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# SERVICE CAMPAIGN BULLETIN

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Reference:

NTB14-030d

Date:

January 20, 2016

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## VOLUNTARY SERVICE CAMPAIGN 2011 - 2013 JUKE TIMING CHAIN

This bulletin has been amended. The Owner's Letter has been removed.  
Please discard previous versions of this bulletin.

**CAMPAIGN ID #:** P4213

**APPLIED VEHICLES:** 2011 – 2013 Juke (F15)

Check Service Comm to confirm campaign eligibility

### INTRODUCTION

Nissan is conducting this Voluntary Service Campaign to replace the engine timing chain on certain specific 2011 – 2013 Juke vehicles. This service will be performed at no charge for parts or labor.

### IDENTIFICATION NUMBER

Nissan has assigned identification number P4213 to this campaign. This number must appear on all communications and documentation of any nature dealing with this campaign.

### DEALER RESPONSIBILITY

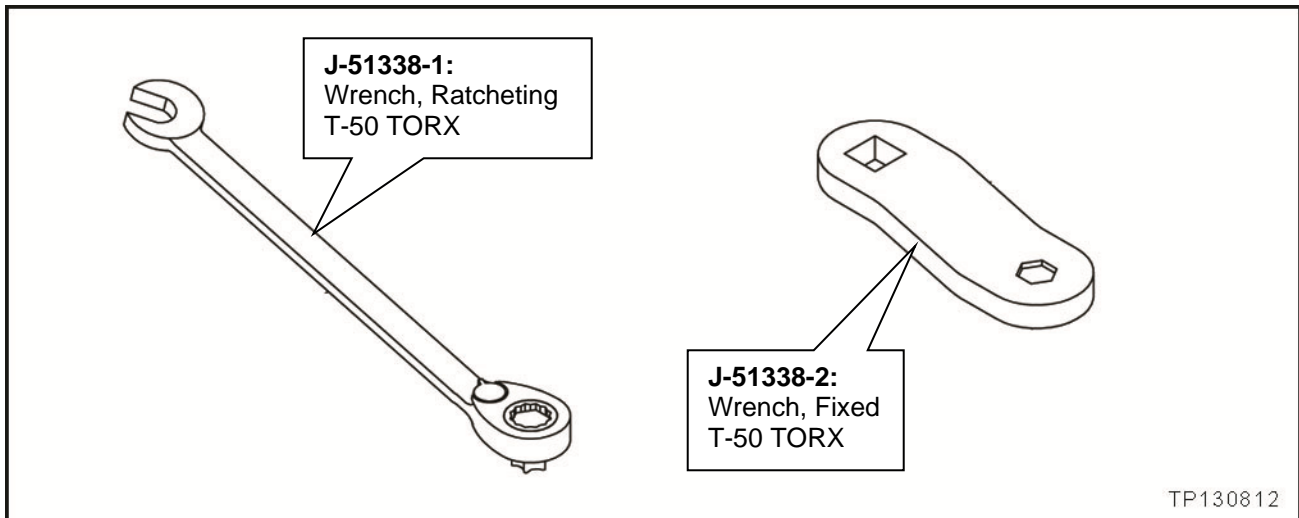
Dealers are to correct each vehicle falling within the range of this campaign that enters the service department. This includes vehicles purchased from private parties or presented by transient (tourist) owners and vehicles in a dealer's inventory.

**NOTE:** If an engine replacement is required, contact the Warranty Powertrain Claims Call Center at 1-800-973-9992 option 1 for Pre-Approval.

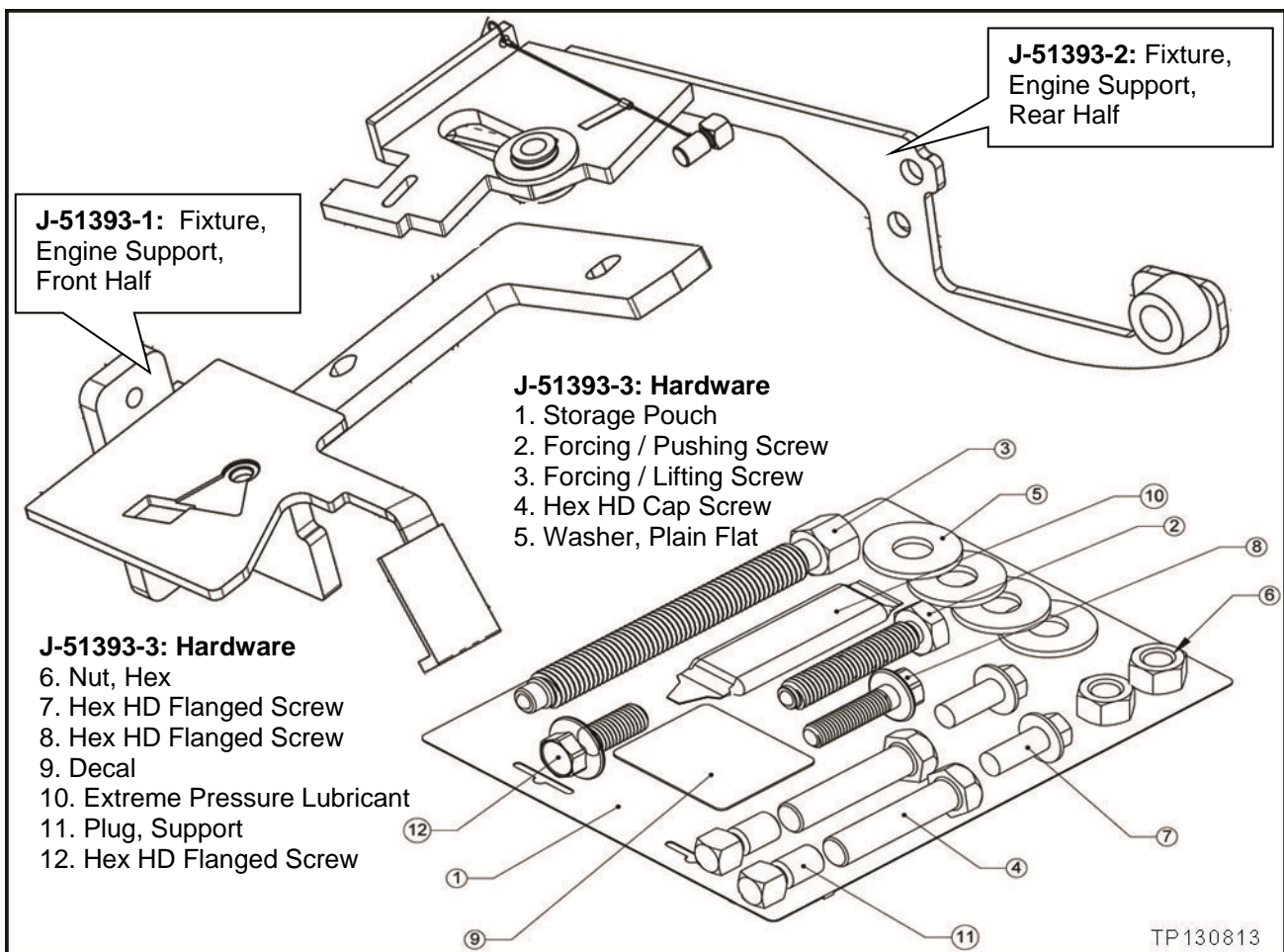
Nissan Bulletins are intended for use by qualified technicians, not 'do-it-yourselfers'. Qualified technicians are properly trained individuals who have the equipment, tools, safety instruction, and know-how to do a job properly and safely. NOTE: If you believe that a described condition may apply to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

## REQUIRED SPECIAL TOOLS

### Special Tool J-51338 - T-50 TORX Wrench Kit



### Special Tool - J-51393 - Engine Support Fixture



**NOTE:** Each dealer was shipped, at no charge, one J-51338 and one J-51393. Additional tools can be ordered from TECH-MATE at 1-800-662-2001.

## Timing Chain Exploded View

- This exploded view of the timing chain is provided for convenience. Reference it as needed while performing the service procedure in this bulletin.

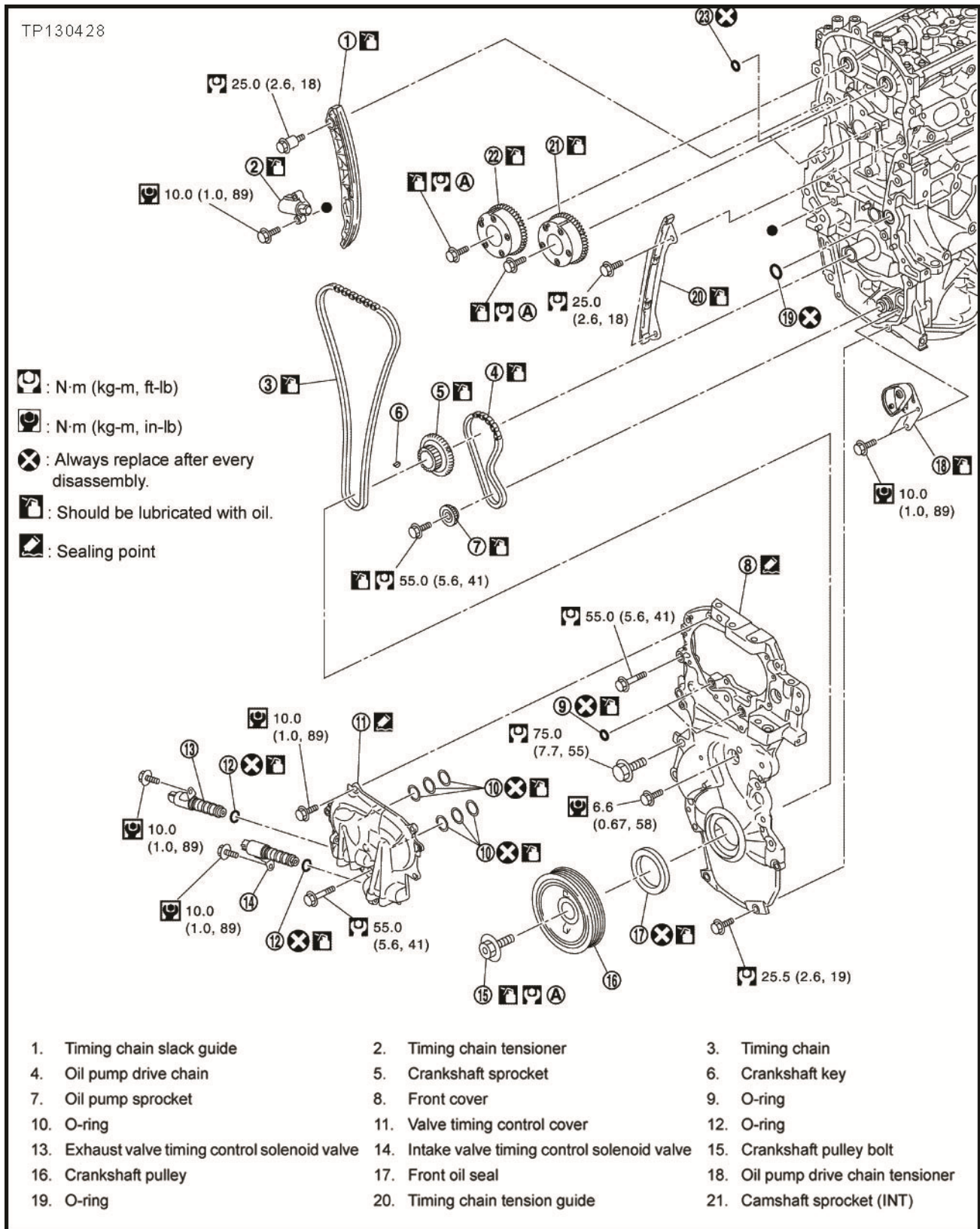


Figure A

## SERVICE PROCEDURE

**NOTE:** If an engine replacement is required, contact the Warranty Powertrain Claims Call Center at 1-800-973-9992 option 1 for Pre-Approval.

**NOTE:** During this Service Procedure you will be performing work from the top, front, and bottom of the engine. Support the vehicle on a hoist or other suitable support to allow access to the top, bottom, and front of the engine.

1. Write down the radio settings.

Presets	1	2	3	4	5	6
AM						
FM 1						
FM 2						
SAT 1						
SAT 2						
Bass	Treble		Balance		Fade	Speed Sen. Vol.

2. If equipped; write down the customer preferred settings for the Automatic Air Conditioning System.
  - If needed, refer to the Electronic Service Manual (ESM), section HAC-Heater and Air Conditioning > System Settings.
3. Turn the ignition OFF.
4. Disconnect the negative battery cable.
5. Drain the engine oil.
  - If needed, refer to the ESM, section MA - Maintenance, for engine oil draining information.
6. Remove the right front wheel.
  - If needed, refer to the ESM, section WT- Road Wheels and Tires, for wheel removal information.

**NOTE:**

- **Step 7 is for 2WD models only.**
- For AWD models, skip to step 8 on page 7.

7. **2WD models only;** remove the rear torque rod and rear torque rod bracket, remove the heat insulator for the right front axle boot, and remove the bolts for the right front axle support bearing bracket as follows:

- Remove the rear torque rod.
  - Torque rod is held on with 2 bolts (see Figure A1).
- Remove the rear torque rod bracket.
  - Bracket is hold on with 3 bolts (see Figure A1).

**NOTE:** The bolts for the rear torque rod bracket are “one time use” bolts. Use new bolts for reassembly.

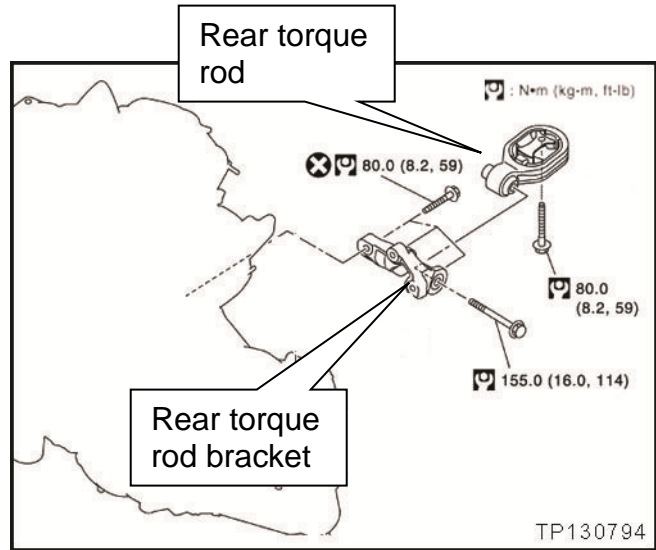


Figure A1

- Remove the plate shown in Figure A2.
  - Plate is held on with 2 bolts.

