

# 1998 XJ RANGE - Electronic Engine Controls - 303-14

## **A : DTC P0101, P0102, P0103; MASS AIR FLOW (MAF) SENSOR RANGE/PERFORMANCE, HIGH/LOW VOLTAGE**

### **NOTE:**

Before commencing this test, check the air filter for blockage, the engine air intake and breather systems for leaks, and the TPS for additional DTCs.

### **A1 : CHECK THE MAF SENSOR SENSE CIRCUIT FOR HIGH RESISTANCE**

1. Disconnect the battery negative terminal.
2. Disconnect the ECM electrical connector, EM12.
3. Disconnect the MAF sensor electrical connector, PI35.
4. Measure the resistance between EM12, pin 13 (GY) and PI35, pin 02 (GY).

#### **•Is the resistance greater than 5 ohms?**

#### **-> Yes**

REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC. TEST the system for normal operation.

#### **-> No**

Goto <<A2>>

### **A2 : CHECK THE MAF SENSOR SENSE CIRCUIT FOR SHORT TO HIGH VOLTAGE**

1. Reconnect the battery negative terminal.
2. Turn the ignition switch to the **ON** position.
3. Measure the voltage between the MAF sensor electrical connector, PI35, pin 02 (GY) and GROUND.

#### **•Is the voltage greater than 3 volts?**

#### **-> Yes**

REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC. TEST the system for normal operation.

#### **-> No**

Goto <<A3>>

### **A3 : CHECK THE MAF SENSOR SENSE CIRCUIT FOR SHORT TO GROUND**

### **NOTE:**

The short to GROUND may be intermittent. Move the wiring to attempt to reproduce the conditions under which the DTC was logged, and visually inspect the harness for any signs of chafing, see 'visual inspection chart'.

1. Turn the ignition switch to the **OFF** position.
2. Measure the resistance between PI35, pin 02 (GY) and GROUND.

#### **•Is the resistance less than 10,000 ohms?**

#### **-> Yes**

REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC. TEST the system for normal operation.

#### **-> No**

Goto <<A4>>

## **A4 : CHECK THE MAF SENSOR SUPPLY CIRCUIT VOLTAGE**

1. Reconnect the ECM electrical connector, EM12.
2. Turn the ignition switch to the **ON** position.
3. Measure the voltage between the MAF sensor electrical connector, PI35, pin 01 (WU) and GROUND.

•Is the voltage greater than 10 volts?

-> **Yes**

Goto <<A5>>

-> **No**

REPAIR the circuit between the MAF sensor electrical connector, PI35, pin 01 (WU) and BATTERY. This circuit includes the EMS control relay, fuse 12 of the EMS fuse board, and splices in the harness. For additional information, refer to the wiring diagrams. CLEAR the DTC. TEST the system for normal operation.

## **A5 : CHECK THE MAF SENSOR SUPPLY CIRCUIT FOR HIGH RESISTANCE**

1. Disconnect the battery negative terminal.
2. Disconnect the EMS fuse board electrical connector, EM20.
3. Measure the resistance between EM20, pin 10 (WU) and PI35, pin 01 (WU).

•Is the resistance greater than 5 ohms?

-> **Yes**

REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC. TEST the system for normal operation.

-> **No**

INSTALL a new MAF sensor. CLEAR the DTC. TEST the system for normal operation.