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2017 MAZDA 6 / Atenza Sedan OEM Service and Repair Workshop Manual

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CLEARING DTC [PARKING ASSIST UNIT (ULTRASONIC)]

SM2899112

id0902q924020

CMDTC Memory Clearing Procedure

1. Connect the M-MDS to the DLC-2.
2. After the vehicle is identified, select the following items from the initialization screen of the M-MDS.
 - (1) Select "Self Test".
 - (2) Select "All CMDTCs".
3. Verify the DTC according to the directions on the screen.
4. Press the clear button on the DTC screen to clear the DTC.
5. Switch the ignition off.
6. Switch the ignition ON (engine off or on) and wait for 5 s or more.
7. Perform DTC inspection. (See **DTC INSPECTION [PARKING ASSIST UNIT (ULTRASONIC)]**.)
8. Verify that no DTCs are displayed.

ODDTC Memory Clearing Procedure

1. Connect the M-MDS to the DLC-2.
2. After the vehicle is identified, select the following items from the initialization screen of the M-MDS.
 - (1) Select "Self Test".
 - (2) Select "Modules".
 - (3) Select "PSM".
3. Verify the DTC according to the directions on the screen.

DTC No.	Warning/indicator light	Description	Fail-safe	Drive cycle	Self test type*1	Memory function	Page
B1B48:14	–	Rear corner ultrasonic sensor (LH) circuit malfunction	×	–	C, D	×	(See DTC B1B48:14 [PARKING ASSIST UNIT (ULTRASONIC)].)
B1B48:2A	–	Rear corner ultrasonic sensor (LH) characteristic malfunction	×	–	C, D	×	(See DTC B1B48:2A [PARKING ASSIST UNIT (ULTRASONIC)].)
B1B50:14	–	Rear ultrasonic sensor (LH) circuit malfunction	×	–	C, D	×	(See DTC B1B50:14 [PARKING ASSIST UNIT (ULTRASONIC)].)
B1B50:2A	–	Rear ultrasonic sensor (LH) characteristic malfunction	×	–	C, D	×	(See DTC B1B50:2A [PARKING ASSIST UNIT (ULTRASONIC)].)
U0010:88	–	Module communication error (MS-CAN)	×	–	C, D	×	(See DTC U0010:88/U0155:00 [PARKING ASSIST UNIT (ULTRASONIC)].)
U0100:82 *3	–	Error signal received from PCM	×	–	C, D	×	(See DTC U0100:82 [PARKING ASSIST UNIT (ULTRASONIC)].)
U0121:82 *3	–	Error signal received from DSC HU/CM	×	–	C, D	×	(See DTC U0121:82 [PARKING ASSIST UNIT (ULTRASONIC)].)
U0155:00	–	Communication error with instrument cluster	×	–	C, D	×	(See DTC U0010:88/U0155:00 [PARKING ASSIST UNIT (ULTRASONIC)].)
U0415:68 *3	–	Error signal received from DSC HU/CM	×	–	C, D	×	(See DTC U0415:68 [PARKING ASSIST UNIT (ULTRASONIC)].)
U0423:68	–	Error signal received from instrument cluster	×	–	C, D	×	(See DTC U0423:68 [PARKING ASSIST UNIT (ULTRASONIC)].)
U2107:93 *3	–	Smart city brake support [reverse] (SCBS R) forcibly turned off	–	–	C, D	×	(See DTC U2107:93 [PARKING ASSIST UNIT (ULTRASONIC)].)
U2300:54	–	Configuration data not received from instrument cluster	×	–	C, D	×	(See DTC U2300:54 [PARKING ASSIST UNIT (ULTRASONIC)].)
U2300:55	–	Instrument cluster configuration not implemented	×	–	C, D	×	(See DTC U2300:55 [PARKING ASSIST UNIT (ULTRASONIC)].)
U2300:56	–	Configuration data unmatched with instrument cluster	×	–	C, D	×	(See DTC U2300:56 [PARKING ASSIST UNIT (ULTRASONIC)].)