**NOTE:** This plate is a “one time use” part. Use a new plate for reassembly.

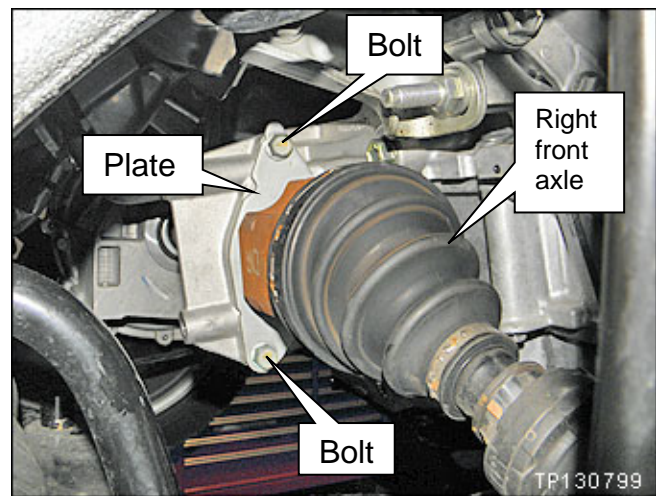


Figure A2

**NOTE:** The plate shown in Figure A3 was removed in the previous step.

- d. Remove the heat insulator.
  - Insulator is held on with 3 bolts.
- e. Remove the 3 bolts for the support bearing bracket.

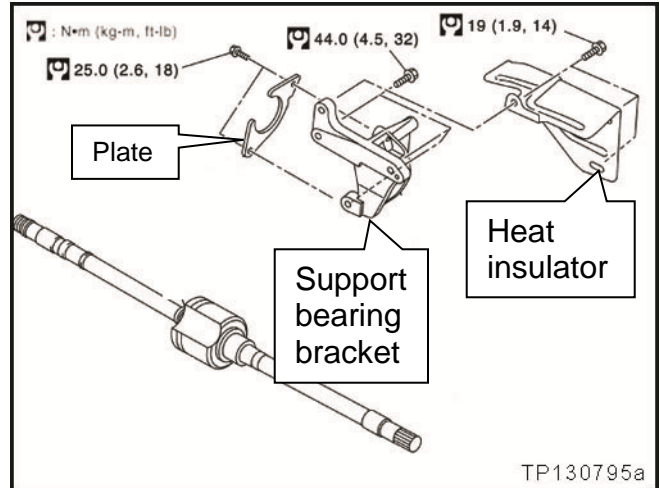


Figure A3

**NOTE:**

- The support bearing bracket will not be completely removed. It will stay loose on the axle during the procedure, as shown in Figure A4.
- Be careful not to pull the axle out of the transmission or oil will leak out.



Figure A4

8. Remove **only the front half** of the right front fender protector.

- Remove the 2 bolts and 7 clips shown in Figure 1.

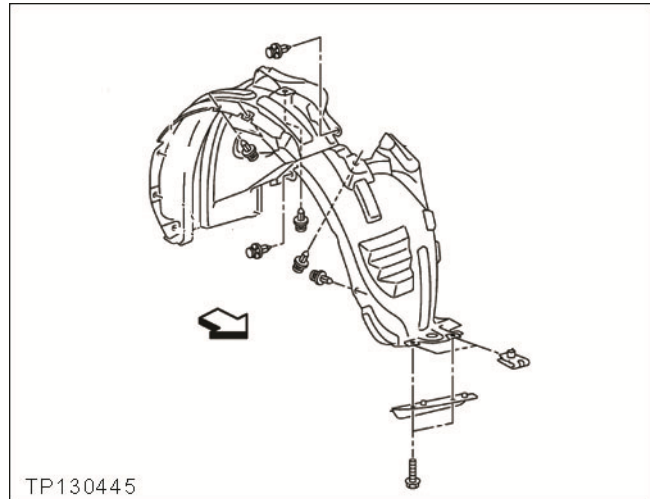


Figure 1

9. Position the front half of the fender protector behind the brake rotor as shown.

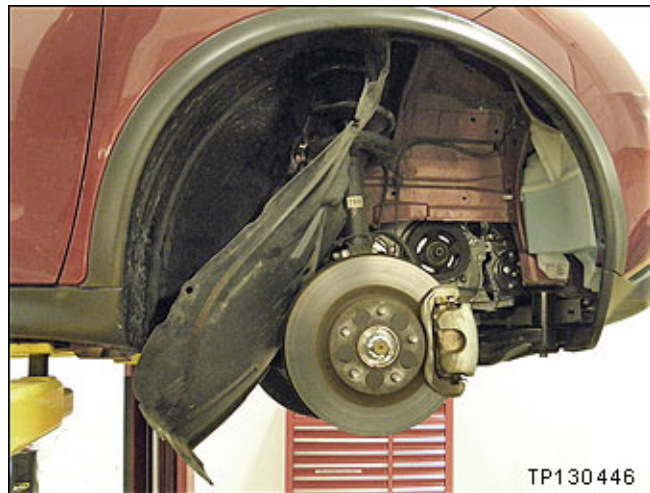


Figure 2

10. Remove the drive belt as follows:

**WARNING:** Avoid placing a hand in a location where pinching may occur if the wrench accidentally comes off.

- a. Use a 14 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, remove the drive belt from the A/C compressor drive.
- d. Carefully allow the tensioner to move to a relaxed position (carefully release your pulling force on the wrench).
- e. Completely remove the drive belt.

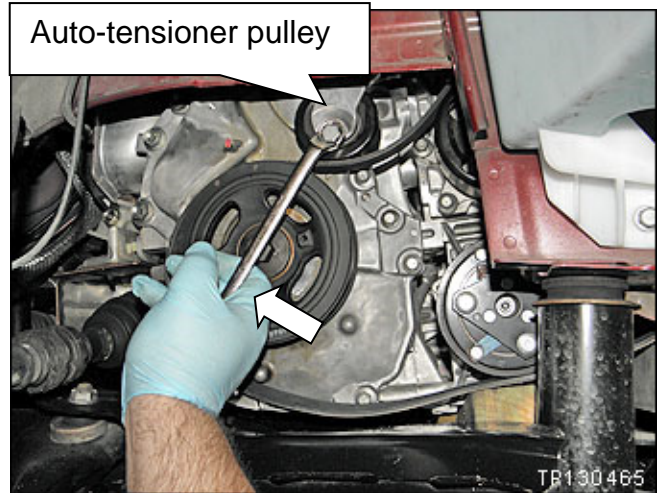


Figure 3

11. Set the engine timing mark to 0 degrees.

- a. Rotate the crankshaft to line up marks A and B shown in Figure 4.  
B mark has no paint.  
C marks are painted.

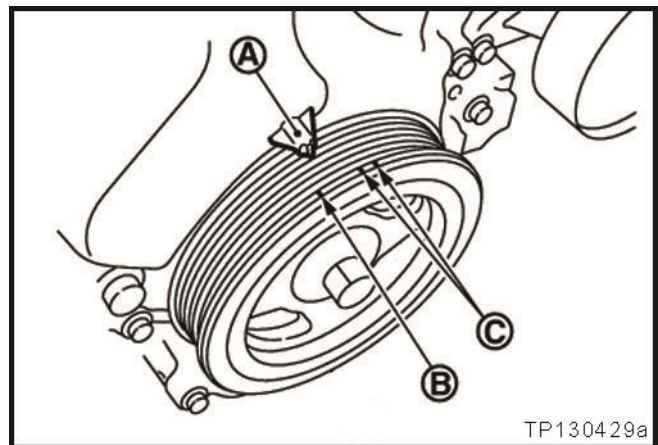


Figure 4



12. Loosen the crankshaft pulley bolt;  
3 to 4 turns.

**NOTE:** Bolt must stay in place for  
puller to push on the bolt in the next  
step.

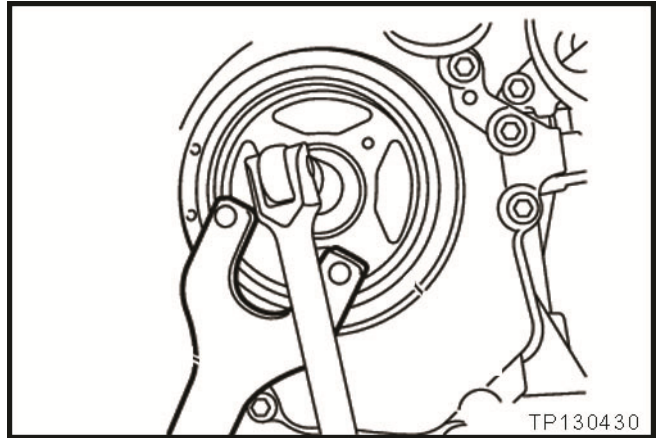


Figure 5

13. Remove the crankshaft pulley.

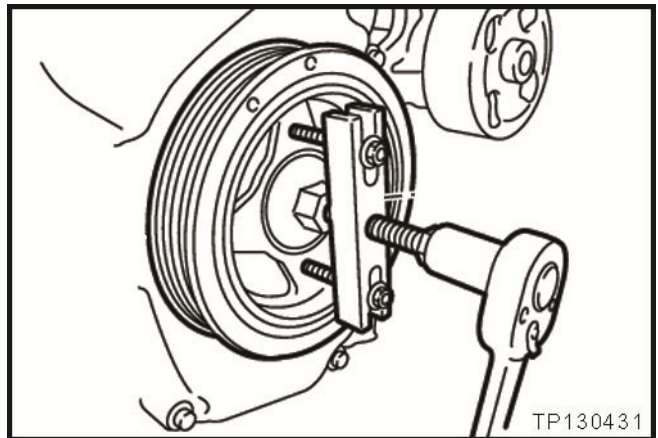


Figure 6

14. Remove bolt # 19 from the front cover  
(timing chain cover).

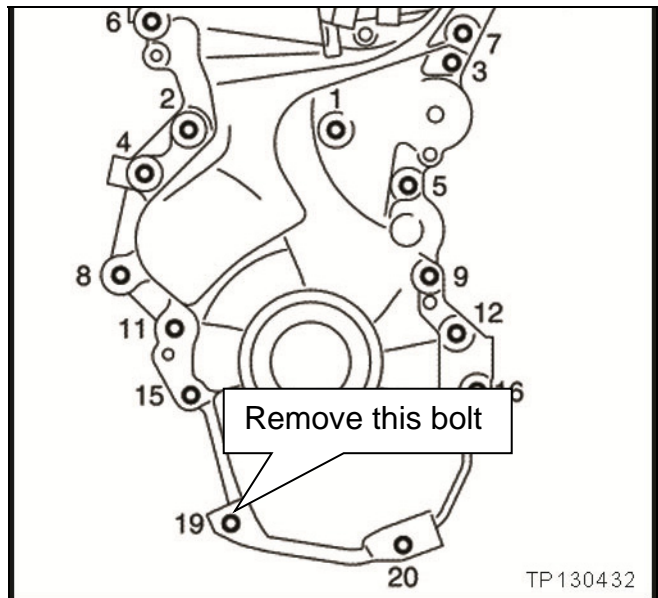


Figure 7

15. Install the Front Half of special tool J-51393 (see Figures 8, 9, and 10).

- Protect the engine cradle paint from scratches by placing a shop cloth between the special tool and the engine cradle.
- Attach with bolts/nuts in existing holes on the lower control arm.
- One bolt goes in with the bolt head on top; and one with the bolt head on the bottom.
- Bolts are included in the Hardware Kit for J-51393.

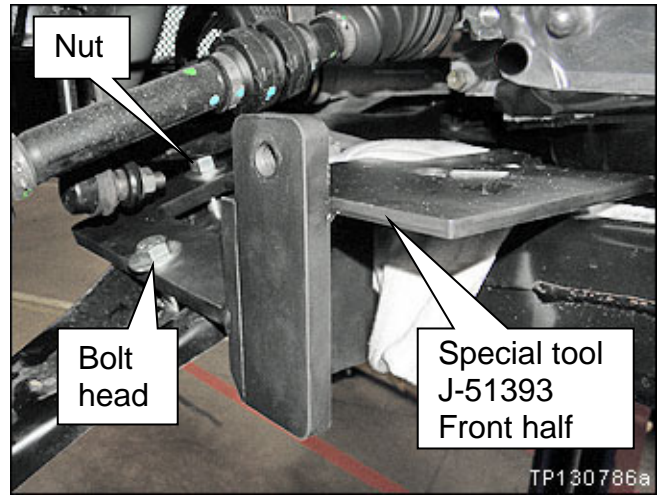


Figure 8

- Make sure the special tool is hooked onto the engine cradle as shown.

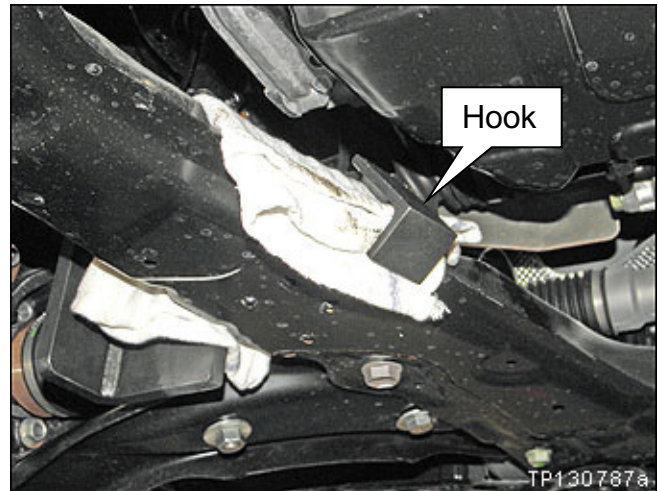


Figure 9

- Bottom view of the lower control arm showing one bolt installed with the bolt head on top, and one with the bolt head on the bottom.

