

REVISED
Please note addition of important information
on pages 9 & 17

TECHNICAL INSTRUCTIONS

FOR

**SPECIAL SERVICE CAMPAIGN 90H (SAFETY RECALL)
FOR VEHICLES IN**

AK, CO, IA, ID, IL, KS, ME, MI, MN, MT, ND, NE, NH, NV, NY, SD, VT, WI & WY

&

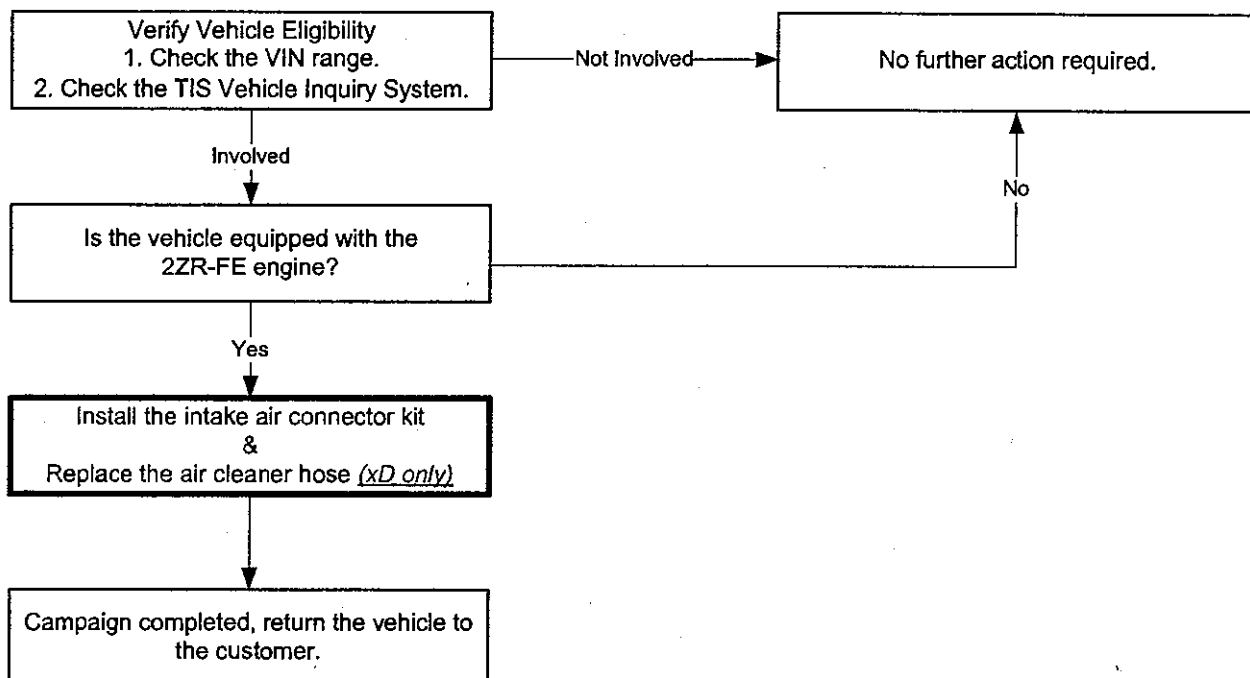
**SPECIAL SERVICE CAMPAIGN 90H
FOR VEHICLES IN**

**AL, AR, AZ, CA, CT, DC, DE, FL, GA, HI, IN, KY, LA, MA, MD, MO, MS, NC, NJ, NM,
OH, OK, OR, PA, RI, SC, TN, TX, UT, VA, WA, WV & THE US TERRITORIES**

BRAKE VACUUM PORT ON THE 2ZR-FE (1.8 LITER) ENGINE

**2009 – 2010 COROLLA & COROLLA MATRIX
2008 – 2009 SCION xD**

I. OPERATION FLOW CHART



II. IDENTIFICATION OF AFFECTED VEHICLES

A. AFFECTED VIN RANGE

Model	WMI	Year	VIN Range	
			VDS	Range
Corolla	1NX	2009	BU40E	Z001002 – Z165305
		2010	BU4EE	Z165312 – Z216294
	2T1	2009	BU40E	C001054 – C191051
		2010	BU4EE	C185955 – C241463
	JTD	2009	BL40E	9017763 – 9095008
				J000111 – J055039
		2010	BU4EE	9093922 – 9102968
Corolla Matrix	2T1	2009	KU40E	C001057 – C191049
		2010	KU4EE	C191054 – C241053
xD	JTK	2008	KU104	J000116 – J032918
		2009	KU104	J032919 – J049777

- Check the TIS Vehicle Inquiry system to confirm the VIN is involved in this SSC. This will verify the vehicle is affected and has not already been completed prior to dealer shipment or by another dealer.
- TMS warranty will not reimburse dealers for repairs conducted on vehicles that are not affected or were completed by another dealer.

III. PREPARATION

A. PARTS

- Corolla & Corolla Matrix

Part Number	Part Description	Quantity
04009-13137	Intake Air Connector Kit*	1

- xD

Part Number	Part Description	Quantity
04009-13137	Intake Air Connector Kit*	1
04009-14137	Air Cleaner Hose	1

* For kit contents refer to the appendix on the last page.

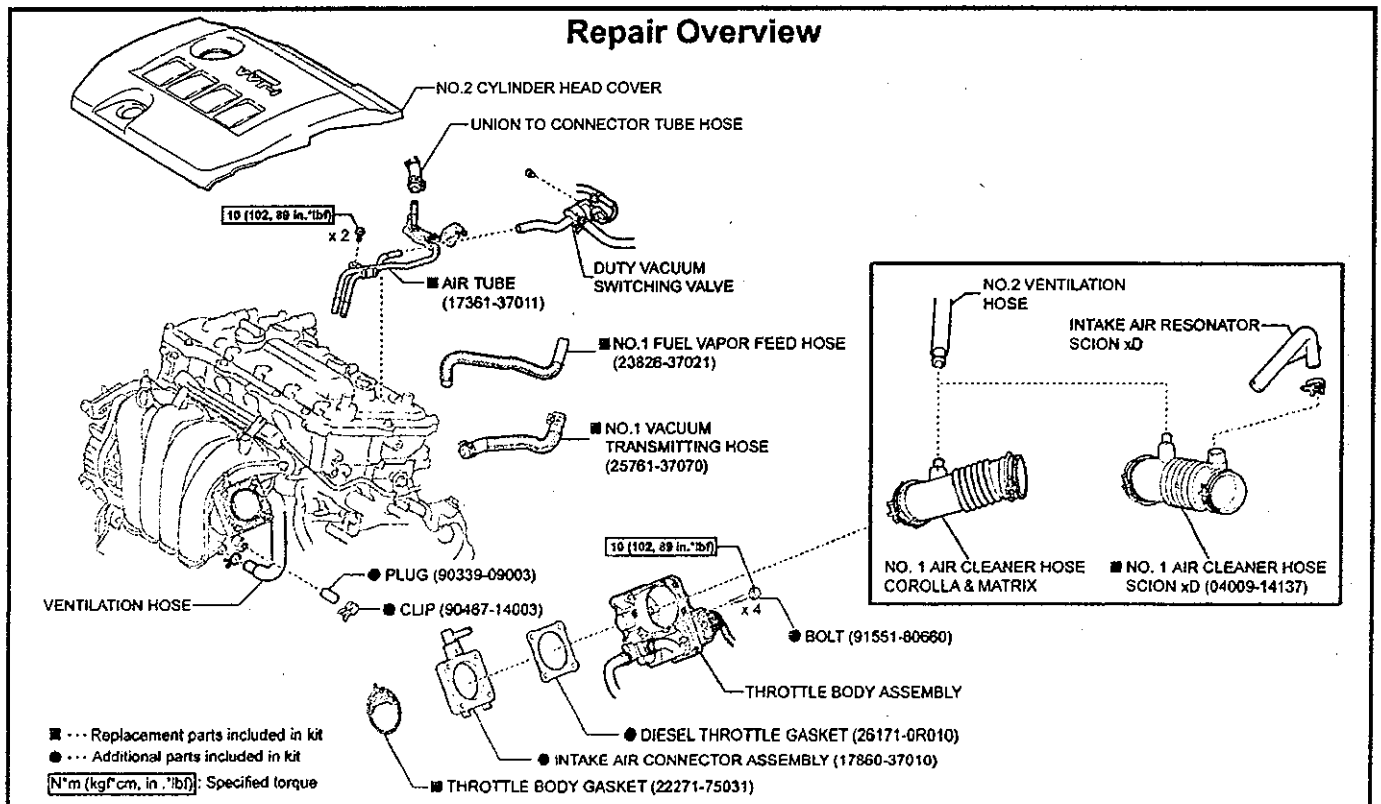
B. TOOLS, EQUIPMENT & MATERIALS

- Standard hand tools
- E6 TORX® socket
- Techstream scantool
- Protective tape

IV. BACKGROUND & COMPONENTS

If the vehicle is operated in extremely low temperatures, there is a possibility that condensed moisture from a positive crankcase ventilation (PCV) port may seep into the brake system vacuum port ("port") and freeze. The port is located inside the intake manifold and provides vacuum assist for the brakes.

Should this condition continue, ice may slowly accumulate at the port and in the worst case, ultimately plug the port. As a result, power assist to the brakes would gradually decrease (eventually to zero), and the increased pedal pressure required could lead to greater vehicle stopping distances. To correct this condition, an Intake Air connector Kit (shown below in red) will be installed.



