

## 2012 - Mazda6 - Engine

### NO.7 SLOW RETURN TO IDLE [MZR 2.5]

|                |                                                                                                                                                                                                                                                                |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7              | SLOW RETURN TO IDLE                                                                                                                                                                                                                                            |
| DESCRIPTION    | <ul style="list-style-type: none"> <li>Engine takes more time than normal to return to idle speed.</li> </ul>                                                                                                                                                  |
| POSSIBLE CAUSE | <ul style="list-style-type: none"> <li>PCM DTC is stored.</li> <li>Erratic signal from PSP switch</li> <li>ECT sensor malfunction</li> <li>Thermostat is stuck open.</li> <li>Throttle body malfunction</li> <li>Air leakage from intake air system</li> </ul> |

#### Diagnostic procedure

| STEP | INSPECTION                                                                                                                                                                                                                                                                                                    | RESULTS | ACTION                                                                                                                                                                                                                                                                                                |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | <b>VERIFY PCM DTC</b> <ul style="list-style-type: none"> <li>Retrieve any DTCs using the M-MDS.</li> </ul> (See <b>ON-BOARD DIAGNOSTIC TEST [MZR 2.5].</b> ) <ul style="list-style-type: none"> <li>Are there any DTCs displayed?</li> </ul>                                                                  | Yes     | Go to the appropriate DTC inspection.<br>(See <b>DTC TABLE [MZR 2.5].</b> )                                                                                                                                                                                                                           |
|      |                                                                                                                                                                                                                                                                                                               | No      | Go to the next step.                                                                                                                                                                                                                                                                                  |
| 2    | <b>INSPECT POWER STEERING OPERATION SIGNAL</b> <ul style="list-style-type: none"> <li>Access the PCM PID PSP using the M-MDS.</li> </ul> (See <b>ON-BOARD DIAGNOSTIC TEST [MZR 2.5].</b> ) <ul style="list-style-type: none"> <li>Do the PIDs indicate the correct values under trouble condition?</li> </ul> | Yes     | Go to the next step.                                                                                                                                                                                                                                                                                  |
|      |                                                                                                                                                                                                                                                                                                               | No      | Inspect the PSP switch and the related harnesses.<br><br>(See <b>POWER STEERING PRESSURE (PSP) SWITCH INSPECTION [MZR 2.5].</b> )<br><br>Repair or replace the malfunctioning part according to the inspection results. <ul style="list-style-type: none"> <li>If the malfunction remains,</li> </ul> |

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|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                   | <p>perform the intermittent concern troubleshooting procedure.</p> <p>(See <b>INTERMITTENT CONCERN TROUBLESHOOTING [MZR 2.5]</b>.)</p> |
| 3 | <b>INSPECT ECT SENSOR SIGNAL</b> <ul style="list-style-type: none"> <li>Access and monitor the PCM PID ECT using the M-MDS.</li> </ul> <p>(See <b>ON-BOARD DIAGNOSTIC TEST [MZR 2.5]</b>.)</p> <ul style="list-style-type: none"> <li>Start the engine and warm it up to ECT PID is <b>above 90 °C { 194 °F }</b>.</li> <li>Does the ECT PID increasing dull at the thermostat initial opening temperature?</li> </ul> <p><b>Thermostat initial opening temperature:</b></p> <ul style="list-style-type: none"> <li><b>80—84 °C { 176—183 °F }</b></li> </ul>                                                                                                    | <p>Yes</p> <p>Thermostat operation is normal.</p> <ul style="list-style-type: none"> <li>Go to the next step.</li> </ul>                                                                                                                                                                          |                                                                                                                                        |
|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p>No</p> <p>Inspect characteristic of the ECT sensor.</p> <p>(See <b>ENGINE COOLANT TEMPERATURE (ECT) SENSOR INSPECTION [MZR 2.5]</b>.)</p> <ul style="list-style-type: none"> <li>If normal, replace the thermostat.</li> </ul> <p>(See <b>THERMOSTAT REMOVAL/ INSTALLATION [MZR 2.5]</b>.)</p> |                                                                                                                                        |
| 4 | <b>VISUALLY INSPECT THROTTLE BODY</b> <ul style="list-style-type: none"> <li>Is the throttle body free of contamination?</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <p>Yes</p> <p>Inspect for air leakage from the intake air system components while racing the engine to higher speed.</p> <p>Repair or replace the malfunctioning part according to the inspection results.</p>                                                                                    |                                                                                                                                        |
|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p>No</p> <p>Clean or replace throttle body.</p> <p>(See <b>INTAKE-AIR SYSTEM REMOVAL/ INSTALLATION [MZR 2.5]</b>.)</p>                                                                                                                                                                           |                                                                                                                                        |
| 5 | <ul style="list-style-type: none"> <li>Verify test results. <ul style="list-style-type: none"> <li>If normal, return to diagnostic index to service any additional symptoms.</li> </ul> <p>(See <b>SYMPTOM DIAGNOSTIC INDEX [MZR 2.5]</b>.)</p> <li>If malfunction remains, inspect related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. <ul style="list-style-type: none"> <li>If vehicle is repaired, troubleshooting completed.</li> <li>If vehicle is not repaired or additional diagnostic information is not available, reprogram the PCM if a later calibration is available. Retest.</li> </ul> </li> </li></ul> |                                                                                                                                                                                                                                                                                                   |                                                                                                                                        |



