

## 2012 - Mazda6 - Transmission/ Transaxle

### NO.6 LOW MAXIMUM SPEED AND POOR ACCELERATION [AY6A-EL]

| 6              | Low maximum speed and poor acceleration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| DESCRIPTION    | <ul style="list-style-type: none"><li>• Vehicle acceleration is poor at start.</li><li>• Delayed acceleration when accelerator pedal is depressed while driving.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| POSSIBLE CAUSE | <ul style="list-style-type: none"><li>• If the clutch is stuck or does not stay in 4GR, malfunction is in engine circuit.<ul style="list-style-type: none"><li>▪ Clutch slippage, burnt (C1 clutch, C2 clutch, C3 clutch, B1 brake)<ul style="list-style-type: none"><li>• Line pressure low</li><li>• Incorrect accelerator opening signal</li><li>• VSS malfunction</li><li>• Input/turbine speed sensor malfunction</li><li>• Sensor ground malfunction</li><li>• Shift solenoid A malfunction</li><li>• Shift solenoid B malfunction</li><li>• Shift solenoid C malfunction</li><li>• Shift solenoid D malfunction</li><li>• Shift solenoid E malfunction</li><li>• Line pressure control solenoid malfunction</li><li>• Shift solenoid F malfunction</li><li>• Body ground malfunction</li><li>• Control valve body malfunction</li></ul></li><li>▪ Transaxle fixed in 3GR or 5GR* (Operation of fail-safe function)<ul style="list-style-type: none"><li>• Short or open circuit in wiring harness</li><li>• Poor connection of connector</li></ul></li></ul></li></ul> |

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|  | <ul style="list-style-type: none"> <li>Malfunction of electronic parts of output and input system</li> <li>Insufficient starting torque (Suspected when in-gear, shift control and engine circuit are normal)</li> <li>Torque converter malfunction (Poor operation, stuck)</li> </ul> <p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>Before following the troubleshooting steps, make sure that the Automatic Transaxle On-Board Diagnostic and Automatic Transaxle Basic Inspection are conducted. (See <b>BASIC INSPECTION [AY6A-EL]</b>.)</li> </ul> |
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Diagnostic procedure

| STEP | INSPECTION                                                                                                                                                                                                                                                                                                           | ACTION |                                                                                                                                                                |
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| 1    | <b>INSPECT SELECTOR LEVER POSITION SIGNAL FOR MALFUNCTION</b> <ul style="list-style-type: none"> <li>With the ignition at ON, does the gear position indicator light indication correspond to the selector lever position?</li> </ul>                                                                                | Yes    | Go to the next step.                                                                                                                                           |
|      |                                                                                                                                                                                                                                                                                                                      | No     | Go to No.27 "GEAR POSITION INDICATOR LIGHT DOES NOT ILLUMINATE IN D OR M POSITION", or No.28 "GEAR POSITION INDICATOR LIGHT ILLUMINATE IN P, R OR N POSITION". |
| 2    | <b>INSPECT ENGINE CONTROL SYSTEM FOR MALFUNCTION</b> <ul style="list-style-type: none"> <li>Go to No.12 "LACK/LOSS OF POWER (ACCELERATION/CRUISE)".<br/><br/>(See <b>NO.12 LACK/ LOSS OF POWER-ACCELERATION/ CRUISE [MZI 3.7 V6]</b>.)</li> <li>Does engine control system normal?</li> </ul>                        | Yes    | Go to the next step.                                                                                                                                           |
|      |                                                                                                                                                                                                                                                                                                                      | No     | Repair or replace any malfunctioning parts according to the inspection results.                                                                                |
| 3    | <b>INSPECT SHIFT SOLENOIDS FOR MALFUNCTION</b> <ul style="list-style-type: none"> <li>Stop the engine.</li> <li>Inspect following solenoid.               <ul style="list-style-type: none"> <li>Shift solenoid A<br/><br/>(See <b>SHIFT SOLENOID A INSPECTION [AY6A-EL]</b>.)</li> <li>Shift</li> </ul> </li> </ul> | Yes    | Go to the next step.                                                                                                                                           |
|      |                                                                                                                                                                                                                                                                                                                      | No     | Inspect the coupler component.<br><br>If normal, replace the control valve body.<br><br>(See <b>CONTROL VALVE BODY REMOVAL/ INSTALLATION [AY6A-EL]</b> .)      |

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|   | <p>solenoid B</p> <p>(See <b>SHIFT SOLENOID B INSPECTION [AY6A-EL]</b>.)</p> <ul style="list-style-type: none"> <li>▪ Shift solenoid C</li> </ul> <p>(See <b>SHIFT SOLENOID C INSPECTION [AY6A-EL]</b>.)</p> <ul style="list-style-type: none"> <li>▪ Shift solenoid D</li> </ul> <p>(See <b>SHIFT SOLENOID D INSPECTION [AY6A-EL]</b>.)</p> <ul style="list-style-type: none"> <li>▪ Shift solenoid E</li> </ul> <p>(See <b>SHIFT SOLENOID E INSPECTION [AY6A-EL]</b>.)</p> <ul style="list-style-type: none"> <li>▪ Shift solenoid F</li> </ul> <p>(See <b>SHIFT SOLENOID F INSPECTION [AY6A-EL]</b>.)</p> <ul style="list-style-type: none"> <li>▪ Line pressure control solenoid</li> </ul> <p>(See <b>LINE PRESSURE CONTROL SOLENOID INSPECTION [AY6A-EL]</b>.)</p> <ul style="list-style-type: none"> <li>• Are they normal?</li> </ul> |     |                                                                                                                                                                                   |
| 4 | <p><b>VERIFY IF MALFUNCTION CAUSE IS TORQUE CONVERTER OR TRANSAXLE (INCLUDING CONTROL VALVE BODY)</b></p> <ul style="list-style-type: none"> <li>• Perform the stall test.</li> </ul> <p>(See <b>MECHANICAL SYSTEM</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes | <p>Inspect the ATF condition.</p> <p>If large amount of metal specks are found, replace the transaxle.</p> <p>(See <b>AUTOMATIC TRANSAXLE REMOVAL/ INSTALLATION [AY6A-EL]</b></p> |

