

**TECHNICAL INSTRUCTIONS**

**FOR**

**SPECIAL SERVICE CAMPAIGN JLG**

**AIR INJECTION PUMPS AND AIR SWITCHING VALVES**

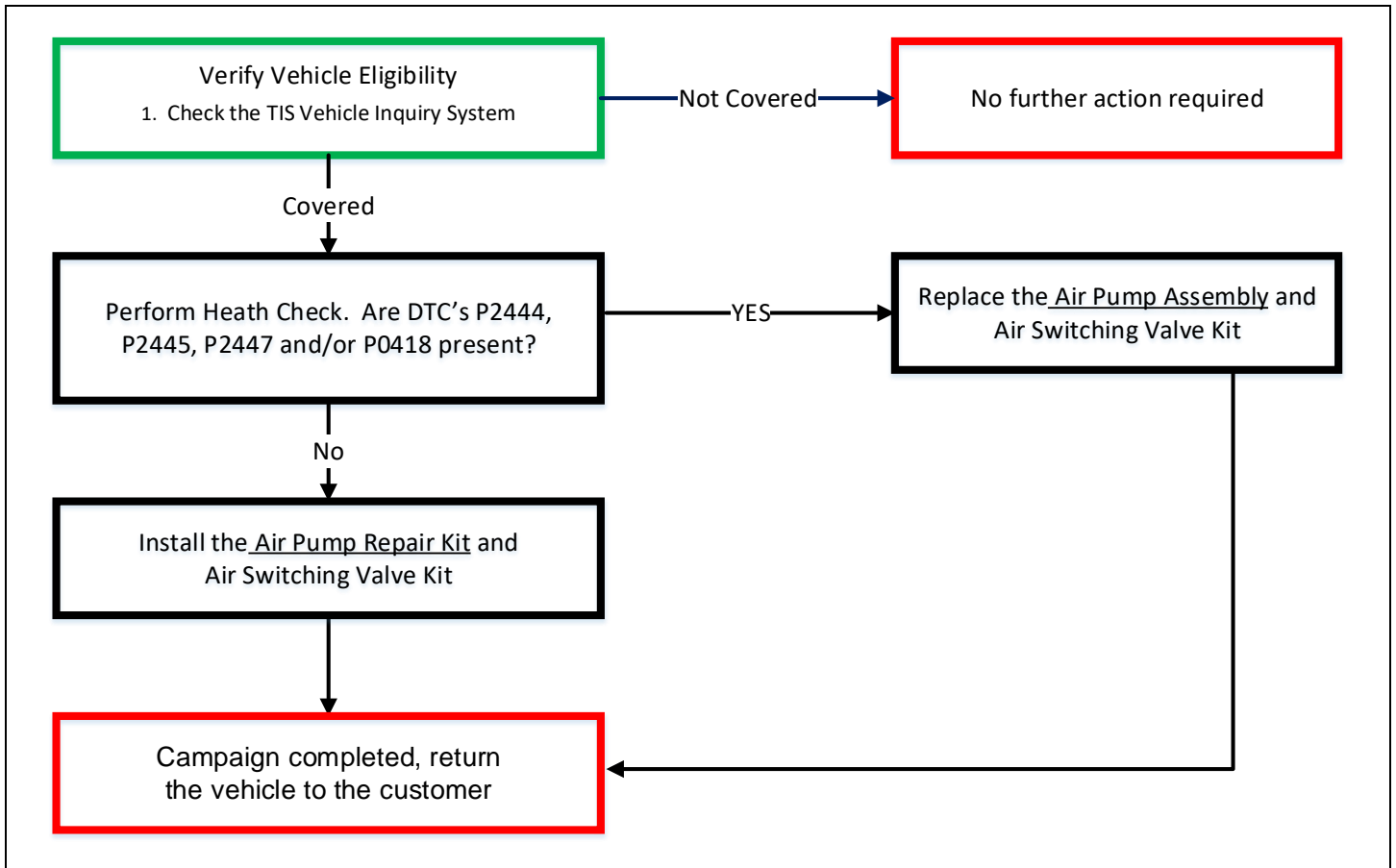
**CERTAIN 2010 - 2013 GX 460**

The repair quality of covered vehicles is extremely important to Lexus. All dealership technicians performing this recall are required to successfully complete the most current version of the E-Learning course "Safety Recall and Service Campaign Essentials". To ensure that all vehicles have the repair performed correctly; technicians performing this recall repair are required to currently hold at least one of the following certification levels:

- Certified
- Senior
- Master

It is the dealership's responsibility to select technicians with the above certification level or greater to perform this recall repair. Carefully review your resources, the technician skill level, and ability before assigning technicians to this repair. It is important to consider technician days off and vacation schedules to ensure there are properly trained technicians available to perform this repair at all times.

## I. OPERATION FLOW CHART



## II. IDENTIFICATION OF AFFECTED VEHICLES

- Check the TIS Vehicle Inquiry System to confirm the VIN is involved in this Safety Recall, and that it has not already been completed prior to dealer shipment or by another dealer.
- TMS warranty will not reimburse dealers for repairs completed on vehicles that are not affected or were completed by another dealer.

