RECALL CAMPAIGN BULLETIN

Reference:	Date:
NTB06-082a	January 25, 2007

VOLUNTARY RECALL CAMPAIGN
VOLUNTARY SERVICE CAMPAIGN
ALTIMA AND SENTRA QR25DE ENGINE OIL CONSUMPTION

This bulletin has been amended. This version adds a flow chart for dealer inventory vehicles on page 66, amends the expense codes in the claims information, and amends the flow charts on pages 4, 14 and 68. Please discard all previous versions of this bulletin.

CAMPAIGN I.D. #	PB023
NHTSA #:	06V-223
APPLIED VEHICLES:	2006 Altima (L31), with QR25DE Engine 2006 Sentra (B15), with QR25DE Engine
APPLIED VINs:	Altima 1N4AL11**6C 159667 – 234874, or 1N4AL11**6N 344352 – 415475 Sentra 3N1AB51**6L 526889 - 597232

NOTE: Use Service Comm to determine campaign eligibility.

INTRODUCTION

Nissan has determined on some 2006 model year Nissan Altima (Sentra) vehicles equipped with four cylinder 2.5L engines, there is a possibility of an engine compartment fire. This is caused by extremely low engine oil level resulting from higher than normal engine oil consumption due to a manufacturing problem in some engines.

Nissan will take the following actions at no cost to the customer for parts or labor:

- In order to prevent a fire from occurring, Nissan will reprogram the Electronic Control Module (ECM or engine computer) (Item 1 below).
- Nissan will also take additional steps to help assure continued satisfaction, by evaluating the vehicle to determine if it exhibits abnormal oil consumption. In a small percentage of vehicles, engine replacement will be needed (Item 2 below).

1. In order to prevent a fire from occurring, a Nissan dealer will reprogram the Electronic Control Module (ECM or engine computer). This reprogramming will ensure that the engine will go into a "limp home" mode in the event that the engine oil drops to an unacceptable level. If this occurs, the "Service Engine Soon" light will illuminate and the vehicle engine RPM will not exceed 1800. Reduced drivability will result, but the vehicle will be able to be driven to a Nissan dealer for service.

   The ECM reprogramming should take about one hour to complete, but a Nissan dealer may require the vehicle for a longer time based upon their work schedule.

2. In addition to the ECM reprogramming, Nissan will also inspect the vehicle to determine if it has been consuming engine oil at a higher than normal rate. In many cases, a Nissan dealer will be able to make this diagnosis during the same visit as the ECM reprogramming.
    - If oil consumption is determined to be normal, the oil and filter will be changed and the vehicle returned to the customer.
    - If oil consumption is determined to be abnormal, the engine in the vehicle will be replaced.
    - In some cases, analysis of the engine oil will be necessary to determine if the engine needs to be replaced.

If engine oil analysis is necessary, a Nissan dealer will take an oil sample at the time of ECM reprogramming and send it to a separate laboratory. The oil, filter, and oil pan will be replaced and the vehicle will then be returned to the customer. After the oil sample analysis is completed, Nissan will inform the customer of the results in approximately 2-3 weeks by mail. In the meantime, it is safe to continue to drive the vehicle, but as always regularly checking the engine oil level as specified in the Owner's Manual is recommended.

In a few cases, the results of the oil sample will indicate engine replacement is necessary. In those cases, Nissan will ask the customer to return the vehicle to the dealership to have the engine replaced. If it is necessary to replace the engine, a rental vehicle will be provided while the vehicle is left at the dealer for the repair.

Nissan has extended the engine portion of the Powertrain Coverage on some of the 2006 Nissan New Vehicles Limited Warranty to 84 months or 100,000 miles, whichever comes first. All other warranty terms, limitations, and conditions remain unchanged. This warranty extension applies to the vehicle whether the engine is replaced or not.

IDENTIFICATION NUMBER

Nissan has assigned identification number PB023 to this campaign. This number must appear on all communications and documentation of any nature dealing with this campaign.

NUMBER OF VEHICLES POTENTIALLY AFFECTED

The number of vehicles potentially affected is approximately 115,000.

DEALER RESPONSIBILITY

It is the retailer's responsibility to check Service Comm for the campaign status on each vehicle falling within the range of this voluntary safety recall which for any reason enters the service department. This includes vehicles purchased from private parties or presented by transient (tourist) owners and vehicles in a dealer's inventory. **Federal law requires that new vehicles in dealer inventory which are the subject of a safety recall must be corrected prior to sale. Failure to do so can result in civil penalties by the National Highway Traffic Safety Administration.** While federal law applies only to new vehicles, Nissan strongly encourages dealers to correct any used vehicles in their inventory before they are retailed.

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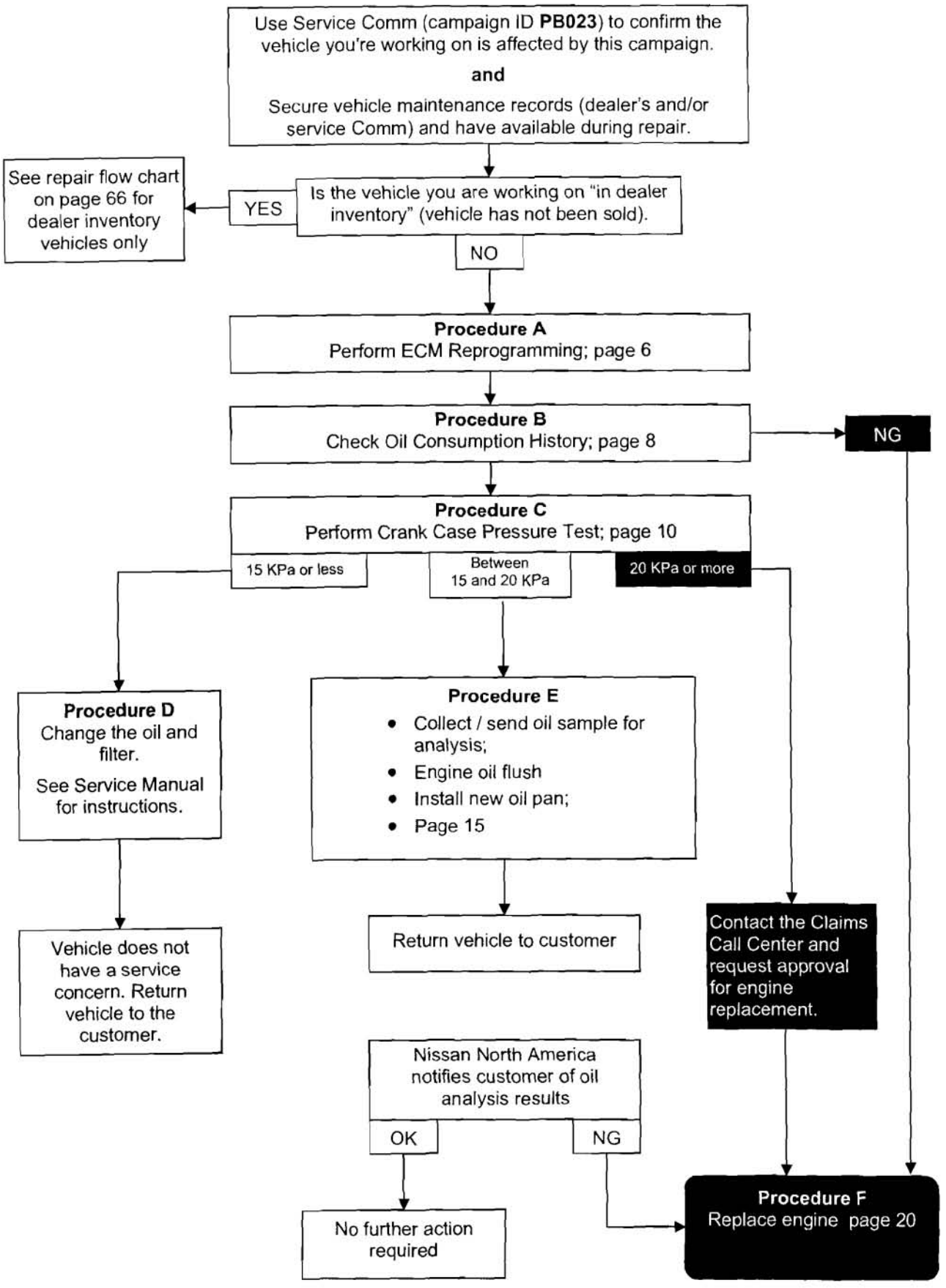
REPAIR OVERVIEW



SERVICE ADVISOR INSTRUCTIONS

To ensure the highest levels of customer satisfaction, Nissan recommends the following actions be taken by the Service Advisor during the initial customer contact and during the scheduled appointment date.

Initial (First) Customer Contact

- Respond to any customer questions regarding the voluntary recall campaign "Altima and Sentra QR25DE engine oil consumption". Refer to the Owner's Notification Letter (attached to the end of this bulletin).
- Inform the customer that an appointment is necessary. Prior to scheduling the appointment confirm the availability of potential parts for necessary repair.
- Remind the customer to bring their Owner Notification Letter to the dealer.

Scheduled Appointment Date

- Confirm availability of alternate transportation prior to customer arrival.
- If available, secure service documentation (dealer's and/or service Comm) showing the last time the engine oil level was checked and filled. Have this available for the technician repairing the vehicle.

  NOTE: For the purposes of this campaign, ONLY the following documentation for oil level checked and filled will be accepted.

  ⇒ Repair / work order from any Nissan dealer showing the vehicle mileage and indicating service for "check and refill oil level", or "oil and filter change".

  ⇒ Service Comm print showing CM I.D PB019 was performed and mileage at which it was performed (see NTB06-045).

- The Owner Notification Letter, if available from the customer, has a "peel and stick" label containing the VIN and customer information. This sticker can be used in preparing the oil sample bottle, if an oil sample procedure becomes necessary.
- Only in cases that the repair follows Procedure E where an oil sample is necessary for analysis, do you need to provide the customer with the following information.

  Information dialogue to customer:

  A laboratory analysis of an oil sample from your vehicle was required at the time of ECM reprogramming and sent to a separate laboratory. Your oil, filter, and oil pan were replaced and your vehicle is being returned to you.

  After the oil sample analysis is completed, Nissan will inform you of the results in approximately 2-3 weeks by mail. In the meantime, regularly check your engine oil level as specified in your Owner's Manual. In a few cases the results of the oil sample will indicate engine replacement is necessary. In those cases, Nissan will ask you to return your vehicle to the dealership to have the engine replaced at no cost to you. If it is necessary to replace your engine, a rental vehicle will be provided while you leave your vehicle at the dealer for the repair.

SERVICE PROCEDURE

PROCEDURE A: ECM REPROGRAMMING

Before beginning reprogramming, use CONSULT-II to make sure there are **no DTCs stored** in the ECM.

Repairs for stored DTCs must be done before performing the ECM reprogramming. Use ASIST for DTC diagnostic and repair information.

Repairs for stored DTCs are not related to this campaign.

Reprogramming should be performed by an OBD-II Certified technician

1. Compare your vehicle's ECM P/N to those shown under **Current ECM P/N** in Chart A.

Chart A

From → To

MODEL	Vehicle Configuration	Current ECM P/Ns Before Reprogramming	New ECM P/N's
2006 Altima with QR25DE engine	A/T 50 state/Canada (ULEV)	23710-ZD80A, -ZD80B, -ZD80C, ZD80D, -ZD80E	23710-ZD88A
	A/T with ASCD 50 state/Canada (ULEV)	23710-ZD81A, -ZD81B, -ZD81C, ZD81D, -ZD81E	23710-ZD89A
	M/T 50 state/Canada (ULEV)	23710-ZD82A, -ZD82B, -ZD82C, ZD82D	23710-ZD82E
	M/T with ASCD 50 state/Canada (ULEV)	23710-ZD83A, -ZD83B, -ZD83C, ZD83D	23710-ZD83E
	A/T CAL (SULEV)	23710-ZD84A, -ZD84B, -ZD84C, ZD84D	23710-ZD84E
	A/T with ASCD CAL (SULEV)	23710-ZD85A, -ZD85B, -ZD85C, ZD85D	23710-ZD85E
	M/T CAL (SULEV)	23710-ZD86A, -ZD86B, -ZD86C, ZD86D	23710-ZD86E
	M/T with ASCD CAL (SULEV)	23710-ZD87A, -ZD87B, -ZD87C, ZD87D	23710-ZD87E
2006 Sentra with QR25DE engine	A/T 50 state/Canada	23710 – ZG50B, -ZG50C, -ZG50D, -ZG58A	23710–ZG58B
	A/T w/NATS 50 state/Canada	23710 – ZG51B, -ZG51C, -ZG51D, -ZG58E	23710–ZG58D
	M/T 50 state/Canada	23710 – ZG52B, -ZG52C, -ZG52D, -ZG59A	23710–ZG59B
	M/T w/NATS 50 state/Canada	23710 – ZG53B, -ZG53C, -ZG53D, -ZG59E	23710–ZG59D

2. If your vehicle's current ECM P/N matches one of the Current ECM P/N's in Chart A:
    - Perform ECM reprogramming. (Detailed steps of ECM reprogramming are in Appendix B on page 24).
    - Make sure to connect a battery charger to the vehicle battery and set it to a low charge rate (trickle charge) during the ECM reprogramming.

3. If your vehicle's ECM P/N does not match one of the Current ECM P/N's in Chart A:
    - This campaign may not apply or has already been done on this vehicle.
    - **Recheck Service Comm (campaign ID PB023) to confirm the vehicle you're working on is affected by this campaign.**

PROCEDURE B: CHECK OIL CONSUMPTION HISTORY

NOTE:

- This check should only be done if you have documentation of the last time the engine oil was filled (topped off or changed).
- If there is no engine oil service documentation, go to Procedure C on page 10.

1. Park the vehicle on a level surface with the engine stopped for at least thirty (30) minutes.

   IMPORTANT: The 30 minute time period is needed to allow all of the oil to drain back to the oil pan (crankcase).

2. **Write down the exact oil level reading using the engine dipstick and ruler (see Figure B1).**

   - Use the ruler included in the Special Tool Kit.
   - To measure; line up the 0 mm edge of the ruler with the H mark on the dipstick.
   - The example in Figure B1 shows the oil level is 8mm below the H mark.

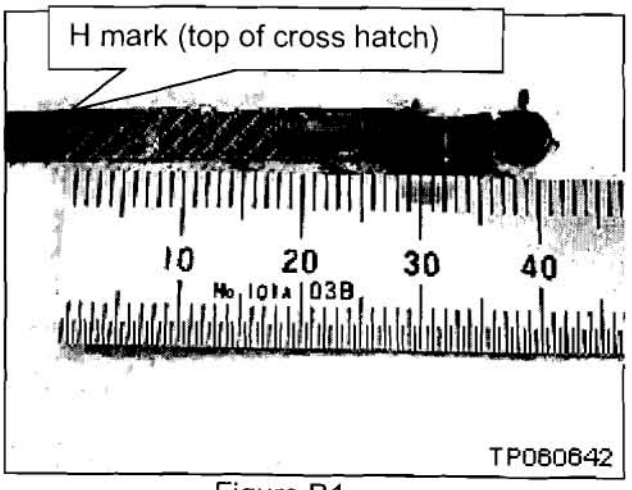


Figure B1

3. Check service records for the last time the engine oil was filled (dealer's or service Comm).

   NOTE: For the purposes of this campaign, ONLY the following documentation for oil level checked and filled will be accepted.

   ⇒ Repair / work order from any Nissan dealer showing the vehicle mileage and indicating service for "check and refill oil level", or "oil and filter change".

   ⇒ Service Comm print showing CM I.D PB019 was performed and mileage at which it was performed (see NTB06-045).

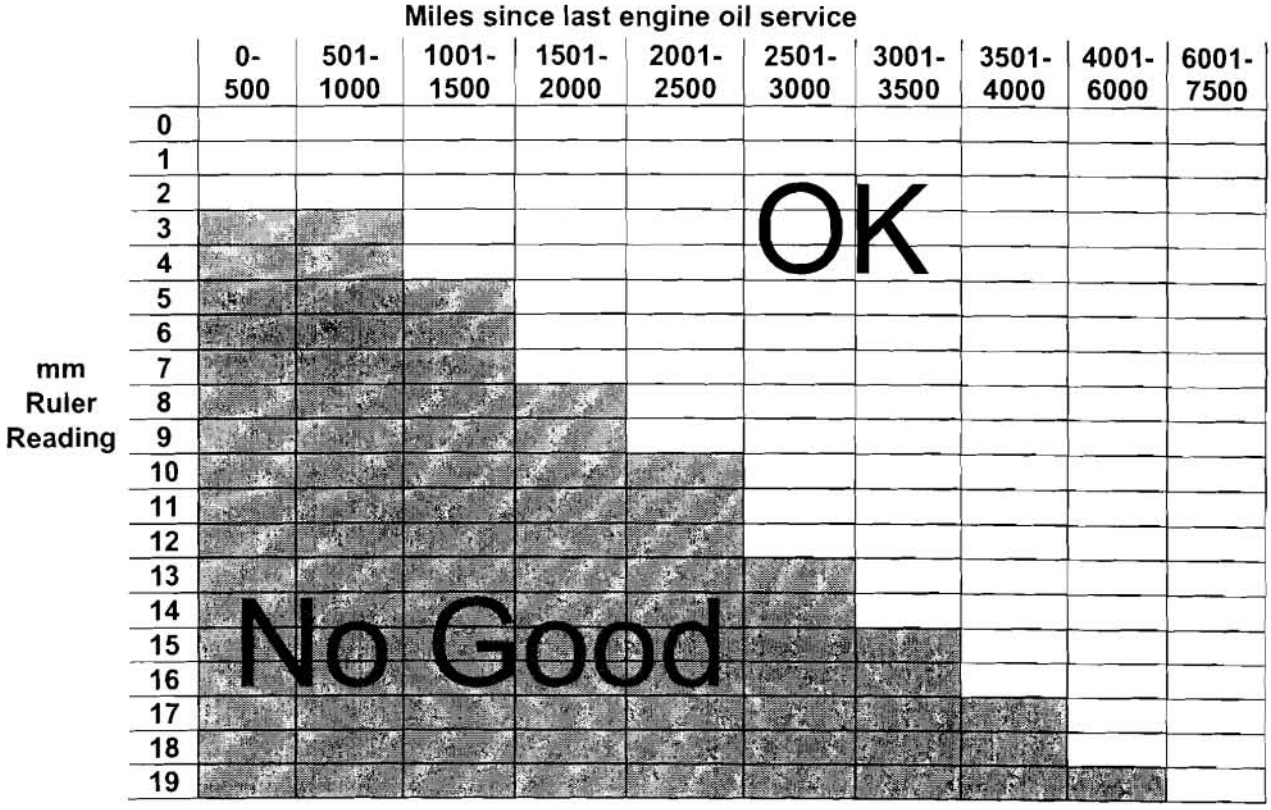
4. Determine the number of miles driven since the last engine oil was filled.

5. Select the correct mileage range at the top of the Oil Consumption Chart.

6. Use your ruler reading from step 2 to select the correct mm ruler reading at the left side of the chart.

7. Write down your results (OK or NO GOOD) based on the intersecting points of the mileage and mm ruler reading.

OIL CONSUMPTION CHART



NOTE: If the engine oil level is more then 19 mm low, the consumption rate is considered No Good.

- **OK:** Go to Procedure C on the next page.

- **No Good:** Go to Procedure F on page 20.

PROCEDURE C: PERFORM CRANK CASE PRESSURE TEST

1. Remove the plastic engine cover.

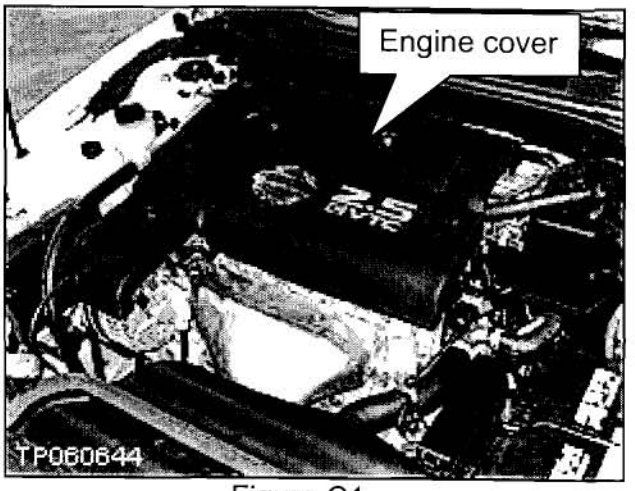


Figure C1

2. For indoor shops; place the shop exhaust vent hose over the tailpipe.

3. Connect CONSULT-II to the vehicle.

4. Start the engine—CONSULT-II will turn on automatically.

5. Select ENGINE—wait for System Call to run.

6. Select ENGINE > DATA MONITOR > SELECTION FROM MENU > COOLANT > TEMP/S. Set reading to Numerical Display.

7. **Let the engine idle** until the engine coolant temperature reaches 192°F (88°C) or greater.

   IMPORTANT: Keep engine at **Idle Speed Only** during engine warm up.

8. Turn the engine OFF.

   - Leave CONSULT-II connected to the vehicle.

9. Remove clamp and disconnect the valve cover PCV breather hose.

   CAUTION: Hold the air duct elbow as shown in this picture to prevent breaking it.

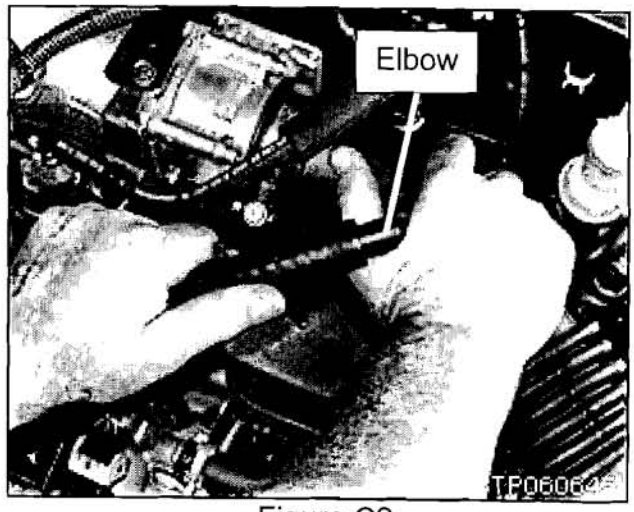


Figure C2

10. Disconnect the PCV hose at the intake manifold.

11. Cap the ports, plug and clamp the hose as shown in Figure C3.

    DO NOT PLUG the valve cover PCV breather hose yet.

    IMPORTANT: You <u>MUST</u> use the caps and plugs from the Special Tool Kit. Make sure the Caps and Plugs are fully installed/seated. DO NOT use "pinch-off" pliers, they will not seal well enough.

