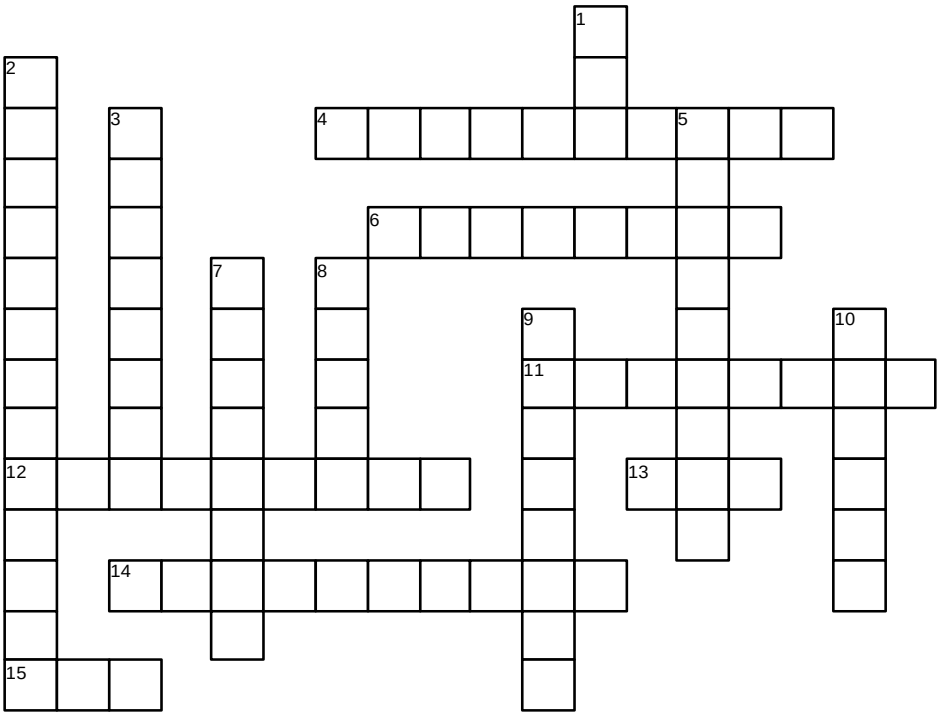
Emission Control Devices Operation and Diagnosis

Chapter 42



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ACROSS

4 A _____ _____ contains a spring-type metallic disc or reed that closes under exhaust backpressure.

6 A ____ ____ pressure sensors monitors the rate with which vacuum increases in the system.

11 Measure the inlet and the outlet temperatures using an _____ thermometer.

12 A _____ converter is an aftertreatment device used to reduce exhaust emissions outside of the engine.

13 ___ is an emission control system that lowers the amount of NOx formed during combustion.

14 By a process called _____, the fuel vapor molecules adhere to the carbon surface.

15 Excessive ___ emissions are controlled by the exhaust gas recirculation system and the catalytic converter.

DOWN

1 ___ systems were developed to ventilate the crankcase and recirculate the vapors to the engine's induction system so they can be burned in the cylinders.

2 Many vehicles use a ____ _____ pump as part of the evaporative control system diagnosis equipment.

3 The substrate is coated with a porous aluminum material called a _____, which makes the surface rough.

5 Most GM and many other vehicles use a _____ ___ that contains a pulse-width modulated solenoid to precisely regulate exhaust gas flow and a feedback potentiometer that signals the computer regarding the actual position of the valve.

7 The catalytic converter uses a _____, which is a chemical that helps start a chemical reaction but does not enter into the chemical reaction.

8 The recirculated exhaust gas is _____ and does not enter into the combustion process.

9 The catalytic converter does not work when cold, and it must be heated to its _____-___ temperature of close to 500°F (260°C) before it starts working at 50% effectiveness.

10 Since the early 1990s, many converters contain _____, an element that can store oxygen.