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Model Year Start: 2013	Model: RAV4 EV	Prod Date Range: [12/2012 -]
Title: BRAKE CONTROL / DYNAMIC CONTROL SYSTEMS: ELECTRONICALLY CONTROLLED BRAKE SYSTEM: INITIALIZATION; 2013 MY RAV4 EV [12/2012 -]		

INITIALIZATION

1. DESCRIPTION

(a) Perform initialization and calibration of the linear solenoid valve when the brake booster with master cylinder assembly, brake pedal stroke sensor assembly or brake pedal is replaced.

Follow the procedure to perform initialization.

HINT:

- If there is a problem with the auxiliary battery (12 V) voltage, initialization and calibration of the linear solenoid valve cannot be completed normally. Make sure to check the auxiliary battery voltage before performing initialization and calibration of the linear solenoid valve.
- If the actuator's temperature is high, initialization and calibration of the linear solenoid valve may not be completed normally. If so, wait until the temperature decreases and then perform initialization and calibration of the linear solenoid valve.
- If the power switch is turned off, brake pedal is depressed, parking brake is applied or vehicle speed signal is input while the linear solenoid valve offset learning is being performed, the learning will be canceled.

PART TO BE REPLACED	NECESSARY OPERATION
Brake booster with master cylinder assembly	Initialization and calibration of the linear solenoid valve
<ul style="list-style-type: none"> • Brake pedal stroke sensor assembly • Brake pedal 	<ol style="list-style-type: none"> 1. Clearing stored linear solenoid valve calibration data 2. Initialization and calibration of the linear solenoid valve

2. PERFORM INITIALIZATION AND CALIBRATION OF LINEAR SOLENOID VALVE (When Using the Techstream)

NOTICE:

If the brake pedal stroke sensor assembly or brake pedal has been replaced, it is necessary to perform linear solenoid valve learning.

If the brake booster with master cylinder has been replaced, or the brake booster pump or brake master cylinder reservoir has been replaced, linear solenoid valve learning will be automatically performed during the Bleed Brake System procedure


INFO

(a) Clear the stored linear solenoid valve calibration data.

- (1) Turn the power switch off.
- (2) Check that the steering wheel is centered.
- (3) Check that park (P) is selected.
- (4) Connect the Techstream to the DLC3.
- (5) Turn the power switch on (IG).
- (6) Turn the Techstream on.
- (7) Select the skid control ECU (brake booster with master cylinder assembly) to clear the linear solenoid valve calibration data using the Techstream. Enter the

following menus: Chassis / ABS/VSC/TRAC / Utility / Reset Memory.

(8) Perform initialization and calibration of the linear solenoid valve.

(9) Perform the zero point calibration of yaw rate and acceleration sensor  .

(b) Perform initialization and calibration of the linear solenoid valve.

(1) Turn the power switch off.

(2) Check that the steering wheel is centered.

(3) Check that park (P) is selected.

(4) Check that the parking brake is released.

NOTICE:

Linear valve offset learning cannot be started with the parking brake applied. If the parking brake is applied during offset learning, the learning process will be canceled and then restarted when the parking brake is released.

(5) Connect the Techstream to the DLC3.

(6) Turn the power switch on (IG) with the brake pedal released.

NOTICE:

- If the linear solenoid valve offset learning is performed without turning the power switch on (IG), the learning process may not be completed properly because of insufficient auxiliary battery voltage.
- When the linear solenoid valve offset learning is interrupted, or the learning process is performed with park (P) is not selected, DTC C1345 (Linear Solenoid Valve Offset Learning Undone) will be stored.

(7) Turn the Techstream on.

(8) Switch the skid control ECU (brake booster with master cylinder assembly) to the Test Mode using the Techstream. Enter the following menus: Chassis / ABS/VSC/TRAC / Utility / ECB* Utility / Linear Valve Offset.

*: Electronically Controlled Brake System


(9) Follow the prompt of the ECB* Utility.

*: Electronically Controlled Brake System

HINT:

- The time needed to complete initialization and calibration of the linear solenoid valve varies depending on auxiliary battery voltage.
- The brake warning light / yellow (minor malfunction) blinks at 1 second intervals during initialization and calibration of the linear solenoid valve and changes to the Test Mode display.
- The brake warning light / yellow (minor malfunction) blinks at 0.25 seconds intervals if the Test Mode is normal.

(10) Check that DTC C1345 (Linear Solenoid Valve Offset Learning Undone) which indicates trouble with stroke sensor zero point learning is not output when the brake warning light / yellow (minor malfunction) changes to the Test Mode display upon initialization and calibration of the linear solenoid valve completion.

(11) Perform the zero point calibration of the yaw rate and acceleration sensor  .

(12) Enter the normal mode from the Test Mode following the Techstream directions.

