



# RECALL CAMPAIGN BULLETIN

Reference:

NTB03-070d

Date:

August 20, 2008

## VOLUNTARY RECALL CAMPAIGN ALTIMA AND SENTRA QR25DE ENGINE EXHAUST PIPE HANGER PIN AND PRE-CATALYST

This bulletin has been amended. Expense Code 001 in the Claims Information has been changed.  
Please discard all previous versions of this bulletin.

**CAMPAIGN I.D. #** R3007, R3014, R3015, R3016, & R3017

**NHTSA #:** 03V-084

**APPLIED VEHICLES:** 2002-03 Altima (L31), with QR25DE Engine  
2002-04 Sentra (B15), with QR25DE Engine

**APPLIED VINS:** **Altima:** 1N4AL11\*\*2C100000 - 294952  
1N4AL11\*\*2C700001 - 719020  
1N4AL11\*\*3C100003 - 311983

**Sentra:** 3N1AB51\*\*2L700019 - 730181  
3N1AB51\*\*3L716572 - 736783  
3N1AB51\*\*4L727627 - 730593  
3N1AB51\*\*4L736618 - 738436

**NOTE:**

**For 2003 and 2004 Applied Vehicles: When you perform Procedure C (ECM Reprogramming), go to NTB06-051a for reprogramming information. You will still need to perform all other parts of this bulletin on 2003 and 2004 Applied Vehicles.**

### INTRODUCTION

Nissan has determined that some 2002-2003 model year Altima and 2002-2004 model year Sentra vehicles equipped with the 2.5 liter engine have defects that relate to motor vehicle safety. For 2002-2003 model year Altimas, there is a possibility that the exhaust pipe hanger pin may catch debris from the road that could be ignited by contact with the catalytic converter and cause a fire. In addition, for 2002-2003 model year Altimas and 2002-2004 model year Sentras, there is a possibility that certain engine operating conditions may cause damage to the pre-catalyst. Material from inside a damaged pre-catalyst could enter the engine and result in increased oil consumption. If the engine oil level is not checked on a periodic basis and drops below the low level, and the driver continues to operate the vehicle ignoring noticeable engine noise, engine damage may occur which could result in a fire.

## IDENTIFICATION NUMBER

Nissan has assigned identification number R3007/R3014/R3015/R3016/R3017 to this campaign. These numbers must appear on all communications and documentation of any nature dealing with this campaign.

**NOTE:** The multiple PNC codes (shown above) are used to define the model and repair group (e.g., those that do NOT require certain repairs or parts kits).

## NUMBER OF VEHICLES POTENTIALLY AFFECTED

The number of vehicles potentially affected is approximately 360,000.

## 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.

## OVERVIEW OF REPAIR

### Exhaust Pipe Hanger Pin:

- The exhaust pipe hanger pin is shortened on 2002-03 Altima, except those that were already repaired. This repair is NOT necessary on Sentra vehicles.  
**(This repair may be needed only if the PNC code is R3007.)**

### ECM Reprogramming / Pre-Catalyst / Exhaust Heat Shields:

- ECM reprogramming is required to prevent future damage to the pre-catalyst. A special reprogramming card is available that contains ECM reprogramming data for all models/engine/transmission configurations affected by this campaign.
- The exhaust pre-catalyst will be tested to determine if the pre-catalyst needs to be replaced.
- The exhaust pre-catalyst will be inspected to determine if more extensive repairs are needed, that, for a limited number of vehicles, may include engine replacement.
- Installation of new Heat Shields on the exhaust system for vehicles with PNC code R3007, R3014 and R3016.

**NOTE: For vehicles with PNC code R3015 and R3017 new heat shields are not required. Do not use a visual inspection to determine the need for new heat shields, use the PNC code.**

Use the "Repair Flow Chart" in the Service Procedure to determine the complete repair procedures for a specific vehicle.

## **SPECIAL CUSTOMER ASSISTANCE FEATURES**

Customers should be informed that:

- A. The basic repair for this campaign should take approximately 3 hours to complete.
- B. A limited number of vehicles affected by this campaign may require more extensive campaign repairs.
- C. If more extensive repairs are required:
  - The repair may take up to 5 days to complete.
  - Car Rental Assistance is available upon owner request and is to be provided free of charge to the customer.

Refer to the Claims Information section of this bulletin for additional information related to Car Rental Assistance.

## **INFORMATION REGARDING ENGINE & EXHAUST SYSTEM MODIFICATION(S)**

Some vehicles may be presented for repair that have been modified using non-Nissan components or in a way not authorized by Nissan. Vehicles that have minor or cosmetic modifications (such as a modified air filter/intake system) will be eligible for this campaign, as long as the modifications do not affect the dealer's ability to diagnose and install the campaign parts in accordance with this bulletin within the allotted time(s).

Owners of vehicles with more extensive, non-Nissan approved engine and/or exhaust system modifications may be responsible for bringing the vehicle into a condition that allows the campaign procedures to be followed and the repairs completed. Extensive modifications to these systems may make diagnosis (an essential part of this campaign) and the installation of campaign parts not possible. In such cases, the engine/vehicle must be returned to an appropriate condition in order for the campaign repair to be performed.

For example, the following Original Equipment Manufacturer (OEM) parts must be installed and functional:

- all oxygen sensors
- the pre-catalytic converter
- catalytic converter
- engine (ECM) control module

Once the campaign repair is completed, the re-installation of any non-Nissan parts is the financial responsibility of the owner and the cost to install these parts must be negotiated between the dealer and the vehicle owner. The Nissan dealer may elect not to perform any repairs that may violate emissions or other regulations.

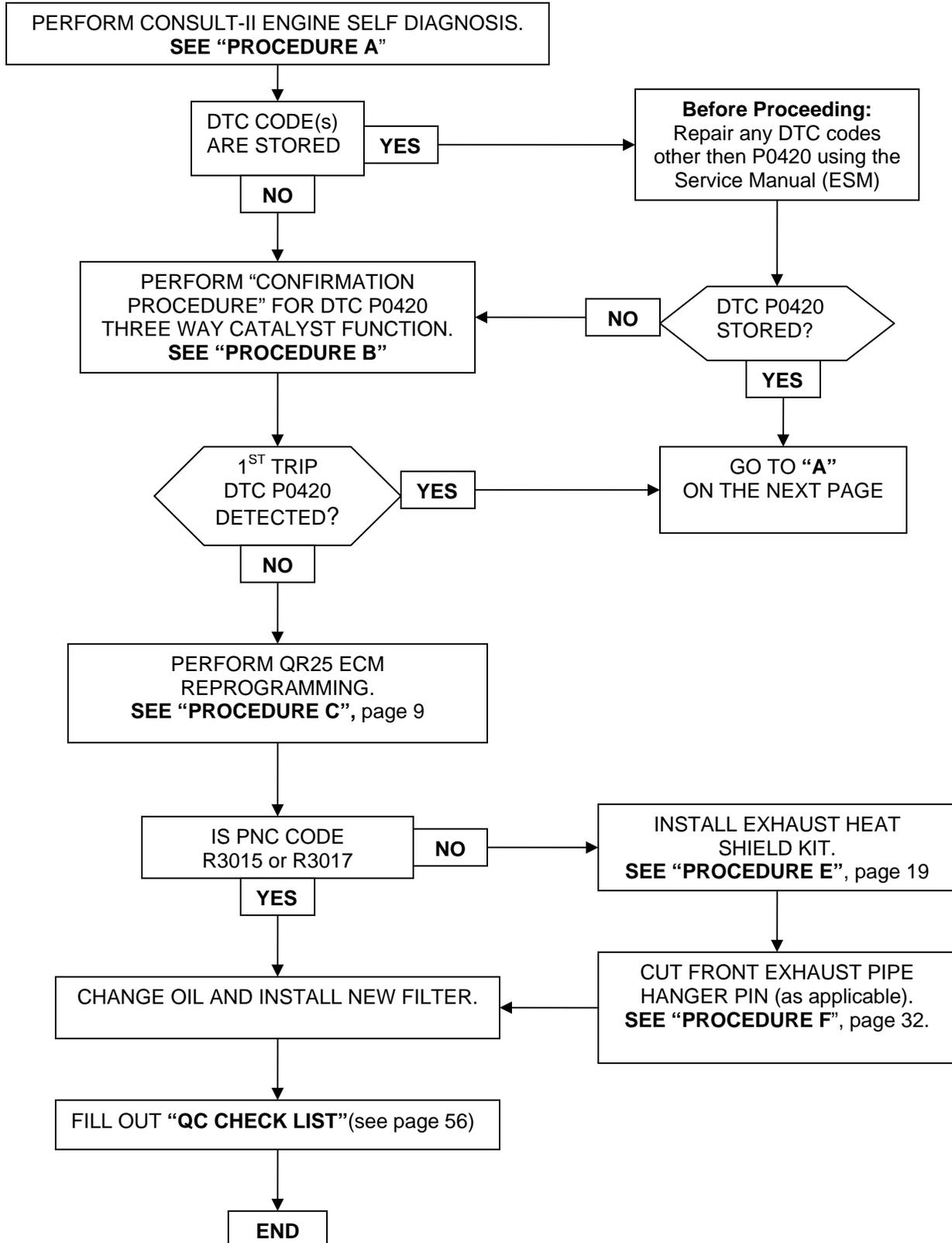
For questions regarding modified equipment, contact the Warranty Claims Call Center.

## SERVICE PROCEDURE

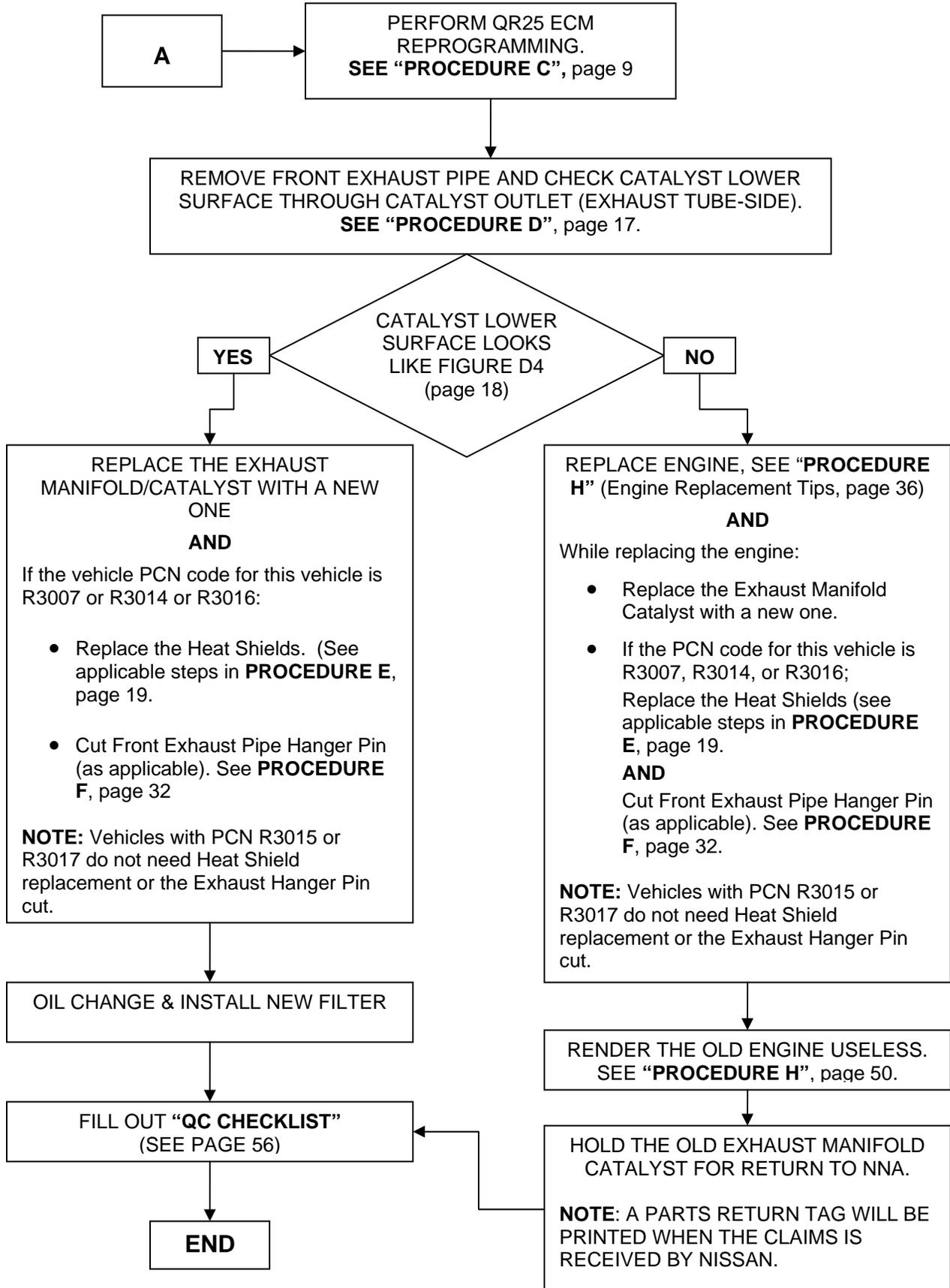
Refer to the Repair Flow Chart below to determine the steps needed for this vehicle.

**NOTE: Use Service Comm to determine if the vehicle you're working on requires this campaign, and to obtain the vehicle-specific PNC code. Write the PNC code on the Repair Order.**

### Repair Flow Chart



## Repair Flow Chart (cont.)



## Procedure A - Perform CONSULT-II Engine Self-Diagnosis:

Procedure A should be performed by an OBDII Certified technician.

1. Install the Diagnostics Card (red/white) into slot A of CONSULT-II (see Figure A1).

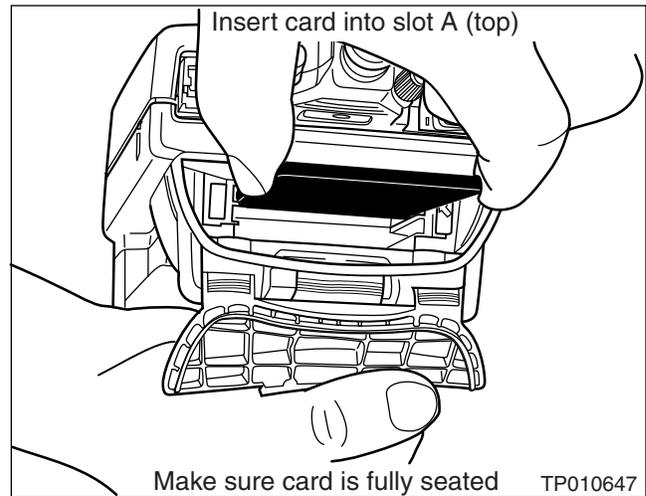


Figure A1

2. Confirm the CONSULT-II date and time are correctly set as follows:

A. With the Diagnostics Card (red/white) in slot 1, turn ON CONSULT-II.

B. Touch "**SUB MODE**" (see Figure A2).

C. Touch "**SET DATE**".

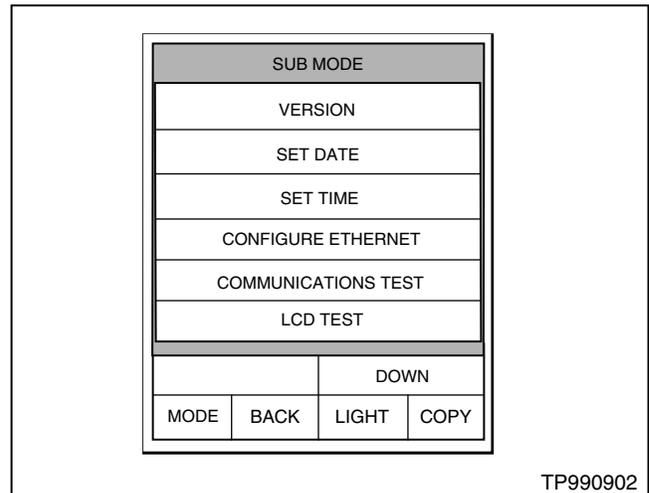


Figure A2

- 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.
- If the date is OK, press "**BACK**" and go to step D.

D. Touch "**SET TIME**".

- If the time is not correct, touch the hour, minute or AM/PM as needed. Then adjust it by using arrow keys. Once done, press "**SAVE**", press "**BACK**" and go to step 3 (next page).
- If time is OK, press "**BACK**" and go to step 3 (next page).

**Procedure A**

3. Connect CONSULT-II to the vehicle and turn the ignition switch to the 'ON' position.

4. With CONSULT-II **ON**, from the Main Menu screen proceed as follows:

**START(Nissan)**>>**ENGINE**>>**Self-DIAG Results**

A. If your screen looks like Figure A3 (**No DTC Detected**):

- Print the Self-Diagnosis Results screen and attach it to the Repair Order
- Press **ERASE**, then press **YES**
- Perform **Procedure B - Conduct P0420 Three Way Catalyst DTC Confirmation**. Then, refer to the Repair Flow Chart (page 4) for further instructions.

B. If your screen looks like Figure A4 (**DTC is Detected**):

- Print the Self-Diagnosis Results screen and attach it to the Repair Order\*
- Press **ERASE**, then press **YES**
- Perform **Procedure C – Perform QR25 ECM Reprogramming**. Then, refer to the Repair Flow Chart (page 4) for further instructions.

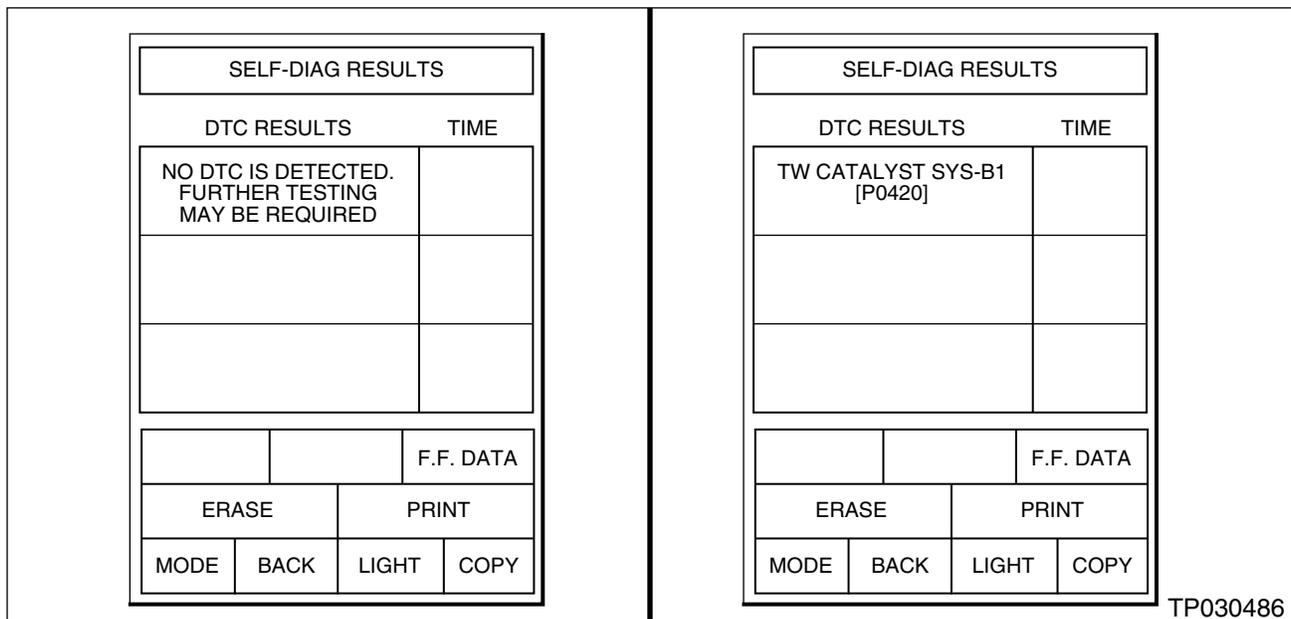


Figure A3

Figure A4

TP030486

\* Figure A5 (below) is an example of the CONSULT-II Self-Diagnosis Results printout.

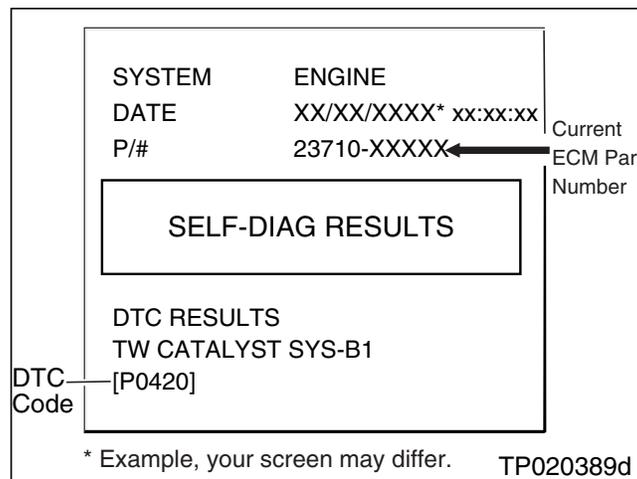


Figure A5

**Procedure A**

## Procedure B - Conduct P0420 Three Way Catalyst Function DTC Confirmation:

Procedure B should be performed by an OBDII Certified technician.

1. Use CONSULT-II to perform the following DTC Confirmation procedure:
  - A. Start the engine and warm it up to normal operating temperature.
  - B. Using CONSULT-II, select: **SYSTEM >ENGINE >DIAG MODE >DATA MONITOR >MONITOR ITEM >ECM INPUT SIGNALS >START.**
  - C. Confirm **COOLANT TEMP/S** is more than 70 °C (158 °F).
  - D. Turn the ignition switch OFF and wait at least 10 seconds.
  - E. Turn the ignition switch ON and using CONSULT-II, select: **DIAG MODE >SCROLL DOWN >DTC & SRT CONFIRMATION >WORK ITEM >SRT WORK SUPPORT >MAIN SIGNALS >START.**
  - F. Start the engine.