V. TABLE OF CONTENTS

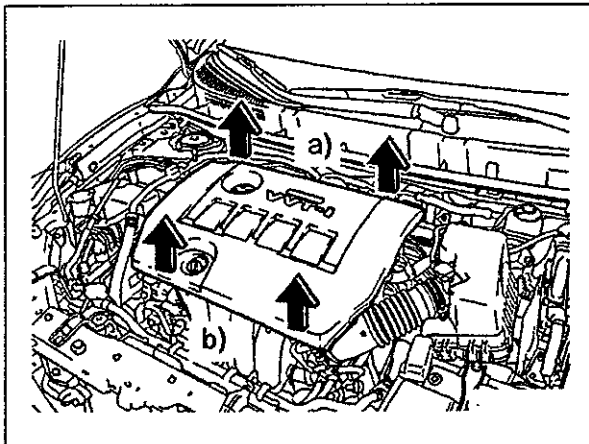
VI. Corolla & Corolla Matrix Work Procedure..... page 04

VII. Scion xD Work Procedure..... page 12

VIII. Appendix..... page 20

VI. COROLLA & COROLLA MATRIX WORK PROCEDURE

A. REMOVAL PROCESS

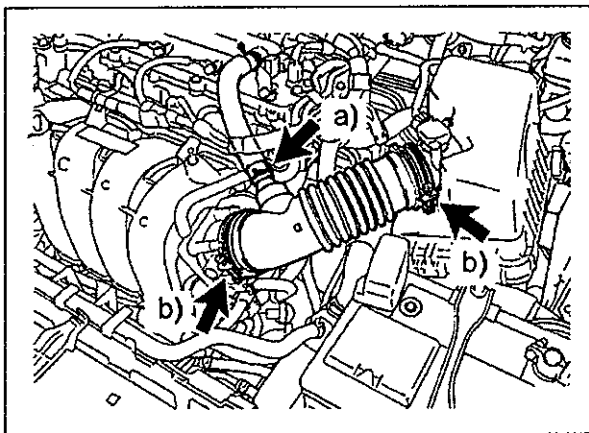


1. REMOVE THE NO. 2 CYLINDER HEAD COVER

- Place both hands on the back side of the cover and lift up to disengage the 2 clips.
- Place both hands on the front side of the cover and lift up to disengage the 2 clips, and remove the cylinder head cover.

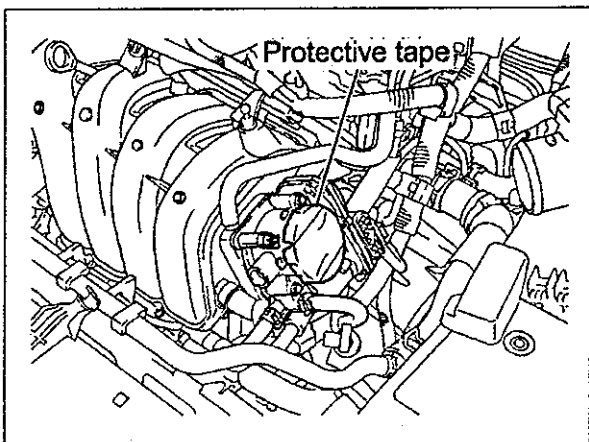
NOTE:

- Disengage the back side clips first
- Lifting the front and back side at once will damage the cover.

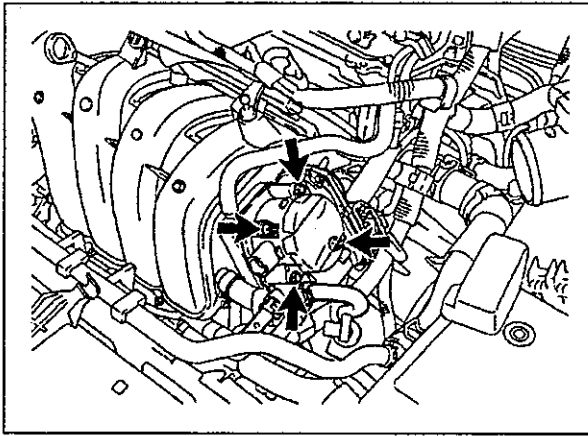


2. REMOVE THE NO.1 AIR CLEANER HOSE

- Remove the clip and disconnect the ventilation hose.
- Loosen the 2 clamps and remove the No.1 air cleaner hose.

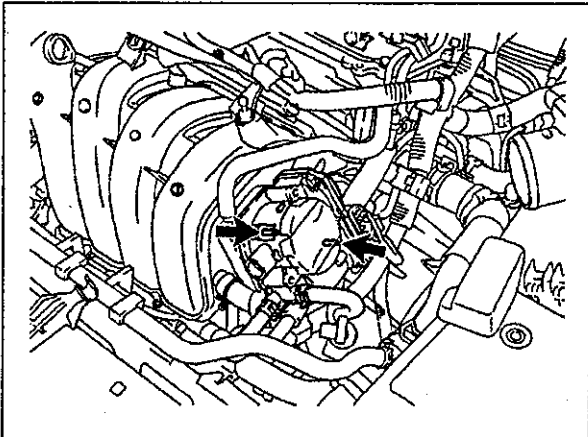


- Place protective tape over the throttle body opening to prevent foreign objects from entering.



3. REMOVE THE THROTTLE BODY ASSEMBLY

- a) Remove the 2 bolts and 2 nuts.

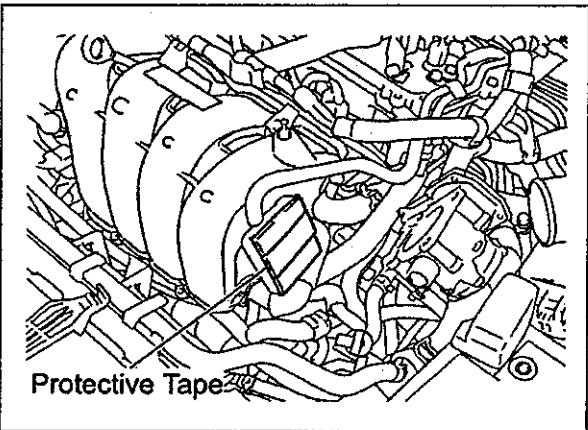


- b) Using an E6 TORX® socket, remove the 2 stud bolts and the throttle body assembly.

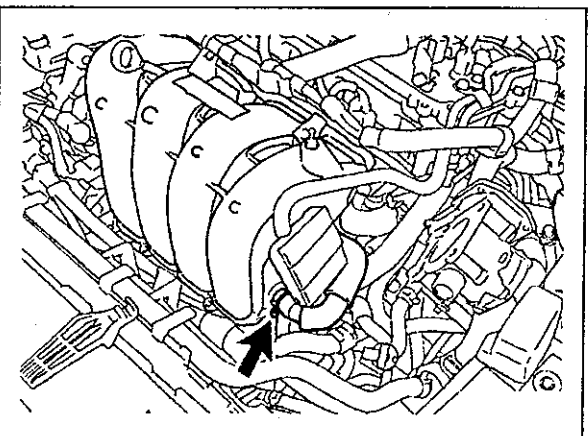
NOTE:

DO NOT disconnect the throttle body assembly connector and water bypass hoses from the throttle body assembly.

- c) Remove the throttle body gasket.

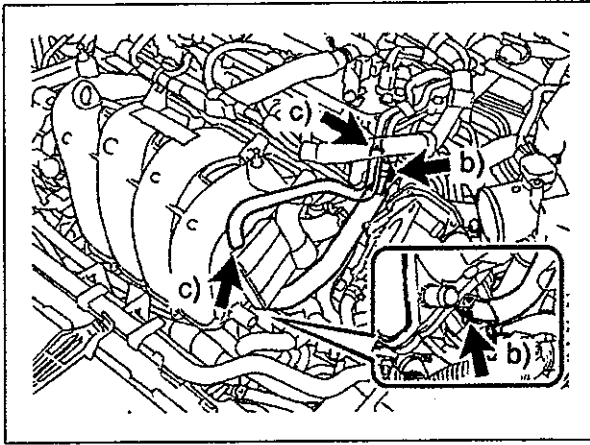


- d) Place protective tape over the intake manifold opening to prevent foreign objects from entering.

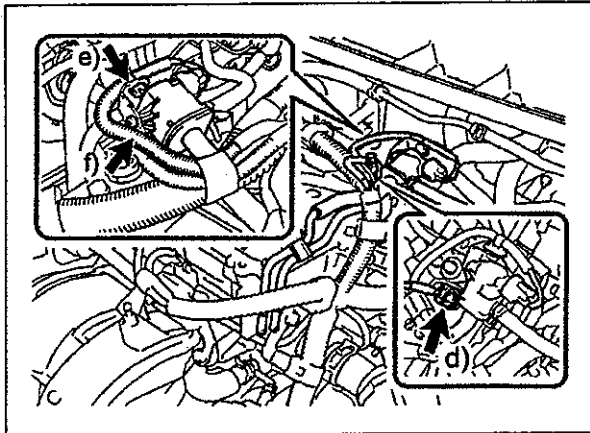


4. REMOVE THE AIR TUBE

- a) Remove the clip and disconnect the ventilation hose.



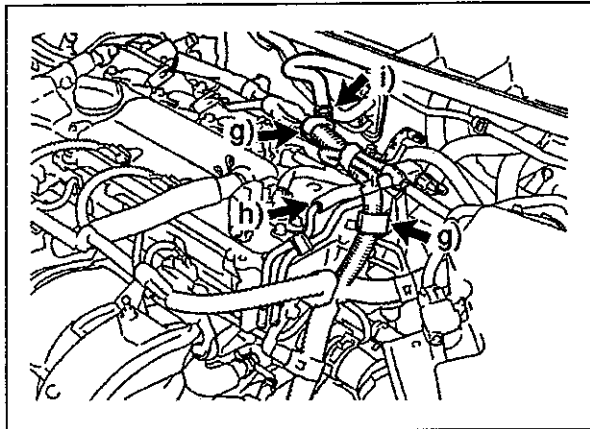
- b) Remove the 2 clips and disconnect the No.1 vacuum transmitting hose.
- c) Remove the No.1 fuel vapor feed hose.



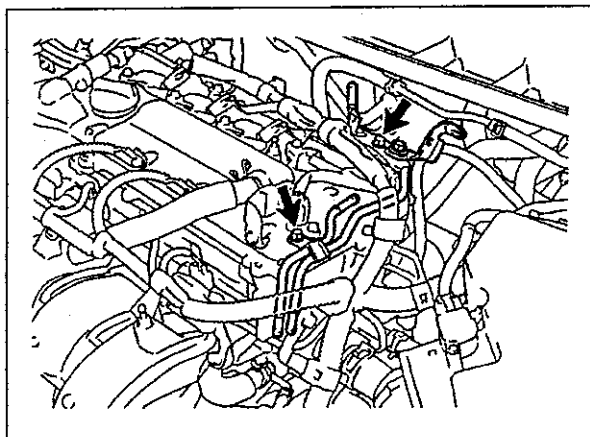
- d) Disconnect the crank position sensor connector.
- e) Disconnect the wire harness clip.
- f) Remove the screw and the vacuum switching valve.

