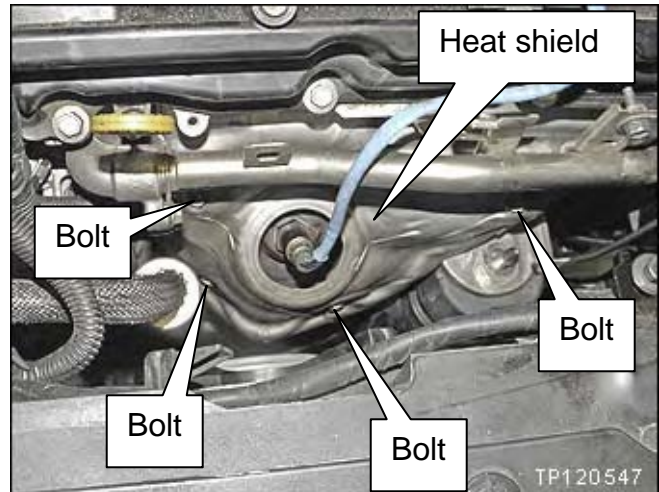


Figure 11

15. Remove both front wheels.

Reassembly torque:
113 N•m (12 kg-m, **83 ft-lb**)
Tighten bolts in three steps
using a star pattern.

16. Remove the front fender protector side covers.

- The right side is shown; remove both sides.
- Each cover is held on with 6 clips.

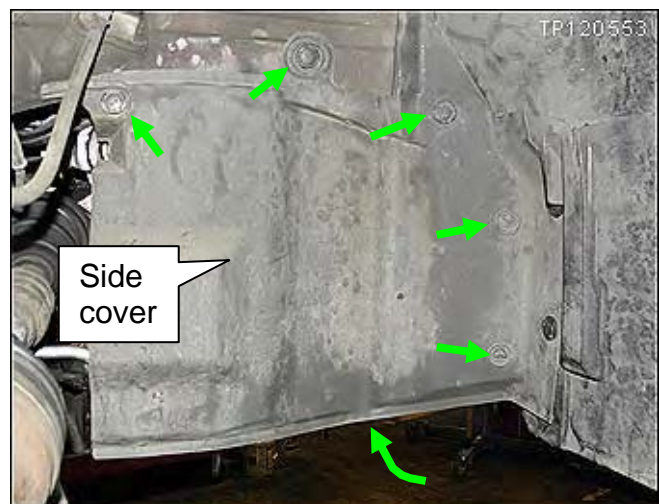


Figure 12

17. Remove the front exhaust tube (see Figure 13):

- Remove 2 nuts at center exhaust tube to front exhaust tube.
- Remove 6 nuts / bolts at front exhaust tube to exhaust manifolds (both banks).
- Remove nut and bolt for front exhaust tube stay.
- Remove 2 bolts for front exhaust tube bracket.

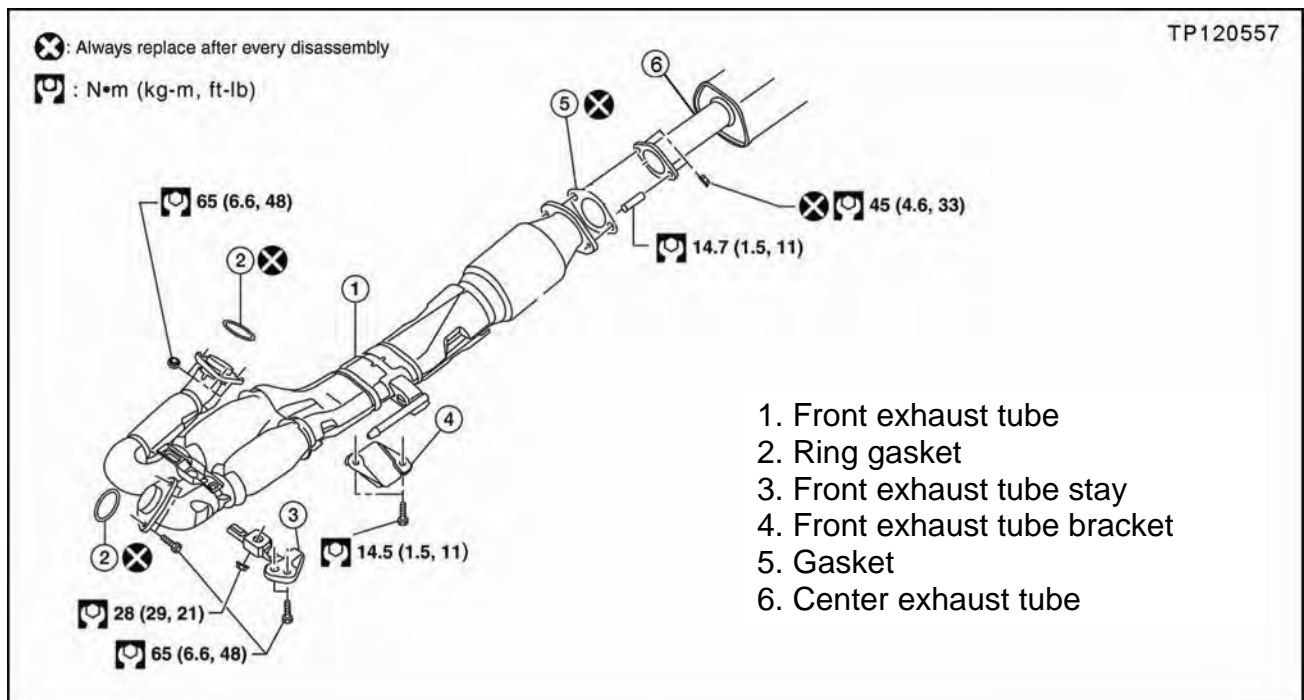


Figure 13

18. Remove the clamp nut and bolt for the lower ball joints.

- Right side is shown; remove nut and bolt for both sides (left and right).

Reassembly torque:
63 N•m (6.4 kg-m, **46 ft-lb**)

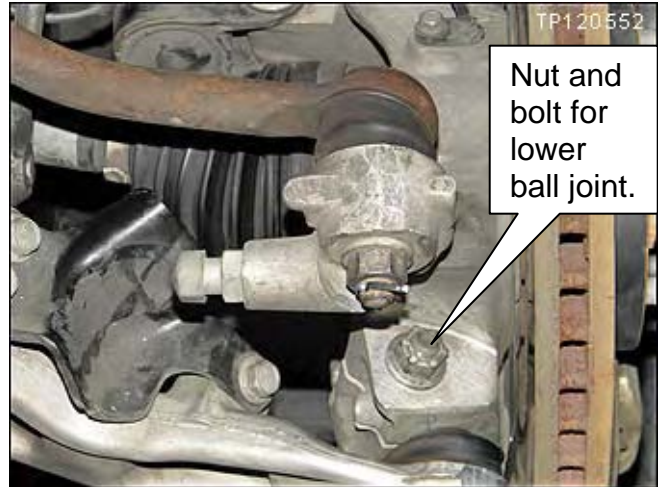


Figure 14

19. Separate the ball joints from the steering knuckles.

- Right side is shown; separate ball joint from steering knuckle on both sides (left and right).

20. Remove the nuts from the upper end of the suspension connecting rods.

- Right side is shown; remove nut from both sides (left and right).

Reassembly torque:
78.5 N•m (8.0 kg-m, **58 ft-lb**)



Figure 15

21. Remove the cotter pin and nut for RH side tie rod end (see Figure 16).

22. Separate the RH side tie rod end from the steering knuckle.

23. Remove the 2 steering gear assembly mounting bolts (see Figure 16).

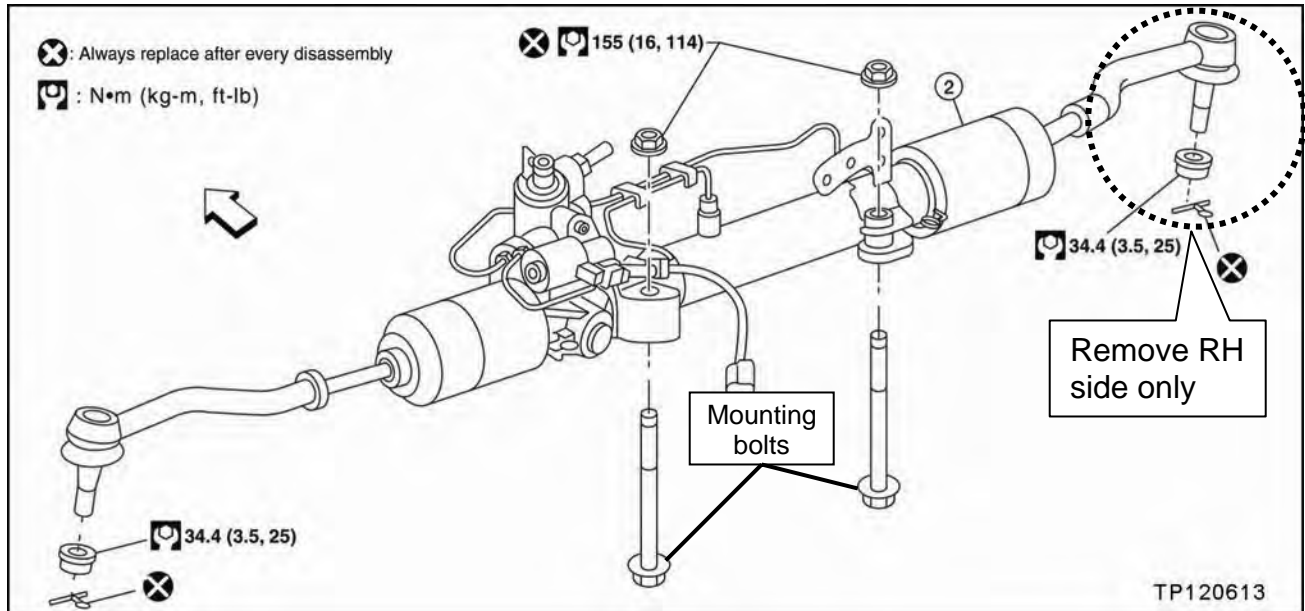


Figure 16

24. Attach elastic straps (or other suitable support) to each side of the steering gear assembly.

- Right side is shown; attach a strap to both sides.

NOTE: The support straps will hold the steering gear when the front suspension member is lowered.



Figure 17

25. Take the Power Steering (P/S) line loose from for the mounting points shown (1 bolt and 2 clips).

NOTE: Do not remove the P/S line; just take it loose from the mounting points.

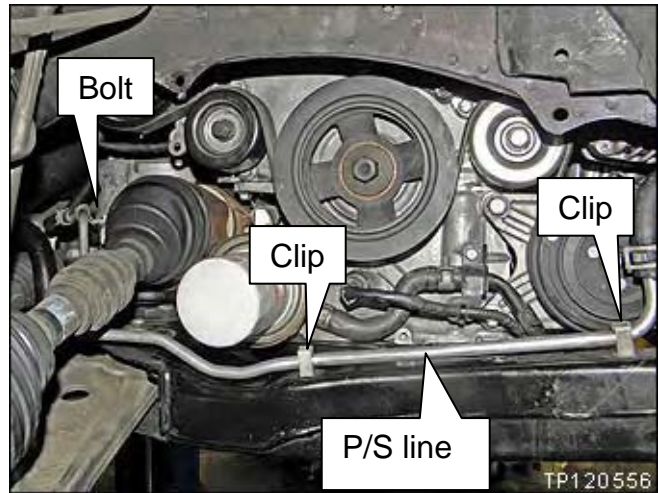


Figure 18

26. Remove bolt from lower torque rod.

Reassembly torque:
103 N•m (11kg-m, **76 ft-lb**)



Figure 19

27. Unclip the Power Steering (P/S) gear electrical harness from the front suspension member.

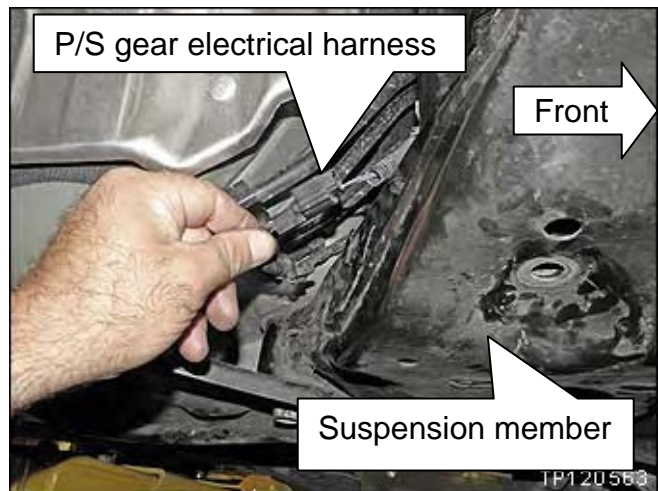


Figure 20

28. Remove the nut from the rear engine mount.

Reassembly torque:
103 N•m (11 kg-m, **76 ft-lb**)