- G. Let the engine idle for one minute.
- H. Increase engine speed to between 4000 RPM and 4500 RPM for one minute under NO load (see Figure B1).
- I. Slow the engine speed down to between 2000 RPM and 3000 RPM and **hold it steady** until “**CMPLT**” shows up on the CONSULT-II screen

### IMPORTANT:

- In some cases, it could take up to three minutes at 2000 to 3000 RPM for “**CMPLT**” to show up on the CONSULT-II screen.
- After three minutes is up, go to step J (next step).

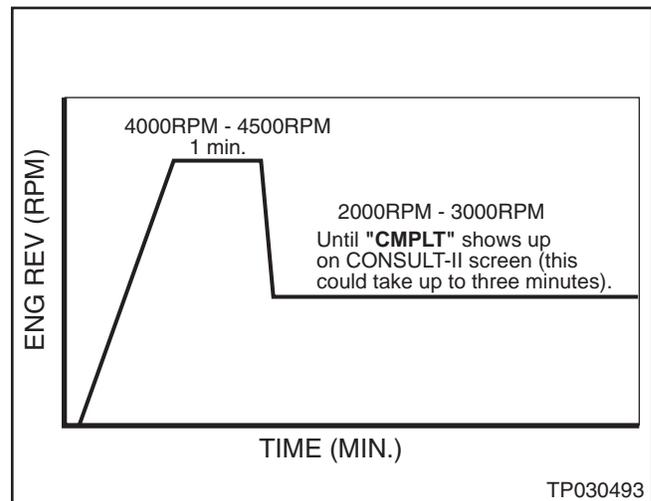


Figure B1

- J. Release the accelerator pedal completely. Then, using CONSULT-II, select: **BACK**, and **SRT STATUS**.
  - If “**CATALYST**” shows “**INCMP**”, repeat steps G through I (above).
  - If “**CATALYST**” shows “**CMPLT**”, print SRT Status and attach it to the Repair Order. Then, go to step K (next step).
- K. Using CONSULT-II, select **SELF-DIAG RESULTS** mode.
  - **If P0420 code is confirmed:** print the Self-Diagnosis Results with ECM part number and attach it to the Repair Order. Press **ERASE** to clear the DTC. Then, refer to the **Repair Flow Chart** (page 4) for further instructions.
  - **If P0420 code is NOT confirmed:** refer to the **Repair Flow Chart** (page 4) for further instructions.

## Procedure B

## Procedure C - Perform QR25 ECM Reprogramming:

For 2003 and 2004 Applied Vehicles: When you perform Procedure C (ECM Reprogramming), go to NTB06-051a for reprogramming information. You will still need to perform all other parts of this bulletin on 2003 and 2004 Applied Vehicles.

Procedure C should be performed by an OBDII Certified technician.

### Important Information About ECM Reprogramming and The Special “QR25 Campaign ECM Software” Reprogramming Card:

- This is a special ECM Reprogramming procedure **just for this Campaign**.
- Your dealership has been supplied with a special “QR25 Campaign ECM Software” reprogramming card for this campaign.
- This card already contains all the ECM data needed for this campaign.
- ECM data files do NOT have to be down-loaded from ASIST.
- If the special “QR25 Campaign ECM Software” reprogramming card is inoperable, refer to the **Inoperable “QR25 Campaign ECM Software” Reprogramming Card Procedure** on page 16.

1. With the Diagnostics (red/white) card still in slot A of CONSULT-II.

2. Connect CONSULT-II to the vehicle making sure the connector is fully plugged in.

3. Turn the ignition switch “ON”, but do not start the engine. CONSULT-II will turn on automatically

4. Press "**SUB MODE**", then select "**BATTERY CHARGE**".

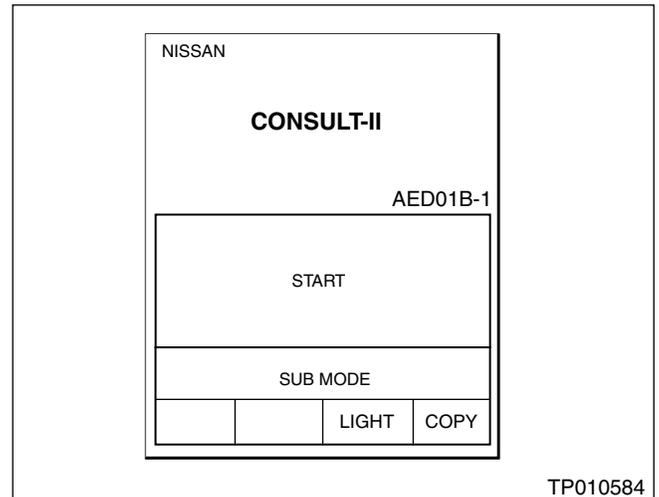


Figure C1

5. Check the vehicle’s battery voltage reading on the CONSULT-II screen (see Figure C2).

#### NOTE:

- The vehicle’s battery voltage is called "**CHARGER INPUT**".
- This is to confirm CONSULT-II is receiving voltage from the vehicle battery.

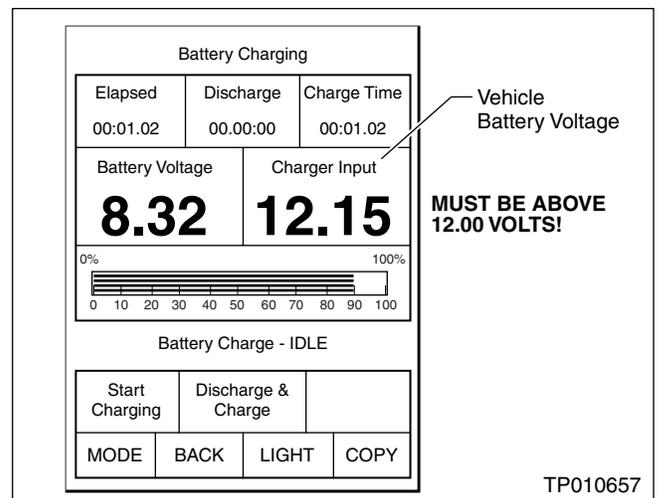


Figure C2

## Procedure C

6. Turn the vehicle's ignition switch "OFF" and CONSULT-II "OFF".
7. Remove the Diagnostics Card (red/white) and install the "QR25 Campaign ECM Software" reprogramming card (Orange 16MB) into slot A of CONSULT-II (see Figure C3).

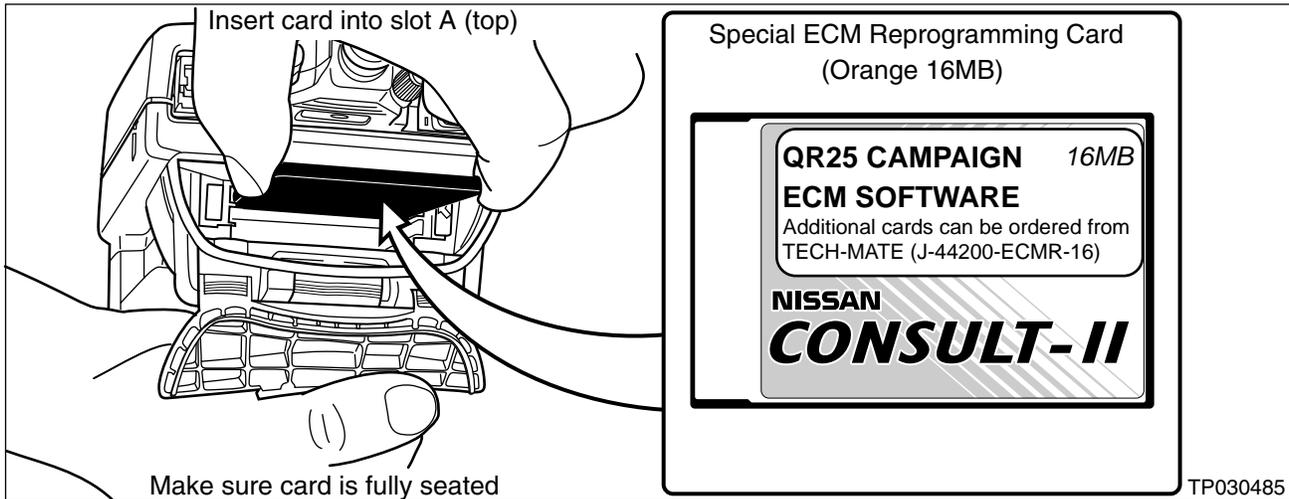


Figure C3

8. Connect a battery charger (or a "known-good" additional 12V battery) to the vehicle battery (see Figure C4).

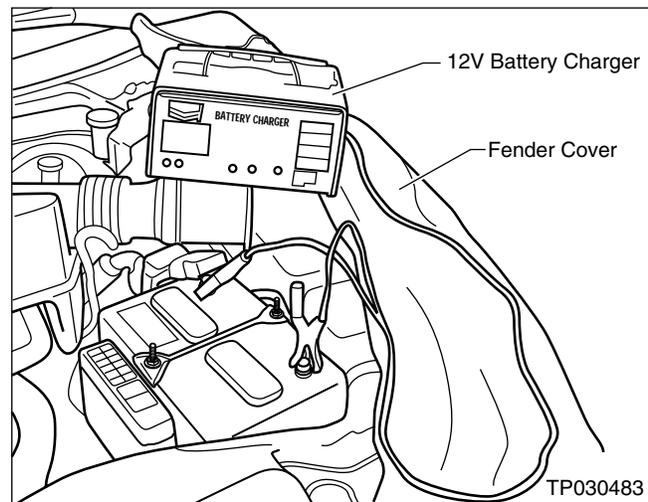


Figure C4

- **You MUST Trickle charge the battery during the reprogramming procedure.**
- This is to make sure the battery voltage does not drop below 12.0 volts.
- **DO NOT 'boost' charge the battery during reprogramming.**
- It is normal for the radiator fans to come on during this reprogramming procedure.
- **DO NOT DISCONNECT ANY ELECTRICAL CONNECTIONS TO THE RADIATOR FANS.**

**CAUTION: Do not allow the vehicle's battery voltage to drop below 12.0 volts during ECU Reprogramming. Permanent ECU damage can occur if the battery does not maintain the minimum voltage during the ECU Reprogramming.**

9. **Make Sure the DLC-II cable is firmly plugged into the vehicle harness** (see **CAUTION** below step 8). Turn the ignition switch "ON", but do not start the engine. CONSULT-II will turn on automatically (see Figure C5).

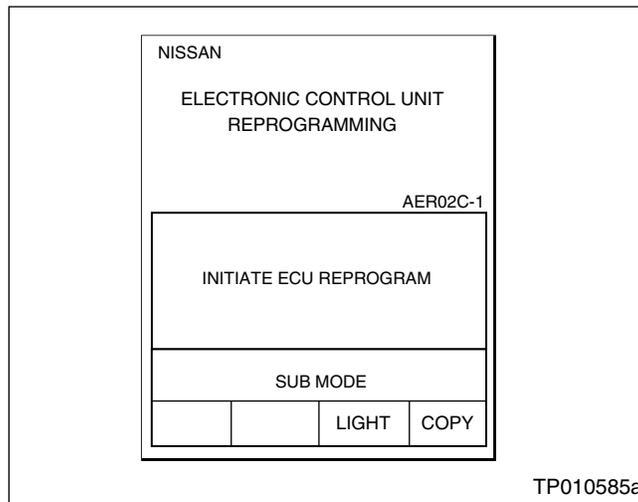


Figure C5

10. Confirm that all electrical loads (except for the ignition) such as headlights, defroster, A/C, Audio (radio), cellular telephone (if applicable) are "OFF".

**CAUTION: Do not** unplug CONSULT-II from the vehicle while Reprogramming ECM. **Do not** attempt ECM reprogramming with any vehicle electrical loads "ON" except for the ignition. Permanent ECM damage can occur.

11. Roll the driver's window part way down, exit the vehicle, close the door and hang the CONSULT-II unit on the outside of the window (see Figure C6)

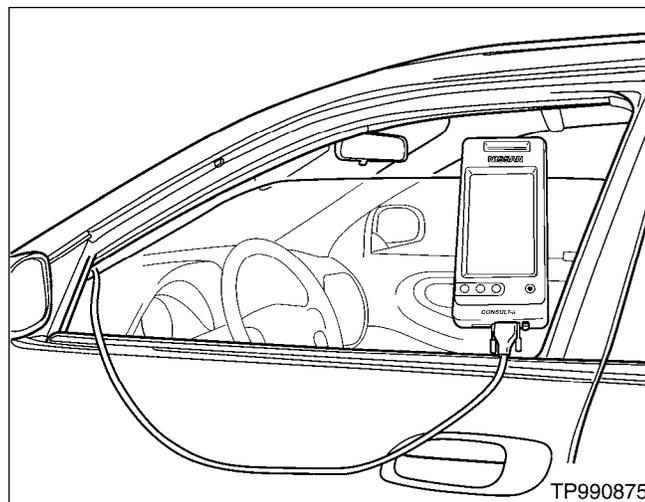


Figure C6

**CAUTION: Do not** open the vehicle doors or trunk during the reprogramming.

12. Press **"INITIATE ECU REPROGRAM"** (see Figure C7), then do the following:

- Press **"ECM"**
- Review the precaution
- Press **"NEXT"**

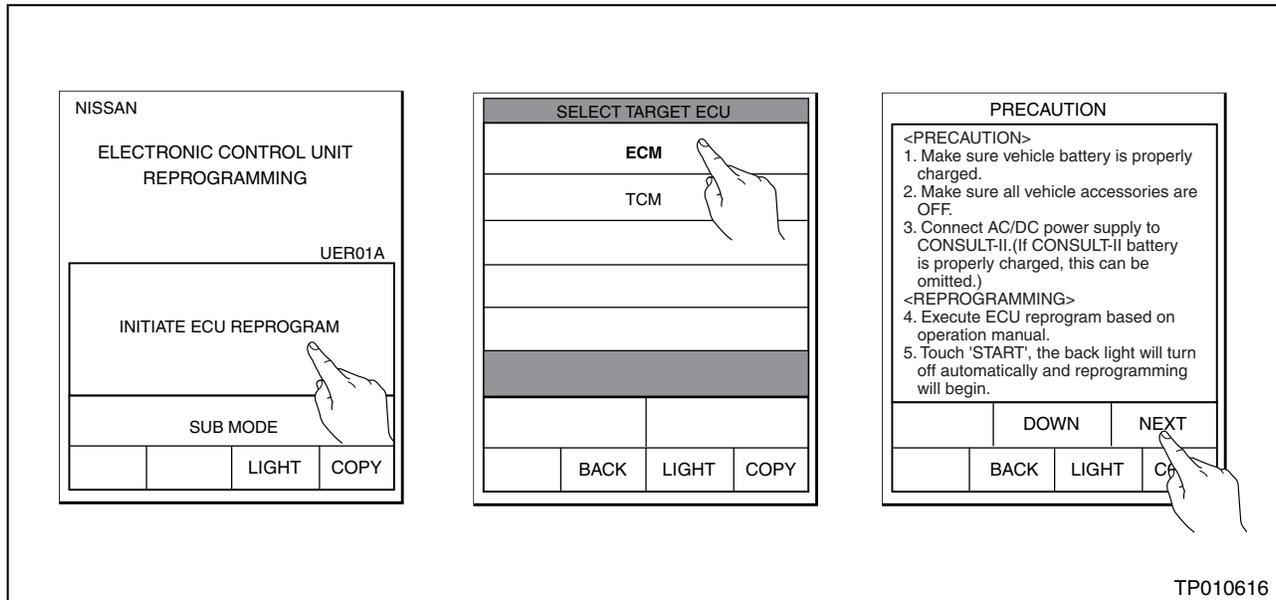


Figure C7

13. Press **"CHECK ECM P/N"** to "confirm" (take note of) the ECM part number on the vehicle to be reprogrammed (see Figure C8).

**NOTE:** Shown below is the vehicle's ECM part number BEFORE Reprogramming.

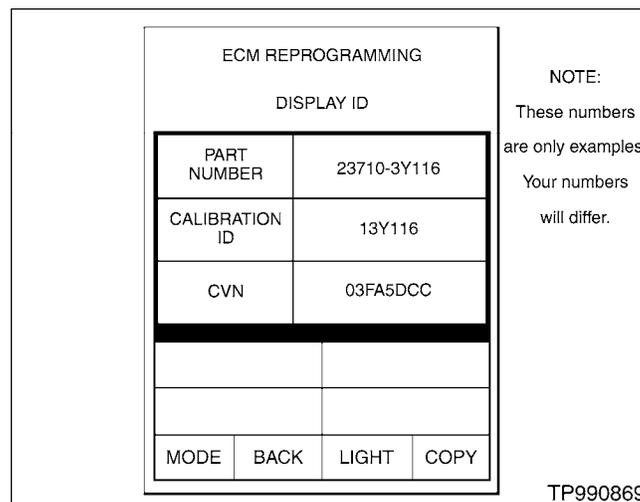


Figure C8

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

15. Press **"BACK"** to return to the main menu.

16. Refer to the chart below. Match the vehicle's Current ECM Part Number with the New ECM Part Number. Make a note of the "number match" (current and new ECM P/N) on the repair order.

**NOTE:** B15 = Sentra, L31 = Altima

VEHICLE APPLICATION	CURRENT ECM P/N	NEW ECM P/N
2002 B15 QR25 A/T	23710-8U000, -8U001, -8U500, -8U501	23710-8U502
2002 B15 QR25 A/T w/NATS	23710-8U040, -8U041, -8U540, -8U541	23710-8U542
2002 B15 QR25 5-M/T	23710-8U010, -8U011, -8U510, -8U511	23710-8U512
2002 B15 QR25 5-M/T w/NATS	23710-8U060, -8U061, -8U560, -8U561	23710-8U562
2002 B15 QR25 6-M/T	23710-8U020, -8U021	23710-8U022
2002 B15 QR25 6-M/T w/NATS	23710-8U070, -8U071	23710-8U072
2002 L31 QR25 A/T w/ASCD	23710-8J000, -8J001, -9J000, -9J001, -9J002	23710-9J003
2002 L31 QR25 A/T	23710-8J010, -8J011, -9J005, -9J006, -9J007	23710-9J008
2002 L31 QR25 M/T w/ASCD	23710-8J060, -8J061, -9J010, -9J011, -9J012	23710-9J013
2002 L31 QR25 M/T	23710-8J070, -8J071, -9J015, -9J016, -9J017	23710-9J018
<b>NOTE: For 2003 and 2004 Applied Vehicles, go to NTB06-051a for ECM reprogramming information.</b>		

**NOTES:**

- **For 2003 and 2004 Applied Vehicles: When you perform Procedure C (ECM Reprogramming), go to NTB06-051a for reprogramming information. You will still need to perform all other parts of this bulletin on 2003 and 2004 Applied Vehicles.**
- 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.

**Procedure C**

17. Now go to the CONSULT-II screen and select the correct ECM program to install from the choices on the screen (see Figure C9). Refer to the new ECM P/N note in the "number match" note you made in step 16.

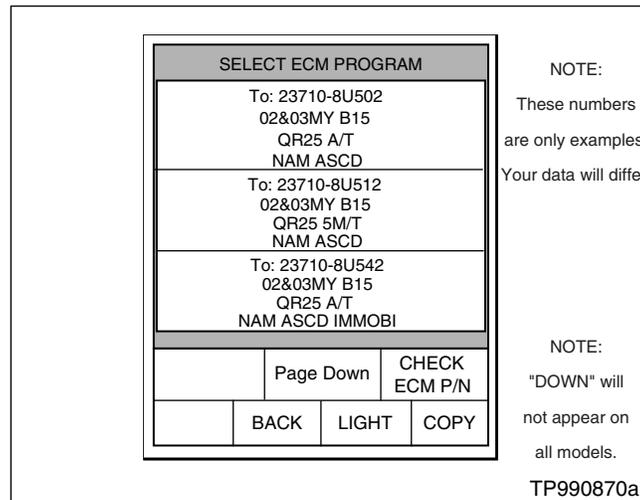


Figure C9

18. The "REPROGRAM START" window should appear (see Figure C10).

**NOTE:** If you get an "error" message, refer to the ECU Reprogramming Software Operations Manual in ASIST for instructions.

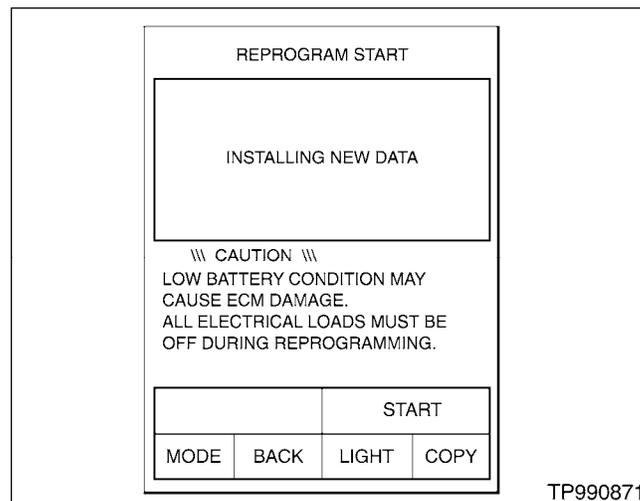


Figure C10

19. Press "**START**". After a moment the window shown in Figure C11 (next page) will come up. CONSULT-II will now turn OFF its screen "backlight" and begin to reprogram the ECM.

**NOTE:** This process will take about 20 minutes.

**CAUTION:** Leave the vehicle and the CONSULT-II unit "undisturbed" (don't "touch" them) until Reprogramming is complete.