NOTE:

If the screw cannot be removed, remove the bracket bolt for the duty vacuum switching valve instead.



- g) Disconnect the 2 wire harness clips.
- h) Disconnect the duty cycle vacuum switching valve fuel vapor feed hose from the air tube.
- i) Remove the clip and disconnect the union to connector tube hose.

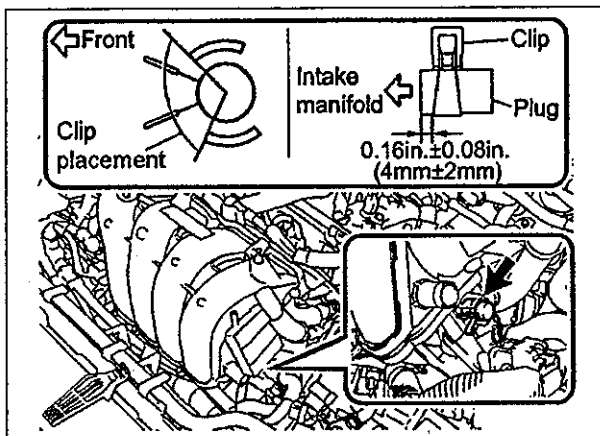


- j) Remove the 2 bolts.
- k) Remove the air tube, while ensuring that it does not come in contact with the crank position sensor and wire harness.

NOTE:

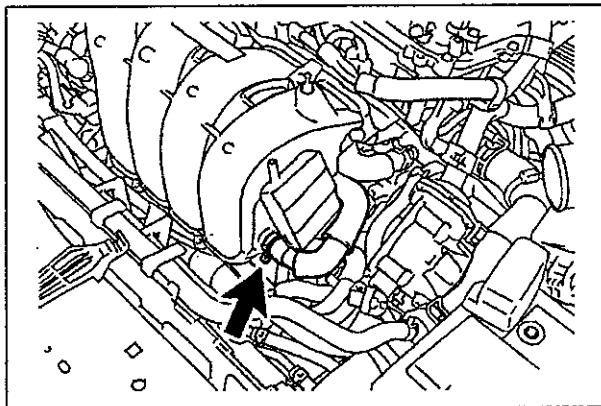
Damage to the crank position sensor and wire harness may occur if contacted by the air tube during removal.

B. INSTALLATION PROCESS



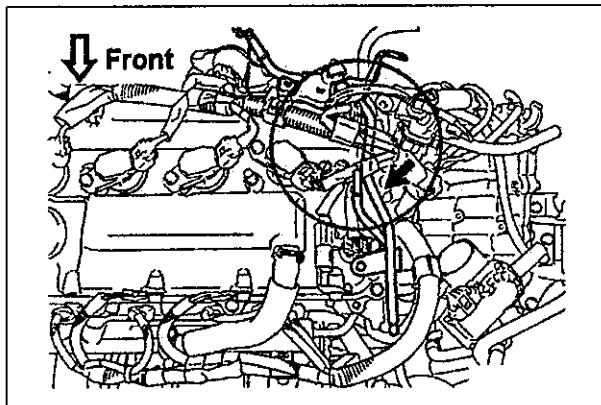
1. INSTALL THE PLUG

- Install the **NEW** plug to the intake manifold's No.1 vacuum transmitting hose connection point.
- Install a **NEW** clip as shown in illustration.



2. RECONNECT THE VENTILATION HOSE

- Reconnect the ventilation hose and reinstall the clip.



3. INSTALL THE NEW AIR TUBE

- Install the **NEW** air tube.

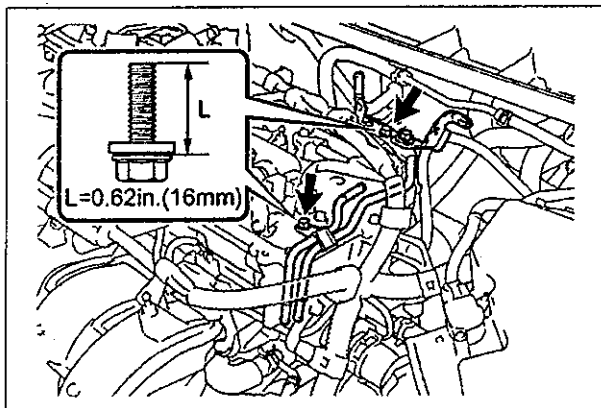
NOTE:

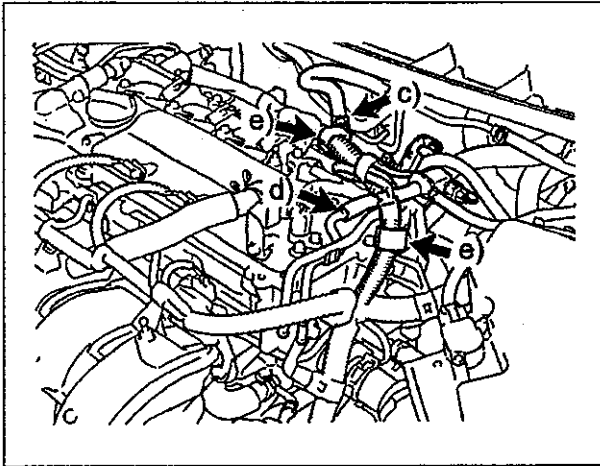
- Make sure not to pinch the wire harness when installing the air tube.
- Set the air tube underneath the wire harness as shown in illustration.

- Reinstall the 2 air tube bolts and torque to 10 N·m (102 kgf·cm, 89 in·lbf).

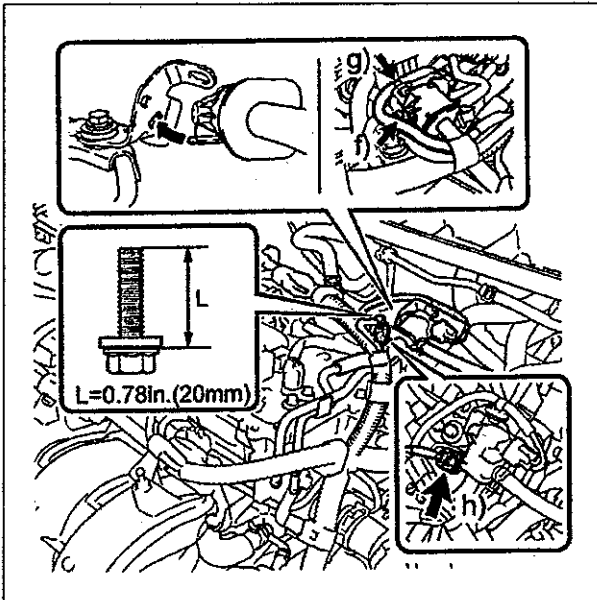
NOTE:

- The bolt for the air tube bracket is shorter [L = 0.62 in. (16 mm)] than the one for the duty vacuum switching valve [L = 0.78 in. (20 mm)].
- If the bracket bolt for the duty vacuum switching valve was removed, make sure to use the correct one during reinstallation.





- c) Reconnect the union to connector tube hose and reinstall the clip.
- d) Reconnect the duty cycle vacuum switching valve fuel vapor feed hose.
- e) Reconnect the 2 wire harness clips.

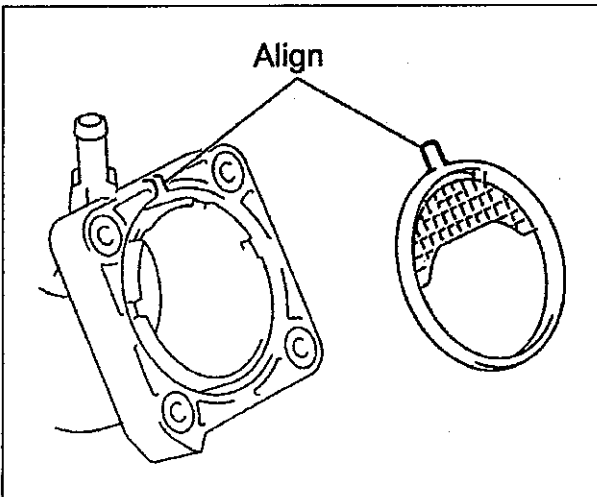


- f) Reinstall the vacuum switching valve and screw.

NOTE:

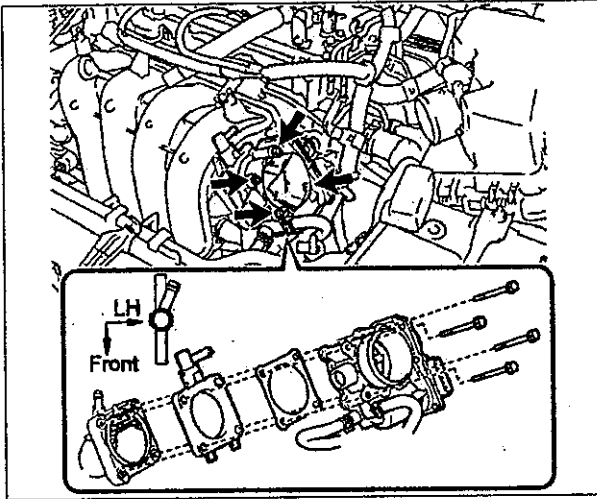
- If the bracket bolt for the duty vacuum switching valve was removed reinstall it and torque to 5.9 N·m (60 kgf·cm, 52 in·lbf).
- Make sure to use the correct bolt, as the one for the duty vacuum switching valve is longer [L = 0.78 in. (20 mm)] than the one for the air tube bracket [L = 0.62 in. (16 mm)].

- g) Reconnect the wire harness clip.
- h) Reconnect the crank position sensor connector.