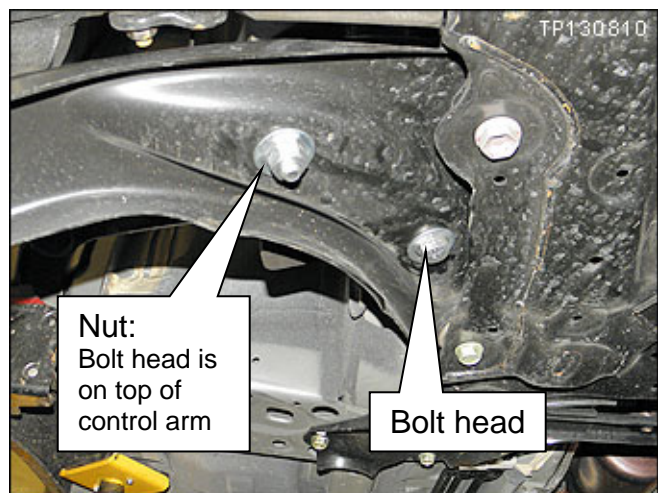


Figure 10

16. Install the Rear Half of special tool J-51393 as follows (see Figures 11, 12, and 13):

- a. Hold the rear half of the special tool from under the engine as shown in Figure 11.
- b. Install the support pin.
  - Support pin goes in the existing threaded hole in the front of the engine block.
  - Thread the pin all the way in by hand and then back-out 1 turn.

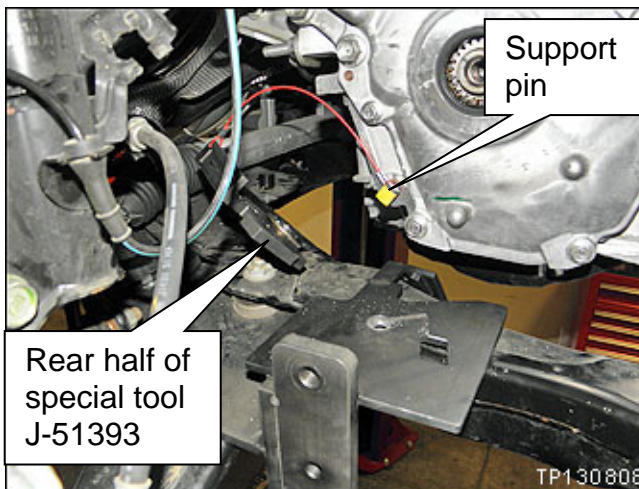


Figure 11

- c. Bolt the rear half of the special tool to the side of the engine as shown.
  - Bolts are included in the Hardware Kit for J-51393.

**NOTE:** AWD model shown, 2WD model uses the same bolt position.

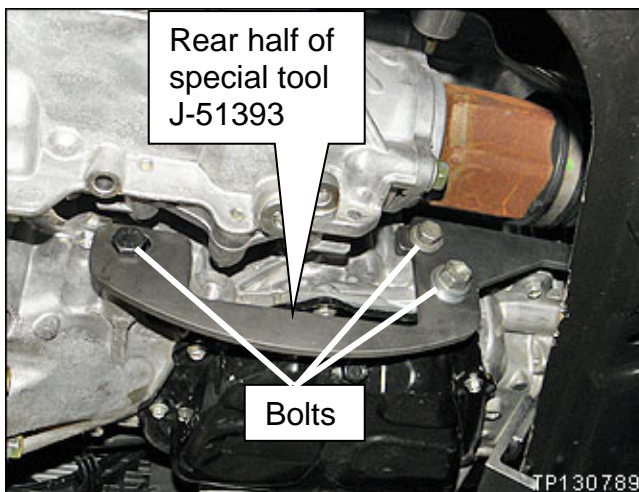


Figure 12

- When the rear half of the special tool is installed, the support pin should be touching the tool as shown.
- The support pin should be touching on a flat side, not a corner.

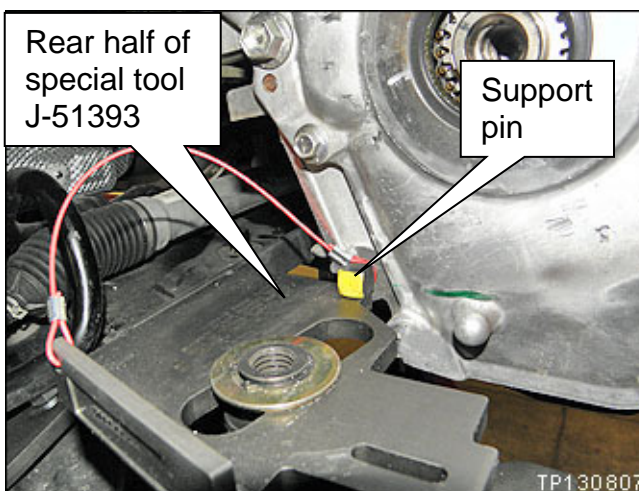


Figure 13

17. Install the special tool lifting screw.

18. Adjust the lifting screw just enough so the fixture (special tool J-51393) is supporting the weight of the engine.

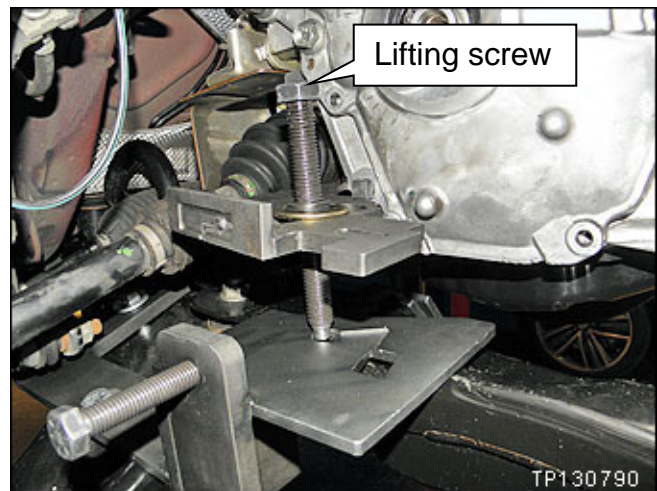


Figure14

19. **AWD only:** Remove the rear engine mounting bracket.

- a. Remove 2 bolts shown in Figure 15.
- b. Remove the bracket.

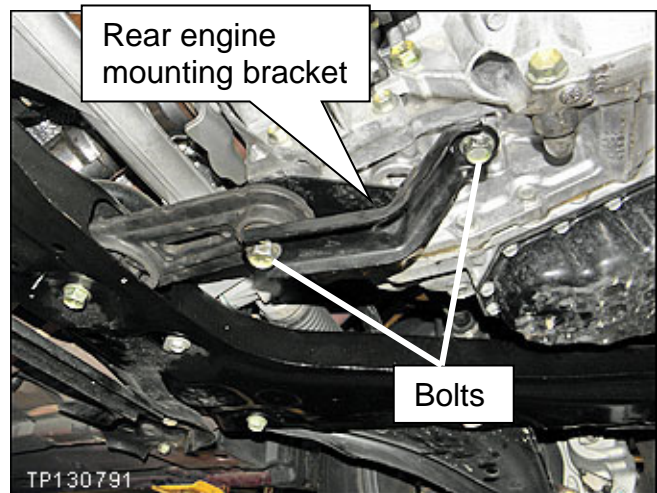


Figure 15

20. Lower the vehicle enough to work on the top of the engine.

21. Remove the bolt holding the engine ground wire shown in Figure 16.

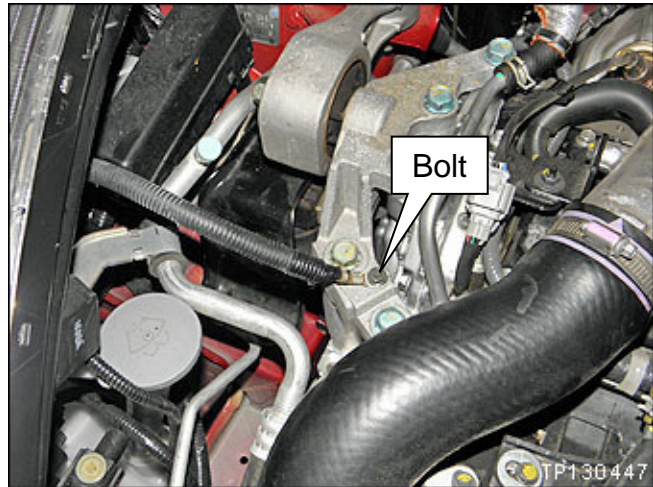


Figure 16

22. Remove the bolt holding the A/C low pressure line shown in Figure 17.

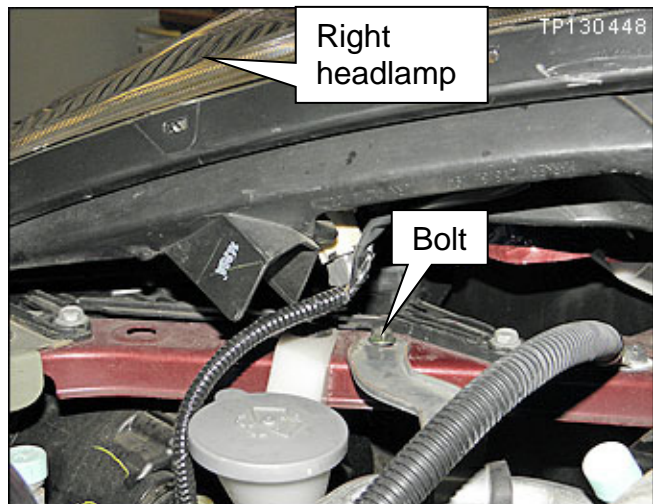


Figure 17

23. Remove the upper torque rod RH.

- a. Remove 2 bolts shown in Figure 18.
- b. Remove the upper torque rod RH.

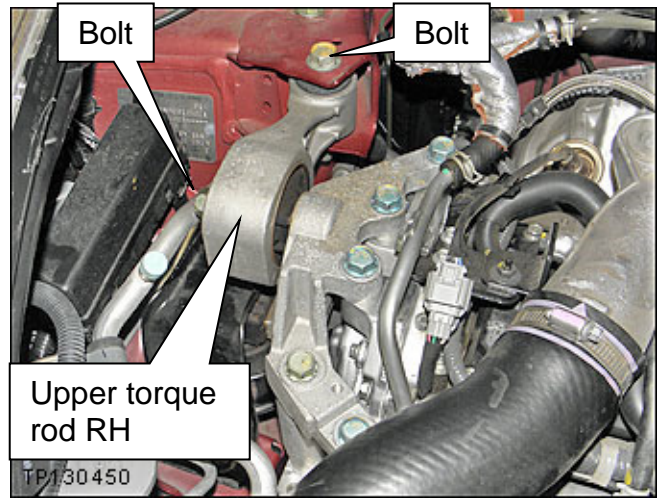


Figure 18

24. Remove the engine mounting insulator RH.

- a. Remove the 8 bolts shown in Figure 19.
- b. Remove the engine mounting insulator RH.

**NOTE:** Raising the engine a small amount with the special tool lifting screw may help in removing the engine mounting insulator RH.

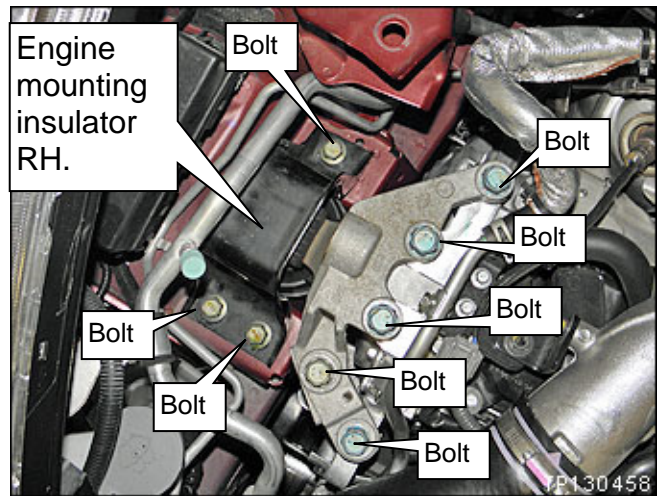


Figure 19

25. Disconnect the harness clips and electrical connectors for the intake and exhaust valve timing control solenoid valves.

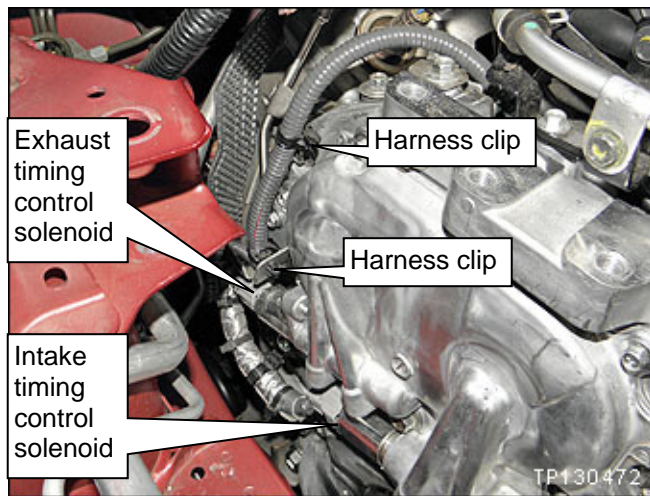


Figure 20

26. Remove the engine cover and disconnect the intercooler hose as shown in Figure 21.

- Place a clean shop cloth in the hose to prevent entry of debris.

