

## G - TESTS W/CODES - 4-CYL

### Article Text

1993 Mazda MX-3

For NONE

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## ARTICLE BEGINNING

1993 ENGINE PERFORMANCE

Self-Diagnostics - MX-3 1.6L, Protege & 323

MX-3 1.6L, Protege & 323

## INTRODUCTION

If no faults were found while performing F - BASIC TESTING, proceed with self-diagnostics. If no fault codes or only pass codes are present after entering self-diagnostics, proceed to appropriate H - TEST W/O CODES article for diagnosis by symptom (i.e., ROUGH IDLE, NO START, etc.).

## SELF-DIAGNOSTIC SYSTEM

### Hard Failures

Hard failures cause malfunction indicator light (CHECK ENGINE) to illuminate and remain on until problem is repaired. If light comes on and remains on (light may flash) during vehicle operation, cause of malfunction must be determined using diagnostic (code) charts. See CODE CHARTS. If a sensor fails, control unit will use a substitute value in its calculations to continue engine operation. In this condition, commonly known as limp-in mode, the vehicle runs but driveability will not be optimum.

### Intermittent Failures

Intermittent failures may cause CHECK ENGINE light to flicker or illuminate and go out after the intermittent fault goes away. However, the corresponding trouble code will be retained in ECU memory. If related fault does not reoccur within a certain time frame, related trouble code will be erased from ECU memory. Intermittent failures may be caused by a sensor, connector or wiring related problems. See INTERMITTENTS in H - TESTS W/O CODES article.

## RETRIEVING CODES

### Accessing Trouble Codes

1) Using jumper wire, connect self-diagnostic connector terminals TEN and GND. See Fig. 1. Connector is located at back of left front wheelwell.

2) With ignition on and engine stopped, observe malfunction indicator light (CHECK ENGINE). Note trouble codes. Check TROUBLE CODE IDENTIFICATION chart for possible cause. If light remains on continuously, MIL circuit is grounded or ECU is defective. If no codes are found, go to J - PIN VOLTAGE CHARTS article.

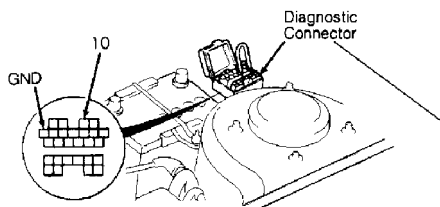


Fig. 1: Locating Self-Diagnostic Connector  
Courtesy of Mazda Motors Corp.

## AFTER-REPAIR PROCEDURE

After indicated service or replacement is performed, clear codes. See CLEARING CODES. Recheck PCME memory. No codes should be present. If codes are present, see appropriate trouble code chart under CODE CHARTS to repair vehicle.

## CLEARING CODES

### Clearing Trouble Codes

1) Disconnect negative battery cable. Depress brake pedal for at least 5 seconds. Reconnect battery cable.

2) Ground test connector with jumper wire. Turn ignition on, but DO NOT start engine for 6 seconds. Start and run engine at 2000 RPM for 2 minutes. Verify no codes are displayed.

## CODE CHARTS

NOTE: See J - PIN VOLTAGE CHARTS article to identify ECU connector terminals.

NOTE: Trouble Codes No. 6, 12, 55, 60, 61, 62 and 63 are automatic transmission related problems. If codes are present, see appropriate TRANSMISSION SERVICE & REPAIR article.

## TROUBLE CODE IDENTIFICATION

## TROUBLE CODE IDENTIFICATION

| CODE NO. | LOCATION OF MALFUNCTION              | OUTPUT SIGNAL PATTERN                                                                         | SELF-DIAGNOSIS                                                                 | FAIL-SAFE                                                                                               |
|----------|--------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| 02       | Ne-signal                            | ON <br>OFF   | No Ne-signal                                                                   | —                                                                                                       |
| 03       | G-signal<br>(DOHC and California B6) | ON <br>OFF   | No G-signal                                                                    | Cancels 2-group (DOHC) or sequential (California B6) injection                                          |
| 06*      | Vehicle speed sensor                 | ON <br>OFF   | No input signal from vehicle speed sensor                                      | Shifting performed normally                                                                             |
| 08       | Airflow meter                        | ON <br>OFF   | Open or short circuit                                                          | Basic fuel injection amount fixed as for two driving modes<br>(1) Idle switch ON<br>(2) Idle switch OFF |
| 09       | Water thermosensor                   | ON <br>OFF   |                                                                                | Maintains constant 20°C (68°F) command                                                                  |
| 10       | Intake air thermosensor              | ON <br>OFF |                                                                                | Maintains constant 20°C (68°F) command                                                                  |
| 12       | Throttle sensor                      | ON <br>OFF |                                                                                | Throttle opening judged as full stroke lockup not provided                                              |
| 14       | Atmospheric pressure sensor (in ECU) | ON <br>OFF |                                                                                | Maintains constant command of sea level pressure                                                        |
| 15       | Oxygen sensor (Inactivation)         | ON <br>OFF | Sensor output continues less than 0.55V 95 sec. after engine starts (1500 rpm) | Cancels engine feedback operation                                                                       |
| 17       | Oxygen sensor (Inversion)            | ON <br>OFF | Sensor output continues uncharged 50 sec. after engine exceeds 1500 rpm        | Cancels engine feedback operation                                                                       |
| 25       | Solenoid valve (pressure regulator)  | ON <br>OFF | Open or short circuit                                                          | —                                                                                                       |

\* Transmission-related code, see appropriate MITCHELL® TRANSMISSION SERVICE & REPAIR manual.

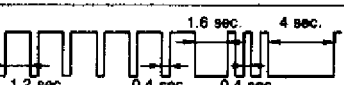
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G - TESTS V

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Fig. 2: Trouble Code Identification Chart  
Courtesy of Mazda Motors Corp.

### TROUBLE CODE IDENTIFICATION (CONT.)

| CODE NO. | LOCATION OF MALFUNCTION        | OUTPUT SIGNAL PATTERN                                                                         | SELF-DIAGNOSIS                       | FAIL-SAFE                                                                                                                       |
|----------|--------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 26       | Solenoid valve (purge control) | ON <br>OFF   | Open or short circuit                | —                                                                                                                               |
| 34       | ISC valve                      | ON <br>OFF   |                                      | —                                                                                                                               |
| 41       | Solenoid valve (VICS) (DOHC)   | ON <br>OFF   |                                      | —                                                                                                                               |
| 55*      | Pulse generator                | ON <br>OFF   | No input signal from pulse generator | Shifting performed in accordance with signals from vehicle speed sensor                                                         |
| 60*      | 1-2 shift solenoid valve       | ON <br>OFF   | Open or short circuit                | Solenoid valve(s) performs the shifting with as little interference as possible with driving performance<br>Lockup not provided |
| 61*      | 2-3 shift solenoid valve       | ON <br>OFF   |                                      |                                                                                                                                 |
| 62*      | 3-4 shift solenoid valve       | ON <br>OFF |                                      |                                                                                                                                 |
| 63*      | Lockup solenoid valve          | ON <br>OFF |                                      | Shifting performed normally<br>Lockup not provided                                                                              |

\* Transmission-related code, see appropriate MITCHELL® TRANSMISSION SERVICE & REPAIR manual.