4. REINSTALL THE THROTTLE BODY ASSEMBLY

- a) Remove the protective tape.
- b) Install the **NEW** throttle body gasket.



- c) Reinstall the throttle body assembly with a **NEW** intake air connector, **NEW** gasket and 4 **NEW** bolts in the order shown in the illustration.
- d) Verify that the gasket is properly positioned.

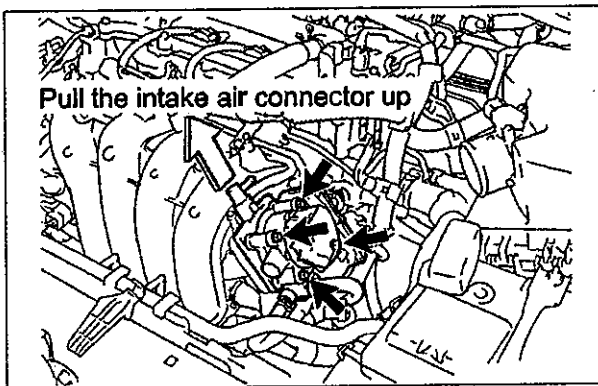
NOTE:

Make sure the orientation of the intake air connector is correct during installation.

Revised

STOP

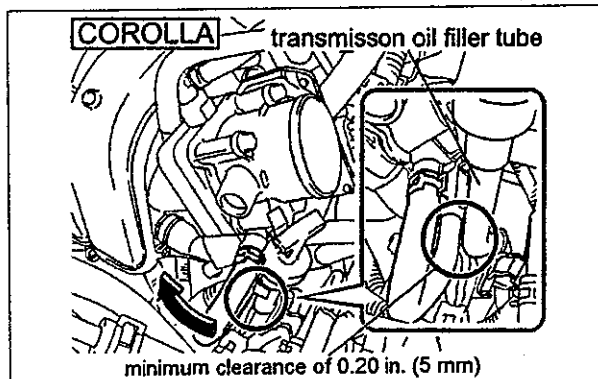
Ensure that the air intake connector is properly aligned with the throttle body by pulling upward on the air intake connector hose fitting while tightening the bolts. Failure to do this may result in a whistling noise during light throttle application.



- e) While pulling up the intake air connector, lightly tighten the 4 bolts and then torque the 4 bolts in a criss-cross pattern to 10 N·m (102 kgf-cm, 89 in-lbf).

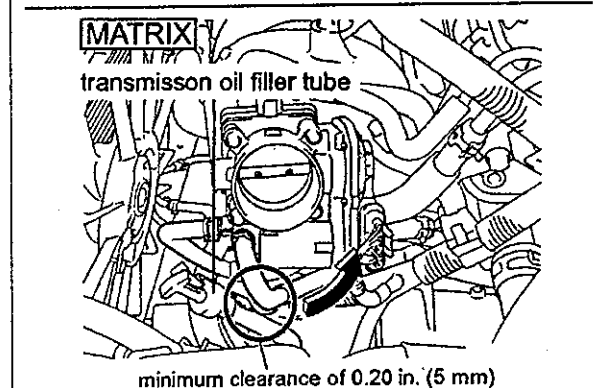
NOTE:

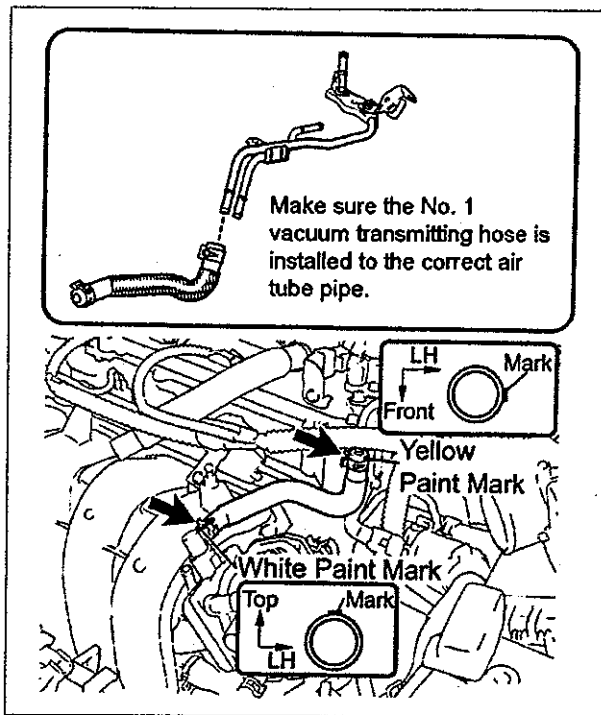
- Pulling up on the intake air connector while tightening the bolts will ensure the proper alignment of components and a tight seal with the gasket.



5. INSPECT THE WATER HOSE CLEARANCE (AUTOMATIC TRANSMISSION ONLY)

- a) Inspect the clearance between the water by-pass hose and the transmission oil filler tube. The clearance should be 0.20 in. (5 mm) or more. If not, twist the water hose as needed to increase the clearance.



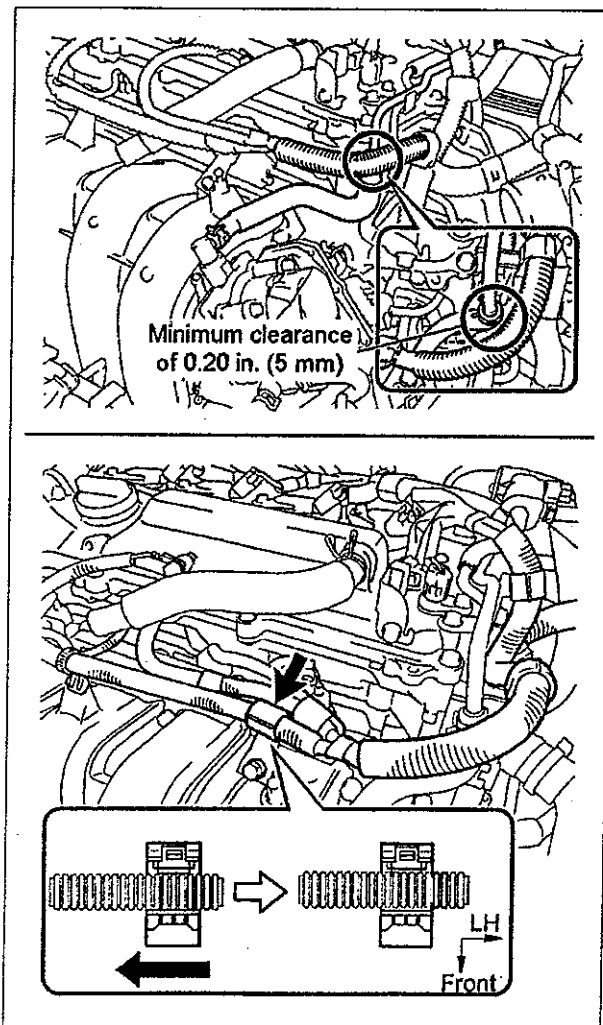


6. INSTALL THE NEW NO. 1 VACUUM TRANSMITTING HOSE

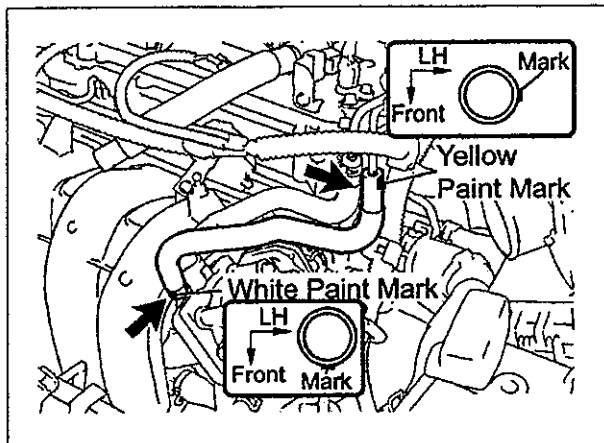
- a) Using 2 **NEW** clips, install the **NEW** No.1 vacuum transmitting hose so that its yellow paint mark faces outward, and the white paint mark faces upward as shown in the illustration.

NOTE:

Make sure the No.1 vacuum transmitting hose is installed to the correct air tube pipe.

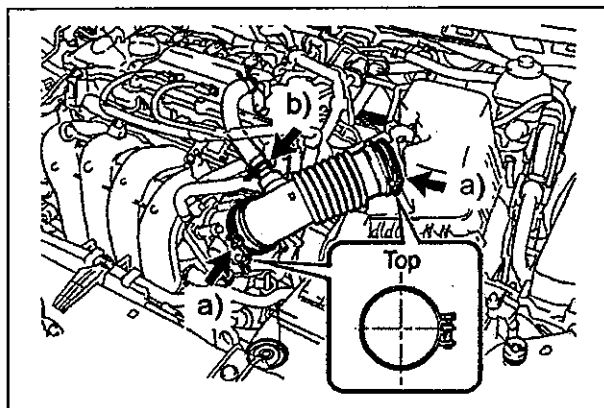


- b) If the clearance between the No.1 vacuum transmitting hose and the wire harness is less than **0.20 in. (5 mm)**, follow the steps below to adjust it.
 - i. Remove the bracket from the intake manifold.
 - ii. Open the clip, slide the hose about 1 to 2 ribs towards the left side of the vehicle and close the clip.
 - iii. Reinstall the bracket to the intake manifold and reinspect the clearance.



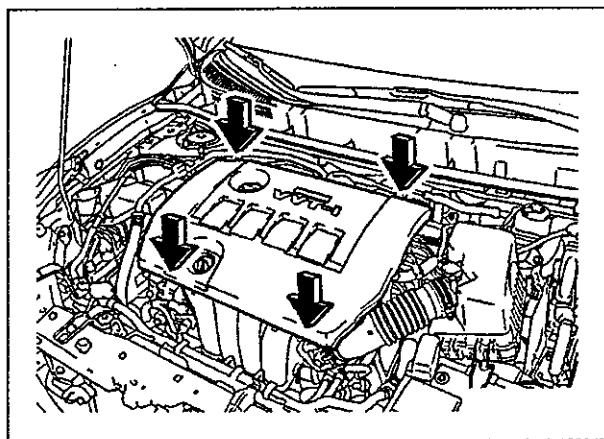
7. INSTALL THE NEW NO. 1 FUEL VAPOR FEED HOSE

- a) Install the **NEW** No.1 fuel vapor feed hose so that its **yellow paint mark** faces outward, and the **white paint mark** faces the front as shown in the illustration.