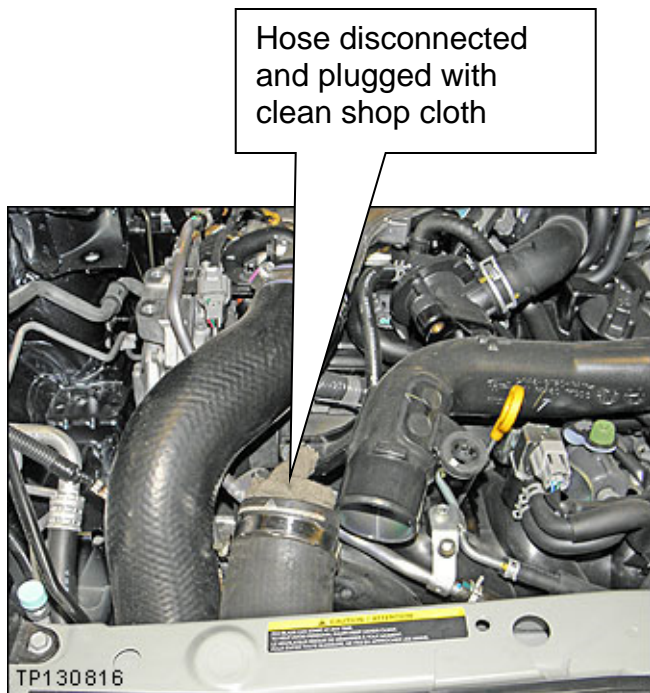


Figure 21

27. Raise the vehicle enough to adjust the special tool at the front of the engine.

28. Lower and remove the lifting screw (see Figure 22).

29. Install the pushing screw all the way (see Figure 22).

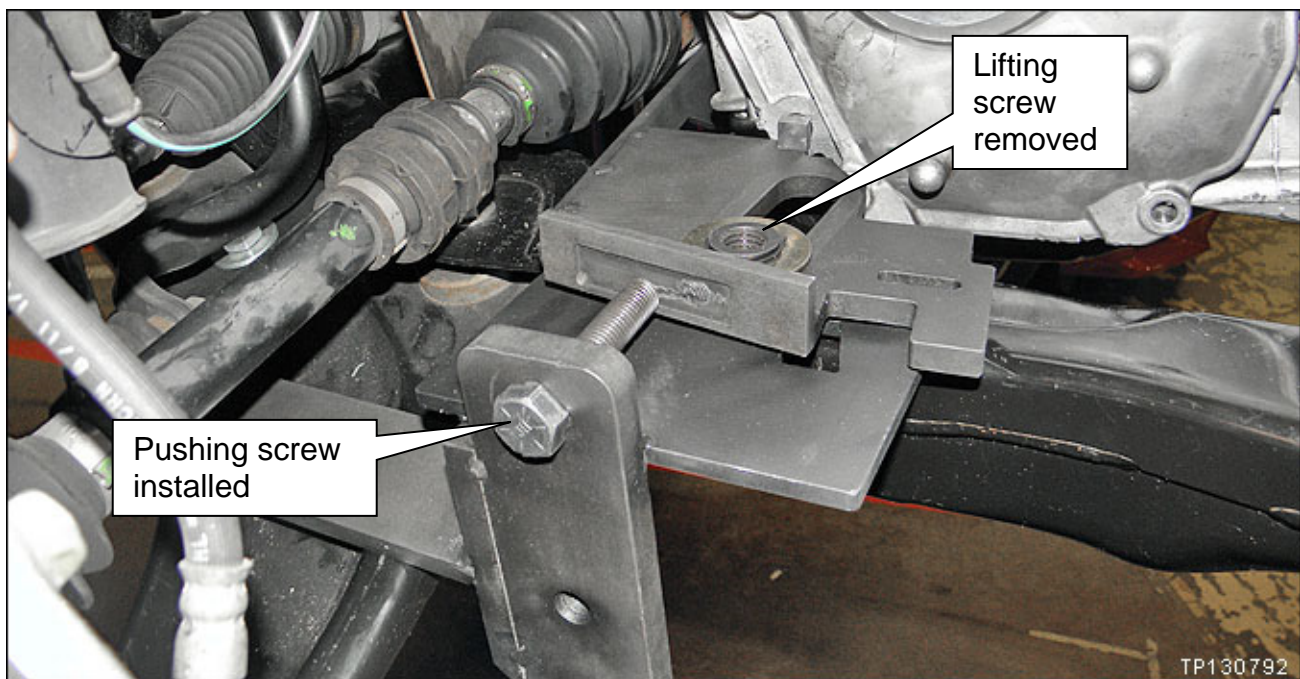


Figure 22



30. Remove the drive belt auto tensioner as follows:

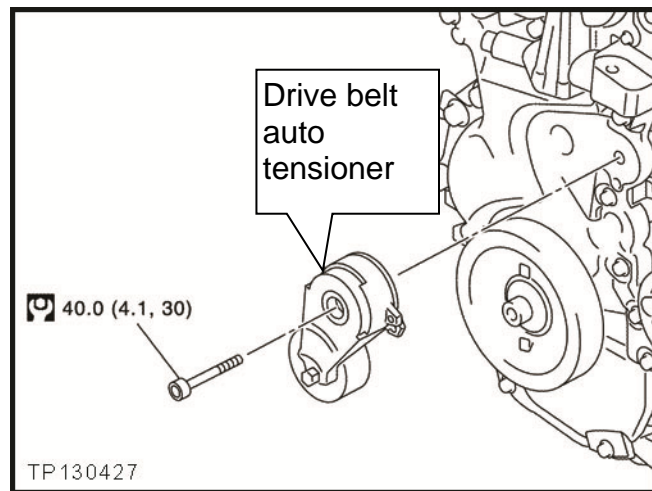


Figure 23

a. Use special tool J-51338-2 (Fixed T-50 Torx Wrench) to loosen the auto tensioner bolt.

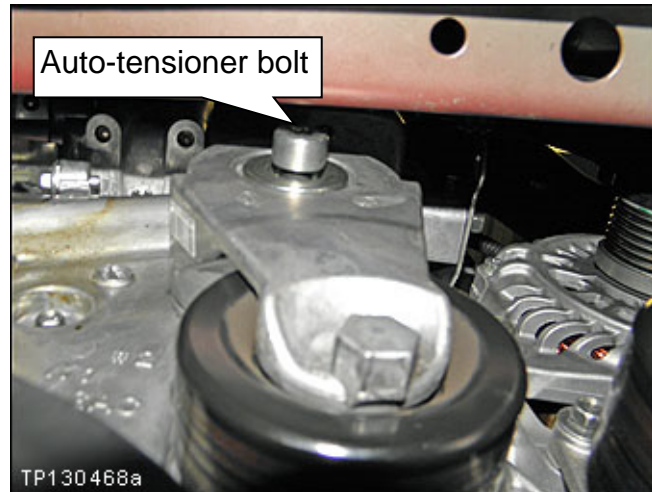


Figure 24

b. Use special tool J-51338-1 (Ratcheting T-50 Torx Wrench) to unscrew several threads of the auto tensioner bolt.

c. With your fingers, unscrew the auto tensioner bolt all the way.

d. Slightly twist and remove the auto tensioner.

31. Remove bolts from the lower part of the front cover.

- Remove the bolts below the line in Figure 25.

**NOTE:** Bolt #19 should have been removed in step 14.

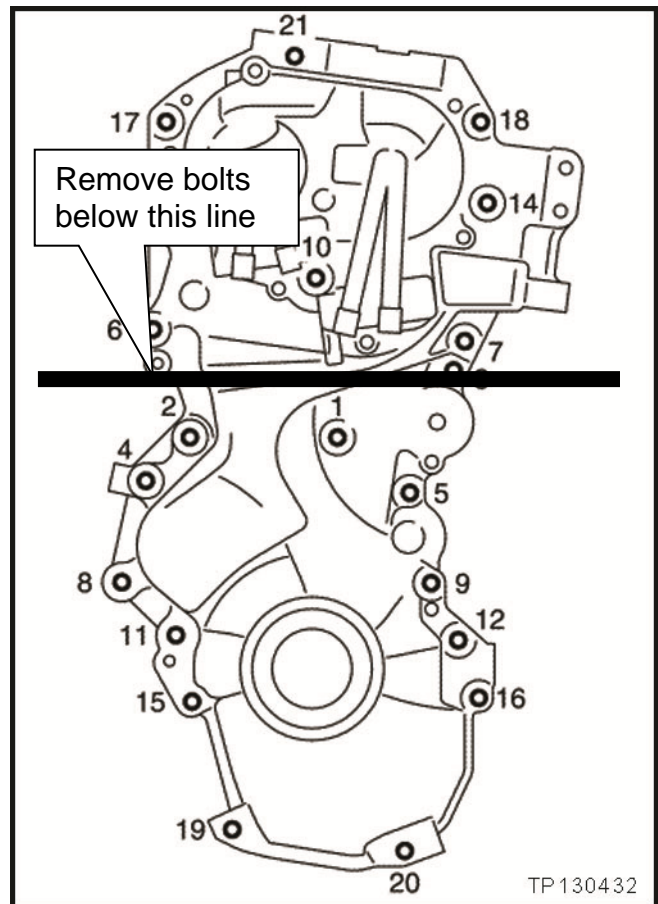


Figure 25

32. Back-out the special tool pushing screw.

33. Install the special tool lifting screw.

34. Adjust the lifting screw to raise the engine.

- Raise the engine as much as possible **without** hitting the engine wall with the turbo charger.
- When engine is raised as much as possible, the special tool will be near the top of the lifting screw threads.

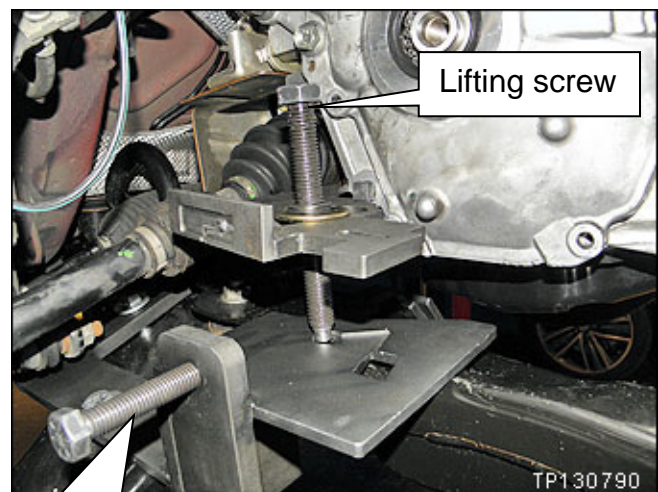


Figure 26

**IMPORTANT:** Make sure the engine is raised as much as possible to create adequate space for front cover removal.

35. Lower the vehicle enough to work from the top of the engine.

36. Remove the bolt shown in Figure 27.

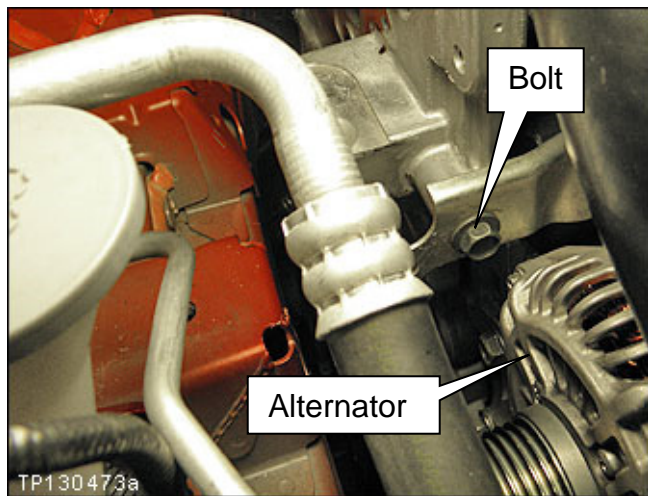


Figure 27

37. Remove bolts from the upper part of the front cover.

- Remove the bolts above the line shown in Figure 28.

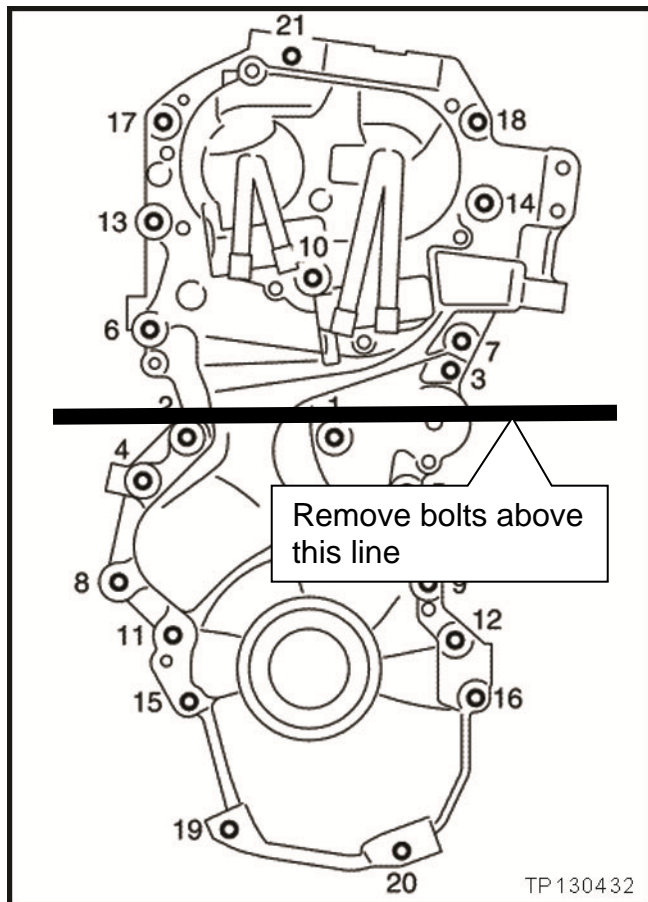


Figure 28

38. Remove the front cover.

- Use the pry points to carefully break the liquid gasket seal.
- Carefully remove the cover.

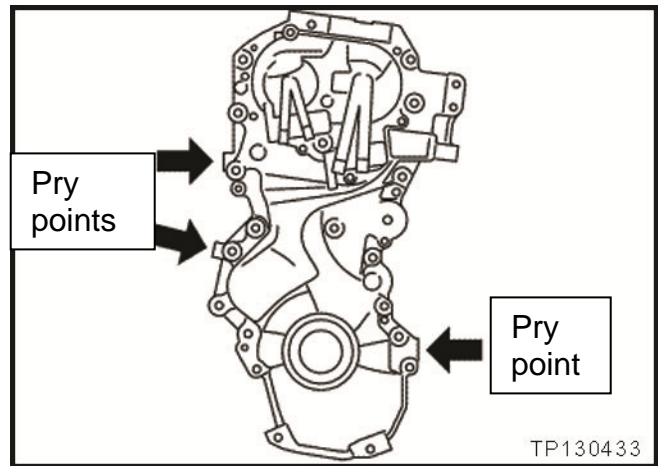


Figure 29

39. Make sure the cam timing marks are in the position shown in Figure 30.

If the cam timing marks are approximately 180 degrees from the position shown, do the following:

- Rotate the crankshaft 360 degrees. (This may require temporarily installing the crankshaft pulley.)
- Line up the cam timing marks as shown in Figure 30.

