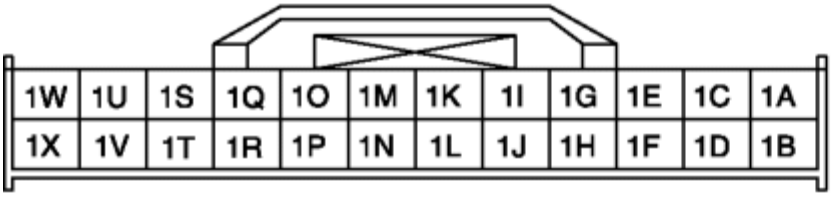
2012 - Mazda6 - Body and Accessories

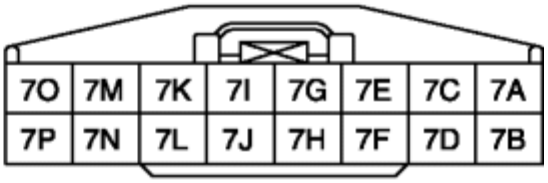
NO.1 KEYLESS ENTRY SYSTEM DOES NOT OPERATE NORMALLY [KEYLESS ENTRY SYSTEM]

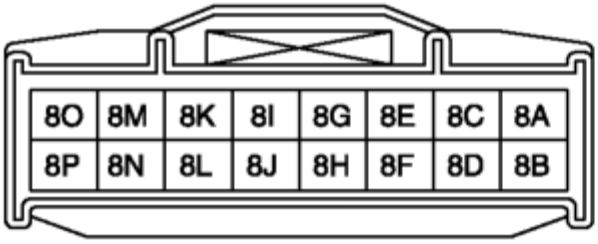
- When performing an asterisked (*) troubleshooting inspection, slightly shake the wiring harness and connectors while performing the inspection to discover whether poor contact points are the cause of any intermittent malfunctions. If there is a problem, verify that the connectors, terminals and wiring harnesses are connected correctly and undamaged.

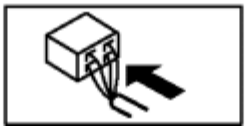
1	**Keyless entry system does not operate normally**
DESCRIPTION	• Malfunction in door lock linkage system, or BCM
POSSIBLE CAUSE	• Malfunction in BCM power supply ▪ Open circuit in IG1 and/or B+ power supply circuit ▪ Open or short circuit in ground circuit ▪ BCM malfunction • Malfunction in keyless switch related circuit ▪ Keyless switch malfunction • Malfunction in door switch signal circuit ▪ Open or short circuit in wiring between BCM and door switch ▪ Door switch malfunction • Malfunction in door lock/unlock signal circuit ▪ Door lock actuator malfunction ▪ Open or short circuit in wiring between BCM and door lock actuator • Malfunction in turn light signal circuit ▪ BCM malfunction ▪ Open or short circuit wiring between BCM and each turn signal light

BODY CONTROL MODULE (BCM) WIRING HARNESS SIDE CONNECTOR









Diagnostic procedure

STEP	INSPECTION		ACTION
1	**INSPECT FOR MALFUNCTION IN BCM POWER SUPPLY CIRCUIT OR ELSEWHERE** • Did any of the following items operate during the keyless entry system operation inspection? ▪ All doors lock/unlock ▪ Hazard wiring light flashes	Yes	Go to the next step.
		No	Inspect the connection of the BCM connectors, and go to Step 4.
2	**INSPECT FOR MALFUNCTION IN KEYLESS SWITCH OR ELSEWHERE** • Did the following item operate during the keyless entry system operation inspection? ▪ All doors	Yes	Go to the next step.
		No	Go to Step 9.

	lock/unlock		
3	**INSPECT FOR MALFUNCTION IN DOOR LOCK ACTUATOR OR ELSEWHERE** • Did the following item operate during the keyless entry system operation inspection? ▪ Hazard warning light flashes	Yes	Go to the next step.
		No	Go to Step 11.
*4	**INSPECT BCM POWER SUPPLY CIRCUIT** • Are the BCM power supply and voltage normal? ▪ IG1 signal (terminal 3AB, 4A) ▪ B+ signal (terminal 2D, 2J, 4B, 4C)	Yes	Go to the next step.
		No	• Inspect for burnt fuse. • Inspect the power supply system wiring harness for an open or short circuit. • Then go to Step 14.
*5	**INSPECT BCM GROUND CIRCUIT** • Is the BCM ground voltage normal? ▪ 0V (terminal 1V, 2A)	Yes	Go to the next step.
		No	Inspect the ground system wiring harness for open circuit. Then go to Step 14.
*6	**INSPECT DOOR SWITCH SIGNAL** • Monitor following BCM (door switch) PID using the M-MDS. ▪ TR/LG_SW (Trunk lid latch switch) ▪ DRSW_P (Passenger's door latch switch) ▪ DRSW_D (Driver's door switch) ▪ DRSW_LR (Rear door latch switch (LH))	Yes	Go to the next step.
		No	• Inspect for open or short circuit in wiring harness between BCM and suspected door latch/trunk lid latch switch. ▪ If wiring harness is normal, inspect suspect door latch/trunk lid latch switch. (See **FRONT DOOR LATCH SWITCH**

