

# Air Flow Meter/Sensor: Description and Operation

## MASS AIR FLOW (MAF) SENSOR

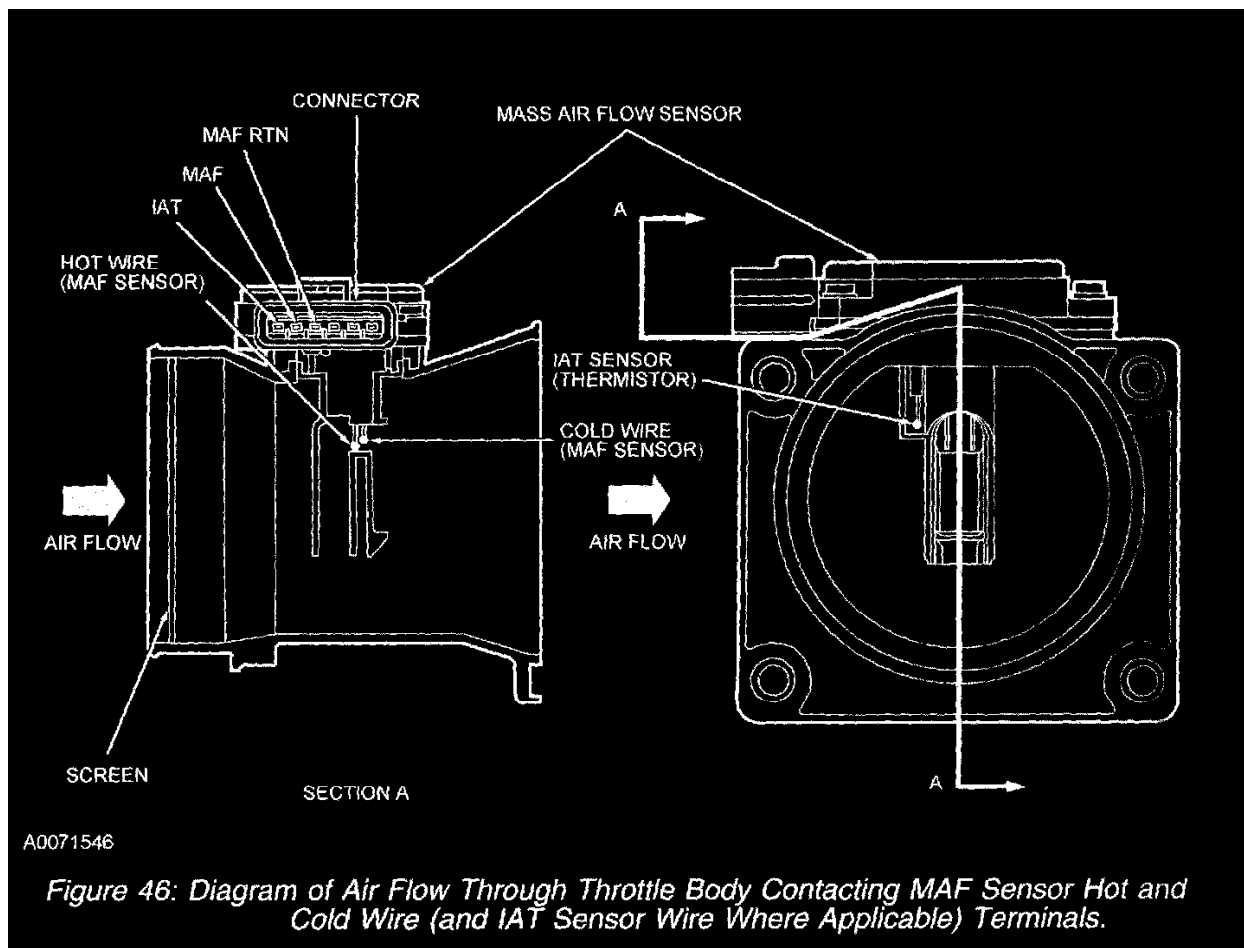
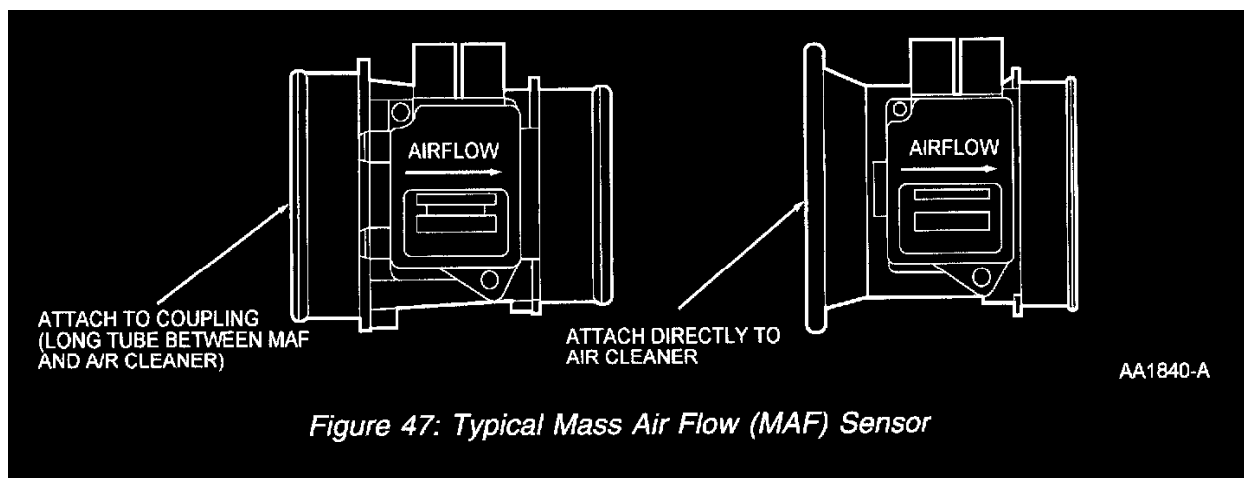
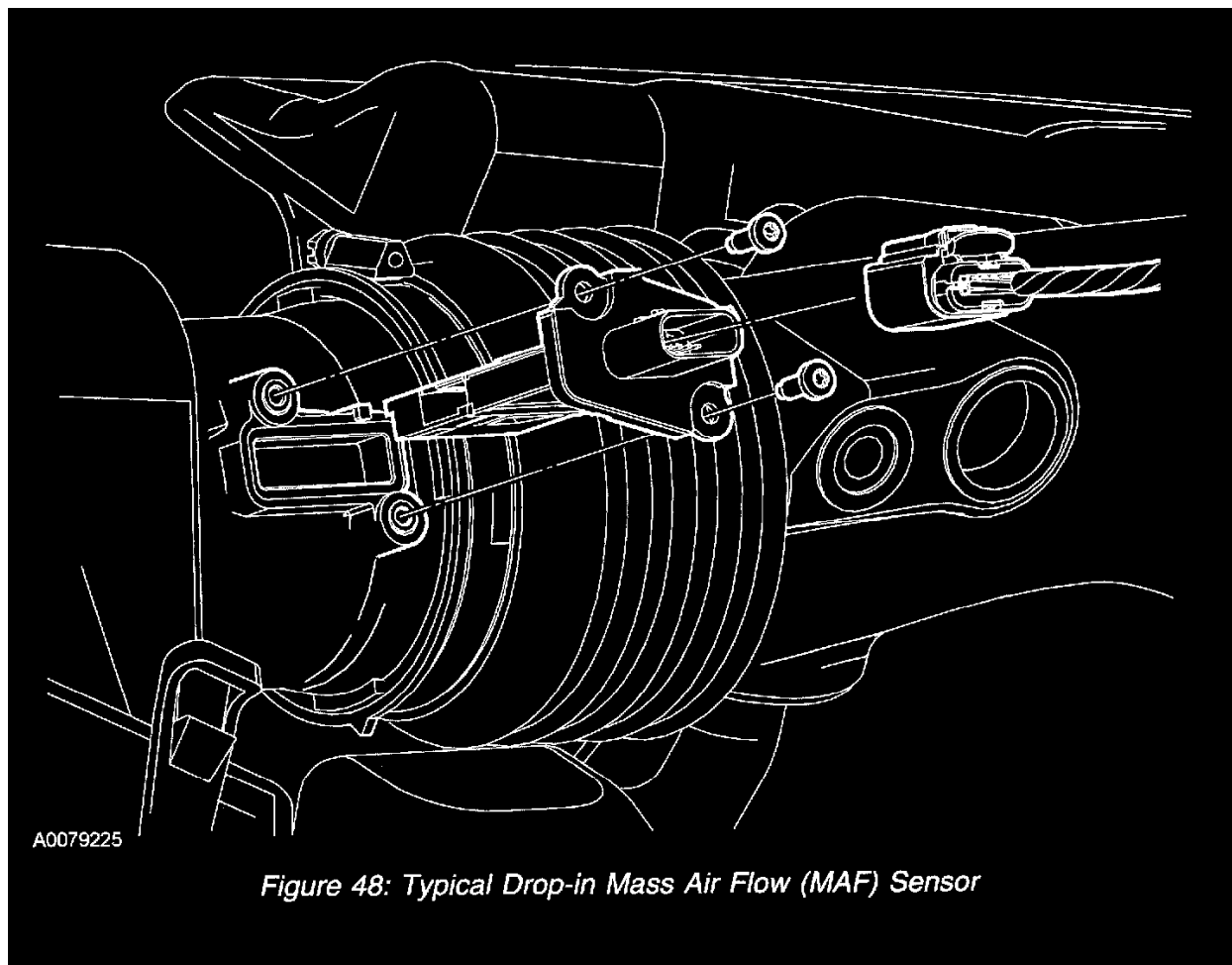


Diagram Of Air Flow Through Throttle Body Contacting MAF Sensor Hot And Cold Wire (and IAT Sensor Wire Where Applicable) Terminals



Typical Mass Air Flow (MAF) Sensor



*Figure 48: Typical Drop-in Mass Air Flow (MAF) Sensor*

#### **Typical Drop-in Mass Air Flow (MAF) Sensor**

The MAF sensor uses a hot wire sensing element to measure the amount of air entering the engine. Air passing over the hot wire causes it to cool. This hot wire is maintained at **200°C (392°F)** above the ambient temperature as measured by a constant cold wire. If the hot wire electronic sensing element must be replaced, then the entire assembly must be replaced. Replacing only the element may change the air flow calibration.

The current required to maintain the temperature of the hot wire is proportional to the mass air flow. The MAF sensor then outputs an analog voltage signal to the PCM proportional to the intake air mass. The PCM calculates the required fuel injector pulse width in order to provide the desired air/fuel ratio. This input is also used in determining transmission electronic pressure control (EPC), shift and torque converter clutch scheduling.

Most MAF sensors have integrated bypass technology (IBT) with an integrated intake air temperature (IAT) sensor.

The MAF sensor is located between the air cleaner and the throttle body or inside the air cleaner assembly.