### III. PREPARATION

#### A. PARTS

Part Number	Part Description	Quantity
04006-37138	Air Switching Valve Kit* (required on all repairs)	1
04008-3520C	Air Pump Repair Kit** (used on most repairs)	1
17610-0C040	Assembly, Air Pump*** (used on very few repairs)	1

Part Number	*Air Switching Valve Kit Contains:	Quantity
25701-38100	Valve Set, Emission Control, No .2	1
25702-38050	Valve Set, Emission Control, No .1	1
17613-31010	Cover, Air Pump	1
17376-38030	Gasket, Air Tube, No.1	2

Part Number	**Air Pump Repair Kit Contains:	Quantity
90166-A0010	Screw, Hexalobular Tapping	1
17617-0C010	Filter, Air Pump	1
17602-0C010	Cover Sub-Assembly, Air Pump Filter (w/ Air Pump Inlet)	1

\*\*\* The Air Pump assembly will need to be replaced only in rare cases, depending on the inspection results.

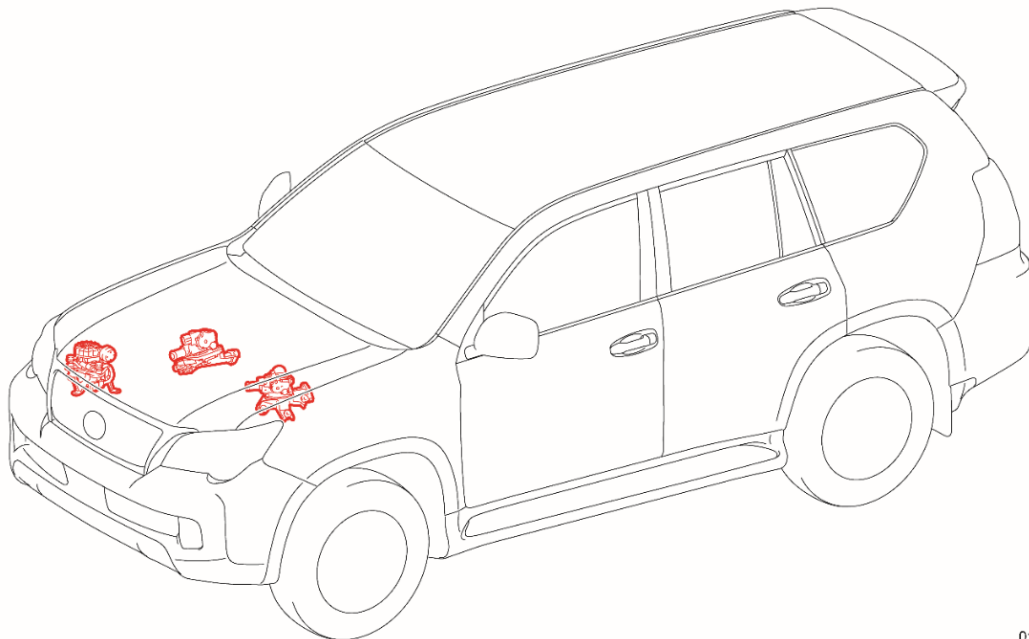
**Note: Warranty will only reimburse the dealership for the cost of the kit. Claims for individual parts listed will be denied.**

#### B. TOOLS & EQUIPMENT

<ul style="list-style-type: none"> <li>• Techstream</li> <li>• Torque Wrench</li> </ul>	<ul style="list-style-type: none"> <li>• Standard Hand Tools</li> <li>• Torx T25 socket</li> </ul>
---	--