When the Reprogramming is complete, CONSULT-II will:

- "Beep"
- Turn the screen backlight ON
- Automatically print out a report

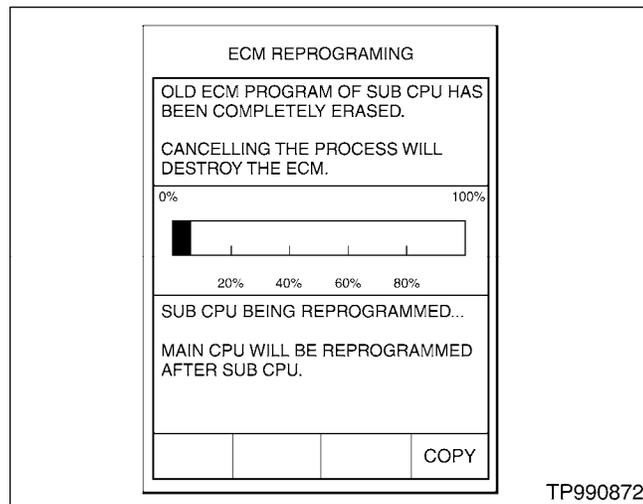


Figure C11

**CAUTION:**

- If CONSULT-II prints out an ERROR message during the reprogramming process, the ECM has been permanently damaged and you'll have to replace it.
- If this happens, it is possible that a step(s) in the reprogramming procedure was missed/performed incorrectly, the vehicle's voltage supply (to CONSULT-II) was too low (below 12V), or the CONSULT-II unit may have a problem.
- Perform steps A through E below.

- A. Turn the ignition key "OFF", turn CONSULT-II "OFF" and DISCONNECT THE NEGATIVE TERMINAL OF THE VEHICLE BATTERY (Do not start the vehicle with the damaged ECM installed).
- B. Remove the damaged ECM from the vehicle.
- C. Attach the CONSULT-II printout to the repair order for future reference.
- D. Replace the damaged ECM.

**NOTE:** The replacement ECM that you order may have to be re-programmed to the latest part number for the vehicle you are working on.

- E. Return to the beginning of Procedure C, step 1 on page 9. Carefully follow each step exactly as written.

20. Once ECM Reprogramming is done, CONSULT-II will print out a report (see Figure C12). Attach this to the repair order for future reference.

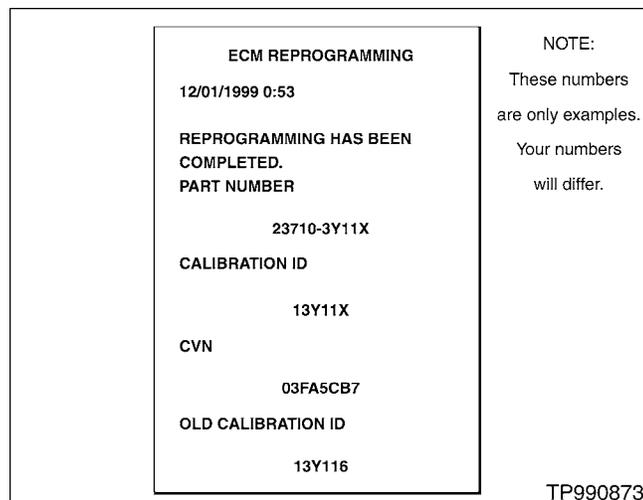


Figure C12

**Procedure C**

21. Press "**END**" to return to the main menu. Enter the vehicle and turn the ignition switch OFF and CONSULT-II OFF. Disconnect CONSULT-II from the vehicle.
22. **Wait more than 10 seconds, then turn the ignition switch "ON" for 1 second. Then, turn the ignition switch "OFF" again for 10 seconds.**
- 23 **Repeat step 16 for a total of three times (see Figure C13). This will reset the ECM "self learned" values.**

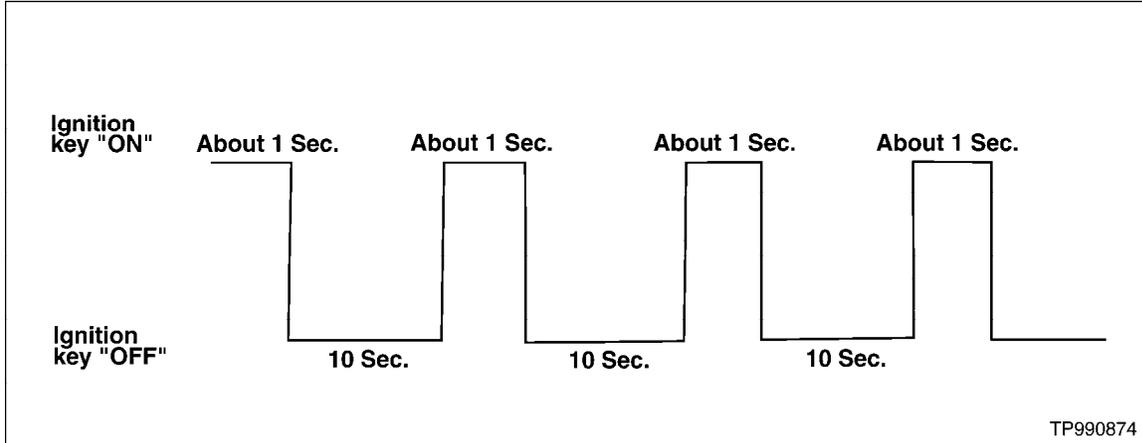


Figure C13

24. Start the engine and confirm it is operating normally.
25. Return to the Repair Flow Chart (page 4 and 5) for further instructions.

### Inoperable "QR25 Campaign ECM Software" Reprogramming Card Procedure

If the special "QR25 Campaign ECM Software" reprogramming card is not working, you can do the following:

- A. Update the special "QR25 Campaign ECM Software" reprogramming card using ASIST. **This will require ASIST version 8.0.0 or greater.**

**CAUTION:** ECM files will be lost if the special "QR25 Campaign ECM Software" reprogramming card is updated on ASIST versions earlier than Version 8.0.0.

**NOTE:** Use the keypad in the ECU Reprogramming Data Window, to enter code **03070** to update the card. This will download all ECM data required for this campaign.

- B. Use your existing CONSULT-II Reprogramming Card (8MB) to download the individual ECM data (from ASIST) required to complete the campaign repair.

**NOTE:** Use the conventional Model/Model Year search method to download the data.

- If you want to obtain an additional "QR25 Campaign ECM Software" reprogramming card(s), P/N J-44200-ECMR-16, contact Tech-Mate (1-800-662-2001, option #1).

## Procedure D - Remove Front Exhaust Pipe/Inspect Catalyst Lower Surface:

1. Remove the two nuts that secure the Front Exhaust Pipe to the Exhaust Manifold/Catalyst (see Figure D1). Discard the old gasket as you'll be installing a new one later.

**NOTE:** The stud(s) may come out of the Catalyst when removing the nut – this is okay. Just re-install them later.

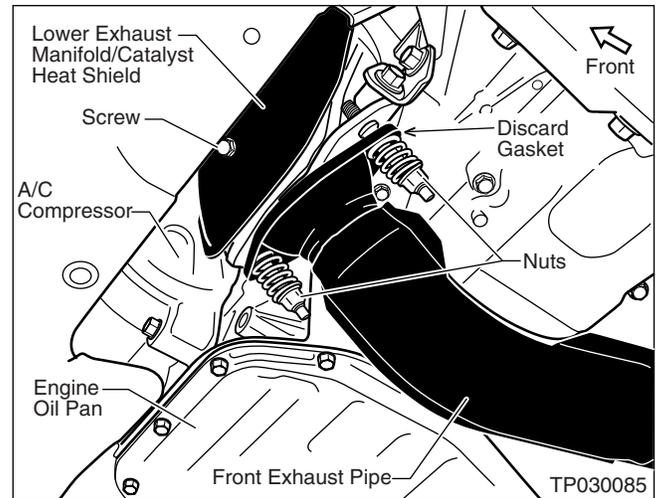


Figure D1

2. Remove the two nuts that secure the Front Exhaust Pipe to the Muffler (see Figure D2). Then, separate the Front Exhaust Pipe from the Muffler. Save the gasket; you'll need to re-use it.

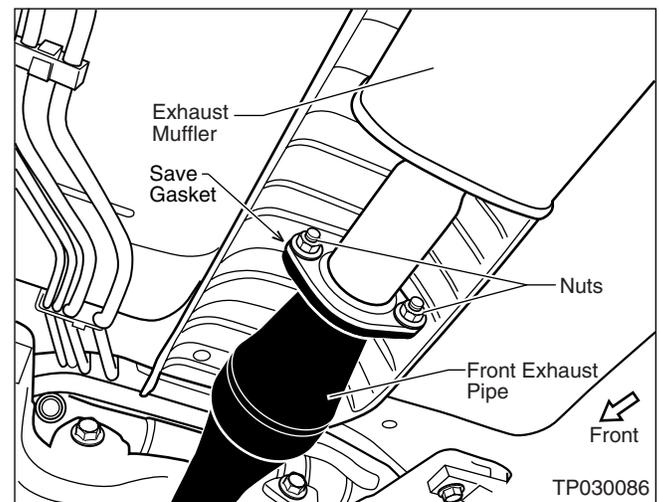


Figure D2

3. **This Step For Altima ONLY:** Slide the Front Exhaust Pipe Hanger Pin out of the Front Exhaust Pipe Hanger (see Figure D3).
4. Remove the Exhaust Pipe from the vehicle.

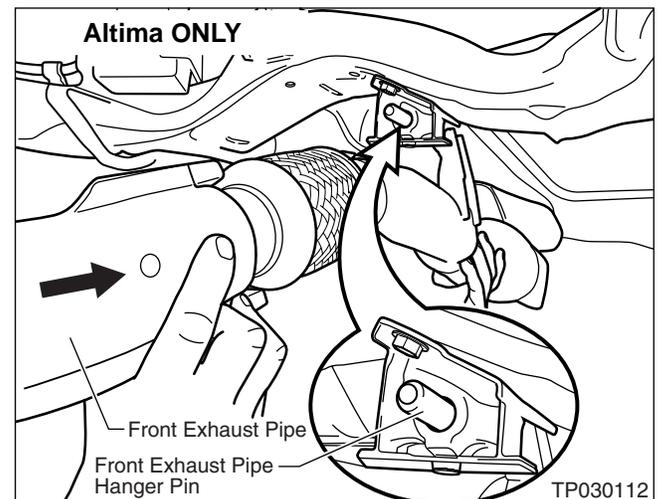


Figure D3

## Procedure D

5. Inspect the entire catalyst lower surface condition as shown in Figure D4.

**IMPORTANT:** Make sure you inspect the entire lower surface. You are looking for cracks or holes in the lower surface.

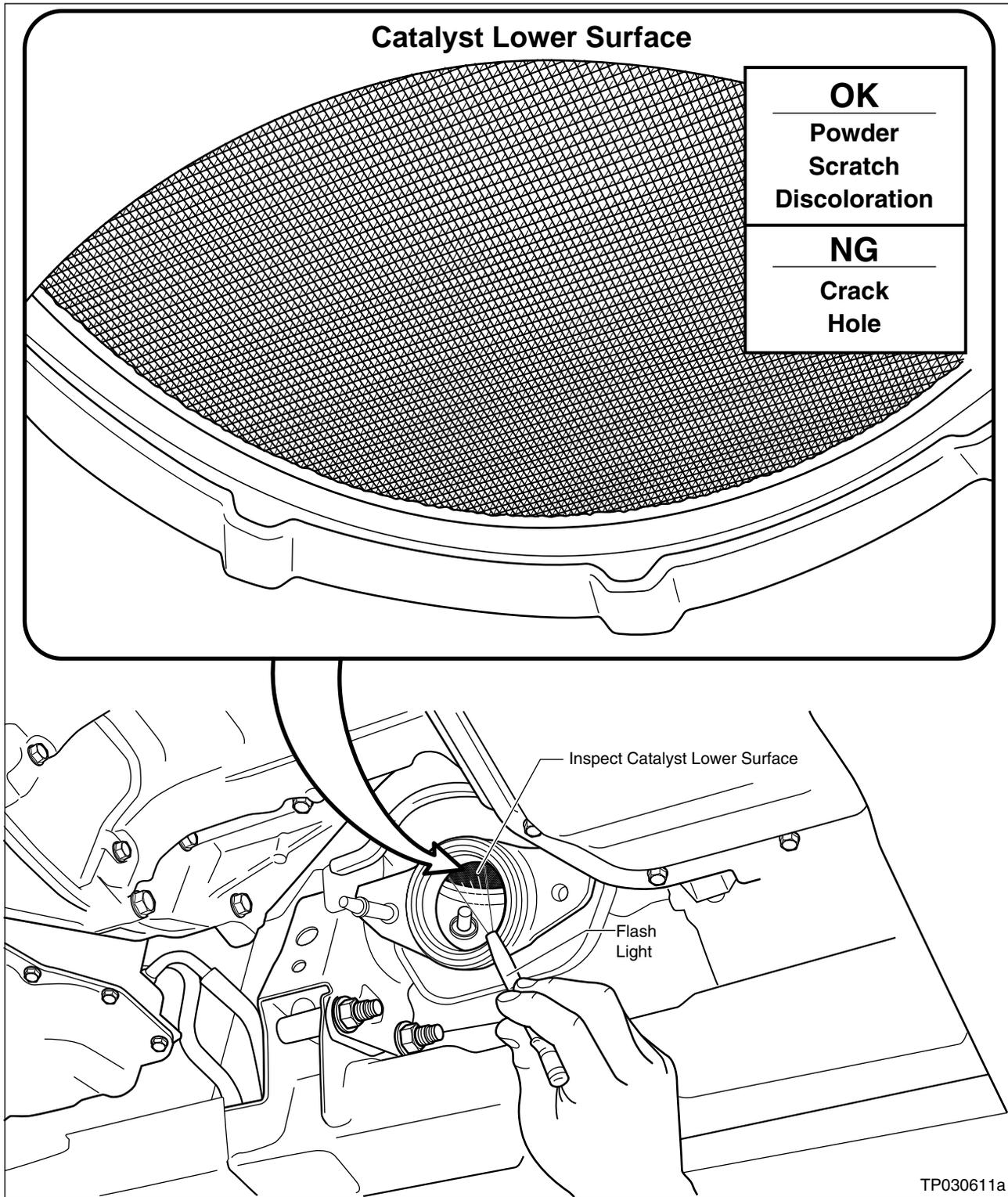


Figure D4

6. Return to the Repair Flow Chart (page 4) for further instructions.

**Procedure E - Install Exhaust Heat Shield Kit:  
(For PNC codes R3007, R3014, and R3016 ONLY)**

**NOTE:** Vehicles with PNC code R3015 or R3017 **DO NOT** need a heat shield kit installed. This includes some 2003 vehicles and all 2004 vehicles. Refer to Service Comm for the vehicle-specific PNC code.

There are four (4) Heat Shield Kits available in this campaign. Please select the correct one from the following chart:

 **Use the PNC code from Service Comm to determine Heat Shield requirement**

PNC Code	Model and Year	Heat Shield Kit P/N A6590 -	Figure
R3007	2002 Altima	8J025	E1
R3007 or R3014	2003 Altima	8J026	E2
R3015	2003 Altima	No Heat Shield Kit Required	
R3016	2002 Sentra	8J027	E3
R3016	2003 Sentra	8J028	E4
R3017	2004 Sentra	No Heat Shield Kit Required	

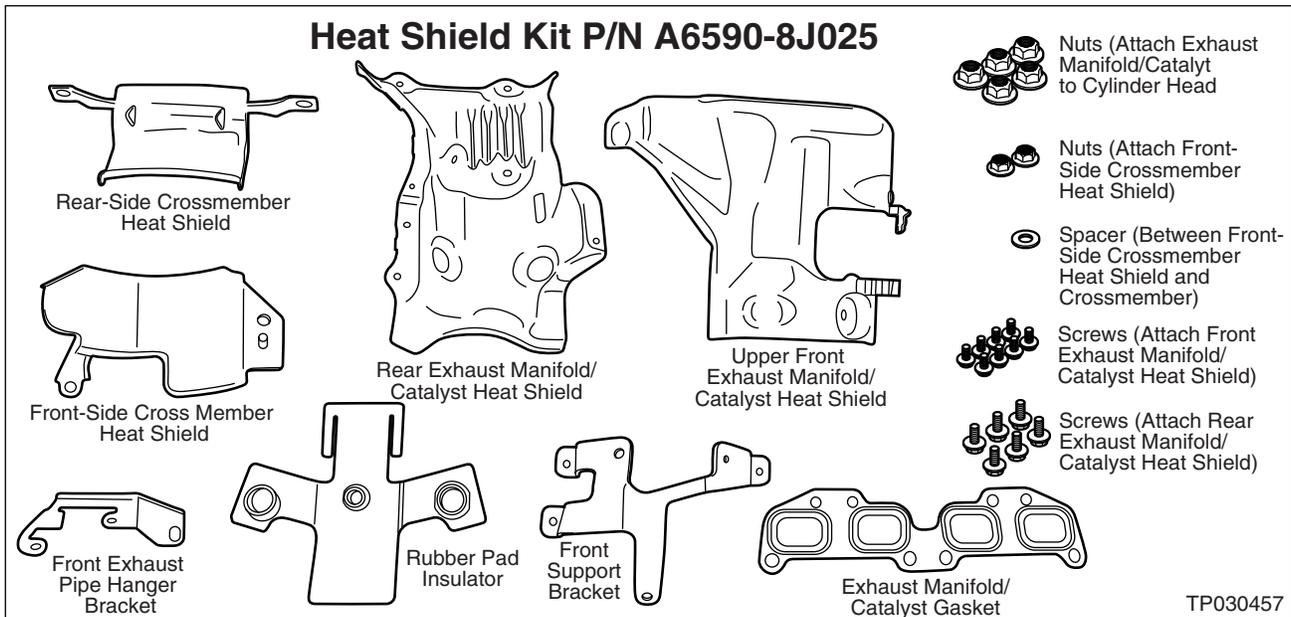
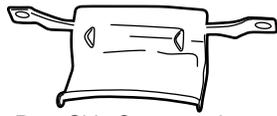
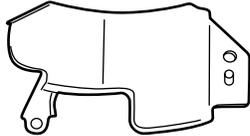


Figure E1

### Heat Shield Kit P/N A6590-8J026



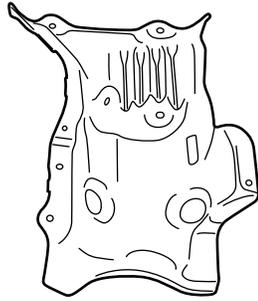
Rear-Side Crossmember Heat Shield



Front-Side Cross Member Heat Shield



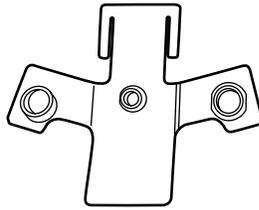
Front Exhaust Pipe Hanger Bracket



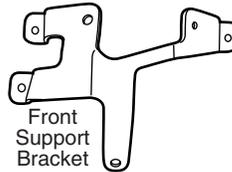
Rear Exhaust Manifold/Catalyst Heat Shield



Exhaust Manifold/Catalyst Gasket



Rubber Pad Insulator



Front Support Bracket



Nuts (Attach Exhaust Manifold/Catalyst to Cylinder Head)



Nuts (Attach Front-Side Crossmember Heat Shield)



Spacer (Between Front-Side Crossmember Heat Shield and Crossmember)



Screws (Attach Front Exhaust Manifold/Catalyst Heat Shield)

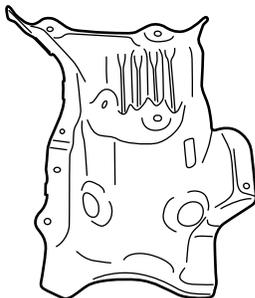


Screws (Attach Rear Exhaust Manifold/Catalyst Heat Shield)

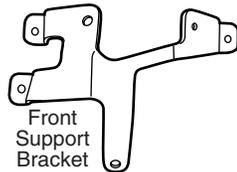
TP030458

Figure E2

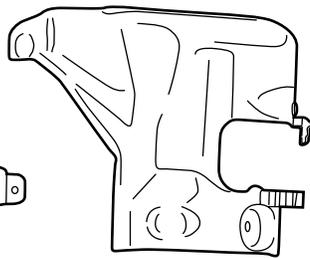
### Heat Shield Kit P/N A6590-8J027



Rear Exhaust Manifold/Catalyst Heat Shield



Front Support Bracket



Upper Front Exhaust Manifold/Catalyst Heat Shield



Exhaust Manifold/Catalyst Gasket



Nuts (Attach Exhaust Manifold/Catalyst to Cylinder Head)



Screws (Attach Front Exhaust Manifold/Catalyst Heat Shield)



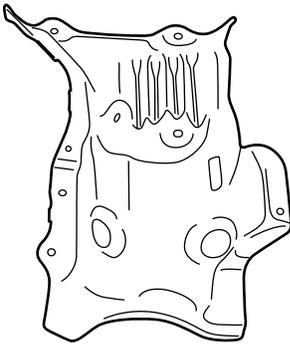
Screws (Attach Rear Exhaust Manifold/Catalyst Heat Shield)

TP030459

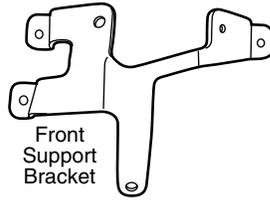
Figure E3

## Procedure E

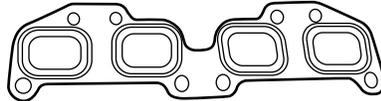
## Heat Shield Kit P/N A6590-8J028



Rear Exhaust Manifold/  
Catalyst Heat Shield



Front  
Support  
Bracket



Exhaust Manifold/  
Catalyst Gasket



Nuts (Attach Exhaust  
Manifold/Catalyst  
to Cylinder Head)



Screws (Attach Front  
Exhaust Manifold/  
Catalyst Heat Shield)



Screws (Attach Rear  
Exhaust Manifold/  
Catalyst Heat Shield)

TP030460

Figure E4

### Preliminary Steps:

1. Record all radio station presets.
2. Make sure the ignition key is in the OFF position.
3. Disconnect the negative battery cable.

## Remove Alternator:

4. **This Step For Altima ONLY:** Re-position (lift up about an inch) the Relay Box to allow enough clearance for removing the Lower Alternator Mounting Bolt. See Figure E5.

- Remove one nut at the lower front of the Relay Box (see Figure E5).
- Use a flat-blade screwdriver to release the Clip on the side (facing the Alternator) of the Relay Box (see Figure E5).

