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2010 MAZDA MX-5 / Miata OEM Service and Repair Workshop Manual

Go to manual page

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) and wait for 5 s or more.

7.Perform DTC inspection. (See DTC INSPECTION [INSTRUMENT CLUSTER (DIRECT TIRE PRESSURE MONITORING SYSTEM (TPMS))].)

8.Verify that no DTCs are displayed.

DTC	Tire Pressure Monitoring System (TPMS) control
U0300:00	–
U3000:42	–

DTC C2011:87/C2012:87/C2013:87/C2014:87 [INSTRUMENT CLUSTER (DIRECT TIRE PRESSURE MONITORING SYSTEM (TPMS))]

SM2897929

id02021481170

DTC	C2011:87	Communication error to wheel unit No.1
	C2012:87	Communication error to wheel unit No.2
	C2013:87	Communication error to wheel unit No.3
	C2014:87	Communication error to wheel unit No.4
DETECTION CONDITION		• Communication error to wheel unit is detected at a speed of 25 km/h {16 mph} or more.
FAIL-SAFE FUNCTION		• Refer to "Fail-safe function table". (See DTC TABLE [INSTRUMENT CLUSTER (DIRECT TIRE PRESSURE MONITORING SYSTEM (TPMS))].)
POSSIBLE CAUSE		• Mis-installation of wheel unit • Wheel unit malfunction • Instrument cluster malfunction
SYSTEM WIRING DIAGRAM		Not applicable

Diagnostic Procedure

Step	Inspection	Results	Action
1	VERIFY WHEEL UNIT IS INSTALLED TO EACH WHEEL • Visually inspect the wheel unit. • Are all four wheels installed with a wheel unit?	Yes	Go to the next step.
		No	Install and register the wheel unit, then go to Step3. (See WHEEL UNIT REMOVAL/INSTALLATION.) (See WHEEL UNIT ID REGISTRATION.)
2	IDENTIFY MALFUNCTIONING WHEEL UNIT • Identify the malfunctioning wheel unit. (See MALFUNCTIONING WHEEL UNIT IDENTIFICATION [INSTRUMENT CLUSTER (DIRECT TIRE PRESSURE MONITORING SYSTEM (TPMS))].) • Is there any malfunctioning wheel unit?	Yes	Replace and register the malfunctioning wheel unit, then go to the next step. (See WHEEL UNIT REMOVAL/INSTALLATION.) (See WHEEL UNIT ID REGISTRATION.)
		No	Go to the next step.
3	VERIFY INSTRUMENT CLUSTER DTC • Using the M-MDS, clear the DTC from the instrument cluster. (See CLEARING DTC [INSTRUMENT CLUSTER (DIRECT TIRE PRESSURE MONITORING SYSTEM (TPMS))].) • Using the M-MDS, perform the instrument cluster DTC inspection. (See DTC INSPECTION [INSTRUMENT CLUSTER (DIRECT TIRE PRESSURE MONITORING SYSTEM (TPMS))].) • Is the same Pending DTC present?	Yes	Replace the instrument cluster, then go to the next step. (See INSTRUMENT CLUSTER REMOVAL/INSTALLATION.)
		No	Go to the next step.
4	VERIFY NO DTC IS PRESENT • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [INSTRUMENT CLUSTER (DIRECT TIRE PRESSURE MONITORING SYSTEM (TPMS))].)
		No	DTC troubleshooting completed.