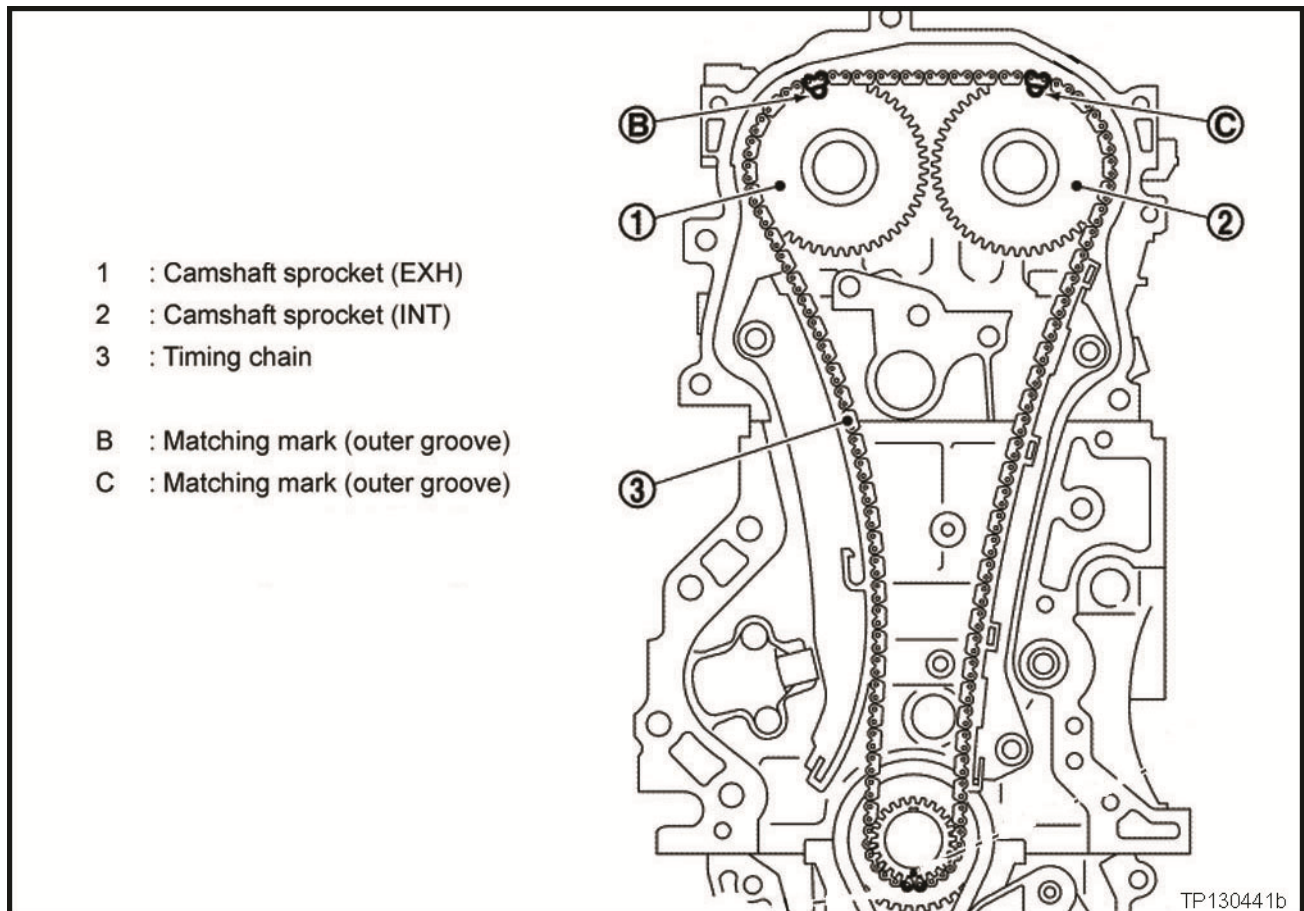


Figure 30

**NOTE:** In the next few steps you will be replacing the timing chain. Use the special tool lifting screw to raise or lower the engine as needed.

40. Remove the O-ring seals shown in Figure 31.

**NOTE:** These seals will not be reused. Use new ones for reassembly.

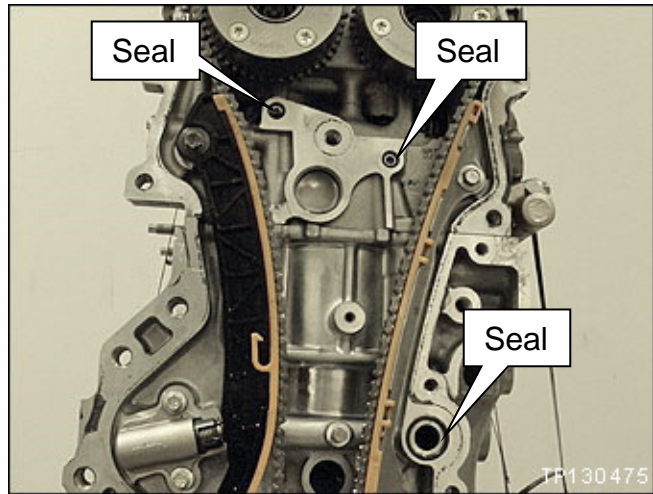


Figure 31

41. Lock the timing chain tensioner plunger in the depressed position as follows (see Figures 32 and 33):

The following steps need to be done at the same time to get the spring clip into the large groove at the top of the plunger:

- Squeeze the ends of the spring clip together.
- Move the spring clip toward the top of the plunger bore.
- Push on the timing chain guide to depress the plunger.

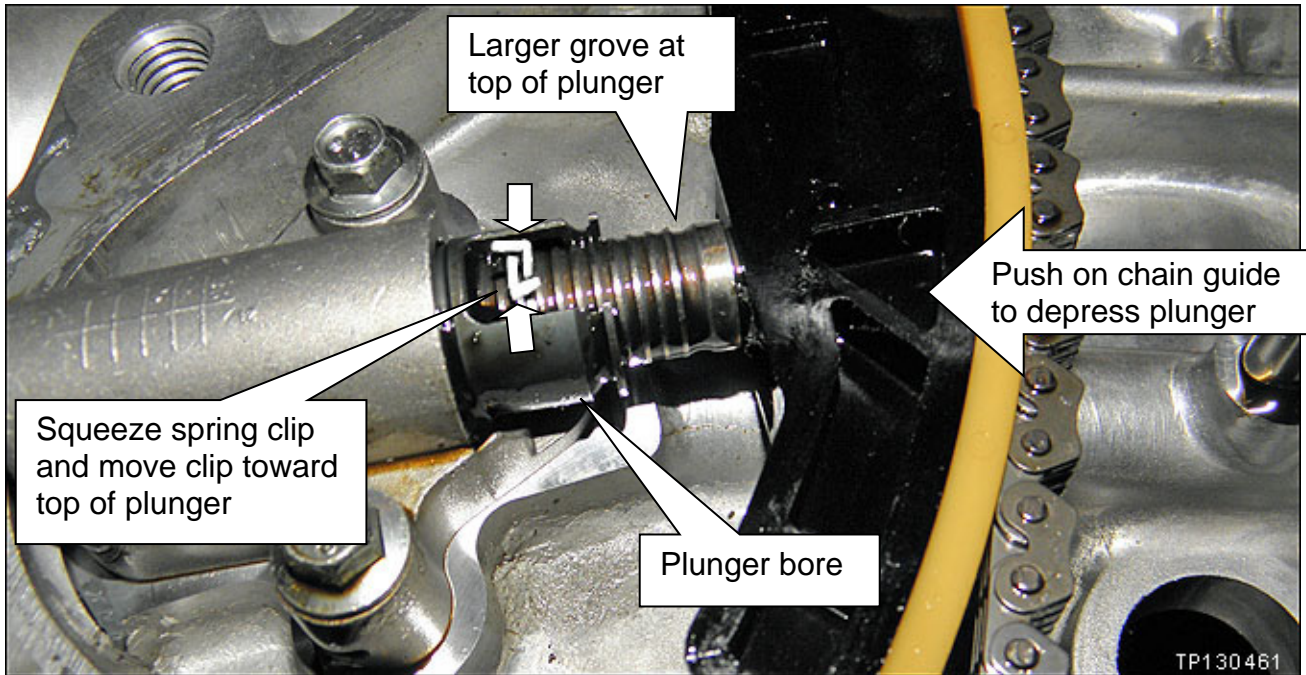


Figure 32

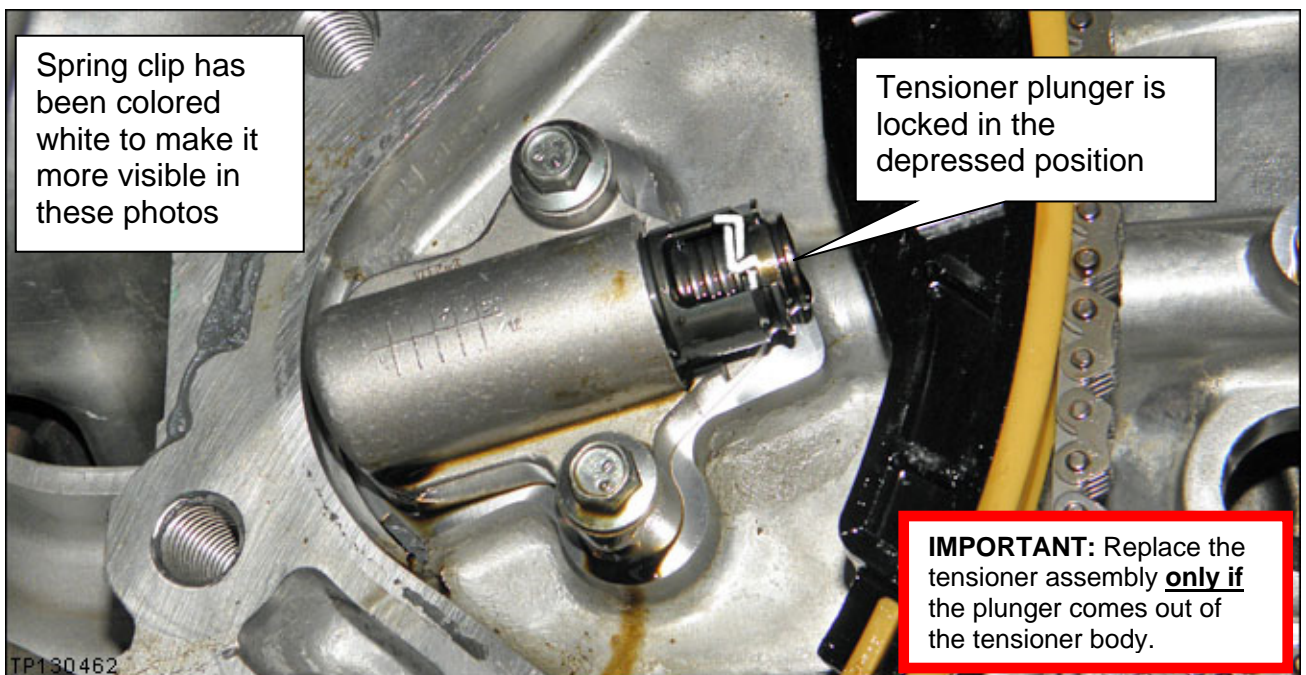


Figure 33

42. Remove the timing chain guides.

- a. First, carefully remove the slack guide.
  - The slack guide is held on with 1 bolt.
  - When the slack guide is removed, the camshafts may suddenly move a few degrees.

**CAUTION:** Use only hand tools on the **slack guide bolt**. Use a “top quality” 6 point 10 mm socket. Do not use power tools.

- b. Second, remove the tension guide.
  - The tension guide is held on with 2 bolts.

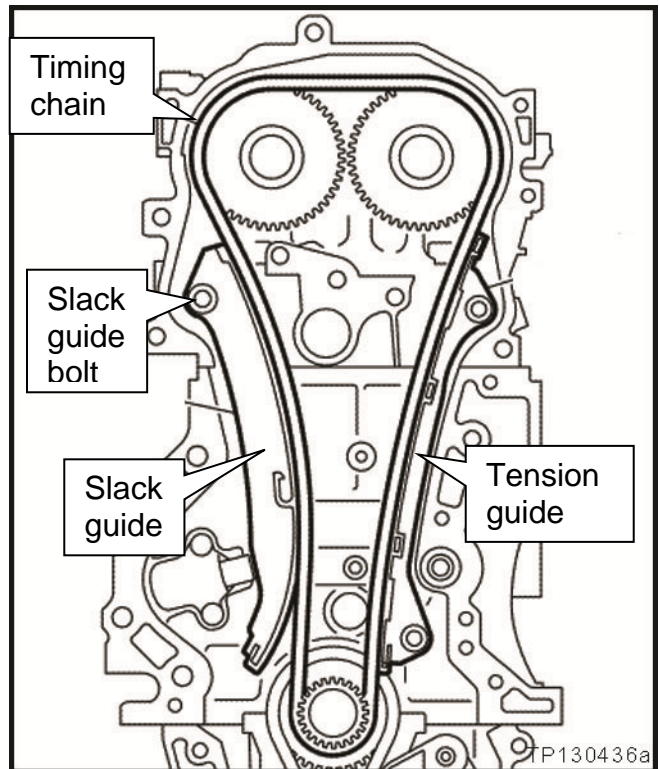


Figure 34

43. Remove the timing chain.

44. Remove the crankshaft sprocket and oil pump drive chain.

- a. Make sure the marks (yellow and blue) on the chain are distinguished. If needed, use more color before removing.
- b. Hold the oil pump drive chain tensioner out of the way.
- c. Remove (slide off) the crankshaft sprocket and the chain.