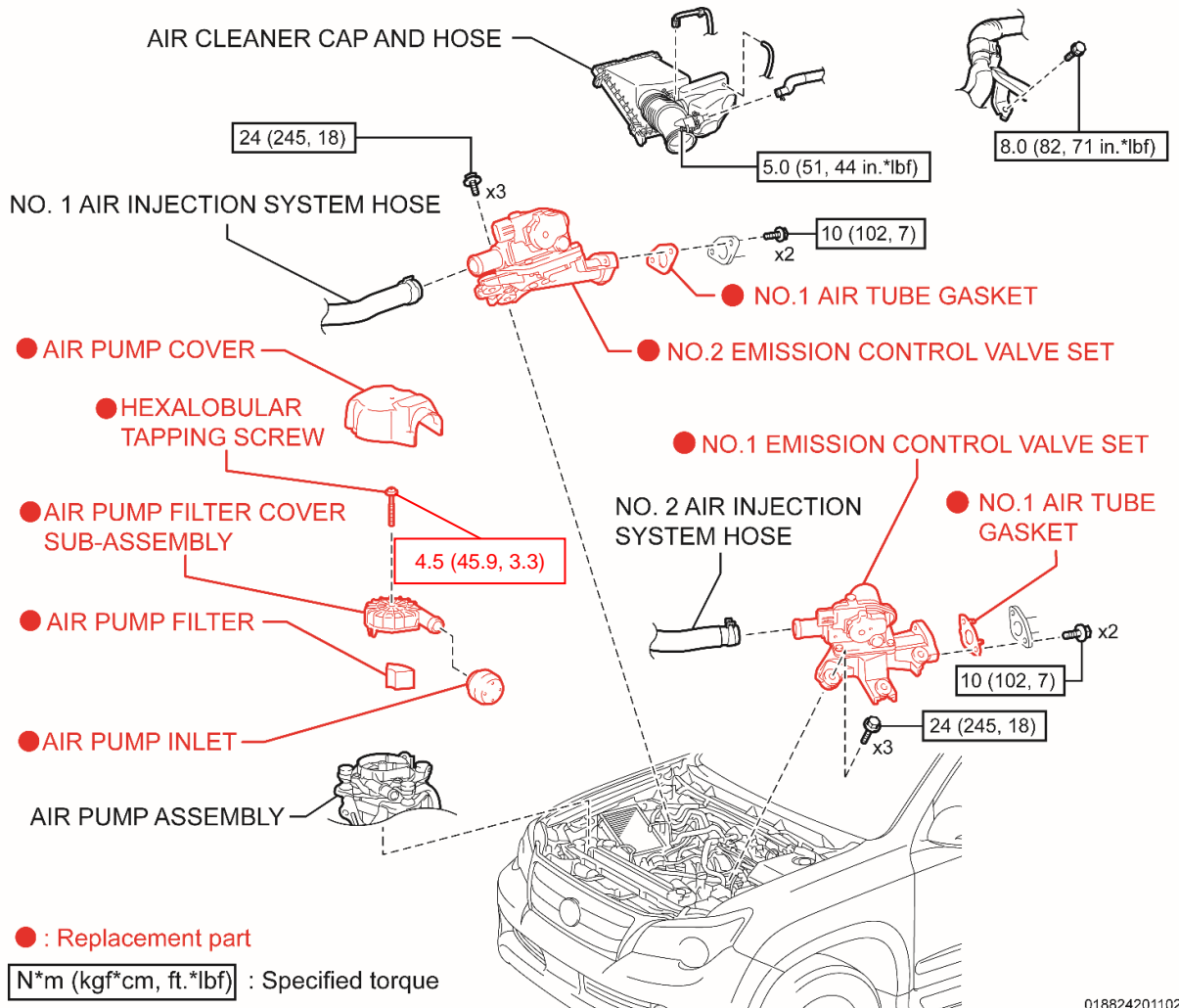
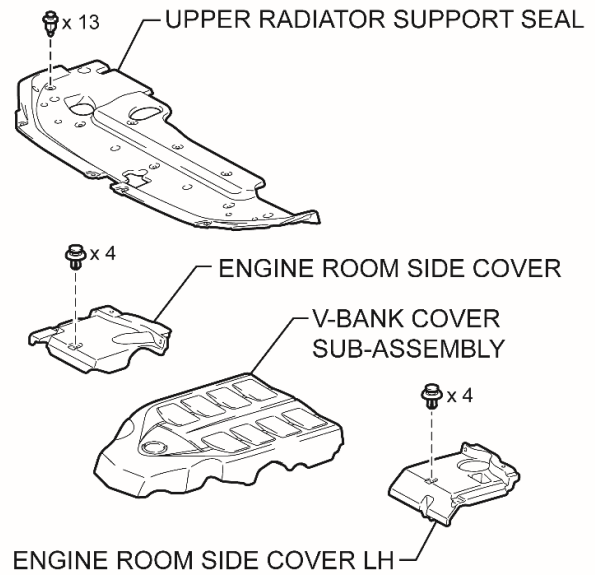
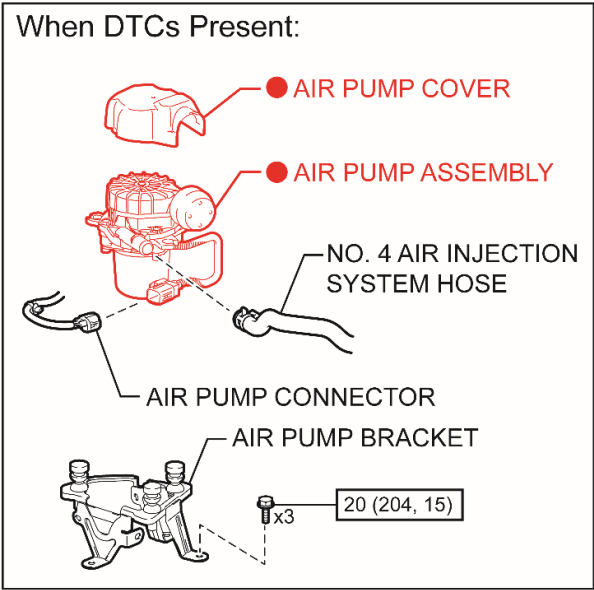
### IV. BACKGROUND

There is a possibility that moisture in the air may cause a filter in the vehicle emissions system to degrade. This degradation could cause damage to other parts of the vehicle emission system and illuminate the check engine light (Malfunction Indicator Light).