29. Disconnect the rear engine mount vacuum hose.

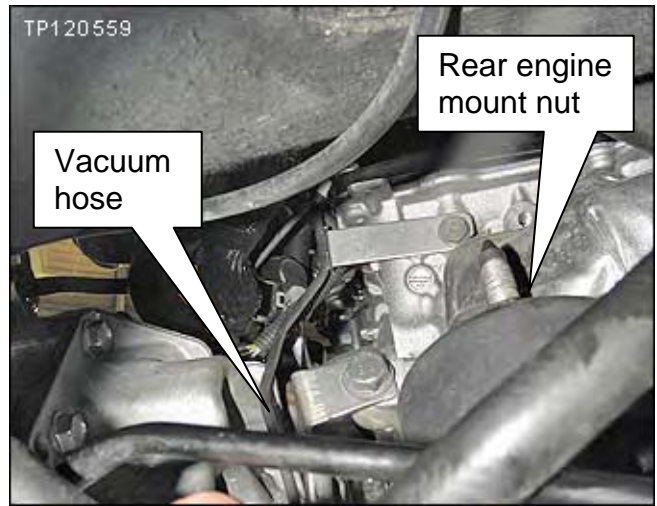


Figure 21

30. Remove 3 bolts from the LH transaxle mount (mount at rear of transmission).

Reassembly torque:
70 N•m (7.1 kg-m, **52 ft-lb**)

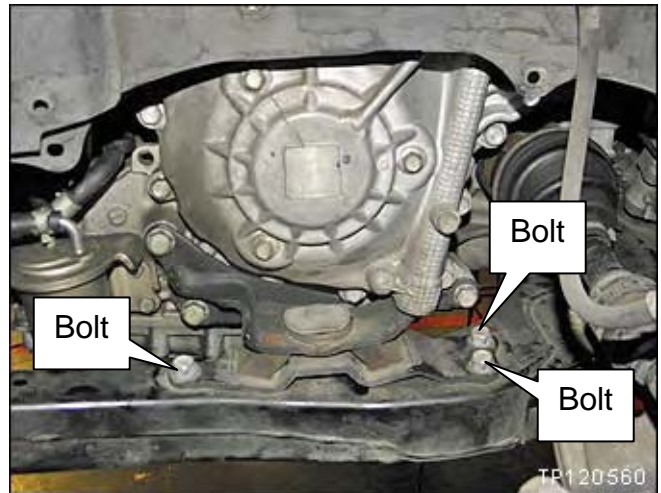


Figure 22

31. Remove the bolts circled in Figure 23 from the member pin stays; 4 bolts on each side – total 8.

Reassembly torque:
55 N•m (5.6 kg-m, **41 ft-lb**)

NOTE: The member pin stays will not be removed at this time. They will be removed later when the bolts for the front suspension member are removed.

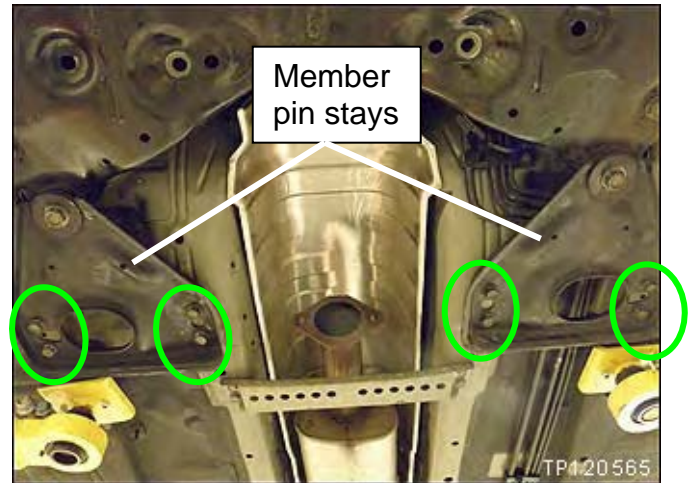


Figure 23

32. Place a support table under the front suspension member (engine cradle) and lower the vehicle just above the table.

- Use engine support table J-47242 or equivalent.



Figure 24

33. Adjust the table to properly support the front suspension member.

34. Lower the vehicle so the support table is supporting the suspension member.

35. Remove the 4 bolts holding the front suspension member.

- 2 bolts shown – 2 similar on the opposite side.

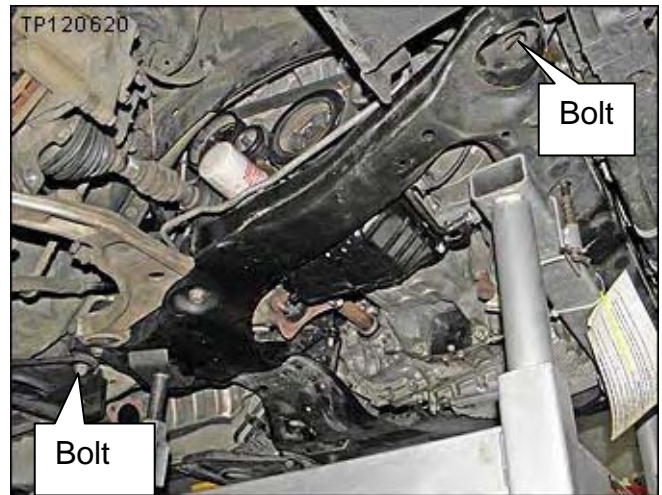


Figure 25

Reassembly torque:
155 N•m (16 kg-m, **114 ft-lb**)

36. Carefully raise the vehicle so the front suspension member stays on the support table.

37. Move the support table with the front suspension member to a safe area away from the working area.



Figure 26

38. For additional support, place a pole jack under the transmission.

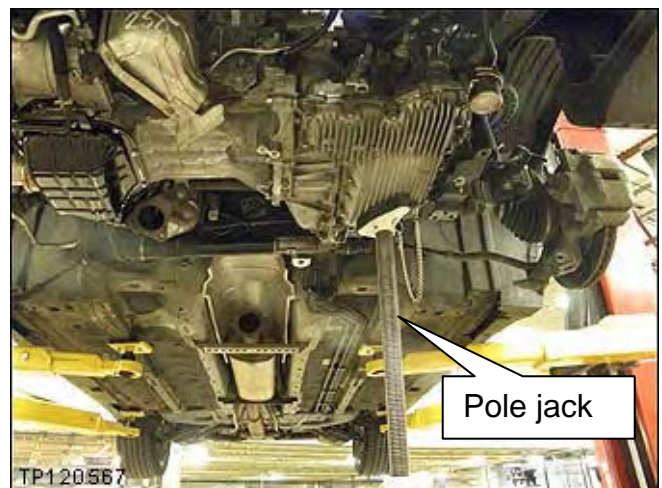


Figure 27

39. Drain the transmission fluid as follows:

- a. Remove the drain plug and allow fluid to drain.
- b. Install a new washer on the drain plug.
- c. Reinstall the drain plug:
Torque to 21 N•m (2.1 kg-m, **15 ft-lb**)



Figure 28

40. Remove the drive belt as follows:

- a. Use a 13 mm off-set box wrench on the auto-tensioner pulley bolt.
- b. Pull / push on the wrench as if turning the bolt in a clockwise direction.
- c. While holding / pulling the wrench, insert a rod (approximately 6 mm / 0.24 inch diameter and at least 25 mm / 1 inch long) through the tensioner retaining boss.

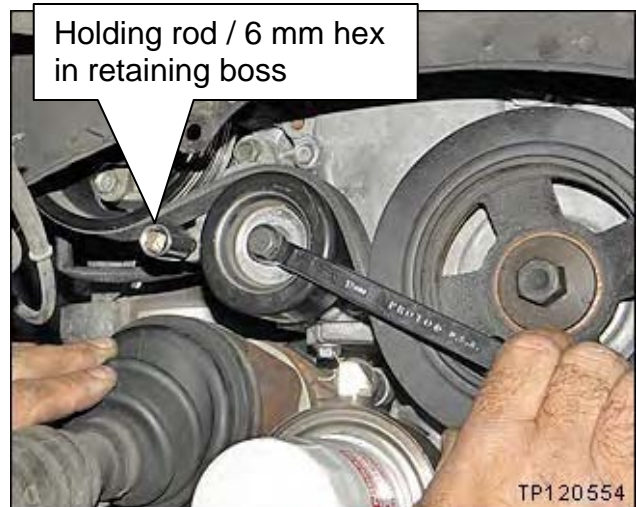


Figure 29

NOTE: For illustration, a 6 mm hex driver was used to hold the tensioner / retaining boss.

- d. Carefully allow the tensioner to move to a relaxed position (carefully release your pulling force on the wrench).
- e. Remove the drive belt.

41. Disconnect the electrical connector from the oil pressure sensor.

42. Disconnect the front coolant hose from the oil cooler.

NOTE: Coolant may leak from the coolant hose.

43. Remove 2 bracket bolts and then move the harness and coolant hose out of the way.

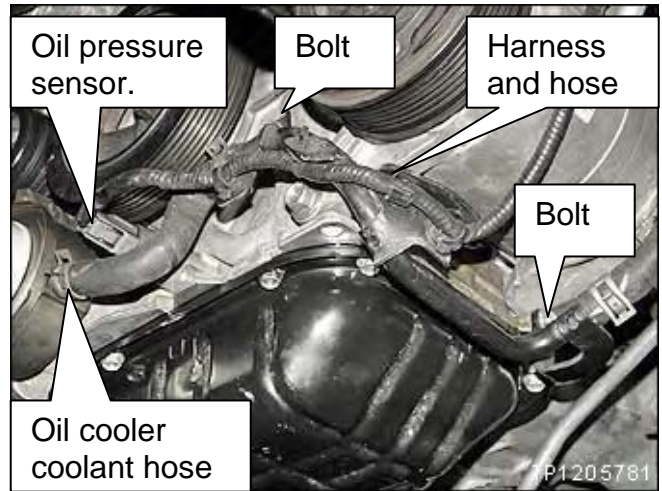


Figure 30

44. Remove the 4 A/C compressor mounting bolts.

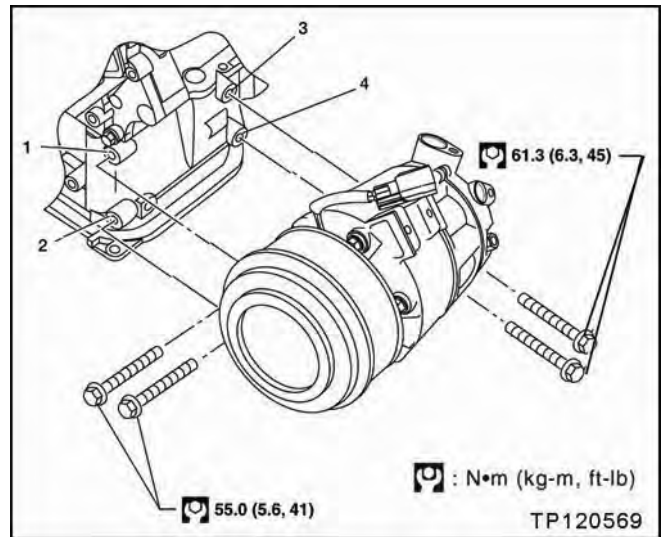


Figure 31

45. Attach a support strap to the A/C compressor.

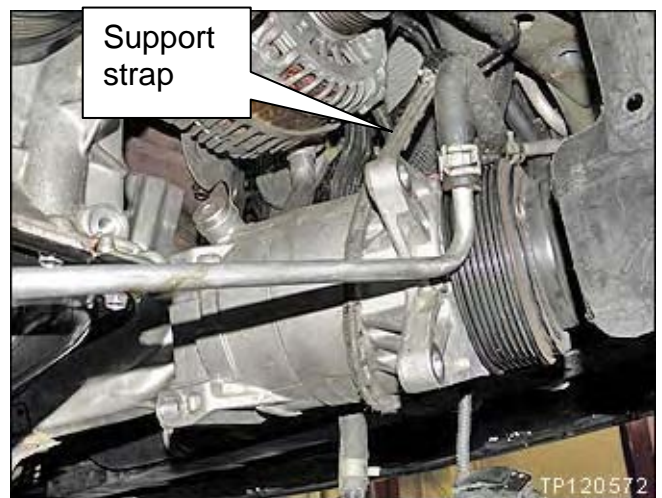


Figure 32

46. Disconnect the heated oxygen sensor 2 (bank 2).
47. Disconnect the crankshaft position sensor.
48. Remove the bolt for the catalyst support bracket.

Reassembly torque:
65 N•m (6.6 kg-m, **48 ft-lb**)

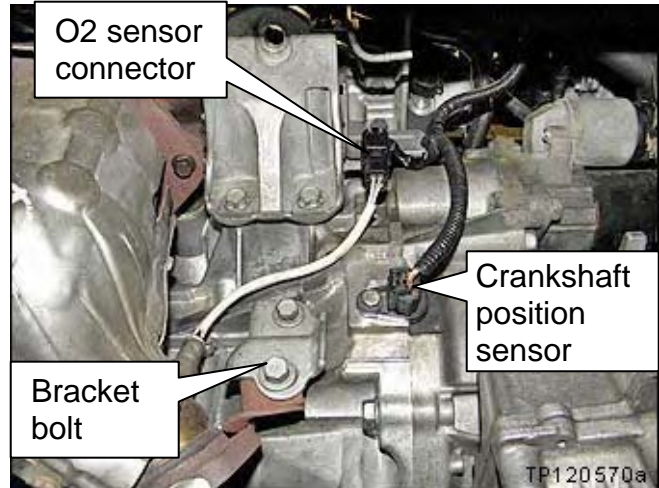


Figure 33

49. Remove the three way catalyst (manifold) bank 2.
 - The three way catalyst is held on with 4 bolts and 2 nuts shown in Figure 34.
 - The nuts can be removed by reaching up from the bottom with a wrench.