8. INSTALL THE NO.1 AIR CLEANER HOSE

- a) Reinstall the No.1 air cleaner hose and tighten the 2 clamps.
- b) Reconnect the ventilation hose and reinstall the clip.



9. REINSTALL THE NO. 2 CYLINDER HEAD COVER

- a) Reinstall the cylinder head cover by reattaching the 2 clips on the backside, then the 2 clips to the front side.

NOTE:

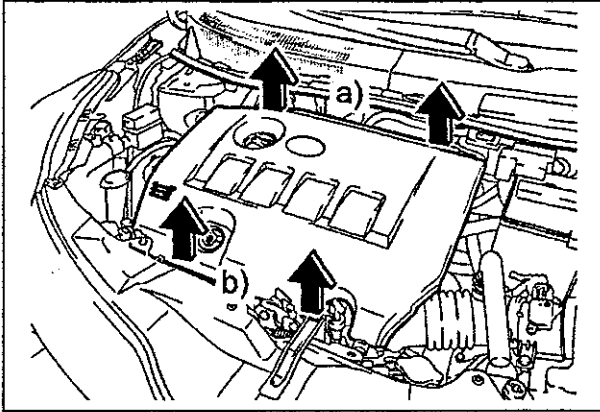
- Make sure the clips are firmly in place.
- Pushing with too much force or hitting the cover to attach the clips may damage the components.

10. FINAL INSPECTION

- a) Check for DTCs. If DTCs are present, confirm the code(s), view and record the freeze frame data and perform repairs as necessary.
- b) Test drive the vehicle to inspect for warning lights, drivability issues, etc.

VII. SCION xD WORK PROCEDURE

A. REMOVAL PROCESS

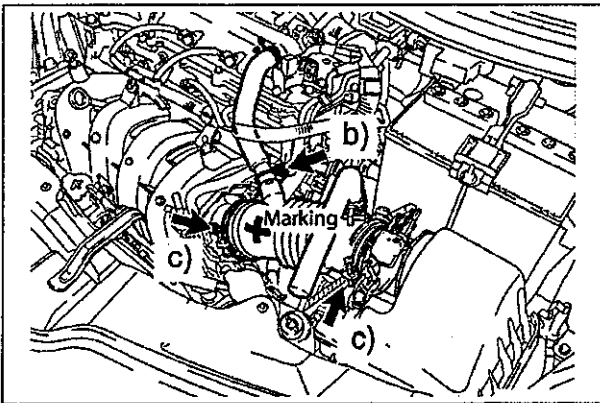


1. REMOVE THE NO. 2 CYLINDER HEAD COVER

- Place both hands on the back side of the cover and lift up to disengage the 2 clips.
- Place both hands on the front side of the cover and lift up to disengage the 2 clips, and remove the cylinder head cover.

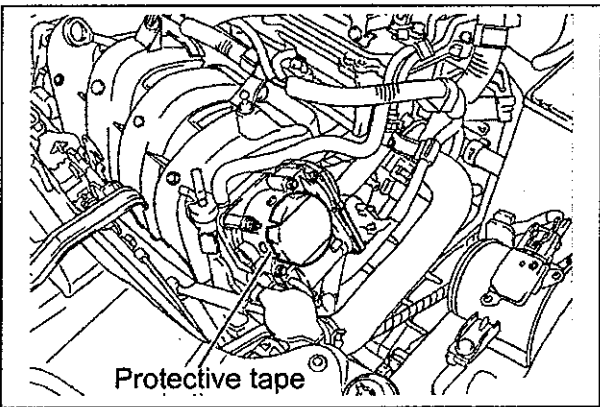
NOTE:

- Disengage the back side clips first
- Lifting the front and back side at once will damage the cover.

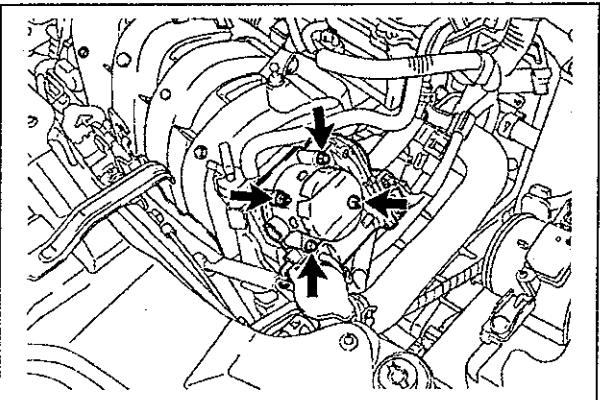


2. REMOVE THE NO.1 AIR CLEANER HOSE

- Mark the No.1 air cleaner hose to assure that it is not reused.
- Remove the clip and disconnect the ventilation hose closest to the throttle body.
- Loosen the 2 clamps and remove the No. 1 air cleaner hose.

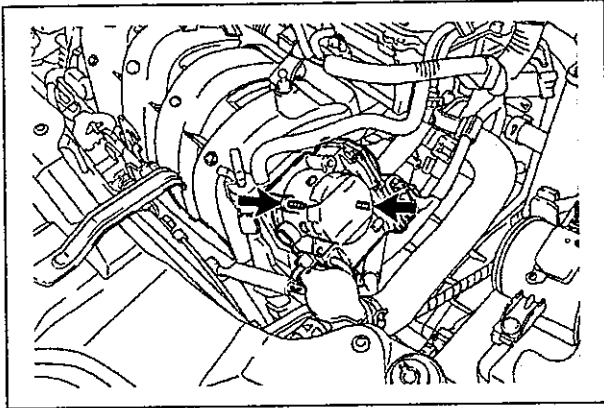


- Place protective tape over the throttle body opening to prevent foreign objects from entering.



3. REMOVE THE THROTTLE BODY ASSEMBLY

- Remove the 2 bolts and 2 nuts.

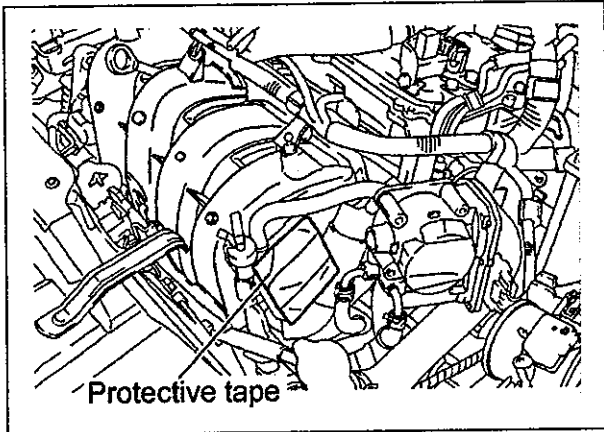


- b) Using an E6 TORX® socket, remove the 2 stud bolts and the throttle body assembly.

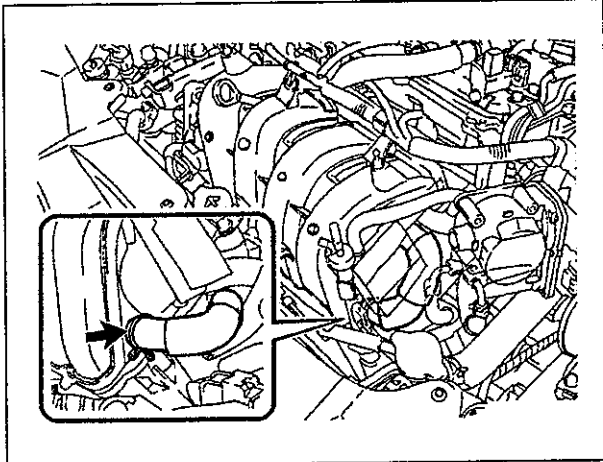
NOTE:

DO NOT disconnect the throttle body assembly connector and water bypass hoses from the throttle body assembly.

- c) Remove the throttle body gasket.

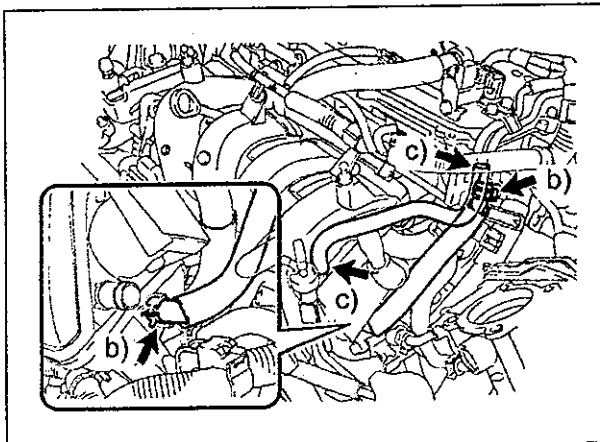


- d) Place protective tape over the intake manifold opening to prevent foreign objects from entering.

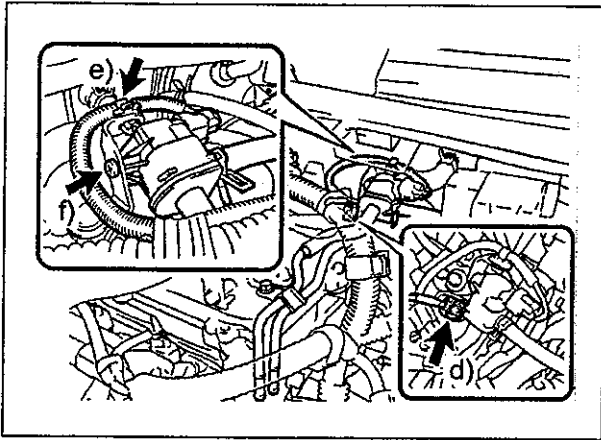


4. REMOVE THE AIR TUBE

- a) Remove the clip and disconnect the ventilation hose.



