

2012 - Mazda6 - Body and Accessories

NO.3 PUSH BUTTON START SYSTEM DOES NOT OPERATE [ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM]

3	Push button start system does not operate
DESCRIPTION	• Cannot switch to ACC or IG ON • Engine does not start
Possible Causes	• Transmitter (electronic key) battery malfunction (battery power depleted) • Transmitter (electronic key) malfunction • Keyless control module malfunction • Open or short circuit in keyless control module power supply • EGI fuse, STEERING LOCK fuse or ROOM fuse malfunction • Front keyless antenna malfunction • Open or short circuit in wiring harness between front keyless antenna and keyless control module • Open or short circuit in wiring harness between push button start switch and keyless control module • PCM malfunction • Engine starting system malfunction • Short to power supply in starter relay wiring harness • Steering lock unit malfunction • Open or short circuit in wiring harness between keyless control module and steering lock unit • Relay block (ACC relay, IG1 relay, IG2 relay) malfunction • Open or short circuit in wiring harness between relay block (ACC relay, IG1 relay, IG2 relay) and keyless control module • CAN system malfunction • Effect of after-market electronic device installation

NOTE:

- Even if the advanced key is inside the vehicle, the advanced start function may not operate if the advanced key is in a poor signal reception location such as the door pocket.

Diagnostic procedure

Step	Inspection	Action
1	• Verify that the advanced keyless entry system is operating. • Is the advanced keyless entry system operating normally?	Yes Go to the next step.
		No Go to applicable malfunction diagnostic procedure. (See SYMPTOM TROUBLESHOOTING CHART [ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM] .)
2	• Measure the voltage at keyless control module terminal 1D and 1E. • Is the voltage B+?	Yes Go to the next step.
		No Inspect the condition of the EGI fuse STEERING LOCK fuse or ROOM fuse If the fuse is broken: • Replace the suspect fuse. If the ROOM fuse is burnt out: • After repairing for a short to ground in the wiring harness between battery + terminal and keyless control module terminal 1D, replace the ROOM fuse. If the EGI fuse is burnt out: • After repairing for a short to ground in the wiring harness between battery + terminal and keyless control module terminal 1E, replace the EGI fuse. • Repair for an open circuit to the wiring harness between the battery+ terminal and keyless control module terminal 1B. If the fuse is normal: • Repair for an open circuit to

			the wiring harness between the battery + terminal and keyless control module terminal 1D. - Repair for an open circuit to the wiring harness between the battery + terminal and keyless control module terminal 1E. If the STEERING LOCK fuse is burnt out: - After replacing for a short to ground in wiring harness between battery + terminal and keyless control module terminal 1B, replace the STEERING LOCK fuse. After repair procedure, go to Step 13.
3	NOTE: - If the malfunction is the ignition not switching to ACC or IG ON, switch to IG ON using the M-MDS and the forced IG-ON function. - If the M-MDS forced IG-ON function cannot be used, Inspect and repair for keyless control module terminals 1B, 1C, 2L, 4A and 4E related harnesses. Reset Step 4. - Verify the keyless control module DTCs using the M-MDS. - Can DTCs be verified?	Yes Go to the applicable DTC inspection. (See DTC TABLE [ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM] .)	No Go to the next step. If the FAIL is displayed on the M-MDS, inspect for open circuit between connector terminal 2G, 2I on the keyless control module vehicle wiring harness and DLC-2.
4	- Has a non-standard electronic device been installed? - Cellular phone - Part with built-in micro computer - Remote engine starter - TV	Yes Go to the next step.	No Go to Step 6.
5	Disconnect all non-standard electronic device connectors and start the engine.	Yes System is normal. Explain to the customer that the effects of	

	Does the engine start?		installed non-standard electronic devices is the reason for the non-operation.
		No	Go to the next step.
6	- Press the push button start with brake pedal (ATX)/clutch pedal (MTX) is depressed. - Verify condition of push button start warning light (red). - Does the push button start system warning light (red) flash?	Yes	- Inspect or repair the front keyless antenna and related wiring harness connectors. - Inspect or repair for open or short circuit in the wiring harness between keyless control module terminal 2H and keyless receiver terminal C. - After repair procedure, go to Step 13.
		No	Go to the next step.
7	- Disconnect the keyless control module connector. - Verify the continuity between following keyless control module harness side connector terminal and GND. - Terminal 2J - Terminal 2K - Is the continuity changing according to the push button start status? - While push button start is pressed: continuity - While push button start is not pressed: not continuity	Yes	Go to Step 10.
		No	Go to the next step.
8	- Switch the ignition to off. - Disconnect the push button start connector. - Verify the continuity between connector terminal I on the push start switch vehicle wiring harness side and ground.	Yes	Go to the next step.
		No	- Inspect the following and repair or replace the malfunctioning location. - Wiring harness between push