NOTE: During reassembly, the nuts can be tightened from above using a socket and extension through the sensor hole in the heat shield.

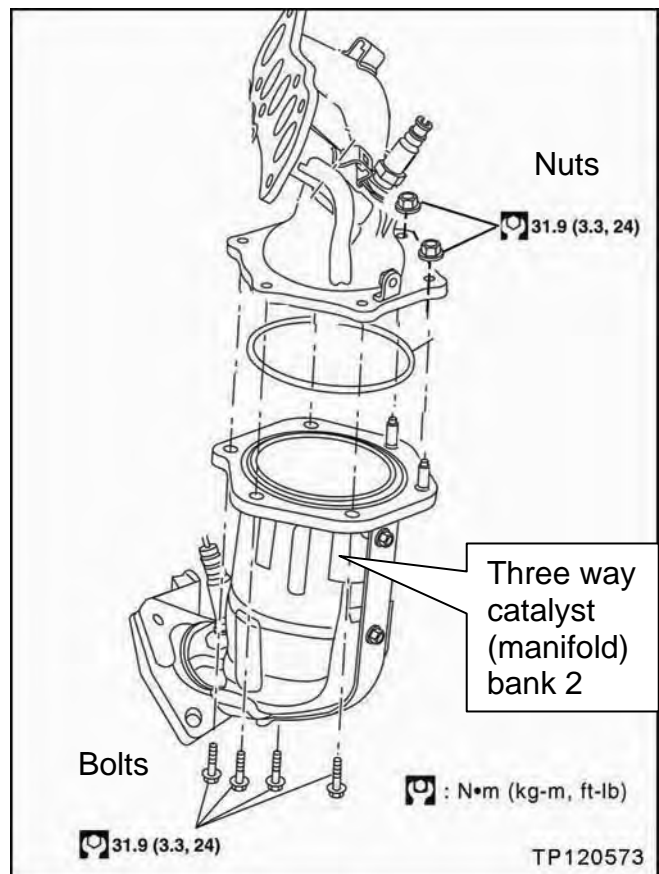


Figure 34

50. Remove the crankshaft position sensor.

Reassembly torque:
7.0 N•m (0.71kg-m, **62 in-lb**)

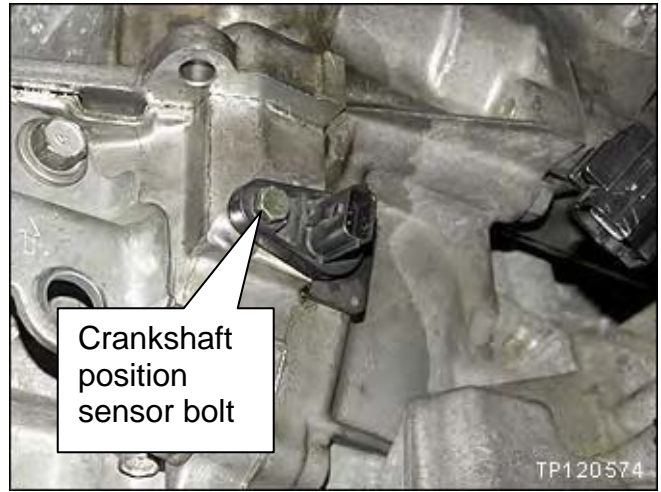


Figure 35

51. Remove the crankshaft position sensor rubber backing and place it with the sensor.



Figure 36

52. Remove the passenger side axle cotter pin and lock nut.

Reassembly torque:
175 N•m (18 kg-m, **129 ft-lb**)
Use a new cotter pin.

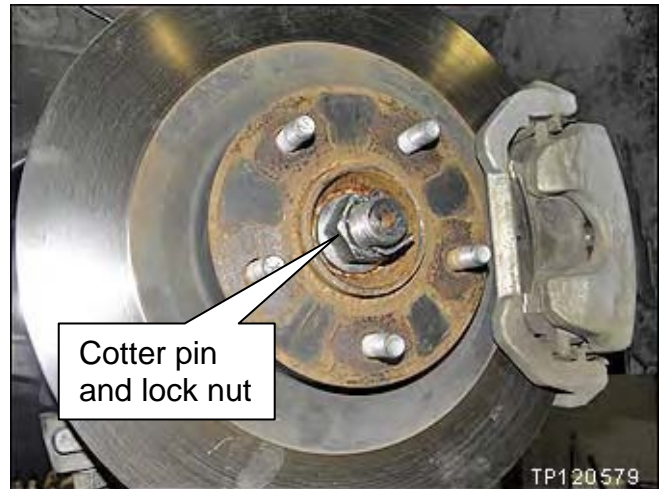


Figure 37

53. Remove the passenger side axle from the steering knuckle.

NOTE: It may be helpful to loosen both bolts and remove only the lower bolt at the upper steering knuckle.

Reassembly torque:
140 N•m (14 kg-m, **103 ft-lb**)
Use new nuts.



Figure 38

54. Remove 2 bolts from the passenger side axle support bearing bracket.

Reassembly torque:
48 N•m (4.9 kg-m, **35 ft-lb**)

55. Remove the passenger side axle from the vehicle.

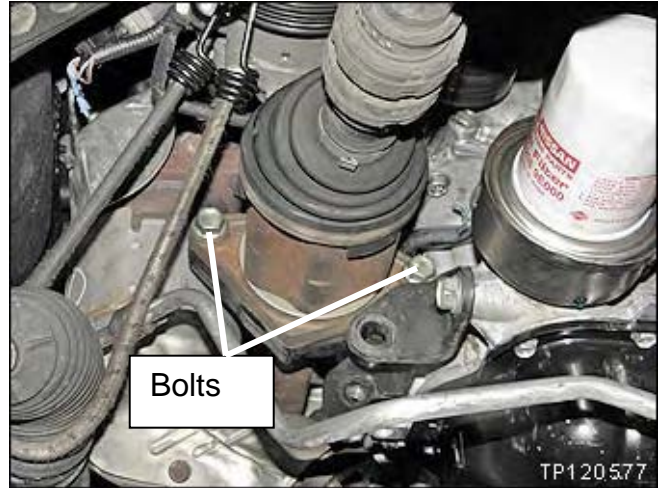


Figure 39

56. Remove the oil filter.

Reassembly torque:
18 N•m (1.8 kg-m, **13 ft-lb**)
Use a new oil filter.



Figure 40

57. Reposition the oil cooler rear coolant hose clamp so the hose can be removed.

58. Remove the oil cooler center bolt and remove the oil cooler.

Reassembly torque:
49 N•m (5.0 kg-m, **36 ft-lb**)
Use a new oil cooler gasket.

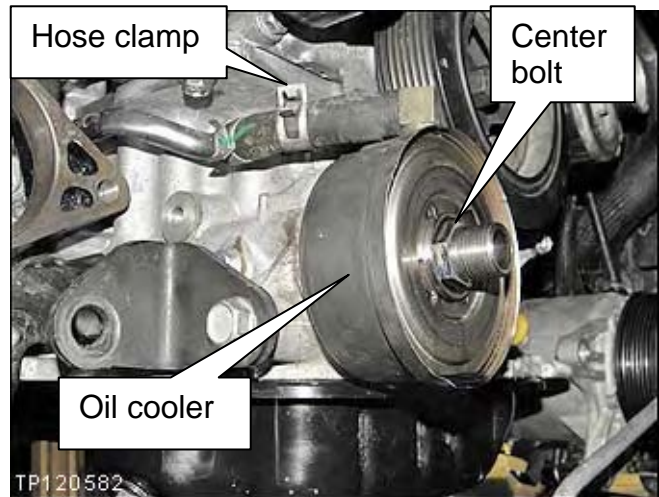


Figure 41

59. Remove the lower torque rod bracket; 3 bolts.

Reassembly torque:
40 N•m (4.1 kg-m, **30 ft-lb**)

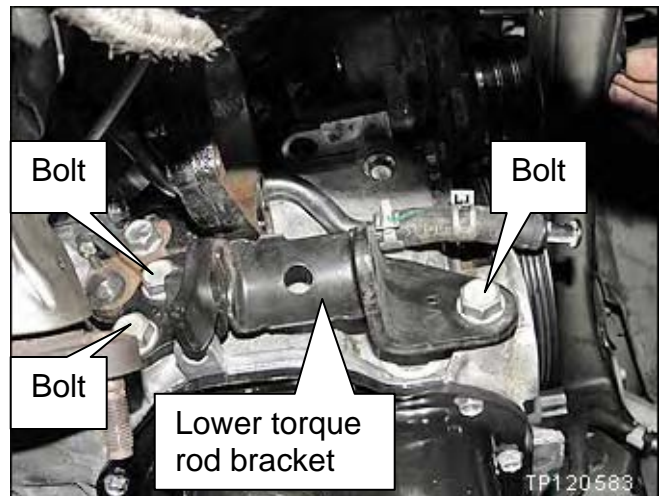


Figure 42

60. Remove the catalyst (bank 1) support bracket - 2 bolts.

Reassembly torque:
65 N•m (6.6 kg-m, **48 ft-lb**)

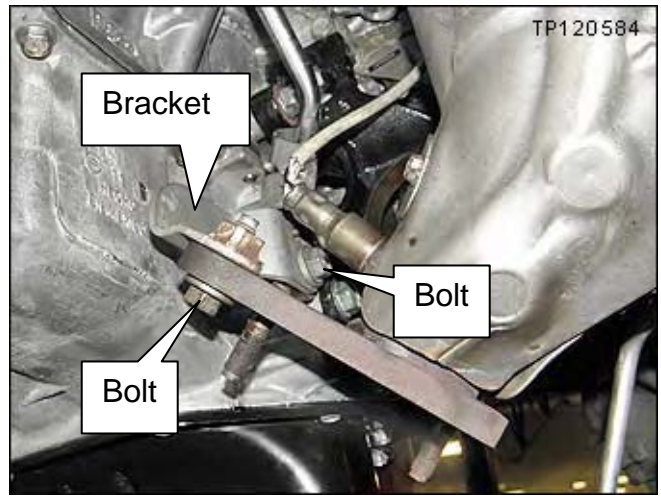


Figure 43

61. Remove the passenger side axle support bearing bracket; 4 bolts.

Reassembly torque:
48 N•m (4.9 kg-m, **35 ft-lb**)

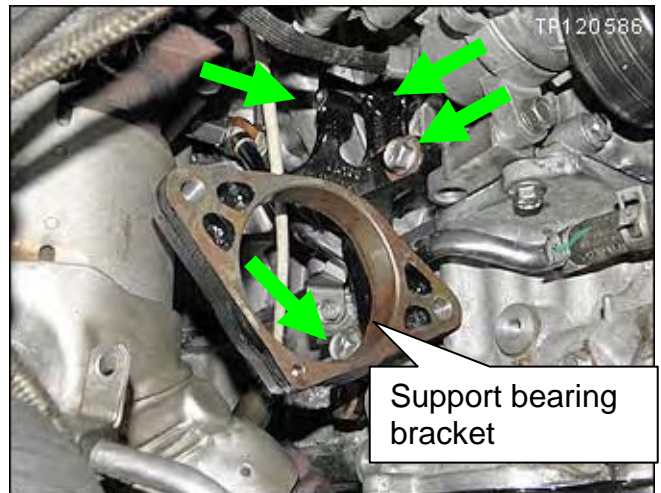


Figure 44

62. Remove the rear oil cooler water pipe (coolant tube) bracket; 2 bolts.

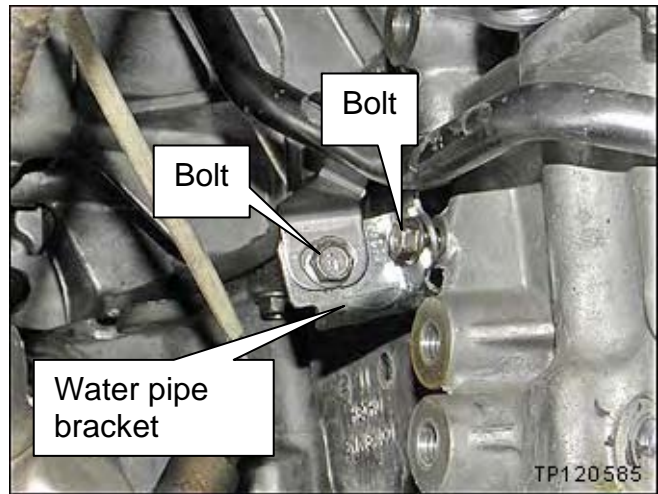


Figure 45

63. Remove the rear oil cooler water pipe.

- Remove the water drain plug (nut) from the water connector and then remove the pipe.

Reassembly torque:
27 N•m (2.8 kg-m, **20 ft-lb**)
Use new copper gasket.