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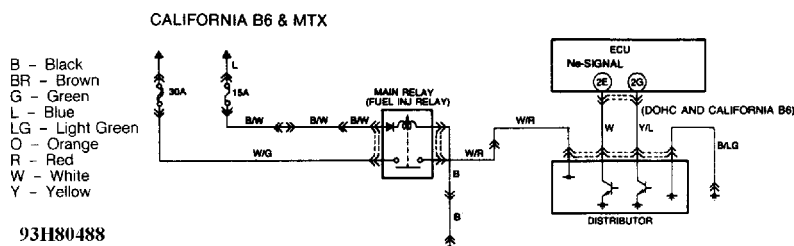
Fig. 3: Trouble Code Identification Chart (Cont.)  
Courtesy of Mazda Motors Corp.

TROUBLE CODE NO. 02 (NE SIGNAL - DISTRIBUTOR)

## G - TESTS W

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Fig. 5: Trouble Code No. 02 (Schematic - CA B6 & MTX)  
Courtesy of Mazda Motors Corp.



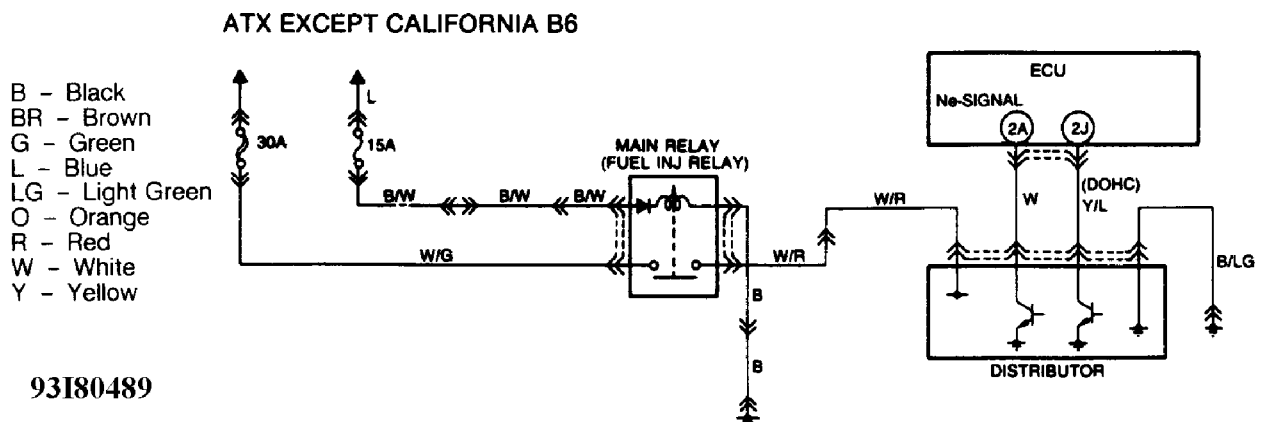


Fig. 6: Trouble Code No. 02 (Schematic - ATX Except CA B6)  
 Courtesy of Mazda Motors Corp.

**TROUBLE CODE NO. 03 (G SIGNAL - DISTRIBUTOR)**

**TROUBLE CODE NO. 03 (G SIGNAL - DISTRIBUTOR)**

| CODE No. |                                                                                                                                              | 03 (DISTRIBUTOR G-SIGNAL) — DOHC and California B6 |                                                                 |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------------|
| STEP     | INSPECTION                                                                                                                                   |                                                    | ACTION                                                          |
| 1        | Check distributor circuit for poor connection                                                                                                | Yes                                                | Repair or replace connector                                     |
|          |                                                                                                                                              | No                                                 | Go to next step                                                 |
| 2        | Check if Code No.02 is also present                                                                                                          | Yes                                                | Go to next step                                                 |
|          |                                                                                                                                              | No                                                 | Go to Step 5                                                    |
| 3        | Check terminal-wire for continuity                                                                                                           | Yes                                                | Go to next step                                                 |
|          |                                                                                                                                              | No                                                 | Repair or replace                                               |
| 4        | Check if battery voltage exists at distributor terminal-wire                                                                                 | Yes                                                | Go to next step                                                 |
|          |                                                                                                                                              | No                                                 | Check for open circuit in wiring from distributor to main relay |
| 5        | Check terminal-wire between distributor and ECU terminal 2G (California B6 and MTX) 2J (ATX except California B6) for continuity and ground  | Yes                                                | Go to next step                                                 |
|          |                                                                                                                                              | No                                                 | Repair or replace                                               |
| 6        | Check if ECU terminal 2G (California B6 and MTX) 2J (ATX except California B6) voltage is OK<br>See PIN VOLTAGE CHARTS article.              | Yes                                                | Replace ECU                                                     |
|          |                                                                                                                                              | No                                                 | Go to next step                                                 |
| 7        | Check if 0V or 4.5V—5.5V exists at distributor terminal-wire                                                                                 | Yes                                                | Replace distributor                                             |
|          |                                                                                                                                              | No                                                 | Go to next step                                                 |
| 8        | Check if 4.5V—5.5V exists at ECU terminal 2G (California B6 and MTX) 2J (ATX except California B6) (With distributor connector disconnected) | Yes                                                | Check for short circuit in wiring from distributor to ECU       |
|          |                                                                                                                                              | No                                                 | Replace ECU                                                     |

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Fig. 7: Trouble Code No. 03 (Diagnostic Flowchart)  
 Courtesy Of Mazda Motors Corp.

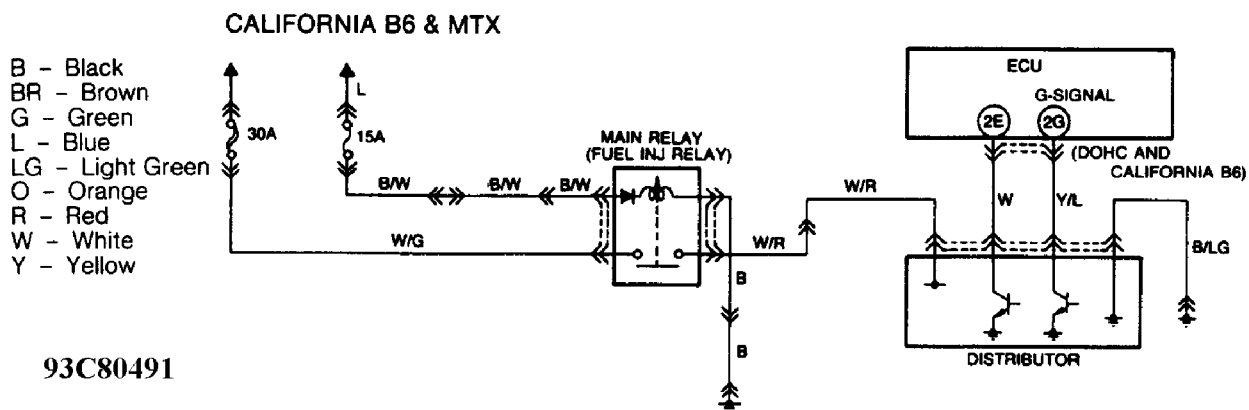


Fig. 8: Trouble Code No. 03 (Schematic - CA B6 & MTX)  
 Courtesy Of Mazda Motors Corp.