	Can continuity be verified?		button start and ground (open circuit). ▪ Ground point (looseness, bad contact) • If there is no malfunction, replace the push button start. • After repair procedure, go to Step 13.
9	• Switch the ignition to off. (PUSH BUTTON START CIRCUIT INSPECTION (SHORT TO GROUND CIRCUIT)). • Leave the push button start connector disconnected. • Disconnect the keyless control module connector (12-pin). • Verify the continuity between the following connector terminals on the push button start vehicle wiring harness side and ground. ▪ Terminal A ▪ Terminal B • Can continuity be verified?	Yes	• Repair for a short to ground in the wiring harness between the push button start and the keyless control module. • After repair procedure, go to Step 13.
		No	Go to the next step.
10	• Switch the ignition to off. • Disconnect the steering lock unit connector. • Verify the continuity between connector terminal H of the steering lock unit on the vehicle wiring harness side and ground. • Can continuity be verified?	Yes	Go to the next step.
		No	• Inspect the following and repair or replace the malfunctioning location. ▪ Wiring harness between steering lock unit terminal H and ground (open circuit) ▪ Ground point (looseness, bad contact) • After repair procedure, go to Step 13.

11	- Perform engine starting procedure. - Verify the system switching related to the push button start operation. - Does the system switch as follows: OFF→ACC→IG1→OFF?	Yes	Go to the next step.
		No	Perform engine control system symptom troubleshooting in "No.3 Engine does not start".
12	- Monitor the following keyless control module PIDs using the M-MDS: MTX vehicles - SHIFT_N (Neutral switch) - CLUTCH_SW (Clutch switch) ATX vehicles - SHIFT_P (P position signal) - BRAKE_SW2 (Brake switch) - Are the PID values correctly indicated for each switch operation?	Yes	- Replace the keyless control module (See KEYLESS CONTROL MODULE REMOVAL/ INSTALLATION [ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM] .) - After replacement, go to the next step.
		No	- Inspect and repair parts and wiring harnesses which are not correctly displayed. - After repair, go to the next step.
13	Does the push button start operate correctly?	Yes	Troubleshooting completed. Explain the contents of the servicing to the customer.
		No	If the malfunction has not been resolved, repeat the inspection from Step 1.

2012 - Mazda6 - Body and Accessories

NO.3 PUSH BUTTON START SYSTEM DOES NOT OPERATE [ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM]

3	Push button start system does not operate
DESCRIPTION	• Cannot switch to ACC or IG ON • Engine does not start
Possible Causes	• Transmitter (electronic key) battery malfunction (battery power depleted) • Transmitter (electronic key) malfunction • Keyless control module malfunction • Open or short circuit in keyless control module power supply • EGI fuse, STEERING LOCK fuse or ROOM fuse malfunction • Front keyless antenna malfunction • Open or short circuit in wiring harness between front keyless antenna and keyless control module • Open or short circuit in wiring harness between push button start switch and keyless control module • PCM malfunction • Engine starting system malfunction • Short to power supply in starter relay wiring harness • Steering lock unit malfunction • Open or short circuit in wiring harness between keyless control module and steering lock unit • Relay block (ACC relay, IG1 relay, IG2 relay) malfunction • Open or short circuit in wiring harness between relay block (ACC relay, IG1 relay, IG2 relay) and keyless control module • CAN system malfunction • Effect of after-market electronic device installation

NOTE:

- Even if the advanced key is inside the vehicle, the advanced start function may not operate if the advanced key is in a poor signal reception location such as the door pocket.

Diagnostic procedure

Step	Inspection	Action
1	• Verify that the advanced keyless entry system is operating. • Is the advanced keyless entry system operating normally?	Yes Go to the next step.
		No Go to applicable malfunction diagnostic procedure. (See SYMPTOM TROUBLESHOOTING CHART [ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM] .)
2	• Measure the voltage at keyless control module terminal 1D and 1E. • Is the voltage B+?	Yes Go to the next step.
		No Inspect the condition of the EGI fuse STEERING LOCK fuse or ROOM fuse If the fuse is broken: • Replace the suspect fuse. If the ROOM fuse is burnt out: • After repairing for a short to ground in the wiring harness between battery + terminal and keyless control module terminal 1D, replace the ROOM fuse. If the EGI fuse is burnt out: • After repairing for a short to ground in the wiring harness between battery + terminal and keyless control module terminal 1E, replace the EGI fuse. • Repair for an open circuit to the wiring harness between the battery+ terminal and keyless control module terminal 1B. If the fuse is normal: • Repair for an open circuit to

