# Mass Air Flow Sensors
## Chapter 77
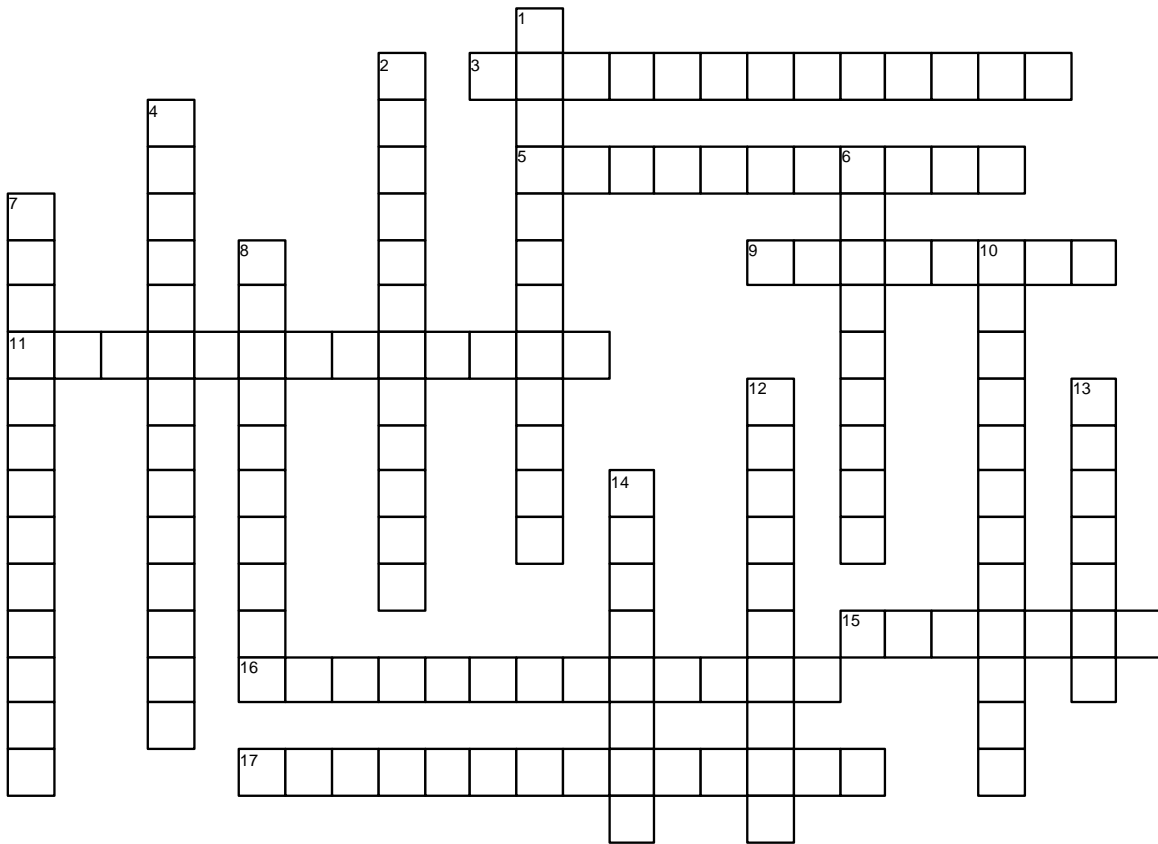
**ACROSS**

**3** A P0102 DTC would indicate ___ _____ ___ output.

**5** Most newer fuel injection systems use a ____ ___ ___ sensor to calculate the amount of air volume delivered to the engine.

**9** Chrysler uses a _____-type Karman Vortex sensors that uses a preeure sensor to detect vortexes.

**11** The ___ ____ _____ uses a temperature sensing resistor to measure the temperature of the incoming air.

**15** In a ___ ____, with engine running at idle, gently tap the MAF sensor with the fingers of an open hand. If the engine stumbles or stalls, the MAF sensor is defective.

**16** The ___ ____ _____ is similar to the hot film type, but uses a hot wire to sense the mass airflow instead of the hot film.

**17** A P0103 DTC would indicate ___ _____ ____ output.

**DOWN**

**1** A _____ _____ sensor sends a sound wave through the turbulence created by incoming air passing through the sensor.

**2** Electronic fuel injection systems that do not use the _____ _____ system for fuel calculation measure the airflow volume delivered to the engine.

**4** Some high wire-type MAF sensors use a ____-___ _____ to keep the sensing wire clean of dust and dirt.

**6** At WOT, the _____, as read on a meter or scan tool, should exceed 7kHz for a digital sensor.

**7** A ____-_____ sensor is a sensor that has a major influence over the amount of fuel being delivered to the engine.

**8** The potentiometer provides the information the computer needs to vary the injector _____ _____ proportionate to airflow.

**10** If a sensor is defective yet still produces a signal to the computer, the computer will often accept the reading and make the required changes in fuel delivery and spark, to diagnose this, perform the _____ __ ____.

**12** _____ waves detect vortexes that are produced, and produce a digital signal where frequency is proprtional to teh amount of air passing through the sensor.

**13** With the engine running at idle speed, gently tap the MAF sensor with the fingers of an open hand, this is called the ___ ____.

**14** If an air hose between the MAF sensor and the throttle body was loose or had a hole, extra air could enter the engine without being measured, this air is called _____ ___.