

ENGINE

Engine Intake System [1AR-FE] (Inspection) - Sienna

INTAKE SYSTEM

PARTS LOCATION

ILLUSTRATION

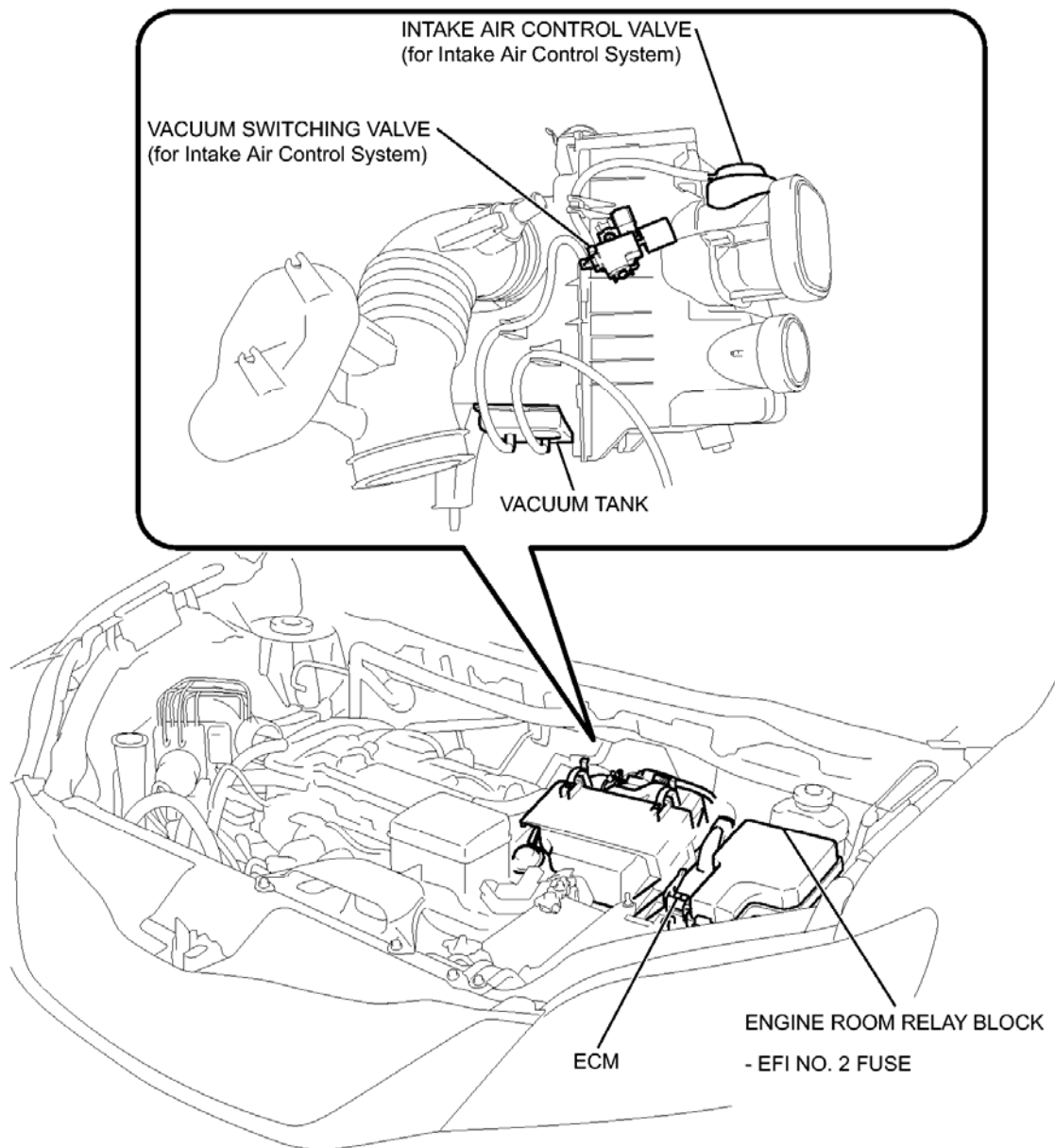


Fig. 1: Identifying Intake System Components Location (1 of 2)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION

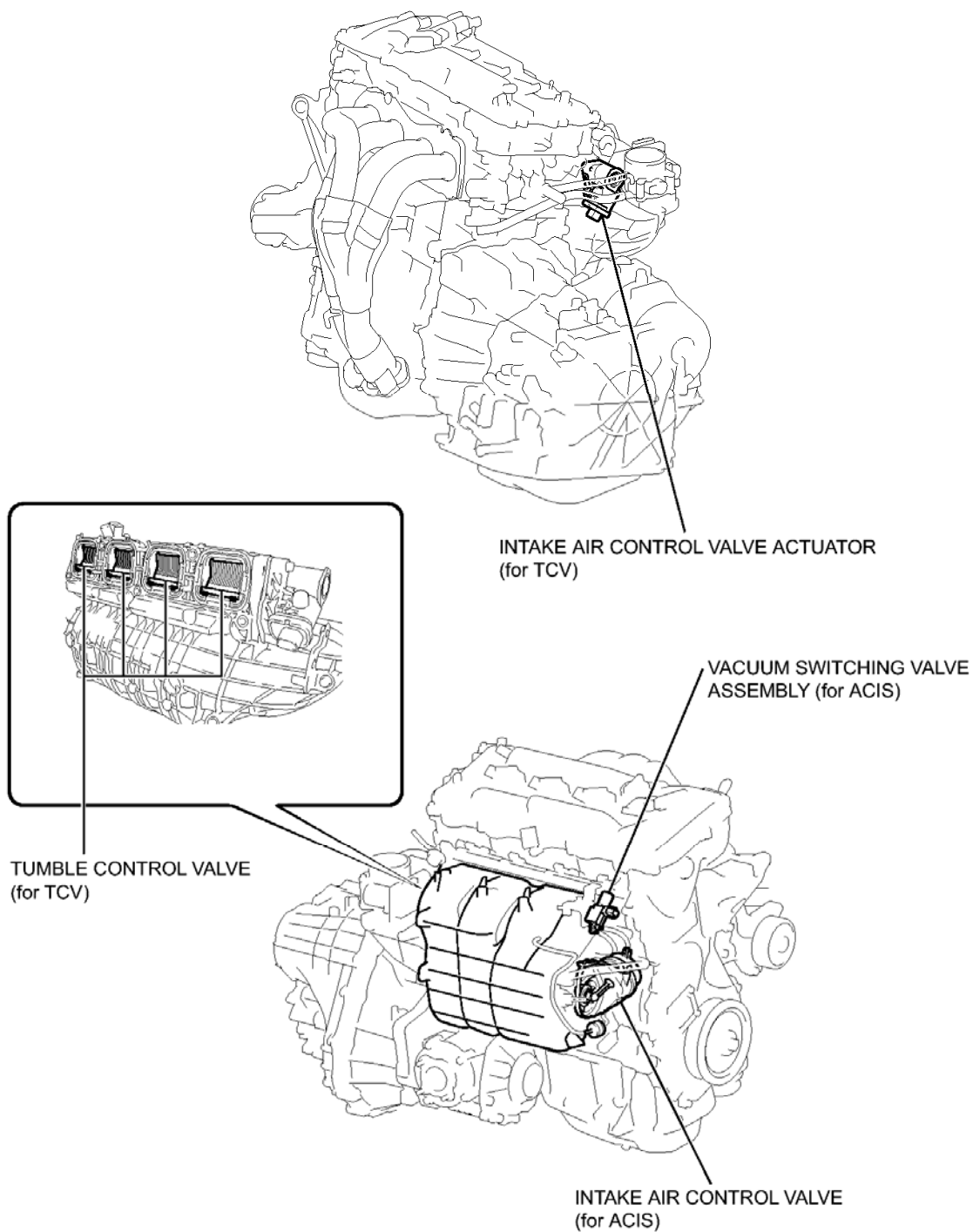


Fig. 2: Identifying Intake System Components Location (2 of 2)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SYSTEM DIAGRAM