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|   | <p><b>TEST [AY6A-EL] .)</b></p> <ul style="list-style-type: none"><li>• Is the stall speed within the specified?</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p>.)</p> <p>If a large amount of metal specks are not found, replace the control valve body.</p> <p>(See <b>CONTROL VALVE BODY REMOVAL/ INSTALLATION [AY6A-EL] .)</b></p> |
|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <p>No Replace the torque converter.</p> <p>(See <b>TORQUE CONVERTER REMOVAL/ INSTALLATION [AY6A-EL] .)</b></p>                                                             |
| 5 | <ul style="list-style-type: none"><li>• Verify test results.<ul style="list-style-type: none"><li>▪ If normal, return to the diagnostic index to service any additional symptoms.</li><li>▪ If malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis.<ul style="list-style-type: none"><li>• If the vehicle is repaired, troubleshooting completed.</li><li>• If the vehicle is not repaired or additional diagnostic information is not available, replace the TCM.</li></ul></li></ul></li></ul> |                                                                                                                                                                            |

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**If case of shift solenoid C failure**

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Diagnostic procedure

| STEP | INSPECTION                                                                                                                                                                                                                                                                                                           | ACTION |                                                                                                                                                                |
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| 1    | <b>INSPECT SELECTOR LEVER POSITION SIGNAL FOR MALFUNCTION</b> <ul style="list-style-type: none"> <li>With the ignition at ON, does the gear position indicator light indication correspond to the selector lever position?</li> </ul>                                                                                | Yes    | Go to the next step.                                                                                                                                           |
|      |                                                                                                                                                                                                                                                                                                                      | No     | Go to No.27 "GEAR POSITION INDICATOR LIGHT DOES NOT ILLUMINATE IN D OR M POSITION", or No.28 "GEAR POSITION INDICATOR LIGHT ILLUMINATE IN P, R OR N POSITION". |
| 2    | <b>INSPECT ENGINE CONTROL SYSTEM FOR MALFUNCTION</b> <ul style="list-style-type: none"> <li>Go to No.12 "LACK/LOSS OF POWER (ACCELERATION/CRUISE)".<br/><br/>(See <b>NO.12 LACK/ LOSS OF POWER-ACCELERATION/ CRUISE [MZI 3.7 V6]</b>.)</li> <li>Does engine control system normal?</li> </ul>                        | Yes    | Go to the next step.                                                                                                                                           |
|      |                                                                                                                                                                                                                                                                                                                      | No     | Repair or replace any malfunctioning parts according to the inspection results.                                                                                |
| 3    | <b>INSPECT SHIFT SOLENOIDS FOR MALFUNCTION</b> <ul style="list-style-type: none"> <li>Stop the engine.</li> <li>Inspect following solenoid.               <ul style="list-style-type: none"> <li>Shift solenoid A<br/><br/>(See <b>SHIFT SOLENOID A INSPECTION [AY6A-EL]</b>.)</li> <li>Shift</li> </ul> </li> </ul> | Yes    | Go to the next step.                                                                                                                                           |
|      |                                                                                                                                                                                                                                                                                                                      | No     | Inspect the coupler component.<br><br>If normal, replace the control valve body.<br><br>(See <b>CONTROL VALVE BODY REMOVAL/ INSTALLATION [AY6A-EL]</b> .)      |

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| 4 | <p><b>VERIFY IF MALFUNCTION CAUSE IS TORQUE CONVERTER OR TRANSAXLE (INCLUDING CONTROL VALVE BODY)</b></p> <ul style="list-style-type: none"> <li>• Perform the stall test.</li> </ul> <p>(See <b>MECHANICAL SYSTEM</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes | <p>Inspect the ATF condition.</p> <p>If large amount of metal specks are found, replace the transaxle.</p> <p>(See <b>AUTOMATIC TRANSAXLE REMOVAL/ INSTALLATION [AY6A-EL]</b></p> |

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|   | <p><b>TEST [AY6A-EL] .)</b></p> <ul style="list-style-type: none"><li>• Is the stall speed within the specified?</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p>.)</p> <p>If a large amount of metal specks are not found, replace the control valve body.</p> <p>(See <b>CONTROL VALVE BODY REMOVAL/ INSTALLATION [AY6A-EL] .)</b></p> |
|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <p>No Replace the torque converter.</p> <p>(See <b>TORQUE CONVERTER REMOVAL/ INSTALLATION [AY6A-EL] .)</b></p>                                                             |
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**If case of shift solenoid C failure**