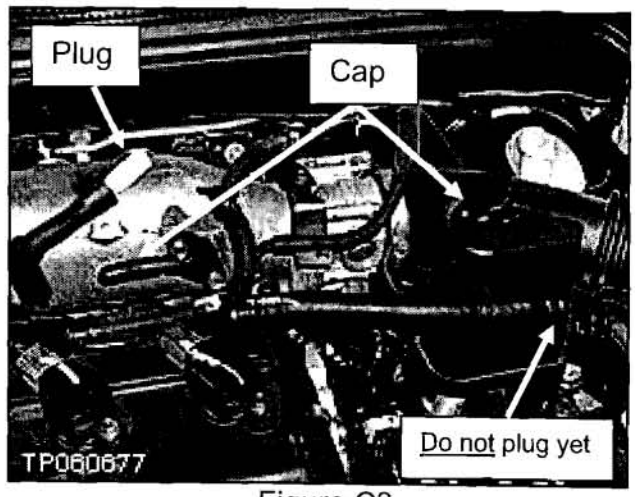


Figure C3

12. Remove the engine oil dipstick and put it in a clean place.

13. Set the PV350 to:

    Metric (push button is in UP position)

    and

    kpa•psi (slide switch in center position)

    NOTE: The PV350 and Fluke meter are included in the Special Tool Kit.

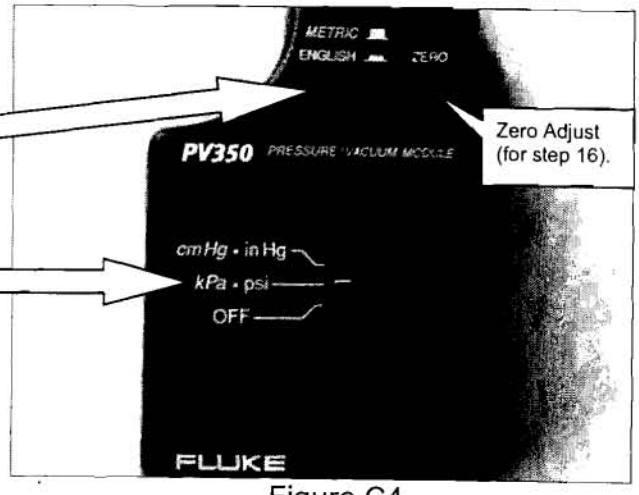


Figure C4

14. Install the PV350 into the Fluke meter (COM & Volt/Ohm holes).

15. Set the Fluke meter dial to mV (Millivolts).

16. Zero the meter using the Zero Adjust on the PV350 module.

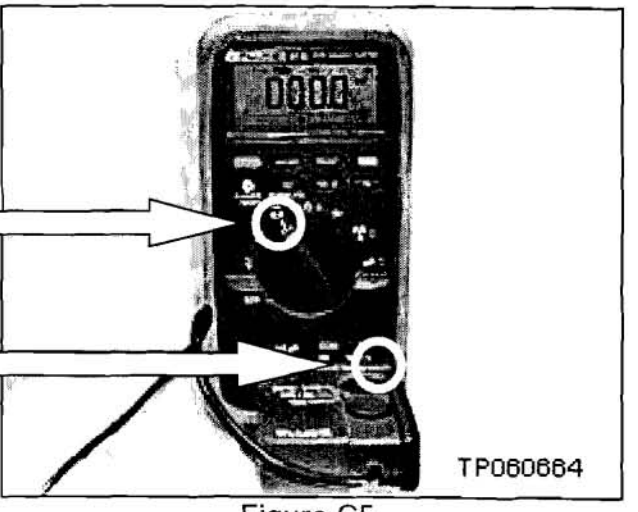


Figure C5

17. Install the sensing end of the PV350 onto the oil dipstick tube and tighten the clamps.

    IMPORTANT: Make sure the rubber tube is securely clamped at each end.

Figure C6

18. Make sure the oil fill cap is tight.

19. Perform the pressure test **EXACTLY** as follows:

    NOTE: You must do these steps exactly to get accurate test results.

    A. Turn OFF and Leave OFF all electrical loads (A/C, headlights, audio, etc.).

    B. Start the engine. Let the engine idle until the engine coolant temperature reaches 192°F (88°C) or greater.

    - CONSULT-II should still be connected to the vehicle. Use it to read the engine temperature.

NOTE: It is recommend that you review steps C, D and E before continuing.

C. Plug the valve cover PCV breather hose.

- Make sure the plug is completely installed / seated.

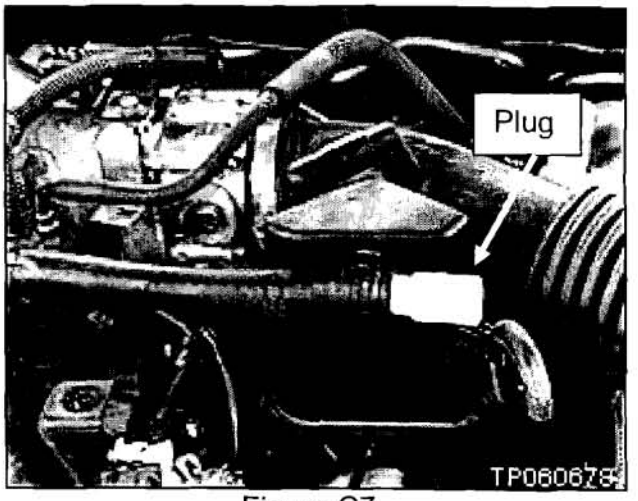


Figure C7

D. Immediately after plugging the PCV breather hose, begin the 90 second time:

NOTE: Keep the engine at idle during this 90 second test.

0 seconds - 90 seconds

Start test **End test**

Test length: 90 seconds only

E. **At 90 seconds**, read the pressure reading.

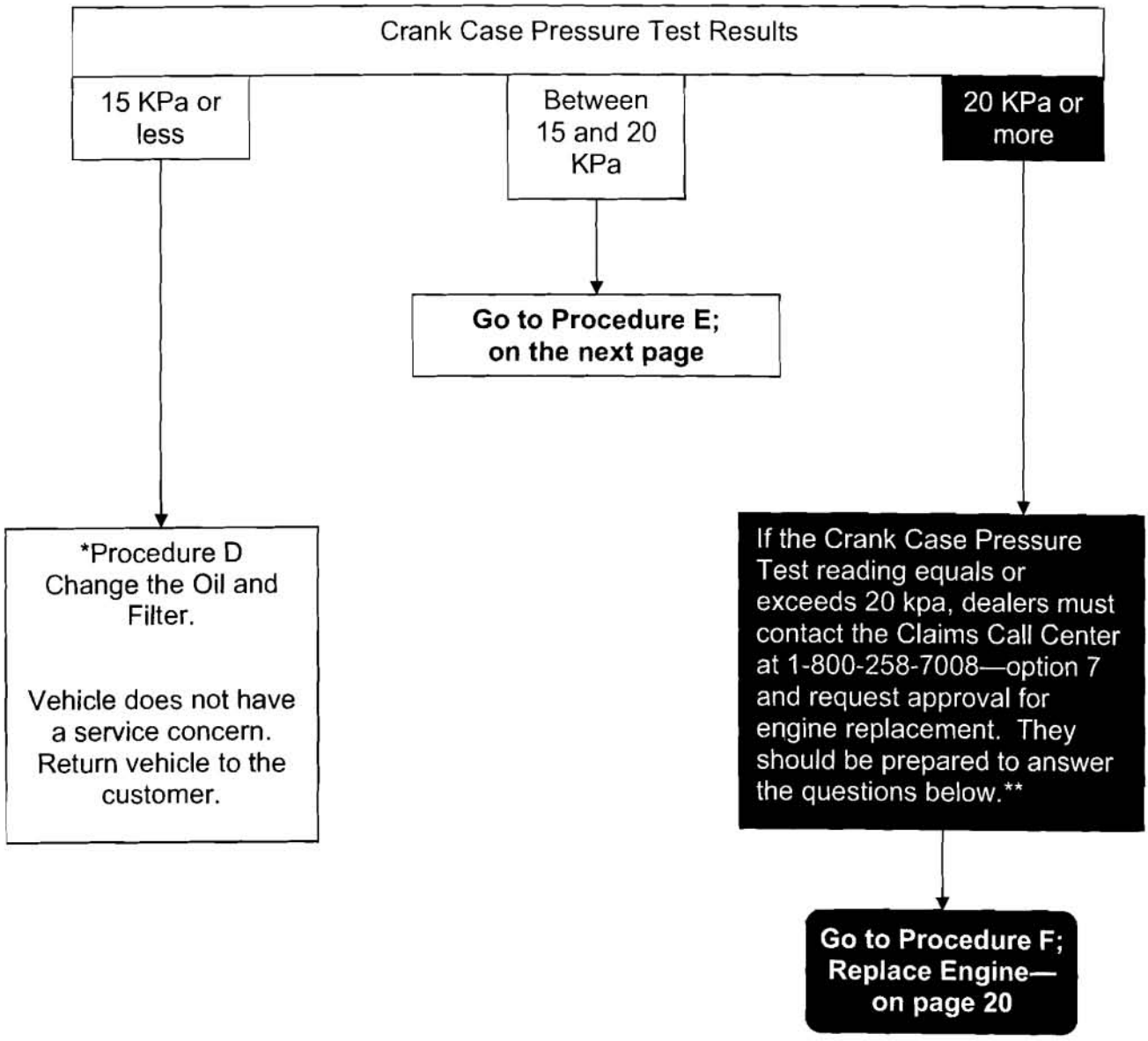
- Write the pressure reading on the repair order.

20. Turn OFF the engine.

21. **Important**: Vent the crankcase by removing the plug from the valve cover PCV breather hose first.
22. Remove remaining plugs / caps, reinstall and clamp hoses in their original positions.

23. See Test Results Flow Chart on the next page.

Test Results Flow Chart



* Procedure D is only an oil and filter change. This bulletin does not have instructions for Procedure D. If needed, refer to the Service Manual for Instructions on changing the oil and filter.

** Questions that are likely to be asked for engine replacement approval:

1. How many miles were driven between the last oil change and current mileage?
2. How far down was the oil on the dipstick?
3. Was the engine at operating temperature?
4. What was the Crankcase pressure reading?
5. Was the measurement obtained at the end of 90 seconds?

PROCEDURE E: (if needed)

- **COLLECT / SEND OIL SAMPLE FOR ANALYSIS**
- **ENGINE OIL FLUSH**
- **INSTALL NEW OIL PAN**

Collect / Send Oil Sample for Analysis

1. Run the engine at idle until it is at operating temperature.

   NOTE:

   - The oil sample should be collected while the engine is warm.
   - If you have just finished the Crank Case Pressure Test, the engine is at operating temperature.

2. Turn the ignition OFF.

   NOTE:

   - You will be collecting the oil sample from the stream of oil as it drains from the oil pan.
   - The collection bottle should be ready to use before removing the drain plug.

3. Prepare the oil sample bottle for oil collection (remove the lid and set the bottle in a convenient place).

   NOTE: Don't put the label on the bottle at this time.

4. Clean the area around the drain plug.

5. Remove the oil drain plug.

6. Allow oil to drain for about 2 seconds.

   NOTE: The oil sample should not be taken from the first oil to drain from the pan.

7. Hold the sample bottle in the stream of oil.

8. Completely fill the sample bottle.

9. Install cap and thoroughly clean the bottle.

10. Prep and mail the sample bottle to the laboratory.

    NOTE: Don't get oil on the label or other paper documentation.

    a. Apply the "Peel and Stick" label—from the Owner Notification Letter—on the top of the blank label supplied in the oil sample kit.
        - If the Owner Notification Letter "Peel and Stick" label is not available, fill in <u>all</u> required information on the blank label. Please print legibly.

    b. Stick the prepared label to the outside of the sample bottle.

    c. Give the bottle to the appropriate dealer staff for mailing.

Oil Sample Kit contents:

- Blank label
- Sample bottle
- Laboratory address label
- Mailing envelope (postage pre-paid)
- One of the following: plastic bag, box, or larger bottle

Additional Oil Sample Kits are available—at no cost—from TECH-MATE at 1-800-662-2001.

Engine Oil Flush

11. After collecting the oil sample, finish draining the engine oil and reinstall the drain plug.

12. Install a new oil filter.

13. Refill the engine with oil.

14. Start the engine and run it at idle until it is at operating temperature.

15. Drain engine oil again.

16. Remove the oil filter again.

NOTE: Do not refill the engine oil at this time.

Install New Lower Oil Pan

17. Remove the bolts from the lower engine oil pan.

NOTE: Pan bolts will be reused.

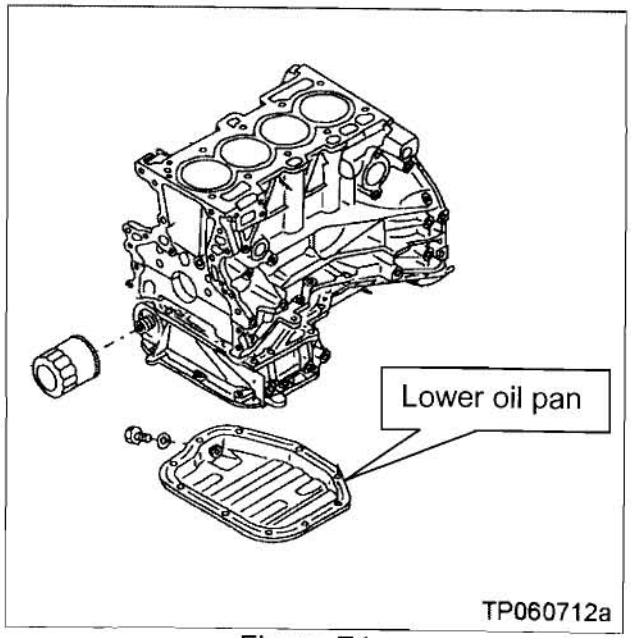


Figure E1

18. Use special tool to cut pan sealant.

    - Special tool J-37228 is available from TECH-MATE at 1-800-662-2001.

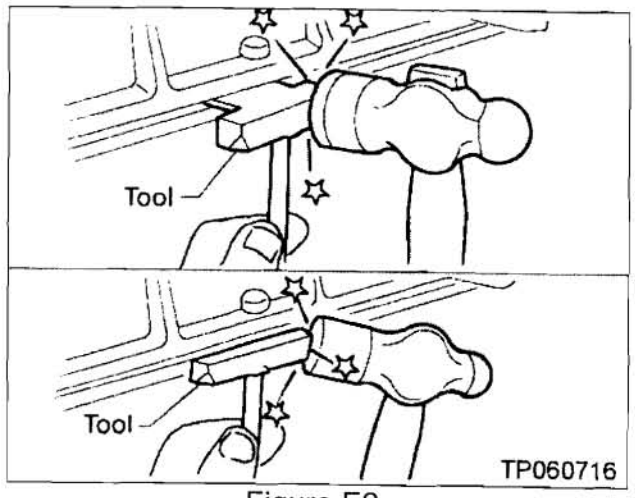


Figure E2

19. Completely clean all of the old sealant off of the upper oil pan.

20. Apply sealant to the new lower oil pan as shown.

    - Use RTV Silicone (Ultra Gray)—Nissan P/N 999MP-AM003P or equivalent.

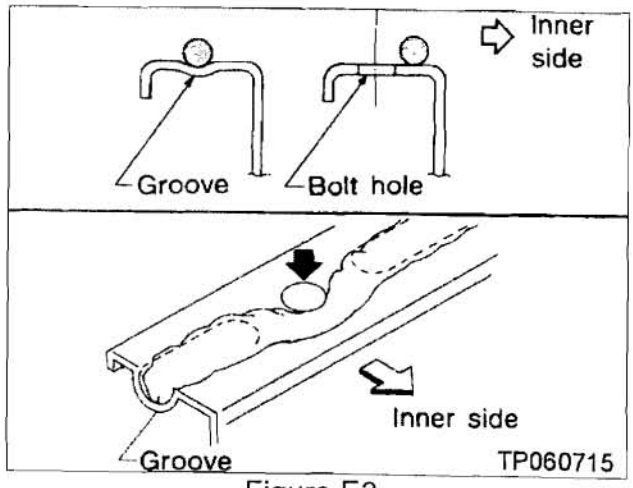


Figure E3

21. Install the new lower oil pan; tighten the bolts in the order shown.

    Torque spec:
    6.4 – 7.5 N.m (0.65 – 0.76 kg-m,
    57 – 66 in-lb)

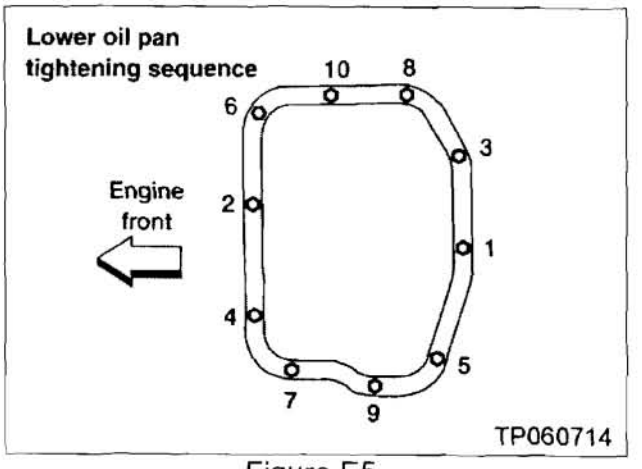


Figure E5

22. **Important:** Wait more than 1 hour before refilling the engine oil.

23. Refill the engine oil.

24. Install a new oil filter.

25. Return the vehicle to the customer.

PROCEDURE F: REPLACE ENGINE (if needed)

1. Record all radio station presets.

2. Make sure the ignition key is in the OFF position.

3. Disconnect the negative battery cable.

4. Refer to the Service Manual for engine replacement information.

   NOTE:
   - This bulletin does not contain a step-by-step engine replacement procedure. Use the Service Manual as the main source for engine replacement procedures.
   - Appendix C on page 43 provides informational tips related to replacing an engine. It is recommended that you review these tips before replacing the engine.

5. Place a check mark ☑ next to each item in the After Engine Replacement Check List on the next page.

6. Perform Final quality checks (see Appendix D on page 59).

After Engine Replacement Check List

Before Starting the Engine

- [ ] Engine oil is filled to the H mark (top of cross hatch)
- [ ] Cooling system is full
- [ ] Power steering fluid is full
- [ ] If applicable: Automatic transmission fluid is filled to the "Cold" level
- [ ] No Fuel Leaks: Turn the ignition ON (do not start the engine). With the fuel lines pressurized, check of leaks at fuel line connection points.

Start Engine and Let it Idle

- [ ] No unusual noises or vibrations
- [ ] No fuel leaks
- [ ] No engine oil leaks
- [ ] No power steering fluid leaks
- [ ] No transmission fluid leaks

Allow Engine to Run Until Fully Warm, Then Raise Engine RPM to Approximately 2500

- [ ] No unusual noise or vibrations
- [ ] No fuel leaks
- [ ] No engine oil leaks
- [ ] No power steering fluid leaks
- [ ] No transmission fluid leaks
- [ ] No exhaust leaks

With Engine At Idle

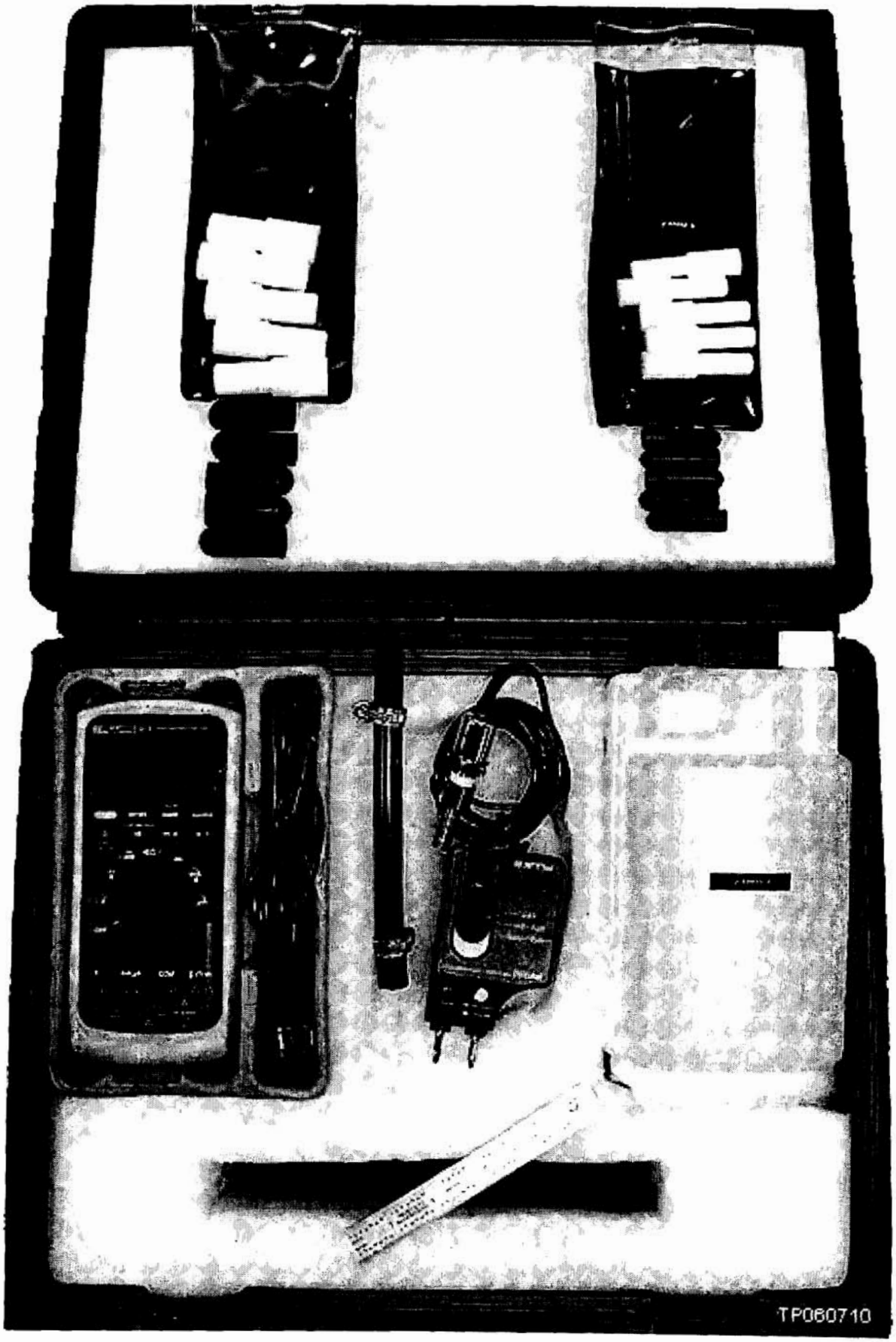
- [ ] If applicable: Automatic transmission fluid is filled to the "HOT" level
- [ ] Heater functions correctly
- [ ] Air conditioning functions correctly

Turn Ignition/Engine OFF

- [ ] Engine oil level is correct
- [ ] Power steering fluid level is correct
- [ ] Coolant reservoir level is correct

APPENDIX INDEX

APPENDIX A: SPECIAL TOOL KIT



APPENDIX B: COMPLETE ECM REPROGRAMMING INSTRUCTIONS

Before beginning reprogramming, use CONSULT-II to make sure there are **no DTCs stored** in the ECM.

Repairs for stored DTCs must be done before performing the ECM reprogramming. Use ASIST for DTC diagnostic and repair information.

Repairs for stored DTCs are not related to this campaign.

Reprogramming should be performed by an OBD-II Certified technician.

