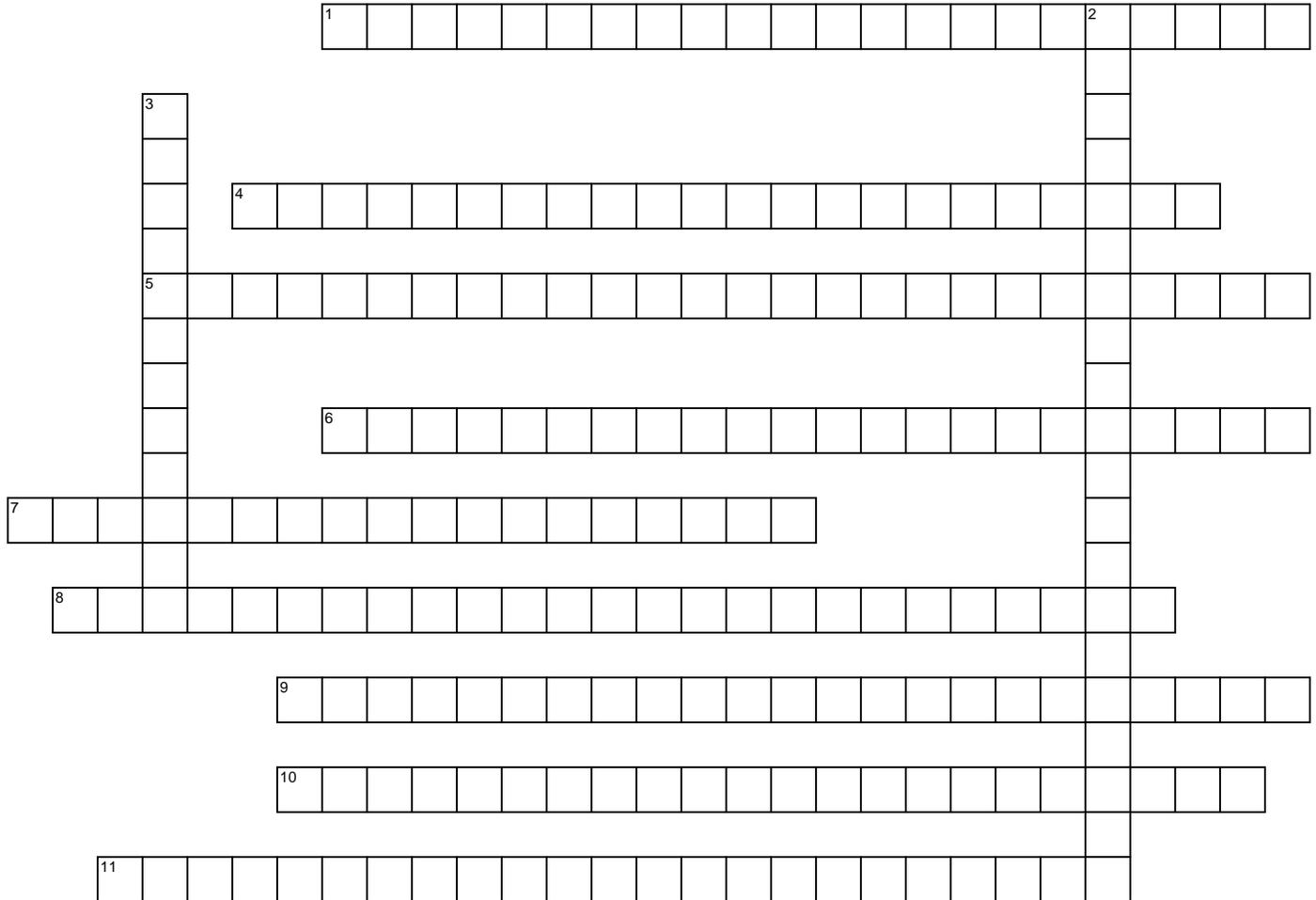


# Chapter 13

## High-Pressure Common Rail Diesel Fuel System



### ACROSS

- 1 The \_\_\_\_\_ require electrical current, high-pressure fuel, low-pressure fuel, and reversed electrical current to inject fuel, and then close the injector after injection.
- 4 The \_\_\_\_\_ fuel systems were introduced on light-duty diesel vehicles in the early 1990s as diesel emission standards began to become more stringent and fuel economy expectations increased. High-pressure fuel injection is needed for several reasons.
- 5 \_\_\_\_\_ uses the electromagnetic field generated by the solenoid and the hydraulic pressure of the fuel to open and close the injector.
- 6 \_\_\_\_\_ monitors the fuel pressure in the rail and communicates this information to the powertrain control module.
- 7 \_\_\_\_\_ is the valve that meters the fuel from the low-pressure system into the high-pressure pump to minimize parasitic loss.
- 8 \_\_\_\_\_ is a sensor located on the fuel rail or somewhere downstream in the high-pressure fuel system. It is a two-wire sensor with a reference voltage and a return.
- 9 \_\_\_\_\_, also called the fuel pressure control valve is a normally open, pulse-width modified (PWM) valve. This valve, together the volume control valve on the high-pressure pump, regulates fuel rail pressure.
- 10 a \_\_\_\_\_, also called transfer tubes carry the high-pressure fuel from the fuel rail to the injector. The supply lines transfer fuel from the rail to the injector, or in some cases, the rail to the transfer tube.
- 11 This module contains the driver circuits and the DC-DC converter needed to operate the injectors.

### DOWN

- 2 A \_\_\_\_\_ is a serviceable component of the high-pressure pump that determines flow rate and allows for lubrication of internal pump components.
- 3 \_\_\_\_\_ is a tube that carries the high-pressure fuel from the fuel rail to the injector.