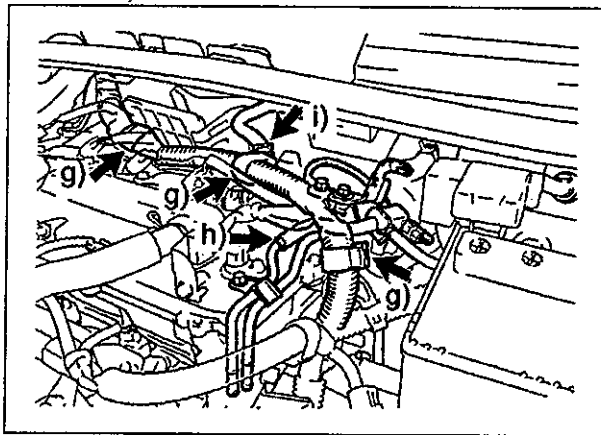
- b) Remove the 2 clips and disconnect the No.1 vacuum transmitting hose.
c) Remove the No.1 fuel vapor feed hose.



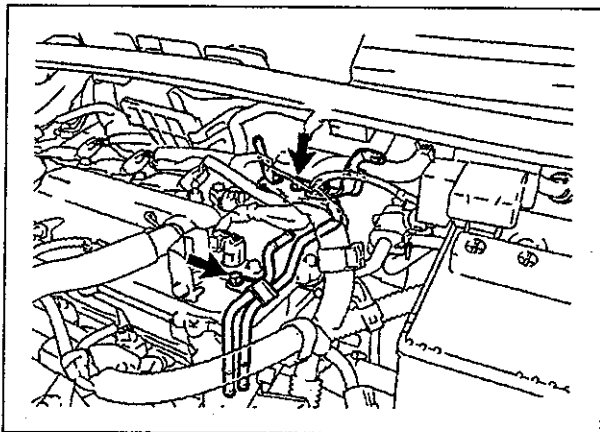
- d) Disconnect the crank position sensor connector.
- e) Disconnect the wire harness clip.
- f) Remove the screw and the vacuum switching valve.

NOTE:

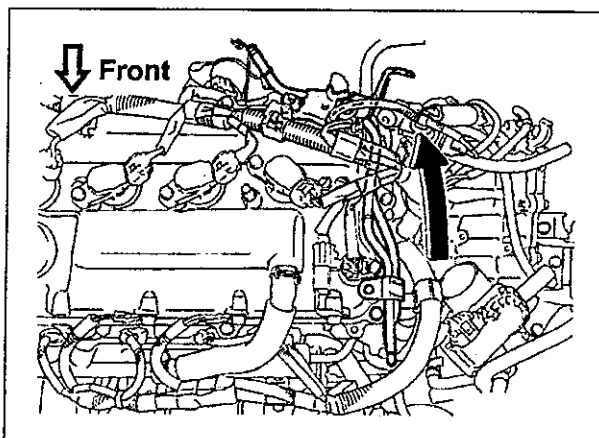
If the screw cannot be removed, remove the bracket bolt for the duty vacuum switching valve instead.



- g) Disconnect the 3 wire harness clips.
- h) Disconnect the duty cycle vacuum switching valve fuel vapor feed hose from the air tube.
- i) Remove the clip and disconnect the union to connector tube hose.



- j) Remove the 2 bolts.

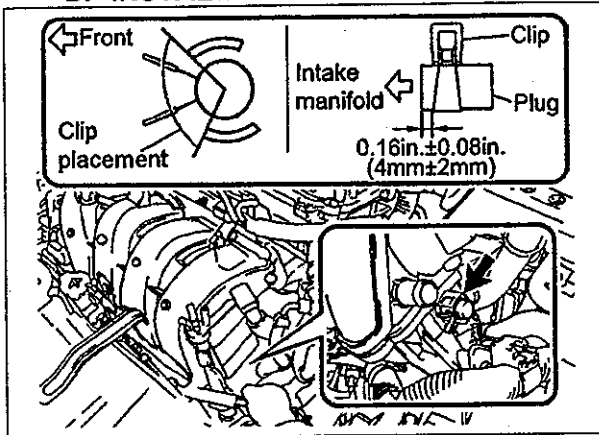


- k) Remove the air tube by moving it towards the rear of the vehicle, and ensuring that it does not come in contact with the crank position sensor and wire harness.

NOTE:

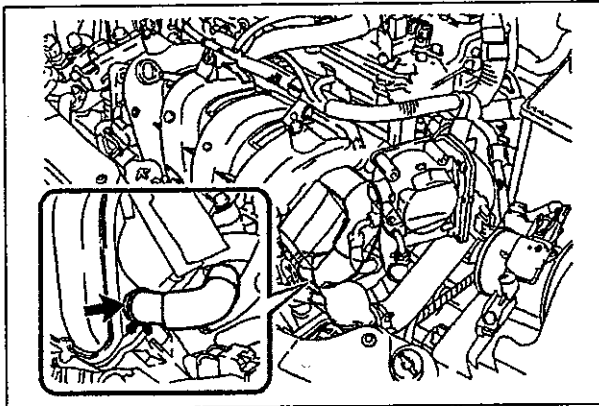
Damage to the crank position sensor and wire harness may occur if contacted by the air tube during removal.

B. INSTALLATION PROCESS



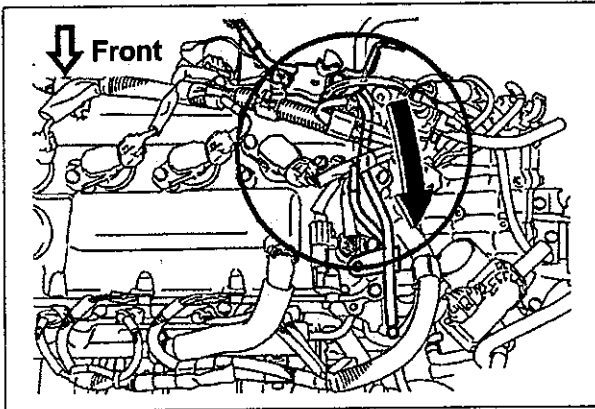
1. INSTALL THE PLUG

- Install the **NEW** plug to the intake manifold's No.1 vacuum transmitting hose's connection point.
- Install a **NEW** clip as shown in the illustration.



2. RECONNECT THE VENTILATION HOSE

- Reconnect the ventilation hose and reinstall the clip.



3. INSTALL THE NEW AIR TUBE

- Install the **NEW** air tube.

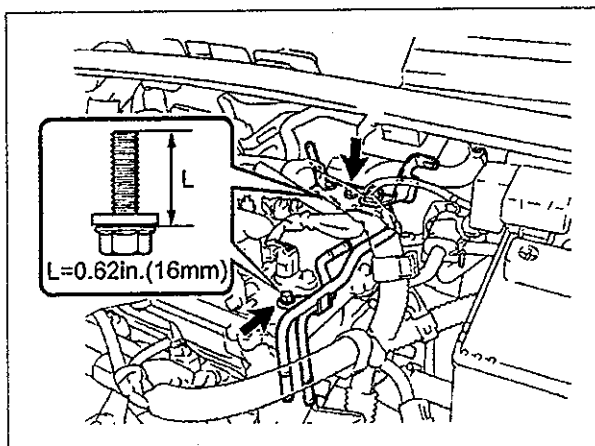
NOTE:

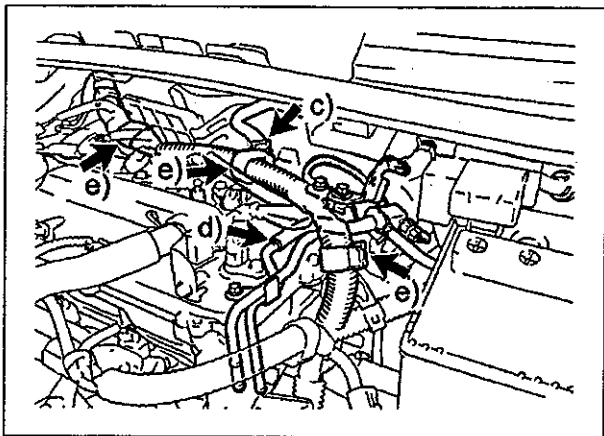
- Make sure not to pinch the wire harness when installing the air tube.
- Set the air tube underneath the wire harness as shown in illustration.

- Reinstall the 2 air tube bolts and torque to 10 N·m (102 kgf·cm, 89 in·lbf).

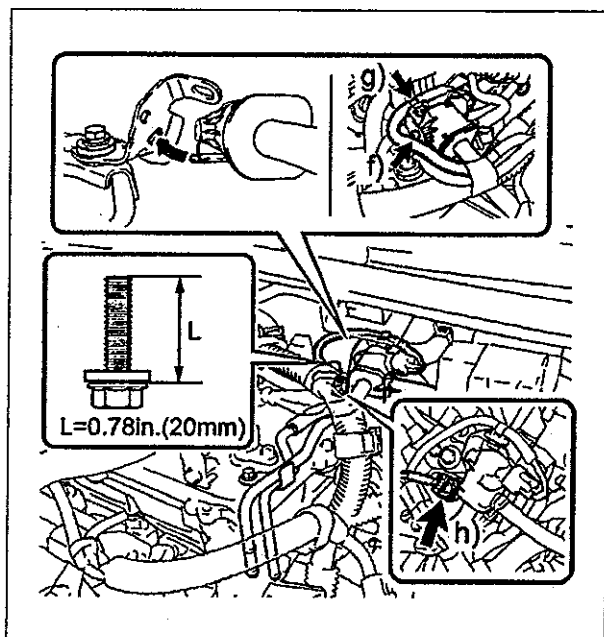
NOTE:

- The bolt for the air tube bracket is shorter [L = 0.62 in. (16 mm)] than the one for the duty vacuum switching valve [L = 0.78 in. (20 mm)].
- If the bracket for the duty vacuum switching valve was removed, make sure to use the correct bolt during reinstallation.