Check the Current ECM Part Number (P/N)

1. With the Diagnostic Card (Red/white card) in CONSULT-II and CONSULT-II turned "ON", print the ECM Part Number as follows:

   START(Nissan) >> **ENGINE** >> **ECM PART NUMBER** >> **COPY**

2. Attach this printout to the Repair Order.
   - Figure A1 is an example of the ECM Part Number printout.

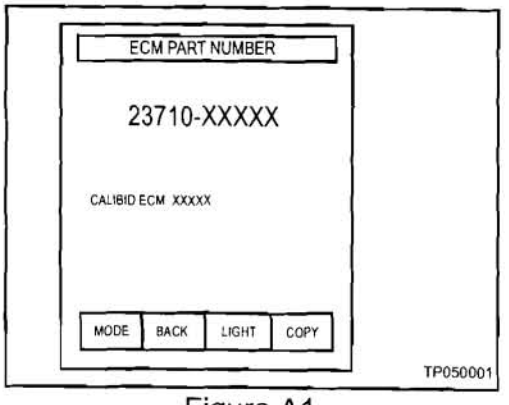


Figure A1

3. Compare your vehicle's ECM P/N to those shown under **Current ECM P/N** in Chart A, on the next page.

Chart A

MODEL	Vehicle Configuration	From → Current ECM P/Ns Before Reprogramming	To → New ECM P/N's
2006 Altima with QR25DE engine	A/T 50 state/Canada (ULEV)	23710-ZD80A, -ZD80B, -ZD80C, ZD80D, -ZD80E	23710-ZD88A
	A/T with ASCD 50 state/Canada (ULEV)	23710-ZD81A, -ZD81B, -ZD81C, ZD81D, -ZD81E	23710-ZD89A
	M/T 50 state/Canada (ULEV)	23710-ZD82A, -ZD82B, -ZD82C, ZD82D	23710-ZD82E
	M/T with ASCD 50 state/Canada (ULEV)	23710-ZD83A, -ZD83B, -ZD83C, ZD83D	23710-ZD83E
	A/T CAL (SULEV)	23710-ZD84A, -ZD84B, -ZD84C, ZD84D	23710-ZD84E
	A/T with ASCD CAL (SULEV)	23710-ZD85A, -ZD85B, -ZD85C, ZD85D	23710-ZD85E
	M/T CAL (SULEV)	23710-ZD86A, -ZD86B, -ZD86C, ZD86D	23710-ZD86E
	M/T with ASCD CAL (SULEV)	23710-ZD87A, -ZD87B, -ZD87C, ZD87D	23710-ZD87E
2006 Sentra with QR25 engine	A/T 50 state/Canada	23710 – ZG50B, -ZG50C, -ZG50D, -ZG58A	23710–ZG58B
	A/T w/NATS 50 state/Canada	23710 – ZG51B, -ZG51C, -ZG51D, -ZG58E	23710–ZG58D
	M/T 50 state/Canada	23710 – ZG52B, -ZG52C, -ZG52D, -ZG59A	23710–ZG59B
	M/T w/NATS 50 state/Canada	23710 – ZG53B, -ZG53C, -ZG53D, -ZG59E	23710–ZG59D

A. If your vehicle's ECM P/N matches one of the Current ECM P/N's in the chart above:

- **Go to Reprogramming the ECM** (next page).

B. If your vehicle's ECM P/N does not match one of the Current ECM P/N's in the chart above:

- This campaign may not apply or has already been done on this vehicle.
- **Recheck Service Comm (campaign ID PB023) to confirm the vehicle you're working on is affected by this campaign.**

Reprogramming the ECM

Reprogramming should be performed by an OBD-II Certified technician.

The reprogramming procedure involves three general steps:

- Setting up
- Download (transfer) data from ASIST into CONSULT-II.
- Download new data from CONSULT-II into the vehicle (Reprogram the ECM).

Setting Up:

1. Install the Reprogramming Card into CONSULT-II.
   - Make sure CONSULT-II is disconnected from the vehicle and turned OFF.
   - The Reprogramming Software Card is the "orange" Card.
   - Use slot A—top slot (see Figure A2).

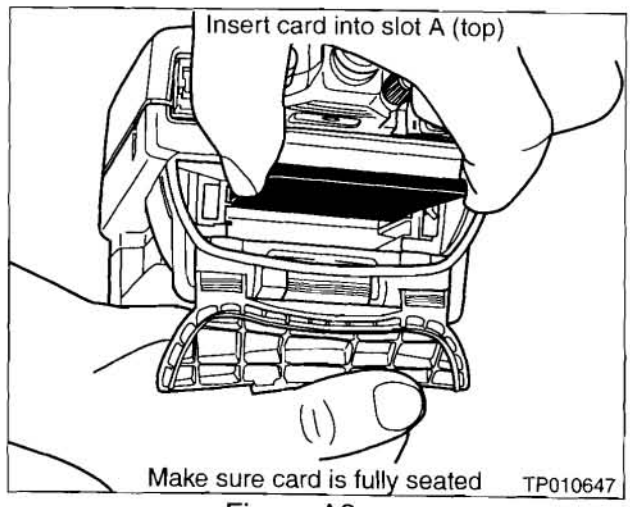


Figure A2

2. Connect the AC power supply to CONSULT-II.

3. Connect CONSULT-II to the ASIST PC with the special Ethernet cable (P/N 02002554 is printed on the cable).
   A. Connect one end to CONSULT-II at the "PC port".
   B. Connect the other end to the ASIST PC at the "Ethernet card" connection port.

4. Confirm the CONSULT-II date and time are correctly set as follows:
   (This is necessary to provide a valid print-out for warranty claims.)
   A. With the Reprogramming card in slot A, turn ON CONSULT-II.
   B. Touch **SUB MODE**.

C. Touch **SET DATE** (see Figure A3).

1) If the date is not correct, touch the **MONTH**, **DAY** or **YEAR** as needed. Then adjust it by using arrow keys. Once done, press **SAVE**, press **BACK**, and go to step D.

2) If the date is OK, press **BACK** and go to step D.

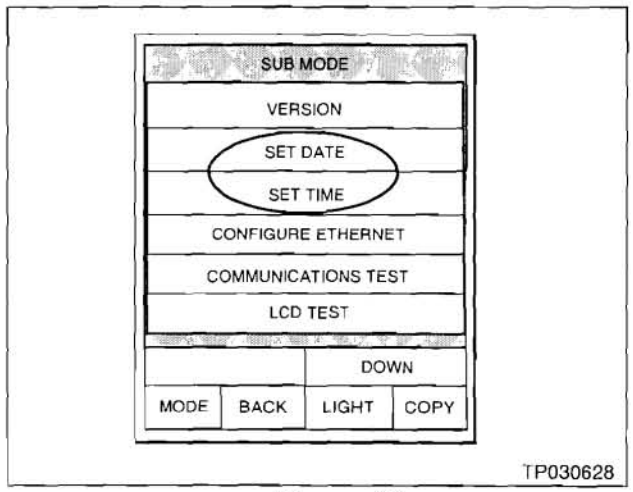


Figure A3

D. Touch **SET TIME** (see Figure A3).

1) If the time is not correct, touch the **HOUR**, **MINUTE** and **AM/PM** Adjust by using arrow keys. Once done, press **SAVE**, press **BACK** and go to step 5.

2) If time is OK, press **BACK** and go to step 5.

IMPORTANT NOTE:

- If your ASIST PC is already being used to perform ECM Reprogramming, proceed to step 5 on the next page.
- **If you are unsure whether your ASIST PC has already been set up for ECM Reprogramming, look in ASIST, under "CONSULT Utilities" – "CONSULT-II Info" – "NISSAN" – "ECU Reprogramming". This will give you instructions for setting the Ethernet (IP) Address of the ASIST PC and CONSULT-II. You will need to do this before performing ECM reprogramming.**

Download (Transfer) Data From ASIST into CONSULT-II

5. From the ASIST PC main menu screen, select **"CONSULT UTILITIES"** (see Figure A4).

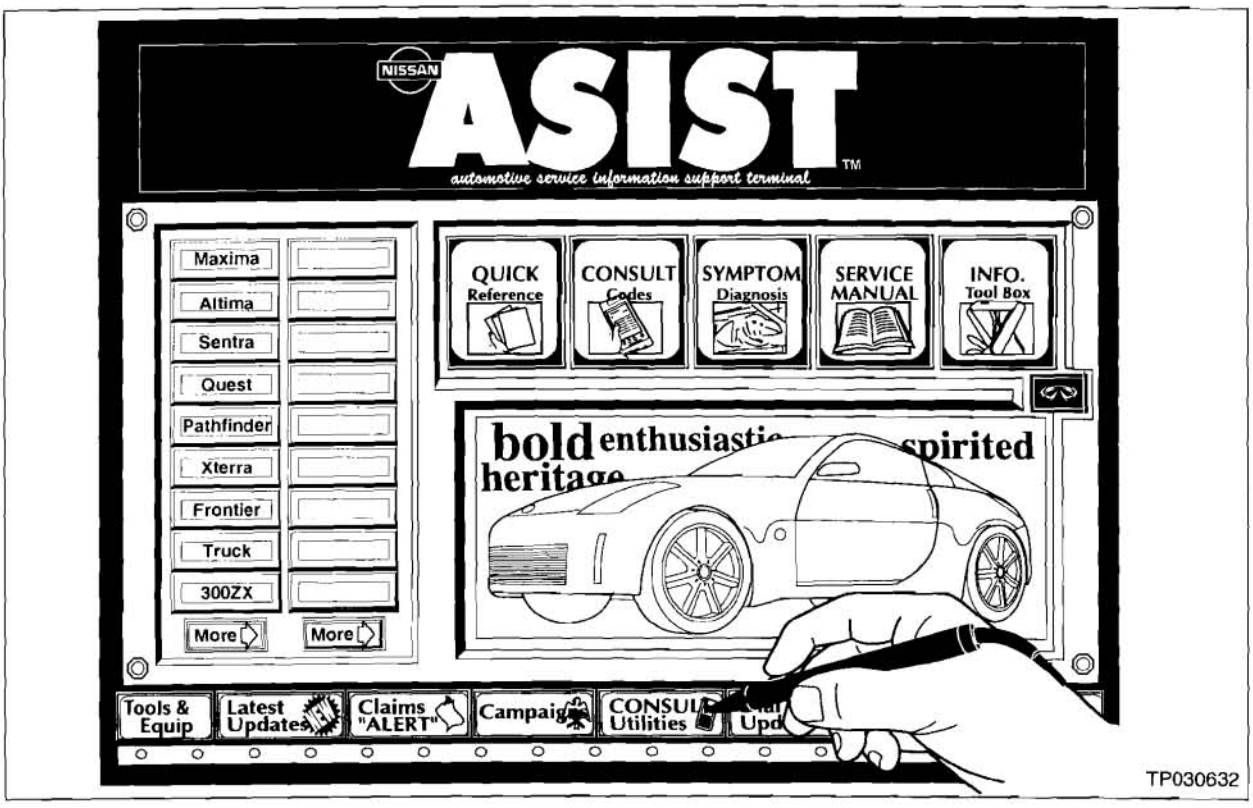


Figure A4

6. From the **"CONSULT UTILITIES"** screen, select **"ECM / TCM DATA"** (see Figure A5).

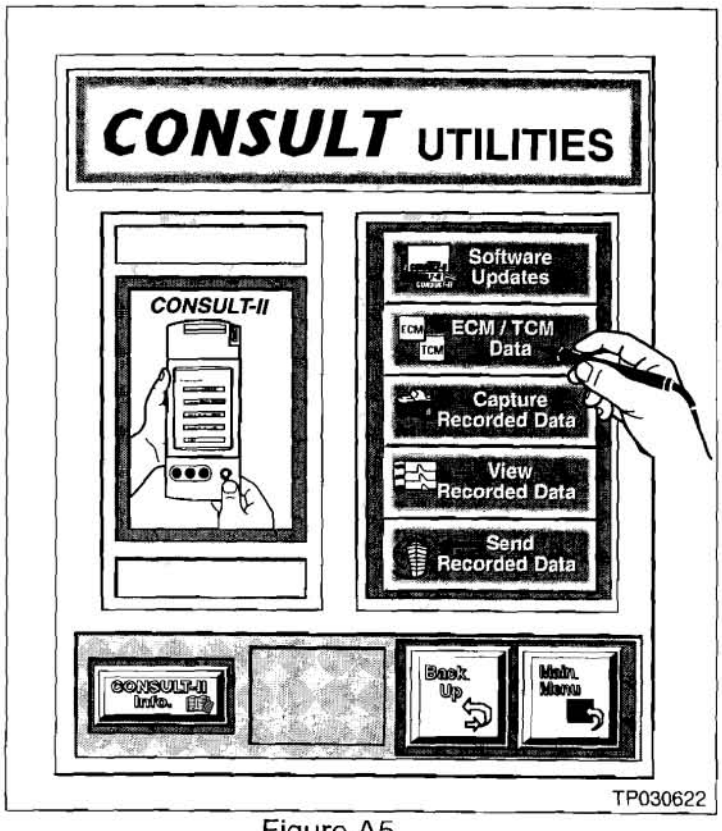


Figure A5

7. Select the **"ECU REPROGRAMMING DATA"** (see Figure A6) as follows:

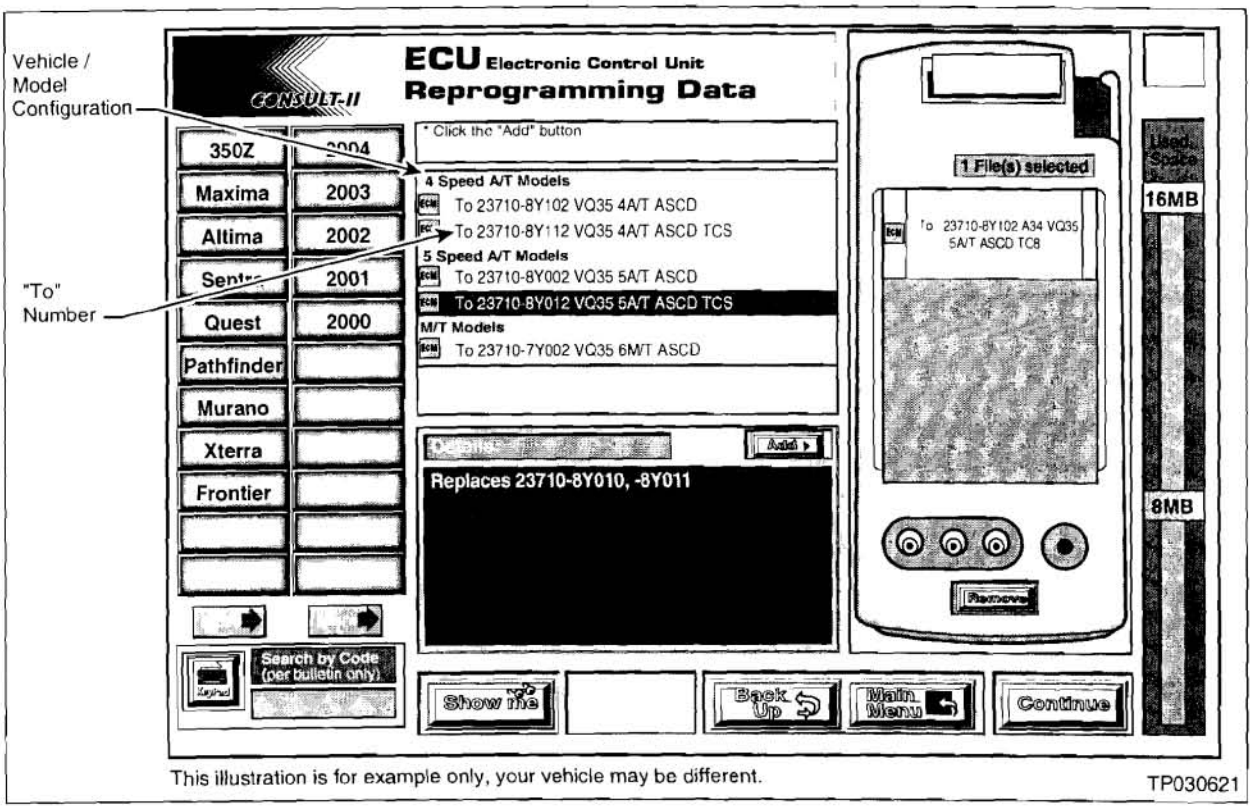


Figure A6

A. Select vehicle model and model year.

B. Select the correct reprogramming data:

1) Locate the specific "Model Configuration" (Example: QR25 A/T ASCD).

NOTE:
- Model Configuration may include items like engine type, transmission type, and vehicle options such as ASCD, TCS, ABS, etc.
- Vehicle configuration can be verified using the "Current ECM P/N" in Chart A on page 25.

2) Select (click on) the "To" number.

NOTE: The "To" number reads: 23710-XXXXX.

3) Write the "To" number on the Repair Order. You will need it later in the reprogramming process.

C. Click on the "Add" button to add data to the "File(s) selected" list. This list is on the right side of the screen.

D. Click the **"CONTINUE"** button to proceed with CONSULT-II setup.

8. Turn ON CONSULT-II as shown in Figure A7.

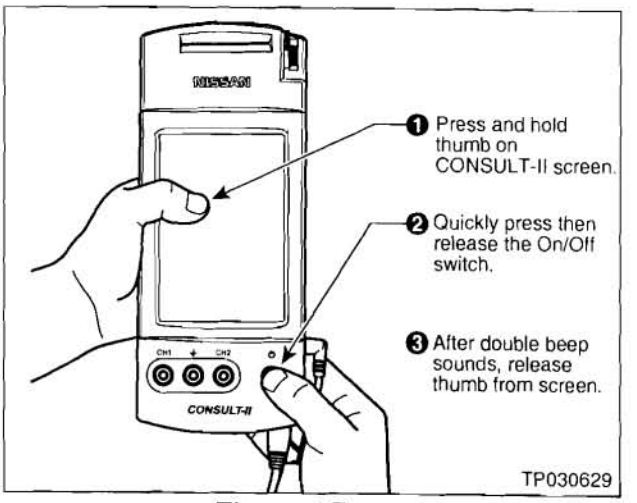


Figure A7

9. Select **Transfer files via LAN** (see Figure A8).

NOTE: If you accidentally choose a menu option other than "Transfer Files via LAN"; turn CONSULT-II OFF, and then back ON as shown in Figure A7 above.

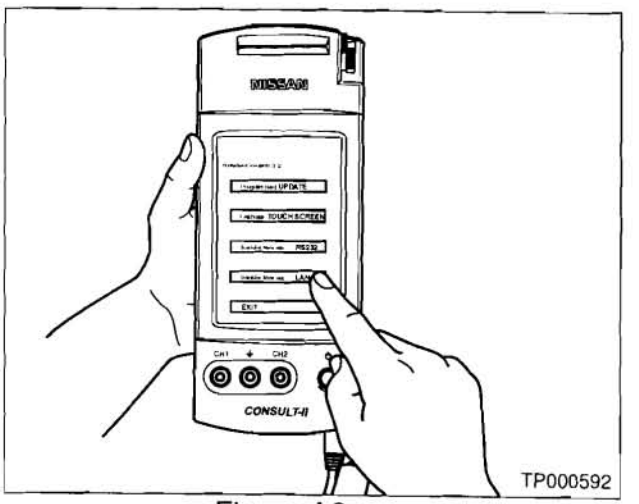


Figure A8

Set the CONSULT-II unit down for now and go to your ASIST PC.

10. Transfer (download) data from ASIST into CONSULT-II.

A. On the ASIST screen, click on **"Transfer"** (see Figure A9).

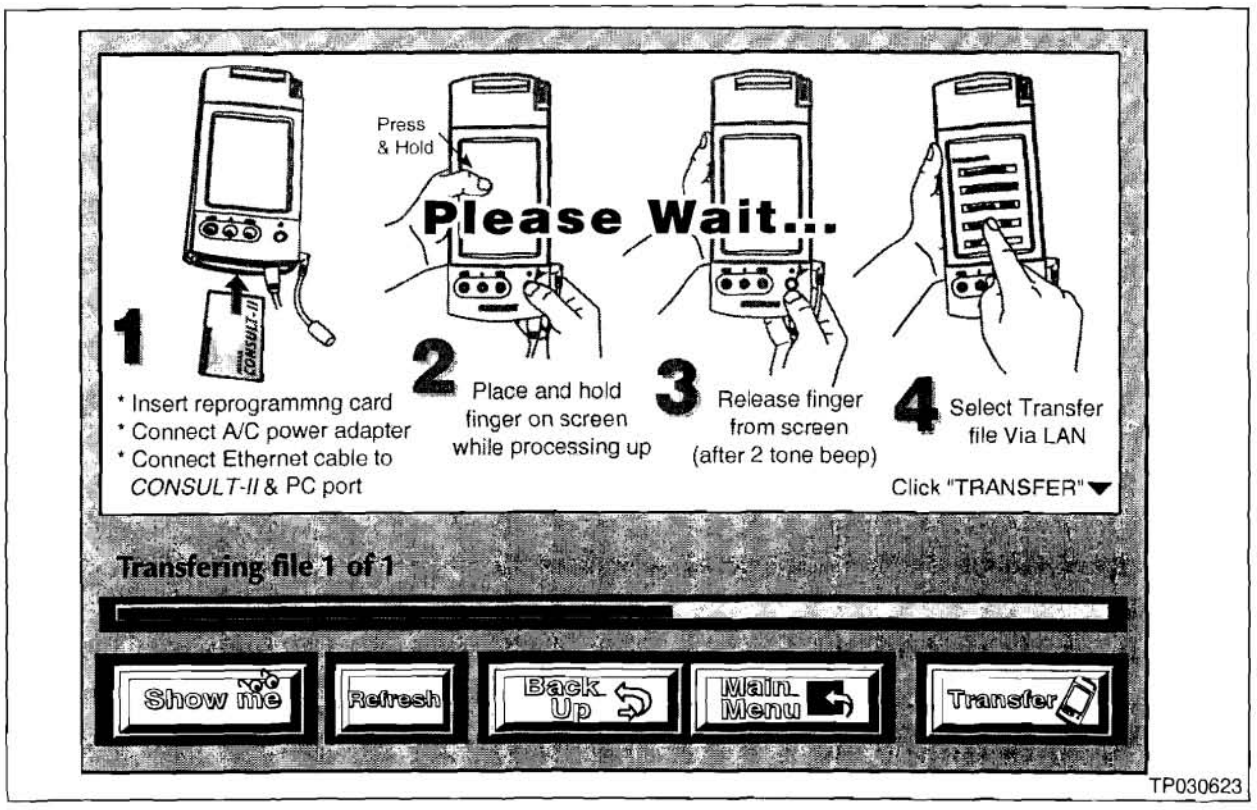


Figure A9

- Data transfer will take about 15 seconds.
- Transfer progress is displayed on the ASIST screen.

B. Wait until the data transfer is complete (see CAUTION below).

CAUTION: DO NOT DISCONNECT THE ETHERNET CABLE UNTIL COMPLETE IS DISPLAYED AS SHOWN IN FIGURE A10 ON THE NEXT PAGE.

- If the cable is disconnected before "File Transfer Complete" is displayed, you **MUST** restart the transfer (download) procedure; otherwise ECM damage can occur.
- If the cable is disconnected during the transfer; wait for ASIST to display an "error" message, then click on "OK". Select "Backup", then return to step 6.