018824201101

# V. COMPONENTS



018824201102

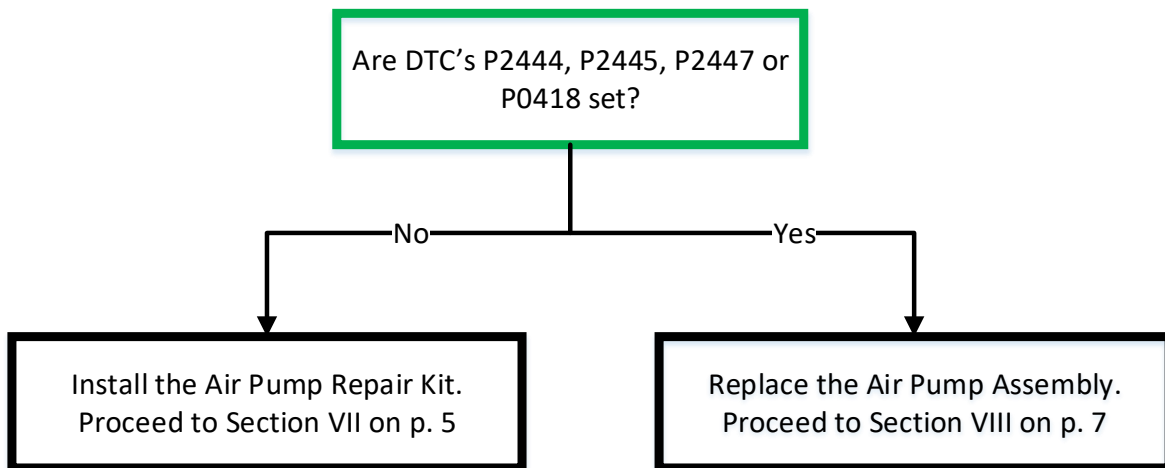
## VI. WORK PROCEDURE



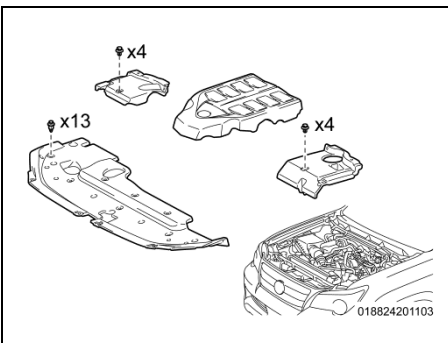
### 1. CHECK FOR DTC'S

- a. Using a Techstream, perform a Health Check to determine if relevant Diagnostic Trouble Codes are present.

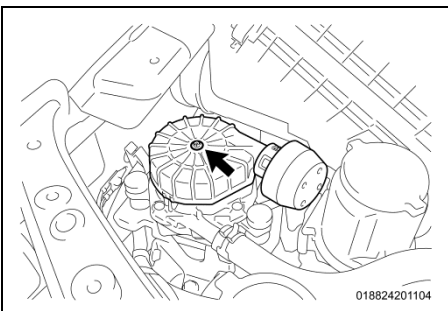
**Note:** *This Service Campaign covers only the inspection and replacement of the air pump and switching valves, as detailed in these instructions. It does not cover the diagnosis or replacement of any other parts on the vehicle.*



## VII. INSTALL AIR PUMP REPAIR KIT



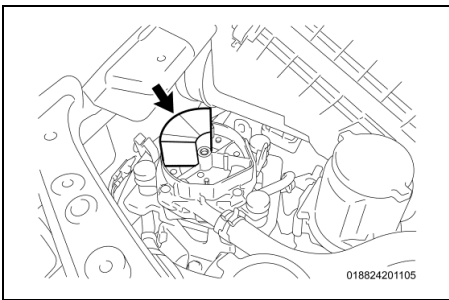
### 1. REMOVE THE ENGINE ROOM COVERS



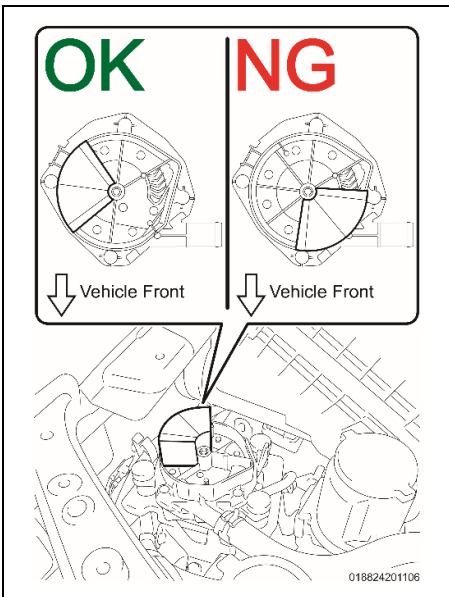
### 2. INSTALL THE AIR PUMP REPAIR KIT

- a. Using a Torx T25 socket, remove the screw and air pump filter cover sub-assembly.

**Note.** The cover assembly and the screw will not be reused.

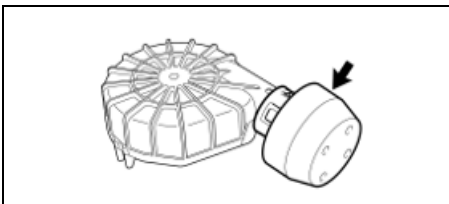


b. Remove and discard the air pump filter.

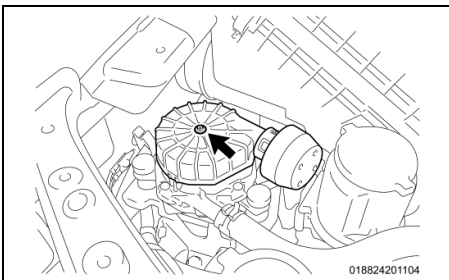


c. Install the **NEW** air pump filter.

**STOP** BE SURE TO CORRECTLY POSITION THE AIR PUMP FILTER ELEMENT.

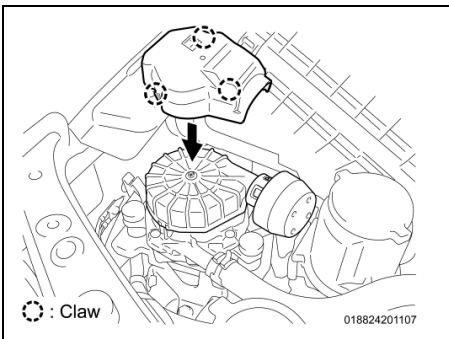


d. Install the **NEW** air pump inlet to the **NEW** air pump filter cover sub-assembly.



e. Using a Torx T25 socket, install the **NEW** air pump filter cover sub-assembly with the **NEW** hexalobular tapping screw.