**NOTE:** You can also re-position the relay box by removing the lower front nut and sliding the relay box forward.

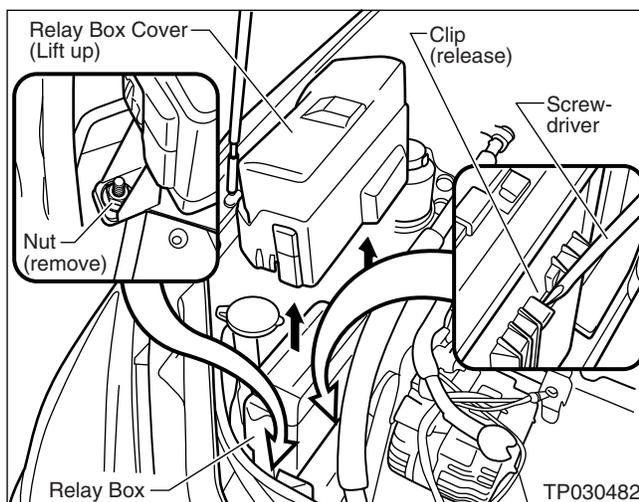


Figure E5

5. **This Step For Sentra ONLY:**

- Remove both upper radiator mounting brackets.
- Remove the passenger-side front inner fender well in order to remove the alternator.

6. Remove the top Plastic Engine Cover (as applicable).

7. Remove all wire harness connections from the Alternator (see Figure E6).

8. Remove the Alternator Belt (see Figure E6).

9. Remove the Alternator Mounting Bolts (see Figure E6).

**IMPORTANT:** Prevent the belt tensioner from losing its tension by inserting a screwdriver (or other suitable device) through the tensioner mounting hole (see Figure E7).

10. Remove the Alternator from the vehicle.

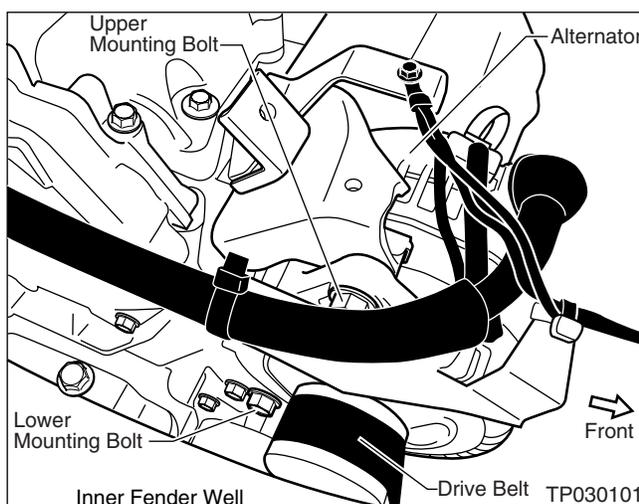


Figure E6

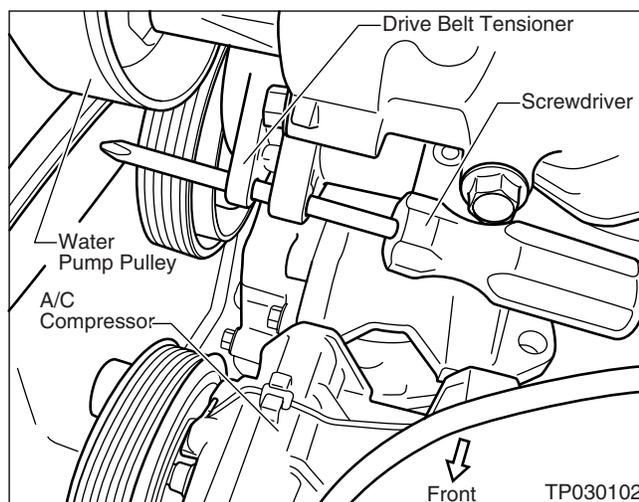


Figure E7

## Procedure E

### Disconnect Oxygen Sensor Wire Harness:

11. Disconnect the Oxygen Sensor Wire Harness Connector (see Figure E8).
12. Remove the Oxygen Sensor Wire Harness from the Upper Front Exhaust Manifold/Catalyst Heat Shield Clips.

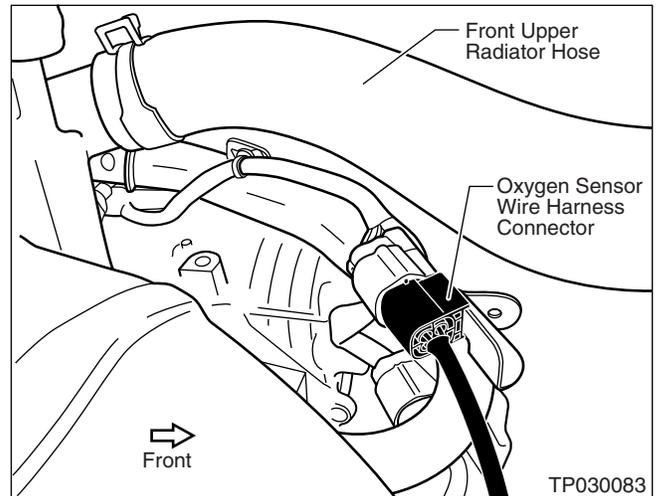


Figure E8

### Remove Upper Front Exhaust Manifold/Catalyst Heat Shield:

**IMPORTANT:** If you break off a heat shield screw(s) in an Exhaust Manifold/Catalyst that is supposed to be re-used on the vehicle, perform **Procedure G – Install Keen-Sert(s) As Needed**. See page 33 of this bulletin.

13. Remove Upper Front Exhaust Manifold/Catalyst Heat Shield:
  - Carefully remove four screws that secure the Heat Shield (see Figure E9).
  - **IMPORTANT:** Use “penetrating” oil. Loosen screws ½ turn with hand-tool (do not use power tool) and apply penetrating oil before removing screws completely.
  - Remove the Heat Shield

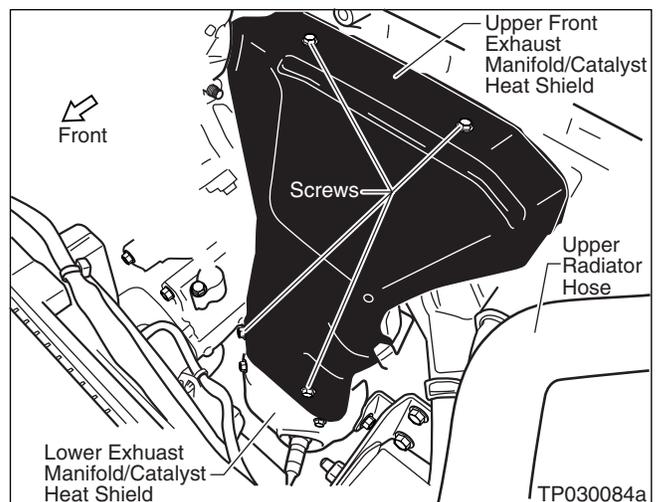


Figure E9

### Procedure E

## Remove Front Exhaust Pipe:

**NOTE:** You may have already removed the Front Exhaust Pipe in **Procedure D**. If so, proceed with step 17 (next page).

14. Remove the two nuts that secure the Front Exhaust Pipe to the Exhaust Manifold/Catalyst (see Figure E10). Discard the old gasket as you'll be installing a new one later.

**NOTE:** The stud(s) may come out of the Catalyst when removing the nut – this is okay. Just re-install them later.

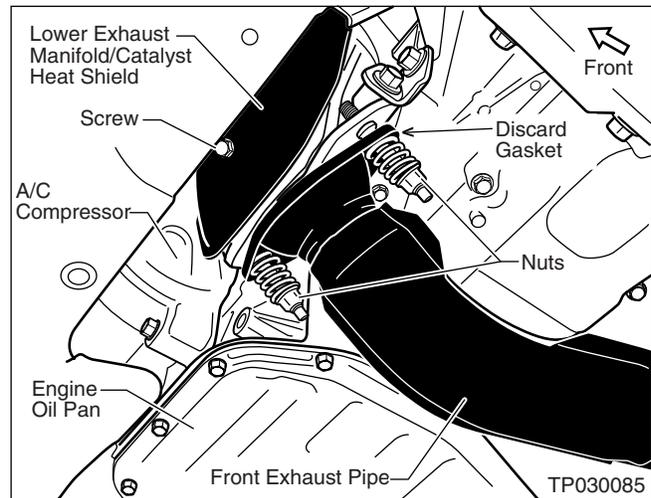


Figure E10

**NOTE:** Steps 15, 16, and 18 through 26 are for **Altima ONLY**.

15. **This Step For Altima ONLY:** Remove the two nuts that secure the Front Exhaust Pipe to the Muffler (see Figure E11). Then, separate the Front Exhaust Pipe from the Muffler. Save the gasket as you'll need to re-use it later.

- **IMPORTANT:** Use “penetrating” oil. Loosen screws  $\frac{1}{2}$  turn with hand-tool (do not use power tool) and apply penetrating oil before removing screws completely.

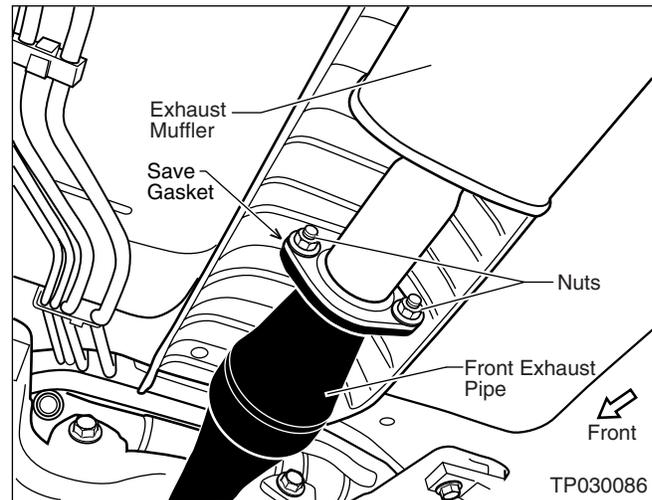


Figure E11

16. **This Step For Altima ONLY:** Slide the Front Exhaust Pipe Hanger Pin out of the Front Exhaust Pipe Hanger (see Figure E12). Remove the Exhaust Pipe from the vehicle.

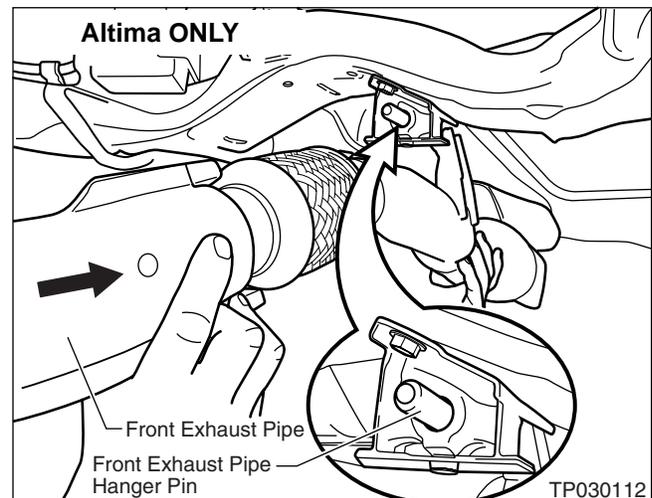


Figure E12

**Procedure E**

## Loosen/Remove Exhaust Manifold/Catalyst Support Bracket Bolts (Altima & Sentra):

17. Loosen the bolt that secures the bracket to the engine block, and remove the bolt that secures the bracket to the Exhaust Manifold/Catalyst (see Figure E13).

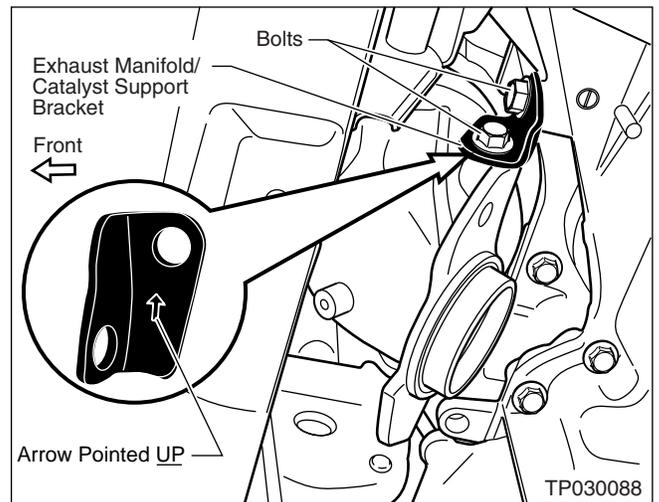


Figure E13

## Remove Front Exhaust Pipe Hanger (Altima ONLY):

18. Remove two bolts and remove the Front Exhaust Pipe Hanger (see Figure E14).

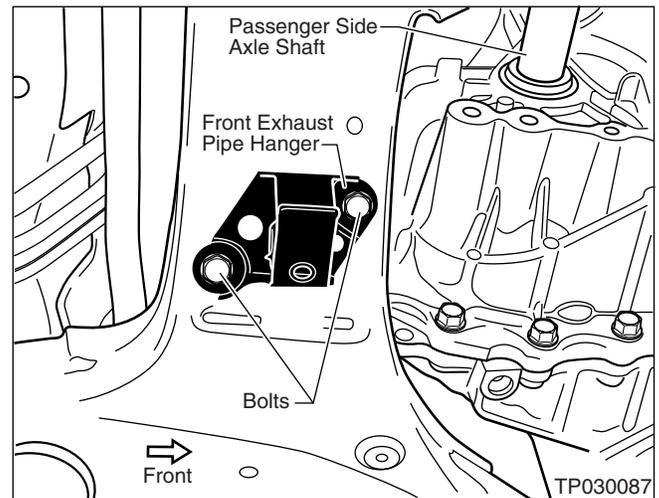


Figure E14

## Install New Hanger Support Bracket (Altima ONLY):

19. Install the new Hanger Support Bracket along with the old Front Exhaust Hanger (see Figure E15).

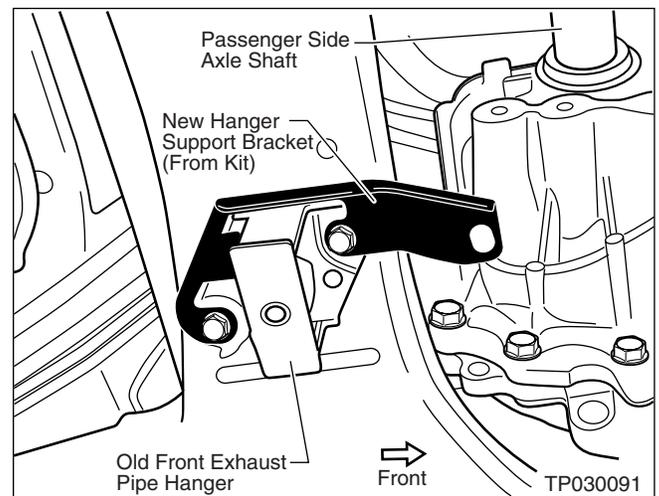


Figure E15

## Procedure E

### Remove Mass Damper Nut (Altima ONLY):

20. Remove the the Mass Damper Nut as shown in Figure E16.

**NOTE:** Some vehicles may NOT be equipped with a Mass Damper.

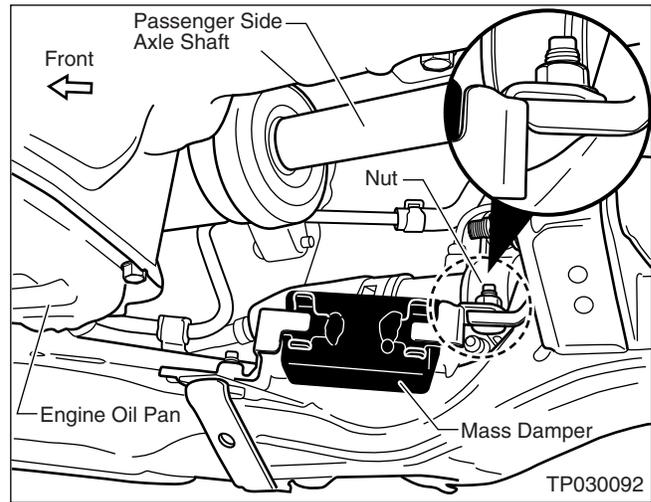


Figure E16

### Install New Rubber Pad Insulator (Altima ONLY):

21. Guide the new Rubber Pad Insulator UP between the Passenger Side Axle Shaft and the Engine Mount (see Figure E17).

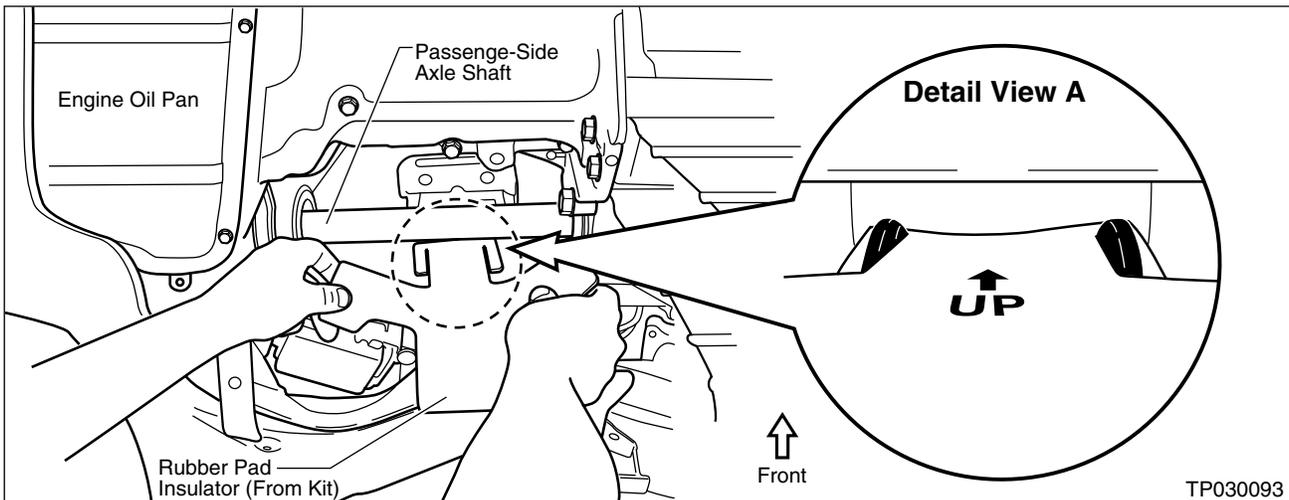


Figure E17

22. Then, hook the upper portion of the Rubber Pad Insulator onto the Engine Mount (see **Detail View A** in Figure E17).

23. Securely press the Rubber Pad Insulator into the holes of the Engine Mount (see Figure E18).

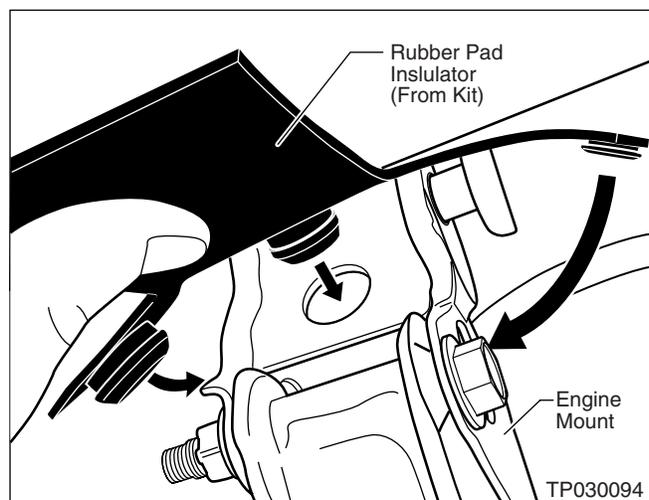


Figure E18

### Procedure E

### Install New Rear-Side Crossmember Heat Shield (Altima ONLY):

24. Remove the two main Steering Rack and Pinion mounting bolts (see Figure E19).
25. Install the new Rear-Side Crossmember Heat Shield using the Rack and Pinion bolts (see Figure E19).

**2002 Altima:** Torque bolts to: 136 – 164 N-m (13.8 – 16.8 Kg-m, 100 – 121 ft-lb).

**2003 Altima:** Torque bolts to: 110 – 140 N-m (12 – 14 Kg-m, 82 – 103 ft-lb).

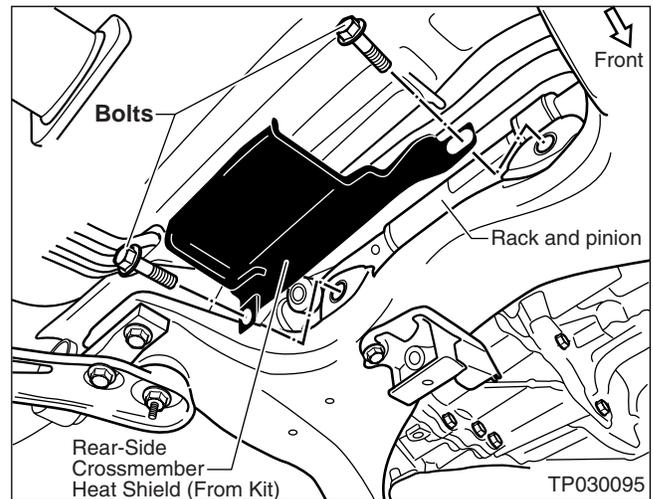


Figure E19

### Install New Front-Side Crossmember Heat Shield (Altima ONLY):

26. Install the new Front-Side Crossmember Heat Shield to the Mass Damper and to the newly installed Hanger Support Bracket with two nuts (P/N 08918-3401A-KT). See Figure E20.

**NOTE:** Some Altima vehicles may NOT be equipped with a Mass Damper. If this is the case, add the new Spacer (supplied in the kit) between the heat shield and the crossmember mount (see Figure E20).