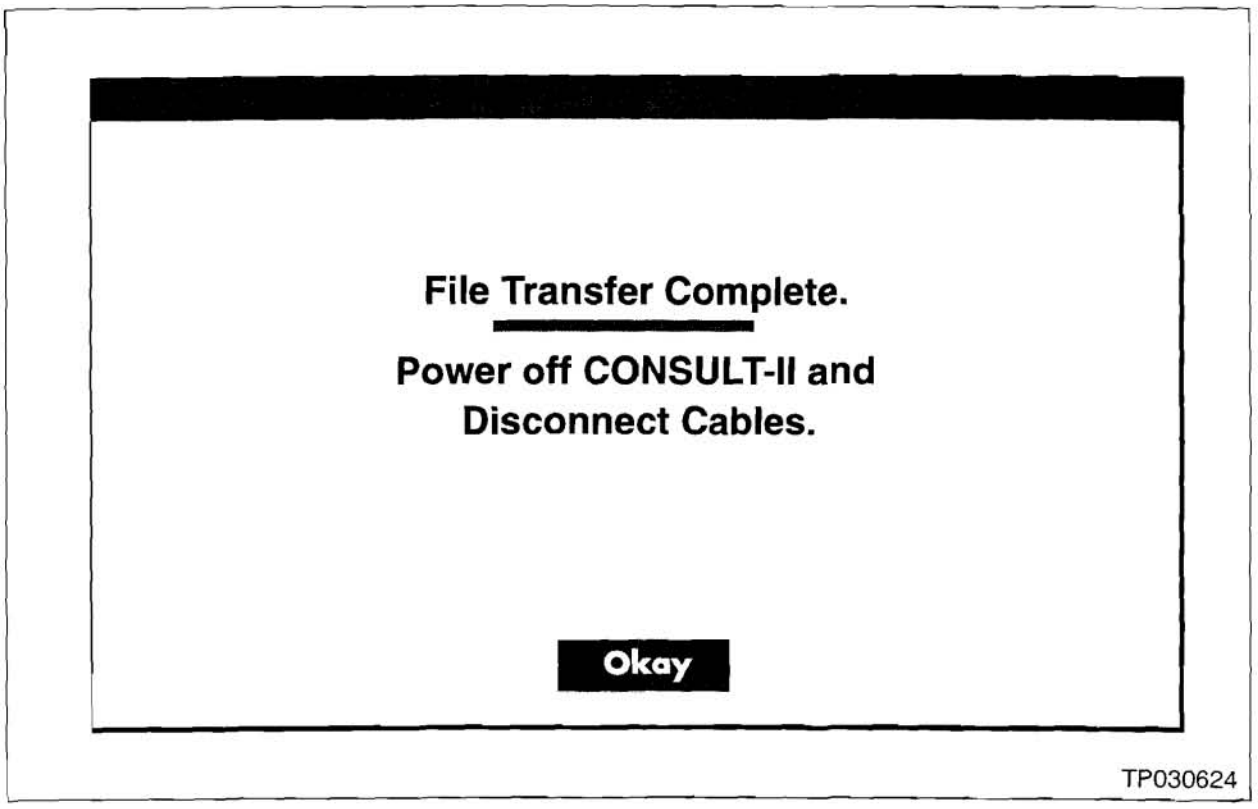


Figure A10

11. When transfer is complete as shown in Figure A10.

    A. Select (click on) **"Okay"**, then **"MAIN MENU"**.

    B. Turn OFF CONSULT-II.

    C. Disconnect the AC power cord and the Ethernet cable from CONSULT-II.

Download New Data From CONSULT-II into the Vehicle (Reprogram ECM)

CAUTION:

- Perform this operation in four (4) sections. DO NOT SKIP any of these sections.
- They must be performed in order, 1 through 4.

Section 1: Connect a battery charger and CONSULT-II to the vehicle.

Section 2: Confirm the vehicle battery voltage and CONSULT-II "Charger Input".

Section 3: Perform ECM Reprogramming.

Section 4: Perform ECM Reprogram Confirmation.

Section 1: Connect a battery charger and CONSULT-II to the vehicle.

12. Confirm the ignition switch is OFF.

13. Connect a battery charger to the vehicle battery.

    A. Set the charger at a low charge rate (trickle charge).

IMPORTANT

Do not perform ECU Reprogramming without connecting a battery charger to the vehicle's battery. Permanent ECU damage can occur.
Connecting a vehicle battery charger will maintain:

- Proper CONSULT-II power supply during reprogramming—very important if the CONSULT-II battery is low.
- Vehicle battery voltage level—especially on late model vehicles where the cooling fans come on during reprogramming.

14. Connect CONSULT-II to the vehicle using the DLC-II cable with black Converter Box (see Figure A11 on the next page).

VERY IMPORTANT:

- Make sure the DLC-II is straight and fully plugged in to the vehicle.
- Make sure all other DLC-II cable connections shown in Figure A11 are connected properly.

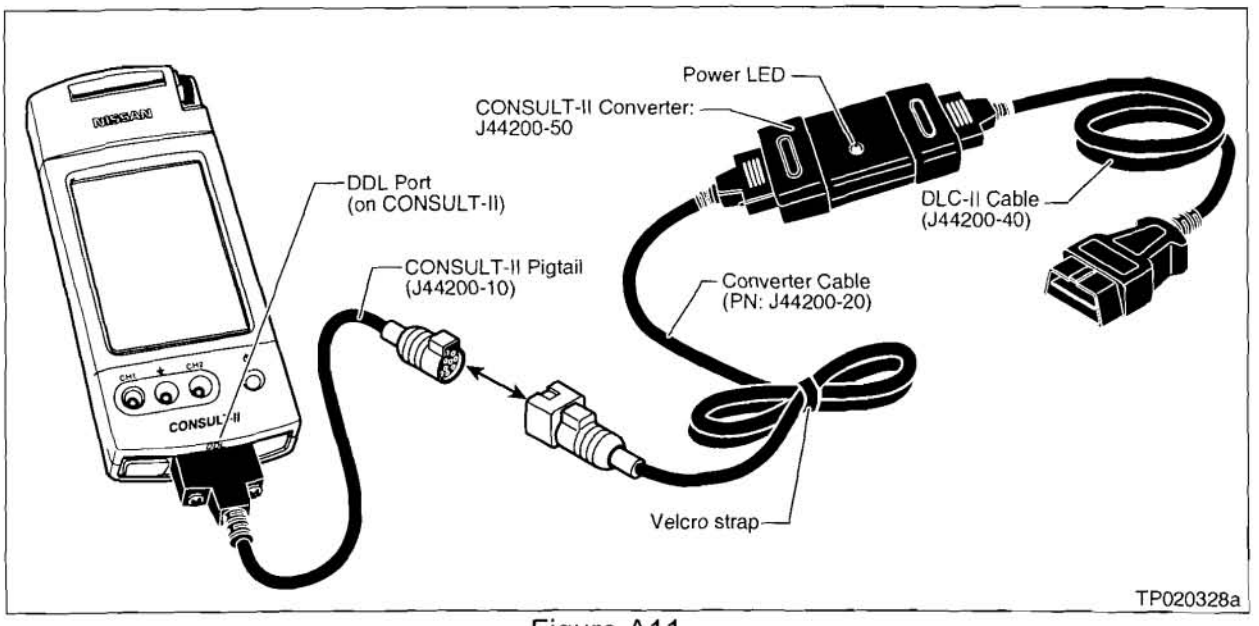


Figure A11

CAUTION

- Nissan requires the use of essential tools shown in Figure A11 when performing ECM reprogramming.
- J44200-10 "Pigtail" should not be removed from the CONSULT-II DDL Port. This "Pigtail" allows use of the stronger "quick disconnect" cable set.
- If cables are very often changed at the DDL Port (base) of the CONSULT-II unit, cable connector pin damage may result.
- If there is connector pin damage, ECM reprogramming may fail. Permanent ECU damage can occur.

15. Turn ON the ignition switch (do not start the engine).

    - CONSULT-II will turn ON automatically (see Figure A12).
    - Confirm that all electrical loads* (except for the ignition) are OFF.

    * Headlights, defroster, A/C, Audio (radio), and cellular telephone, etc.

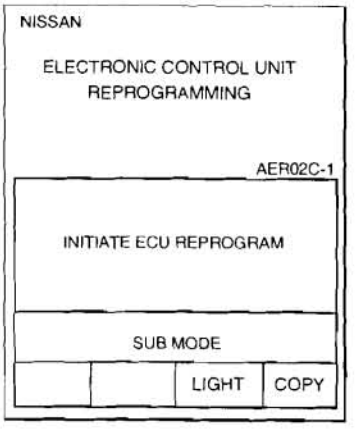


Figure A12

16. Roll down the driver's window part way, exit the vehicle, close the door, and hang the CONSULT-II unit on the outside of the window (see Figure A13).

    - This step is necessary to ensure the CONSULT-II and DLC-II cable will not be disturbed during reprogramming.

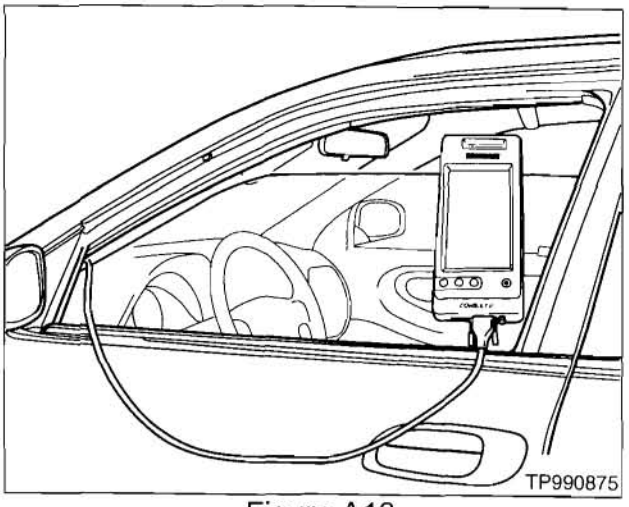


Figure A13

CAUTION: DO NOT connect the CONSULT-II AC power supply for Steps 17, 18 and 19.

Section 2: Confirm the vehicle's battery voltage and CONSULT-II "Charger Input"

17. Press **SUB MODE** (see Figure A14) then:

    A. Press **DOWN** 4 times.

    B. Select **BATTERY CHARGE**.

18. Check the CONSULT-II's "Charger Input" reading (see Figure A14).

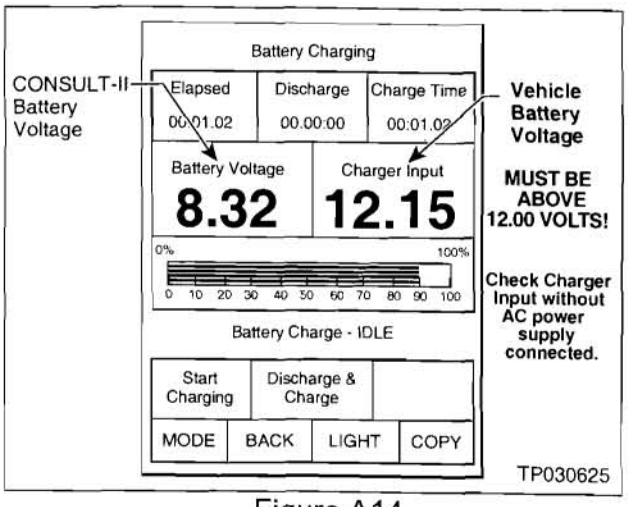


Figure A14

NOTE:

- **"Battery Voltage"** is the voltage level of CONSULT-II's battery.
- **"Charger Input"** is the voltage level of the vehicle's battery; **(it must be above 12 volts.)**.

19. The "Charger Input" reading **MUST** be above 12 volts (see Figure A14).

- A reading above 12 volts confirms;

  a. The DLC-II is properly connected to the vehicle,

  b. The vehicle battery voltage is sufficient for ECM reprogramming, and

  c. CONSULT-II has a sufficient power supply to perform ECM reprogramming.

- If the vehicles battery voltage ("Charger Input") is below 12 volts, one or more of the following may be the cause:

  a. The battery charger you hooked up in section 1 is not charging the battery (poor connection or it is not working).

  b. The DLC-II does not have a good connection to the vehicle (not straight).

  c. The DLC-II cable may have a malfunction (damaged wire or pins).

  d. The CONSULT-II Converter (J44200-50 / black box) is not working correctly

CAUTION:

- Do not attempt ECU Reprogramming if the vehicle's battery voltage is below 12 volts.
- Permanent ECU damage can occur if the vehicle battery does not maintain the minimum voltage during ECU Reprogramming.
- If "Charger Input" is above 12 volts, power from the vehicle battery will keep CONSULT-II's power supply at the correct level during reprogramming. (see Figure A14).

Section 3: ECM Reprogramming

20. Press **INITIATE ECU REPROGRAM** (see Figure A15), then
    A. Press **ECM**
    B. Review the precaution
    C. Press **NEXT**

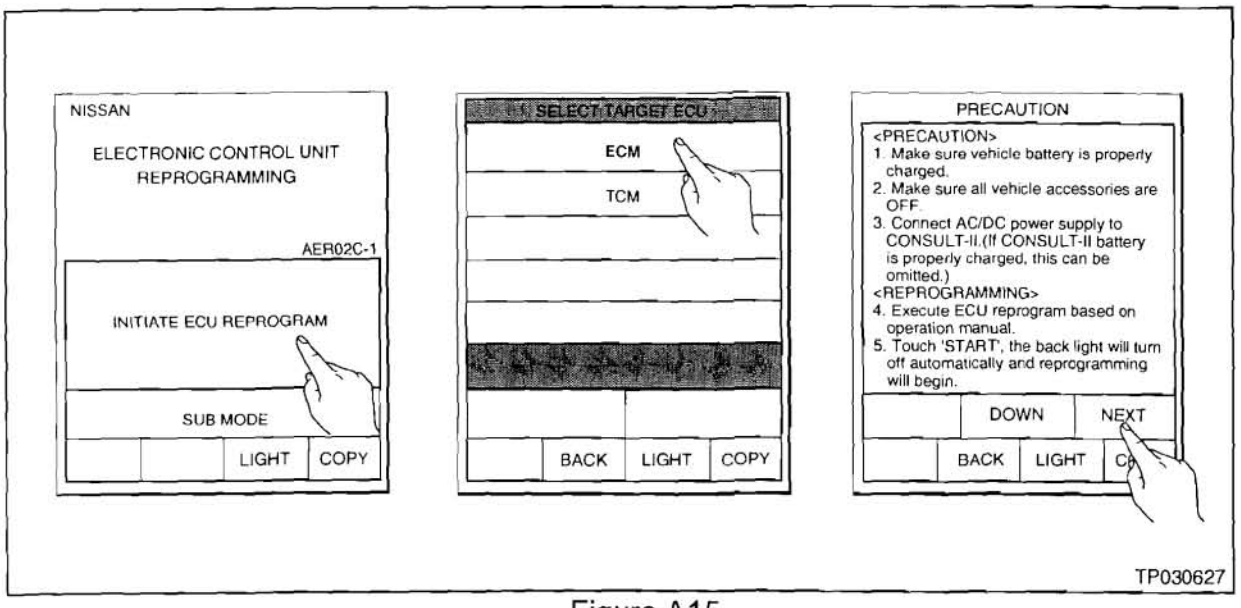


Figure A15

21. Press **CHECK ECM P/N** to "confirm" (take note of) the current ECM part number (see Figure A16).

NOTE: This is the vehicle's ECM part number BEFORE Reprogramming.

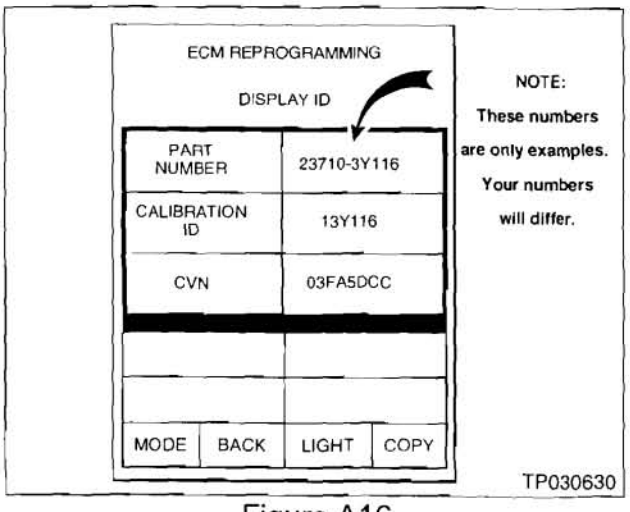


Figure A16

22. Press **COPY** to print the current ECM part number for future reference.

23. Press **BACK** to return to the main menu.

24. Select the ECM program to install (see Figure A17).

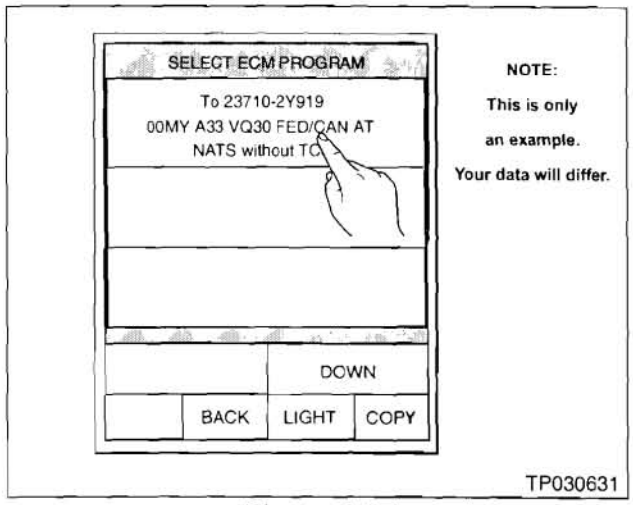


Figure A17

25. The **"REPROGRAM START"** window should appear (see Figure A18).

- **NOTE:** If you get an error message, refer to the ECU Reprogramming Software Operations Manual.

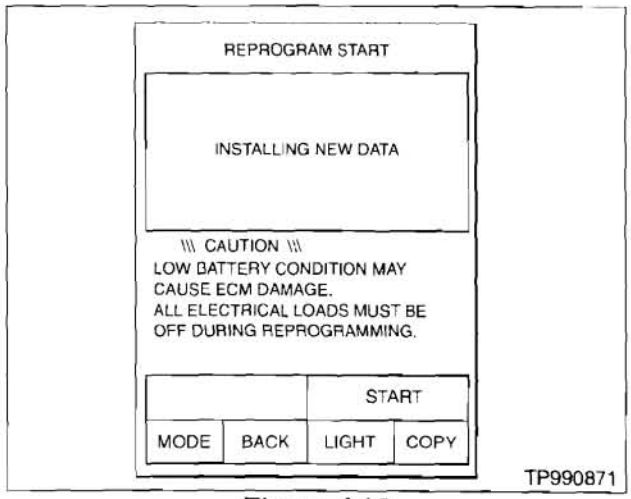


Figure A18

CAUTION DURING REPROGRAMMING:

- Do not unplug CONSULT-II from the vehicle during reprogramming. Permanent ECM damage can occur.
- Do not open any door or the trunk during reprogramming.
- On some vehicles, the cooling fans may come on during reprogramming. <u>This is a normal condition.</u> Do not disconnect the cooling fans. Forgetting to reconnect them may cause severe engine damage. A vehicle battery charger is needed* to maintain the battery voltage level during reprogramming.

  * You should have hooked up a battery charger in Section 1

26. Press **START**.

- After a few seconds, the window shown in Figure A19 will appear.
- CONSULT-II will now turn OFF its screen backlight.
- When the screen backlight goes OFF, ECM reprogramming has started.

  NOTE: This process will take from 10 to 20 minutes.

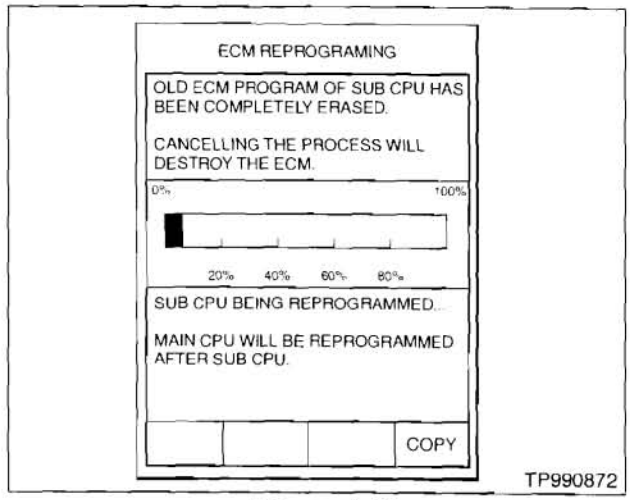


Figure A19

CAUTION: You must leave the vehicle and the CONSULT-II unit "undisturbed" (don't touch) until reprogramming is complete.

NOTE: If the CONSULT-II screen gives you an error message "Unmatch of Vehicle Data":

- You tried to reprogram with an incorrect data file, or
- You are trying to reprogram with a file that is already in the ECM.

27. When the Reprogramming is complete, CONSULT-II will "beep", turn the screen backlight back ON and automatically print out a report (see Figure A20).

- Remember it may take up to 20 minutes.
- Attach the print-out to the repair order for future reference.

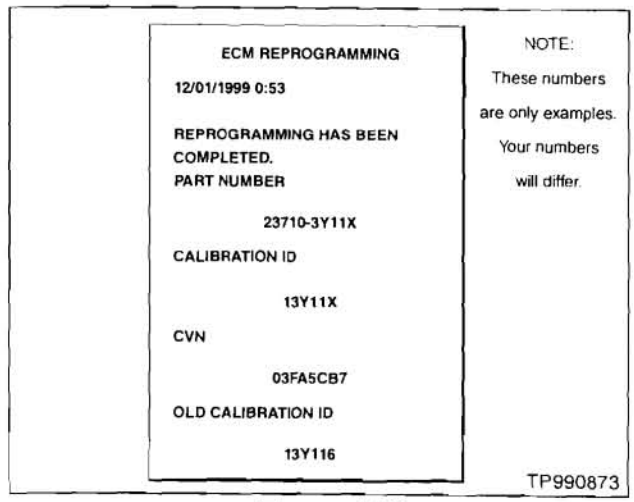


Figure A20

CAUTION

If CONSULT-II prints "REPROGRAMMING UNEXPECTEDLY TERMINATED":

- The ECM has been permanently damaged and will require replacement.
- In this case, perform steps A through F on page 42.

Do not start the engine with the damaged ECM installed.