**Torque: 4.5 N·m {45.9 kgf·cm, 40 in.lbs}**



### 3. INSTALL THE **NEW** AIR PUMP COVER

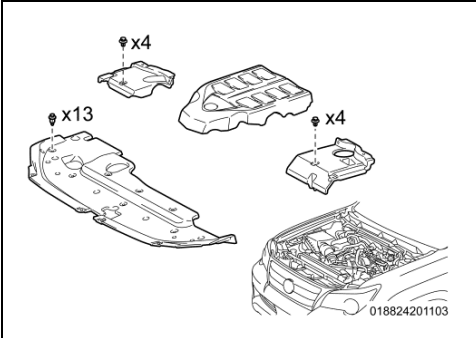
a. Install the **NEW** air pump cover by engaging the 3 claws.

**Skip to Section IX. Replace Emission Control Valve #1 (LH) on p. 9**

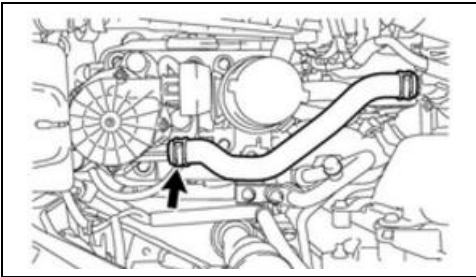
## VIII. REPLACE AIR PUMP ASSEMBLY

**STOP**

Complete this section only if DTC's P2444, P2445, P2447 or P0418 are set.

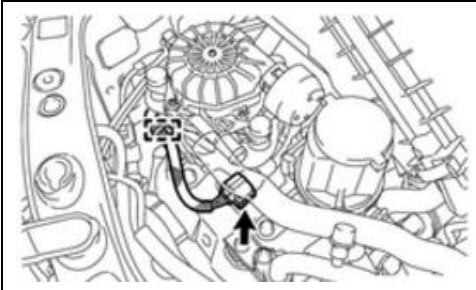


### 1. REMOVE THE ENGINE ROOM COVERS

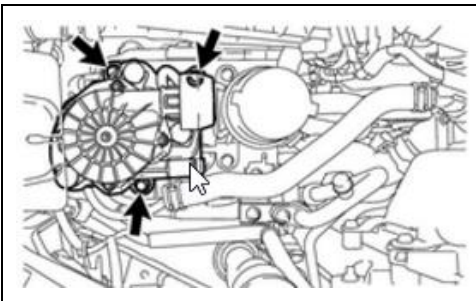


### 2. REMOVE AIR PUMP ASSEMBLY

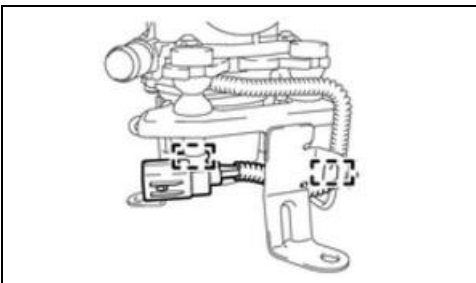
a. Disconnect the No. 4 air injection system hose from the air pump.



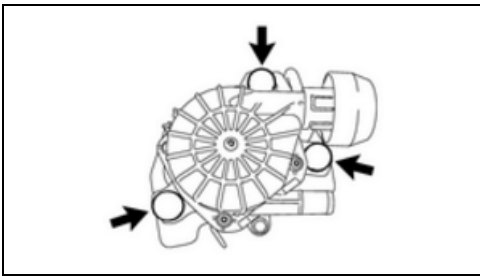
b. Disconnect the air pump connector and detach the wire harness clamp.



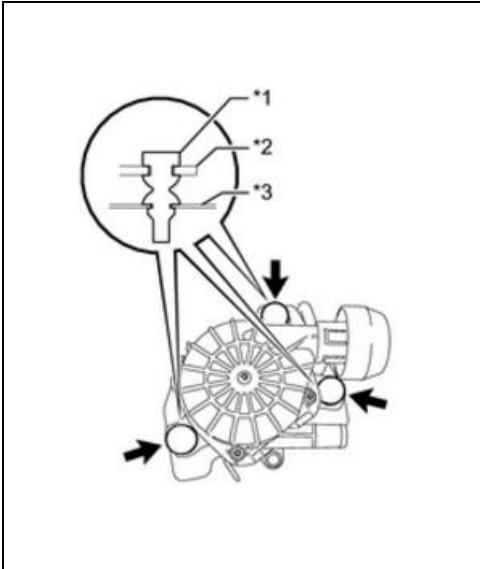
c. Remove the 3 bolts and air pump with bracket.



d. Detach the 2 air pump connector clamps.



- e. Detach the 3 fittings of the air pump insulator and remove the air pump from the bracket.



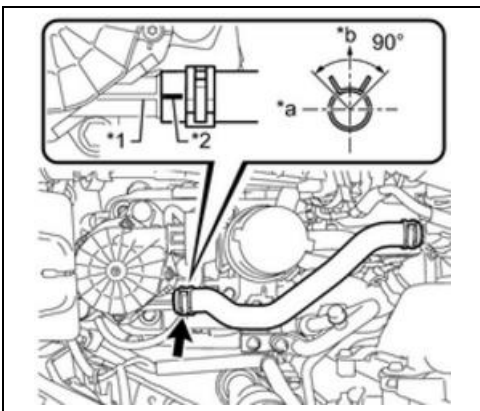
**3. INSTALL NEW AIR PUMP ASSEMBLY**

- a. Attach the 3 fittings of the air pump insulator to install the **NEW** air pump to the bracket.  
 b. Attach the 2 air pump connector clamps.  
 c. Install the air pump with bracket with the 3 bolts.