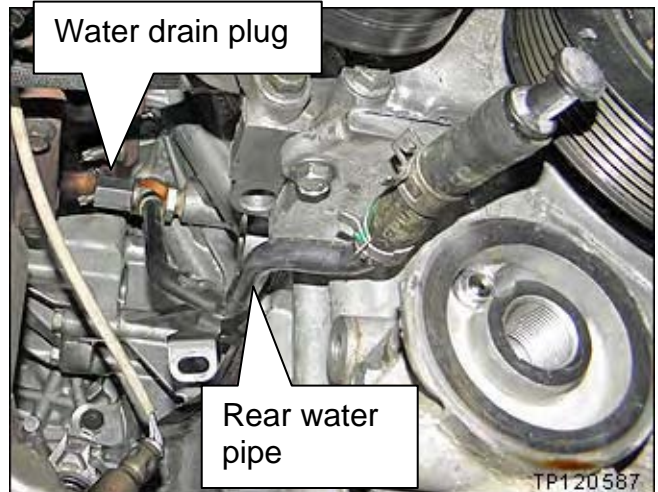


Figure 46

64. Remove the engine oil drain plug and drain the engine oil.

65. Put a new washer on the drain plug and reinstall the drain plug.

- Torque drain plug to 34.3 N•m (3.5 kg-m, **25 ft-lb**).

NOTE: The following items will be removed in the next few steps.

- Lower oil pan
- Upper oil pan
- Oil strainer
- Oil pan baffle

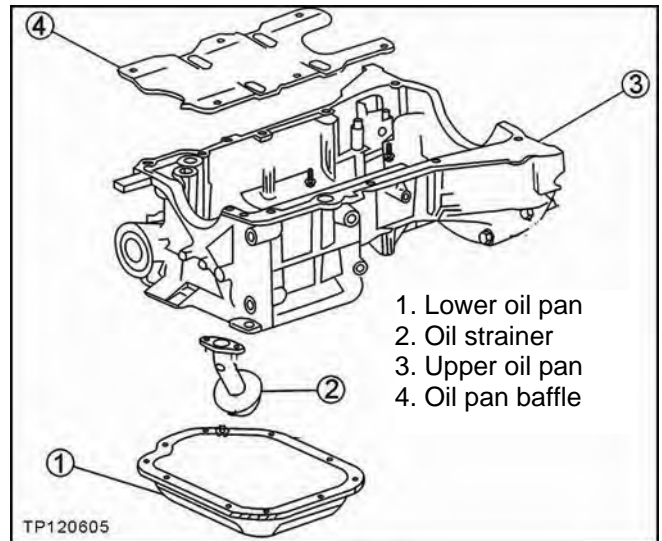


Figure 47

66. Remove the bolts from the lower oil pan in the order shown.

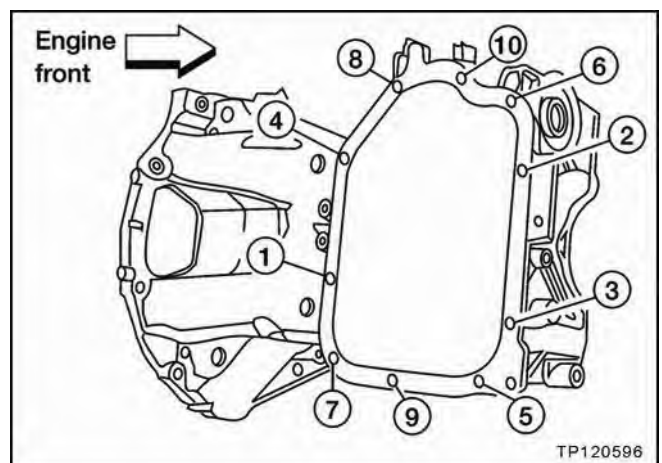


Figure 48

67. Insert a suitable tool between the upper oil pan and the lower oil pan. Tap the tool as needed to remove the lower oil pan.

CAUTION:

- Do not damage the mating surfaces.
- Do not use a screwdriver; it will damage the mating surfaces.

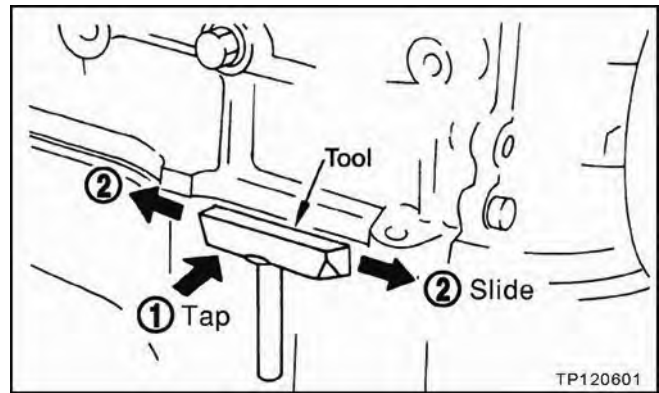


Figure 49

68. Remove 4 bolts connecting the rear of the upper oil pan to the transmission.

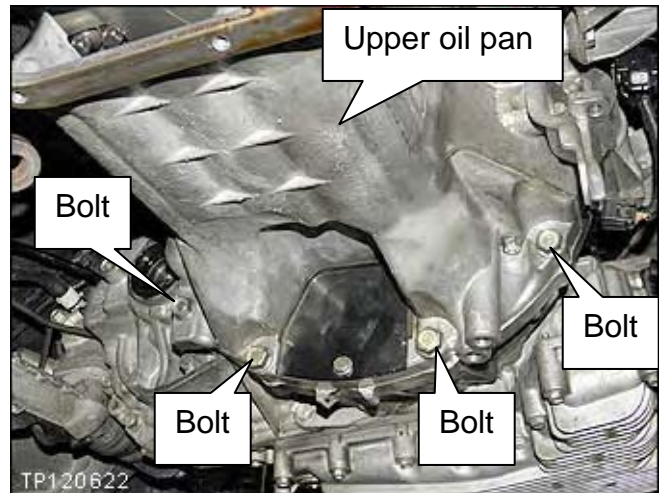


Figure 50

69. Remove the upper oil pan bolts in the order shown.

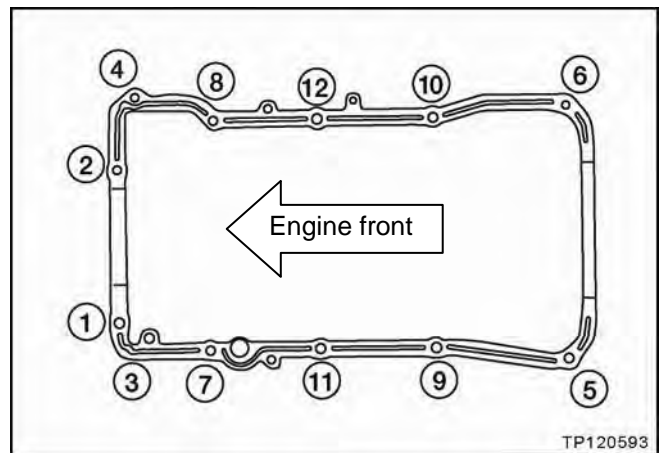


Figure 51

70. Remove the upper oil pan as follows (see Figure 52):

- a. Insert an appropriate size tool into the notch (1) of the upper oil pan as shown.
- b. Pry off the upper oil pan by moving the tool up and down (2) as shown.

CAUTION:

- Do not damage the mating surfaces.
- Do not damage the crankshaft position sensor signal plate teeth.

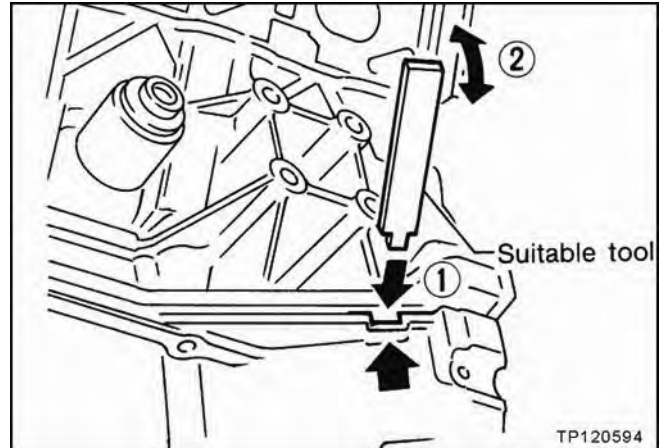


Figure 52

71. Remove the oil strainer; 2 bolts.

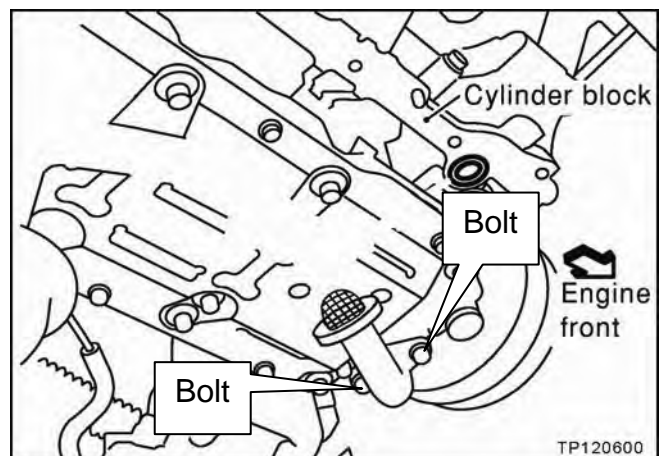


Figure 53

72. Remove the oil pan baffle; 6 bolts.

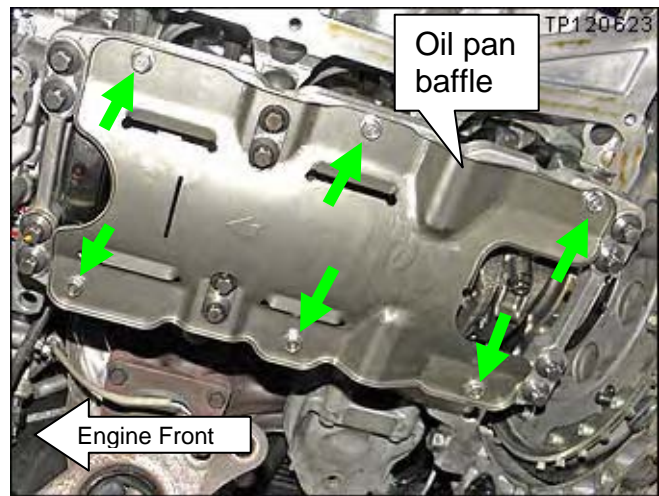


Figure 54

73. Remove the main bearing beam as follows:

- a. Remove the main bearing bolts in the order shown.
- b. Remove the main bearing beam.

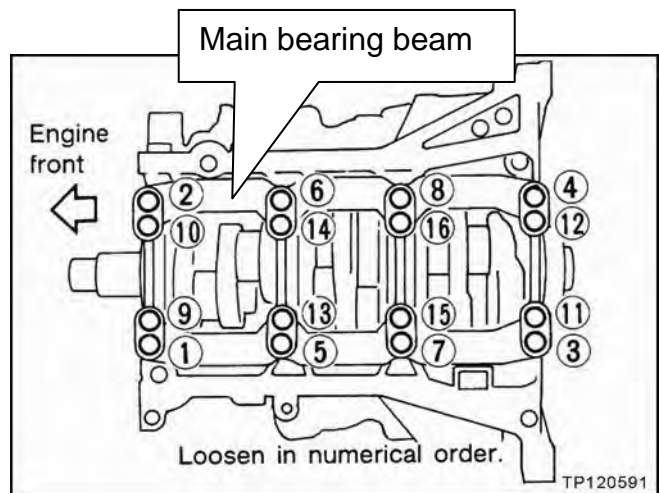


Figure 55

74. For main bearings 2, 3, and 4:

- a. Install flat washers (about 7) on 6 main bearing bolts.
- b. Install 2 bolts (with washers) finger tight into main bearing caps 2, 3, and 4.

NOTE: The bolts installed above will prevent the main bearing caps from falling off while working on the engine.

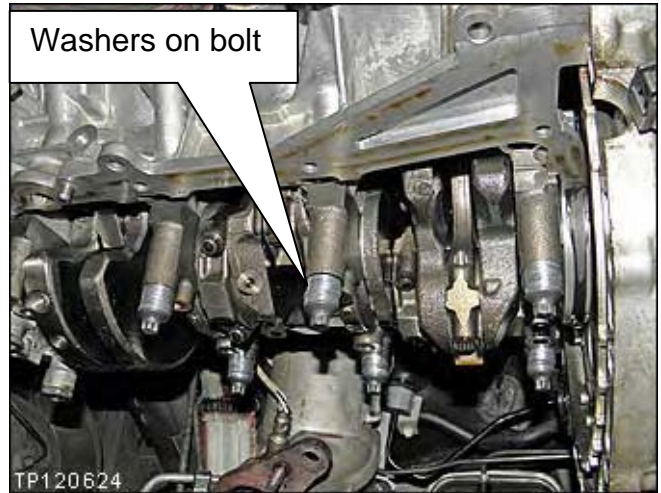


Figure 56

75. Remove the # 1 main bearing cap.



Figure 57

76. Remove the upper half of the #1 main bearing as follows:

CAUTION: While removing the upper half of the #1 main bearing, be careful not to mar, nick, scratch, or otherwise damage the crankshaft journal or the engine block where the bearing seats.

a. Use a 3.2 mm (1/8 inch) cotter pin to shape a special tool as shown in Figure 58:

- Cut and shape the cotter pin to the dimensions shown.
- This tool will be used to remove the upper half of the #1 main bearing.