Step	Inspection		Action
2	**INSPECT INSTRUMENT CLUSTER CONNECTOR** • Disconnect the instrument cluster connector. • Inspect the connector engagement and connection condition and inspect the terminals for damage, deformation, corrosion, or disconnection. • Is the connector normal?	Yes	Go to the next step.
		No	Repair or replace the connector, then go to Step 7.
3	**INSPECT WIRING HARNESS BETWEEN INSTRUMENT CLUSTER AND START STOP UNIT FOR SHORT TO GROUND** • Verify that the instrument cluster and start stop unit connectors are disconnected. • Inspect for continuity between start stop unit terminal 1Q (wiring harness-side) and body ground. • Is there continuity?	Yes	Refer to the wiring diagram and verify whether or not there is a common connector between instrument cluster terminal X and start stop unit terminal 1Q. **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. Go to Step 7.
		No	Go to the next step.
4	**INSPECT WIRING HARNESS BETWEEN INSTRUMENT CLUSTER AND START STOP UNIT FOR SHORT TO POWER SUPPLY** • Verify that the instrument cluster and start stop unit connectors are disconnected. • Connect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Switch the ignition ON (engine off or on). • Measure the voltage at the start stop unit terminal 1Q (wiring harness-side). • Is the voltage 0 V?	Yes	Go to the next step.
		No	Refer to the wiring diagram and verify whether or not there is a common connector between instrument cluster terminal X and start stop unit terminal 1Q. **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 power supply. • Repair or replace the malfunctioning part. **If there is no common connector:** • Repair or replace the wiring harness which has a short to power supply. Go to Step 7.
5	**INSPECT WIRING HARNESS BETWEEN INSTRUMENT CLUSTER AND START STOP UNIT FOR OPEN CIRCUIT** • Switch the ignition off. • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Verify that the instrument cluster and start stop unit connectors are disconnected. • Inspect the wiring harness for continuity between instrument cluster terminal X (wiring harness-side) and start stop unit terminal 1Q (wiring harness-side). • 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 instrument cluster terminal X and start stop unit terminal 1Q. **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 Step 7.

PID/DATA MONITOR INSPECTION [INSTRUMENT CLUSTER (DIRECT TIRE PRESSURE MONITORING SYSTEM (TPMS))]

SM2897932

id02021481200

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 “DataLogger”.

(2)Select “Modules”.

(3)Select “IC”.

3.Select the applicable monitor item from the PID table.

4.Verify the PID data according to the directions on the screen.

Note

• The PID data screen function is used for monitoring the calculated value of input/output signals in the module. Therefore, if the monitored value of the output parts is not within the specification, it is necessary to inspect the monitored value of input parts corresponding to the applicable output part control. In addition, because the system does not display an output part malfunction as an abnormality in the monitored value, it is necessary to inspect the output parts individually.

MALFUNCTIONING WHEEL UNIT IDENTIFICATION [INSTRUMENT CLUSTER (DIRECT TIRE PRESSURE MONITORING SYSTEM (TPMS))]

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id02021481220

Note

• The Tire Pressure Monitoring System (TPMS) does not identify the location of the malfunctioning wheel unit on the vehicle (LF, RF, LR, RR). The TPMS identifies each wheel unit as No.1, No.2, No.3 and No.4. In order to identify the location of the wheel unit, perform the following procedure.

1.Adjust the air pressure as follows:

- RF: 220 kPa {2.2 kgf/cm2, 32 psi}
- LF: 240 kPa {2.4 kgf/cm2, 35 psi}
- LR: 260 kPa {2.6 kgf/cm2, 38 psi}
- RR: 280 kPa {2.8 kgf/cm2, 40 psi}

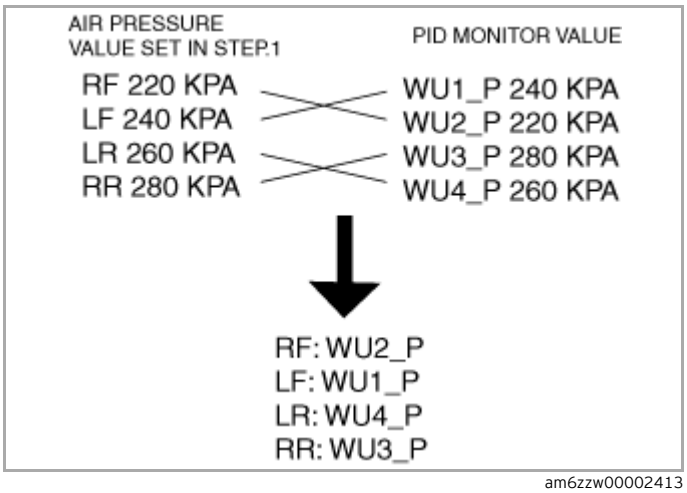
2.Connect the M-MDS to the DLC-2.