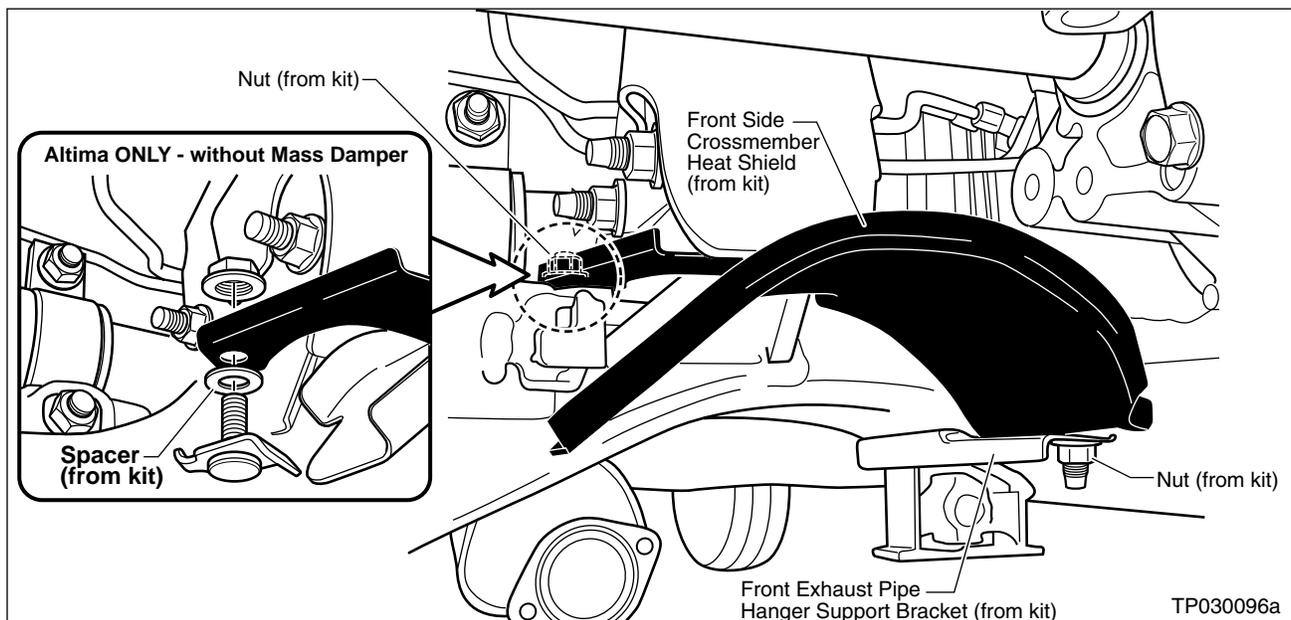


Figure E20

### Remove Exhaust Manifold/Catalyst:

27. Remove five nuts that secure the Exhaust Manifold/Catalyst to the cylinder head (see Figure E21).

- **IMPORTANT:** Use “penetrating” oil. Loosen screws ½ turn with hand-tool (do not use power tool) and apply penetrating oil before removing screws completely.

28. Remove the Exhaust Manifold/Catalyst from the vehicle and place it on your work bench.

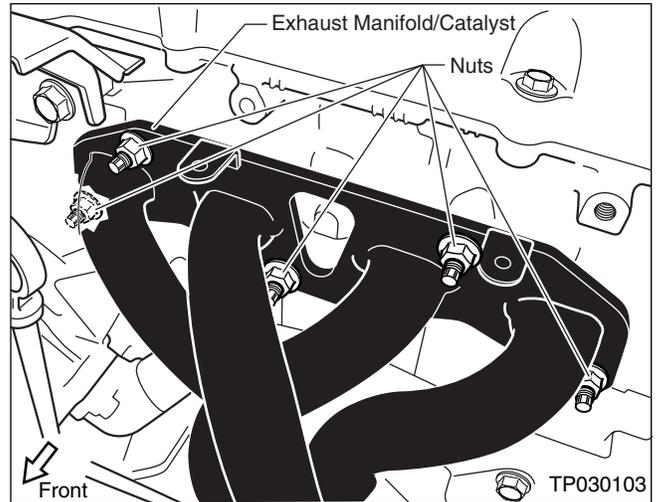


Figure E21

### Install New Heat Shield on Old Exhaust Manifold/Catalyst:

**NOTE:** For installing a new Heat Shield on a new Exhaust Manifold/Catalyst, see page 30.

#### **IMPORTANT:**

- Use suitable hand protection when handling the Exhaust Manifold/Catalyst heat shields.
- Be careful NOT to damage the Oxygen sensors when performing this procedure.

29. Remove three screws and remove the old Upper Rear Heat Shield from the manifold (see Figure E22).

- **IMPORTANT:** Use “penetrating” oil. Loosen screws ½ turn with hand-tool (do not use power tool) and apply penetrating oil before removing screws completely.
- Confirm there is no damage to the threads inside the mounting bosses.

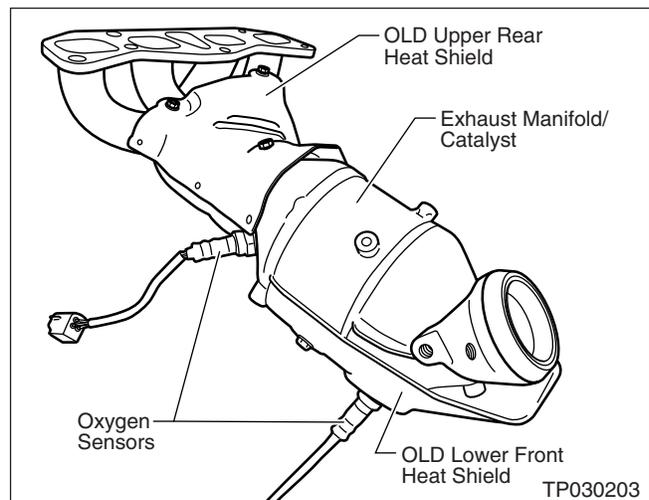


Figure E22

- If you break off a heat shield screw(s) in an Exhaust Manifold/Catalyst that is supposed to be re-used on the vehicle, perform **Procedure G – Install “Keen-Sert(s)” As Needed.** See page 33 of this bulletin.

### Procedure E

30. Install the new Rear Heat Shield onto the old Exhaust Manifold/Catalyst with four new screws (see Figure E23a).

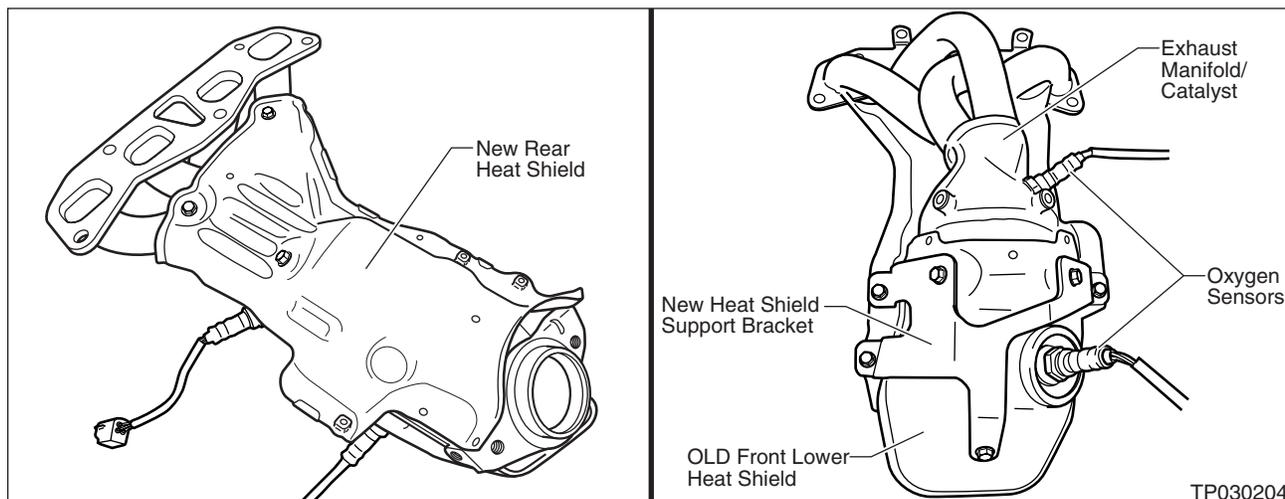


Figure E23a

Figure E23b

31. Turn the manifold over (see Figure E23b).

32. Remove the three screws that secure the old Front Lower Heat Shield onto the manifold. Leave the heat shield in position, as it does not get replaced.

- **IMPORTANT:** Use “penetrating” oil. Loosen screws  $\frac{1}{2}$  turn with hand-tool (do not use power tool) and apply penetrating oil before removing screws completely.
- Confirm there is no damage to the threads inside the mounting bosses.
- If you break off a heat shield screw(s) in an Exhaust Manifold/Catalyst that is supposed to be re-used on the vehicle, perform **Procedure G – Install “Keen-Sert(s)” As Needed.** See page 33 of this bulletin.

33. Install the new Heat Shield Support Bracket using six new screws (see Figure E23b).

**NOTE: For Sentra:** Remove the lower Oxygen Sensor at this time. This will provide additional clearance needed when installing the Manifold/Catalyst in the vehicle (covered later in this procedure).

## Install New Heat Shield on New Exhaust Manifold/Catalyst:

### IMPORTANT:

- Use suitable hand protection when handling the Exhaust Manifold/Catalyst heat shields.
- Be careful NOT to damage the Oxygen sensors when performing this procedure.

34. Remove three screws and remove the old Lower Front Heat Shield from the old manifold (see Figure E24).

- **IMPORTANT:** Use “penetrating” oil. Loosen screws  $\frac{1}{2}$  turn with hand-tool (do not use power tool) and apply penetrating oil before removing screws completely.

- Confirm there is no damage to the threads inside the mounting bosses.
- If you break off a heat shield screw(s) in an Exhaust Manifold/Catalyst that is supposed to be re-used on the vehicle, perform **Procedure G – Install “Keen-Sert(s)” As Needed.** See page 33 of this bulletin.

35. Remove the old Oxygen Sensors from the old manifold (see Figure E24).

36. Install the new Rear Heat Shield onto the new Exhaust Manifold/Catalyst with four new screws (see Figure E25a).

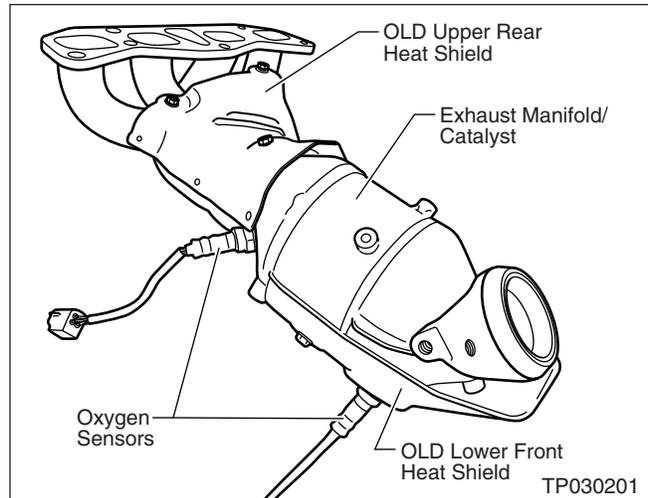


Figure E24

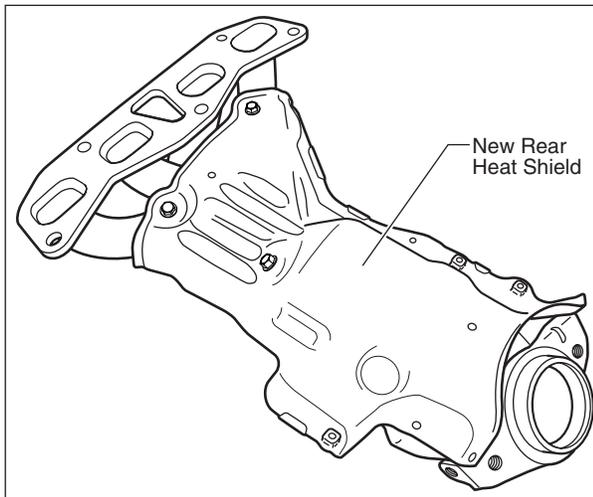


Figure E25a

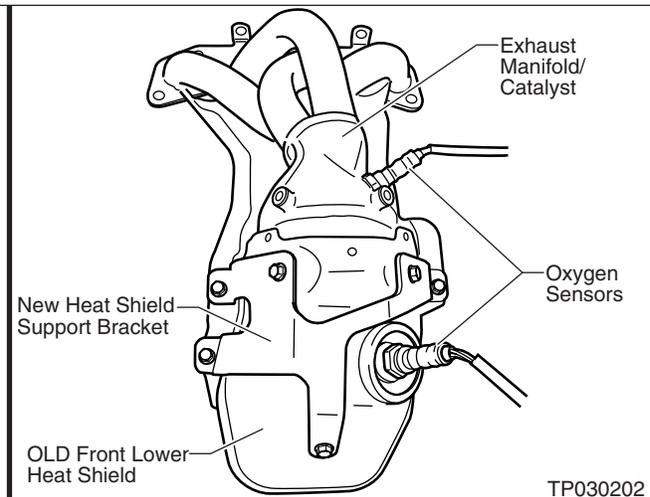


Figure E25b

37. Turn the manifold over (see Figure E25b).

38. Position the old Front Lower Heat Shield onto the manifold, but do not install any screws yet (see Figure E25b).

39. Install the new Heat Shield Support Bracket using six new screws (see Figure E25b).

**NOTE: Sentra ONLY:** With regard to step 40, do NOT re-install the lower Oxygen Sensor at this time. This will provide additional clearance needed when installing the Manifold/Catalyst in the vehicle (covered later in this procedure).

40. Re-install both Oxygen Sensors.

## Procedure E

## Install Exhaust Manifold/Catalyst to Cylinder Head:

41. **This Step For Sentra ONLY:** Remove two nuts and remove the Cooling Fan Heat Shield (see Figure E26).

**NOTE:** Removing this Heat Shield is needed for additional clearance when installing the Exhaust Manifold/Catalyst in the vehicle.

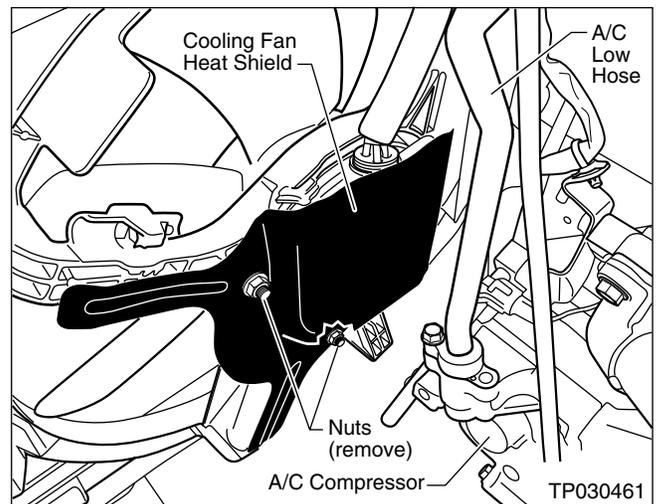


Figure E26

42. Re-install the Exhaust Manifold/Catalyst assembly to the Cylinder Head using a new gasket and new nuts from the kit.

- Tighten the Manifold mounting nuts to: 29 – 32 ft-lbs.

43. Re-install the Manifold Support Bracket.

44. Re-install the Front Exhaust Pipe:

- Use a new gasket between the Pipe and the Exhaust Manifold/Catalyst (see PARTS INFORMATION for the gasket part number).
- Re-use the old gasket between the Pipe and the muffler.
- Make sure the larger ends of the springs are placed against the Exhaust Manifold/Catalyst.

45. **This Step For Sentra ONLY:** Re-install the:

- Cooling Fan Heat Shield
- Both upper radiator support brackets
- Lower Oxygen Sensor
- Passenger-side front inner fender well

46. Install the manifold upper front heat shield.

47. Re-connect the Oxygen Sensor Wire Harness to the vehicle harness.

48. Re-install the alternator.

49. **This Step For Altima ONLY:** Re-install the Relay Box.

50. Re-install the plastic engine cover (as applicable).

51. Re-connect the negative battery cable.

52. Re-program all radio station presets.

53. Return to the Repair Flow Chart (page 4 and 5) for further instructions.

**Procedure F - Cut Front Exhaust Pipe Hanger Pin (Altima ONLY):**  
**(For PNC code R3007)**

1. Locate the Front Exhaust Pipe Hanger Pin (for the front exhaust pipe). You'll see it on the left side of the exhaust pipe, near the flex joint.
2. Mark a cut line on the Hanger Pin 30 mm from the forward end (front) of the pin (see Figure F1).

**NOTE:** If it looks like the pin has already been trimmed, skip step 3 here and move on to the next appropriate step in the Repair Flow Chart (page 4).

**WARNING:** Wear appropriate eye protection and gloves before performing the next step.

3. Use a 3" (or equivalent) air-powered cut-off wheel to cut the pin as shown in Figure F1 below.

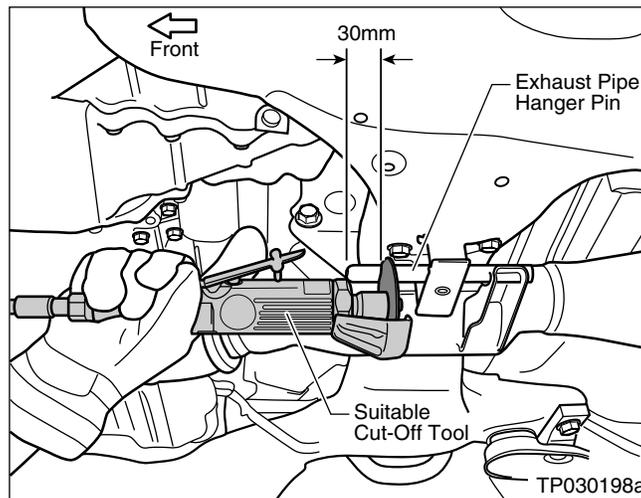


Figure F1

4. Return to the Repair Flow Chart (page 4 and 5) for further instructions.

## Procedure G – Install “Keen-Sert(s)” As Needed

### Drill Out Broken Screw(s):

1. Obtain the Thread Repair Kit J-46530 and make sure all components are in the kit (see Figure G1).

**NOTE:** Thread Repair Kit and additional threaded inserts (“Keen-Sert”) can be ordered from TECH-MATE at (1-800-662-2001). The “Keen-Sert” part number is J-46530-5.

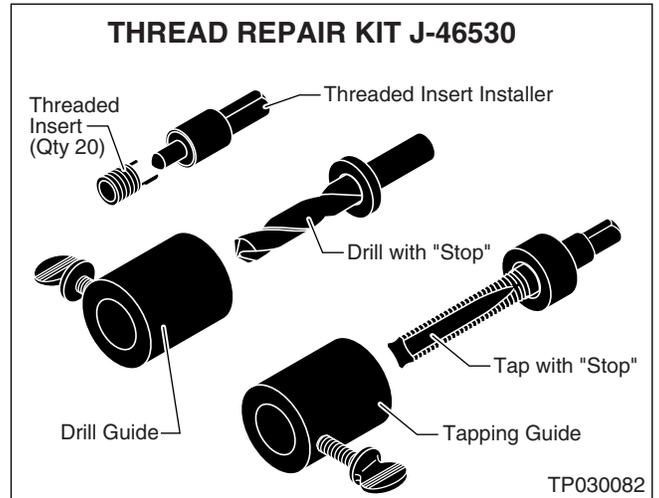


Figure G1

2. Install (push down until fully seated) and tighten the Drill Guide (identified by “DRILL ONLY”) onto the “boss” of the broken screw (see Figure G2).

- Make sure the Drill Guide is securely tightened.

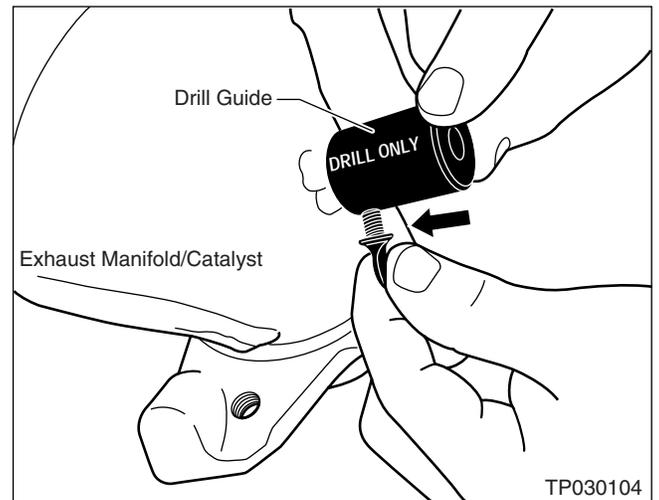


Figure G2

3. Drill out the broken screw with the special Drill Bit from the Thread Repair Kit (see Figure G3).

#### **IMPORTANT:**

- Use a suitable lubricant when drilling.
- Don't drill too fast as it will over-heat the drill bit.
- Make sure the drill bit bottoms out against the drill bit stop.

4. When finished drilling, remove the Drill Guide.

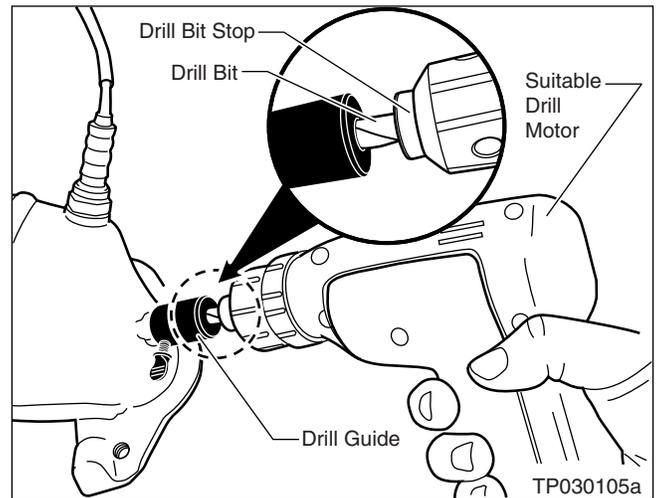


Figure G3

## Procedure G

### Tap New Threads in Drilled-Out Hole(s):

5. Install (push down until fully seated) and tighten the Tapping Guide (identified by "TAP ONLY") onto the drilled-out "boss" (see Figure G4).
6. Tap new threads in the drilled-out hole with the special Tap from the Thread Repair Kit (see Figure G5).