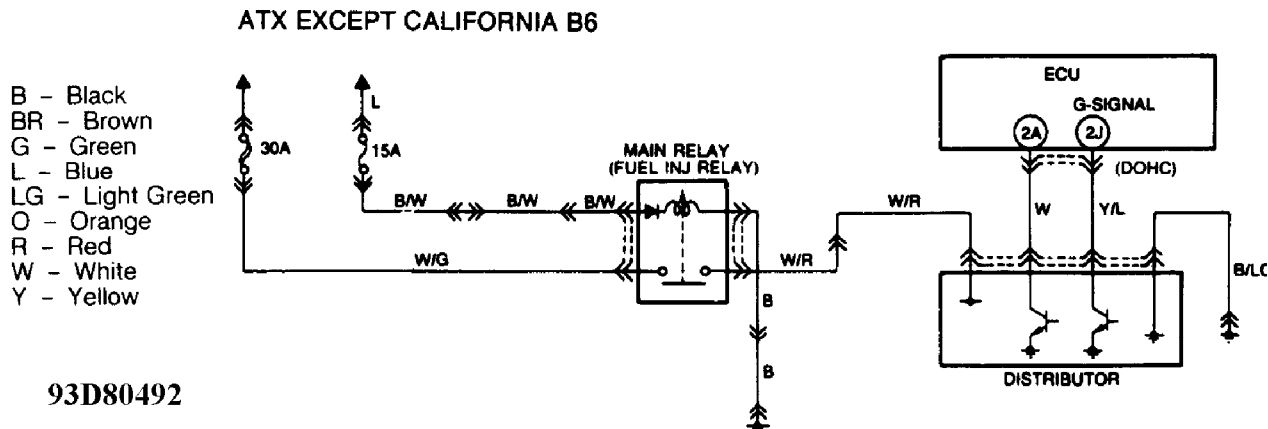


Fig. 9: Trouble Code No. 03 (Schematic - ATX Except CA)  
 Courtesy Of Mazda Motors Corp.

## TROUBLE CODE NO. 08 (AIRFLOW METER)

### TROUBLE CODE NO. 08 (AIRFLOW METER)

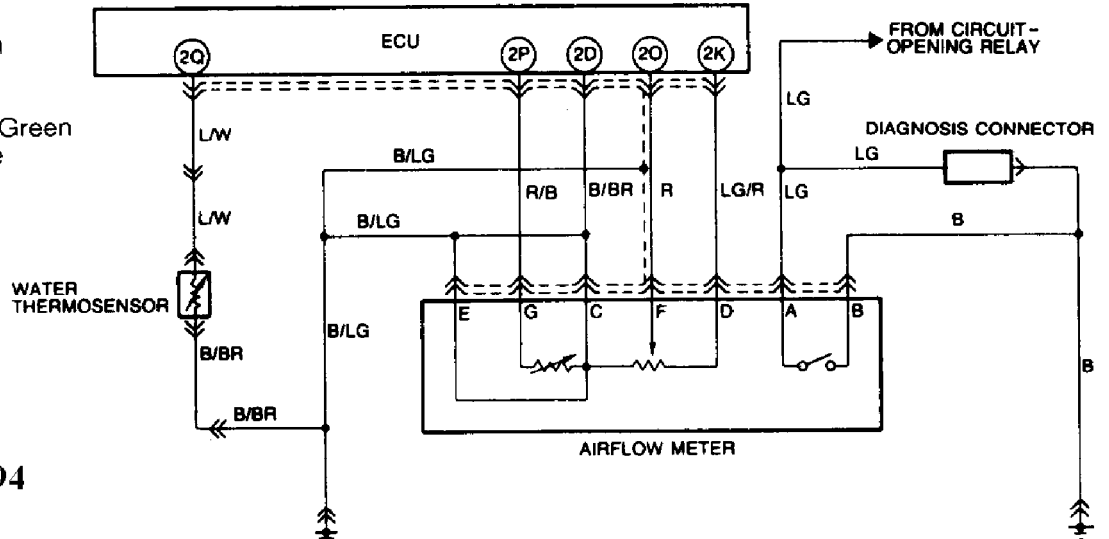
| CODE No. | 08 (AIRFLOW METER)                                                                                                        |                                                                                        |
|----------|---------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| STEP     | INSPECTION                                                                                                                | ACTION                                                                                 |
| 1        | Check airflow meter circuit for poor connection                                                                           | Yes Repair or replace connector                                                        |
|          |                                                                                                                           | No Go to next step                                                                     |
| 2        | Check if Code No.10 is also present                                                                                       | Yes Check for open circuit in wiring from airflow meter terminal-wire (B/LG) to ground |
|          |                                                                                                                           | No Go to next step                                                                     |
| 3        | Check if resistance of airflow meter is OK                                                                                | Yes Go to next step                                                                    |
|          |                                                                                                                           | No Replace airflow meter                                                               |
| 4        | Check wire harness between airflow meter and ECU for continuity                                                           | Yes Go to next step                                                                    |
|          |                                                                                                                           | No Repair or replace wire harness                                                      |
| 5        | Check if ECU terminals voltages are OK<br>California B6 and MTX: 2D, 2K and 2O<br>ATX except California B6: 2B, 2I and 3D | Yes Replace ECU                                                                        |
|          |                                                                                                                           | No Check for short circuit in wiring from airflow meter to ECU                         |

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Fig. 10: Trouble Code No. 08 (Diagnostic Flowchart)  
 Courtesy of Mazda Motors Corp.

### CALIFORNIA B6 & MTX

B - Black  
BR - Brown  
G - Green  
L - Blue  
LG - Light Green  
O - Orange  
R - Red  
W - White  
Y - Yellow

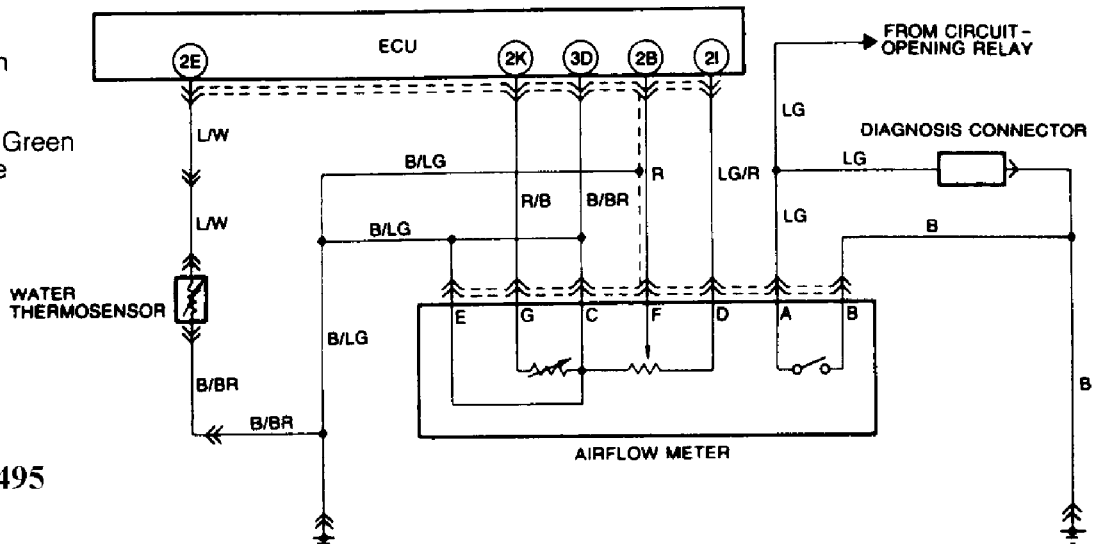


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Fig. 11: Trouble Code No. 08 (Schematic - CA B6 & MTX)  
Courtesy of Mazda Motors Corp.