Step	Inspection	Action	
1	VERIFY OTHER PARKING ASSIST UNIT (ULTRASONIC) DTCs - Clear the DTC for the parking assist unit (ultrasonic) using the M-MDS. (See CLEARING DTC [PARKING ASSIST UNIT (ULTRASONIC)].) - Retrieve the parking assist unit (ultrasonic) DTCs using the M-MDS. (See DTC INSPECTION [PARKING ASSIST UNIT (ULTRASONIC)].) - Is DTC U3000:49 displayed?	Yes	Replace the parking assist unit (ultrasonic), then go to Step 9. (See PARKING ASSIST UNIT (ULTRASONIC) REMOVAL/INSTALLATION .)
		No	Go to the next step.
2	VERIFY FRONT BUMPER EXTERNAL APPEARANCE AND INSTALLATION CONDITION - Verify that the front bumper external appearance and installation condition. - Are the front bumper external appearance and installation condition normal?	Yes	Go to the next step.
		No	Repair or replace the front bumper, then go to Step 9. (See FRONT BUMPER REMOVAL/INSTALLATION .)
3	PERFORM DTC INSPECTION AND VERIFY FRONT CORNER ULTRASONIC SENSOR (RH) MALFUNCTION Note - If the left sensor is switched with the right sensor and the output DTC changes, there is a malfunction in the front corner ultrasonic sensor (RH) before the positions were switched. - Switch the ignition off. - Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) - Disconnect the front corner ultrasonic sensor (LH) connector and the front corner ultrasonic sensor (RH) connector. - Switch the front corner ultrasonic sensor (LH) with the front corner ultrasonic sensor (RH). (See FRONT ULTRASONIC SENSOR REMOVAL/INSTALLATION.) - Always reconnect all disconnected connectors. - Connect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) - Clear the DTC for the parking assist unit (ultrasonic) using the M-MDS. (See CLEARING DTC [PARKING ASSIST UNIT (ULTRASONIC)].) - Switch the ignition ON (engine off or on) and wait for 5 s or more. - Retrieve the parking assist unit (ultrasonic) DTCs using the M-MDS. (See DTC INSPECTION [PARKING ASSIST UNIT (ULTRASONIC)].) - Is DTC B1B36:14 or B1B40:14 displayed?	Yes	If DTC B1B36:14 is displayed: - Go to the next step. If DTC B1B40:14 is displayed: - Replace the front corner ultrasonic sensor (LH) (front corner ultrasonic sensor (RH) before switching), then go to Step 9. (See FRONT ULTRASONIC SENSOR REMOVAL/INSTALLATION.)
		No	Return the switched sensor to its original position, and perform the DTC inspection for the parking assist unit (ultrasonic). (See FRONT ULTRASONIC SENSOR REMOVAL/INSTALLATION.) (See DTC INSPECTION [PARKING ASSIST UNIT (ULTRASONIC)].) If DTC B1B36:14 is displayed: - Go to the next step. If DTC B1B36:14 is not displayed: - Go to Step 10.

DTC B1B36:2A [PARKING ASSIST UNIT (ULTRASONIC)]

SM2899115

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Description	Front corner ultrasonic sensor (RH) characteristic malfunction
Detection condition	• Parking assist unit (ultrasonic) detected a front corner ultrasonic sensor (RH) characteristic malfunction with the ignition switched ON (engine off or on).
Fail-safe	Not applicable
Possible cause	Note • If the vehicle is driven under the following situations, the parking assist unit (ultrasonic) may output a DTC. — A place where muddy water is splattered — Cold region • Front bumper external appearance damage or incorrect front bumper installation — Improper installation caused by front bumper deformation • Front corner ultrasonic sensor (RH) malfunction — Scratches on sensor surface, deformation, dirt, or freezing — Sensor characteristic malfunction • Parking assist unit (ultrasonic) malfunction
System wiring diagram	Not applicable

Diagnostic Procedure

Step	Inspection	Action
1	VERIFY OTHER PARKING ASSIST UNIT (ULTRASONIC) DTCs • Clear the DTC for the parking assist unit (ultrasonic) using the M-MDS. (See CLEARING DTC [PARKING ASSIST UNIT (ULTRASONIC)].) • Retrieve the parking assist unit (ultrasonic) DTCs using the M-MDS. (See DTC INSPECTION [PARKING ASSIST UNIT (ULTRASONIC)].) • Is DTC U3000:49 displayed?	Yes Replace the parking assist unit (ultrasonic), then go to Step 5. (See PARKING ASSIST UNIT (ULTRASONIC) REMOVAL/INSTALLATION .)
		No Go to the next step.
2	VERIFY IF FRONT CORNER ULTRASONIC SENSOR (RH) CHARACTERISTIC DETERIORATES TEMPORARILY • Clear the DTC for the parking assist unit (ultrasonic) using the M-MDS. (See CLEARING DTC [PARKING ASSIST UNIT (ULTRASONIC)].) • Retrieve the parking assist unit (ultrasonic) DTCs using the M-MDS. (See DTC INSPECTION [PARKING ASSIST UNIT (ULTRASONIC)].) • Is the same DTC displayed?	Yes Go to the next step.
		No System is normal. (Explain to the customer that there is a temporary malfunction due to driving in a place where muddy water was splashed, or driving in a cold region.)