HINT:

Refer to the Techstream operator's manual for further details.

(13) Turn the power switch off and disconnect the Techstream.

3. PERFORM INITIALIZATION AND CALIBRATION OF LINEAR SOLENOID VALVE (When not Using the Techstream)

NOTICE:

If the brake pedal stroke sensor assembly or brake pedal has been replaced, it is necessary to perform linear solenoid valve learning.

If the brake booster with master cylinder has been replaced, or the brake booster pump or brake master cylinder reservoir has been replaced, linear solenoid valve learning will be automatically performed during the Bleed Brake System procedure

INFO .

(a) Clear the stored linear solenoid valve calibration data.

- (1) Turn the power switch off.
- (2) Check that the steering wheel is centered.
- (3) Check that park (P) is selected.
- (4) Check that the parking brake is released.

NOTICE:

Linear valve offset learning cannot be started with the parking brake applied. If the parking brake is applied during offset learning, the learning process will be canceled and then restarted when the parking brake is released.

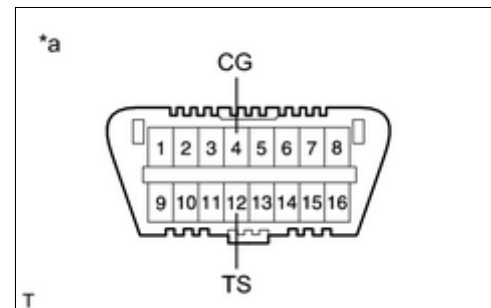
(5) Turn the power switch on (IG) with the brake pedal released.

(6) Using SST, connect and disconnect terminals TS and CG of the DLC3 4 times or more within 8 seconds.

SST: 09843-18040

Text in Illustration

*a	Front view of DLC3
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(7) Check that no codes other than ABS code 42, VSC code 45 and electronically controlled brake system code 48, 66, or 95 are stored in the diagnostic system.

HINT:

- How to read DTCs:

Diagnostic trouble codes are represented by the number of blinks of a warning light. For example, code 21 would be shown by 2 blinks, a pause of 1.5 seconds, and then 1 blink.

- If one code is detected:

The light repeats the same code after a pause of 4 seconds.

- If multiple codes are detected:

The light outputs one code after another with a 2.5-second pause between each code. When all codes have been output, there is a 4-second pause and then the light begins to output the codes again.

- The ABS warning, brake warning / yellow (minor malfunction) and slip indicator lights do not indicate a normal system code.

(b) Perform initialization and calibration of the linear solenoid valve.

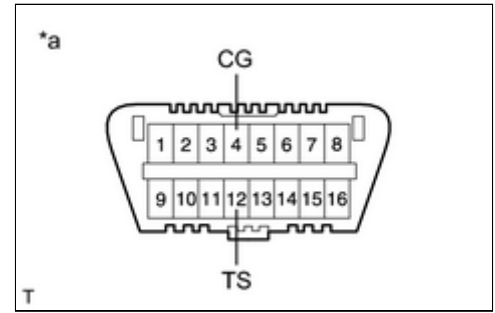
- (1) Turn the power switch off.
- (2) Check that the steering wheel is centered.
- (3) Check that park (P) is selected.

(4) Using SST, connect terminals TS and CG of the DLC3.

SST: 09843-18040

Text in Illustration

*a	Front view of DLC3
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(5) Turn the power switch on (IG) with the brake pedal released.

NOTICE:

- If the linear solenoid valve offset learning is performed without turning the power switch on (IG), the learning process may not be completed properly because of insufficient auxiliary battery voltage.
- When the linear solenoid valve offset learning is interrupted, or the learning process is performed with park (P) is not selected, DTC 66 (Linear Solenoid Valve Offset Learning Undone) will be stored.


(6) Leave the vehicle stationary without depressing the brake pedal for 2 minutes.

(7) Check that the interval between blinks of the brake warning light / yellow (minor malfunction) changes from 1 second to 0.25 seconds.

HINT:

- The time needed to complete initialization and calibration of the linear solenoid valve varies depending on the auxiliary battery voltage.
- The brake warning light / yellow (minor malfunction) blinks at 1 second intervals during initialization and calibration of the linear solenoid valve and changes to the Test Mode display.
- The brake warning light / yellow (minor malfunction) blinks at 0.25 seconds intervals if Test Mode is normal.

(8) Check that DTC 66 (Linear Solenoid Valve Offset Learning Undone) which indicates trouble with stroke sensor zero point learning is not output when the brake warning light / yellow (minor malfunction) changes to the Test Mode display upon initialization and calibration of the linear solenoid valve completion.

(9) Perform the zero point calibration of the yaw rate and acceleration sensor  .

(10) Turn the power switch off and disconnect SST from the DLC3.