		the wiring harness between the battery + terminal and keyless control module terminal 1D. - Repair for an open circuit to the wiring harness between the battery + terminal and keyless control module terminal 1E. If the STEERING LOCK fuse is burnt out: - After replacing for a short to ground in wiring harness between battery + terminal and keyless control module terminal 1B, replace the STEERING LOCK fuse. After repair procedure, go to Step 13.
3	NOTE: - If the malfunction is the ignition not switching to ACC or IG ON, switch to IG ON using the M-MDS and the forced IG-ON function. - If the M-MDS forced IG-ON function cannot be used, Inspect and repair for keyless control module terminals 1B, 1C, 2L, 4A and 4E related harnesses. Reset Step 4. - Verify the keyless control module DTCs using the M-MDS. - Can DTCs be verified?	YesGo to the applicable DTC inspection. (See DTC TABLE [ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM] .) NoGo to the next step. If the FAIL is displayed on the M-MDS, inspect for open circuit between connector terminal 2G, 2I on the keyless control module vehicle wiring harness and DLC-2.
4	- Has a non-standard electronic device been installed? - Cellular phone - Part with built-in micro computer - Remote engine starter - TV	YesGo to the next step. NoGo to Step 6.
5	Disconnect all non-standard electronic device connectors and start the engine.	YesSystem is normal. Explain to the customer that the effects of

	Does the engine start?		installed non-standard electronic devices is the reason for the non-operation.
		No	Go to the next step.
6	- Press the push button start with brake pedal (ATX)/clutch pedal (MTX) is depressed. - Verify condition of push button start warning light (red). - Does the push button start system warning light (red) flash?	Yes	- Inspect or repair the front keyless antenna and related wiring harness connectors. - Inspect or repair for open or short circuit in the wiring harness between keyless control module terminal 2H and keyless receiver terminal C. - After repair procedure, go to Step 13.
		No	Go to the next step.
7	- Disconnect the keyless control module connector. - Verify the continuity between following keyless control module harness side connector terminal and GND. - Terminal 2J - Terminal 2K - Is the continuity changing according to the push button start status? - While push button start is pressed: continuity - While push button start is not pressed: not continuity	Yes	Go to Step 10.
		No	Go to the next step.
8	- Switch the ignition to off. - Disconnect the push button start connector. - Verify the continuity between connector terminal I on the push start switch vehicle wiring harness side and ground.	Yes	Go to the next step.
		No	- Inspect the following and repair or replace the malfunctioning location. - Wiring harness between push

	Can continuity be verified?		button start and ground (open circuit). ▪ Ground point (looseness, bad contact) • If there is no malfunction, replace the push button start. • After repair procedure, go to Step 13.
9	• Switch the ignition to off. (PUSH BUTTON START CIRCUIT INSPECTION (SHORT TO GROUND CIRCUIT)). • Leave the push button start connector disconnected. • Disconnect the keyless control module connector (12-pin). • Verify the continuity between the following connector terminals on the push button start vehicle wiring harness side and ground. ▪ Terminal A ▪ Terminal B • Can continuity be verified?	Yes	• Repair for a short to ground in the wiring harness between the push button start and the keyless control module. • After repair procedure, go to Step 13.
		No	Go to the next step.
10	• Switch the ignition to off. • Disconnect the steering lock unit connector. • Verify the continuity between connector terminal H of the steering lock unit on the vehicle wiring harness side and ground. • Can continuity be verified?	Yes	Go to the next step.
		No	• Inspect the following and repair or replace the malfunctioning location. ▪ Wiring harness between steering lock unit terminal H and ground (open circuit) ▪ Ground point (looseness, bad contact) • After repair procedure, go to Step 13.

11	- Perform engine starting procedure. - Verify the system switching related to the push button start operation. - Does the system switch as follows: OFF→ACC→IG1→OFF?	Yes	Go to the next step.
		No	Perform engine control system symptom troubleshooting in "No.3 Engine does not start".
12	- Monitor the following keyless control module PIDs using the M-MDS: MTX vehicles - SHIFT_N (Neutral switch) - CLUTCH_SW (Clutch switch) ATX vehicles - SHIFT_P (P position signal) - BRAKE_SW2 (Brake switch) - Are the PID values correctly indicated for each switch operation?	Yes	- Replace the keyless control module (See KEYLESS CONTROL MODULE REMOVAL/ INSTALLATION [ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM] .) - After replacement, go to the next step.
		No	- Inspect and repair parts and wiring harnesses which are not correctly displayed. - After repair, go to the next step.
13	Does the push button start operate correctly?	Yes	Troubleshooting completed. Explain the contents of the servicing to the customer.
		No	If the malfunction has not been resolved, repeat the inspection from Step 1.