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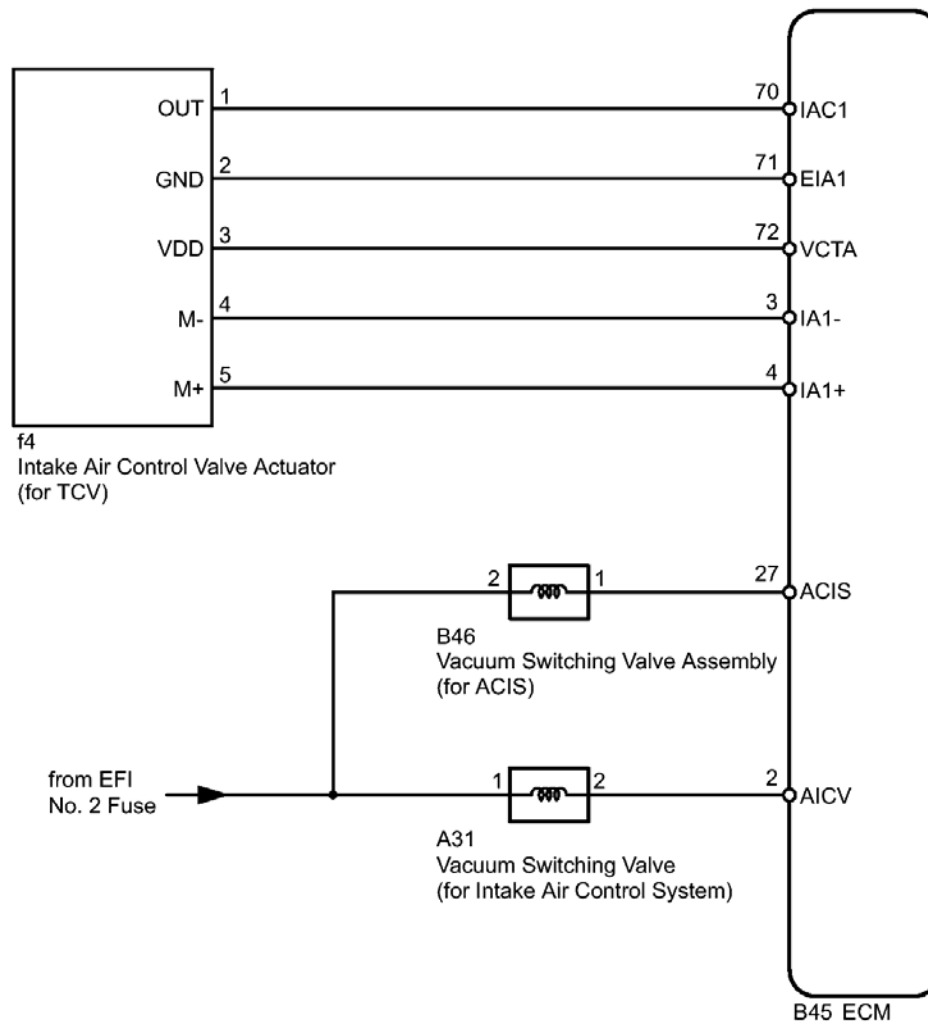


Fig. 3: Intake System Diagram

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

ON-VEHICLE INSPECTION

ON-VEHICLE INSPECTION

1. INSPECT INTAKE SYSTEM

- Check that there are no vacuum leaks at the points shown in the illustration.