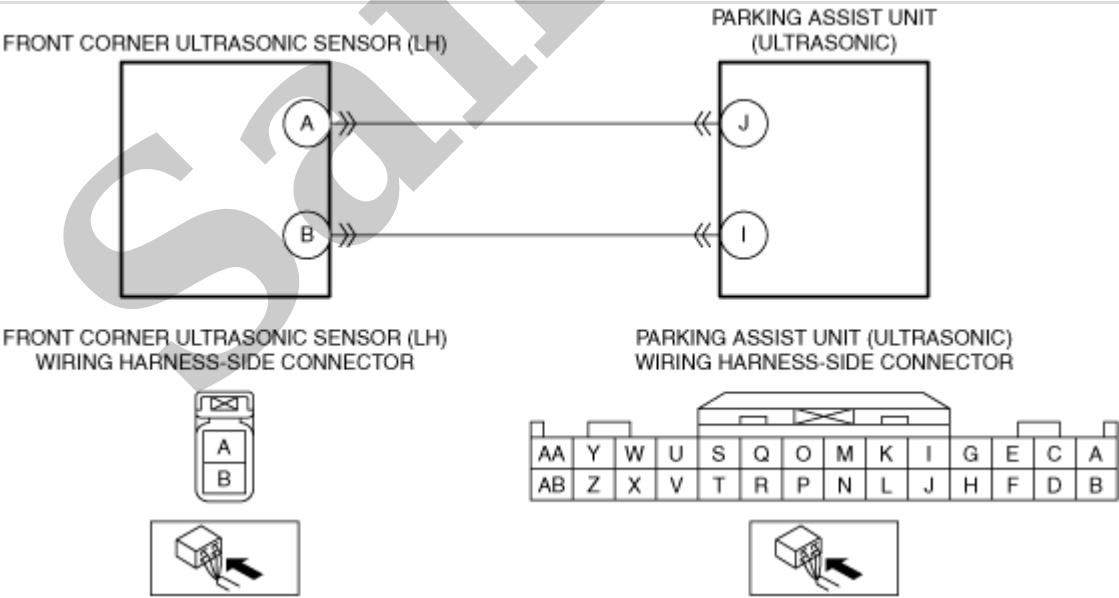
Step	Inspection		Action
1	VERIFY OTHER PARKING ASSIST UNIT (ULTRASONIC) DTCs • Clear the DTC for the parking assist unit (ultrasonic) using the M-MDS. (See CLEARING DTC [PARKING ASSIST UNIT (ULTRASONIC)].) • Retrieve the parking assist unit (ultrasonic) DTCs using the M-MDS. (See DTC INSPECTION [PARKING ASSIST UNIT (ULTRASONIC)].) • Is DTC U3000:49 displayed?	Yes	Replace the parking assist unit (ultrasonic), then go to Step 9. (See PARKING ASSIST UNIT (ULTRASONIC) REMOVAL/INSTALLATION .)
		No	Go to the next step.
2	VERIFY FRONT BUMPER EXTERNAL APPEARANCE AND INSTALLATION CONDITION • Verify that the front bumper external appearance and installation condition. • Are the front bumper external appearance and installation condition normal?	Yes	Go to the next step.
		No	Repair or replace the front bumper, then go to Step 9. (See FRONT BUMPER REMOVAL/INSTALLATION .)
3	PERFORM DTC INSPECTION AND VERIFY FRONT ULTRASONIC SENSOR (RH) MALFUNCTION Note • If the left sensor is switched with the right sensor and the output DTC changes, there is a malfunction in the front ultrasonic sensor (RH) before the positions were switched.	Yes	If DTC B1B38:14 is displayed: • Go to the next step. If DTC B1B42:14 is displayed: • Replace the front ultrasonic sensor (RH) (front ultrasonic sensor (LH) before switching), then go to Step 9. (See FRONT ULTRASONIC SENSOR REMOVAL/INSTALLATION.)
		No	Return the switched sensor to its original position, and perform the DTC inspection for the parking assist unit (ultrasonic). (See FRONT ULTRASONIC SENSOR REMOVAL/INSTALLATION.) (See DTC INSPECTION [PARKING ASSIST UNIT (ULTRASONIC)].) If DTC B1B38:14 is displayed: • Go to the next step. If DTC B1B38:14 is not displayed: • Go to Step 10.

