

G - TESTS W/CODES - TESTS

Article Text

2000 Mazda MX-5 Miata

For Yorba Linda Miata

Copyright © 1998 Mitchell Repair Information Company, LLC

Monday, May 12, 2003 01:43PM

ARTICLE BEGINNING

2000 ENGINE PERFORMANCE

Self-Diagnostics

Miata

DIAGNOSTIC TESTS

CAUTION: Ensure ignition is off before disconnecting harness connector from any component or control module. If PCM replacement is instructed in following testing, always ensure PCM connectors and ground circuits are okay. If either are suspect, repair and repeat testing to confirm PCM malfunction.

NOTE: For connector terminal identification, see CONNECTOR IDENTIFICATION in SELF-DIAGNOSTICS - INTRODUCTION - MIATA, MILLENIA, MPV & PROTEGE article. See appropriate wiring diagram in WIRING DIAGRAMS article. Always perform applicable drive cycle test after repair is performed to verify that DTC does not reset.

NOTE: For following tests, manufacturer recommends use of New Generation Star (NGS) tester. NGS tester is referred to as scan tool. For more information, see SELF-DIAGNOSTICS - INTRODUCTION - MIATA, MILLENIA, MPV & PROTEGE article.

DTC P0102: MASS AIRFLOW (MAF) SENSOR CIRCUIT LOW INPUT

Condition

DTC is set when input voltage from MAF sensor is less than .86 volt with engine started for 3 seconds. Possible causes are:

- * MAF sensor malfunction.
- * Open or short circuit between main relay and MAF sensor.
- * Open or short circuit between Powertrain Control Module (PCM) and MAF sensor.

Diagnosis & Repair Procedure

1) Ensure FREEZE FRAME PID data has been recorded. Check service bulletins. Inspect all applicable harness connectors. If problem is found, repair as necessary and go to step 4). If no problem is found, go to next step.

2) Using scan tool, access PID/DATA MONITOR. Record PID data for MAF V. If MAF V is not .86-4.9 volts, check for open circuit on Light Green/Black wire between PCM connector No. 2 terminal "L" and MAF sensor terminal "B". If problem is found, repair as necessary and go to step 4). If no problem is found, go to next step. If MAF V is .86-4.9 volts, go to step 6).

3) Turn ignition off. Disconnect MAF sensor connector. Turn ignition on. Measure voltage between ground and harness connector terminal "C" (White/Red wire). If battery voltage is present, go to

G - TESTS W/CODES - TESTS

Article Text (p. 2)

2000 Mazda MX-5 Miata

For Yorba Linda Miata

Copyright © 1998 Mitchell Repair Information Company, LLC

Monday, May 12, 2003 01:43PM

next step. If battery voltage is not present, check for open or short circuit on White/Red wire between MAF sensor and main relay. If problem is found, repair as necessary and go to step 4).

4) Turn ignition off. Check continuity of Black/Blue wire between MAF harness connector terminal "A" and ground. If continuity exists, go to next step. If continuity does not exist, repair open Black/Blue wire and go to step 4).

5) Disconnect PCM connectors. Check continuity of wire between MAF harness connector terminal "B" and PCM harness connector No. 2 terminal "L". If continuity exists, go to next step. If continuity does not exist, repair open wire and go to step 4).

6) Check continuity between MAF harness connector terminal "B" and ground. Check continuity between MAF harness connector terminals "A" and "B". If continuity does not exist, replace MAF sensor and go to next step. If continuity exists, repair short to ground or between circuits.

7) Erase DTC. See CLEARING CODES in SELF-DIAGNOSTICS - INTRODUCTION - MIATA, MILLENIA, MPV & PROTEGE article. Start engine. Using scan tool, access PID/DATA MONITOR. Record PID data for MAF V. If MAF V should be .86-4.9 volts. If same DTC is present, replace PCM. If any other DTC is present, go to appropriate test.

DTC P0103: MASS AIRFLOW (MAF) SENSOR CIRCUIT HIGH INPUT

Condition

DTC is set when input voltage from MAF sensor is more than 4.9 volts with engine started for 3 seconds. Possible causes are:

- * MAF sensor malfunction.
- * Open or short circuit between Powertrain Control Module (PCM) and MAF sensor.

Diagnosis & Repair Procedure

1) Ensure FREEZE FRAME PID data has been recorded. Check service bulletins. Inspect all applicable harness connectors. If problem is found, repair as needed.

2) Using scan tool, access PID/DATA MONITOR. Record PID data for MAF V. If MAF V is not .86-4.9 volts, go to next step. If MAF V is .86-4.9 volts, problem is intermittent (not current).

3) Turn ignition off. Disconnect MAF connector. Repair any bent or corroded terminals. Turn ignition on. Check voltage between MAF harness connector terminal "B" (Light Green/Black wire) and ground. If voltage is .1 volt or more, repair short to voltage and go to step 4). If voltage is less than .1 volt, go to next step.

4) Turn ignition off. Disconnect PCM connectors. Repair any bent or corroded terminals. Go to next step.

5) Erase DTC. See CLEARING CODES in SELF-DIAGNOSTICS - INTRODUCTION - MIATA, MILLENIA, MPV & PROTEGE article. Start engine. Using scan tool, access PID/DATA MONITOR. Record PID data for MAF V. If MAF V should be .86-4.9 volts. If same DTC is present, replace PCM. If any other DTC is present, go to appropriate test.