This chart is provided as a reference to confirm the correct final ECM P/N after reprogramming

Chart A

From → To

MODEL	Vehicle Configuration	ECM P/Ns Before Reprogramming	Final / New ECM P/N's
2006 Altima with QR25DE engine	A/T 50 state/Canada (ULEV)	23710-ZD80A, -ZD80B, -ZD80C, ZD80D, -ZD80E	23710-ZD88A
	A/T with ASCD 50 state/Canada (ULEV)	23710-ZD81A, -ZD81B, -ZD81C, ZD81D, -ZD81E	23710-ZD89A
	M/T 50 state/Canada (ULEV)	23710-ZD82A, -ZD82B, -ZD82C, ZD82D	23710-ZD82E
	M/T with ASCD 50 state/Canada (ULEV)	23710-ZD83A, -ZD83B, -ZD83C, ZD83D	23710-ZD83E
	A/T CAL (SULEV)	23710-ZD84A, -ZD84B, -ZD84C, ZD84D	23710-ZD84E
	A/T with ASCD CAL (SULEV)	23710-ZD85A, -ZD85B, -ZD85C, ZD85D	23710-ZD85E
	M/T CAL (SULEV)	23710-ZD86A, -ZD86B, -ZD86C, ZD86D	23710-ZD86E
	M/T with ASCD CAL (SULEV)	23710-ZD87A, -ZD87B, -ZD87C, ZD87D	23710-ZD87E
2006 Sentra with QR25 engine	A/T 50 state/Canada	23710 – ZG50B, -ZG50C, -ZG50D, -ZG58A	23710–ZG58B
	A/T w/NATS 50 state/Canada	23710 – ZG51B, -ZG51C, -ZG51D, -ZG58E	23710–ZG58D
	M/T 50 state/Canada	23710 – ZG52B, -ZG52C, -ZG52D, -ZG59A	23710–ZG59B
	M/T w/NATS 50 state/Canada	23710 – ZG53B, -ZG53C, -ZG53D, -ZG59E	23710–ZG59D

NOTE:

- Part numbers for ECM programs are subject to change.
- If a more recent part number is available for any of the ECM data (specified in the Chart above) the latest version should be used to complete this campaign repair.
- ASIST contains the latest version of all ECM data.

28. Press **END** to return to the main menu.

29. Turn the ignition switch OFF and CONSULT-II OFF.

30. **Wait more than 10 seconds, then turn the ignition switch ON for 1 second. Then, turn the ignition switch OFF again for 10 seconds (see Figure A21).**

    - This will reset ECM self learned Data.

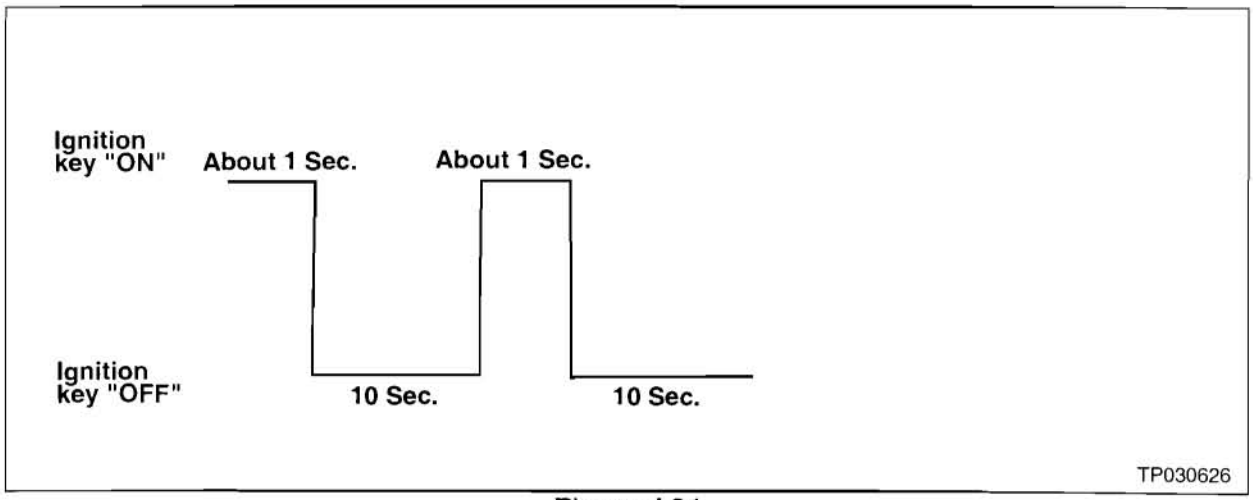


Figure A21

Section 4: Perform ECM Reprogram Confirmation.

31. Start the engine.

32. Check engine idle speed.

    - If idle speed is too low, perform IAVL (Idle Air Volume Learning). See the appropriate Service Manual (ESM) for this procedure.

      NOTE: If the engine will not idle, hold the engine RPM at about 2000, then slowly bring it down to an idle. IAVL can now be performed.

33. Confirm the engine is operating normally.

34. Make sure the Check Engine Light (MIL) is not ON.

    - If necessary, use CONSULT-II and the Diagnostic (red/white) Card to erase any DTC's that may have stored during the reprogramming procedure.

PROGRAMMING UNEXPECTEDLY TERMINATED **(See step 27):**

- The ECM has been permanently damaged and will require replacement.
- Perform steps A through F below.

CAUTION: Do not start the engine with the damaged ECM installed.

A. Turn the ignition OFF, turn CONSULT-II OFF, and DISCONNECT THE NEGATIVE TERMINAL OF THE VEHICLE BATTERY.

B. Attach the CONSULT-II print-out to the repair order for future reference.

C. Replace the damaged ECM.

D. Reconnect the negative battery cable.

E. Perform IAVL (Idle Air Volume Learning). See the appropriate Service Manual (ESM) for this procedure.

F. Check the new ECM's current P/N. Make sure it is the latest (newest) P/N—see step 21.

NOTE:

- A new ECM from the parts department may not have the newest program.
- If needed, return to step 5 of this procedure (Appendix B: ECM Reprogramming) and reprogram the new ECM with the latest available P/N. Be careful to follow each step exactly as written.

APPENDIX C: ENGINE REPLACEMENT TIPS

- **This bulletin <u>does not</u> contain a step-by-step engine replacement procedure.**
- It only provides informational tips related to replacing an engine. It is recommended that you review these tips before replaceing the engine.
- Please refer to the applicable Service Manual as your main source of information.
- The following informational tips are included:

  - Precautions
  - Removal Tips
  - Installation Tips
  - Torque Specifications
  - Special Tools

Precautions

- Use suitable covers to protect exterior (fenders, grille, etc.) and interior (upholstery, carpet, etc.) when performing this procedure.

- Make sure the parking brake is applied and the front and rear wheels are blocked to prevent vehicle movement.

- Do NOT start work until the cooling and exhaust systems are cooled off.

- Make sure the correct vehicle lift points are used when raising the vehicle. Also, make sure the vehicle is properly positioned (balanced) on the lift, considering that the engine will be removed.

- Use a torque wrench when installing nuts and bolts.

- Refer to the Torque Charts in Appendix C <u>and</u> the applicable Service Manual for Torque Specifications when re-installing and tightening nuts and bolts.

- Cover openings of any vehicle/engine systems that are disconnected/opened to keep out "foreign" materials from getting in.

- Carefully mark and arrange disassembled parts in an organized way for proper re-installation.

- Use care during disassmbly/re-assembly NOT to damage sliding or "mating" surfaces.

- Make sure all sliding and mating surfaces are clean and free of debris before re-assembly.

- Make sure the new engine has the alignment dowels installed in the rear of the block. There should be two of them (located diagonal to each other).

- For vehicles with Automatic Transmission; make sure the converter pilot is installed in the rear of the crankshaft.

- Use special tools as needed. Refer to the Special Tools List in the Service Manual and Appendix C.

- Always work safely and avoid using too much force.

Engine Removal Tips

Variable Valve Timing (VVT) Wire Harness Connector (Altima and Sentra)

- Make sure the VVT Wire Harness Connector is disconnected before removing the engine (see Figure F1).

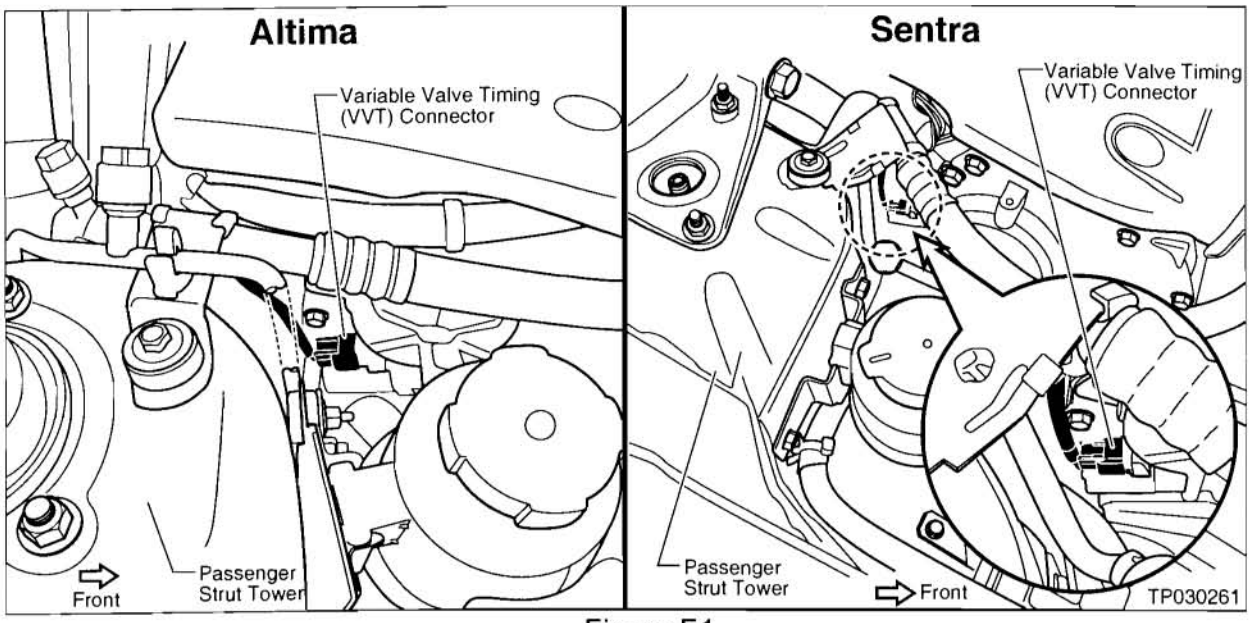


Figure F1

Crankshaft Position Sensor (Altima and Sentra)

- Remove the Crankshaft Position Sensor before separating the engine and transmission. Do NOT damage the edge of the Crankshaft Position Sensor or the ring gear teeth. Pull the sensor straight out to help avoid damage (see Figure F2).
- To release the wire harness connector, push IN on the release tab, then PULL the connector OFF.

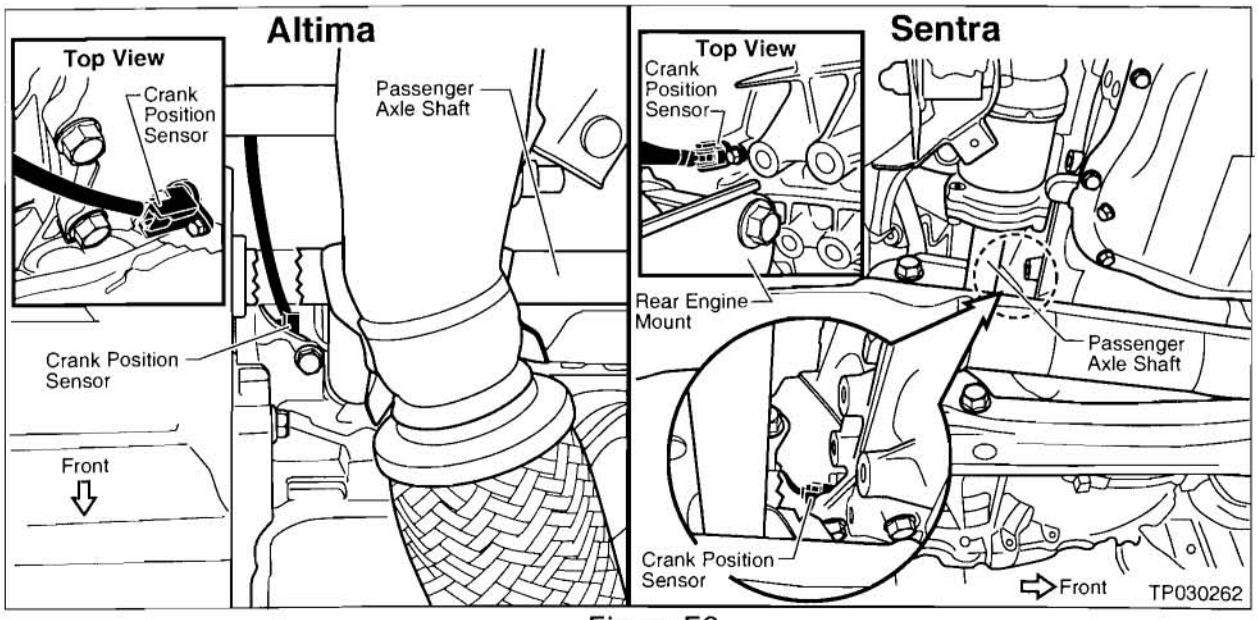


Figure F2

Passenger Side Lower Motor Mount Bolt (Altima ONLY)

- The Passenger Side Lower Motor Mount Bolt can be difficult to see. Before you remove the engine, remember to remove this bolt (see Figure F3).

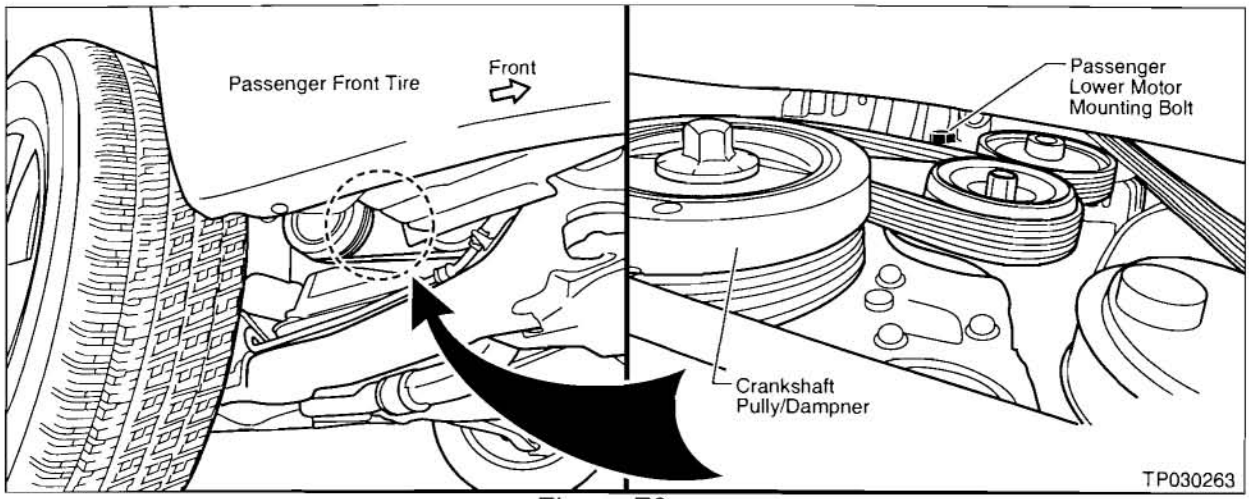


Figure F3

Center Member (Sentra ONLY)

- Remove the Center Member, but leave the Rear Engine Mount on the engine (see Figure F4).

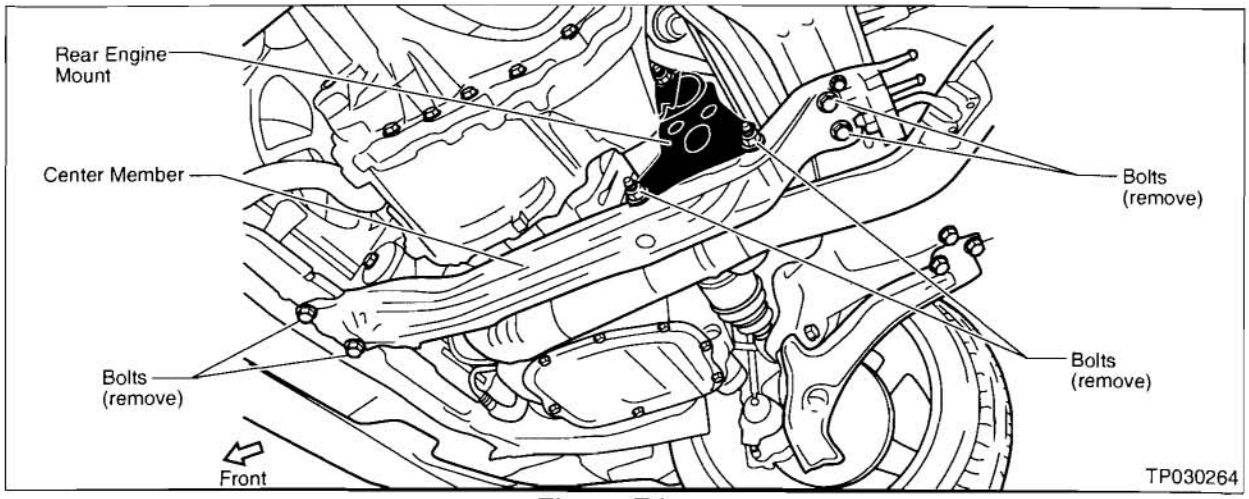


Figure F4

Axle Shafts Removal (Altima and Sentra)

- Be careful NOT to damage the oil seals in the transaxle when removing the axles. Support the axles properly and pull them straight out to help prevent damage.

Front Lower Control Arms (Altima and Sentra)

- After disconnecting the Front Lower Control Arms from the vehicle underbody, tie them back. This will give clearance when you remove the engine.

Power Steering Hose Support Bracket Bolts (Altima ONLY)

- Make sure to remove the Power Steering Hose Support Bracket Bolts before engine removal (see Figure F5).

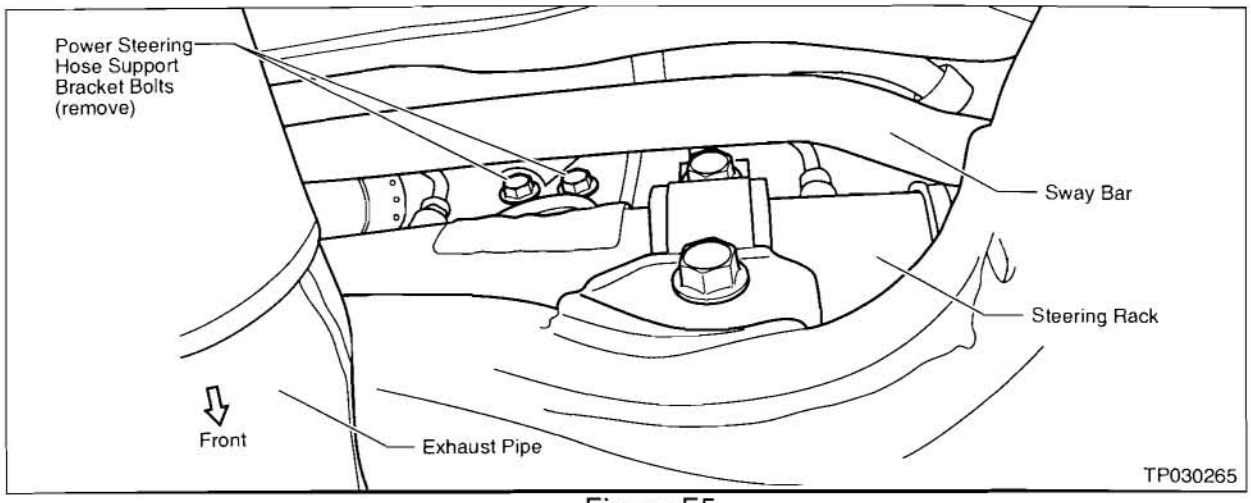


Figure F5

Power Steering Pipe Clamps (Altima ONLY)

- Remove the Power Steering Pipe Clamps on the engine cradle before removing the engine (see Figure F6).

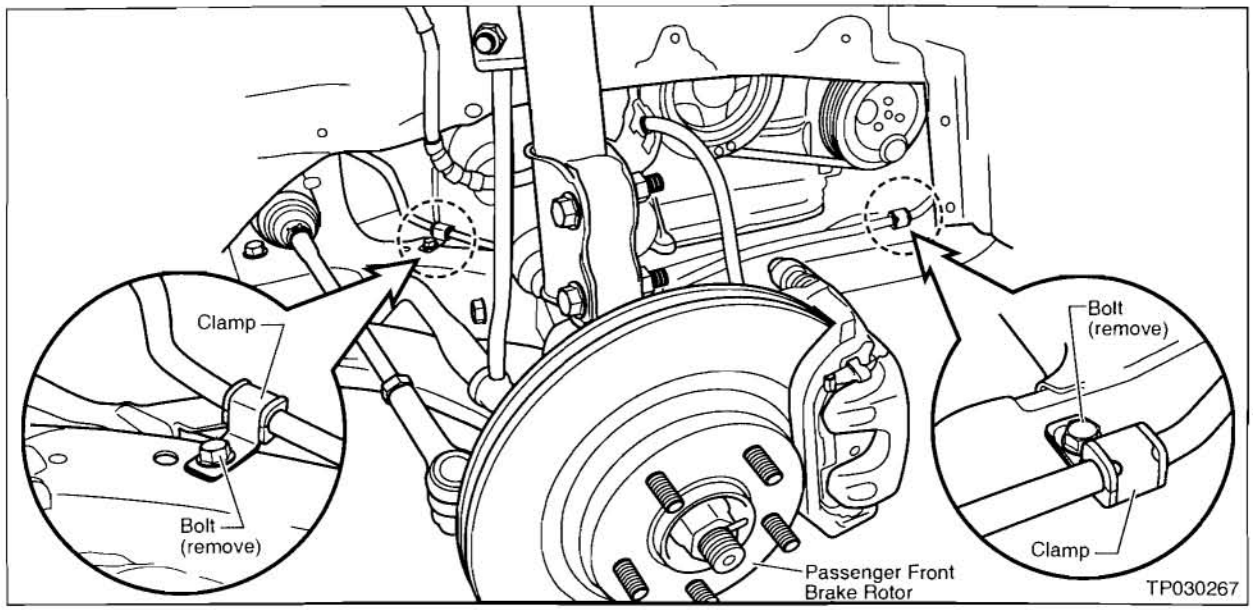


Figure F6

Coolant Pipe (Alitma ONLY)

- Disconnect the Coolant Hoses from the Metal Coolant Pipe, but leave the metal pipe on the engine (see Figure F7).

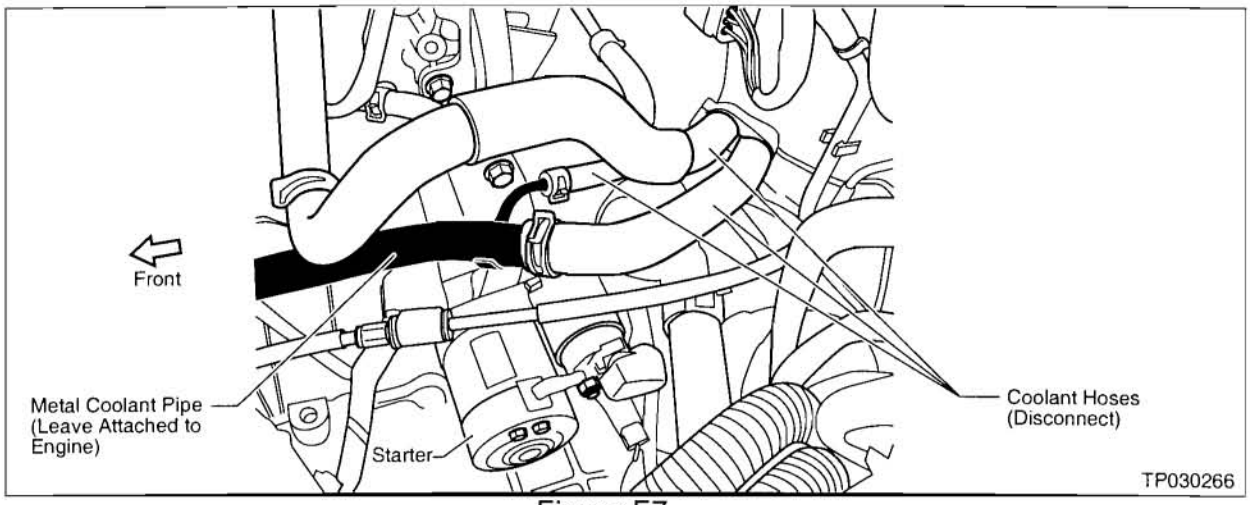


Figure F7

Torque Converter/Lower Bell Housing Bolts (Altima and Sentra)

- Remove the Torque Converter and **Lower** Bell Housing Bolts before removing the engine. It's easier to do this before the engine is out of the vehicle (see Figure F8).