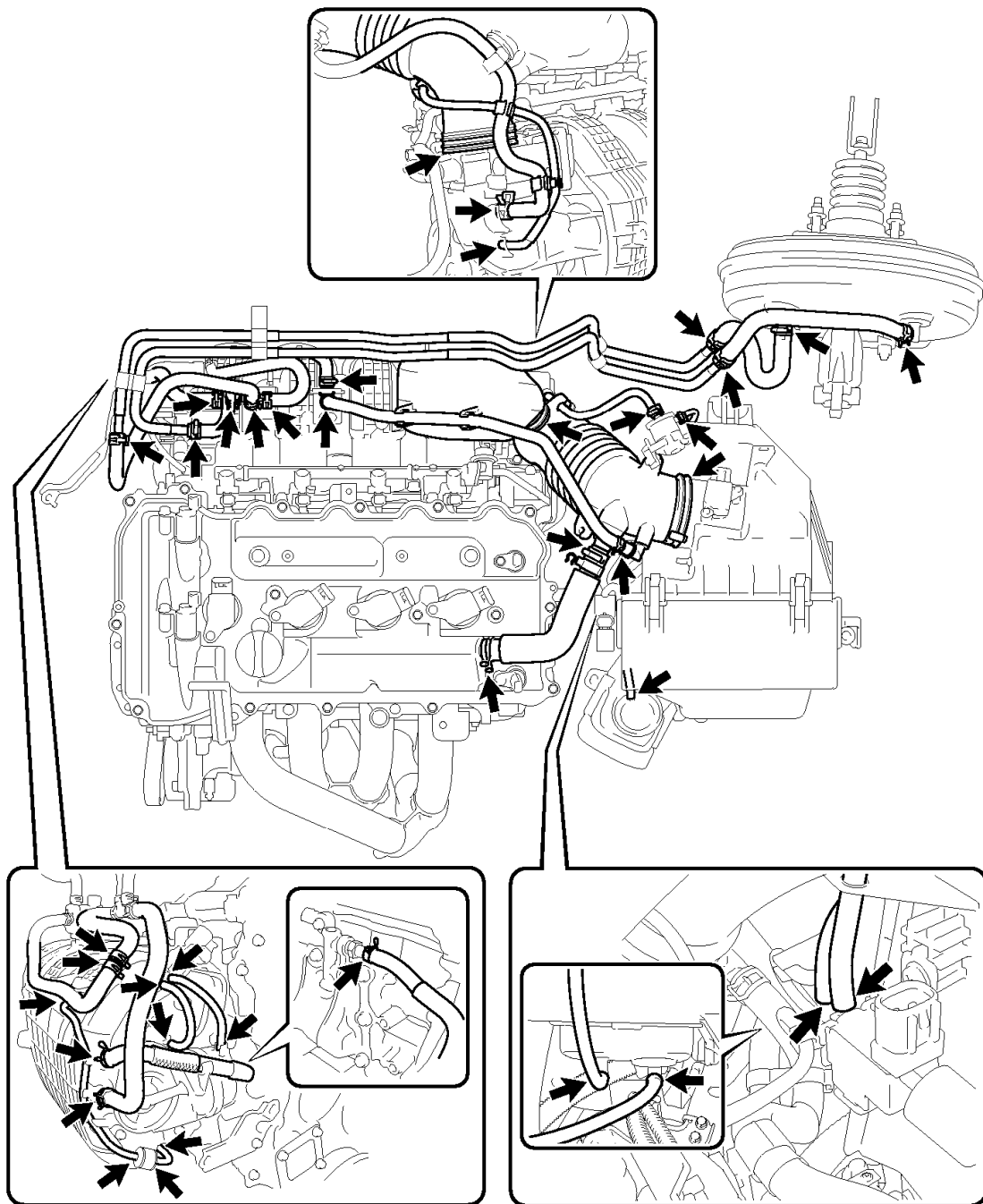
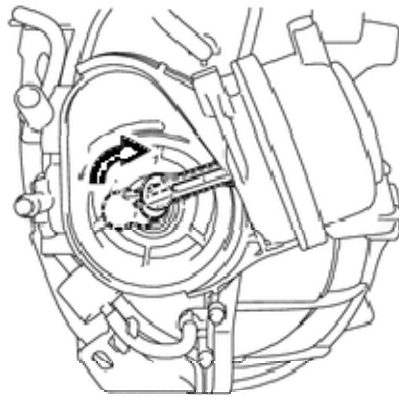


Fig. 4: Identifying Intake System Vacuum Leak Points
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. INSPECT INTAKE AIR CONTROL VALVE (for ACIS)

- a. Connect the Techstream to the DLC3.
- b. Start the engine and turn the Techstream on.
- c. Warm up the engine.

- d. Enter the following menus: Powertrain / Engine / Active Test / Activate the VSV for Intake Control.



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Fig. 5: Identifying VSV For Intake Control
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- e. When "Activate the VSV for Intake Control" is turned on, check that the actuator rod operates.

If the operation is not as specified, inspect the intake air control valve, vacuum tank and check valve. Refer to **INSPECTION** .

- f. When "Activate the VSV for Intake Control" is turned off, check that the actuator rod returns to its original position.

If the operation is not as specified, inspect the intake air control valve and vacuum hose. Refer to **INSPECTION** .

3. INSPECT INTAKE AIR CONTROL VALVE ACTUATOR (for TCV)

- a. Connect the Techstream to the DLC3.
- b. Turn the ignition switch to ON (do not run the engine).
- c. Turn the Techstream on.
- d. Enter the following menus: Powertrain / Engine / Active Test / All Data / Control the IAC Duty Ratio.
 1. Set the duty ratio to 60% or -60% for 1 to 3 seconds, and then return the duty ratio to 0%. Check Intake Air Control Position in the Data List.

Specified Condition

Condition (Active Test)	Specified Condition (Data List)
Control the IAC	Intake Air Control

Duty Ratio set to 60%	Position 35° or more
Control the IAC Duty Ratio set to -60%	Intake Air Control Position 17° or less

NOTE:

- Supply power to the intake control valve for 1 to 3 seconds.
- If power is supplied to the intake control valve for less than 1 second, the gear of the tumble control valve does not reach the stopper and the value in the Data List may be incorrect.
- If power is supplied to the intake control valve for more than 3 seconds, the motor may be damaged.
- Do not perform this inspection more than 2 times consecutively.

