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2000 MAZDA RX-7 (FD) OEM Service and Repair Workshop Manual

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DTC No.	Check engine light	Master warning indication/master warning light	Charging system warning indication/charging system warning light	Engine oil warning indication/engine oil warning light	Check fuel cap warning indication/check fuel cap warning light	Condition	Fail-safe function	Drive cycle	Mor
P0602:00 *5	ON	OFF	OFF	OFF	OFF	PCM programming error	–	1	
P0604:00	ON	OFF	OFF	OFF	OFF	PCM RAM error	×	1	
P0606:00	ON	OFF	OFF	OFF	OFF	PCM processor error	×	1	
P0610:00 *5	ON	OFF	OFF	OFF	OFF	PCM vehicle configuration error	–	1	
P061B:00	ON	OFF	OFF	OFF	OFF	Internal control module torque calculation performance problem	×	1	
P061D:00	ON	OFF	OFF	OFF	OFF	Internal control module engine air mass performance problem	×	1	

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P1200:00 *6	OFF	OFF	OFF	OFF	OFF	Low fuel injection amount	–	–	
P1260:00	OFF	OFF	OFF	OFF	OFF	Immobilizer system problem	–	–	
P130C:00 *5	ON *8	Indication/illumination	OFF	OFF	OFF	Pre-ignition detected	–	1	
P1380:00	OFF	OFF	OFF	OFF	OFF	Electric variable valve timing control circuit problem	×	1	
P144A:00 *5	ON	OFF	OFF	OFF	OFF	Evaporator system: clogging between fuel tank and fuel tank pressure sensor	–	2	
P1450:00 *5	ON	OFF	OFF	OFF	OFF	Evaporator system: abnormal negative pressure in fuel tank	–	2	

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P2127:00	ON	OFF	OFF	OFF	OFF	APP sensor No.2 circuit low input	×	1	
P2128:00	ON	OFF	OFF	OFF	OFF	APP sensor No.2 circuit high input	×	1	
P2135:00	ON	OFF	OFF	OFF	OFF	TP sensor No.1/No.2 voltage correlation problem	×	1	
P2138:00	ON	OFF	OFF	OFF	OFF	APP sensor No.1/No.2 voltage correlation problem	×	1	
P2183:00 *5	ON *3	OFF	OFF	OFF	OFF	ECT sensor No.2 circuit range/performance problem	–	2	E c s
P2184:00	ON	OFF	OFF	OFF	OFF	ECT sensor No.2 circuit low input	–	1	E c s

DTC No.	Check engine light	Master warning indication/master warning light	Charging system warning indication/charging system warning light	Engine oil warning indication/engine oil warning light	Check fuel cap warning indication/check fuel cap warning light	Condition	Fail-safe function	Drive cycle	Mor
P2311:00	OFF	OFF	OFF	OFF	OFF	Ion sensor No.4 circuit problem	–	1	
P2502:00	OFF	OFF	Indication/illumination	OFF	OFF	Generator system: Malfunction in voltage generated by generator	×	1	
P2503:00	OFF	OFF	Indication/illumination	OFF	OFF	Generator system: Voltage generated by generator is low	×	1	
P2504:00	OFF	OFF	Indication/illumination	OFF	OFF	Generator system: Voltage generated by generator is high	×	1	
P2507:00	ON	OFF	OFF	OFF	OFF	PCM battery voltage low input	–	1	
P250A:00	OFF	Indication/illumination	OFF	Indication/illumination	OFF	Engine oil level signal: engine oil level sensor malfunction	–	1	

DTC No.	Check engine light	Master warning indication/master warning light	Charging system warning indication/charging system warning light	Engine oil warning indication/engine oil warning light	Check fuel cap warning indication/check fuel cap warning light	Condition	Fail-safe function	Drive cycle	Mor
U0101:00	ON	OFF	OFF	OFF	OFF	CAN communication: communication error to TCM	×	1	
U0104:00 *7	OFF	OFF	OFF	OFF	OFF	CAN communication: communication error to radar unit	×	1	
U0121:00	ON	OFF	OFF	OFF	OFF	CAN communication: communication error to DSC HU/CM	×	1	
U0131:00	OFF	OFF	OFF	OFF	OFF	CAN communication: communication error to EPS control module	–	1	
U0140:00	OFF	OFF	OFF	OFF	OFF	CAN communication: communication error to front body control module (FBCM)	–	1	
U0151:00	OFF	OFF	OFF	OFF	OFF	CAN communication: communication error to SAS control module	–	1	
U0155:00	ON *3	OFF	OFF	OFF	OFF	CAN communication: communication error to instrument cluster	–	1	
U0214:00	OFF	OFF	OFF	OFF	OFF	CAN communication: communication error to start stop unit	–	1	

DTC No.	Check engine light	Master warning indication/master warning light	Charging system warning indication/charging system warning light	Engine oil warning indication/engine oil warning light	Check fuel cap warning indication/check fuel cap warning light	Condition	Fail-safe function	Drive cycle	Mor
U1100:00	OFF	OFF	OFF	OFF	OFF	LIN communication: communication error to engine oil level sensor	–	1	C
U2300:00	OFF	Indication/illumination	OFF	OFF	OFF	Global central configuration error	×	1	C
U3000:41	OFF	OFF	OFF	OFF	OFF	PCM processor error	–	–	C

*1:C: CMDTC self test, O: KOEO self test, R: KOER self test

*2:KOER self test only

*3:The check engine light may be illuminated depending on the condition.