3.Drive the vehicle at a speed of 25 km/h {16 mph} or more for 2 min or more.

4.Select the following monitor items using the M-MDS, and verify them.

- WU1_P
- WU2_P
- WU3_P
- WU4_P

5.Determine which wheel unit identification code matches which wheel and tire by comparing the PID monitor values with the air pressure values set in Step1.



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FOREWORD [INSTRUMENT CLUSTER (DIRECT TIRE PRESSURE MONITORING SYSTEM (TPMS))]

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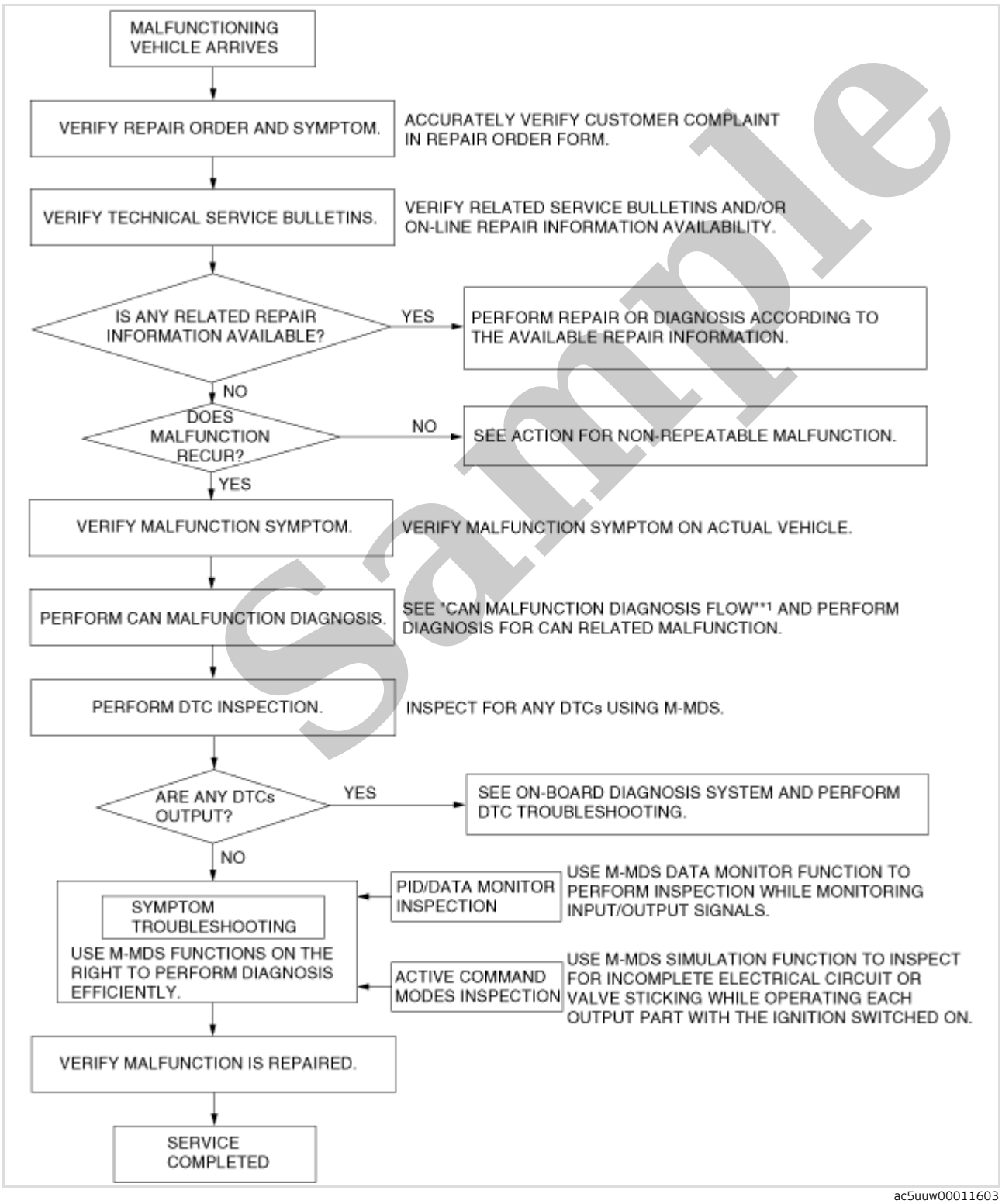
• If there is any vehicle malfunction complaint lodged by a customer, perform malfunction diagnosis according to the troubleshooting procedure.