### ATX EXCEPT CALIFORNIA B6

B - Black  
BR - Brown  
G - Green  
L - Blue  
LG - Light Green  
O - Orange  
R - Red  
W - White  
Y - Yellow



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Fig. 12: Trouble Code No. 08 (Schematic - ATX Except CA)  
Courtesy of Mazda Motors Corp.

TROUBLE CODE NO. 09 (COOLANT THERMOSENSOR)

## TROUBLE CODE NO. 09 (COOLANT THERMOSENSOR)

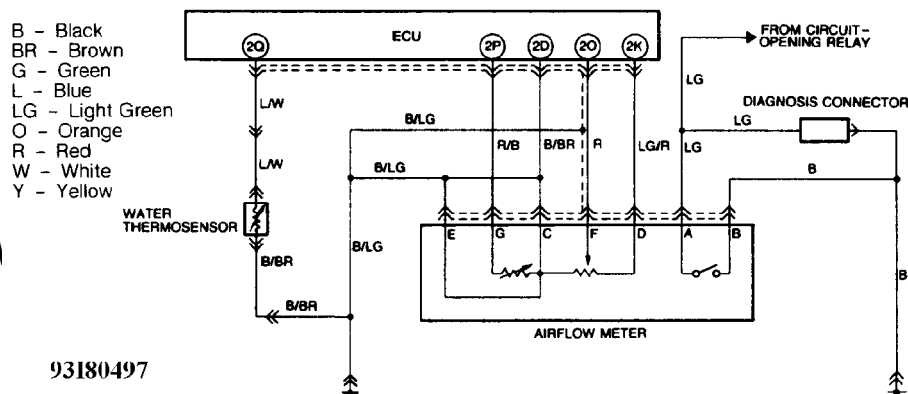
| CODE No.     | 09 (WATER THERMOSENSOR)                                                                                                                                |  |        |                                                                  |                    |                                                             |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------|------------------------------------------------------------------|--------------------|-------------------------------------------------------------|
| STEP         | INSPECTION                                                                                                                                             |  | ACTION |                                                                  |                    |                                                             |
| 1            | Check water thermosensor circuit for poor connection                                                                                                   |  | Yes    | Repair or replace connector                                      |                    |                                                             |
|              |                                                                                                                                                        |  | No     | Go to next step                                                  |                    |                                                             |
| 2            | Check wire harness between water thermosensor and ECU for continuity                                                                                   |  | Yes    | Go to next step                                                  |                    |                                                             |
|              |                                                                                                                                                        |  | No     | Repair or replace                                                |                    |                                                             |
|              |                                                                                                                                                        |  |        |                                                                  | Water thermosensor | ECU                                                         |
|              |                                                                                                                                                        |  |        |                                                                  | A (L/W)            | 2Q (California B6 and MTX)<br>2E (ATX except California B6) |
| B (B/BR)     | 2D (California B6 and MTX)<br>3D (ATX except California B6)                                                                                            |  |        |                                                                  |                    |                                                             |
| 3            | Check if resistance of water thermosensor is OK                                                                                                        |  | Yes    | Go to next step                                                  |                    |                                                             |
|              |                                                                                                                                                        |  | No     | Replace water thermosensor                                       |                    |                                                             |
|              |                                                                                                                                                        |  |        |                                                                  | Coolant temp.      | Resistance (kΩ)                                             |
|              |                                                                                                                                                        |  |        |                                                                  | -20°C (-4°F)       | 14.6—17.8                                                   |
|              |                                                                                                                                                        |  |        |                                                                  | 20°C (68°F)        | 2.21—2.69                                                   |
| 80°C (176°F) | 0.29—0.35                                                                                                                                              |  |        |                                                                  |                    |                                                             |
| 4            | Check if same code No. is present following after-repair procedure. *                                                                                  |  | Yes    | Go to next step                                                  |                    |                                                             |
|              |                                                                                                                                                        |  | No     | Water thermosensor and circuit OK                                |                    |                                                             |
| 5            | Check if ECU terminals voltages are OK<br>California B6 and MTX...2D and 2Q<br>ATX except California B6...2E and 3D<br>See PIN VOLTAGE CHARTS article. |  | Yes    | Replace ECU                                                      |                    |                                                             |
|              |                                                                                                                                                        |  | No     | Check for short circuit in wiring from water thermosensor to ECU |                    |                                                             |

\* - See AFTER-REPAIR PROCEDURE under SELF-DIAGNOSTIC SYSTEM.

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Fig. 13: Trouble Code No. 09 (Diagnostic Flowchart)  
Courtesy of Mazda Motors Corp.

CALIFORNIA B6 & MTX



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Fig. 14: Trouble Code No. 09 (Schematic - CA B6 & MTX)  
Courtesy of Mazda Motors Corp.

# ATX EXCEPT CALIFORNIA B6

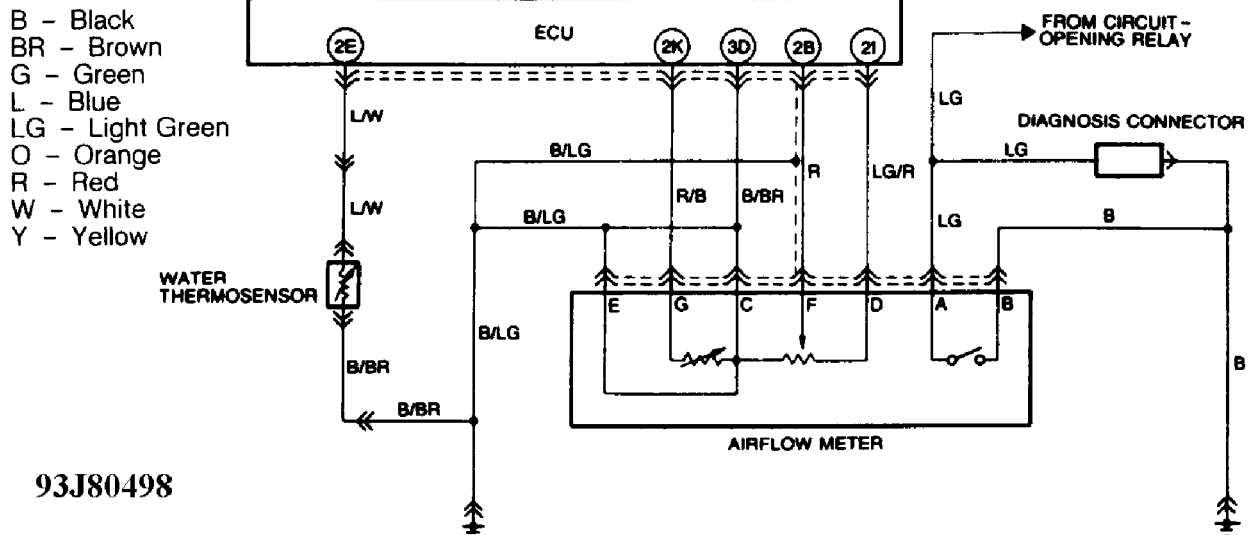


Fig. 15: Trouble Code No. 09 (Schematic - ATX Except CA)  
 Courtesy of Mazda Motors Corp.