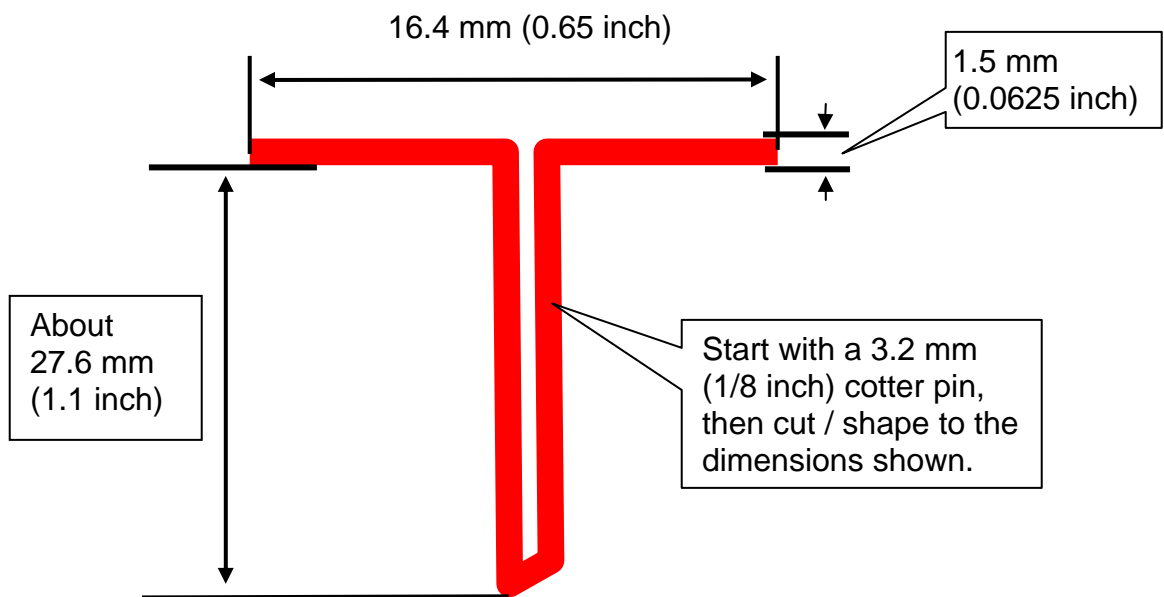


Figure 58

- b. Install the special tool into the # 1 main bearing crankshaft journal oil hole.
- Turn the crankshaft so the oil hole is in the position shown.
- c. Slowly turn the crankshaft counterclockwise (as you face the front of the engine).

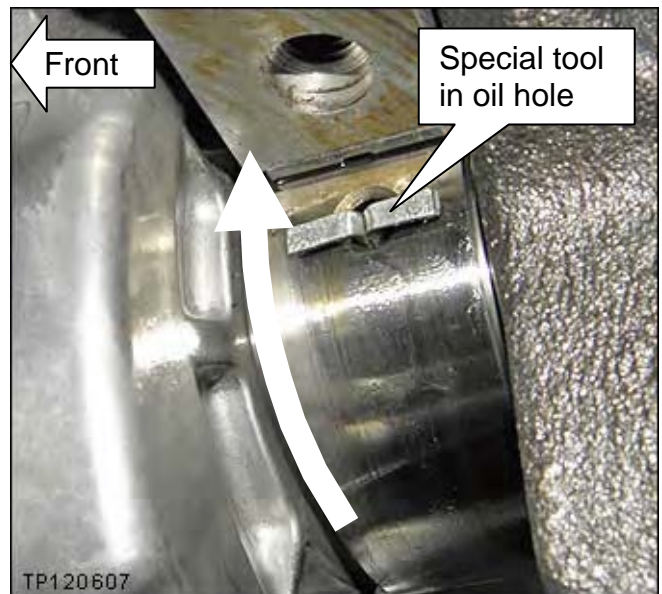


Figure 59

On the opposite side of the crankshaft:

- As the crankshaft turns, the special tool will push out the upper half of the main bearing.

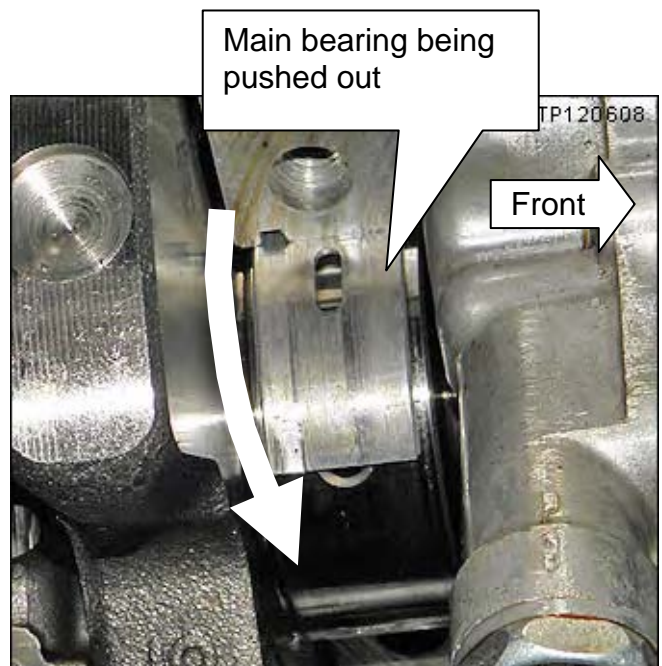


Figure 60

NOTE: Observe the location of the bearing tang. **Do not** rotate the crankshaft in the direction that will push the tang into the block.

77. Choose the grade for the **new** #1 main bearing as follows:

- a. Check the color on the side of the bearing that you removed.
- Check the color for the upper and lower halves – it may be different.

NOTE: If color cannot be determined, refer to page 48.

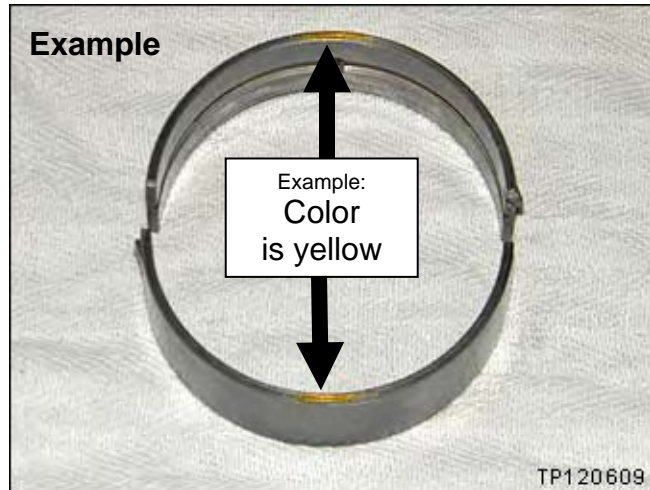


Figure 61

- b. Select a new main bearing that is one full grade above the bearing that was removed.
- Examples:** If Yellow was removed, which is grade 3; select grade 4 (Blue) for installation.
If Blue/Yellow was removed, which is grade 34; select grade 45 (pink/blue) for installation.

# 1 MAIN BEARING GRADE	GRADE COLOR	PART NUMBER
0	Black	12207-31U00
½ grade: 01	Upper Half – Brown	12207-AG000
	Lower Half – Black	
1	Brown	12207-31U01
½ grade: 12	Upper Half – Green	12207-AG001
	Lower Half – Brown	
2	Green	12207-31U02
½ grade: 23	Upper Half – Yellow	12207-AG002
	Lower Half – Green	
3	Yellow	12207-31U03
½ grade: 34	Upper Half – Blue	12207-AG003
	Lower Half – Yellow	
4	Blue	12207-31U04
½ grade: 45	Upper Half – Pink	12207-AG004
	Lower Half – Blue	
5	Pink	12207-31U05
½ grade: 56	Upper Half – Purple	12207-AG005
	Lower Half – Pink	
6	Purple	12207-31U06
½ grade: 67	Upper Half – White	12207-AG006
	Lower Half – Purple	
7	White	12207-31U07

78. Install the upper half of the new # 1 main bearing using the special tool and turning the engine in the opposite direction (clockwise):

CAUTION:

- Make sure to tightly hold the bearing against the crankshaft journal with your fingers while turning the crankshaft.
- Make sure the tool contacts only the end of the bearing and does not scratch the block or the bearing.
- **Be careful** not to mar, nick, scratch, or otherwise damage the crankshaft journal or the engine block where the bearing seats.

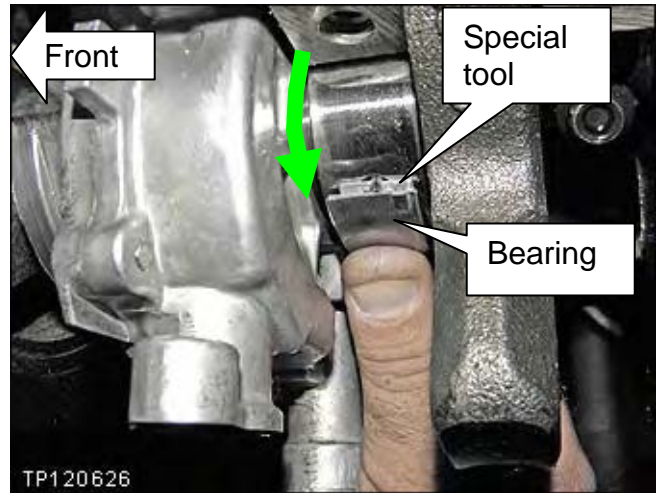


Figure 62

79. Install the lower half of the new main bearing into the #1 main bearing cap.



Figure 63

80. Use Plastigage[®] to make sure the new bearing fits within the specified tolerance.

- Use Plastigage[®] size .001 - .003 inch (green package).

- a. Remove oil and dust from the crankshaft journal and bearing.
- b. Cut a Plastigage slightly shorter than the bearing width, and place it in the crankshaft axial direction, avoiding oil holes.
- c. Install the #1 main bearing cap.
- d. Remove all main bearing bolts and remove all washers from the bolts.
- e. Reinstall the main bearing beam using the original main bearing bolts.
- f. Tighten the main bearing bolts to the specified torque.

- Tighten the bolts in two stages:

Stage 1: 32.3 - 38.3 N•m
(3.3 - 3.9 kg-m, **24 - 28 ft-lb**)

Stage 2: 90 - 95 degrees clockwise.

- Use special tool BT-8653-A (torque angle meter).
- This special tool is located in drawer 15 of the Nissan Special Tool Storage System.
- Additional tools can be ordered from Tech•Mate at 1-800-662-2001.

IMPORTANT:

- Do not tighten the angle by sight.
- Use an angle type torque tool.
- Do not rotate the crankshaft.

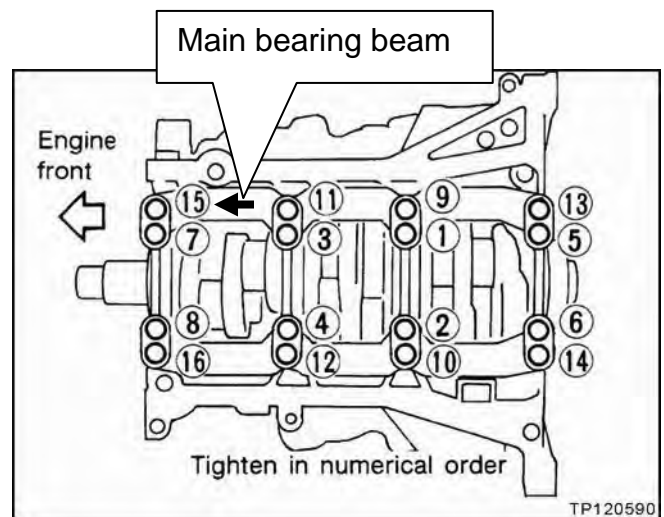


Figure 65

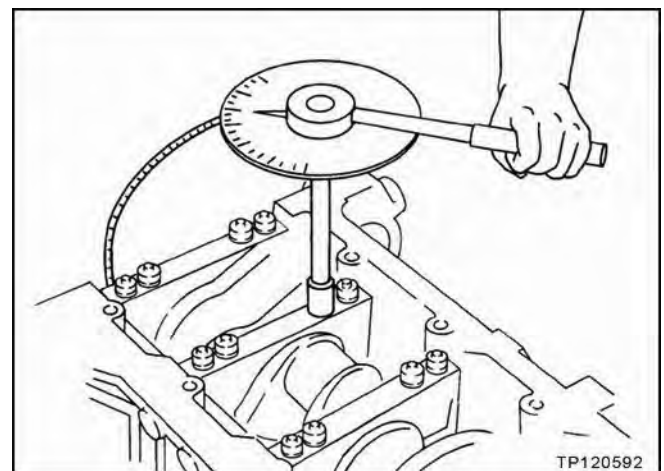


Figure 66

- g. Remove all of the main bearing bolts in the order shown.
- h. Remove the main bearing beam.