Troubleshooting Procedure



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4.After completion of repairs, clear all DTCs stored in the module. (See CLEARING DTC [INSTRUMENT CLUSTER (DIRECT TIRE PRESSURE MONITORING SYSTEM (TPMS))].)

WHEEL UNIT ID REGISTRATION CANNOT BE PERFORMED [DIRECT TIRE PRESSURE MONITORING SYSTEM (TPMS)]

SM2897936

id02030500050

Troubleshooting item	Wheel unit ID registration cannot be performed
Description	• TPMS warning light flashes
Possible cause	• New wheel unit malfunction (caused when installing to wheel). • Any malfunction on an old wheel unit which has not been replaced.

Diagnostic Procedure

Step	Inspection	Results	Action
1	PERFORM WHEEL UNIT ID REGISTRATION • Connect the M-MDS to the DLC-2. • Display the wheel unit ID registration condition (ID and tire pressure table) using the M-MDS. (See PID/DATA MONITOR INSPECTION [INSTRUMENT CLUSTER (DIRECT TIRE PRESSURE MONITORING SYSTEM (TPMS))].) • Disconnect the negative battery terminal and connect it immediately. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) **Note** **• If the battery is removed, the tire pressure data for WU1_P to WU4_P stored in the instrument cluster is reset.** **• Tire pressure is 0 kPa {0 kgf/cm^2, 0 psi} when it is displayed again using the M-MDS.** • Set the tire pressure for the four wheels separately. • Perform the wheel unit ID registration. (See WHEEL UNIT ID REGISTRATION.) • Can the ID be registered?	Yes	Symptom troubleshooting completed. Adjust the tire pressure on four wheels, and then return the vehicle to the customer.
		No	Go to the next step.
2	IDENTIFY UNREGISTERED WHEEL UNIT • Identify the malfunctioning wheel unit. (See MALFUNCTIONING WHEEL UNIT IDENTIFICATION [INSTRUMENT CLUSTER (DIRECT TIRE PRESSURE MONITORING SYSTEM (TPMS))].) • Is the wheel unit for which the ID could not be registered a new wheel unit?	Yes	Replace with a new wheel unit, then go to the next step. (See WHEEL UNIT REMOVAL/INSTALLATION.)
		No	Replace the old wheel unit, then go to the next step (any malfunction on an old wheel unit which has not been replaced). (See WHEEL UNIT REMOVAL/INSTALLATION.)
3	PERFORM WHEEL UNIT ID REGISTRATION • Perform the wheel unit ID registration again. (See WHEEL UNIT ID REGISTRATION.) • Can the ID be registered?	Yes	Symptom troubleshooting completed.
		No	Verify the symptom troubleshooting again and return to Step 1, if the malfunction recurs.