#### NOTE:

- Turn the tap handle to the right (clockwise)
  - After one rotation, turn the tap handle to the left one-half turn. Do this during the entire tapping process to keep the tap from clogging.
  - Use a suitable lubricant when tapping the threads.
  - Make sure the tap bottoms out against the tap stop.
7. Remove the Tapping Guide.
    - Clean the newly threaded hole.

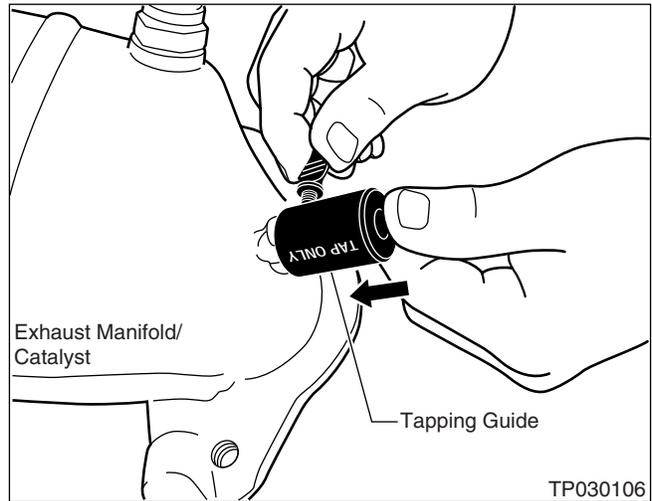


Figure G4

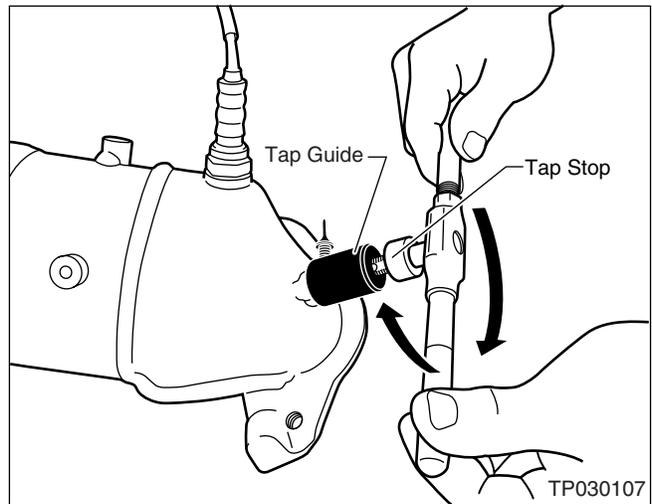


Figure G5

### Install Threaded Insert ("Keen-Sert"):

8. Screw the Threaded Insert all the way (clockwise) into the newly threaded hole (see Figure G6).
- Make sure the top thread of the Threaded Insert is flush with top of the hole (see Figure G6).

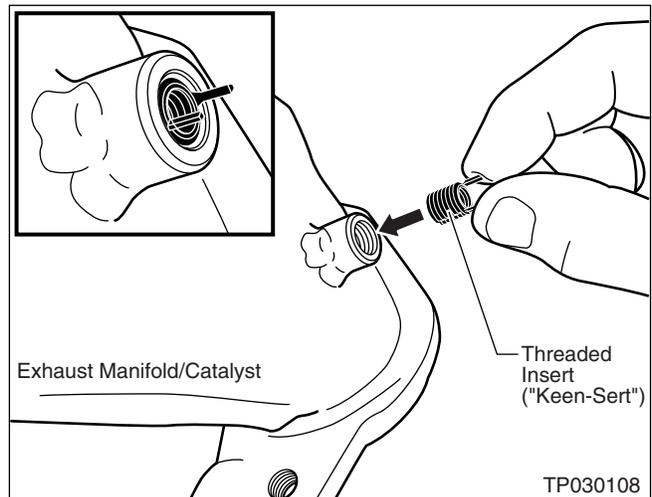


Figure G6

## Procedure G

9. Drive the Lock Tabs down flush with the special Lock Tab Driver tool and a hammer (see Figure G7).

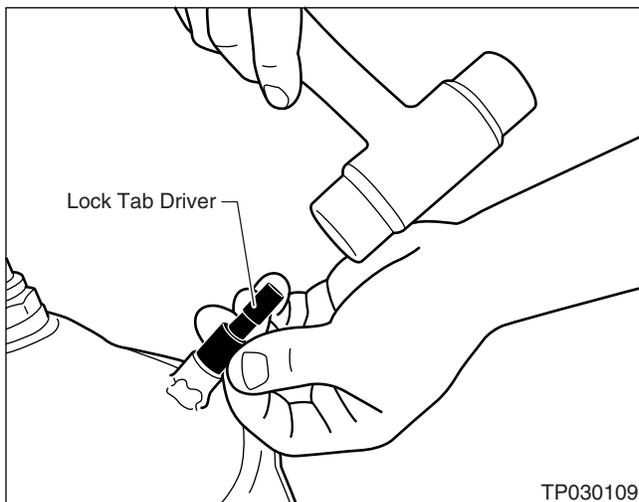


Figure G7

10. Return to the appropriate Service Procedure step.

## Procedure H - Engine Replacement Tips:

### NOTE:

- This procedure **does not** contain a step-by-step engine replacement procedure.
- It only provides informational tips related to replacing an engine.
- Please refer to the applicable Service Manual as your main source of information.
- The following informational tips are included in Procedure H:

- 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 on pages 44 through 48 and 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 disassembly/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).
- Use special tools as needed. Refer to the Special Tools List on page 49.
- Always work safely and avoid using too much force.

## 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 H1).

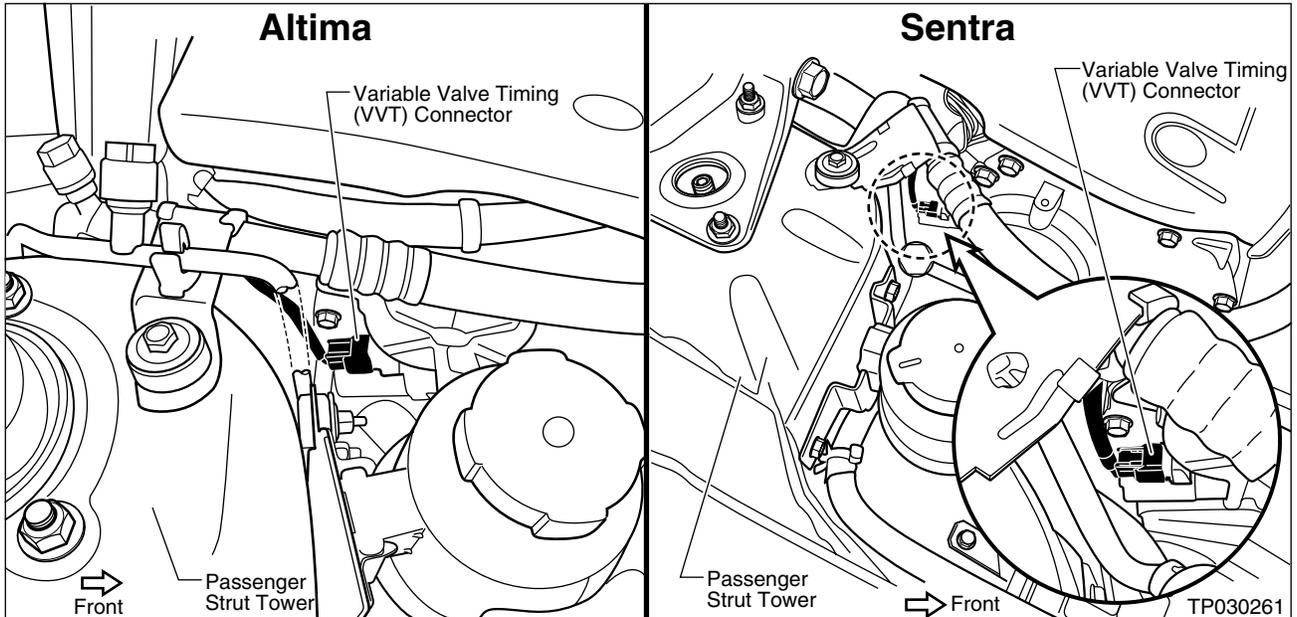


Figure H1

### 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 H2.
- To release the wire harness connector, push IN on the release tab, then PULL the connector OFF.

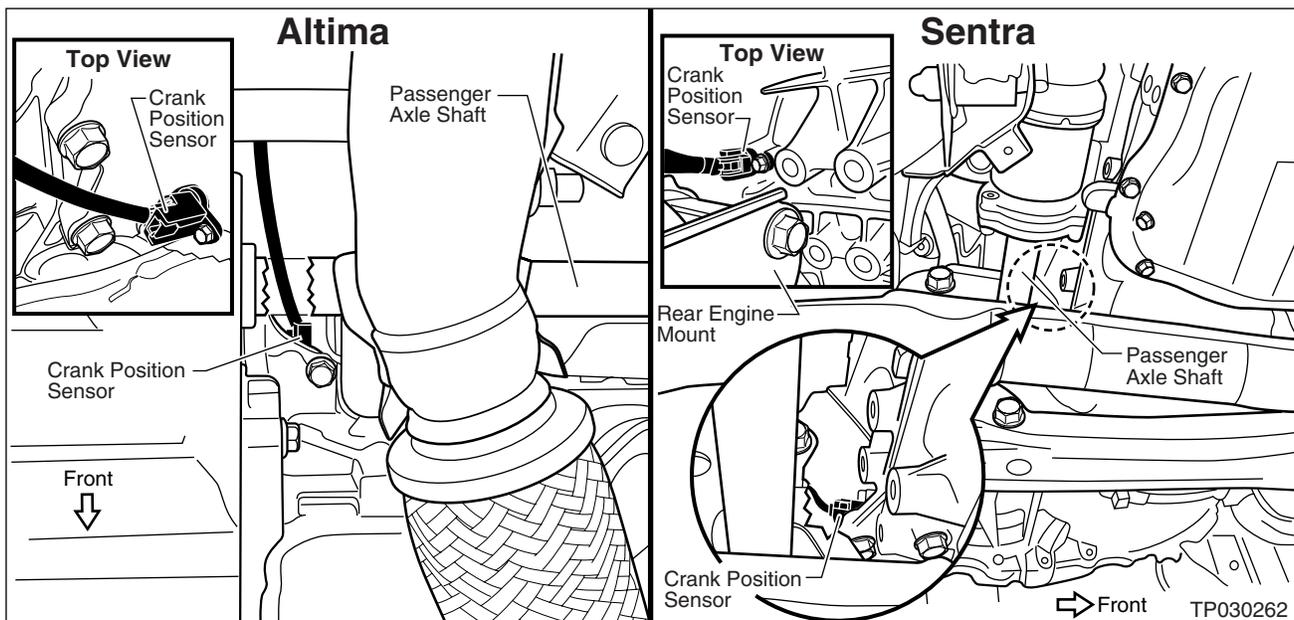


Figure H2

### 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 H3.

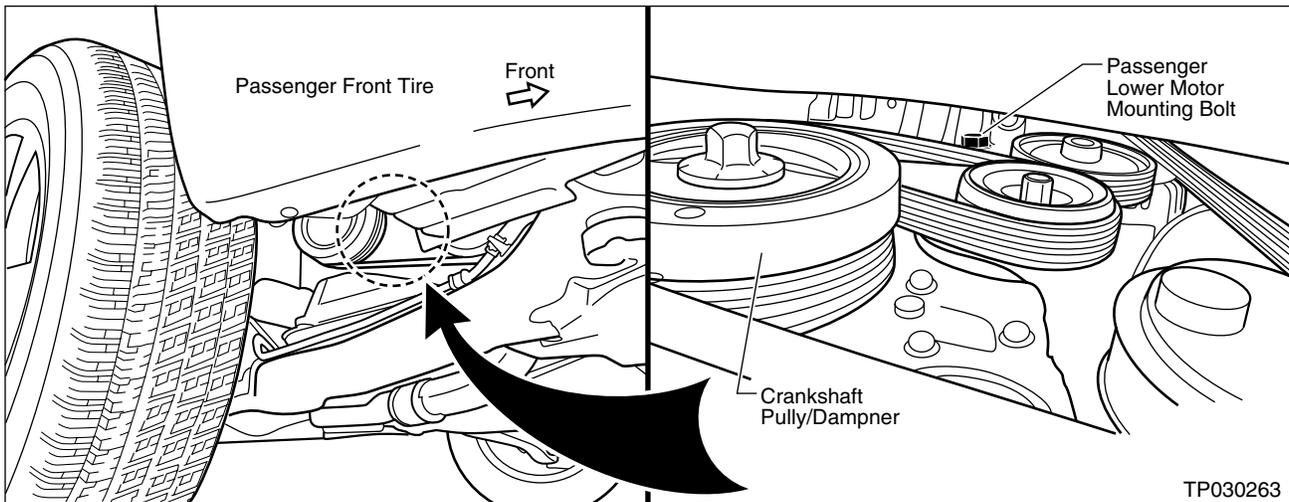


Figure H3

### Center Member (Sentra ONLY)

- Remove the Center Member, but leave the Rear Engine Mount on the engine (see Figure H4).

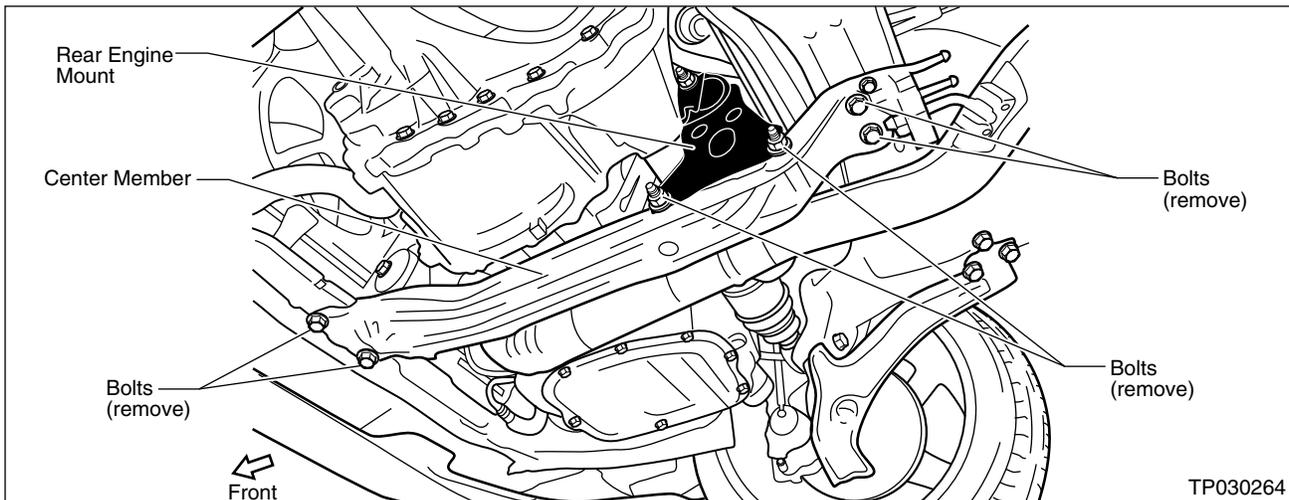


Figure H4

### Axle Shafts Removal (Altima and Sentra)

- Be careful NOT to damage the oil seals in the transaxle when removing both axle shafts. 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 for clearance when you remove the engine.

**Procedure H**

## Power Steering Hose Support Bracket Bolts (Altima ONLY)

- Make sure to remove the Power Steering Hose Support Bracket Bolts before engine removal (see Figure H5).

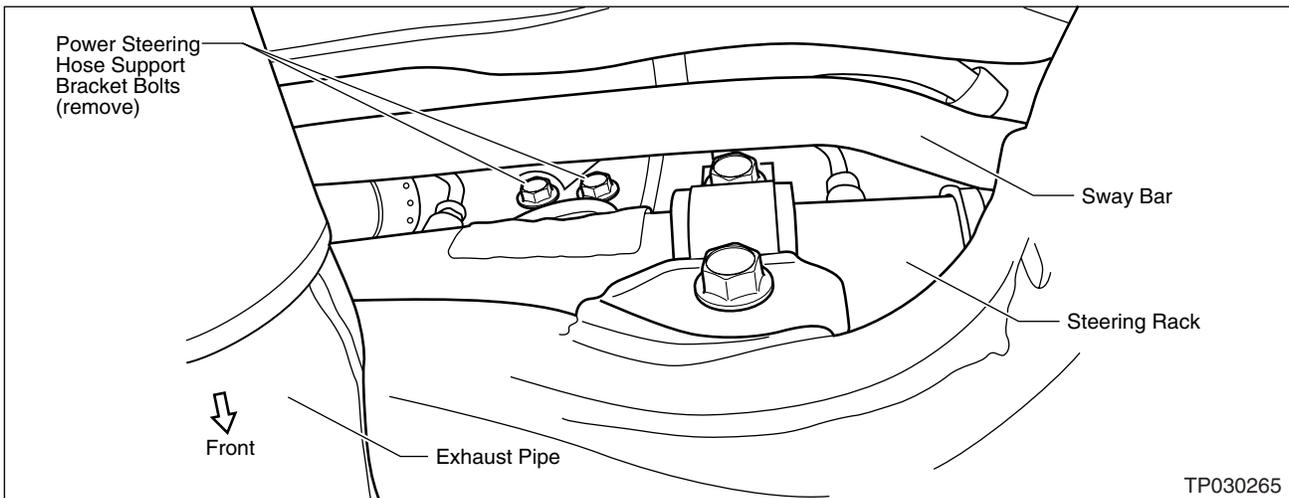


Figure H5

## Power Steering Pipe Clamps (Altima ONLY)

- Remove the Power Steering Pipe Clamps on the engine cradle before removing the engine (see Figure H6).

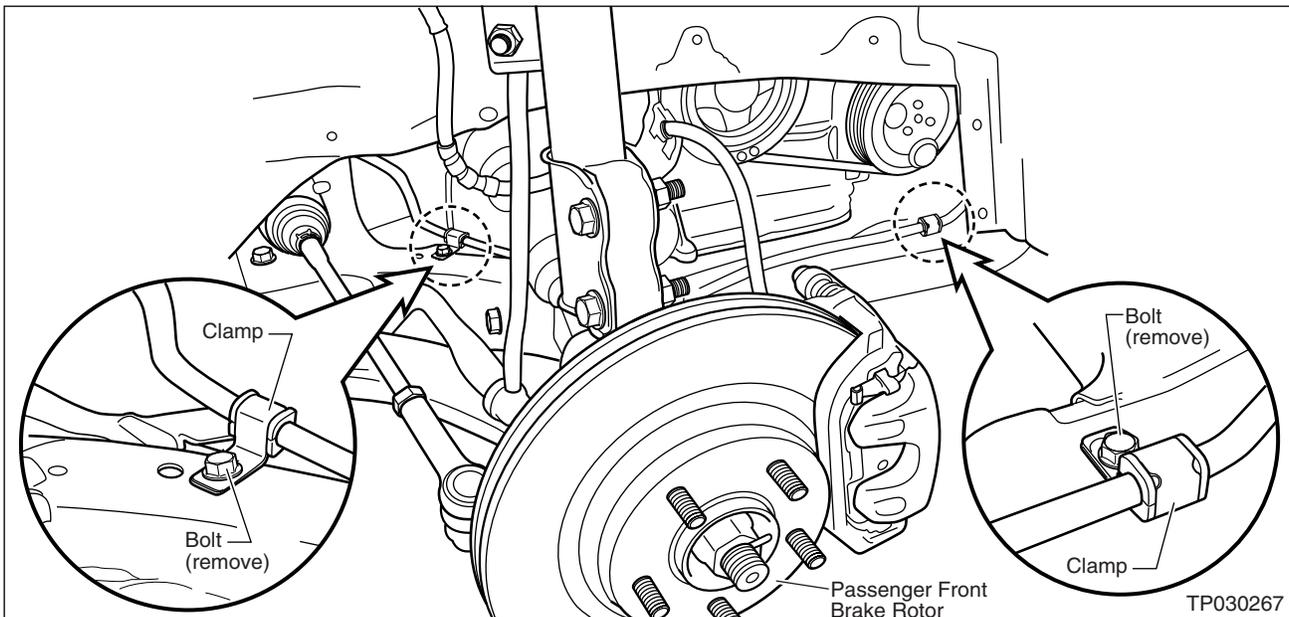


Figure H6

### Coolant Pipe (Alitma ONLY)

- Disconnect the Coolant Hoses from the Metal Coolant Pipe, but leave the metal pipe on the engine (see Figure H7).

