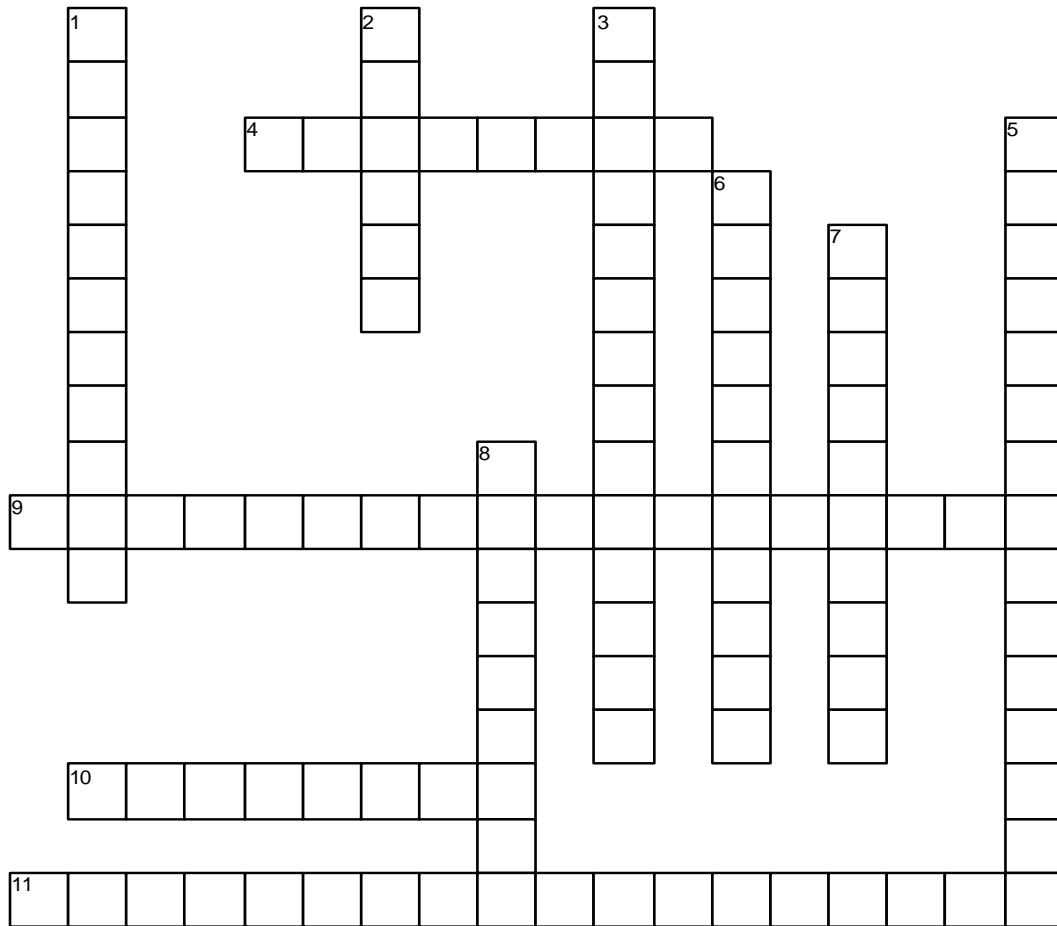


In-Vehicle Engine Service

Chapter 22



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ACROSS

- 4** Expansion/contraction rate difference between the cast-iron head and the aluminum intake manifold can cause the intake manifold gasket to be damaged by the relative motion of the head and intake manifold. This type of failure is called _____.
- 9** _____ will cause the engine to warm p slowly if at all. This condition can cause the powertrain control module (PCM) to set a P0128 diagnostic trouble code (DTC) which means that the engine coolant temperature does not reach the specified temperature.
- 10** HEVs and EREVs are designed to stop the gasoline engines unless needed. This feature is called _____.
- 11** Always check _____ for the exact procedures to follow when working around or under the hood of a hybrid electric vehicle.

DOWN

- 1** _____ have a limited service and a specified replacement interval ranging from 60,000 miles (97,000 km) to about 100,000 miles (161,000 km).
- 2** A _____ thermostat works, but not within the correct temperature range. Therefore, the engine could overheat or operate cooler than normal or even do both.
- 3** Many V-type engines leak oil, coolant, or experience an air (vacuum) leak caused by a leaking intake _____.
- 5** Gasoline _____-_____ systems operate at high pressure and the injectors can often be heard with the engine running and the hood open.
- 6** _____ is when the thermostat fails close or almost closes and the engine will likely overheat.
- 7** Before replacing the _____, double-check that the cooling system problem is not due to another fault, such as being low on coolant or an inoperative cooling fan.
- 8** _____ is when a thermostat fails to open or partially opens and the operating temperature of the engine will then be less than normal.