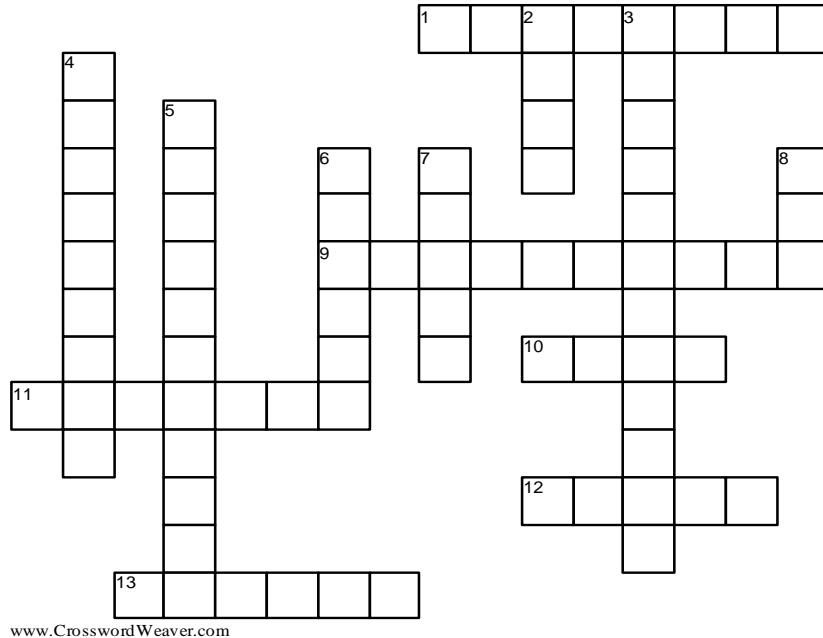


Automotive Electrical and Engine Performance 9th Edition Chapter 42 - PCV and SAI Systems



ACROSS

- 1 _____ crankcase ventilation (PCV): A system that removes harmful gases from the engine crankcase and recirculates them into the intake manifold to be burned during combustion, helping reduce emissions.
- 9 _____ pump: A type of air injection pump used in older emission control systems, similar to the smog pump, to reduce exhaust emissions by injecting air into the exhaust stream.
- 10 The proper operation of the PCV valve can be checked by placing a finger over the inlet hole in the valve when the engine is running and removing the finger rapidly. Repeat several times. The valve should “_____ back.” If the valve does not snap back, replace the valve.
- 11 While most _____ flow control systems work the same as a PCV valve system, they may not use fresh air scavenging of the crankcase.
- 12 All air-injection systems use one or more one-way _____ valves to protect the air pump and other components from reverse exhaust flow.
- 13 Gases that escape past the piston rings and enter the crankcase, often containing fuel vapors and combustion byproducts.

DOWN

- 2 _____ pump: Another term for the air injection pump, responsible for pumping air into the exhaust system as part of the AIR or SAI system.
- 3 _____ and many fuel-injected engines use an oil/vapor or oil/water separator and a calibrated orifice instead of a PCV valve.
- 4 _____ air injection (SAI): A system designed to inject air into the exhaust stream, especially during cold starts, to reduce emissions by accelerating the oxidation of pollutants.
- 5 The belt-driven air pump uses a _____ filter just behind the drive pulley.
- 6 The _____ test is performed by simply removing the PCV valve and giving it a shake.
- 7 _____ valve: A one-way valve used in air injection and fuel systems to prevent backflow, protecting components such as the air pump from reverse exhaust gas flow.
- 8 _____-injection reaction (AIR): A system that injects air into the exhaust manifold to help reduce emissions by promoting the oxidation of unburned hydrocarbons and carbon monoxide.