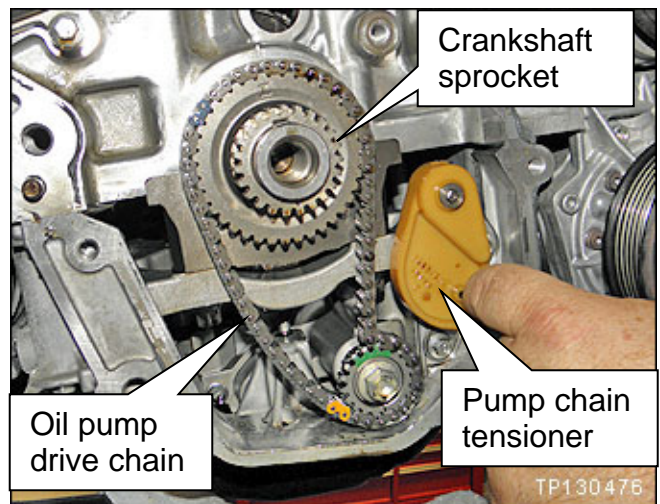


Figure 35

**NOTE:** Do not remove the pump chain tensioner.

45. Thoroughly clean all of the old liquid gasket (silicone) material off of the mating surfaces:

- Front of the engine
- Front cover

46. Install the **new** crankshaft sprocket.

47. Reinstall (reuse) the old oil pump drive chain.

Make sure the colored chain links align with the marks on the sprockets.

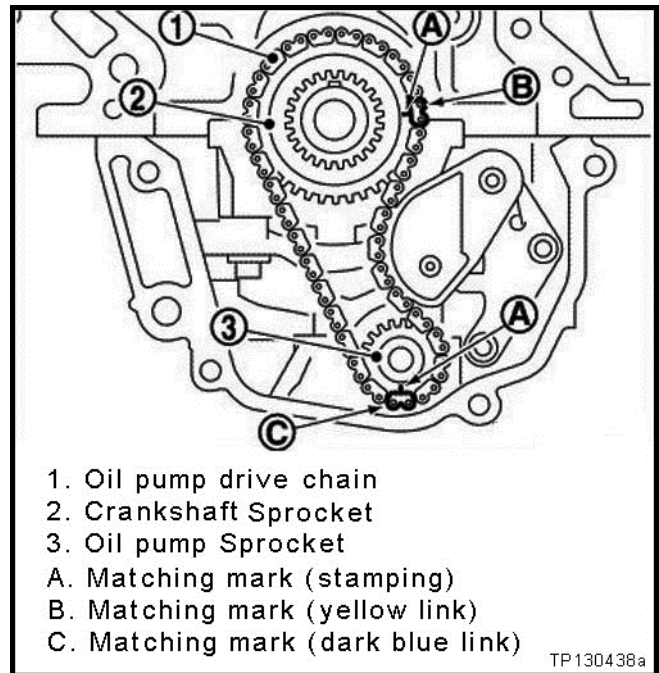


Figure 36

48. Install the **new** timing chain.

- You may need to slightly move the camshaft sprockets to align the matching marks with the colored chain links.

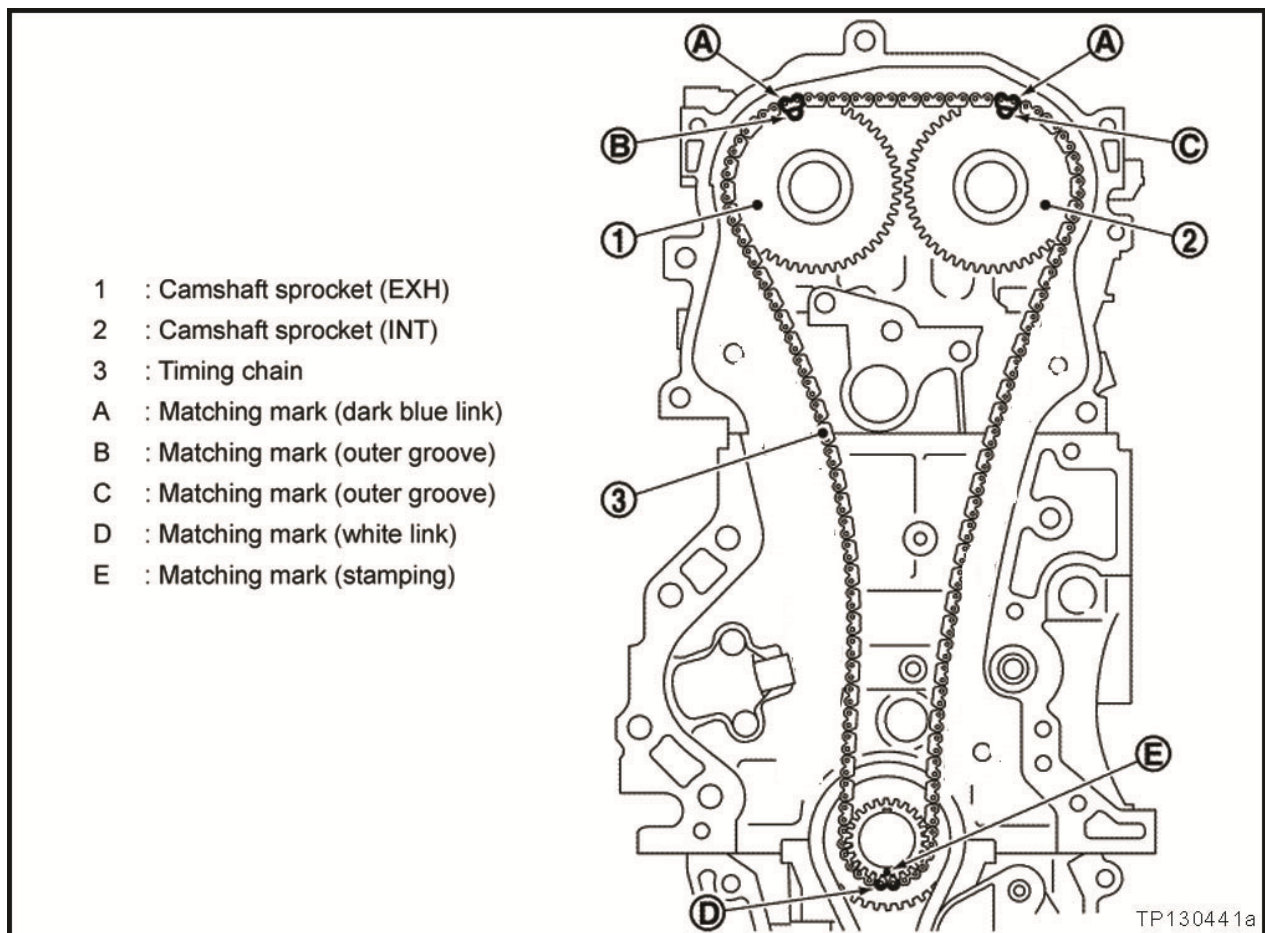


Figure 37



49. Install the **new** timing chain guides.

- The slack guide is held on with 1 bolt.
- The tension guide is held on with 2 bolts.
- Torque all 3 guide bolts to:  
25 N•m (2.6 kg-m, **18 ft-lb**)

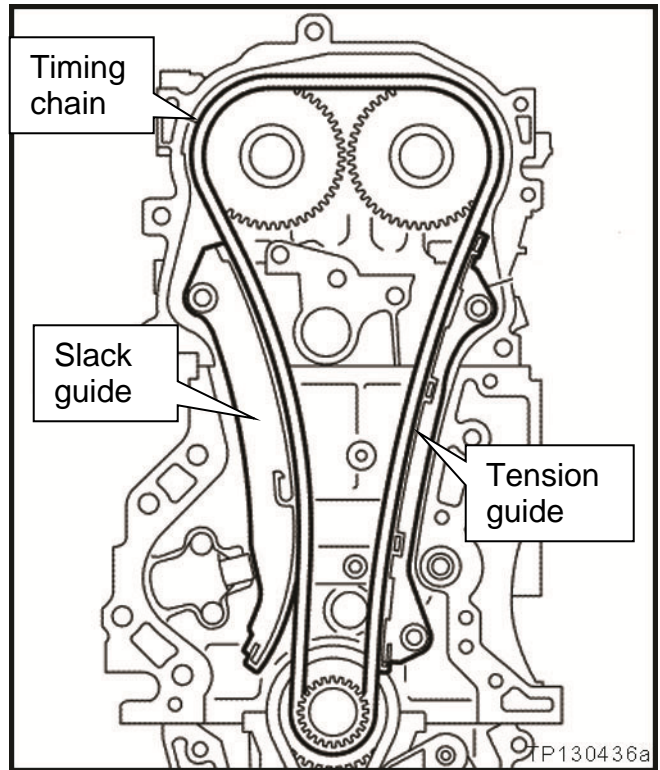


Figure 38

50. Release the timing chain tensioner plunger as follows (see Figure 39):

- a. Push on the slack guide to release pressure on the spring clip.
- b. Squeeze the ends of the spring clip together.
- c. Slowly release the slack guide allowing the plunger to push the guide; putting tension on the timing chain.

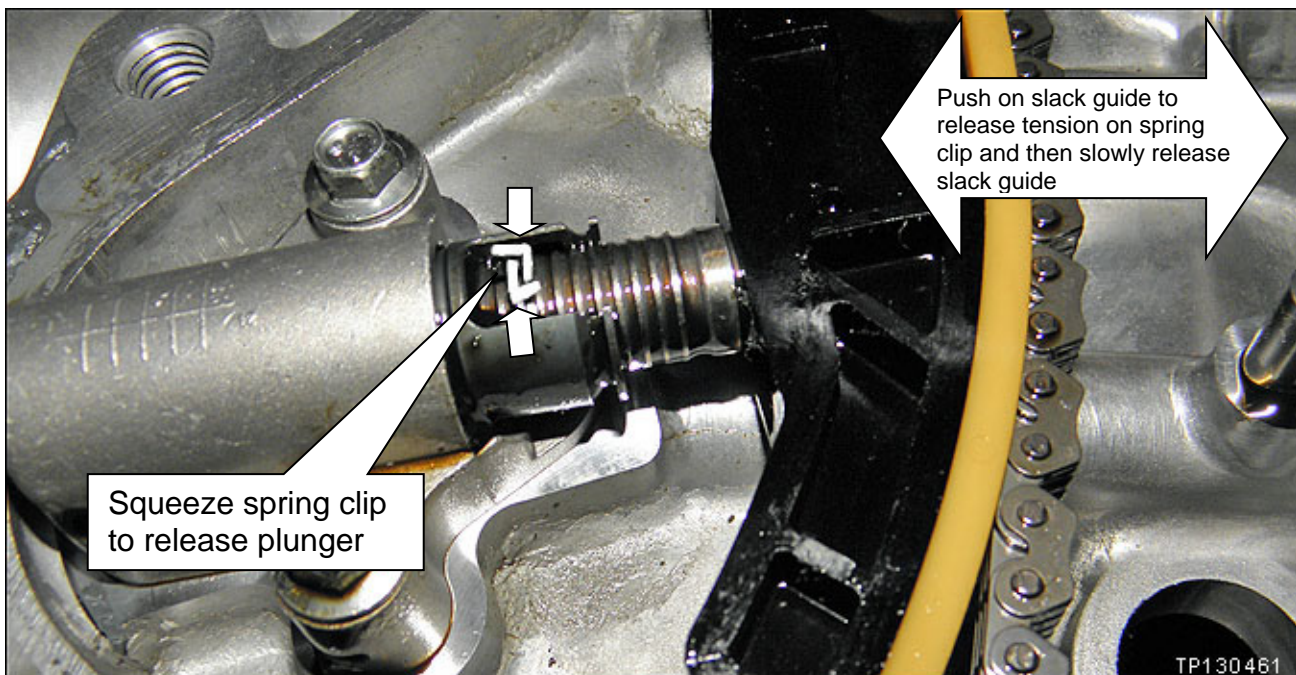


Figure 39

51. Install **new** O-ring seals on the front of the engine.

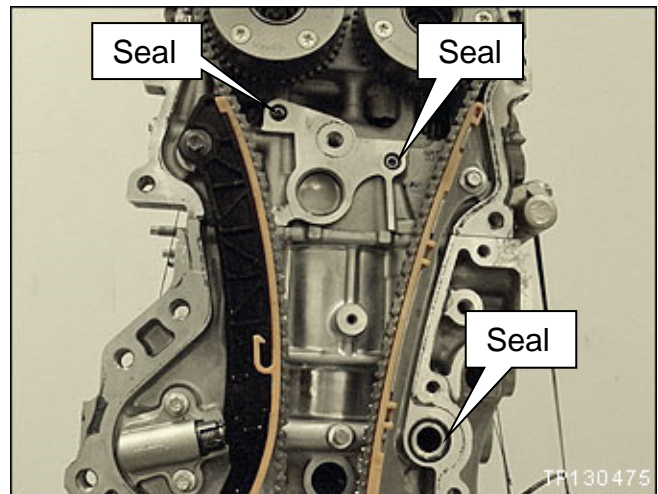


Figure 40

52. Cut about ¼ inch off of the timing mark on the front cover.

53. Remove the front oil seal from the front cover.

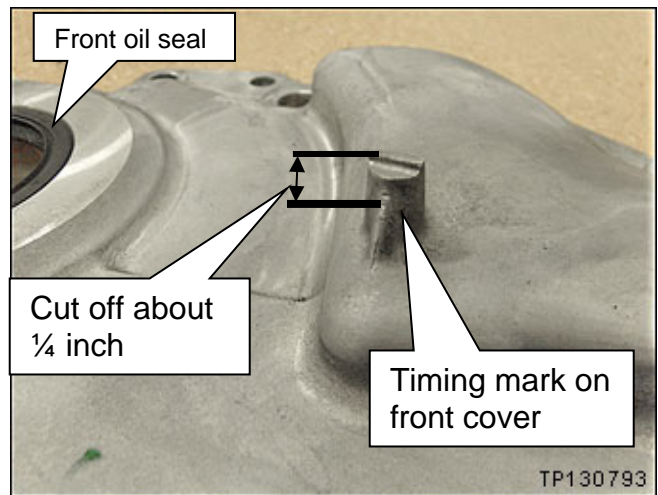


Figure 41

54. Install 6 **new** ring seals for the variable camshaft oil supply.

- Apply a small amount of engine oil to the new seals.