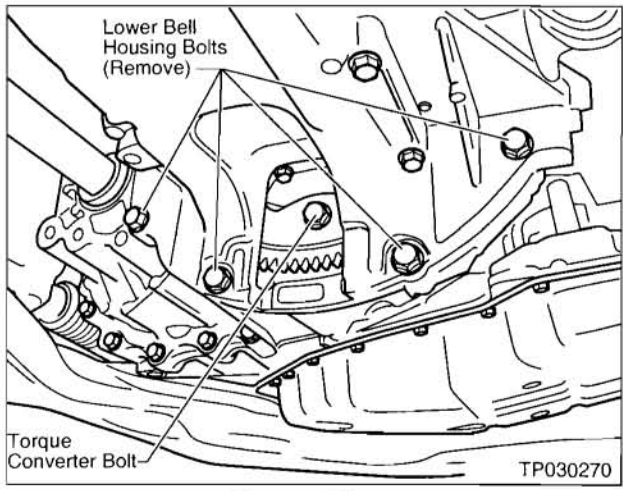


Figure F8

A/T Revolution Sensor Wire Harness Connectors (Altima and Sentra)

- Make sure you mark the A/T Revolution Sensor Wire Harness Connectors for proper re-installation (see Figure F9). If these connectors are "mixed up", improper transmission shifting can occur.

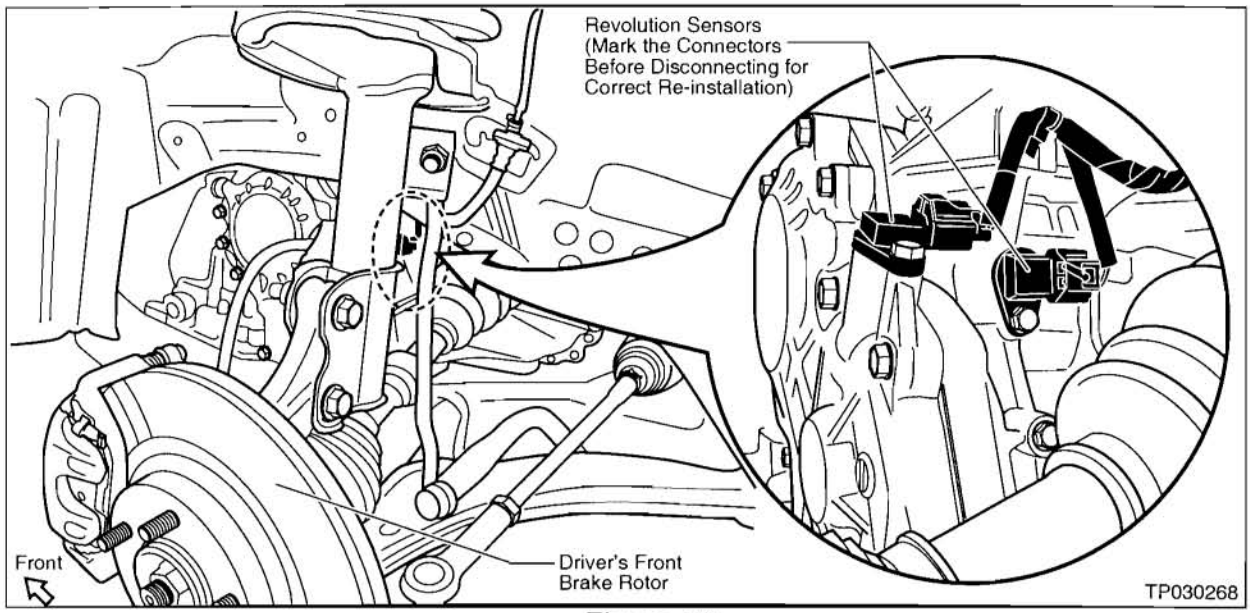


Figure F9

Top Rear Main Harness Support Bracket (Altima and Sentra)

- Remove the bolt that secures the Top Rear Main Harness Support Bracket to the engine before engine removal (see Figure F10).

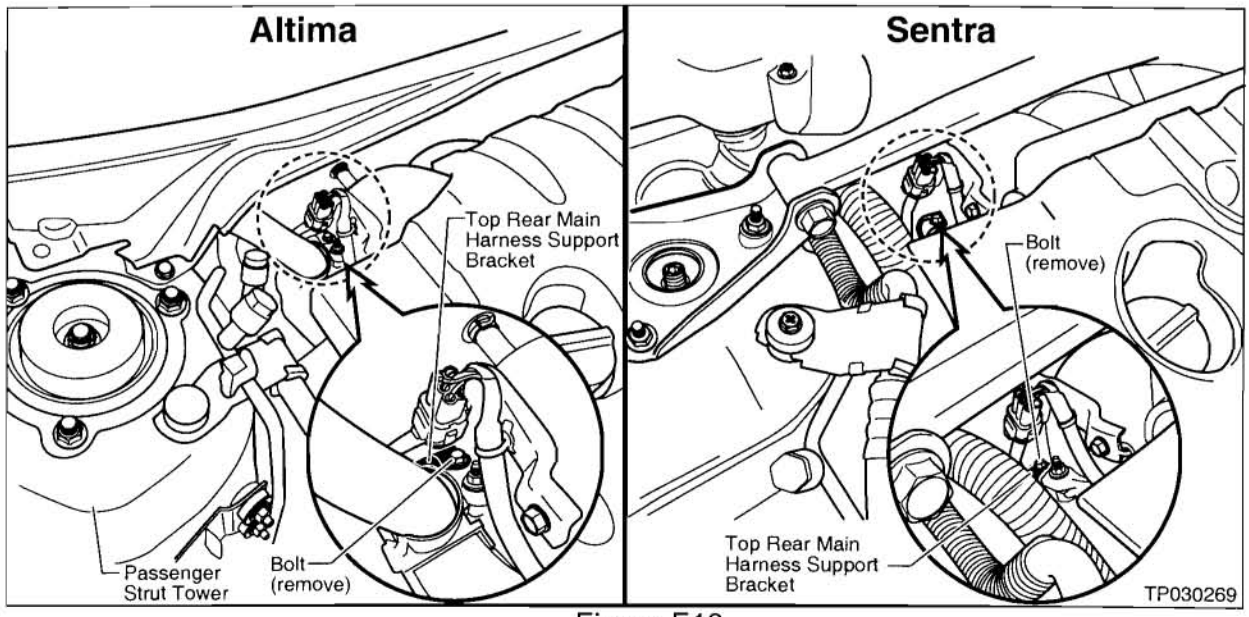


Figure F10

Wire Harness Support Bracket (Altima ONLY)

- Remove one bolt to release the Wire Harness Support Bracket (see Figure F11).

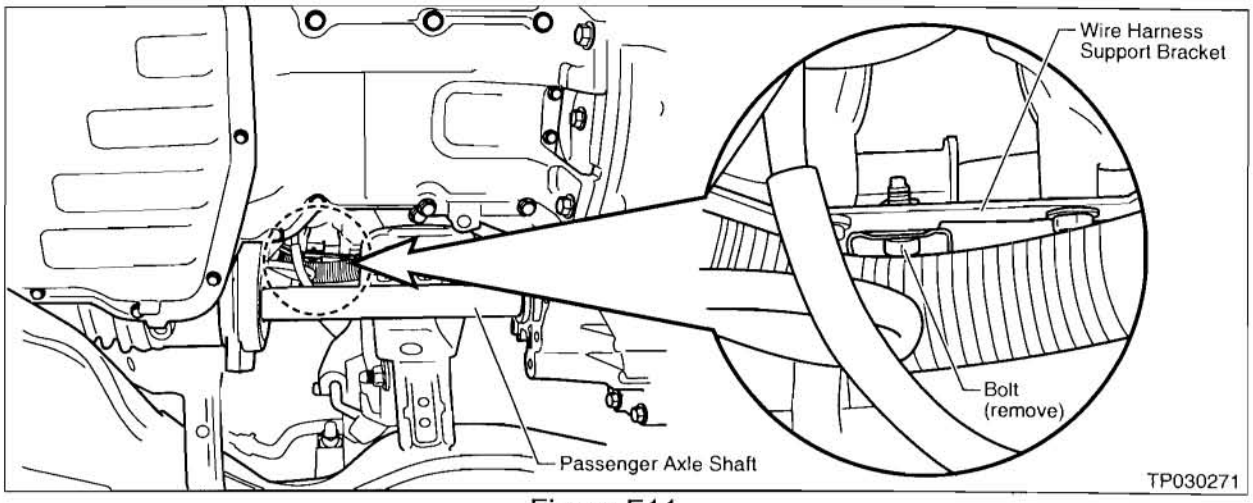


Figure F11

Torx Sockets for Flywheel/Flex Plate to Crankshaft Bolts (Altima and Sentra)

- **Torx TP55 (J-46531):** Use for M/T equipped vehicles.

  NOTE: Do NOT use a standard T55 Torx bit as it can break or strip-out.

- **Torx E20 Socket (J-45816):** Use for A/T equipped vehicles.

  NOTE: Do NOT use a standard external Torx socket as it can round-off the bolt head.

  IMPORTANT: Do NOT use an air tool with the above noted Torx bit/socket.

Engine Installation Tips

Engine Block Alignment Dowels (Altima and Sentra)

- Make sure the new engine has the alignment dowels installed in the rear of the block. There should be two of them (located diagonal to each other).

Torque Converter Pilot (A/T)

For vehicles with Automatic Transmission; make sure the Converter Pilot is installed in the rear of the crankshaft.

> **NOTE:** For Manual Transmission vehicles, if a Converter Pilot is already installed, it can be left in place.

Front Suspension Member "Engine Cradle" (Altima ONLY)

- Install the front bolts securing the Front Suspension Member and allow the rear (of the suspension member) to hang down slightly. This will allow access for re-installation of the components in this area.

- Vehicle must be on the ground when torquing all Suspension Member mounting nuts.

Torque Converter to Flex Plate Securing (Altima and Sentra)

- Use a screwdriver to move the Torque Converter up or down to align the Torque Converter bolt holes with the Flex Plate bolt holes (see Figure F12).

- Make sure the bolt "shoulder" is fully seated in the mounting hole.

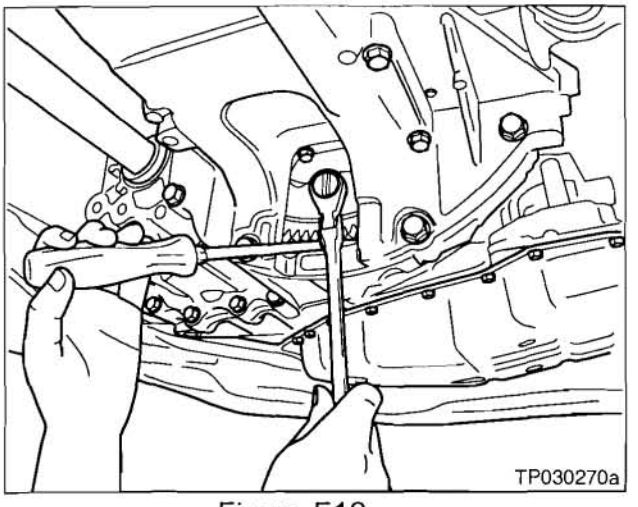


Figure F12

Filling Coolant System—50/50 Mixture (Altima and Sentra)

- Use genuine Nissan engine coolant.

- Use the Engine Coolant Refill Tool #J-45695 to ensure complete filling without air bubbles ("pockets") in the cooling system. Refer to NTB02-011 for additional tool use information.

- For proper heater performance, it is IMPORTANT that the cooling system be filled with an accurate mixture of 50% coolant and 50% water and all air bubbles be purged from the system.

  NOTE: If needed, use engine coolant refractometer—special tool J-23688—to confirm the correct coolant concentration. Refer to NTB03-098 for tool use information.

Torque Specifications

A/T and M/T Bell Housing Bolt Tightening Sequence (Altima and Sentra)

- Tighten the bolts that secure the transmission bell housing to the engine in the sequence shown in Figure F13 below.

CAUTION:

- The engine and transmission must be fully mated together before tightening the bolts.
- Do NOT use the bolts to pull the engine and transmission together.

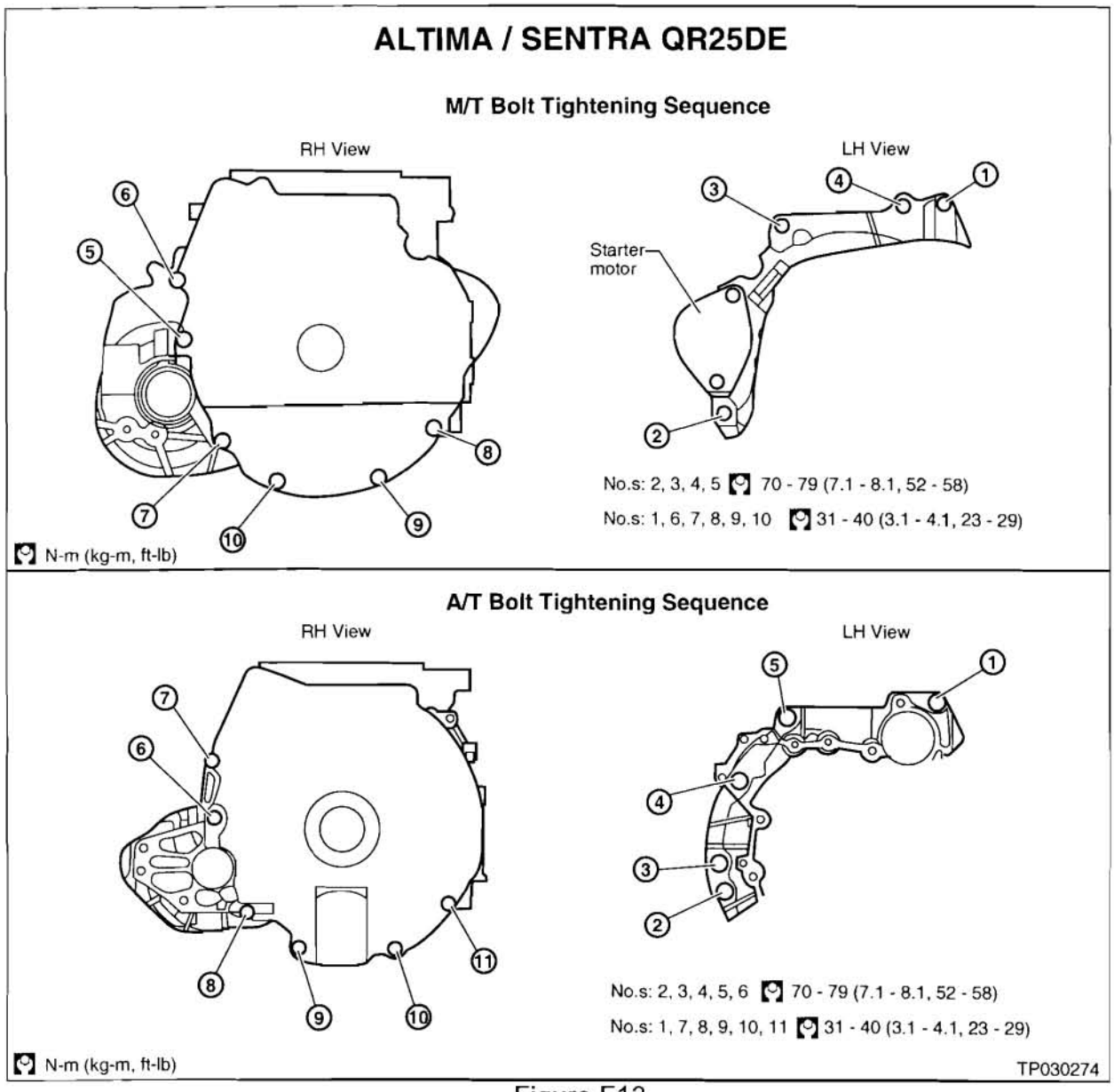


Figure F13

Torque Specifications (Altima and Sentra)

- Refer to the below Illustrations for torque specifications. As needed; refer to the applicable Electronic Service Manual for other torque specifications.

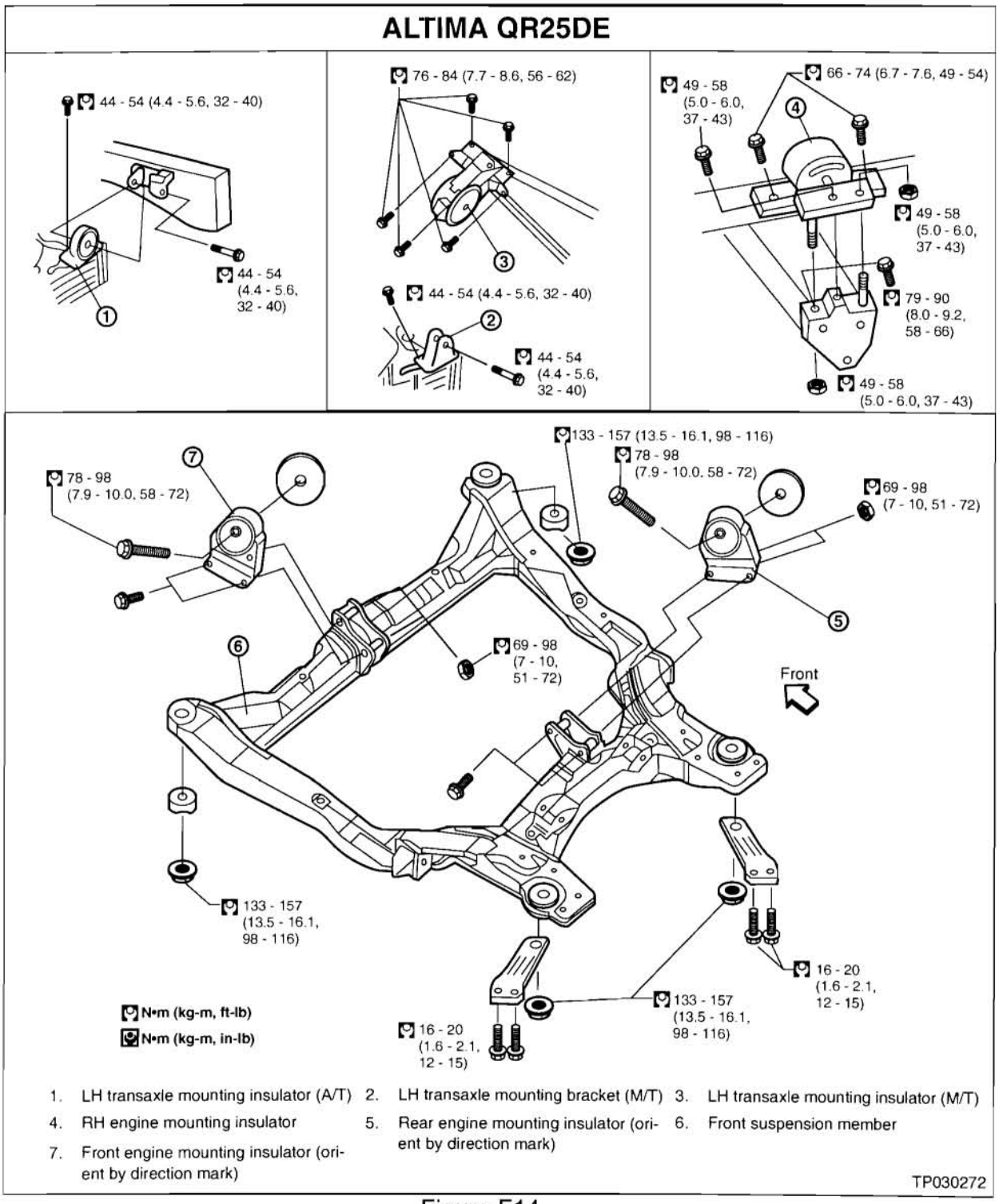


Figure F14

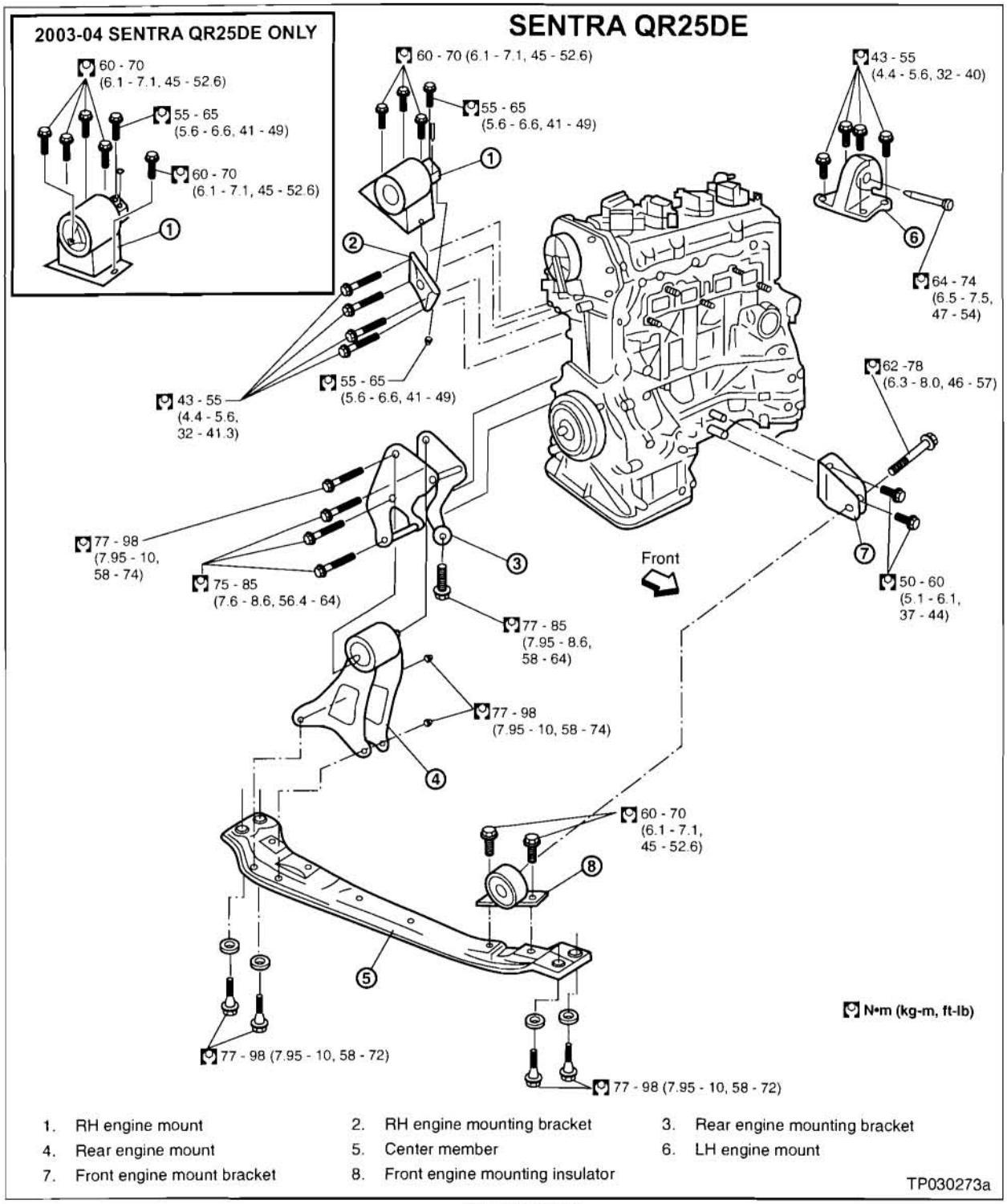

SENTRA QR25DE
2003-04 SENTRA QR25DE ONLY
60 - 70 (6.1 - 7.1, 45 - 52.6)
55 - 65 (5.6 - 6.6, 41 - 49)
60 - 70 (6.1 - 7.1, 45 - 52.6)
60 - 70 (6.1 - 7.1, 45 - 52.6)
55 - 65 (5.6 - 6.6, 41 - 49)
43 - 55 (4.4 - 5.6, 32 - 40)
64 - 74 (6.5 - 7.5, 47 - 54)
43 - 55 (4.4 - 5.6, 32 - 41.3)
55 - 65 (5.6 - 6.6, 41 - 49)
62 -78 (6.3 - 8.0, 46 - 57)
77 - 98 (7.95 - 10, 58 - 74)
75 - 85 (7.6 - 8.6, 56.4 - 64)
Front
50 - 60 (5.1 - 6.1, 37 - 44)
77 - 85 (7.95 - 8.6, 58 - 64)
77 - 98 (7.95 - 10, 58 - 74)
60 - 70 (6.1 - 7.1, 45 - 52.6)
N•m (kg-m, ft-lb)
77 - 98 (7.95 - 10, 58 - 72)
77 - 98 (7.95 - 10, 58 - 72)
1. RH engine mount
2. RH engine mounting bracket
3. Rear engine mounting bracket
4. Rear engine mount
5. Center member
6. LH engine mount
7. Front engine mount bracket
8. Front engine mounting insulator
TP030273a