*4:After two drive cycle since DTC was detected

*5:Except Mexico

*6:Mexico

*7:Vehicles with mazda radar cruise control (MRCC) system

*8:Turns on in second drive cycle or later.

STEP	INSPECTION	RESULTS	ACTION
4	**INSPECT REFRIGERANT PRESSURE SENSOR CIRCUIT FOR SHORT TO GROUND** • Verify that the refrigerant pressure sensor connector is disconnected. • Inspect for continuity between the following terminals (wiring harness-side) and body ground: — Refrigerant pressure sensor terminal A — Refrigerant pressure sensor terminal B • Is there continuity?	Yes	Disconnect the PCM connector and inspect the wiring harness for short to ground. • If the short to ground circuit could be detected in the wiring harness: — Refer to the wiring diagram and verify whether or not there is a common connector between the following terminals: • Refrigerant pressure sensor terminal A–PCM terminal 2AZ • Refrigerant pressure sensor terminal B–PCM terminal 2AV **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 a short to ground. • Repair or replace the malfunctioning part. **If there is no common connector:** • Repair or replace the wiring harness which has a short to ground. • If the short to ground circuit could not be detected in the wiring harness: — Replace the PCM (short to ground in the PCM internal circuit). (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].) Go to Step 9.
		No	Go to the next step.
5	**INSPECT PCM CONNECTOR CONDITION** • Disconnect the PCM connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the connector and/or terminals, then go to Step 9.
		No	Go to the next step.

Item	Definition	Unit	Condition/Specification
AC_PRES	Refrigerant pressure input from refrigerant pressure sensor	KPa {MPA}, mBar {BAR}, psi, in H20	• Displays refrigerant pressure
	Refrigerant pressure sensor voltage	V	• Refrigerant pressure is 1.0 MPa {10 kgf/cm^2, 145 psi}: Approx. 1.58 V • Refrigerant pressure is 1.1 MPa {11 kgf/cm^2, 160 psi}: Approx. 1.75 V • Refrigerant pressure is 1.2 MPa {12 kgf/cm^2, 174 psi}: Approx. 1.88 V

Diagnostic Procedure

STEP	INSPECTION	RESULTS	ACTION
1	RECORD VEHICLE STATUS AT TIME OF DTC DETECTION TO UTILIZE WITH REPEATABILITY VERIFICATION Note • Recording can be facilitated using the screen capture function of the PC. • Record the snapshot data on the repair order.	–	Go to the next step.
2	VERIFY RELATED REPAIR INFORMATION AVAILABILITY • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	DETERMINE IF REFRIGERANT PRESSURE SENSOR OR WIRING HARNESS MALFUNCTION • Access the AC_PRES PID using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].) • Verify the AC_PRES PID value. • Is the AC_PRES PID value 5 V or B+?	Yes	Go to Step 7.
		No	Go to the next step.
4	INSPECT REFRIGERANT PRESSURE SENSOR CONNECTOR CONDITION • Switch the ignition off. • Disconnect the refrigerant pressure sensor connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the connector and/or terminals, then go to Step 10.
		No	Go to the next step.
5	INSPECT PCM CONNECTOR CONDITION • Disconnect the PCM connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the connector and/or terminals, then go to Step 10.
		No	Go to the next step.
6	INSPECT REFRIGERANT PRESSURE SENSOR • Reconnect all disconnected connectors. • Inspect the refrigerant pressure sensor. (See REFRIGERANT PRESSURE SENSOR INSPECTION [FULL-AUTO AIR CONDITIONER].) (See REFRIGERANT PRESSURE SENSOR INSPECTION [MANUAL AIR CONDITIONER].) • Is there any malfunction?	Yes	Replace the refrigerant pressure sensor, then go to Step 10. (See REFRIGERANT PRESSURE SENSOR REMOVAL/INSTALLATION [FULL-AUTO AIR CONDITIONER].) (See REFRIGERANT PRESSURE SENSOR REMOVAL/INSTALLATION [MANUAL AIR CONDITIONER].)
		No	Go to Step 10.

DTC P0600:00 [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))]

SM2897011

id0102t385040

DTC P0600:00	Serial communication link
DETECTION CONDITION	• PCM internal malfunction. **Diagnostic support note** • This is a continuous monitor (CCM). • The check engine light illuminates if the PCM detects the above malfunction condition during the first drive cycle. • FREEZE FRAME DATA/Snapshot data is available. • DTC is stored in the PCM memory.
FAIL-SAFE FUNCTION	• Not applicable
POSSIBLE CAUSE	• PCM malfunction
SYSTEM WIRING DIAGRAM	• Not applicable

Diagnostic Procedure

STEP	INSPECTION	RESULTS	ACTION
1	**RECORD VEHICLE STATUS AT TIME OF DTC DETECTION TO UTILIZE WITH REPEATABILITY VERIFICATION** **Note** **• Recording can be facilitated using the screen capture function of the PC.** • Record the FREEZE FRAME DATA/snapshot data on the repair order.	–	Go to the next step.
2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**PERFORM DTC INSPECTION AND VERIFY IF MALFUNCTIONING PART IS PCM** • Clear the DTC from the PCM memory using the M-MDS. (See CLEARING DTC [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].) • Start the engine and warm it up completely. • Perform the KOEO or KOER self test. (See KOEO/KOER SELF TEST [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].) • Is the same Pending DTC present?	Yes	Replace the PCM, then go to the next step. (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)
		No	Go to the next step.
4	**VERIFY AFTER REPAIR PROCEDURE** • Perform the "AFTER REPAIR PROCEDURE". (See AFTER REPAIR PROCEDURE [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].)
		No	DTC troubleshooting completed.