## TROUBLE CODE NO. 10 (INTAKE AIR THERMOSENSOR)

### TROUBLE CODE NO. 10 (INTAKE AIR THERMOSENSOR)

| CODE No. | 10 (INTAKE AIR THERMOSENSOR — IN AIRFLOW METER)                                                                                             |                                                                                                    |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| STEP     | INSPECTION                                                                                                                                  | ACTION                                                                                             |
| 1        | Check intake air thermosensor circuit for poor connection                                                                                   | Yes Repair or replace connector                                                                    |
|          |                                                                                                                                             | No Go to next step                                                                                 |
| 2        | Check if Code No.08 is also present                                                                                                         | Yes Check for open circuit in wiring from airflow meter terminal wires (B/LG) and (B/BR) to ground |
|          |                                                                                                                                             | No Go to next step                                                                                 |
| 3        | Check wire harness between intake air thermosensor and ECU for continuity                                                                   | Yes Go to next step                                                                                |
|          |                                                                                                                                             | No Repair or replace                                                                               |
| 4        | Check if resistance of airflow meter between terminals C (B/BR) and G (R/B) is OK                                                           | Yes Go to next step                                                                                |
|          |                                                                                                                                             | No Replace airflow meter                                                                           |
| 5        | Check if same code No. is present following after-repair procedure. *                                                                       | Yes Go to next step                                                                                |
|          |                                                                                                                                             | No Intake air thermosensor and circuit OK                                                          |
| 6        | Check if ECU terminals voltages are OK California B6 and MTX, 2D and 2P ATX except California B6, 2K and 3D See PIN VOLTAGE CHARTS article. | Yes Replace ECU                                                                                    |
|          |                                                                                                                                             | No Check for short circuit in wiring from intake air thermosensor to ECU                           |

\* - See AFTER-REPAIR PROCEDURE under SELF-DIAGNOSTIC SYSTEM.

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Fig. 16: Trouble Code No. 09 (Diagnostic Flowchart)  
 Courtesy of Mazda Motors Corp.

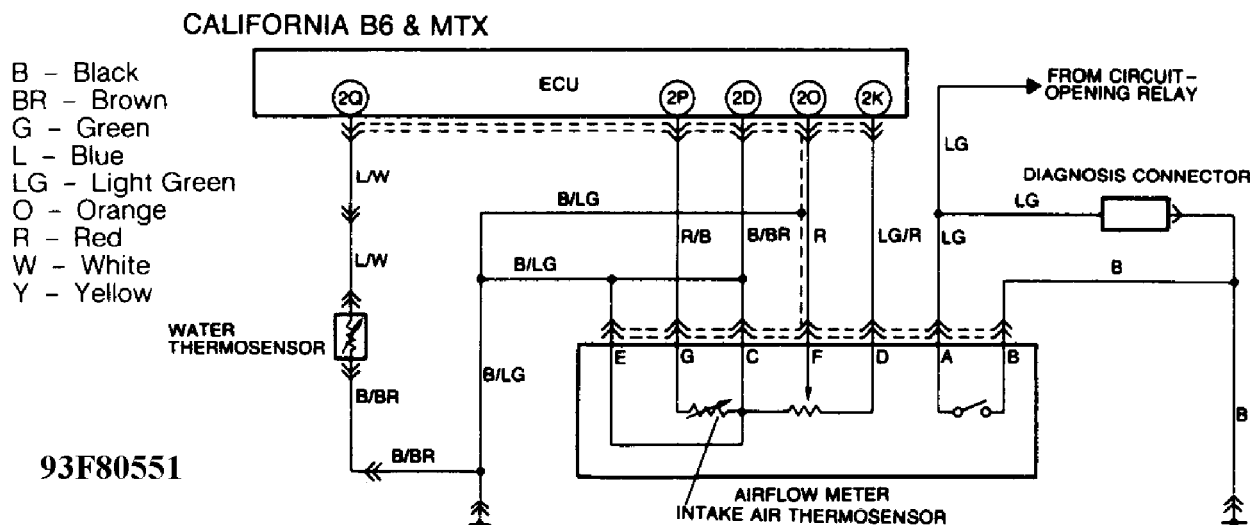


Fig. 17: Trouble Code No. 09 (Schematic - CA B6 & MTX)  
 Courtesy of Mazda Motors Corp.

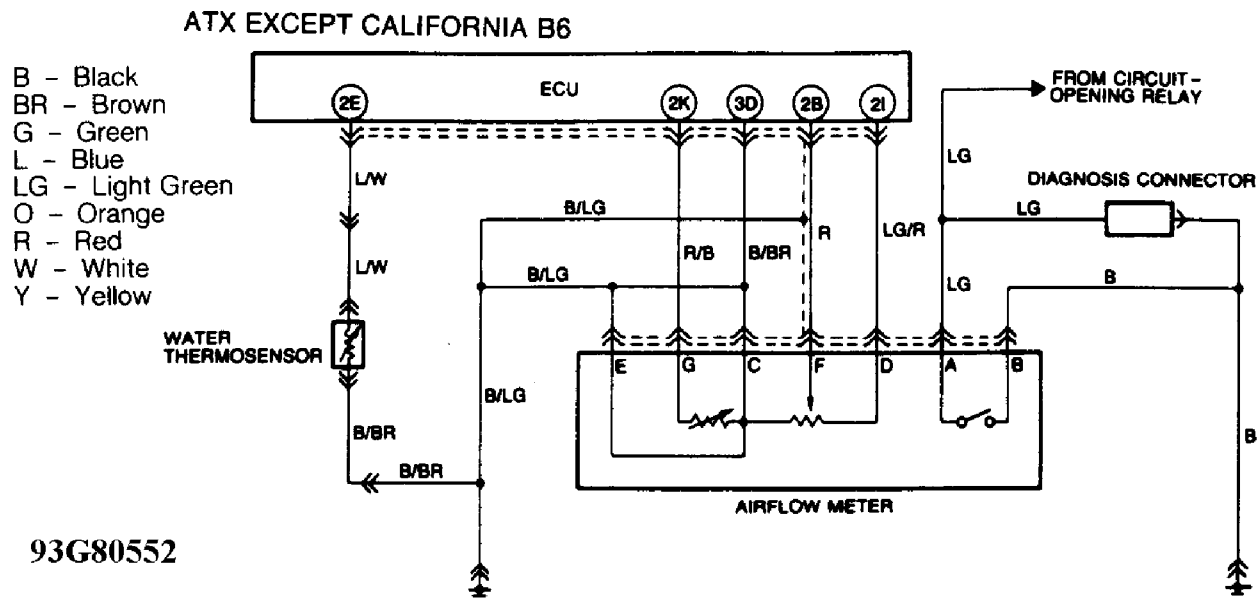


Fig. 18: Trouble Code No. 09 (Schematic - ATX Except CA)  
 Courtesy of Mazda Motors Corp.