Figure F15

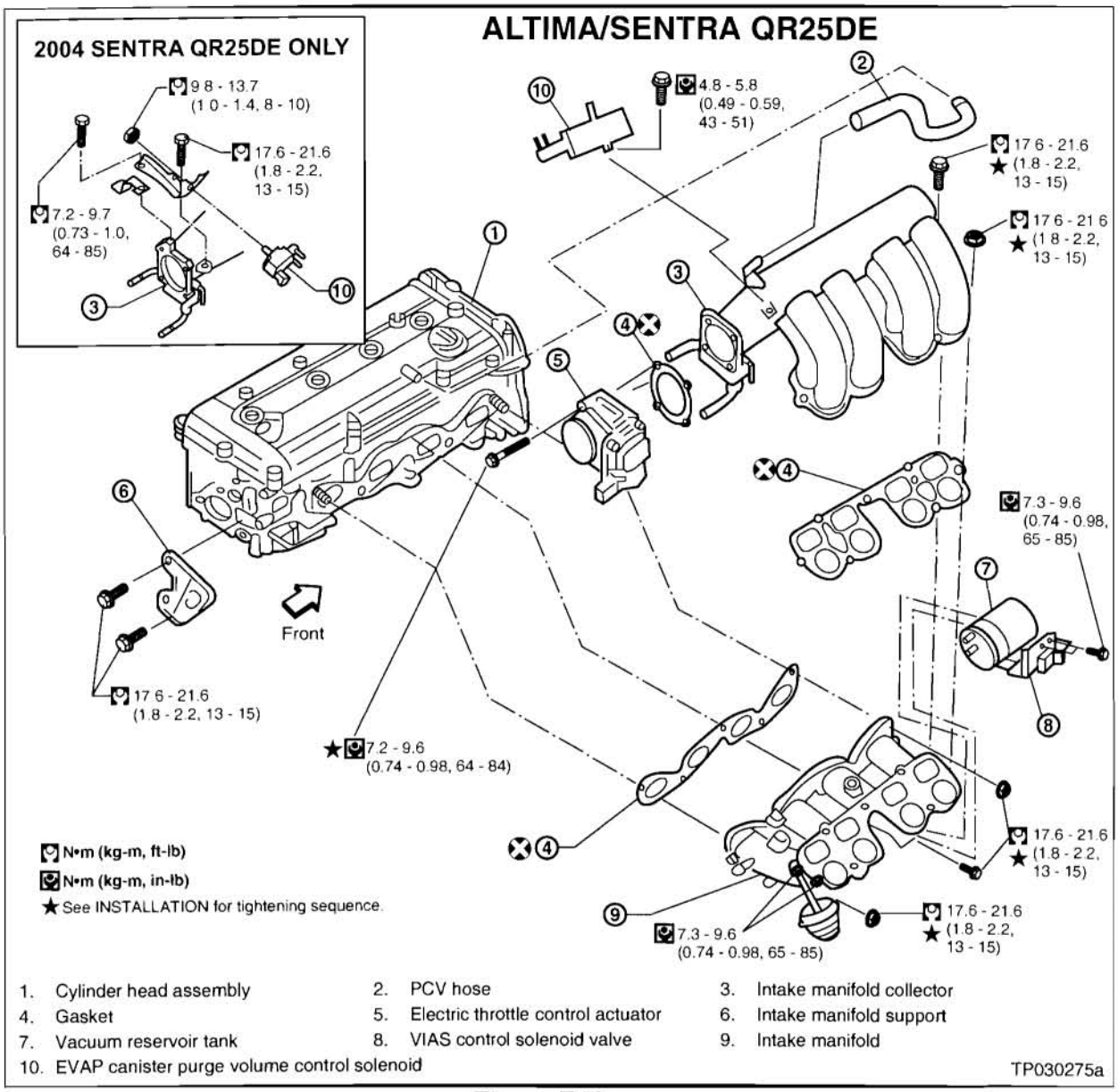


Figure F16

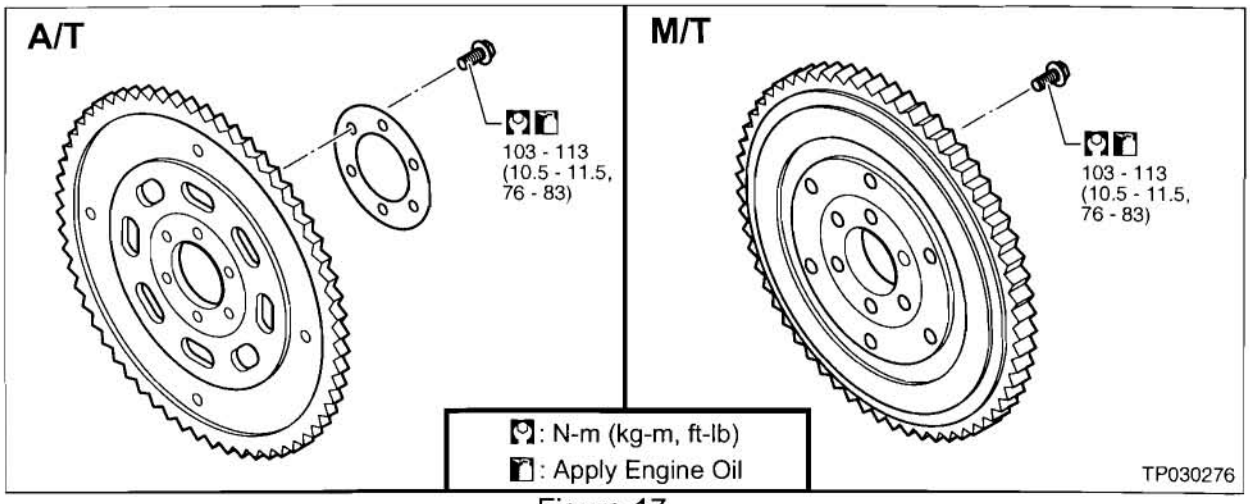


Figure 17

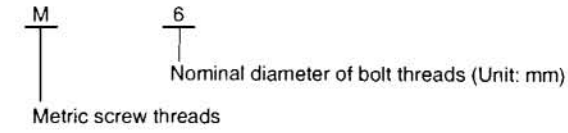
Altima and Sentra

Grade	Bolt Size	Bolt Diameter* mm	Pitch mm	Tightening Torque (Without Lubricant)							
				Hexagon Head Bolt				Hexagon Flange Bolt			
				N-m	kg-m	ft-lb	in-lb	N-m	kg-m	ft-lb	in-lb
4T	M6	6.0	1.0	5.1	0.52	3.8	45.1	6.1	0.62	4.5	53.8
	M8	8.0	1.25	13	1.3	9	-	15	1.5	11	-
			1.0	13	1.3	9	-	16	1.6	12	-
	M10	10.0	1.5	25	2.5	18	-	29	3.0	22	-
			1.25	25	2.6	19	-	30	3.1	22	-
	M12	12.0	1.75	42	4.3	31	-	51	5.2	38	-
			1.25	46	4.7	34	-	56	5.7	41	-
	M14	14.0	1.5	74	7.5	54	-	88	9.0	65	-
7T	M6	6.0	1.0	8.4	0.86	6.2	74.6	10	1.0	7	87
	M8	8.0	1.25	21	2.1	15	-	25	2.5	18	-
			1.0	22	2.2	16	-	26	2.7	20	-
	M10	10.0	1.5	41	4.2	30	-	48	4.9	35	-
			1.25	43	4.4	32	-	51	5.2	38	-
	M12	12.0	1.75	71	7.2	52	-	84	8.6	62	-
			1.25	77	7.9	57	-	92	9.4	68	-
	M14	14.0	1.5	127	13.0	94	-	147	15.0	108	-
9 T	M6	6.0	1.0	12	1.2	9	-	15	1.5	11	-
	M8	8.0	1.25	29	3.0	22	-	35	3.6	26	-
			1.0	31	3.2	23	-	37	3.8	27	-
	M10	10.0	1.5	59	6.0	43	-	70	7.1	51	-
			1.25	62	6.3	46	-	74	7.5	54	-
	M12	12.0	1.75	98	10.0	72	-	118	12.0	87	-
			1.25	108	11.0	80	-	137	14.0	101	-
	M14	14.0	1.5	177	18.0	130	-	206	21.0	152	-

*: Nominal diameter

1. Special parts are excluded.
2. This standard is applicable to bolts having the following marks embossed on the bolt head.

Grade		Mark
4T	.....	4
7T	.....	7
9T	.....	9



TP030277

Figure F18

Special Tools

Special Tools (Altima and Sentra)

- Refer to the below chart (Figure F19) for Special Tool applications.

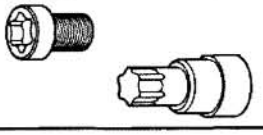
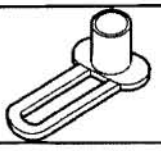
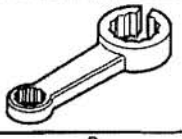
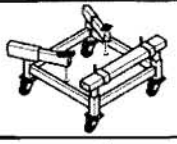
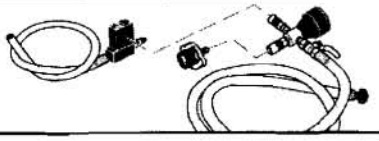
SPECIAL TOOLS LIST (QR25DE)		
Tool Number / Name	Description	STSS*
(J-46531) TP55 Torx Plus Bit 	Removing and installing flywheel bolts (M/T Models), from engine serial #308509Z and later. See NTB03-039 for more information.	Drawer #14
(J-45816) E20 Torx Plus Socket 	Removing and installing drive plate bolts (A/T models). See NTB02-008 for more information.	Drawer #14
(J-45488) Quick Connector Release 	Removing fuel tube quick connectors in engine room. See NTB02-059 for more information.	Drawer #5
KV10114400 (J-38365-A) Heated Oxygen Sensor Wernch 	Loosening or tightening rear heated oxygen sensor.	Drawer #5
(J-39580) Engine Support Table 	Removing engine / trans / sub-frame assembly. See NTB02-022 for more information.	Not in STSS
(J-45695) Engine Coolant Refill Tool 	Refilling engine coolant system without air pockets. See NTB02-011 for more information.	Drawer #15
(J-23688) Engine Coolant Refractometer 	Checking engine coolant concentration (specific gravity) See NTB03-098 for more information.	Drawer # 14
*STSS = Special Tool Storage System		TP030278b

Figure F19

NOTE: Replacement tools can be ordered from Tech-Mate at 1-800-662-2001.

APPENDIX D: FINAL QUALITY CHECKS (used only when engine is replaced)

1. Test drive the vehicle:

   - Drive where you can maintain at least 40 mph for 1 minute (this is required for CONSULT-II diagnosis later).
   - For vehicles with A/T: Make sure the "Kick Down" functions correctly and other shift points are normal.
   - Check instruments for correct operation (speedometer, tachometer, temperature gauge etc.).

2. ASCD operation test (if equipped):

   a. Drive vehicle in an area where ASCD can be used.

   b. Set the ASCD.

   c. When traffic conditions allow, shift A/T to neutral (N), or depress the clutch pedal for M/T. Make sure ASCD is canceled.

   - If the ASCD is not canceled when shifting to N, adjust shifter cable or repair the ASCD system as needed. See Service Manual for repair information.

NOTE: Immediately after the test drive perform the following tests.

3. Attach CONSULT-II to the vehicles OBD-II connector port.

   a. Turn the ignition ON.

      - CONSULT-II will turn on automatically.

   b. Select START (NISSAN BASED VEHICLES).

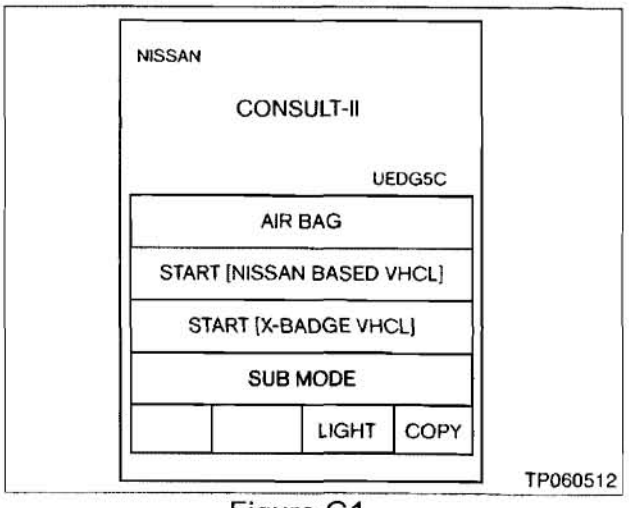


Figure G1

c. CONSULT will display the systems shown in Figure G2.

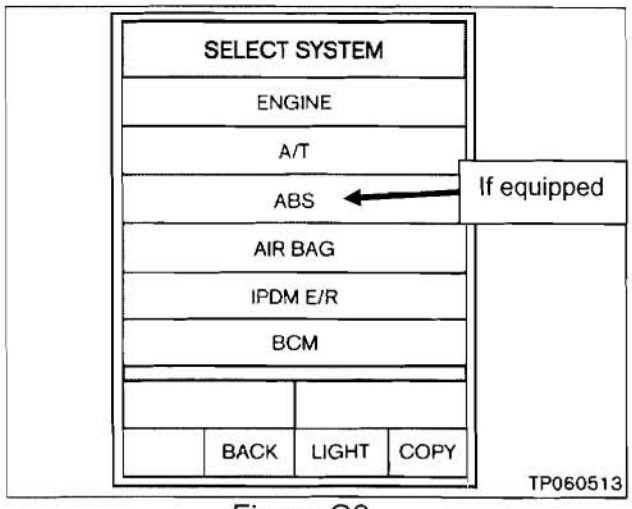


Figure G2

4. Erase any DTC(s) stored in each CONSULT-II compatible system.

   For each system displayed in Figure G2:

   a. Select the system (Engine, A/T, ABS, etc).

   b. Select **SELF-DIAG RESULTS**

   c. Press **ERASE** and **OK**

   d. Press **BACK** two times.

   e. Repeat a through d for each system.

5. Valve Timing Control (VTC) test:

NOTE:

- During the test drive in step 1, you should have maintained at least 40 mph for 1 minute (this is required for the following CONSULT-II diagnosis).
- CONSULT-II should be connected and the engine running.

a. On CONSULT-II, select **ENGINE** > **DATA MONITOR** > **SELECT FROM MENU**

b. Select **INT/V TIM(B1)** and **INT/V SOL(B1)**

c. Press **START**

d. At idle:

- INT/V TIM(B1) should be 1-2 CA
- INT/V SOL(B1) should be 0%

f. Rev engine to 2500 rpm. Make sure VTC signals are changing.

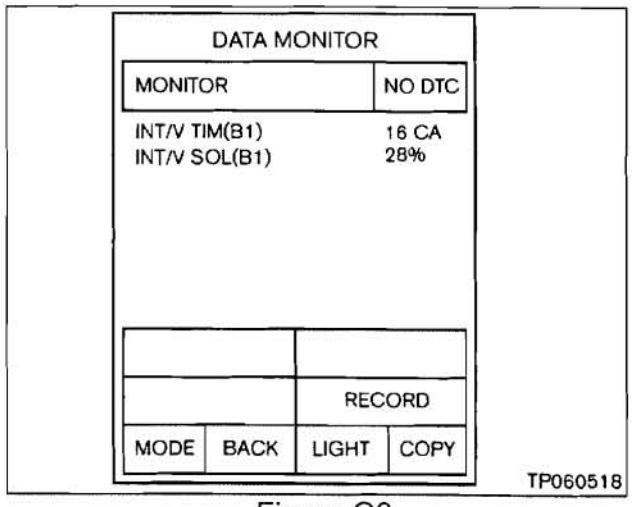


Figure G3

- If signals are changing, test is OK.
- If signals are not changing, repair VTC as needed. See Service Manual for repair information.

6. A/F (Air/Fuel) Sensor test:
   a. On CONSULT-II, press **BACK** 4 times to return to the Select System screen.
   b. Select **ENGINE** > **DATA MONITOR** > **SELECT FROM MENU**
   c. Select **A/F SEN 1 (B1)**
   d. Press **START**
   e. At idle, A/F SEN 1 should be approximately 1.4 V.
   f. Rev engine to 2500 rpm. Make sure A/F sensor voltage is changing.
      - If voltage is changing, test is OK.
      - If voltage is not changing, repair A/F sensor as needed. See Service Manual for repair information.

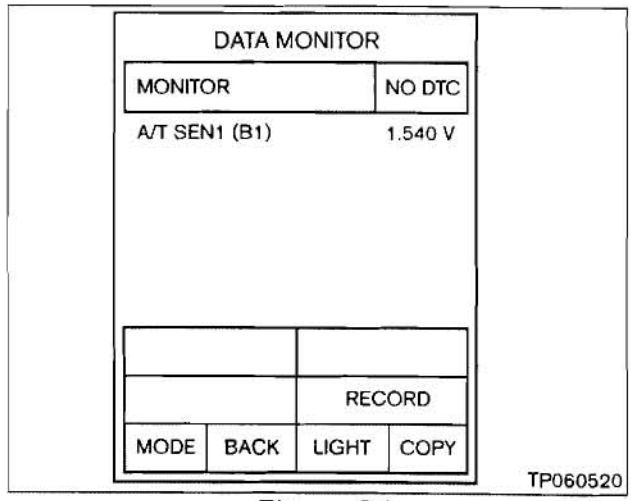


Figure G4

7. EVAP test
   a. On CONSULT-II, press **BACK** 4 times to return to the Select System screen.
   b. Select **ENGINE** > **ACTIVE TEST** > **PURG VOL CONT/V**
   c. Select **SELECT FROM MENU** > **EVAP SYS PRES**
   d. Press **START**
   e. At idle, PSI should be approximately 4.06V.
   f. Use Qu to increase steps to 60. Voltage should be approximately 4.00 V.
      - If signal changes, test is OK.
      - If signal does not change, repair EVAP system as needed. See Service Manual for repair information.

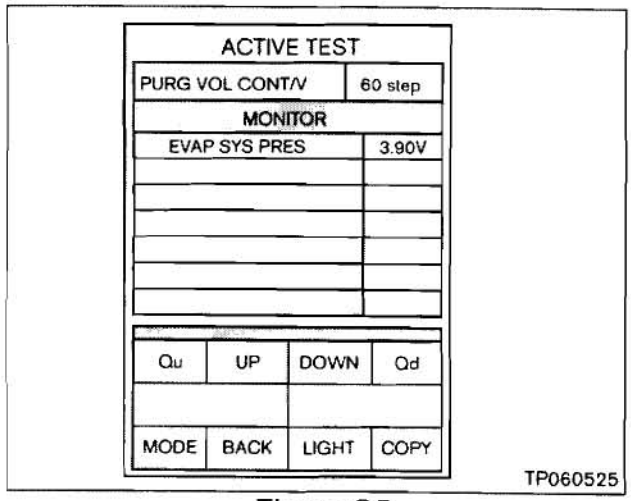


Figure G5

8. Rear O2 Sensor test:

NOTE: Engine must be running for longer then 3 minutes before performing this test.

a. On CONSULT-II, press **BACK** 4 times to return to the Select System screen.

b. Select **ENGINE** > **DATA MONITOR** > **SELECT FROM MENU**

c. Select **HO2S2 (B1)**

d. Press **START**

e. Rev engine to 2500 rpm. Make sure HO2S2 (B1) voltage is changing.

- If voltage is changing, test is OK.
- If voltage is not changing, repair rear O2 sensor as needed. See Service Manual for repair information.

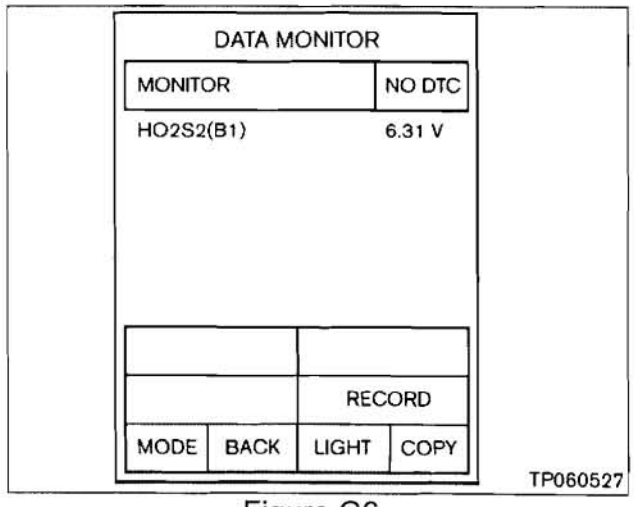


Figure G6

9. Idle Air Volume Lean:

   a. On CONSULT-II, press **BACK** 4 times to return to the Select System screen.

   b. Select **ENGINE** > **DATA MONITOR** > **SELECT FROM MENU**

   c. Select **COOLAN TEMP/S**

   d. Press **START**

   e. At idle, make sure COOLAN TEMP/S is reading between 70°C – and 95°C (**158°F and 203°F**).