	DRSW_RR (Rear door latch switch (RH)) • Are monitored PID values normal?		**INSPECTION**.) (See **REAR DOOR LATCH SWITCH INSPECTION**.) (See **TRUNK LID LATCH SWITCH INSPECTION**.) ▪ If wiring harness malfunction, repair or replace wiring harness, then go to Step 14.
*7	**INSPECT DOOR SWITCH SIGNAL VOLTAGE** • Are the wiring harness between the BCM and each door latch switch normal? ▪ Inspect each terminal (8B, 8D, 8F, 8H) under the following conditions. • Door closed: 1.0V or less • Door open: **B+**	Yes	Go to the next step.
		No	• Inspect the door switch. • Inspect the door switch system wiring harness for a short circuit. • Then go to Step 14.
8	**INSPECT KEYLESS SWITCH** • Is the keyless switch normal? ON: **12V** OFF: **0V**	Yes	Replace the BCM.
		No	Replace the keyless switch, then go to Step 14.
*9	**INSPECT IF MALFUNCTION IS IN DOOR LOCK ACTUATOR, BCM GROUND CIRCUIT OR ELSEWHERE** • Measure the voltage at the BCM terminals 7I, 7M and 7K while operating the transmitter. ▪ All doors locked: **1.0 V or less →**	Yes	Go to the next step.
		No	• Inspect the wiring harness between BCM and the door lock actuator for an open or short circuit. • Inspect the door lock actuator. • Then go to Step 14.

	B+ → 1.0 V or less (7I terminal) ▪ All doors unlocked: **1.0 V or less → B+ → 1.0 V or less** (7M terminal) ▪ Driver-side door unlocked: **1.0 V or less → B+ → 1.0 V or less** (7K terminal) • Is the voltage as above?		
10	**INSPECT DOOR LOCK LINKAGE** • Operate the key cylinder and verify the door locks and unlock manually. • Does every door lock system work?	Yes	Go to step 12.
		No	Inspect the door lock linkage then go to Step 14.
*11	**INSPECT FOR MALFUNCTION IN THEFT-DETERRENT SYSTEM OR ELSEWHERE** • Is the theft-deterrent system equipped?	Yes	Go to the next step.
		No	Go to step 13.
12	**INSPECT BONNET SWITCH AND TRUNK SIGNAL** • Monitor following BCM PID using the M-MDS. ▪ TR/LG_SW (trunk lid latch switch) ▪ HOOD_SW (hood latch switch) • Are monitored PID values ON (open)?	Yes	Normal operation (Hazard warning light flashing on vehicles with theft-deterrent system operates in conjunction with theft-deterrent system).
		No	Go to the next step.
*13	**INSPECT TURN LIGHT SIGNAL CIRCUIT** • Measure voltage at the BCM terminals 8I, 8J, 1P (right side turn signal), 8K, 8L and 1R (left side turn signal) while operating hazard and/or turn signal on.	Yes	Verify the malfunction symptom again.
		No	• Inspect the wiring harnesses between the BCM and each turn light for a short circuit. • Inspect each turn light. • If these items are normal,

	Are the terminal voltages are alternated between **1.0V or less and B+ ?**		replace the BCM.
*14	**REINSPECT MALFUNCTION SYMPTOM AFTER REPAIR** • Does the keyless entry system operate properly?	Yes	Troubleshooting completed. Explain repairs to the customer.
		No	Reinspect the malfunction symptoms, then repeat from Step 1 if the malfunction recurs.

< Previous **Next >**

Back to Top

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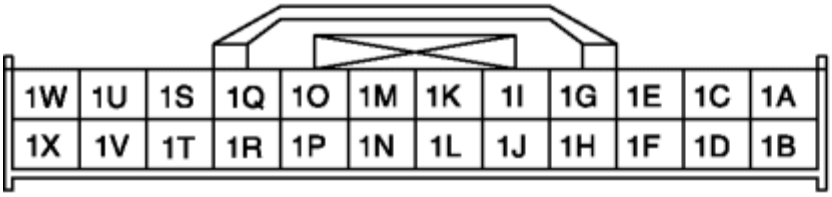

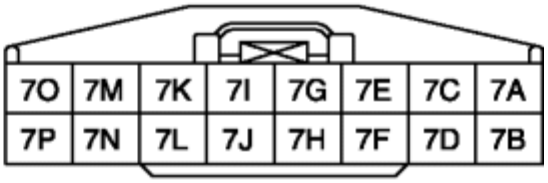

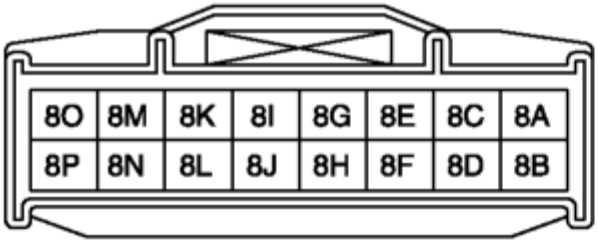

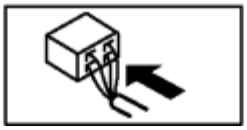

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		No	Inspect the connection of the BCM connectors, and go to Step 4.
2	**INSPECT FOR MALFUNCTION IN KEYLESS SWITCH OR ELSEWHERE** • Did the following item operate during the keyless entry system operation inspection? ▪ All doors	Yes	Go to the next step.
		No	Go to Step 9.

	lock/unlock		
3	**INSPECT FOR MALFUNCTION IN DOOR LOCK ACTUATOR OR ELSEWHERE** • Did the following item operate during the keyless entry system operation inspection? ▪ Hazard warning light flashes	Yes	Go to the next step.
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< Previous **Next >**

Back to Top