#### TROUBLE CODE NO. 12 (THROTTLE SENSOR)

## TROUBLE CODE NO. 12 (THROTTLE SENSOR)

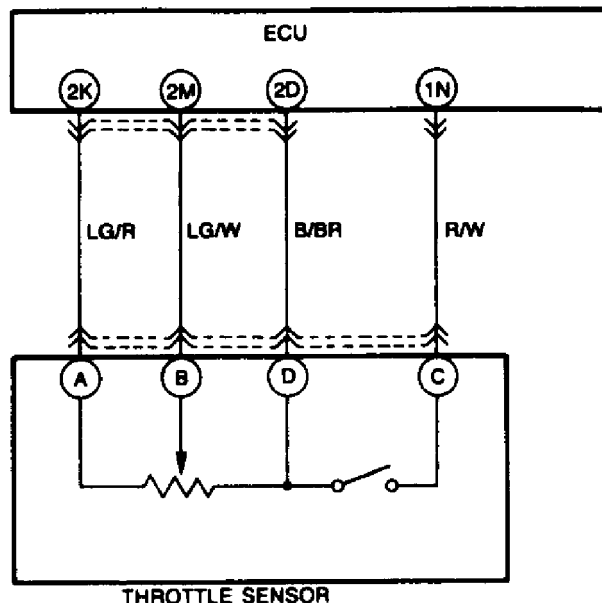
| CODE No. | 12 (THROTTLE SENSOR — ATX)                                                                                |     |                                                               |
|----------|-----------------------------------------------------------------------------------------------------------|-----|---------------------------------------------------------------|
| STEP     | INSPECTION                                                                                                |     | ACTION                                                        |
| 1        | Check throttle sensor circuit for poor connection                                                         | Yes | Repair or replace connector                                   |
|          |                                                                                                           | No  | Go to next step                                               |
| 2        | Check wire harness between throttle sensor and ECU for continuity                                         | Yes | Go to next step                                               |
|          |                                                                                                           | No  | Repair or replace                                             |
|          |                                                                                                           |     |                                                               |
|          |                                                                                                           |     |                                                               |
|          |                                                                                                           |     |                                                               |
| 3        | Check if resistances between terminals B (LG/W) and D (B/BR) are OK                                       | Yes | Go to next step                                               |
|          |                                                                                                           | No  | Adjust or replace throttle sensor                             |
|          |                                                                                                           |     |                                                               |
|          |                                                                                                           |     |                                                               |
|          |                                                                                                           |     |                                                               |
| 4        | Check if ECU terminal 2M (California B6) 2F (Others) voltage is OK<br><br>See PIN VOLTAGE CHARTS article. | Yes | Replace ECU                                                   |
|          |                                                                                                           | No  | Check for short circuit in wiring from throttle sensor to ECU |

**93H80553**

Fig. 19: Trouble Code No. 12 (Diagnostic Flowchart)  
Courtesy of Mazda Motors Corp.

### CALIFORNIA B6 & MTX

B – Black  
 BR – Brown  
 G – Green  
 L – Blue  
 LG – Light Green  
 O – Orange  
 R – Red  
 W – White  
 Y – Yellow

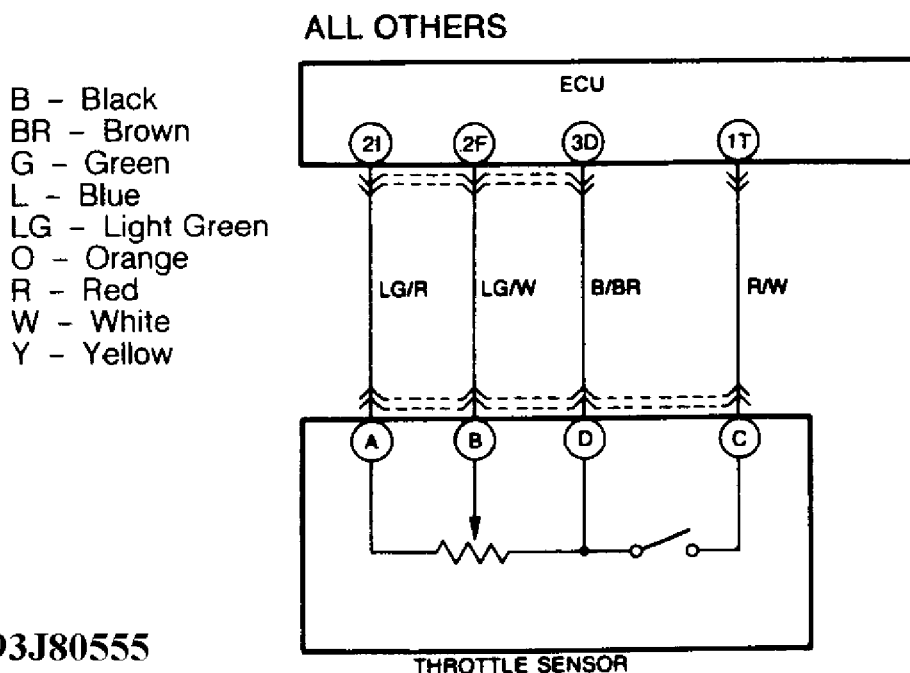


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**93I80554**

Fig. 20: Trouble Code No. 12 (Schematic - CA B6 & MTX)  
Courtesy of Mazda Motors Corp.



**93J80555**  
 Fig. 21: Trouble Code No. 03 (Schematic - All Others)  
 Courtesy of Mazda Motors Corp.

TRouble CODE NO. 14 (ATMOSPHERIC PRESSURE SENSOR)

- \* Replace ECU

TRouble CODE NO. 15 (OXYGEN SENSOR)

### TRouble CODE NO. 15 (OXYGEN SENSOR)

| Note<br>• If Codes No. 15 and 17 are both present, first perform the checking procedure for Code No. 17. |                                                                                                                                                                      |                                                                 |
|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| STEP                                                                                                     | INSPECTION                                                                                                                                                           | ACTION                                                          |
| 1                                                                                                        | Check oxygen sensor circuit for poor connection                                                                                                                      | Yes Repair or replace connector                                 |
|                                                                                                          |                                                                                                                                                                      | No Go to next step                                              |
| 2                                                                                                        | Check if oxygen sensor output voltage is OK                                                                                                                          | Yes Go to next step                                             |
|                                                                                                          |                                                                                                                                                                      | No Replace oxygen sensor                                        |
| 3                                                                                                        | Check wire harness between oxygen sensor and ECU terminal 2N (California B6 and MTX) 2C (ATX except California B6) for continuity<br>See PIN VOLTAGE CHARTS article. | Yes Go to next step                                             |
|                                                                                                          |                                                                                                                                                                      | No Repair or replace                                            |
| 4                                                                                                        | Check if ECU terminal 2N (California B6 and MTX) 2C (ATX except California B6) voltage is OK                                                                         | Yes Go to next step                                             |
|                                                                                                          |                                                                                                                                                                      | No Check for short circuit in wiring from oxygen sensor to ECU  |
| 5                                                                                                        | Check if sensitivity of oxygen sensor is OK                                                                                                                          | Yes Replace ECU                                                 |
|                                                                                                          |                                                                                                                                                                      | No Try known good oxygen sensor and check if condition improves |

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 Fig. 22: Trouble Code No. 15 (Diagnostic Flowchart)  
 Courtesy of Mazda Motors Corp.

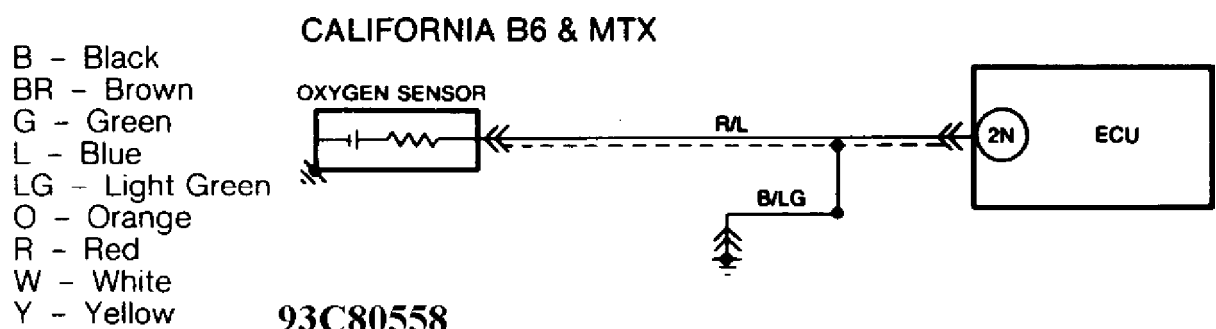


Fig. 23: Trouble Code No. 15 (Schematic - CA B6 & MTX)  
Courtesy of Mazda Motors Corp.