DTC B1B40:14 [PARKING ASSIST UNIT (ULTRASONIC)]

SM2899118

id0902q924080

Description	Front corner ultrasonic sensor (LH) circuit malfunction
Detection condition	• The parking assist unit (ultrasonic) detected a front corner ultrasonic sensor (LH) circuit malfunction with the ignition switched ON (engine off or on).
Fail-safe	Not applicable
Possible cause	• Front bumper external appearance damage or incorrect front bumper installation — Abnormal front bumper installation angle • Front corner ultrasonic sensor (LH) malfunction • Front corner ultrasonic sensor (LH) connector or terminal malfunction • Parking assist unit (ultrasonic) connector or terminal malfunction • Short to ground in wiring harness between the following terminals: — Front corner ultrasonic sensor (LH) terminal A–Parking assist unit (ultrasonic) terminal J — Front corner ultrasonic sensor (LH) terminal B–Parking assist unit (ultrasonic) terminal I • Short to power supply in wiring harness between the following terminals: — Front corner ultrasonic sensor (LH) terminal A–Parking assist unit (ultrasonic) terminal J — Front corner ultrasonic sensor (LH) terminal B–Parking assist unit (ultrasonic) terminal I • Open circuit in wiring harness between the following terminals: — Front corner ultrasonic sensor (LH) terminal A–Parking assist unit (ultrasonic) terminal J — Front corner ultrasonic sensor (LH) terminal B–Parking assist unit (ultrasonic) terminal I • Parking assist unit (ultrasonic) malfunction



Diagnostic Procedure

Step	Inspection		Action
8	INSPECT FRONT CORNER ULTRASONIC SENSOR (LH) CIRCUIT FOR OPEN CIRCUIT • Switch the ignition off. • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Verify that the front corner ultrasonic sensor (LH) and parking assist unit (ultrasonic) connectors are disconnected. • Inspect for continuity between the following terminals (wiring harness-side): — Front corner ultrasonic sensor (LH) terminal A–Parking assist unit (ultrasonic) terminal J — Front corner ultrasonic sensor (LH) terminal B–Parking assist unit (ultrasonic) terminal I • Is there continuity?	Yes	Go to the next step.
		No	Refer to the wiring diagram and verify whether or not there is a common connector between the following terminals: • Front corner ultrasonic sensor (LH) terminal A–Parking assist unit (ultrasonic) terminal J • Front corner ultrasonic sensor (LH) terminal B–Parking assist unit (ultrasonic) terminal I If there is a common connector: • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for an open circuit. • Repair or replace the malfunctioning part. If there is no common connector: • Repair or replace the wiring harness which has an open circuit. Go to the next step.
9	VERIFY THAT REPAIRS HAVE BEEN COMPLETED • Always reconnect all disconnected connectors. • Connect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Clear the DTC for the parking assist unit (ultrasonic) using the M-MDS. (See CLEARING DTC [PARKING ASSIST UNIT (ULTRASONIC)].) • Retrieve the parking assist unit (ultrasonic) DTCs using the M-MDS. (See DTC INSPECTION [PARKING ASSIST UNIT (ULTRASONIC)].) • Is the same DTC displayed?	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the parking assist unit (ultrasonic). (See PARKING ASSIST UNIT (ULTRASONIC) REMOVAL/INSTALLATION.) Go to the next step.
		No	Go to the next step.
10	VERIFY IF OTHER DTCs DISPLAYED • Are any other DTCs displayed?	Yes	Repair or replace the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [PARKING ASSIST UNIT (ULTRASONIC)].)
		No	DTC troubleshooting completed.