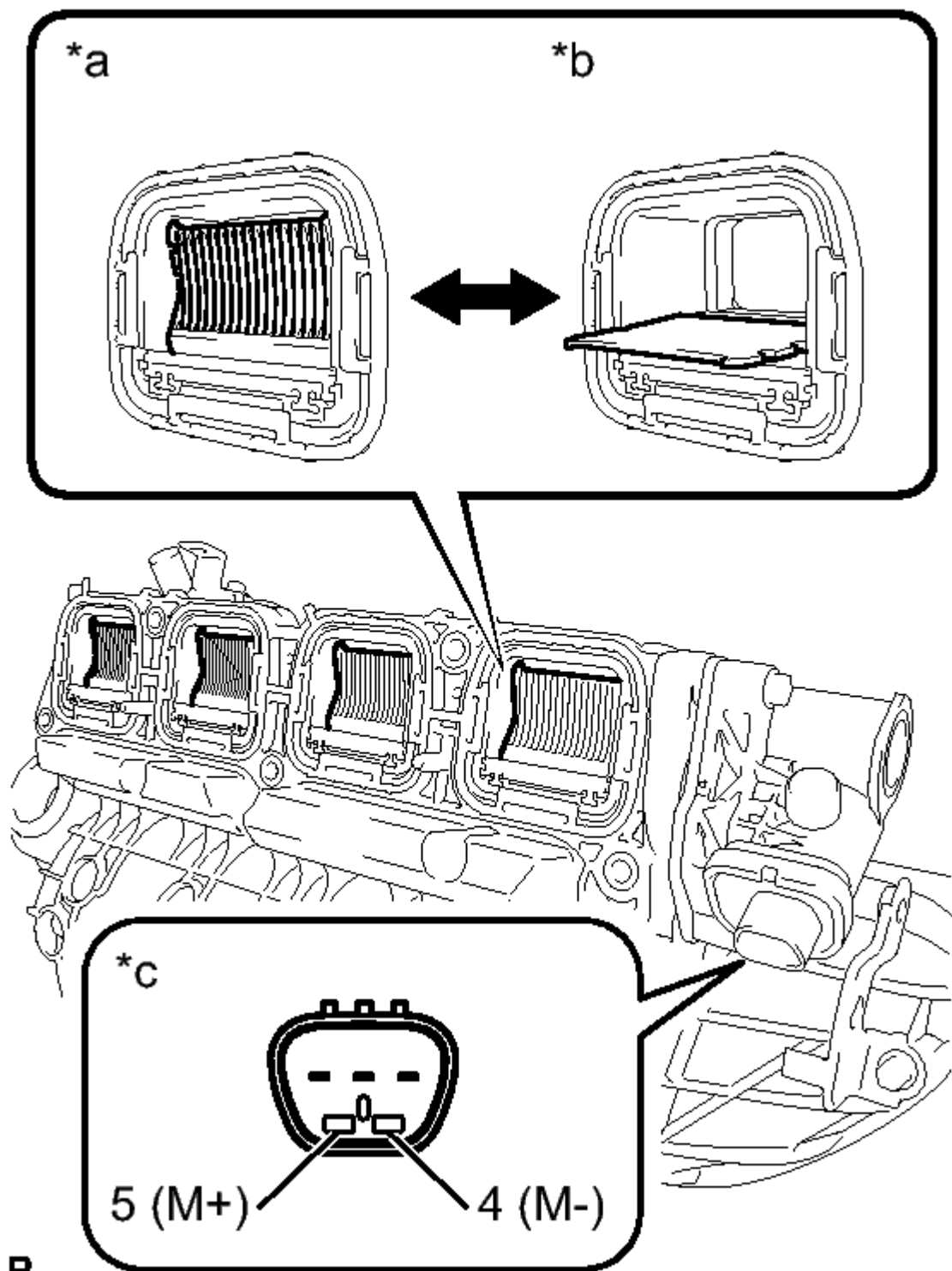
HINT:

The standard duty ratio for inspections is 60% or -60%. However, if the value in the Data List is not as specified, set the duty ratio to 100% or -100% for 1 to 3 seconds, and check the value in the Data List again.

- e. When the result is not as specified during the Active Test, perform the following procedure.
 1. Remove the intake manifold. Refer to **REMOVAL**.