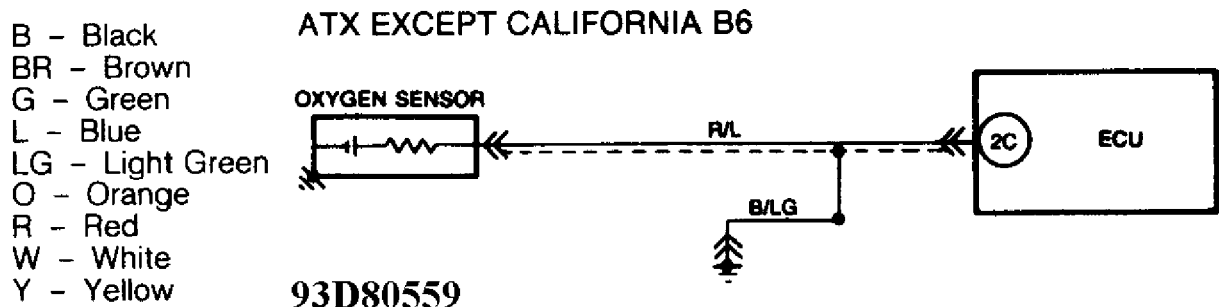


Fig. 24: Trouble Code No. 15 (Schematic - ATX Except CA)  
Courtesy of Mazda Motors Corp.

TROUBLE CODE NO. 17 (OXYGEN SENSOR - INACCURATE)

## TROUBLE CODE NO. 17 (OXYGEN SENSOR – INACCURATE)

| STEP | INSPECTION                                                                                                                                                                                  |     | ACTION                                                                                                                                                                                                                                                                                                                 |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Check if same code No. is present following after-repair procedure. *                                                                                                                       | Yes | Go to next step                                                                                                                                                                                                                                                                                                        |
|      |                                                                                                                                                                                             | No  | Check oxygen sensor circuit for poor connection<br>⇒ If OK, perform troubleshooting Code No.15<br>⇒ If not OK, repair or replace connector                                                                                                                                                                             |
| 2    | Check monitor lamp of Self-Diagnosis Checker illuminate at idle after warming-up engine and running it at 2,500—3,000 rpm for 3 minutes                                                     | Yes | Go to next step<br><br><b>Note</b><br>• A/F mixture rich                                                                                                                                                                                                                                                               |
|      |                                                                                                                                                                                             | No  | Go to Step 5<br><br><b>Note</b><br>• A/F mixture is lean or misfire occurring                                                                                                                                                                                                                                          |
| 3    | Check for correct fuel line pressure at idle<br><br><b>Fuel line pressure:</b><br>265—314 kPa (2.7—3.2 kgf/cm <sup>2</sup> , 38—46 psi)<br>(Vacuum hose to pressure regulator disconnected) | Yes | Go to next step                                                                                                                                                                                                                                                                                                        |
|      |                                                                                                                                                                                             | No  | <b>High pressure</b><br>Check if fuel return hose is clogged or restricted<br>⇒ If OK, replace pressure regulator<br>⇒ If not OK, repair or replace                                                                                                                                                                    |
| 4    | Check injectors for fuel leakage                                                                                                                                                            | Yes | Replace injector                                                                                                                                                                                                                                                                                                       |
|      |                                                                                                                                                                                             | No  | Check if water thermosensor is OK<br>⇒ If OK, Go to Step 11<br>⇒ If not OK, replace water thermosensor                                                                                                                                                                                                                 |
| 5    | Disconnect each high-tension lead at idle and check if engine speed decreases equally at each cylinder                                                                                      | Yes | Go to next step                                                                                                                                                                                                                                                                                                        |
|      |                                                                                                                                                                                             | No  | Go to Step 8                                                                                                                                                                                                                                                                                                           |
| 6    | Check for correct fuel line pressure at idle<br><br><b>Fuel line pressure:</b><br>265—314 kPa (2.7—3.2 kgf/cm <sup>2</sup> , 38—46 psi) (Vacuum hose to pressure regulator disconnected)    | Yes | Go to next step                                                                                                                                                                                                                                                                                                        |
|      |                                                                                                                                                                                             | No  | <b>Low pressure</b><br>Check fuel line pressure while pinching fuel return hose<br>⇒ If fuel line pressure quickly increases, check pressure regulator<br>⇒ If fuel line pressure gradually increases, check for clogging between fuel pump and pressure regulator<br>If not clogged, check fuel pump maximum pressure |
| 7    | Check intake air system components for air leakage                                                                                                                                          | Yes | Go to Step 11                                                                                                                                                                                                                                                                                                          |
|      |                                                                                                                                                                                             | No  | Replace                                                                                                                                                                                                                                                                                                                |
| 8    | Check for misfire of dead cylinder from Step 5 inspection                                                                                                                                   | Yes | Repair or replace ignition system                                                                                                                                                                                                                                                                                      |
|      |                                                                                                                                                                                             | No  | Go to next step                                                                                                                                                                                                                                                                                                        |
| 9    | Check for injector operating sound at idle of dead cylinder from Step 5 inspection                                                                                                          | Yes | Go to next step                                                                                                                                                                                                                                                                                                        |
|      |                                                                                                                                                                                             | No  | Check for battery voltage at injector connector terminal-wire (W/R)<br>⇒ If Yes, replace injector<br>⇒ If No, check wire harness for short or open                                                                                                                                                                     |
| 10   | Replace injector at dead cylinder from Step 5 inspection<br><br>Check if same code No. is present following after-repair procedure. *                                                       | Yes | Go to next step                                                                                                                                                                                                                                                                                                        |
|      |                                                                                                                                                                                             | No  | Removed injector at fault                                                                                                                                                                                                                                                                                              |
| 11   | Try known good ECU and check if condition improves                                                                                                                                          |     |                                                                                                                                                                                                                                                                                                                        |

\* – See AFTER-REPAIR PROCEDURE under SELF-DIAGNOSTIC SYSTEM.

93G80560

Fig. 25: Trouble Code No. 17 (Diagnostic Flowchart)  
Courtesy of Mazda Motors Corp.

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## TROUBLE CODE NO. 25 (PRESSURE REGULATOR SOLENOID VALVE)

## TROUBLE CODE NO. 25 (PRESSURE REGULATOR SOLENOID VALVE)

| STEP | INSPECTION                                                                                                                                                                                                                                 |     | ACTION                                                                                                                   |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|--------------------------------------------------------------------------------------------------------------------------|
| 1    | Disconnect connector from ECU and check if battery voltage exists at ECU terminal 2R (California B6) 2T (MTX except California B6) 3M (ATX except California B6) wire (G/O) with ignition switch ON<br><br>See PIN VOLTAGE CHARTS article. | Yes | Check ECU terminal connector for poor connection<br><br>⇒ If OK, replace ECU<br>⇒ If not OK, repair or replace connector |
|      |                                                                                                                                                                                                                                            | No  | Go to next step                                                                                                          |
| 2    | In same condition as Step 1, check if battery voltage exists at solenoid valve connector terminal-wire (G/O)                                                                                                                               | Yes | Repair or replace wire (G/O)                                                                                             |
|      |                                                                                                                                                                                                                                            | No  | Go to next step                                                                                                          |
| 3    | Check if solenoid valve is OK                                                                                                                                                                                                              | Yes | Check for short or open circuit in wiring from main relay (FUEL INJ relay) to solenoid valve                             |
|      |                                                                                                                                                                                                                                            | No  | Replace solenoid valve                                                                                                   |

93H80561

Fig. 26: Trouble Code No. 25 (Diagnostic Flowchart)  
Courtesy of Mazda Motors Corp.