DTC B1B40:2A [PARKING ASSIST UNIT (ULTRASONIC)]

SM2899119

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Description	Front corner ultrasonic sensor (LH) characteristic malfunction
Detection condition	• Parking assist unit (ultrasonic) detected a front corner ultrasonic sensor (LH) characteristic malfunction with the ignition switched ON (engine off or on).
Fail-safe	Not applicable
Possible cause	Note • If the vehicle is driven under the following situations, the parking assist unit (ultrasonic) may output a DTC. — A place where muddy water is splattered — Cold region • Front bumper external appearance damage or incorrect front bumper installation — Improper installation caused by front bumper deformation • Front corner ultrasonic sensor (LH) malfunction — Scratches on sensor surface, deformation, dirt, or freezing — Sensor characteristic malfunction • Parking assist unit (ultrasonic) malfunction
System wiring diagram	Not applicable

Diagnostic Procedure

Step	Inspection	Action
1	VERIFY OTHER PARKING ASSIST UNIT (ULTRASONIC) DTCs • Clear the DTC for the parking assist unit (ultrasonic) using the M-MDS. (See CLEARING DTC [PARKING ASSIST UNIT (ULTRASONIC)].) • Retrieve the parking assist unit (ultrasonic) DTCs using the M-MDS. (See DTC INSPECTION [PARKING ASSIST UNIT (ULTRASONIC)].) • Is DTC U3000:49 displayed?	Yes Replace the parking assist unit (ultrasonic), then go to Step 5. (See PARKING ASSIST UNIT (ULTRASONIC) REMOVAL/INSTALLATION .)
		No Go to the next step.
2	VERIFY IF FRONT CORNER ULTRASONIC SENSOR (LH) CHARACTERISTIC DETERIORATES TEMPORARILY • Clear the DTC for the parking assist unit (ultrasonic) using the M-MDS. (See CLEARING DTC [PARKING ASSIST UNIT (ULTRASONIC)].) • Retrieve the parking assist unit (ultrasonic) DTCs using the M-MDS. (See DTC INSPECTION [PARKING ASSIST UNIT (ULTRASONIC)].) • Is the same DTC displayed?	Yes Go to the next step.
		No System is normal. (Explain to the customer that there is a temporary malfunction due to driving in a place where muddy water was splashed, or driving in a cold region.)

Step	Inspection		Action
1	VERIFY OTHER PARKING ASSIST UNIT (ULTRASONIC) DTCs • Clear the DTC for the parking assist unit (ultrasonic) using the M-MDS. (See CLEARING DTC [PARKING ASSIST UNIT (ULTRASONIC)].) • Retrieve the parking assist unit (ultrasonic) DTCs using the M-MDS. (See DTC INSPECTION [PARKING ASSIST UNIT (ULTRASONIC)].) • Is DTC U3000:49 displayed?	Yes	Replace the parking assist unit (ultrasonic), then go to Step 9. (See PARKING ASSIST UNIT (ULTRASONIC) REMOVAL/INSTALLATION .)
		No	Go to the next step.
2	VERIFY FRONT BUMPER EXTERNAL APPEARANCE AND INSTALLATION CONDITION • Verify that the front bumper external appearance and installation condition. • Are the front bumper external appearance and installation condition normal?	Yes	Go to the next step.
		No	Repair or replace the front bumper, then go to Step 9. (See FRONT BUMPER REMOVAL/INSTALLATION .)
3	PERFORM DTC INSPECTION AND VERIFY FRONT ULTRASONIC SENSOR (LH) MALFUNCTION Note • If the left sensor is switched with the right sensor and the output DTC changes, there is a malfunction in the front ultrasonic sensor (LH) before the positions were switched.	Yes	If DTC B1B42:14 is displayed: • Go to the next step. If DTC B1B38:14 is displayed: • Replace the front ultrasonic sensor (RH) (front ultrasonic sensor (LH) before switching), then go to Step 9. (See FRONT ULTRASONIC SENSOR REMOVAL/INSTALLATION.)
		No	Return the switched sensor to its original position, and perform the DTC inspection for the parking assist unit (ultrasonic). (See FRONT ULTRASONIC SENSOR REMOVAL/INSTALLATION .) (See DTC INSPECTION [PARKING ASSIST UNIT (ULTRASONIC)] .) If DTC B1B42:14 is displayed: • Go to the next step. If DTC B1B42:14 is not displayed: • Go to Step 10.