**Torque: 20 N·m {204 kgf·cm, 15 ft. lbs}**

- d. Connect the air pump connector and attach the wire harness clamp.

*1	Insulator
*2	Air Pump Assembly
*3	Air Pump Bracket

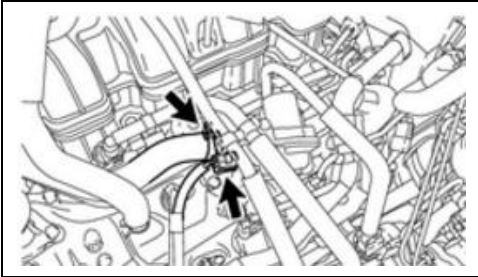


- e. Connect the No. 4 air injection hose so that it's paint mark aligns with the rib of the air pump.

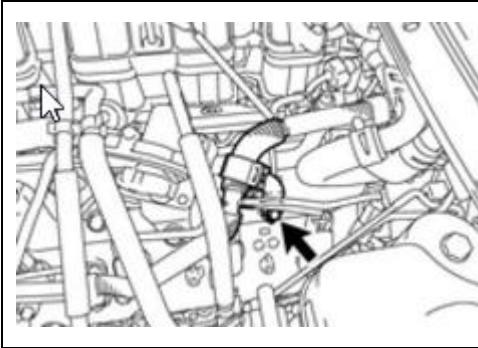
*1	Rib
*2	Paint Mark
*a	Front
*b	Upper Side



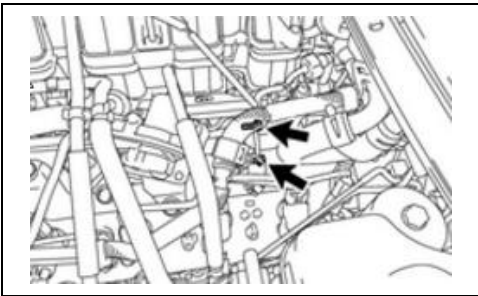
## IX. REPLACE EMISSION CONTROL VALVE No. 1 (LH)



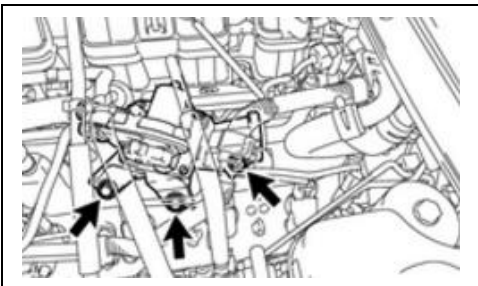
1. **DISCONNECT No.2 AIR INJECTION SYSTEM HOSE**
  - a. Disconnect the air switching valve connector.
  - b. Disconnect the No. 2 air injection system hose.



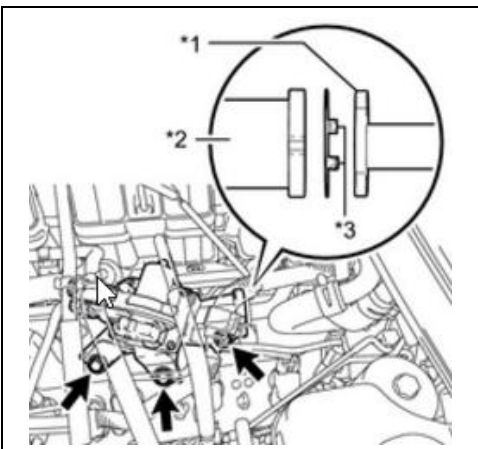
2. **REMOVE EMISSION CONTROL VALVE No. 1 (LH)**
  - a. Remove the bolt and disconnect the wire harness clamp bracket.



- 
- 
- b. Remove the 2 bolts.



- 
- 
- 
- c. Remove the 3 bolts, valve assembly, and gasket.

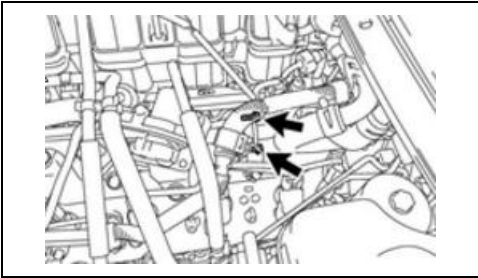


3. **INSTALL EMISSION CONTROL VALVE No. 1**
  - a. Install the **NEW** gasket.
  - b. Install the **NEW** Emission Control Valve with the 3 bolts.

**Torque: 24 N·m {245 kgf·cm, 18 ft.lbs}**

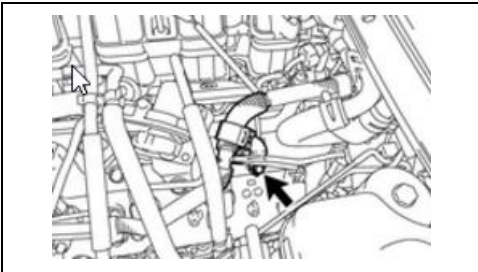
*1	No. 4 Air Tube
*2	Air Switching Valve
*3	Claw

**Note:** Make sure the claws of the gasket are not caught between the air switching valve and No. 4 air tube.



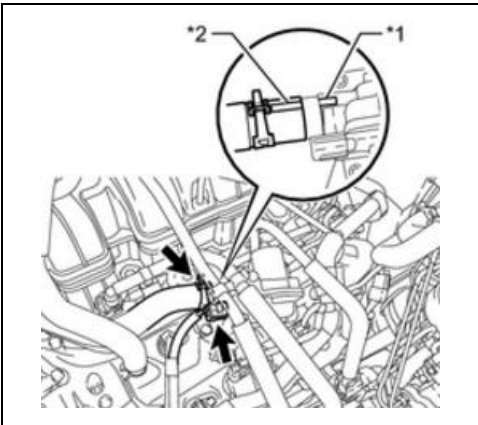
c. Install the 2 bolts.