      - If temperature reading is above 95°C (**203°F**), turn HVAC system to MAX heat (AC OFF) and blower motor on high.
      - Let engine idle at a fast idle speed (1500 rpm) in a shaded area until the engine cools to 95°C (**203°F**) or less.

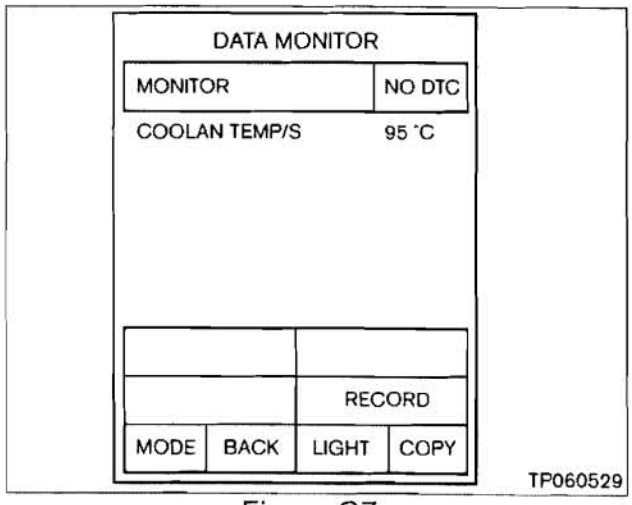


Figure G7

   f. Press **BACK** 3 times to return to the Select Diag Mode screen.

   g. Select **WORK SUPPORT** > **IDLE AIR VOL LEARN**

   h. Press **START**

   i. Press **START** again

   j. Wait until CONSULT-II shows CMPLT in the upper right hand corner of the screen.

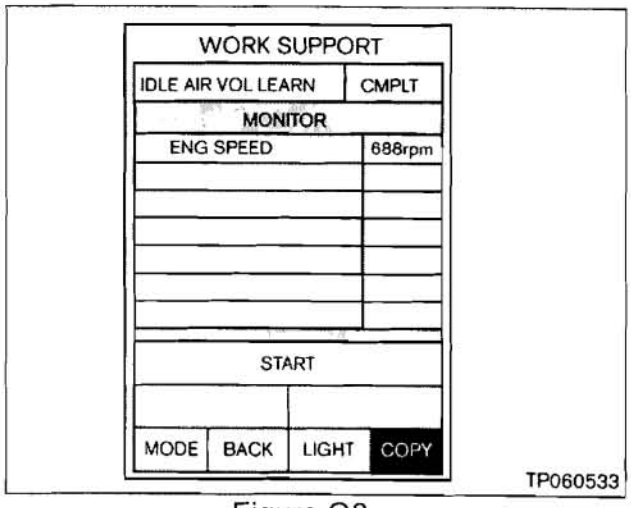


Figure G8

10. Recheck for DTCs:

For each system displayed in Figure G9:

a. Select a system (Engine, A/T, ABS, etc).

b. Select **SELF-DIAG RESULTS**

If DTC is stored:

- PRINT the data.
- Repair the DTC as needed. See Service Manual for DTC repair information.

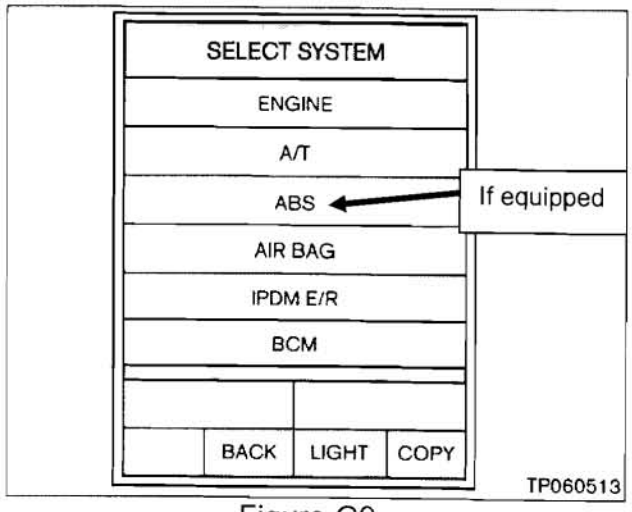


Figure G9

c. Press **ERASE** and **OK**

d. Press **BACK** two times.

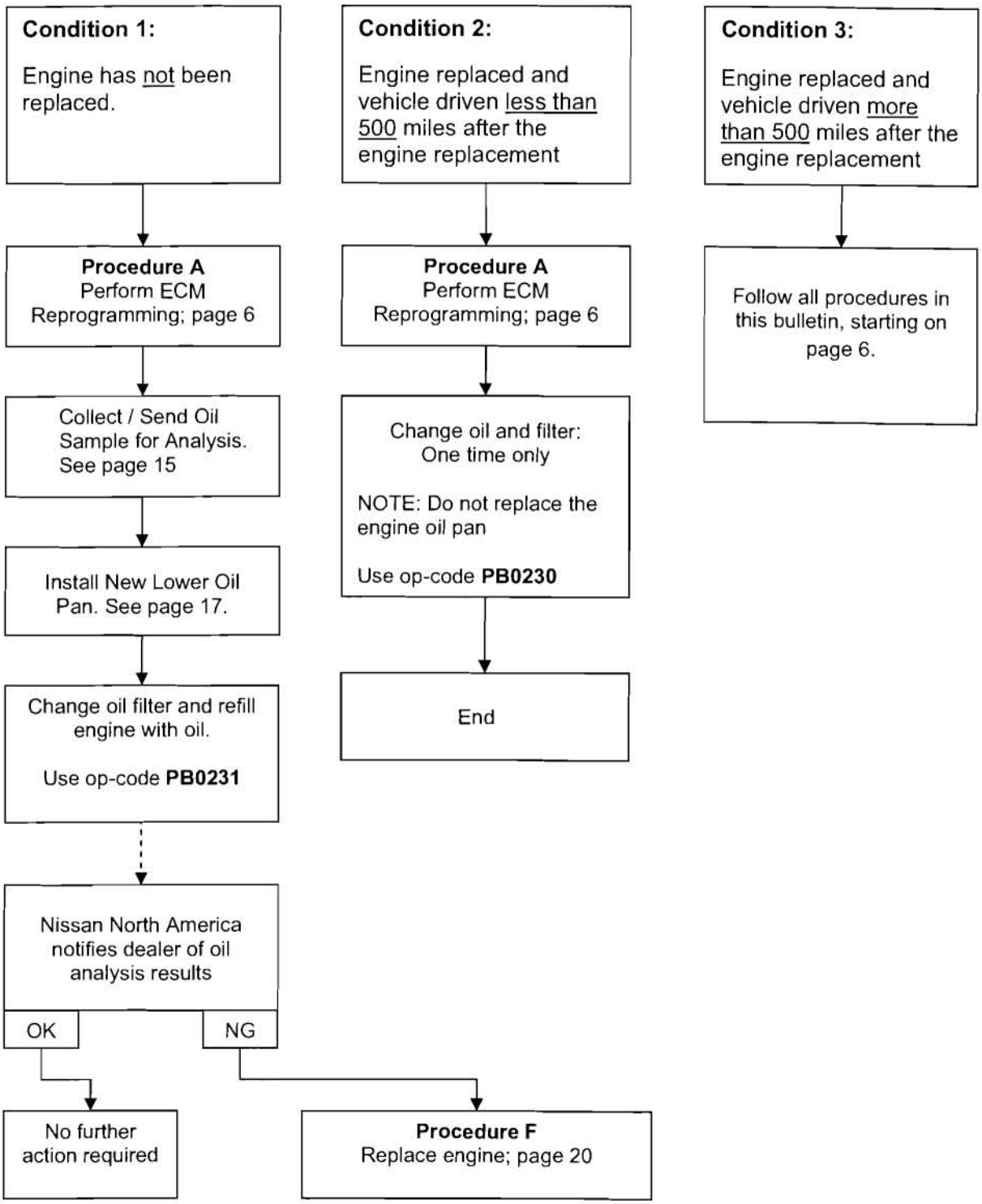
e. Repeat a through d for each system.

END

Dealer Inventory Vehicles Repair Flow Chart

This repair flow chart is for "dealer inventory" vehicles ONLY (vehicles that have not been sold).

Select the vehicle condition for the vehicle you are working on and perform only the repairs listed under that condition.



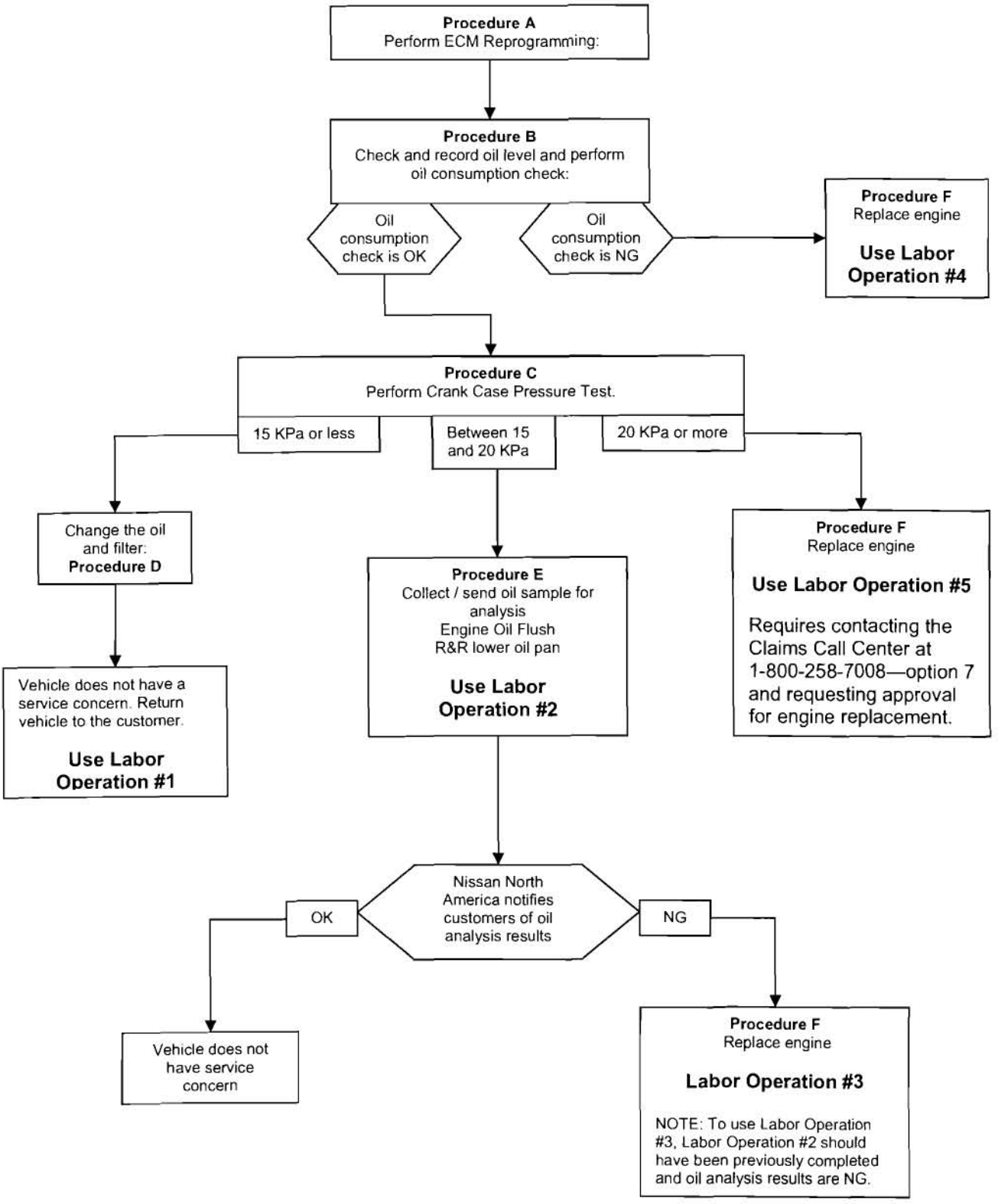
PARTS INFORMATION

DESCRIPTION		PART NUMBER	QTY
Oil Filter		15208-9E000	1 or 2
Lower Oil Pan		11110-3Z011	1 (if needed)
Engine Assembly		10102-8J0HARE	1 (if needed)
Cotter Pin		08921-3202A	2 (if engine is replaced)
Torque Converter Pilot Bushing		12330-16A00	1 (if needed)
Gasket Kit		16799-ZB01A	1 (if engine is replaced)
Gasket Kit Includes the following:			
Gasket – Water Outlet	11062-3Z000		
Gasket – Water Inlet	13050-3Z000		
Gasket – Water Pump	21014-3Z000		
Exhaust Gasket	20692-65J00		
Exhaust Gasket	14036-6N200		
O-ring	92472-N8210		
O-ring	92474-N8210		
Exhaust Gasket (Front Pipe to Manifold/Catalyst)	20695-8J010		
Seal – O-ring, coolant pipe	21049-3Z010		
O-ring	21049-3Z000		
Gasket – Intake Manifold	14035-8J001		

RTV Silicone (Ultra Gray) – Nissan P/N 999MP-AM003P—is available from the Nissan Direct Ship Chemical Care Product Program: Phone 1-800-811-0502, Fax 1-770-218-0148, Website order link via dealer portal www.NNAnet.com or direct www.NissanChemicals.com

Oil Sample Kits are available—at no cost—from TECH-MATE at 1-800-662-2001.

Labor Operation Flow Chart



CLAIMS INFORMATION (cont.)

Key to Procedures:
Procedure A: Perform ECM Reprogramming
Procedure B: Check and Record Oil Level, Perform Oil Consumption Check
Procedure C: Perform Crankcase Pressure Test
Procedure D: Change Oil and Filter
Procedure E: Send Oil for Analysis, Engine Oil Flush, Replace Lower Oil Pan
Procedure F: Replace Engine

Submit a Campaign (CM) line claim using the following claims coding:

"CM" I.D.: PB023

LABOR OPERATION #	DESCRIPTION	OP CODE	FRT
1	Procedures A, B, C, D & Return vehicle to customer.	PB0230	1.1

OR

LABOR OPERATION #	DESCRIPTION	OP CODE	FRT
2	Procedures A, B, C, E & Return vehicle to customer	PB0231	1.9 hrs

Then, only if the oil analysis is NG:

LABOR OPERATION #	DESCRIPTION	OP CODE	FRT
3 (1)	Procedure F	PB0232 – Altima PB0237 – Sentra	7.9 hrs 7.8 hrs

(1) Labor operation #3 is used only when Labor Operation #2 has been previously completed and the oil analysis results are NG.

OR

LABOR OPERATION #	DESCRIPTION	OP CODE	FRT
4	Procedures A, B, & F	PB0233 – Altima PB0238 – Sentra	8.4 hrs 8.3 hrs

OR

LABOR OPERATION #	DESCRIPTION	OP CODE	FRT
5	Procedures A, B, C, & F	PB0234 – Altima PB0239 – Sentra	8.7 hrs 8.6 hrs

Expense codes – next page

CLAIMS INFORMATION (cont.)

Expense Codes:

LABOR OPERATION	EXPENSE CODE	DESCRIPTION	MAX. AMOUNT
#1	001	Oil	$15.60
#2	025	Oil	$31.20
#3 or #4 or #5	026	Engine Replacement Only – Coolant, ATF, P/S fluid top off.	$10.50
#3 or #4 or #5	502	Car Rental Assistance (for engine replacement ONLY)	$35.00/day, Max. 5 days

OWNER'S LETTER (initial campaign notification)

Dear Nissan Owner:

This notice is sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act. Nissan has decided that a defect which relates to motor vehicle safety exists in some 2006 model year Nissan Altimas (Sentras) equipped with four cylinder 2.5L engines. Our records indicate that you own or lease the Nissan vehicle identified by the VIN on the cover of this notice.

Reason for Recall

On some 2006 model year Nissan Altima (Sentra) vehicles equipped with four cylinder 2.5L engines, there is a possibility of an engine compartment fire. This is caused by extremely low engine oil level resulting from higher than normal engine oil consumption due to a manufacturing problem in some engines.

What Nissan Will Do

Nissan will take the following actions **at no cost to you for parts or labor:**

- In order to prevent a fire from occurring, Nissan will reprogram the Electronic Control Module (ECM or engine computer) (Item 1 below).

- Nissan will also take additional steps to help assure your continued satisfaction, by evaluating your vehicle to determine if it exhibits abnormal oil consumption. In a small percentage of vehicles, engine replacement will be needed (Item 2 below).

1. In order to prevent a fire from occurring, your Nissan dealer will reprogram the Electronic Control Module (ECM or engine computer). This reprogramming will ensure that the engine will go into a "limp home" mode in the event that your engine oil drops to an unacceptable level. If this occurs, the "Service Engine Soon" light will illuminate and the vehicle engine RPM will not exceed 1800. Reduced drivability will result, but you will be able to drive the vehicle to your Nissan dealer for service.

   The ECM reprogramming should take about one hour to complete, but your Nissan dealer may require your vehicle for a longer time based upon their work schedule.

2. In addition to the ECM reprogramming, Nissan will also inspect your vehicle to determine if it has been consuming engine oil at a higher than normal rate. In many cases, your Nissan dealer will be able to make this diagnosis during the same visit as the ECM reprogramming.

   - If oil consumption is determined to be normal, your oil and filter will be changed and your vehicle returned to you.

   - If oil consumption is determined to be abnormal, the engine in your vehicle will be replaced.

   - In some cases, analysis of the engine oil will be necessary to determine if the engine needs to be replaced.

If engine oil analysis is necessary, your Nissan dealer will take an oil sample at the time of ECM reprogramming and send it to a separate laboratory. Your oil, filter, and oil pan will be replaced and your vehicle will then be returned to you. After the oil sample analysis is completed, Nissan will inform you of the results in approximately 2-3 weeks by mail. In the meantime, it is safe to continue to drive your vehicle, but as always regularly check your engine oil level as specified in your Owner's Manual.

In a few cases, the results of the oil sample will indicate engine replacement is necessary. In those cases, we will ask you to return your vehicle to the dealership to have the engine replaced. If it is necessary to replace your engine, a rental vehicle will be provided while you leave your vehicle at the dealer for the repair.

Warranty Extension

Nissan has extended the engine portion of the Powertrain Coverage of your 2006 Nissan New Vehicle Limited Warranty to 84 months or 100,000 miles, whichever comes first. All other warranty terms, limitations, and conditions remain unchanged. This warranty extension applies to your vehicle whether your engine is replaced or not.

What You Should Do

Contact your Nissan dealer at your earliest convenience in order to arrange an appointment to have your vehicle repaired.

As with any vehicle, be sure to regularly check engine oil level as specified in your Owner's Manual. If the vehicle shows any signs of more than ½ quart of oil use in 3,500 miles, you should contact your dealer as soon as possible to have your vehicle inspected.

Please bring this notice with you to your service appointment. Instructions have been sent to your Nissan dealer. If the dealer fails, or is unable to make the necessary repairs free of charge, you may contact the National Consumer Affairs Department, Nissan North America, Inc., P.O. Box 685003, Franklin, TN 37068–5003. The special toll free number is 1-800-240-9924. You may also contact the Administrator, National Highway Traffic Safety Administration, 400 7th Street SW., Washington, DC 20590; or call the toll-free Vehicle Safety Hotline at 1-888-327-4236 (TTY: 1-800-424-9153); or go to http://www.safercar.gov.

Nissan will reimburse you for any oil expenses required to top off your engine's oil level prior to the completion of this recall. You can visit your nearest Nissan dealer for reimbursement. If you prefer, you may instead send your original oil receipts and proof of vehicle ownership (copy of your vehicle registration) to the following address:

Nissan North America
Consumer Affairs
P.O. Box 685003
Franklin, TN 37067-5003

Federal law requires that any vehicle lessor receiving this recall notice must forward a copy of this notice to the lessee within ten days.

If you have any questions or concerns, you may contact a Nissan representative at 1-800-240-9924.

Thank you for your cooperation. We are indeed sorry for any inconvenience this may have caused you.

OWNER'S LETTER (oil analysis result normal)

Dear Nissan Owner:

Recently, your 2006 model year Altima or Sentra was at a Nissan dealership for a safety recall related to its engine. The dealer took an engine oil sample and sent it to a laboratory selected by Nissan for analysis to confirm that the engine has been operating without an indication of abnormal oil consumption.

The laboratory test results indicate that your engine's oil consumption is normal. Therefore, no further repairs are needed on your vehicle at this time.

Please follow your vehicle's maintenance schedule as described in your Owner's Manual to ensure continued reliability and proper performance of your vehicle.

To ensure your satisfaction and continued confidence in your new vehicle, Nissan has extended the engine portion of the Powertrain Coverage of your vehicle's 2006 Nissan New Vehicle Limited Warranty to 84 months or 100,000 miles, whichever comes first. All other warranty terms, limitations, and conditions remain unchanged.

If you have any questions please contact our National Consumer Affairs Department, Nissan North America, Inc., P. O. Box 685003, Franklin, TN 37068–5003. The special toll free number is 1-800-240-9924.

Thank you very much for your cooperation. We sincerely apologize for any inconvenience this may have caused.

OWNER'S LETTER (oil analysis result indicate possible abnormal oil consumption)

Dear Nissan Owner:

Recently, your 2006 model year Altima or Sentra was at a Nissan dealership for a safety recall related to its engine. The dealer took an engine oil sample and sent it to a laboratory selected by Nissan for analysis to confirm that the engine has been operating without an indication of abnormal oil consumption.

The laboratory test results indicate that your vehicle's engine may experience abnormal oil consumption in the future. Therefore, Nissan will replace your engine at no cost to you for parts or labor. In addition, Nissan will provide you with a rental vehicle while your engine is being replaced.

Please contact your Nissan dealer at your earliest convenience in order to arrange an appointment. Please bring this letter with you when you keep your service appointment. Instructions have been sent to your Nissan dealer. If the dealer fails, or is unable to make the necessary repairs free of charge, you may contact the National Consumer Affairs Department, Nissan North America, Inc., P. O. Box 685003, Franklin, TN 37068–5003. The special toll free number is 1-800-240-9924.

Your Nissan dealership should be able to schedule your vehicle for repair based on their diagnosis, work schedule, or parts availability. This free repair should take several days to complete. Again, a rental vehicle will be provided to you during these repairs.

To assure you that Nissan stands behind its products, is committed to your satisfaction, and that you may have confidence in your new vehicle, Nissan has extended the engine portion of the Powertrain Coverage of your 2006 Nissan New Vehicle Limited Warranty to 84 months or 100,000 miles, whichever comes first. (All other warranty terms, limitations, and conditions remain unchanged.) This warranty extension continues to apply to your vehicle after its engine has been replaced.

Thank you for your cooperation. We are indeed sorry for any inconvenience this may have caused you.