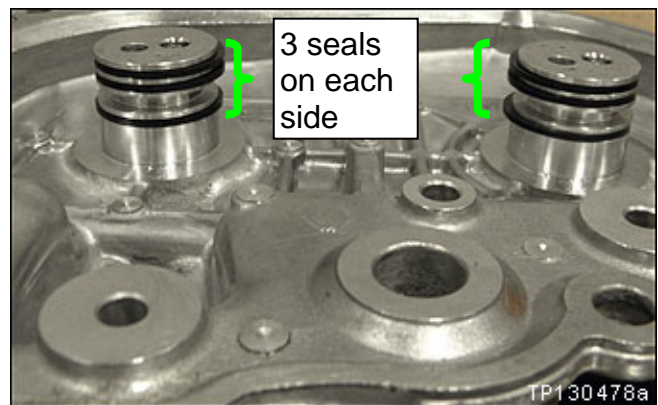


Figure 42

55. Make sure the front cover is clean.

**IMPORTANT:** All oil residue must be cleaned from the sealing surface to ensure a “leak free” seal.

56. Apply Liquid Gasket (continuous bead) to the front cover mating surface as shown.

- Use Liquid Gasket listed in the Parts Information.

1. Front of engine
  2. Front cover
- A. Liquid gasket application area application  
D. Liquid gasket  
b. 4.0 – 5.6 mm  
c. Diameter; 3.4 – 4.4 mm  
z-z. cross section view

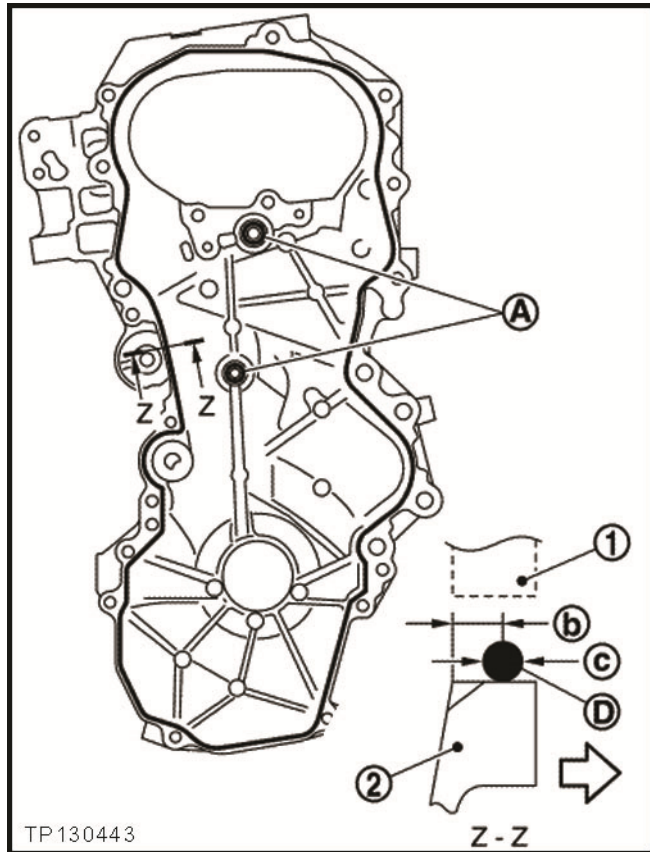


Figure 43

57. With the special tool lifting screw; make sure the engine is raised as much as possible **without** hitting the turbo charger on the engine wall.

58. Carefully install the front cover.

- **Do not scrape or smear the sealant.** If the sealant is scraped or smeared, place the cover back on the bench, remove the sealant and then re-apply.

**NOTE:**

- The vacuum supply line for the brake booster, just above the front of the engine, may interfere with installing of the front cover.
- If needed, remove the brake booster vacuum supply line.

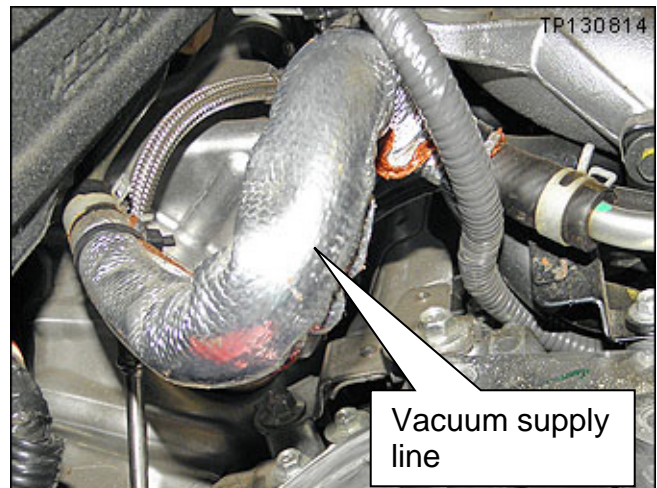


Figure 44

**CAUTION: Before installing the bolts for the front cover:**

- Clean excess silicone out of bolt holes 1, 3, 5, 7, 10, 15, 19, 20 (see Figure 45a).
- Also clean excess silicone out of the hole for the belt tensioner pulley bolt hole (see Figure 45a).
- Use a small flat blade screwdriver or other suitable tool to clean excess silicone from the bolt holes.



Figure 45

59. Install the front cover bolts shown in Figure 45a.

- Tighten the bolts in the order shown.
- Refer to the table below for torque specifications.

**NOTE:**

- Bolt #19 will need to be installed and tightened after the special tool is removed.

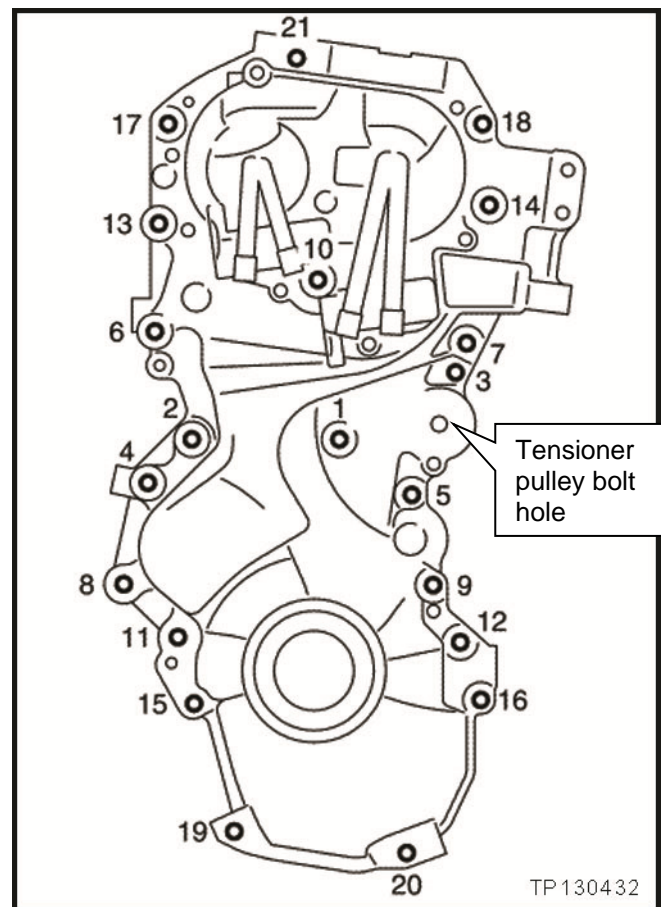


Figure 45a

Bolt Number	Head/Hex Size	Torque
1	8 mm	6.6 N•m (0.67 kg-m, <b>58 in-lb</b> )
6, 7, 10, 13, 31	13 mm	55 N•m (5.6 kg-m, <b>41 ft-lb</b> )
2, 4, 8, 11	16 mm	75 N•m (7.7 kg-m, <b>55 ft-lb</b> )
Other bolts not listed above	10 mm	25.5 N•m (2.6 kg-m, <b>19 ft-lb</b> )

60. Connect the harness clips and connectors for the intake and exhaust valve timing control solenoids.

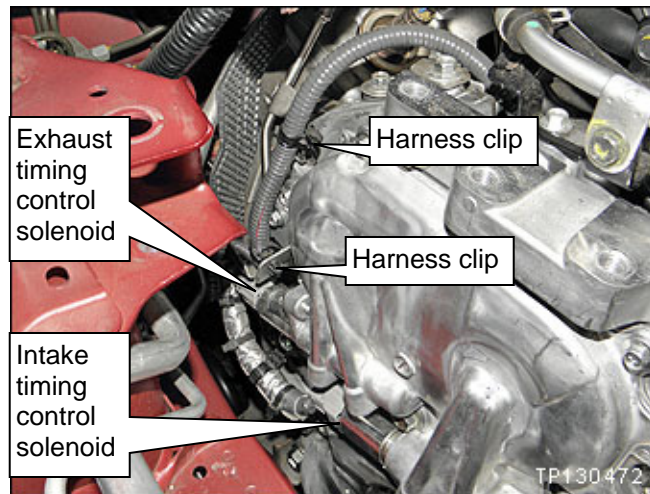


Figure 46

61. Raise the vehicle enough to adjust the special tool at the front of the engine.

62. Lower and remove the lifting screw (see Figure 47).

63. Install the pushing screw all the way (see Figure 47).

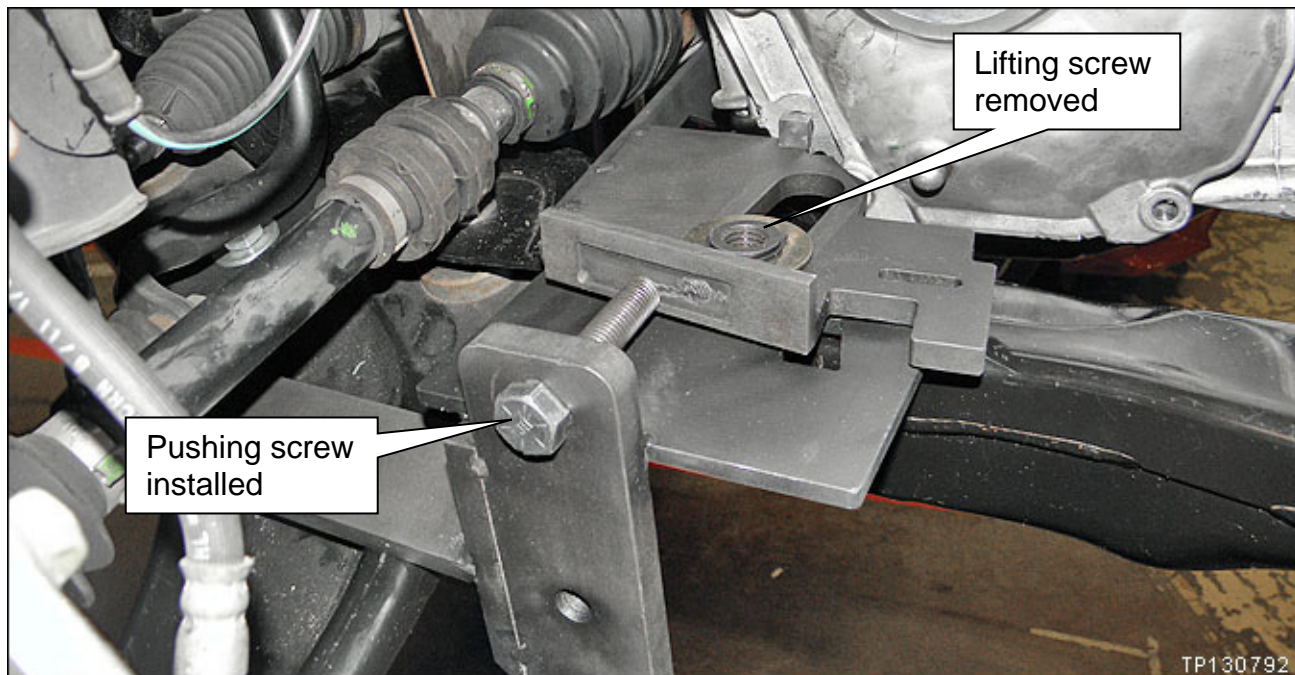


Figure 47

64. Install a **new** front oil seal in the front cover.

- Use a correct size seal installation tool.

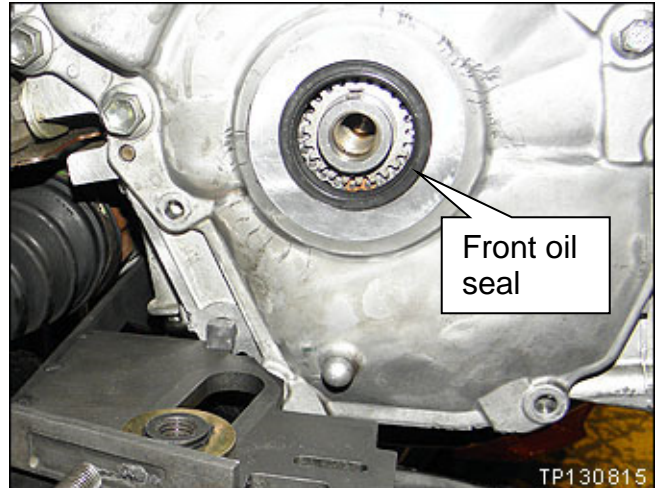


Figure 48

65. Reinstall the crankshaft pulley.

- Apply a small amount of oil to the bolt threads and bolt seat surface.
- Torque bolt to 29.4 N•m (3.0 kg-m, **22 ft-lb**), and then **tighten bolt another 60 degrees**.

**Explanation of Figure 49:**

- The crankshaft pulley bolt flange (1) has 6 marks (A) that are 60 degrees apart.
- Make a mark (B) on the crankshaft pulley (2) next to one of the A marks on the bolt flange.
- Tighten the bolt until the next A mark on the bolt aligns with the B mark you made on the pulley (60 degrees).