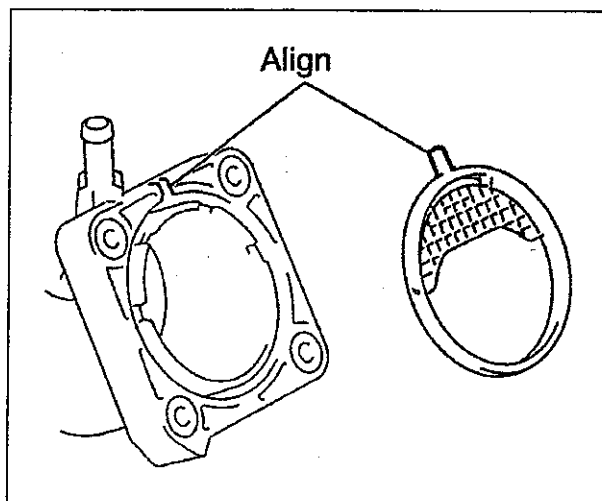
- c) Reconnect the union to connector tube hose and reinstall the clip.
- d) Reconnect the duty vacuum switching valve fuel vapor feed hose.
- e) Reconnect the 3 wire harness clips.



- f) Reinstall the vacuum switching valve with the screw.

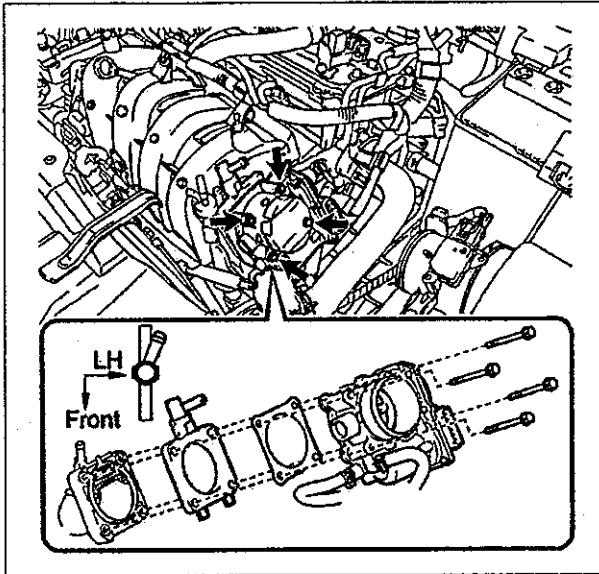
NOTE:

- If the bracket bolt for the duty vacuum switching valve was removed reinstall it and torque to 5.9 N·m (60 kgf·cm, 52 in·lbf).
 - Make sure to use the correct bolt, as the one for the duty vacuum switching valve is longer [L = 0.78 in. (20 mm)] than the one for the air tube bracket [L = 0.62 in. (16 mm)].
- g) Reconnect the wire harness clip.
 - h) Reconnect the crank position sensor connector.



4. REINSTALL THE THROTTLE BODY ASSEMBLY

- a) Remove the protective tape.
- b) Install the **NEW** throttle body gasket.



- c) Reinstall the throttle body assembly with a **NEW** intake air connector, **NEW** gasket and 4 **NEW** bolts in the order shown in the illustration.
- d) Verify that the gasket is properly positioned.

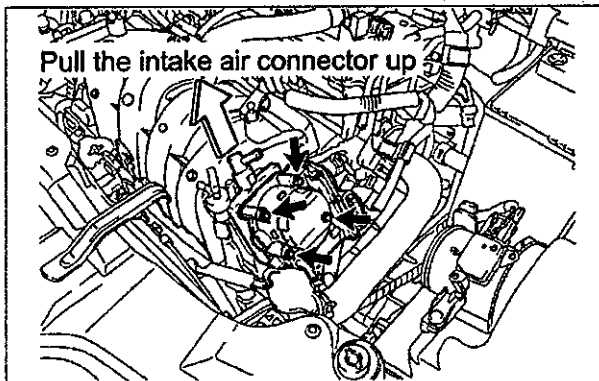
NOTE:

Make sure the orientation of the intake air connector is correct during installation.

Revised



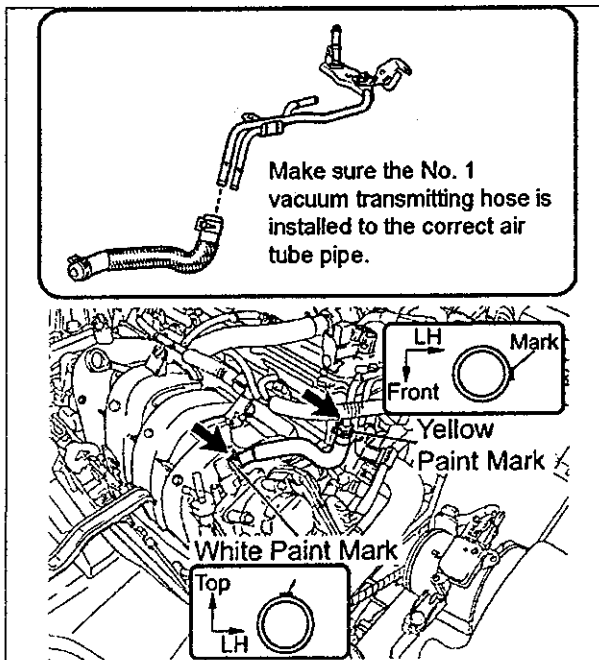
Ensure that the air intake connector is properly aligned with the throttle body by pulling upward on the air intake connector hose fitting while tightening the bolts. Failure to do this may result in a whistling noise during light throttle application.



- e) While pulling up the intake air connector, torque the 4 bolts to 10 N·m (102 kgf·cm, 89 in·lbf).

NOTE:

Pulling up on the intake air connector while tightening the bolts will ensure the proper alignment of components and a tight seal with the gasket.

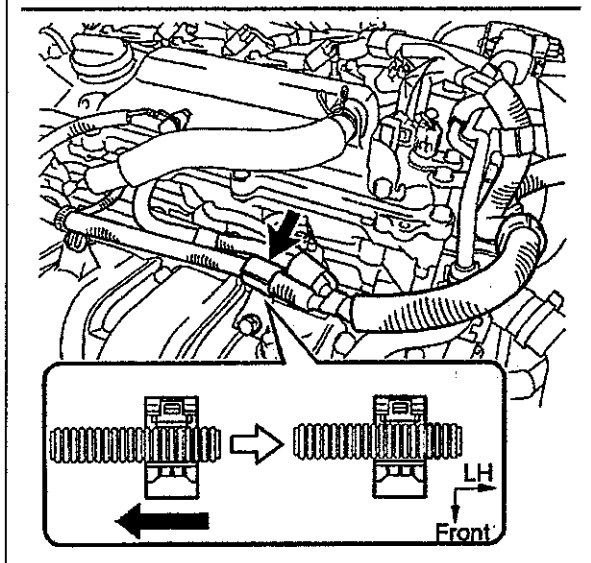
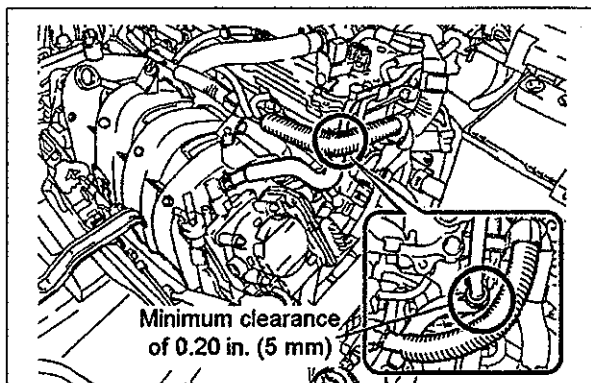


5. INSTALL THE NEW NO. 1 VACUUM TRANSMITTING HOSE

- a) Using 2 **NEW** clips, install the **NEW** No.1 vacuum transmitting hose so that its **yellow paint mark** faces outward, and the **white paint mark** faces upward as shown in the illustration.

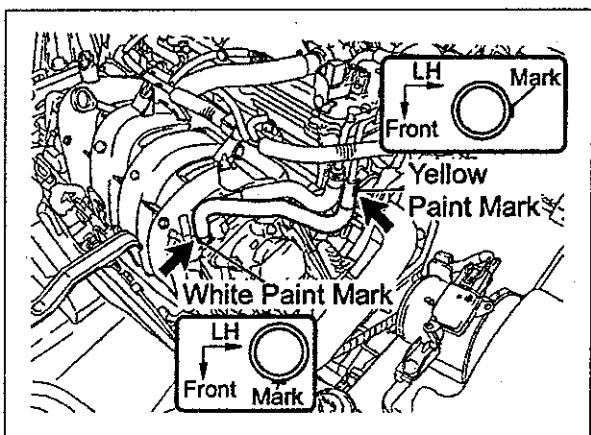
NOTE:

Make sure the No.1 vacuum transmitting hose is installed to the correct air tube pipe.



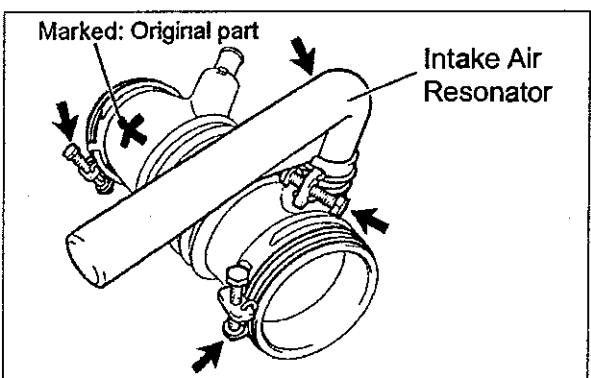
- b) If the clearance between the No.1 vacuum transmitting hose and the wire harness is less than 0.20 in. (5 mm), follow the steps below to adjust it.

- Remove the bracket from the intake manifold.
- Open the clip, slide the hose about 1 to 2 ribs towards the left side of the vehicle and close the clip.
- Reinstall the bracket to the intake manifold and reinspect the clearance.