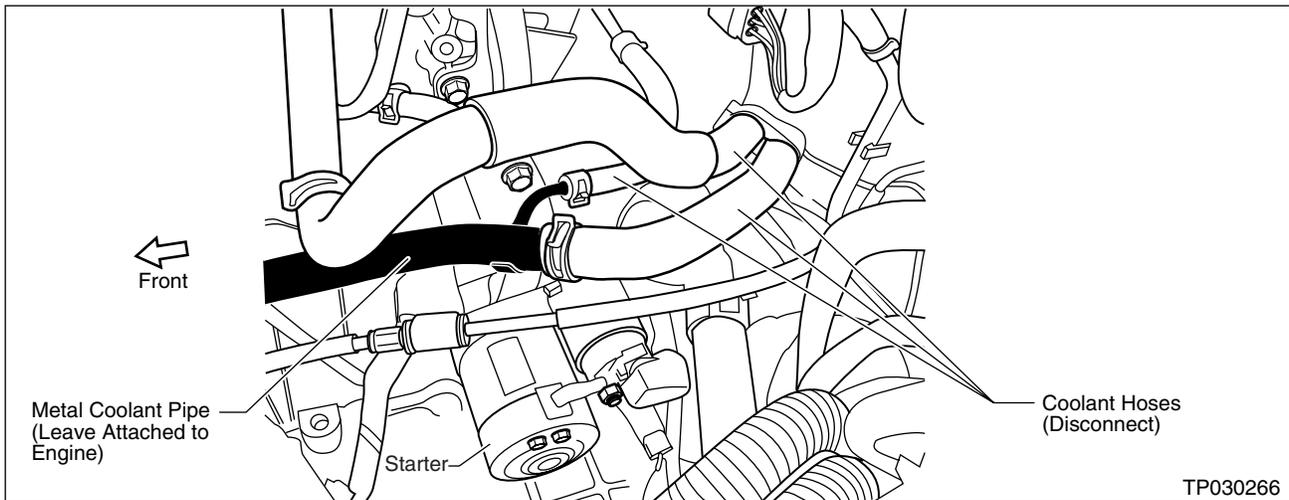


Figure H7

### 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 H8.

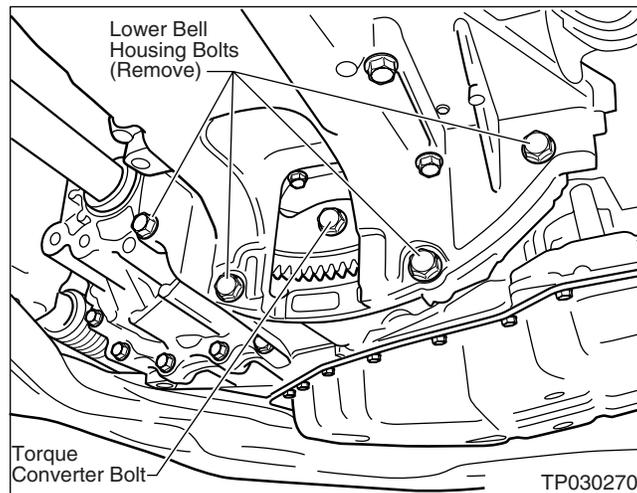


Figure H8

### 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 H9). If these connectors are “mixed up”, improper transmission shifting can occur.

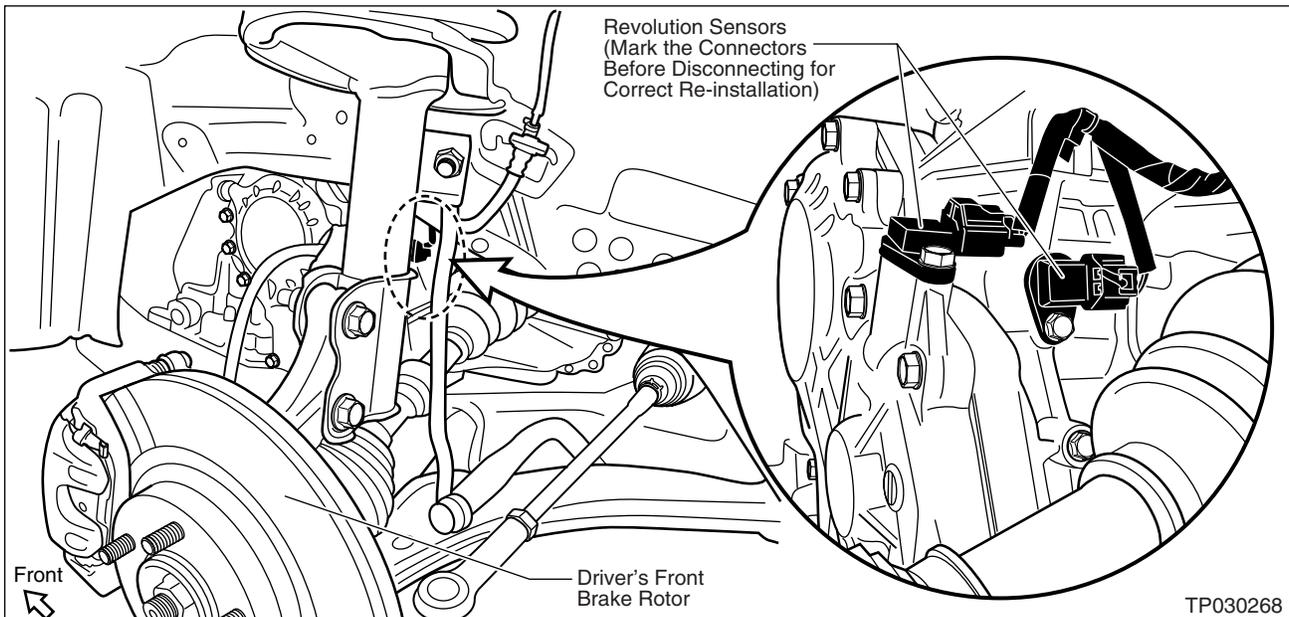


Figure H9

### 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 H10).

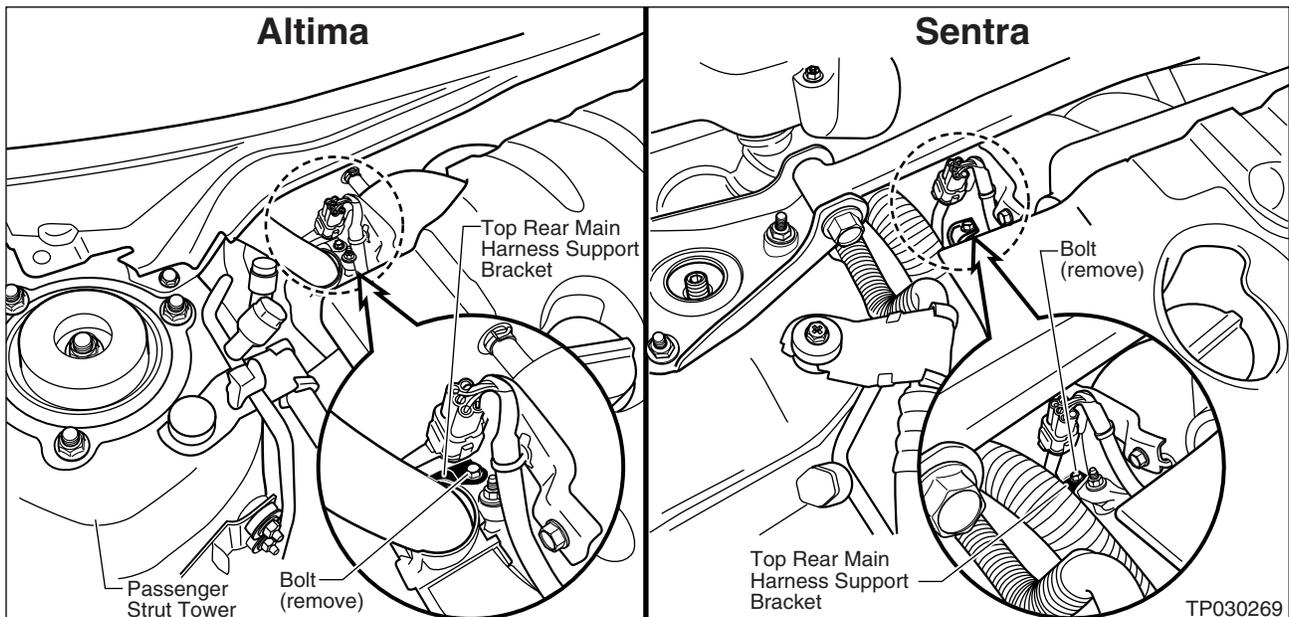


Figure H10

## Wire Harness Support Bracket (Altima ONLY)

- Remove one bolt to release the Wire Harness Support Bracket (see Figure H11).

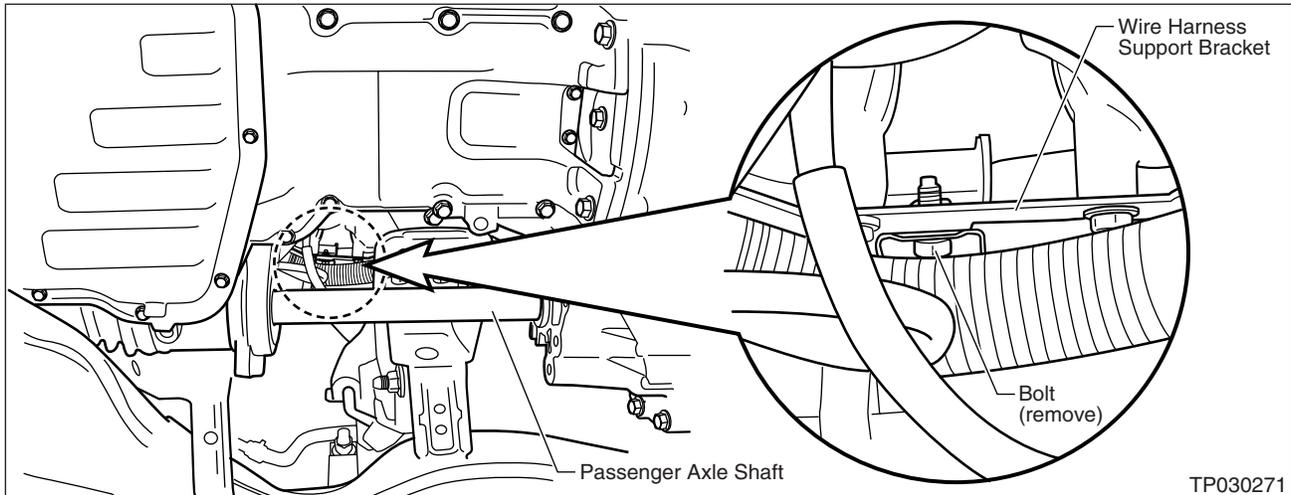


Figure H11

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

- **Torx TP50 (J-45737):** Use for M/T with engine number before (but not including) 308509Z

**NOTE:** Do NOT use a standard T50 Torx bit as it can break or strip out.

- **Torx TP55 (J-46531):** Use for M/T with engine number 308509Z and later

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

- **Torx E20 Socket (J-45816):** Use for all A/T equipped vehicles (w/QR25DE engine).

**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 bits/socket.

## Installation Tips

### 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 H12.
- Make sure the bolt “shoulder” is fully seated in the mounting hole.

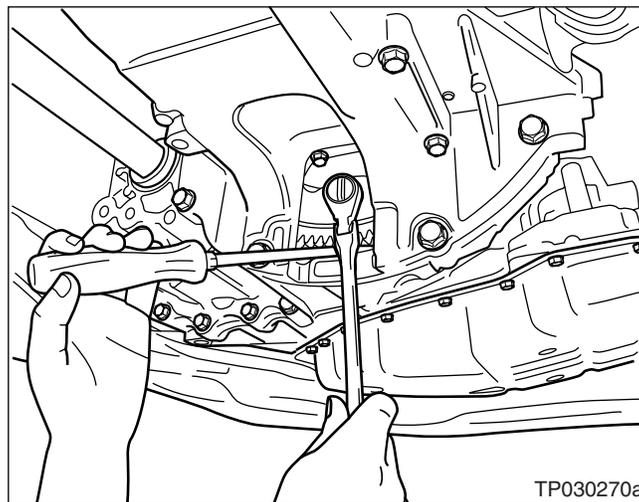


Figure H12

### 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).

### Filling (50/50 Mixture) Coolant System (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.
- 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.
- See NTB02-047a (2002 – 2003 Altima: Poor Heater Performance) for additional information on Altima cooling system refill procedures.

## 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 H13 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.

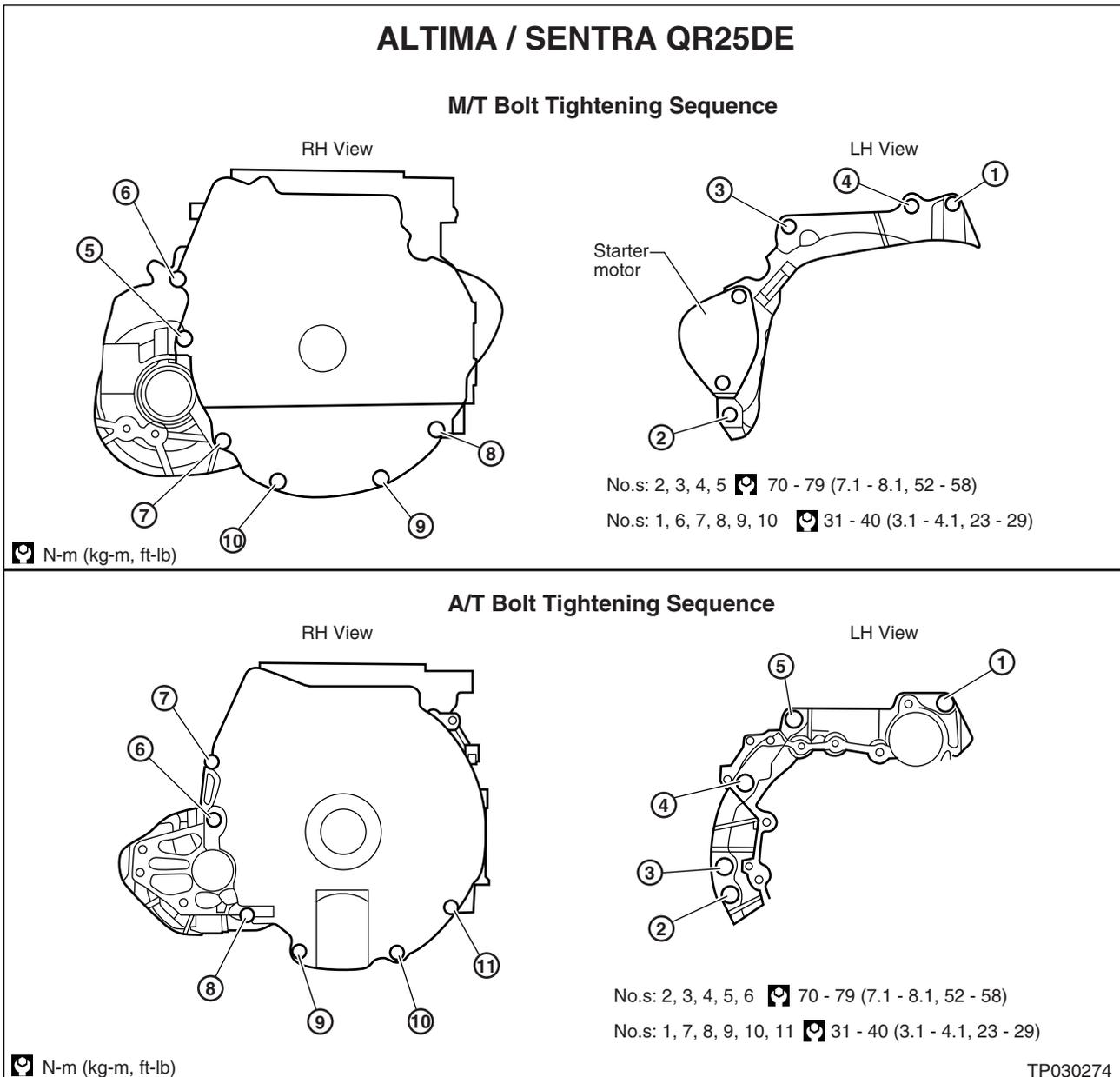


Figure H13



**2003-04 SENTRA QR25DE ONLY**

**SENTRA QR25DE**

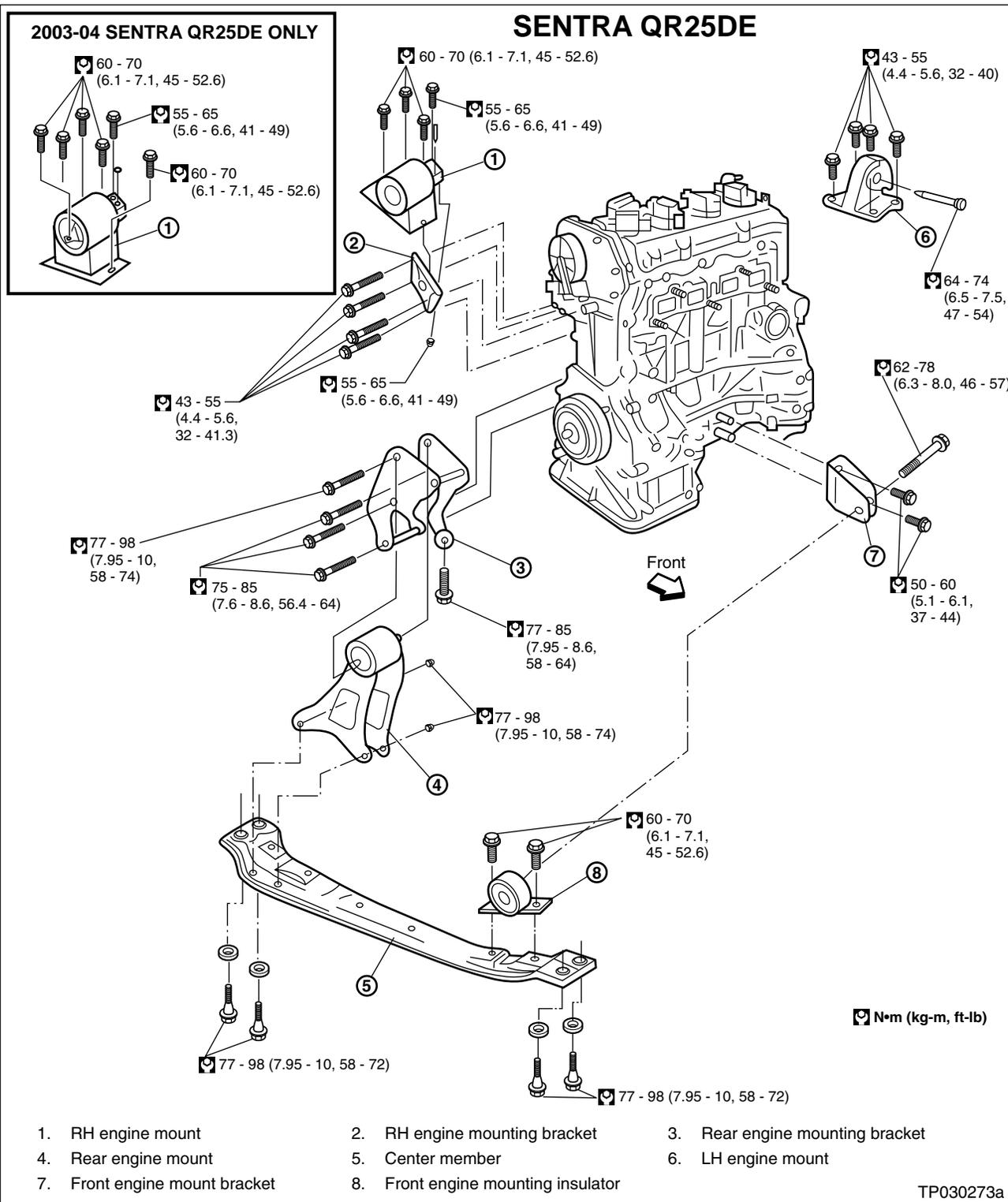


Figure H15

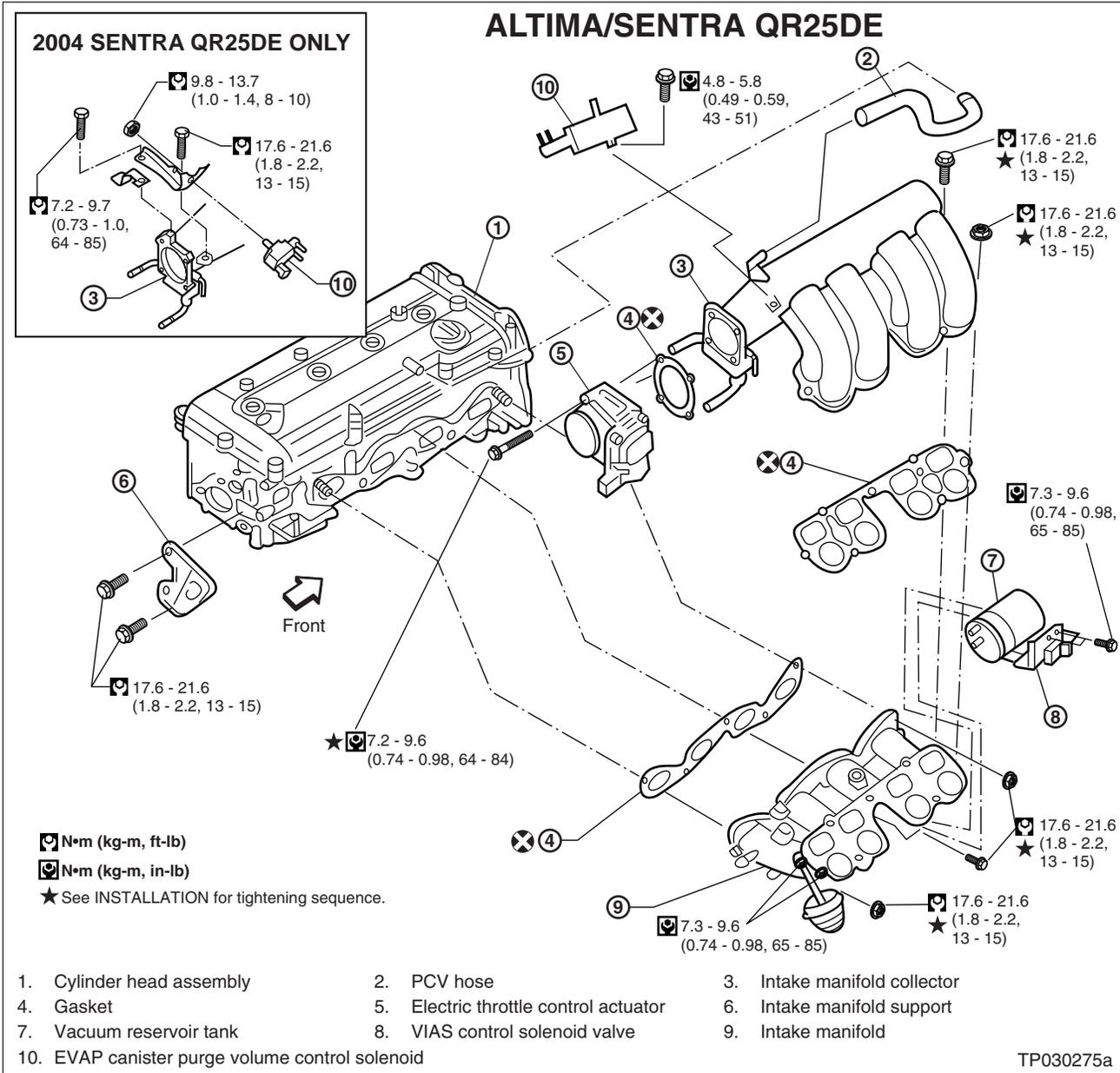


Figure H16

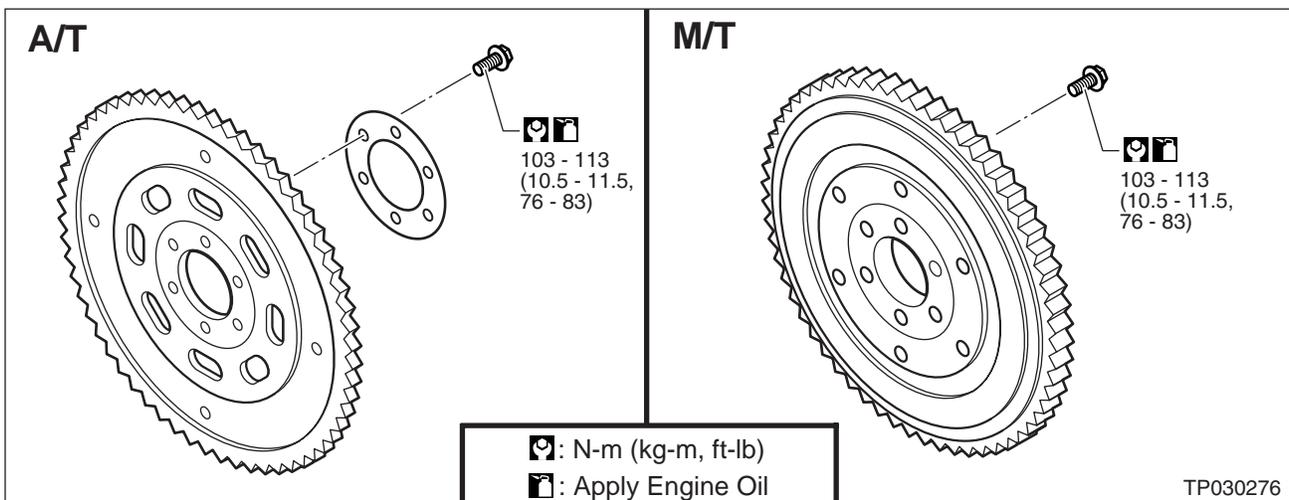


Figure H17

# 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	M	6
7T	7		Nominal diameter of bolt threads (Unit: mm)
9T	9	Metric screw threads	

TP030277

Figure H18

## Special Tools

### Special Tools (Altima and Sentra)

- Refer to the below chart (Figure H19) for Special Tool applications.