**Torque: 10 N·m {102 kgf·cm, 84 in.lbs}**



d. Connect the wire harness clamp bracket with the bolt.

**Torque: 8.0 N·m {82 kgf·cm, 71 in.lbs}**



e. Align the paint mark with the projection to connect the No. 2 air injection system hose.

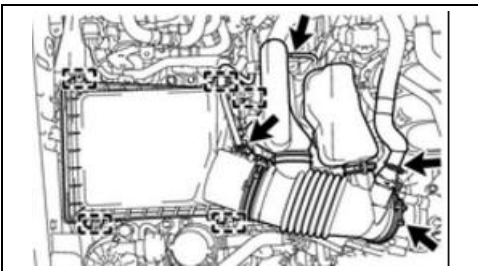
f. Connect the air switching valve connector.

g. Install the Engine Room Side Cover.

*1	Projection
*2	Paint Mark

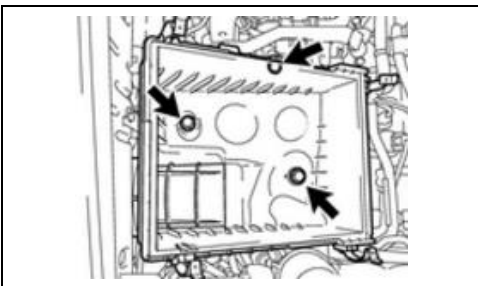
**Note:** Make sure the direction of the hose clamp is as shown in the illustration.

## X. REPLACE EMISSION CONTROL VALVE No. 2 (RH)



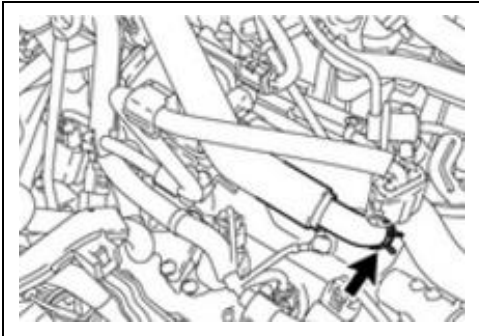
### 1. REMOVE AIR CLEANER CAP AND HOSE

- Disconnect the Mass Air Flow meter.
- Disconnect No. 1 air hose.
- Disconnect the No. 2 ventilation hose.
- Detach the wire harness clamp.



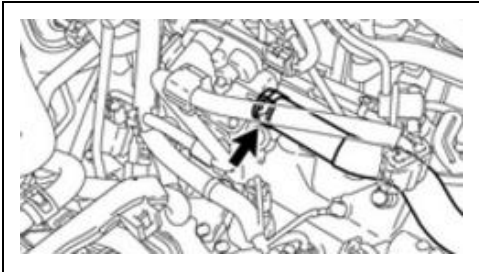
### 2. REMOVE AIR CLEANER CASE

- Remove the 3 bolts.

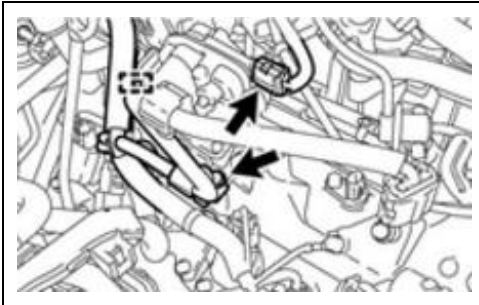


### 3. REMOVE EMISSION CONTROL VALVE No. 2

a. Disconnect the No. 3 Ventilation hose.



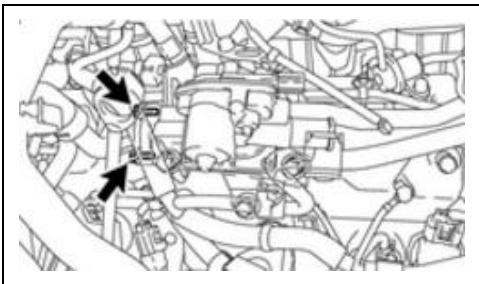
b. Disconnect No. 1 Air Injection Hose



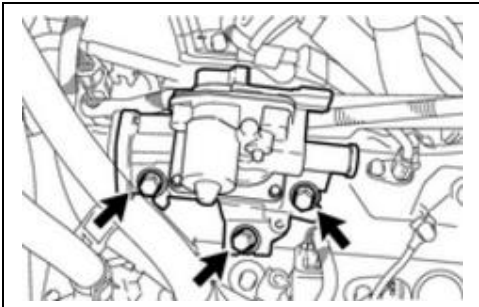
c. Detach the wire harness clamp

d. Disconnect the connector.

e. Remove the bolt and disconnect the wire harness clamp bracket.