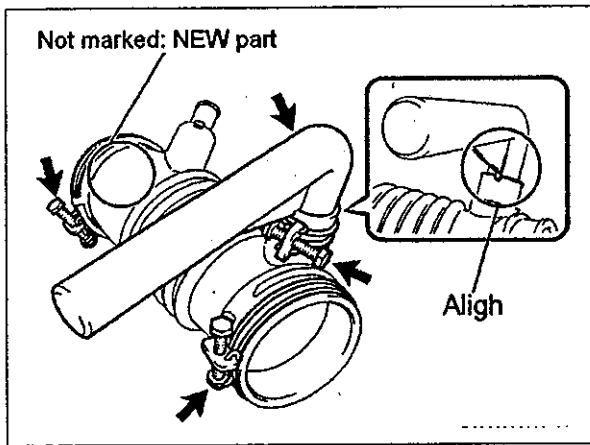
6. INSTALL THE NEW NO. 1 FUEL VAPOR FEED HOSE

- a) Install the **NEW** No.1 fuel vapor feed hose so that its **yellow paint mark** faces outward, and the **white paint mark** faces the front as shown in the illustration.

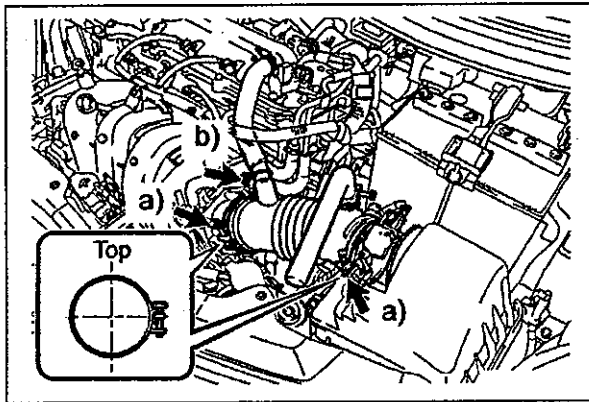


7. INSTALL THE NEW AIR CLEANER HOSE

- a) Remove the 3 clamps and intake resonator from the original air cleaner hose.

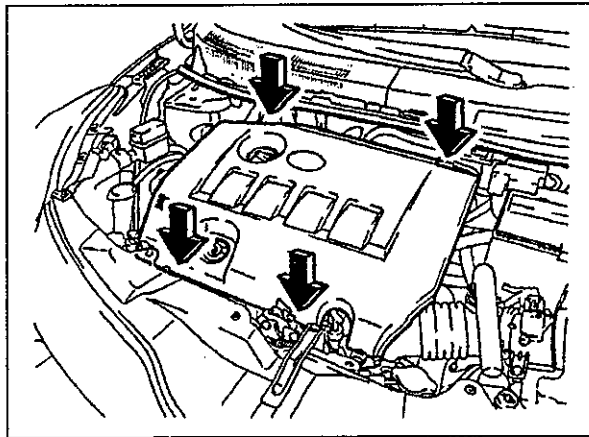


- b) Reinstall the intake resonator and clamp to the **NEW** air cleaner hose.
- c) Align the tab on the intake resonator with the groove on the **NEW** air cleaner hose and tighten the clamp.
- d) Reinstall the 2 clamps to the **NEW** air cleaner hose.



8. INSTALL THE NEW NO.1 AIR CLEANER HOSE

- a) Install the **NEW** air cleaner hose and tighten the 2 clamps.
- b) Reconnect the ventilation hose and reinstall the clip.



9. REINSTALL THE NO. 2 CYLINDER HEAD COVER

- a) Reinstall the cylinder head cover by reattaching the 2 clips on the backside, then the 2 clips to the front side.

NOTE:

- Make sure the clips are firmly in place.
- Pushing with too much force or hitting the cover to attach the clips may damage the components.

10. FINAL INSPECTION

- a) Check for DTCs. If DTCs are present, confirm the code(s), view and record the freeze frame data and perform repairs as necessary.
- b) Test drive the vehicle to inspect for warning lights, drivability issues, etc.

VIII. APPENDIX

A. RECALLED PARTS DISPOSAL

As required by Federal Regulations, please make sure all recalled parts (original parts) removed from the vehicle are disposed of in a manner in which they will not be reused.

B. PARTS KIT CONTENTS

Kit Part Number	Kit Part Name	
04009-13137	Intake Air Connector Kit	
The kit listed above includes the following parts:		
Part Number	Part Name	Qty
17361-37011	Air Tube*	1
17860-37010	Intake Air Connector Assy*	1
22271-75031	Throttle Body Gasket	1
23826-37021	No.1 Fuel Vapor Feed Hose*	1
25761-37070	No.1 Vacuum Transmitting Hose (Includes 2 clips)*	1
26171-0R010	Diesel Throttle Gasket	1
90339-09003	Plug	1
90467-14003	Clip	1
91551-80660	Bolt	4
* These parts are used ONLY in the Intake Air Connector Kit, and NOT available as individual service parts.		

**Special Service Campaign 90H
Certain 2008 – 2009 Scion xD Vehicles
Brake System Vacuum Port**

Dear Scion Customer:

This notice is being sent to advise you that Scion is conducting a Special Service Campaign on 2008 through 2009 Scion xD vehicles in the following 19 states:

Alaska, Colorado, Idaho, Illinois, Iowa, Kansas, Maine, Michigan, Minnesota, Montana, Nebraska, Nevada, New Hampshire, New York, North Dakota, South Dakota, Vermont, Wisconsin and Wyoming

What is the condition?

If the vehicle is operated in extremely low temperatures, there is a possibility that condensed moisture from a positive crankcase ventilation (PCV) port may seep into the brake system vacuum port ("port") and freeze. The port is located inside the intake manifold and provides vacuum assist for the brakes.

Should this condition continue, ice may slowly accumulate at the port and in the worst case, ultimately plug the port. As a result, power assist to the brakes would gradually decrease (eventually to zero), and the increased pedal pressure required could lead to greater vehicle stopping distances.

What should you do?

If you believe that there is a possibility for your vehicle to be operated in the 19 specified states or in the conditions described above, please contact any authorized Scion or Toyota dealer and make an appointment to install a newly designed intake air connector that will relocate the brake system vacuum port at **NO CHARGE** to the vehicle owners.

The repair will take approximately 1 hour. However, depending upon the dealer's work schedule, it may be necessary to make your vehicle available for a longer period of time.

We request that you present this notice to the dealer at the time of your service appointment.

If you would like to update your vehicle ownership or contact information, please go to <http://www.scion.com/#members>. You will need your full 17-digit Vehicle Identification Number (VIN) to input the new information.

What if you have other questions?

Please call your local Scion or Toyota dealer or call the Scion Customer Experience Center at 1-866-548-1851 Monday through Friday, 5:00 am to 6:00 pm, Saturday 7:00 am through 4:00 pm Pacific Time.

What if you have previously paid for repair to your vehicle's brake system vacuum port for this specific condition?

If you have previously paid for repair to your vehicle's brake system vacuum port for this specific condition prior to receiving this letter, please mail a copy of your repair order, proof-of-payment, and proof-of-ownership to the following address for reimbursement consideration

Toyota Motor Sales, U.S.A., Inc
Scion Customer Experience, WC 10
19001 South Western Avenue
Torrance, CA 90509

We have sent this notice in the interest of your continued satisfaction with our products, and we sincerely regret any inconvenience this condition may have caused you.

Thank you for driving a Scion.

Sincerely,

Scion,

A Marque of Toyota Motor Sales, U.S.A., Inc.

Special Service Campaign 90H
Certain 2009 through 2010 Corolla & Corolla Matrix Equipped with 2ZR-FE (1.8 liter) Engine
Brake System Vacuum Port

Dear Toyota Customer:

This notice is being sent to advise you that Toyota is conducting a Special Service Campaign on 2009 – 2010 Corolla & Corolla Matrix vehicles equipped with 2ZR-FE (1.8 liter) engines in the following 19 states:

Alaska, Colorado, Idaho, Illinois, Iowa, Kansas, Maine, Michigan, Minnesota, Montana, Nebraska, Nevada, New Hampshire, New York, North Dakota, South Dakota, Vermont, Wisconsin and Wyoming

What is the condition?

If the vehicle is operated in extremely low temperatures, there is a possibility that condensed moisture from a positive crankcase ventilation (PCV) port may seep into the brake system vacuum port ("port") and freeze. The port is located inside the intake manifold and provides vacuum assist for the brakes.

Should this condition continue, ice may slowly accumulate at the port and in the worst case, ultimately plug the port. As a result, power assist to the brakes would gradually decrease (eventually to zero), and the increased pedal pressure required could lead to greater vehicle stopping distances.

What should you do?

If you believe that there is a possibility for your vehicle to be operated in the 19 specified states or in the conditions described above, please contact any authorized Toyota dealer and make an appointment to install a newly designed intake air connector that will relocate the brake system vacuum port at **NO CHARGE** to the vehicle owners.

The repair will take approximately 1 hour. However, depending upon the dealer's work schedule, it may be necessary to make your vehicle available for a longer period of time.

We request that you present this notice to the dealer at the time of your service appointment.

If you would like to update your vehicle ownership or contact information, please go to www.toyota.com/ownersupdate. You will need your full 17-digit Vehicle Identification Number (VIN) to input the new information.

What if you have other questions?

Please call your local Toyota dealer or call the Toyota Customer Assistance Center at 1-888-270-9371 Monday through Friday, 5:00 am to 6:00 pm, Saturday 7:00 am through 4:00 pm Pacific Time.

What if you have previously paid for repair to your vehicle's brake system vacuum port for this specific condition?

If you have previously paid for repair to your vehicle's brake system vacuum port for this specific condition prior to receiving this letter, please mail a copy of your repair order, proof-of-payment, and proof-of-ownership to the following address for reimbursement consideration

Toyota Motor Sales, U.S.A., Inc
Toyota Customer Experience, WC 10
19001 South Western Avenue
Torrance, CA 90509

We have sent this notice in the interest of your continued satisfaction with our products, and we sincerely regret any inconvenience this condition may have caused you.

Thank you for driving a Toyota.

Sincerely,

TOYOTA MOTOR SALES, U.S.A., INC.