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#### Diagnostic procedure

| STEP | INSPECTION                                                                                                                                                                                                                                                                                                    | RESULTS | ACTION                                                                                                                                                                                                                                                                                                |
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|      |                                                                                                                                                                                                                                                                                                               | No      | Go to the next step.                                                                                                                                                                                                                                                                                  |
| 2    | <b>INSPECT POWER STEERING OPERATION SIGNAL</b> <ul style="list-style-type: none"> <li>Access the PCM PID PSP using the M-MDS.</li> </ul> (See <b>ON-BOARD DIAGNOSTIC TEST [MZR 2.5].</b> ) <ul style="list-style-type: none"> <li>Do the PIDs indicate the correct values under trouble condition?</li> </ul> | Yes     | Go to the next step.                                                                                                                                                                                                                                                                                  |
|      |                                                                                                                                                                                                                                                                                                               | No      | Inspect the PSP switch and the related harnesses.<br><br>(See <b>POWER STEERING PRESSURE (PSP) SWITCH INSPECTION [MZR 2.5].</b> )<br><br>Repair or replace the malfunctioning part according to the inspection results. <ul style="list-style-type: none"> <li>If the malfunction remains,</li> </ul> |

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                   |                                                                                                                                        |
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|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p>No</p> <p>Inspect characteristic of the ECT sensor.</p> <p>(See <b>ENGINE COOLANT TEMPERATURE (ECT) SENSOR INSPECTION [MZR 2.5]</b>.)</p> <ul style="list-style-type: none"> <li>If normal, replace the thermostat.</li> </ul> <p>(See <b>THERMOSTAT REMOVAL/ INSTALLATION [MZR 2.5]</b>.)</p> |                                                                                                                                        |
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|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p>No</p> <p>Clean or replace throttle body.</p> <p>(See <b>INTAKE-AIR SYSTEM REMOVAL/ INSTALLATION [MZR 2.5]</b>.)</p>                                                                                                                                                                           |                                                                                                                                        |
| 5 | <ul style="list-style-type: none"> <li>Verify test results. <ul style="list-style-type: none"> <li>If normal, return to diagnostic index to service any additional symptoms.</li> </ul> <p>(See <b>SYMPTOM DIAGNOSTIC INDEX [MZR 2.5]</b>.)</p> <li>If malfunction remains, inspect related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. <ul style="list-style-type: none"> <li>If vehicle is repaired, troubleshooting completed.</li> <li>If vehicle is not repaired or additional diagnostic information is not available, reprogram the PCM if a later calibration is available. Retest.</li> </ul> </li> </li></ul> |                                                                                                                                                                                                                                                                                                   |                                                                                                                                        |