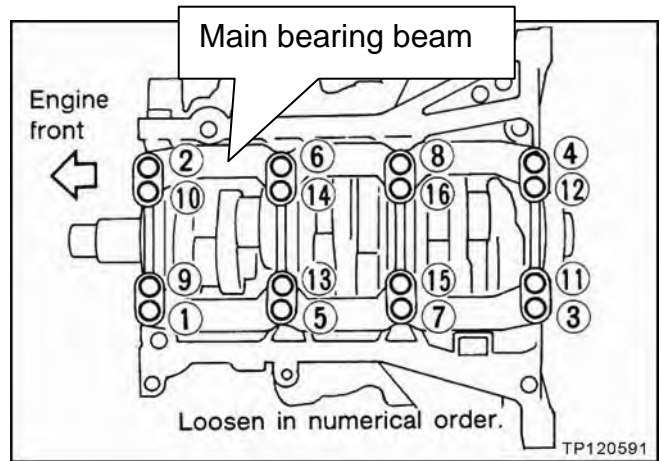


Figure 67

- i. Remove the #1 main bearing cap.
- j. Use the scale supplied with the Plastigage.
- k. Make sure the Plastigage measurement is within the following specification:
0.035 – 0.045 mm (0.0014 – 0.0018 in)

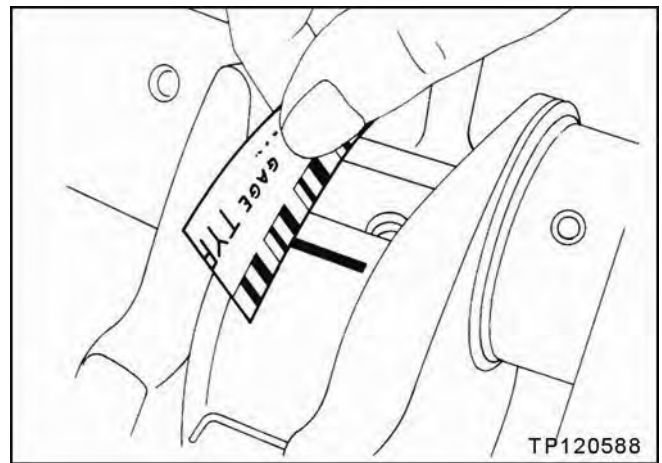


Figure 68

NOTE: If the plastigage measurement is **more than 0.045 mm (0.0018 in):**

- Use the plastigage measurement and the main bearing grade table on page 47 to select a bearing that will make the clearance less than 0.045 mm (0.0018 in):

81. Clean Plastigage from the crankshaft and the main bearing.

82. Check all of the main bearing bolts for reuse as follows:

- a. Measure d1 and d2 as shown.
 - For d2, select the minimum diameter in the measuring area.
- b. Subtract d2 measurement from d1.

$$\begin{array}{r} d1 \\ - d2 \\ \hline = XX \end{array}$$

- c. If the difference between d1 and d2 exceeds **0.11 mm (0.0043 in)**, replace the bolt.

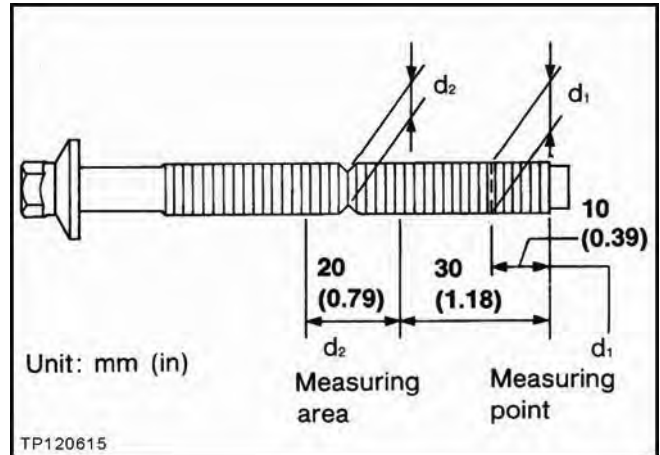


Figure 69

83. Apply new engine oil to the lower half of the # 1 main bearing.

84. Install the #1 main bearing cap.

- Make sure the arrow is pointing toward the front of the engine.

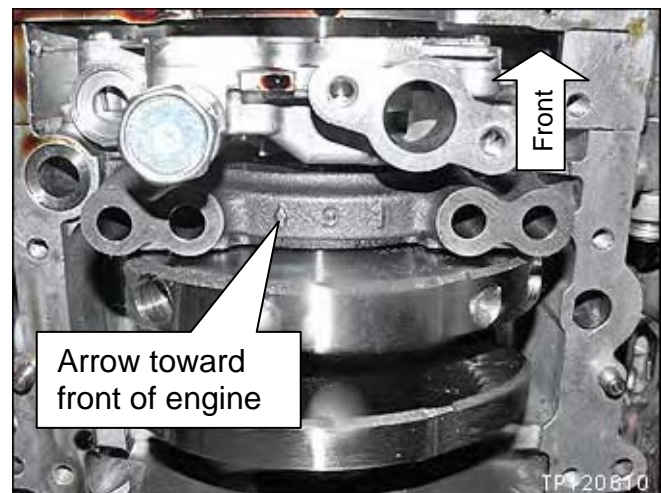


Figure 70

85. Reinstall the main bearing beam and all of the main bearing bolts.

- Make sure the arrow on the main bearing beam is pointing toward the front of the engine.
- Use new main bearing bolts as needed.
- Lubricate the threads and seat surfaces of the bolts with new engine oil.
- Tighten the bolts in the order shown.

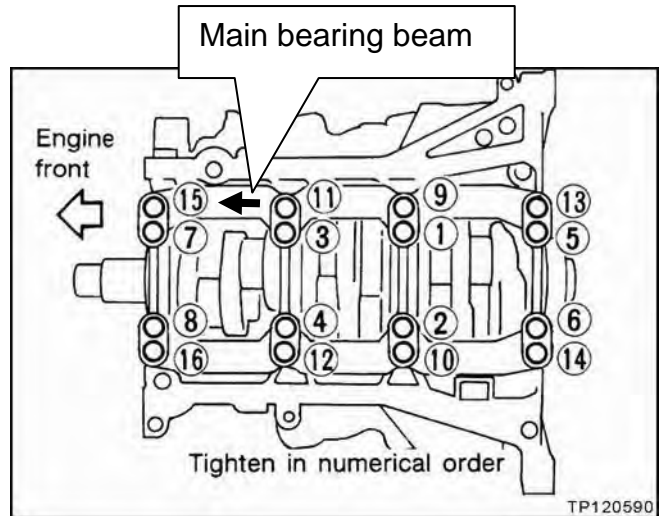


Figure 71

- Tighten the bolts in two stages:
Stage 1: 32.3 - 38.3 N•m
(3.3 - 3.9 kg-m, **24 - 28 ft-lb**)
Stage 2: 90 - 95 degrees clockwise.
- Use special tool BT-8653-A (torque angle meter).
- This special tool is located in drawer 15 of the Nissan Special Tool Storage System.
- Additional tools can be ordered from Tech•Mate at 1-800-662-2001.

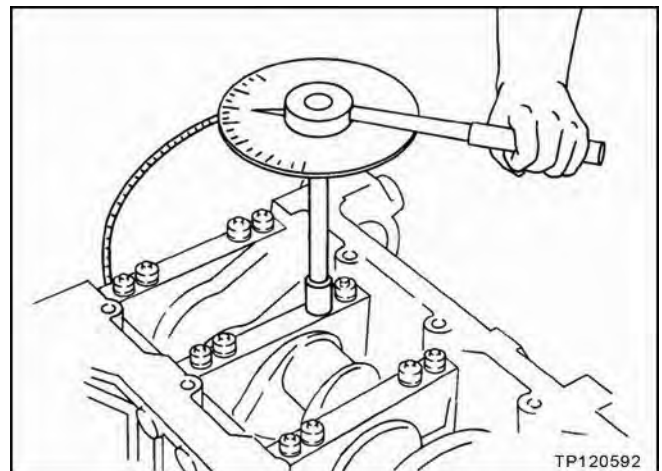


Figure 72

IMPORTANT:

- Do not tighten the angle by sight.
- Use an angle type torque tool.

86. Rotate the engine 360 degrees to confirm even rotational force for one complete revolution.

87. Reinstall the oil pan baffle; 6 bolts.

- Bolt torque:
8.8 N•m (0.90 kg-m, **78 in-lb**)

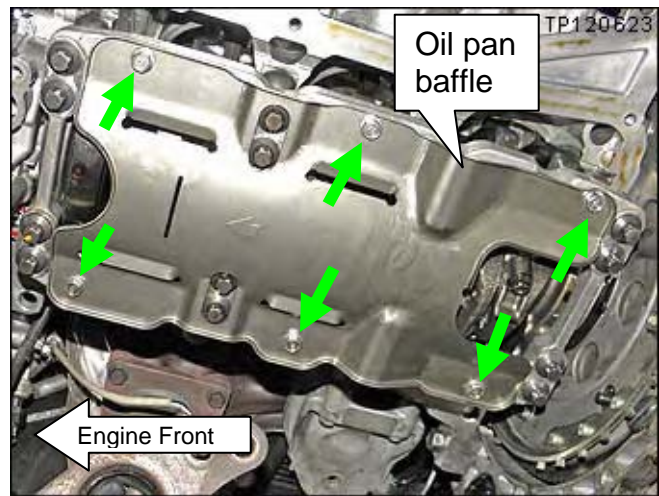


Figure 73

88. Reinstall oil strainer; 2 bolts.

- Bolt torque:
21 N•m (2.1 kg-m, **15 ft-lb**)

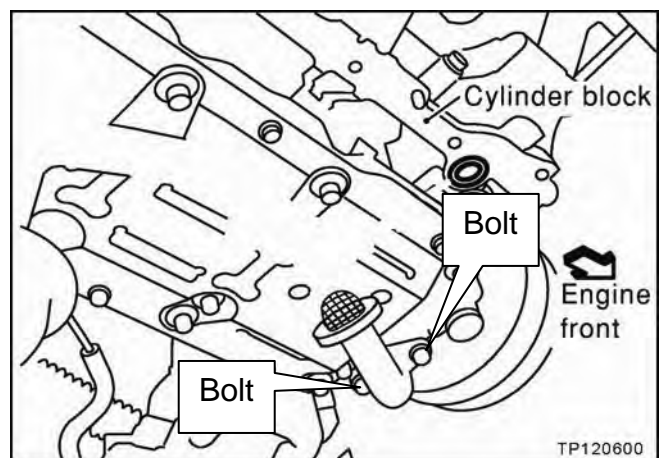


Figure 74

89. Thoroughly clean all of the old sealant from the sealing surfaces of:

- Upper oil pan sealing surfaces
- Lower oil pan sealing surfaces
- Engine block sealing surfaces
- Bolt holes and threads for upper and lower oil pan

CAUTION: Do not damage the mating surfaces.

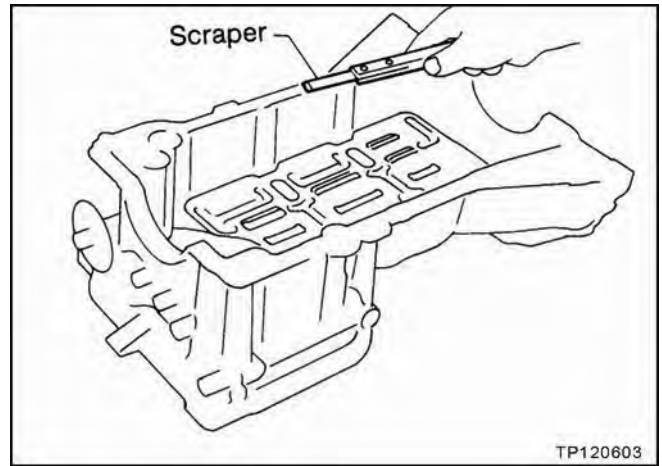


Figure 75

90. Install new oil passage O-ring seals.

- Use petroleum jelly to hold the seals in place.

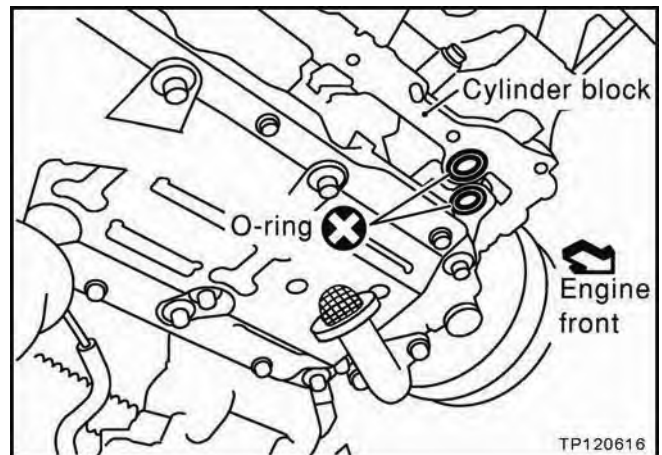


Figure 76

91. Apply sealant to the front cover gasket and rear oil seal retainer gasket as shown.

- Use Nissan 1217H Liquid Gasket (P/N 999MP – 1217HP) or equivalent.