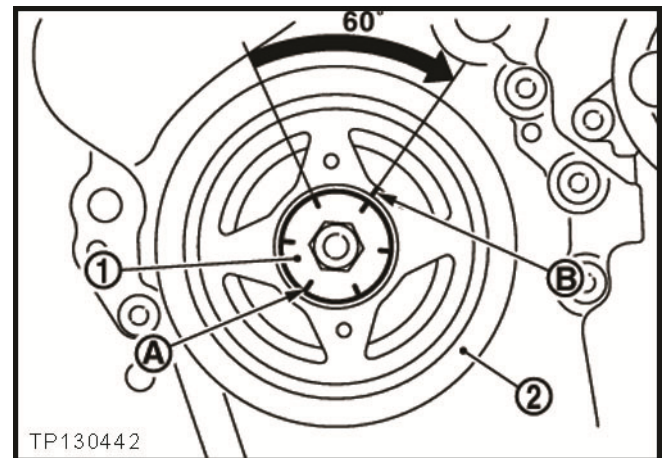


Figure 49

66. Rotate the engine clockwise one full turn. Confirm the engine rotates smoothly.

67. Reinstall the drive belt auto tensioner as follows:

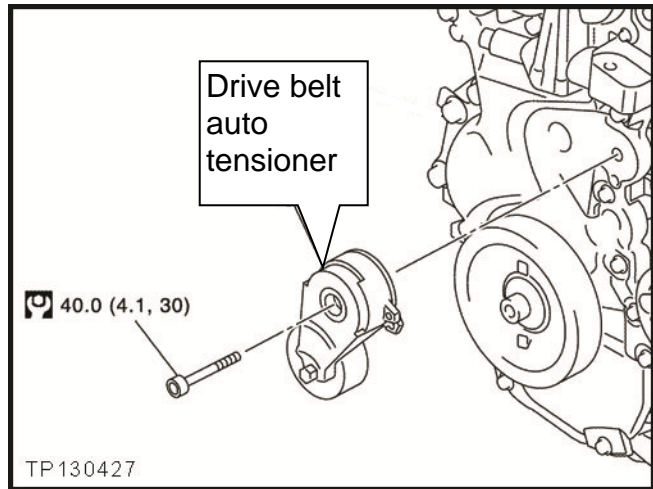


Figure 50

- a. Position the auto tensioner in place.
- b. With your fingers; install the auto tensioner bolt as far as possible.

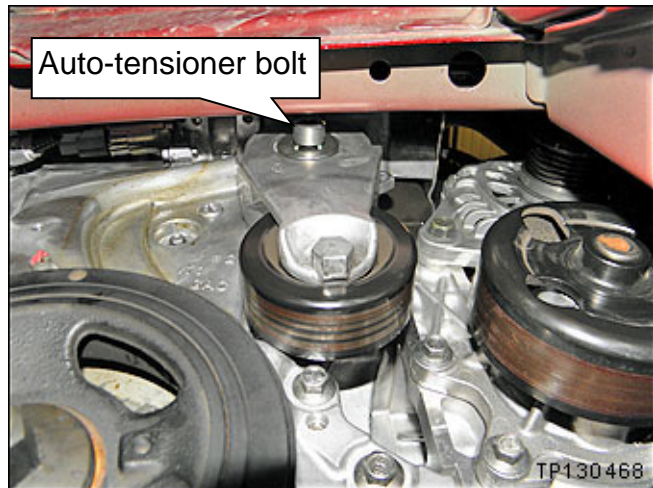


Figure 51

- c. Use special tool J-51338-1 (ratcheting wrench) to install the auto tensioner bolt all the way.
- d. Use special tool J-51338-2 (fixed wrench) to torque the auto tensioner bolt.
- Torque to:  
40 N•m (4.1 kg-m, **30 ft-lb**)



Figure 52

68. Reinstall the drive belt in reverse order.

- If needed, refer to step 10.

69. Back out the special tool pushing screw.

70. Install the special tool lifting screw.

71. Adjust the lifting screw to raise the engine.

- Raise the engine to about its normal assembled position.

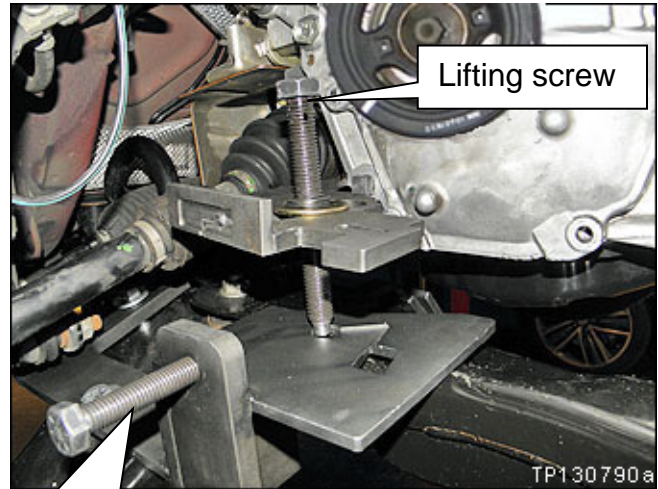


Figure 53

Pushing screw  
backed out

72. Install the engine mounting insulator RH.

- Raise or lower the engine as needed to align and install the 8 bolts shown in Figure 54.
- Torque bolts 1 – 3 to:  
65 N•m (6.6 kg-m, **48 ft-lb**)
- Torque bolts 4 – 8 to:  
45 N•m (4.6 kg-m, **33 ft-lb**)

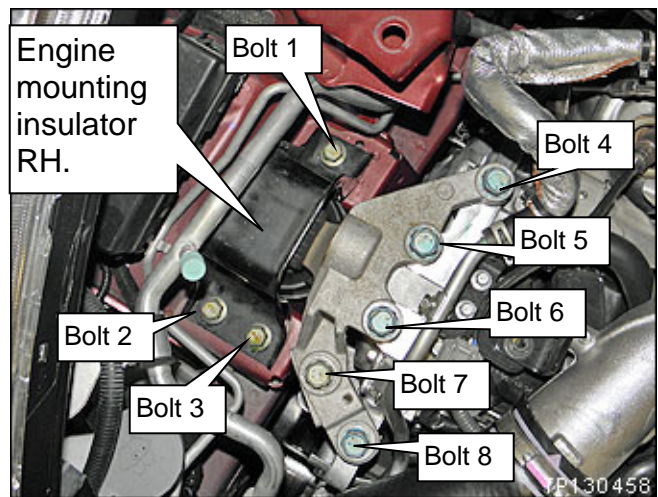


Figure 54



73. Install the upper torque rod RH.

- Torque both bolts to:  
120 N•m (12 kg-m, **89 ft-lb**)

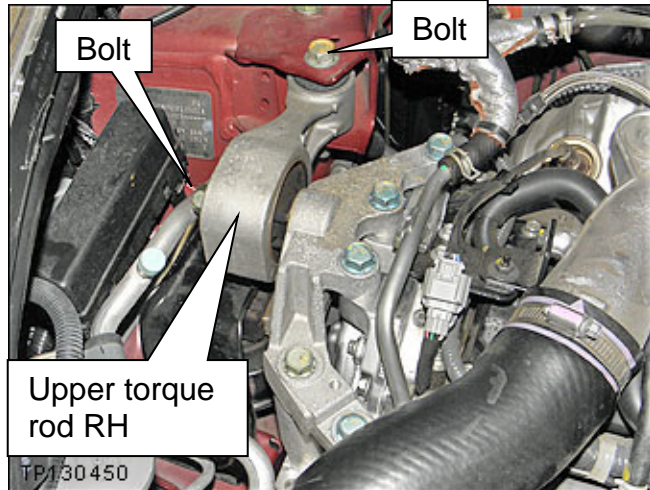


Figure 55

74. Reinstall the bolt shown in Figure 56.

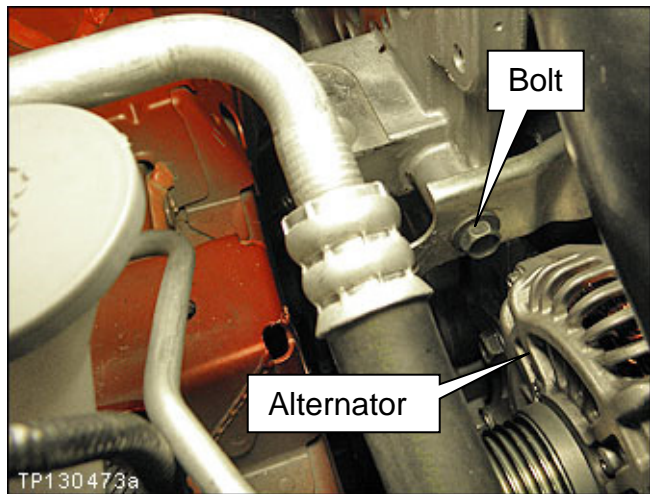


Figure 56

75. Reconnect the intercooler hose.

**IMPORTANT:** Before installation, be sure to remove the shop cloth, installed in step 26, from the intercooler hose.

76. Reinstall the engine cover.

77. Remove the special tool J-51393 (front and rear halves).

78. Install / torque front cover bolt #19.

- If need, refer to step 59.
- Torque bolt to 25.5 N•m (2.6 kg-m, **19 ft-lb**).

79. Reattach the front half of the fender protector.

- Install the 2 bolts and 7 clips shown in Figure 57.

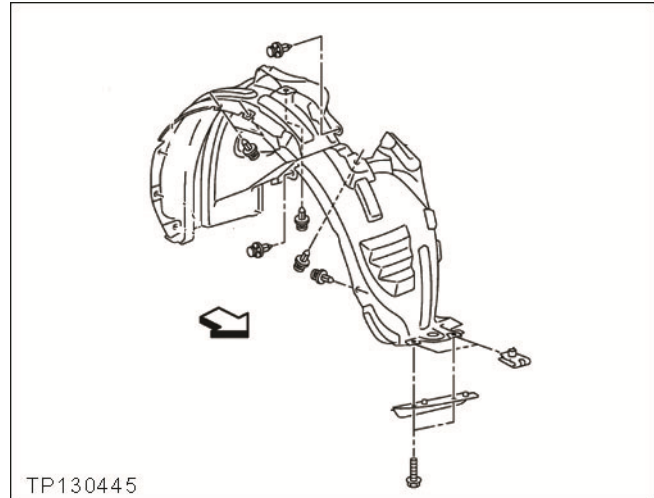


Figure 57

80. For AWD only: Reinstall the rear engine mounting bracket – torque bolts to:  
80 N•m (8.2 kg-m, **59 ft-lb**).

- If needed, refer to step 19.

81. 2WD models only: Reinstall the rear torque rod and rear torque rod bracket, heat insulator for the right front axle boot, and the bolts for the right front axle support bearing bracket:

- Refer to step 7, and reinstall these items in reverse order.

82. Reinstall the right front wheel.

- Torque lug nuts to 108 N•m (11 kg-m, **80 ft-lb**).

83. Fill the engine oil – without new oil filter - 4 ½ quarts.

- If needed; refer to the ESM, section MA-Maintenance, for engine oil refill information.

84. Reconnect the negative battery cable.

85. **If equipped**; Reset the customer preferred setting for the Automatic Air Conditioning System.

- If needed, refer to the ESM, section HAC-Heater and Air Conditioning - System Settings.

86. Reset the clock and the audio settings.

87. Reinitialize and check the Anti-Pinch Function for all Auto-UP power windows:

Reinitialize:

- a. Turn the ignition ON.
- b. Operate the power window switch to fully open the window (glass all the way down).
- c. Hold the window switch UP until the glass stops at the fully closed position, and then continue holding the switch UP for 2 seconds or more.
- d. Check that AUTO-UP function operates normally.

Check Anti-Pinch Function

- a. Fully open the door window (glass all the way down).
- b. Hold a piece of wood near the fully closed position.
- c. Close the door window glass using the AUTO-UP switch. Allow the window glass to hit the wood.
- d. Check the following conditions:
  - Check that the glass lowers for approximately 150 mm (5.9 in), without pinching the wood, and stops.
  - Check that the glass does not rise when operating the power window main switch, while the window is lowering after hitting the wood.

**CAUTION:** Do not check anti-pinch function with hands or other body parts because they may be pinched.

88. Start the engine and let it run until it reaches operating temperature.

- Check for any engine oil leaks.
- Make sure the engine is operating correctly.

89. Check the engine oil level.

- a. Turn the ignition OFF.
- b. Wait 10 minutes.
- c. Check the engine oil level with the dip stick – adjust the level as needed.

## PARTS INFORMATION

DESCRIPTION	PART NUMBER	QUANTITY
Timing Chain Kit (Includes Timing Chain, Slack Guide and Tension Guide)	A3028-1KC3A	1
Sprocket - Crankshaft	13021-CK80A	1
Seal-Oil, Camshaft (Ring seals for variable camshaft oil supply)	13042-3HD0A	6
Seal-O-Ring	15066-ZW80A	1
Seal-O-Ring	15066-6N204	2
Seal-Oil, Crankshaft Front (Front Oil Seal – seals front of crankshaft at front cover)	13510-6N200	1
Retainer-Bearing, Front Drive Shaft (Plate / 2WD only)	39776-JD000	1
Bolts (For Rear Torque Rod Bracket / 2WD only)	For 2011 Juke 01125 – N1161	3
	For 2012 – 2013 Juke 01125 – N2721	
1217H Liquid Gasket (1)	999MP-1217HP	1
Washer Drain (Oil drain plug washer)	11026-JA00A	1
Engine Oil (1)	999PK – 005W30N (1 quart bottle)	5 quarts
	999BK – 05W30NW (Bulk)	

(1) Order this item through the Nissan Maintenance Advantage program: Phone: 877-NIS-NMA1 (877-647-6621). Website order via link on dealer portal [www.NNAnet.com](http://www.NNAnet.com) and click on the [“Maintenance Advantage” link](#)

## CLAIMS INFORMATION

Submit a “CM” line claim using the following claims coding:

CAMPAIGN ID #	DESCRIPTION	OP CODE	FRT
P4213	2WD: Replace Timing Chain and Guides	P42130	3.6 hrs.

CAMPAIGN ID #	DESCRIPTION	OP CODE	FRT
P4213	AWD: Replace Timing Chain and Guides	P42131	3.4 hrs.

**NOTE:** For engine replacements, contact the Warranty Powertrain Claims Call Center at 1-800-973-9992 option 1 for Pre-Approval.