NOTE:

- Confirm that the sound of the tumble control valves physically contacting the stopper can be heard.
 - The valves may be damaged if they are not closed before removing the intake manifold.
 - When removing the intake manifold, be sure to remove the intake manifold slowly while confirming that the tumble control valves remain in the closed position.
 - When the intake manifold has been removed, open the tumble control valves and keep them at a partially open position so that they do not protrude beyond the edge of the intake manifold.
2. Check that the valves move when connecting the battery to the terminals of the intake air control valve actuator.



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Fig. 6: Inspecting Valves For Operation

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

TEXT IN ILLUSTRATION

*a	Closed
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*b	Open
*c	Component without harness connected (Intake Air Control Valve Actuator)

OK

Measurement Condition	Specified Condition
Positive battery voltage applied to terminal 4 (M-), and negative battery voltage applied to terminal 5 (M+)	Open --> Closed
Positive battery voltage applied to terminal 5 (M+), and negative battery voltage applied to terminal 4 (M-)	Closed --> Open

NOTE:

- Apply battery voltage for 1 to 3 seconds.
- If battery voltage is applied for more than 3 seconds, the actuator may be damaged.
- Do not allow the lead wires to contact the other terminals.

3. When the results are not as specified, perform the following inspections.

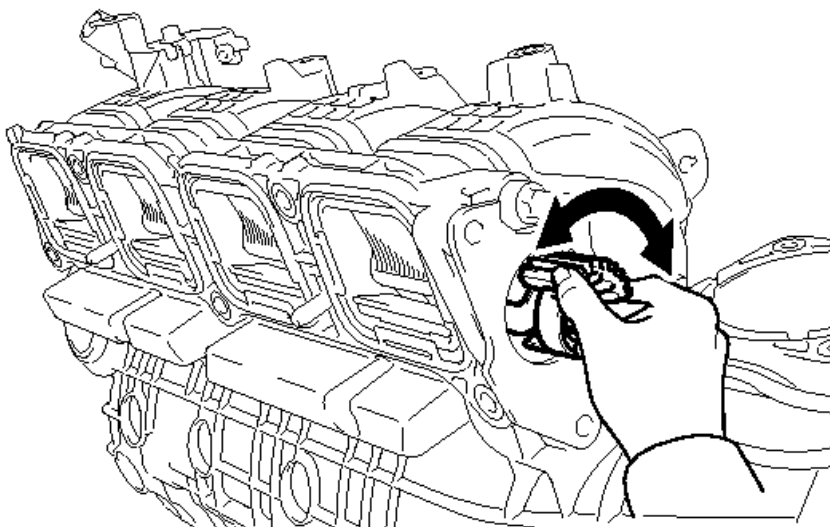
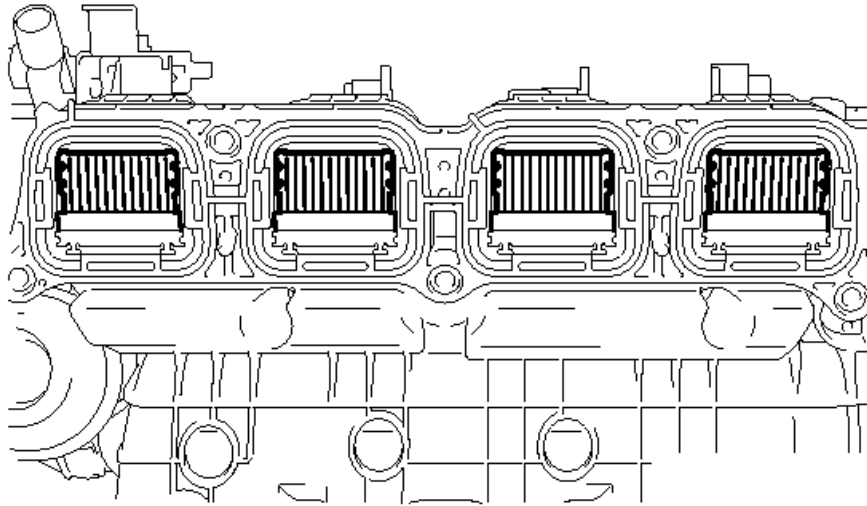


Fig. 7: Inspecting Valves For Smooth Operation
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Check that the valves are not cracked or deformed.

Remove the intake air control actuator, and check that the valves move smoothly.

NOTE:

- **Do not apply excessive force to the valves.**
- **Do not allow foreign matter to adhere to the valves.**

If there are no problems with the valves, inspect the intake air control valve actuator. Refer to **INSPECTION** .