NOTE: The upper oil pan should be installed within 5 minutes of applying sealant.

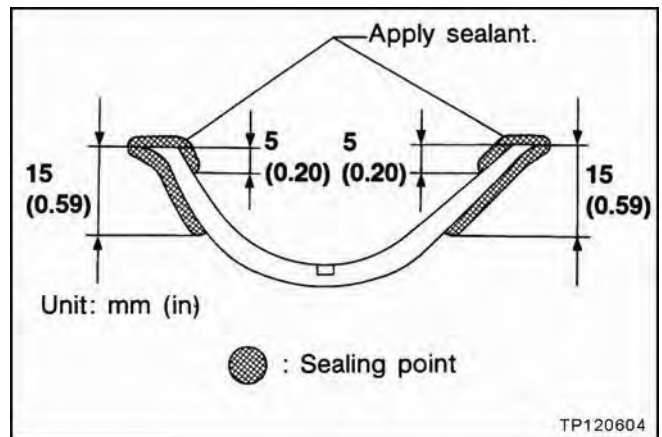


Figure 77

92. Install the front cover gasket and rear oil seal retainer gasket.

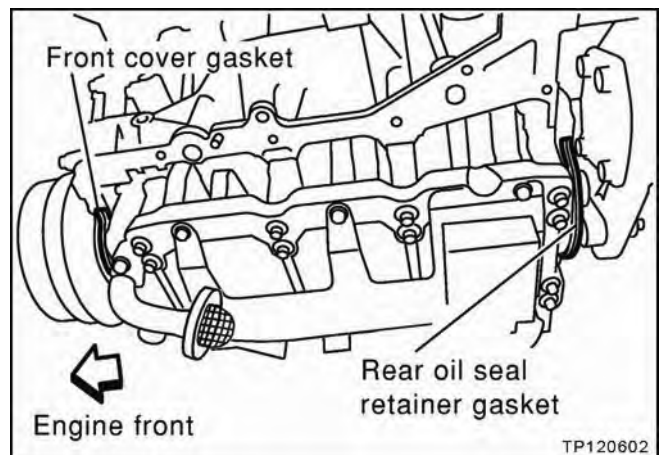


Figure 78

93. Apply sealant to the top side of the upper oil pan as shown in Figures 79 and 80.

- Use Nissan 1217H Liquid Gasket (P/N 999MP – 1217HP) or equivalent.

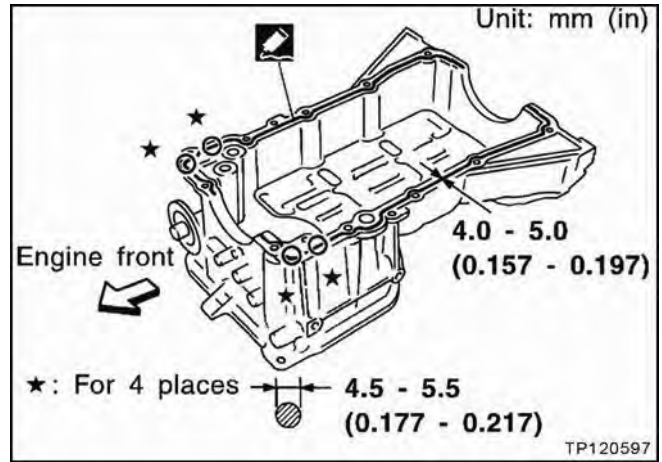


Figure 79

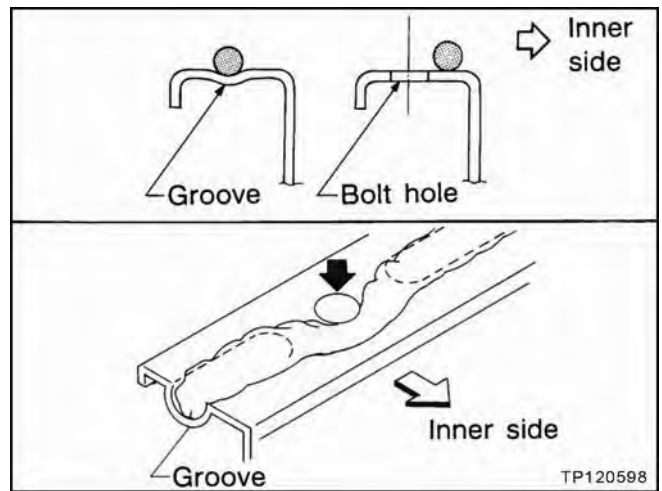


Figure 80

94. Install the upper oil pan and tighten the bolts in the order shown.

- Bolt torque:
22 N•m (2.1 kg-m, **16 ft-lb**)

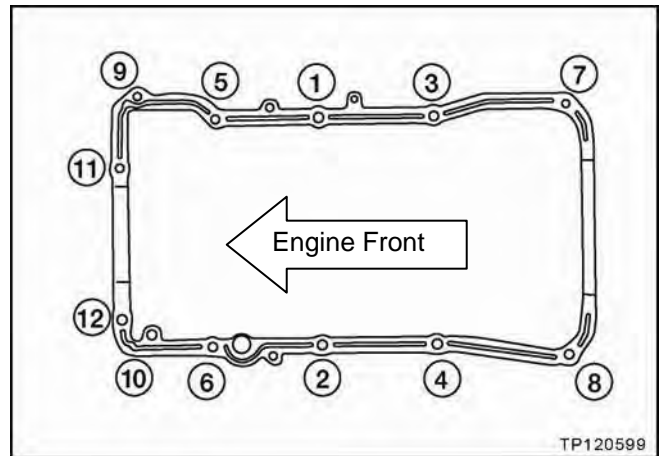


Figure 81

95. Reinstall 4 bolts connecting the rear of the lower oil pan to the transmission.

- Bolt torque:
50 N•m (5.1 kg-m, **37 ft-lb**)

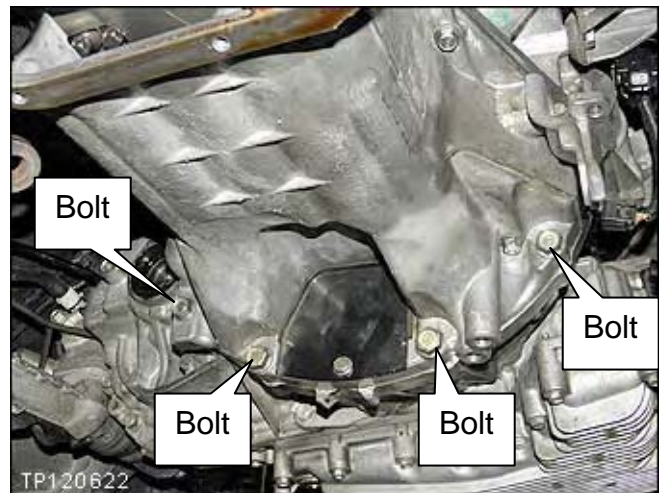


Figure 82

96. Apply sealant to the lower oil pan.

- Use Nissan 1217H Liquid Gasket (P/N 999MP – 1217HP) or equivalent.
- Apply a continuous bead of sealant 4.5 – 5.5 mm (0.177 – 0.217 in) wide.

NOTE: The lower oil pan should be installed within 5 minutes of applying sealant.

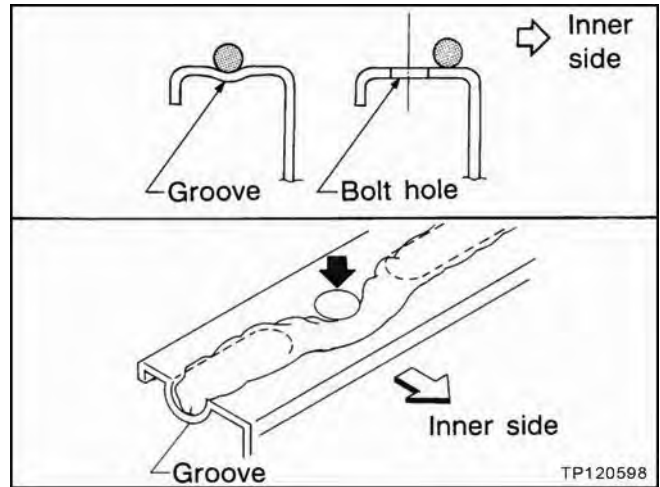


Figure 83

97. Install the lower oil pan and tighten the bolts in the order shown.

- Bolt torque:
8.8 N•m (0.9 kg-m, **78 in-lb**)

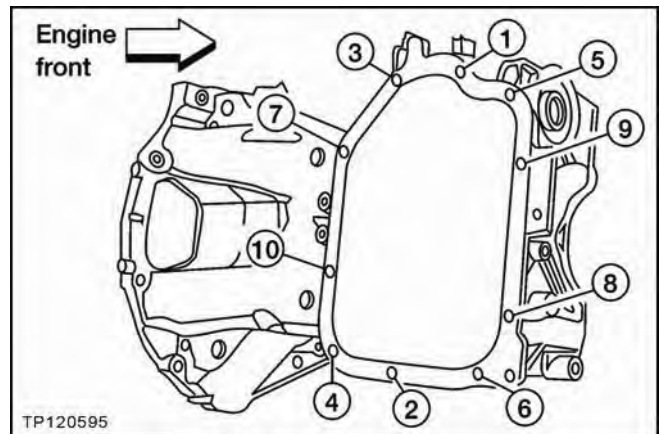


Figure 84

98. Remove and replace the right side differential side oil seal (axle seal).

- Use axle seal driver J-50394 to install the new seal.
- Axle seal driver J-50394 is part of CVT Service Tool Kit J-50255.

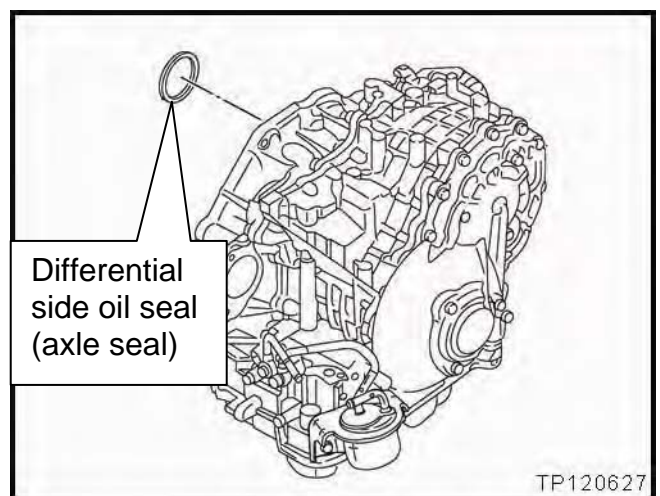


Figure 85

99. Reinstall all other parts in reverse order.

- Go back to step 63 on page 24 and use the Service Procedure steps in reverse order for installation and torque specification reference.

100. Once all parts have been reinstalled, reconnect the negative battery cable.

101. Refill the engine oil: Use Nissan Ester 5W-30 oil (P/N- 999MP – 5W30EP).

102. Refill the transmission fluid – use only Nissan CVT fluid NS2 (P/N 999MP – NS200P).

103. Refill the engine coolant – reuse the coolant that was drained.

- Use usual procedures for filling the engine coolant. If needed, refer to the appropriate Service Manual.
- For top off:
 - 2009 – 2010: Use only Nissan L248SP Engine Green Coolant (P/N 999MP – AF000P).
 - 2011 – 2014: Use only Nissan Blue Long Life Antifreeze/Coolant (P/N 999MP – L25500P).

104. Start the engine and check for leaks (coolant, oil, and exhaust gas).

105. After engine has reached operating temperature:

- a. Turn the engine off and wait 10 minutes.
- b. Make sure vehicle is parked in level area.
- c. Use the dip stick to confirm the engine oil is at the full mark.
- d. Make sure engine coolant in reservoir is full.

106. Perform a front wheel alignment.

- Refer to the appropriate service manual for alignment specifications.

107. Reset the clock and the radio settings.

108. Reset the Automatic Temperature Control customer preferred settings.

109. Reinitialize each auto-up power window as follows:

- a. Turn ignition ON.
- b. Open window all the way DOWN.
- c. Pull all the way UP on the switch and HOLD (close the window completely), continue to HOLD for 4 seconds after window is completely closed.
- d. Confirm auto up/down operates correctly.

110. Inform the customer that:

- Their Automatic Drive Positioner (ADP) settings will need to be reset.
- Some navigation memory setting may need to be reset.