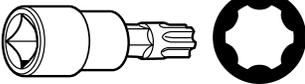
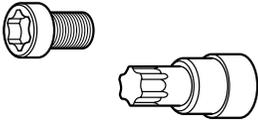
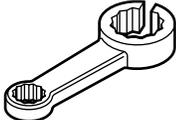
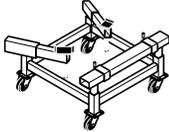
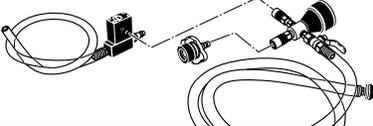
<b>SPECIAL TOOLS LIST (QR25DE)</b>		
Tool Number / Name	Description	STSS*
<b>(J-45737)</b> <b>TP50 Torx Plus Bit</b> 	Removing and installing flywheel bolts (M/T models), prior to engine serial #308509Z. See NTB02-008a for more information.	Drawer #14
<b>(J-46531)</b> <b>TP55 Torx Plus Bit</b> 	Removing and installing flywheel bolts (M/T Models), from engine serial #308509Z and later. See NTB03-039 for more information.	Drawer #14
<b>(J-45816)</b> <b>E20 Torx Plus Socket</b> 	Removing and installing drive plate bolts (A/T models). See NTB02-008a for more information.	Drawer #14
<b>(J-45488)</b> <b>Quick Connector Release</b> 	Removing fuel tube quick connectors in engine room. See NTB02-059 for more information.	Drawer #5
<b>KV10114400</b> <b>(J-38365-A)</b> <b>Heated Oxygen Sensor Wernch</b> 	Loosening or tightening rear heated oxygen sensor.	Drawer #5
<b>(J-39580)</b> <b>Engine Support Table</b> 	Removing engine / trans / sub-frame assembly. See NTB02-022a for more information.	Not in STSS
<b>(J-45695)</b> <b>Engine Coolant Refill Tool</b> 	Refilling engine coolant system without air pockets. See NTB02-011a for more information.	Drawer #15
<b>*STSS = Special Tool Storage System</b>		TP030278

Figure H19

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

## Procedure J – Old Engine Destruction Procedure

To prevent the old engine you removed from being used again: “render” it useless as follows:

**CAUTION: Wear suitable eye and hand protection when performing this procedure.**

1. Use the “ball” end of a 28 to 32 ounce Ball-Peen Hammer to break a hole in the engine block at the location shown in Figure J1 (below).

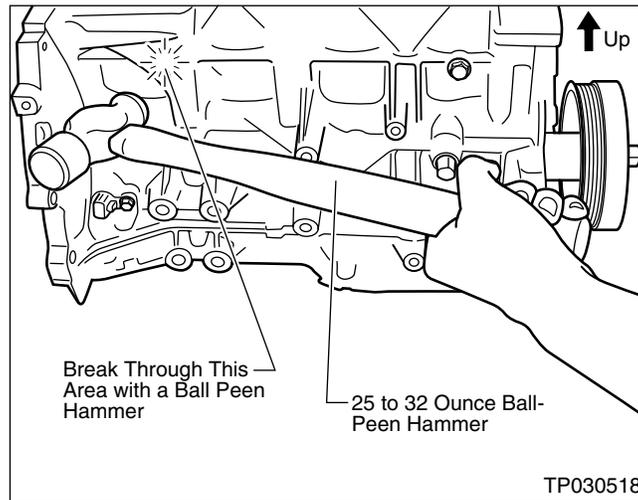


Figure J1

## PARTS INFORMATION

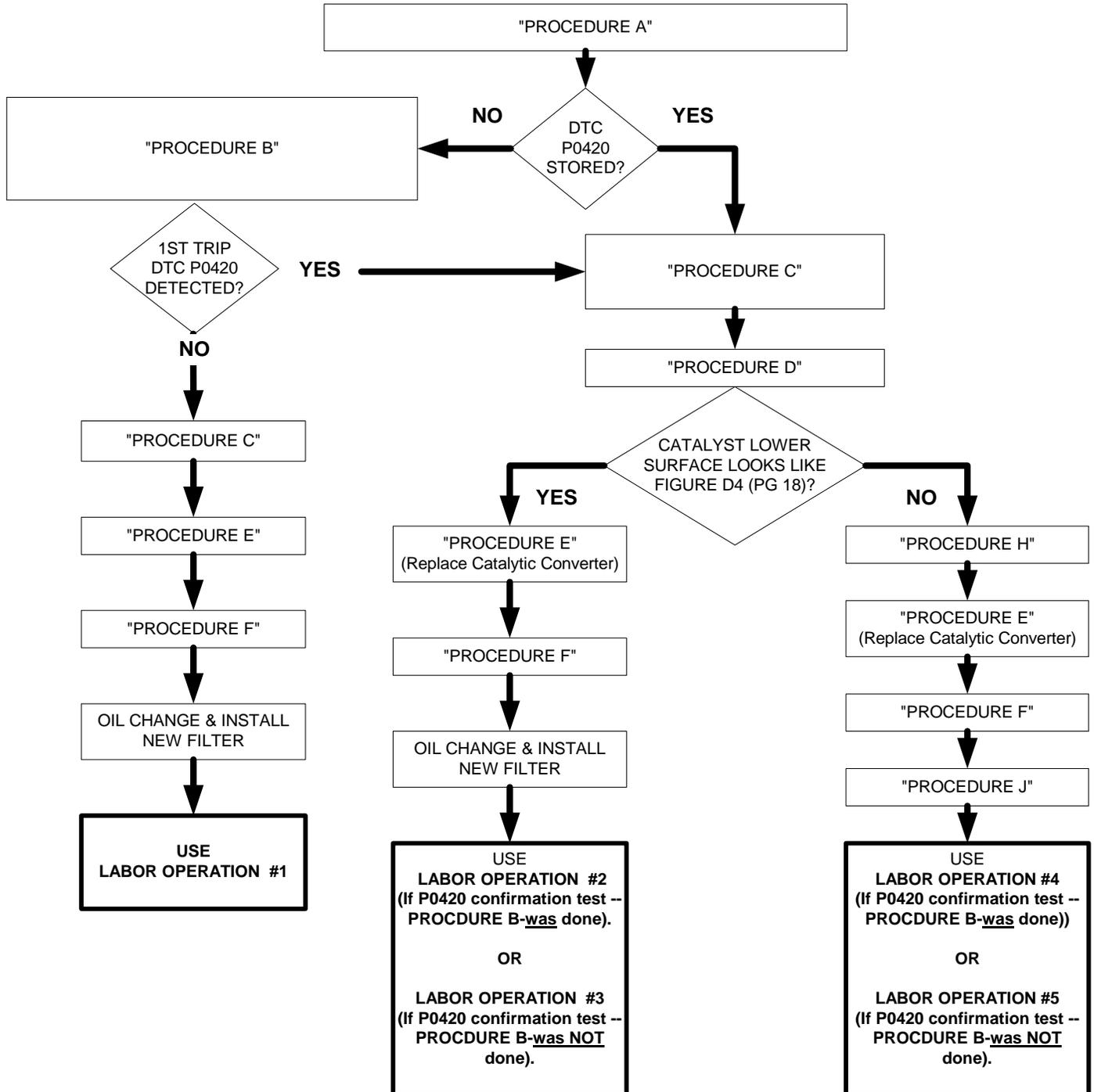
DESCRIPTION	PART NUMBER	QTY
<b>GROUP 1</b> <b>(Parts required for all repairs except engine replacements)</b>		
Oil Filter	15208-9E000	1 (if needed)
Engine Oil Drain Plug Washer	11026-01M02	1 If needed
<b>GROUP 2</b> <b>(Parts required for installation of Heat Shields)</b>		
Heat Shield Kit (2002 Altima with PNC code R3007)	A6590-8J025	1 (if needed)
Heat Shield Kit (2003 Altima with PNC code R3007 or R3014)	A6590-8J026	1 (if needed)
Heat Shield Kit (2002 Sentra with PNC code R3016)	A6590-8J027	1 (if needed)
Heat Shield Kit (2003 Sentra with PNC code R3016))	A6590-8J028	1 (if needed)
Exhaust Gasket (Front Pipe to Manifold/Catalyst)	20695-8J010	1 (if needed)
<b>GROUP 3</b> <b>(Parts required for replacement of engine)</b>		
Exhaust Gasket (Front Pipe to Manifold/Catalyst)	20695-8J010	1 (if needed)
Exhaust Manifold/Catalyst	14002-8J007	1 (if needed)
Engine Assembly	10102-8J0H0	1 (if needed)
Gasket – Water Outlet	11062-3Z000	1 (if needed)
Valve Assembly – Water Control (includes O-ring)	21230-6N200	1 (if needed)
Thermostat Assembly (includes O-ring)	21200-6N210	1 (if needed)
Seal – O-ring, coolant pipe	21049-3Z010	1 (if needed)
Seal – O-ring	21049-3Z000	1 (if needed)
Gasket – Water Inlet	13050-3Z000	1 (if needed)
Gasket – Water Pump	21014-3Z000	1 (if needed)
Gasket – Intake Manifold	14035-8J001	1 (if needed)
Spark Plugs	22401-5M015	4 (if needed)

# CLAIMS INFORMATION

## Dealer Instructions:

- Use the "Labor Operation Flow Chart" (below) to determine the "Labor Operation #" that was performed on this vehicle, then go to step 2 (next page).

### Labor Operation Flow Chart



## Claims Information

2. Match the “**Labor Operation #**” (that you got from the flow chart on the previous page) with the Labor Operation # in the chart below.
3. From the appropriate column, select one (and only one):
  - Labor Operation Code (Op-Code) , and
  - FRT (Flat Rate Time)

### 2002-03 Altima Codes

YR/MODEL/PNC CODE	LABOR OPERATION # (FROM FLOW CHART ON PG 52)				
	#1	#2	#3	#4	#5
	Op-Codes				
2002-03 Altima – PNC <b>R3007</b>	R30071 (2.6 hr)	R30072 (2.6 hr)	R30073 (2.4 hr)	R30074 (8.0 hr)	R30075 (7.8 hr)
<i>(Labor Op #1 Plus Install 1 Keen-Sert)</i>	R30076 (2.7 hr)	**	**	**	**
<i>(Labor Op #1 Plus Install up to 2 – 3 Keen-Serts)</i>	R30077 (2.8 hr)	**	**	**	**
<i>(Labor Op #1 Plus Install up to 4 – 6 Keen-Serts)</i>	R30078 (2.9 hr)	**	**	**	**
<i>(Labor Op #1 Plus Install up to 7 – 9 Keen-Serts)</i>	R30079 (3.0 hr)	**	**	**	**
<hr/>					
2002-03 Altima – PNC <b>R3014</b>	R30141 (2.5 hr)	R30142 (2.5 hr)	R30143 (2.3 hr)	R30144 (7.9 hr)	R30145 (7.7 hr)
<i>(Labor Op #1 Plus Install 1 Keen-Sert)</i>	R30146 (2.6 hr)	**	**	**	**
<i>(Labor Op #1 Plus Install up to 2 – 3 Keen-Serts)</i>	R30147 (2.7 hr)	**	**	**	**
<i>(Labor Op #1 Plus Install up to 4 – 6 Keen-Serts)</i>	R30148 (2.8 hr)	**	**	**	**
<i>(Labor Op #1 Plus Install up to 7 – 9 Keen-Serts)</i>	R30149 (2.9 hr)	**	**	**	**
<hr/>					
2002-03 Altima – PNC <b>R3015</b> <i>( Keen-Serts are <u>NOT</u> applicable for R3015 )</i>	R30151 (1.0 hr)	R30152 (1.0 hr)	R30153 (0.8 hr)	R30154 (7.7 hr)	R30155 (7.5 hr)

\* Use Service Comm to obtain the vehicle-specific PNC code.

\*\* Labor operations 2 – 5 will not need any “Keen-Sert(s)” installation because a new Exhaust Manifold/Catalyst is being installed.

**2002-04 Sentra Warranty Codes**

YR/MODEL/PNC CODE	LABOR OPERATION (FROM FLOW CHART ON PG 52)				
	#1	#2	#3	#4	#5
	Op-Codes				
2002-03 Sentra – PNC <b>R3016</b>	R30161 (2.4 hr)	R30162 (2.4 hr)	R30163 (2.2 hr)	R30164 (8.4 hr)	R30165 (8.2 hr)
<i>(Labor Op #1 Plus Install 1 Keen-Sert)</i>	R30166 (2.5 hr)	**	**	**	**
<i>(Labor Op #1 Plus Install up to 2 – 3 Keen-Serts)</i>	R30167 (2.6 hr)	**	**	**	**
<i>(Labor Op #1 Plus Install up to 4 – 6 Keen-Serts)</i>	R30168 (2.7 hr)	**	**	**	**
<i>(Labor Op #1 Plus Install up to 7 – 9 Keen-Serts)</i>	R30169 (2.8 hr)	**	**	**	**
2004 Sentra – PNC <b>R3017</b> <i>( Keen-Serts are <u>NOT</u> applicable for R3017 )</i>	R30171 (1.0 hr)	R30172 (1.0 hr)	R30173 (0.8 hr)	R30174 (8.2 hr)	R30175 (8.0 hr)

\* Use Service Comm to obtain the vehicle-specific PNC code.

\*\* Labor operations 2 – 5 will not need any “Keen-Sert(s)” installation because a new Exhaust Manifold/Catalyst is being installed.

**Additional Expense:**

EXP. CODE	DESCRIPTION	MAX. AMOUNT
001	Engine Oil	\$13.00

EXP. CODE	DESCRIPTION	MAX. AMOUNT
512	Keen-Sert Insert(s)	\$3.45 / each*

**NOTE:** Dollar value claimed for Keen-Sert inserts must match Op Code claimed and actual number charged out for the repair. For example, if 3 Keen-Serts are used, you would claim \$3.45 x 3 = \$10.35.

EXP. CODE	DESCRIPTION	MAX. AMOUNT
502	Car Rental Assistance <b>(for engine replacement ONLY)</b>	\$35.00/day, Max. 5 days

**NOTE:** If towing is required, contact the Claim Call Center for pre-approval.

**Claims Information**

### **Engine/Exhaust Manifold Replacement:**

- Engines and Exhaust Manifolds replaced as part of this campaign repair are subject to Nissan/Third Party inspection.
- Old (replaced) engines must be held at your dealership for 60 days from the date the engine was replaced.
- All Exhaust Manifolds replaced as part of this campaign repair are subject to Part Return. A Parts Return Tag will be issued if Parts Return is required.
- Please note that claims are subject to charge-back based on inspection of engines and/or exhaust manifolds.

# QC CHECKLIST

## QR25 Engine Exhaust Campaign

Once all repairs are complete:

- Fill out the VIN, Technician's initials, and date (below).
- Place a check mark  next to each item (below).

Vehicle Identification Number	Technician's Initials	Date

### Check Campaign Parts Installation:

- All shields installed (if needed)
- All fasteners secure
- Oxygen sensors connected
- Exhaust hanger pin cut (if needed)

### Check Oil:

- Oil and filter changed
- No oil leaks
- Oil pan drain plug is tight
- Oil level correct

### Check Engine Operation:

- Engine idles normally
- No coolant, oil, or fuel leaks
- "Check Engine Light" is OFF
- No abnormal engine noises or exhaust noises
- No blue smoke from exhaust

### Other Items:

- Clock is correctly set
- Radio presets are set
- Interior is clean

## OWNER'S LETTER (vehicles with exhaust pipe hanger pin)

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 that relates to motor vehicle safety exists in some 2002-2003 model year Nissan Altima vehicles equipped with the 2.5 liter engine.

### Reason for Recall

There is a possibility that the exhaust pipe hanger pin may catch debris from the road that could be ignited by contact with the catalytic converter and cause a fire. In addition, there is a possibility that certain engine operating conditions may cause damage to the pre-catalyst. Material from inside a damaged pre-catalyst could enter the engine and result in increased oil consumption. If the engine oil level is not checked on a periodic basis and drops below the low level, and the driver continues to operate the vehicle ignoring noticeable engine noise, engine damage may occur which could result in a fire.

### What Nissan Will Do

In order to prevent these incidents from occurring, your Nissan dealer will shorten the exhaust pipe hanger pin. The dealer will also reprogram the electronic control module to prevent any future damage to the pre-catalyst. In addition, the dealer will install heat shields on certain components of the exhaust system on vehicles that do not already have them. This free service should take about three hours to complete, but your Nissan dealer may require your vehicle for a longer period of time based upon the dealer's work schedule.

The pre-catalyst will be tested to ensure it is working properly and replaced if necessary. If damage is found inside the pre-catalyst, it will be necessary to replace the engine. Nissan anticipates that few engines will need to be replaced. If the engine needs to be replaced, this also will be free of charge and will take several days. In this case, a car rental allowance is available from your Nissan dealer upon request.

**NOTE:** If the engine or exhaust system of your vehicle has been modified with non-Nissan parts or in a way not authorized by Nissan, you may be responsible for bringing the vehicle into a condition that allows the campaign diagnostic procedures to be followed and the repairs completed. If it is not possible to properly test the pre-catalyst and install all of the campaign parts, you will have to pay the cost to return the vehicle to an appropriate condition in order for the dealer to perform the campaign repairs. You may also have to pay to add any modifications back to your vehicle.

### What You Should Do

Contact your Nissan dealer at your earliest convenience in order to arrange an appointment to have your vehicle repaired. **Until then, check engine oil regularly and fill as needed. If you notice excessive engine noise or an abnormal odor from the engine compartment, you should stop driving and contact your Nissan dealer to arrange to have the vehicle towed to the dealer for repair.** Please bring this notice 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 Office, Nissan North America, Inc. at P.O. Box 191, Gardena, California 90248-0191. The toll free number is 1-800-333-0829. If you reside in Hawaii, please call 1-808-836-0888.

You may also contact the Administrator of the National Highway Traffic Safety Administration, 400 Seventh Street SW, Washington, D.C. 20590 or call the toll free Safety Hotline at (888) 327-4236.

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

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

**Owner's Letter**

## OWNER'S LETTER (vehicles without exhaust pipe hanger pin)

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 that relates to motor vehicle safety exists in some 2002-2003 model year Nissan Altima and 2002-2004 model year Sentra vehicles equipped with the 2.5 liter engine.

### Reason for Recall

There is a possibility that certain engine operating conditions may cause damage to the pre-catalyst. Material from inside a damaged pre-catalyst could enter the engine and result in increased oil consumption. If the engine oil level is not checked on a periodic basis and drops below the low level, and the driver continues to operate the vehicle ignoring noticeable engine noise, engine damage may occur which could result in a fire.

### What Nissan Will Do

In order to prevent this incident from occurring, your Nissan dealer will reprogram the electronic control module to prevent any future damage to the pre-catalyst. In addition, the dealer will install heat shields on certain components of the exhaust system on vehicles that do not already have them. This free service should take about three hours to complete, but your dealer may require your vehicle for a longer period of time based upon the dealer's work schedule.

The pre-catalyst will be tested to ensure it is working properly and replaced if necessary. If damage is found inside the pre-catalyst, it will be necessary to replace the engine. Nissan anticipates that few engines will need to be replaced. If the engine needs to be replaced, this also will be free of charge and will take several days. In this case, a car rental allowance is available from your Nissan dealer upon request.

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### What You Should Do

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