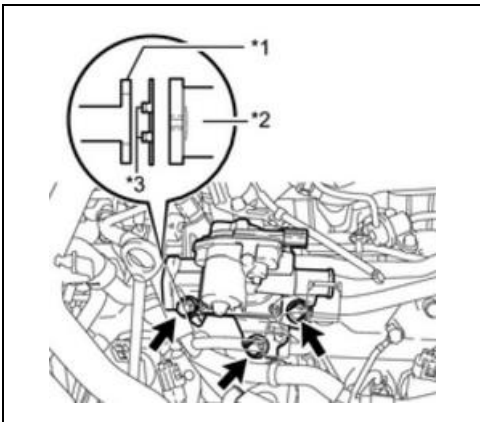


f. Remove the 2 bolts.



g. Remove the 3 bolts.

h. Remove the valve assembly with gasket.



#### 4. INSTALL EMISSION CONTROL VALVE No. 2

- a. Install the **NEW** gasket.
- b. Install the **NEW** Emission Control Valve with the 3 bolts.

**Torque: 24 N·m {245 kgf·cm, 18 ft.lbs}**

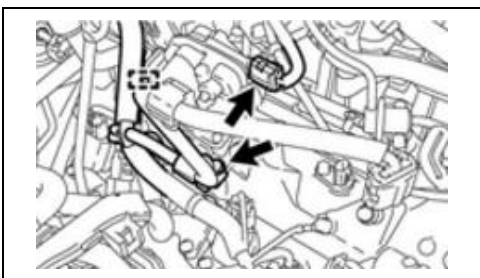
*1	No. 3 Air Tube
*2	Air Switching Valve
*3	Claw

**Note: Make sure the claws of the gasket are not caught between the air switching valve and No. 3 air tube.**

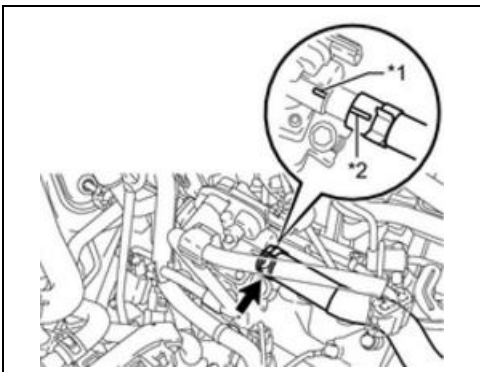


- a. Install the 2 bolts.

**Torque: 10 N·m {102 kgf·cm, 84 in.lbs}**

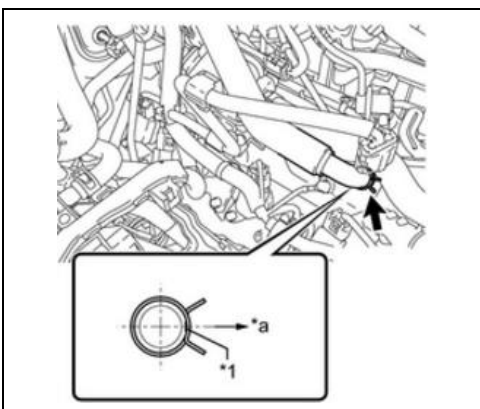


- b. Attach the wire harness clamp.
- c. Connect the electrical connector.



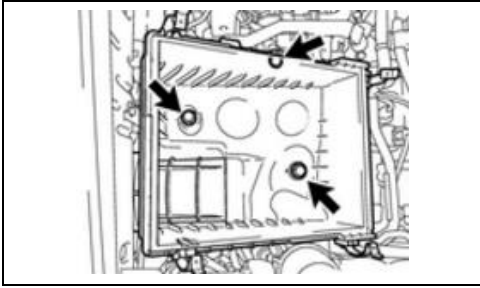
- c. Align the mark with the projection and connect the No. 1 air injection system hose.

*1	Projection
*2	Paint Mark



- d. Connect the No. 3 Ventilation hose.

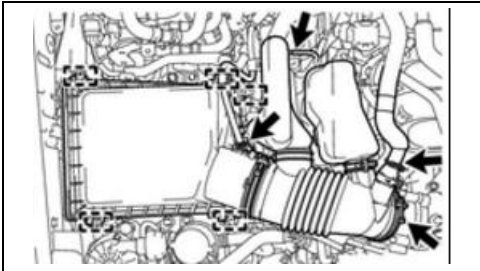
*1	Paint Mark
*a	Front



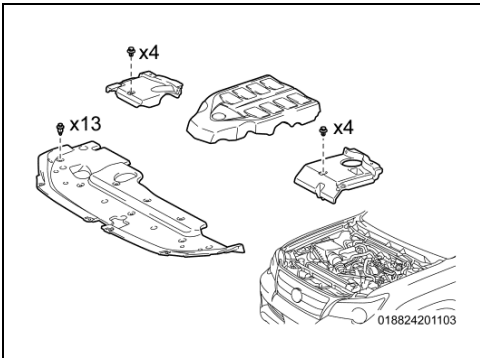
## 5. INSTALL AIR CLEANER ASSEMBLY

- a. Install the 3 bolts in the case.

**Torque: 12 N·m {122 kgf·cm, 108 in.lbs}**



- b. Connect the No. 2 ventilation hose.
- c. Connect No. 1 air hose.
- d. Connect the Mass Air Flow meter.
- e. Attach the wire harness clamp.



## 6. INSTALL ENGINE ROOM COVERS

### ◀ VERIFY REPAIR QUALITY ▶

- Confirm that no DTC's are set

If you have any questions regarding this update, please contact your area representative.

## 10. APPENDIX

### A. 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, ***unless requested for parts recovery return.***

### B. CAMPAIGN DESIGNATION DECORDER