PARTS INFORMATION

DESCRIPTION	PART NUMBER	QTY
Copper gasket for water pipe	11062 – ZA000	1
Oil pump O-ring Seals (seals between upper oil pan and block)	15066 – ZL80B	2
Oil Cooler Seal	21304 – 9N00A	1
Cotter pin (for axle nut)	40073 – 0L700	1
Nuts (for rack bolts)	54588 – JA060	2
Cotter Pin (for tie rod end)	08921 – 3252A	1
Oil Filter (engine)	15208 – 65F0D	1
Drain Plug Washer (engine)	11026 – JA00A	1
Drain Plug Washer (transmission)	31526 – 1XA01	1
Rear Oil Seal Retainer Gasket (upper oil pan rear seal)	11121 – 7Y010	1
Front Cover Gasket (upper oil pan front seal)	11121 – 7Y000	1
Differential Axle Seal	38342 – 81X01	1
Nuts (strut to steering knuckle)	01225 – 00701	2
Exhaust Gaskets (front tube to manifold)	20691 – 51E01	2
Exhaust Gasket (front tube to center tube)	20692 – 65J00	1
Nuts (exhaust front tube to center tube)	01225 – N0011	2
Bolts (main bearing caps)	12293 – JA10A	As needed Max. 16
<p>Order the items listed below through the Nissan Maintenance Advantage program: Phone: 877-NIS-NMA1 (877-647-6621). Website order via link on dealer portal www.NNAnet.com and click on the "Maintenance Advantage" link</p>		
Transmission (CVT) Fluid	Nissan CVT fluid NS2 (P/N 999MP – NS200P)	4
RTV sealant	Nissan 1217H Liquid Gasket (P/N 999MP – 1217HP)	1
Coolant (For Model Years 2009 and 2010)	Nissan L248SP Engine Green Coolant (P/N 999MP – AF000P)	1
Coolant (For Model Years 2011-2014)	Nissan Blue Long Life Antifreeze/Coolant (P/N 999MP – L25500P)	1
Engine Oil	Nissan Ester 5W-30 oil (P/N- 999MP – 5W30EP)	6
Plastigage® (size .001 – 003 inch / green package)	Obtain this product from a local auto parts supply (shop supply)	as needed

Parts Information continued

MAIN BEARING GRADE NUMBER	SIZE (THICKNESS)	GRADE COLOR	PART NUMBER
0	2.000 – 2.003 mm 0.0787 – 0.0789 in	Black	12207-31U00
½ grade: 01	2.003 – 2.006 mm 0.0789 – 0.0790 in	Upper Half – Brown	12207-AG000
	2.000 – 2.003 mm 0.0787 – 0.0789 in	Lower Half – Black	
1	2.003 – 2.006 mm 0.0789 – 0.0790 in	Brown	12207-31U01
½ grade: 12	2.006 – 2.009 mm 0.0790 – 0.0791 in	Upper Half – Green	12207-AG001
	2.003 – 2.006 mm 0.0789 – 0.0790 in	Lower Half – Brown	
2	2.006 – 2.009 mm 0.0790 – 0.0791 in	Green	12207-31U02
½ grade: 23	2.009 – 2.012 mm 0.0791 – 0.0792 in	Upper Half – Yellow	12207-AG002
	2.006 – 2.009 mm 0.0790 – 0.0791 in	Lower Half – Green	
3	2.009 – 2.012 mm 0.0791 – 0.0792 in	Yellow	12207-31U03
½ grade: 34	2.012 – 2.015 mm 0.0792 – 0.0793 in	Upper Half – Blue	12207-AG003
	2.009 – 2.012 mm 0.0791 – 0.0792 in	Lower Half – Yellow	
4	2.012 – 2.015 mm 0.0792 – 0.0793 in	Blue	12207-31U04
½ grade: 45	2.015 – 2.018 mm 0.0793 – 0.0794 in	Upper Half – Pink	12207-AG004
	2.012 – 2.015 mm 0.0792 – 0.0793 in	Lower Half – Blue	
5	2.015 – 2.018 mm 0.0793 – 0.0794 in	Pink	12207-31U05
½ grade: 56	2.018 – 2.021 mm 0.0794 – 0.0796 in	Upper Half – Purple	12207-AG005
	2.015 – 2.018 mm 0.0793 – 0.0794 in	Lower Half – Pink	
6	2.018 – 2.021 mm 0.0794 – 0.0796 in	Purple	12207-31U06
½ grade: 67	2.021 – 2.024 mm 0.0796 – 0.0797 in	Upper Half – White	12207-AG006
	2.018 – 2.021 mm 0.0794 – 0.0796 in	Lower Half – Purple	
7	2.021 – 2.024 mm 0.0796 – 0.0797 in	White	12207-31U07

NOTE: Select a new # 1 main bearing that is one full grade above the bearing that was removed.

Example: # 2 removed, select # 3 for installation.

34 removed, select # 45 for installation.

CLAIMS INFORMATION

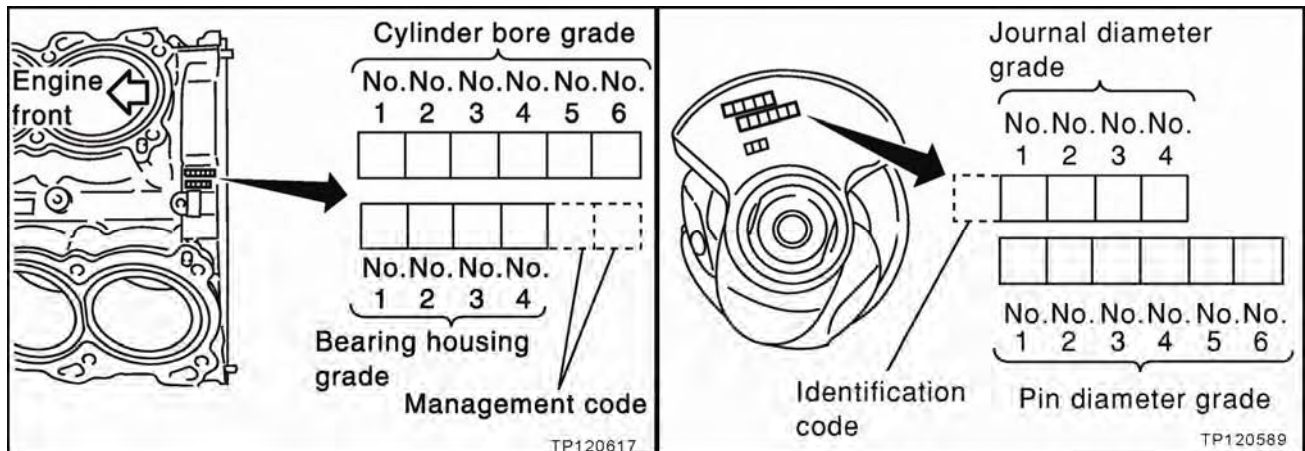
Submit a Primary Part (PP) type line claim using the following claims coding:

DESCRIPTION	PFP	OP CODE	SYM	DIA	FRT
Replace #1 Main Bearing	10103-9N000	AX35AA	ZL	32	6.4

IF No. 1 MAIN BEARING COLOR CANNOT BE DETERMINED:

Determine main bearing grade using the following information:

1. Obtain the No. 1 bearing housing grade off of the engine block.
 - These can be punched as letters, numbers, or roman numerals.
2. Obtain the No. 1 journal diameter grade off of the crankshaft.
 - These can be punched as letters, numbers, or roman numerals.



3. Use the table on the next page to determine the grade number of the No. 1 main bearing removed from the engine.

Example:

- If the No. 1 bearing housing grade stamped on the engine block = **L**,
and
- The No. 1 journal diameter grade stamped on the crankshaft = **M**,
then
- The grade of No. 1 main bearing removed from the engine = **34**.

		Cylinder block bearing housing inner diameter Unit: mm (in)		Crankshaft main journal diameter Unit: mm (in)		Mark																			
		Hole diameter		Axle diameter		Mark																			
		A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	V	W	X	Y	4	7
Mark	Axle diameter	63.993 - 63.994 (2.5194 - 2.5194)	63.994 - 63.995 (2.5194 - 2.5195)	63.995 - 63.996 (2.5195 - 2.5195)	63.996 - 63.997 (2.5195 - 2.5196)	63.997 - 63.998 (2.5196 - 2.5196)	63.998 - 63.999 (2.5196 - 2.5196)	63.999 - 64.000 (2.5196 - 2.5197)	64.000 - 64.001 (2.5197 - 2.5197)	64.001 - 64.002 (2.5197 - 2.5198)	64.002 - 64.003 (2.5198 - 2.5198)	64.003 - 64.004 (2.5198 - 2.5198)	64.004 - 64.005 (2.5198 - 2.5199)	64.005 - 64.006 (2.5199 - 2.5199)	64.006 - 64.007 (2.5199 - 2.5200)	64.007 - 64.008 (2.5200 - 2.5200)	64.008 - 64.009 (2.5200 - 2.5200)	64.009 - 64.010 (2.5200 - 2.5201)	64.010 - 64.011 (2.5201 - 2.5201)	64.011 - 64.012 (2.5201 - 2.5202)	64.012 - 64.013 (2.5202 - 2.5202)	64.013 - 64.014 (2.5202 - 2.5202)	64.014 - 64.015 (2.5202 - 2.5203)	64.015 - 64.016 (2.5203 - 2.5203)	64.016 - 64.017 (2.5203 - 2.5203)
A	59.975 - 59.974 (2.3612 - 2.3612)	0	0	0	01	01	01	1	1	1	12	12	12	2	2	2	23	23	23	3	3	3	34	34	34
B	59.974 - 59.973 (2.3612 - 2.3611)	0	0	01	01	01	1	1	1	12	12	12	2	2	2	23	23	23	3	3	3	34	34	34	4
C	59.973 - 59.972 (2.3611 - 2.3611)	0	01	01	01	1	1	1	12	12	12	2	2	2	23	23	23	3	3	3	34	34	34	4	4
D	59.972 - 59.971 (2.3611 - 2.3611)	01	01	01	1	1	1	12	12	12	2	2	2	23	23	23	3	3	3	34	34	34	4	4	4
E	59.971 - 59.970 (2.3611 - 2.3610)	01	01	1	1	1	12	12	12	2	2	2	23	23	23	3	3	3	34	34	34	4	4	4	45
F	59.970 - 59.969 (2.3610 - 2.3610)	01	1	1	1	12	12	12	2	2	2	23	23	23	3	3	3	34	34	34	4	4	4	45	45
G	59.969 - 59.968 (2.3610 - 2.3609)	1	1	1	12	12	12	2	2	2	23	23	23	3	3	3	34	34	34	4	4	4	45	45	45
H	59.968 - 59.967 (2.3609 - 2.3609)	1	1	12	12	12	2	2	2	23	23	23	3	3	3	34	34	34	4	4	4	45	45	45	5
J	59.967 - 59.966 (2.3609 - 2.3609)	1	12	12	12	2	2	2	23	23	23	3	3	3	34	34	34	4	4	4	45	45	45	5	5
K	59.966 - 59.965 (2.3909 - 2.3608)	12	12	12	2	2	2	23	23	23	3	3	3	34	34	34	4	4	4	45	45	45	5	5	5
L	59.965 - 59.964 (2.3608 - 2.3608)	12	12	2	2	2	23	23	23	3	3	3	34	34	34	4	4	4	45	45	45	5	5	5	56
M	59.964 - 59.963 (2.3608 - 2.3607)	12	2	2	2	23	23	23	3	3	3	34	34	34	4	4	4	45	45	45	5	5	5	56	56
N	59.963 - 59.962 (2.3607 - 2.3607)	2	2	2	23	23	23	3	3	3	34	34	34	4	4	4	45	45	45	5	5	5	56	56	56
P	59.962 - 59.961 (2.3607 - 2.3607)	2	2	23	23	23	3	3	3	34	34	34	4	4	4	45	45	45	5	5	5	56	56	56	6
R	59.961 - 59.960 (2.3607 - 2.3606)	2	23	23	23	3	3	3	34	34	34	4	4	4	45	45	45	5	5	5	56	56	56	6	6
S	59.960 - 59.959 (2.3606 - 2.3606)	23	23	23	3	3	3	34	34	34	4	4	4	45	45	45	5	5	5	56	56	56	6	6	6
T	59.959 - 59.958 (2.3606 - 2.3605)	23	23	3	3	3	34	34	34	4	4	4	45	45	45	5	5	5	56	56	56	6	6	6	67
U	59.958 - 59.957 (2.3605 - 2.3605)	23	3	3	3	34	34	34	4	4	4	45	45	45	5	5	5	56	56	56	6	6	6	6	67
V	59.957 - 59.956 (2.3605 - 2.3605)	3	3	3	34	34	34	4	4	4	45	45	45	5	5	5	56	56	56	6	6	6	6	67	67
W	59.956 - 59.955 (2.3605 - 2.3604)	3	3	34	34	34	4	4	4	45	45	45	5	5	5	56	56	56	6	6	6	6	67	67	67
X	59.955 - 59.954 (2.3604 - 2.3604)	3	34	34	34	4	4	4	45	45	45	5	5	5	56	56	56	6	6	6	6	67	67	67	7
Y	59.954 - 59.953 (2.3604 - 2.3603)	34	34	34	4	4	4	45	45	45	5	5	5	56	56	56	6	6	6	6	67	67	67	7	7
4	59.953 - 59.952 (2.3603 - 2.3603)	34	34	4	4	4	45	45	45	5	5	5	56	56	56	6	6	6	6	67	67	67	7	7	7
7	59.952 - 59.951 (2.3603 - 2.3603)	34	4	4	4	45	45	45	5	5	5	56	56	56	6	6	6	67	67	67	7	7	7	7	7

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