## TROUBLE CODE NO. 26 (PURGE CONTROL SOLENOID VALVE)

## TROUBLE CODE NO. 26 (PURGE CONTROL SOLENOID VALVE)

| STEP | INSPECTION                                                                                                                                                                                                                   |     | ACTION                                                                                                                   |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|--------------------------------------------------------------------------------------------------------------------------|
| 1    | Disconnect connector from ECU and check if battery voltage exists at ECU terminal 2X (California B6 and MTX) 2O (ATX except California B6) wire harness (W/L) with ignition switch ON<br><br>See PIN VOLTAGE CHARTS article. | Yes | Check ECU terminal connector for poor connection<br><br>⇒ If OK, replace ECU<br>⇒ If not OK, repair or replace connector |
|      |                                                                                                                                                                                                                              | No  | Go to next step                                                                                                          |
| 2    | In same condition as Step 1, check if battery voltage exists at solenoid valve connector terminal-wire (W/L)                                                                                                                 | Yes | Repair or replace wire harness (W/L)                                                                                     |
|      |                                                                                                                                                                                                                              | No  | Go to next step                                                                                                          |
| 3    | Check if solenoid valve is OK                                                                                                                                                                                                | Yes | Check for short or open circuit in wiring from main relay (FUEL INJ relay) to solenoid valve                             |
|      |                                                                                                                                                                                                                              | No  | Replace solenoid valve                                                                                                   |

93B80565

Fig. 27: Trouble Code No. 26 (Diagnostic Flowchart)  
Courtesy of Mazda Motors Corp.

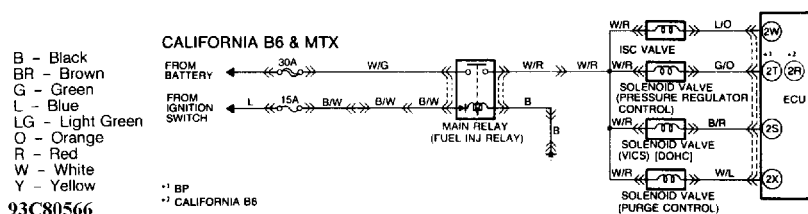
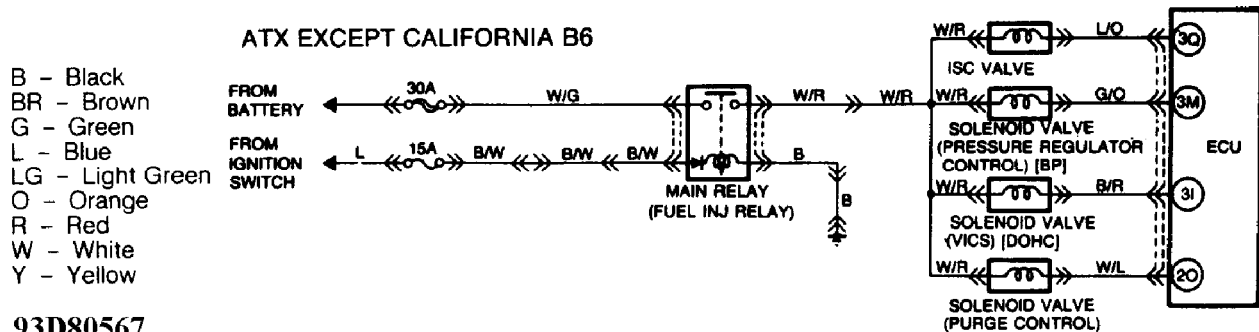


Fig. 28: Trouble Code No. 26 (Schematic - CA B6 & MTX)  
Courtesy of Mazda Motors Corp.



93D80567  
 Fig. 29: Trouble Code No. 26 (Schematic - ATX Except CA)  
 Courtesy of Mazda Motors Corp.

### TROUBLE CODE NO. 34 (IDLE SPEED CONTROL)

## TROUBLE CODE NO. 34 (IDLE SPEED CONTROL)

| STEP | INSPECTION                                                                                                                                                                    | ACTION                                                                                                                      |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 1    | Disconnect connector from ECU and check if battery voltage exists at ECU terminal 2W (California B6 and MTX) 3Q (ATX except California B6) wire (L/O) with ignition switch ON | Yes<br>Check ECU terminal connector for poor connection<br>⇒ If OK, replace ECU<br>⇒ If not OK, repair or replace connector |
|      | See PIN VOLTAGE CHARTS article.                                                                                                                                               | No<br>Go to next step                                                                                                       |
| 2    | In same condition as Step 1, check if battery voltage exists at ISC valve connector terminal-wire (L/O)                                                                       | Yes<br>Repair or replace wire (L/O)                                                                                         |
|      |                                                                                                                                                                               | No<br>Go to next step                                                                                                       |
| 3    | Check ISC valve for correct resistance<br><br><b>Resistance: 11—13Ω (at 20°C [68°F])</b>                                                                                      | Yes<br>Check for short or open circuit in wiring from main relay (FUEL INJ relay) to ISC valve                              |
|      |                                                                                                                                                                               | No<br>Replace ISC valve                                                                                                     |

93E80568  
 Fig. 30: Trouble Code No. 34 (Diagnostic Flowchart)  
 Courtesy of Mazda Motors Corp.

### TROUBLE CODE NO. 41 (VARIABLE INERTIA CHARGING SYSTEM - DOHC)

## TROUBLE CODE NO. 41 (VARIABLE INERTIA CHARGING SYSTEM - DOHC)

| STEP | INSPECTION                                                                                                                             | ACTION                                                                                                                      |
|------|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 1    | Disconnect connector from ECU and check if battery voltage exists at ECU terminal 2S (MTX) 3I (ATX) wire (B/R) with ignition switch ON | Yes<br>Check ECU terminal connector for poor connection<br>⇒ If OK, replace ECU<br>⇒ If not OK, repair or replace connector |
|      | See PIN VOLTAGE CHARTS article.                                                                                                        | No<br>Go to next step                                                                                                       |
| 2    | In same condition as Step 1, check if battery voltage exists at solenoid valve connector terminal-wire (B/R)                           | Yes<br>Repair or replace wire (B/R)                                                                                         |
|      |                                                                                                                                        | No<br>Go to next step                                                                                                       |
| 3    | Check if solenoid valve is OK                                                                                                          | Yes<br>Check for short or open circuit in wiring from main relay to solenoid valve                                          |
|      |                                                                                                                                        | No<br>Replace solenoid valve                                                                                                |

93F80569  
 Fig. 31: Trouble Code No. 41 (Diagnostic Flowchart)  
 Courtesy of Mazda Motors Corp.

If no hard fault codes (or only pass codes) are present, driveability symptoms exist or intermittent codes exist, proceed to the H - TESTS W/O CODES article for diagnosis by symptom (i.e. ROUGH IDLE, NO START, etc.) or intermittent diagnostic procedures.

**END OF ARTICLE**