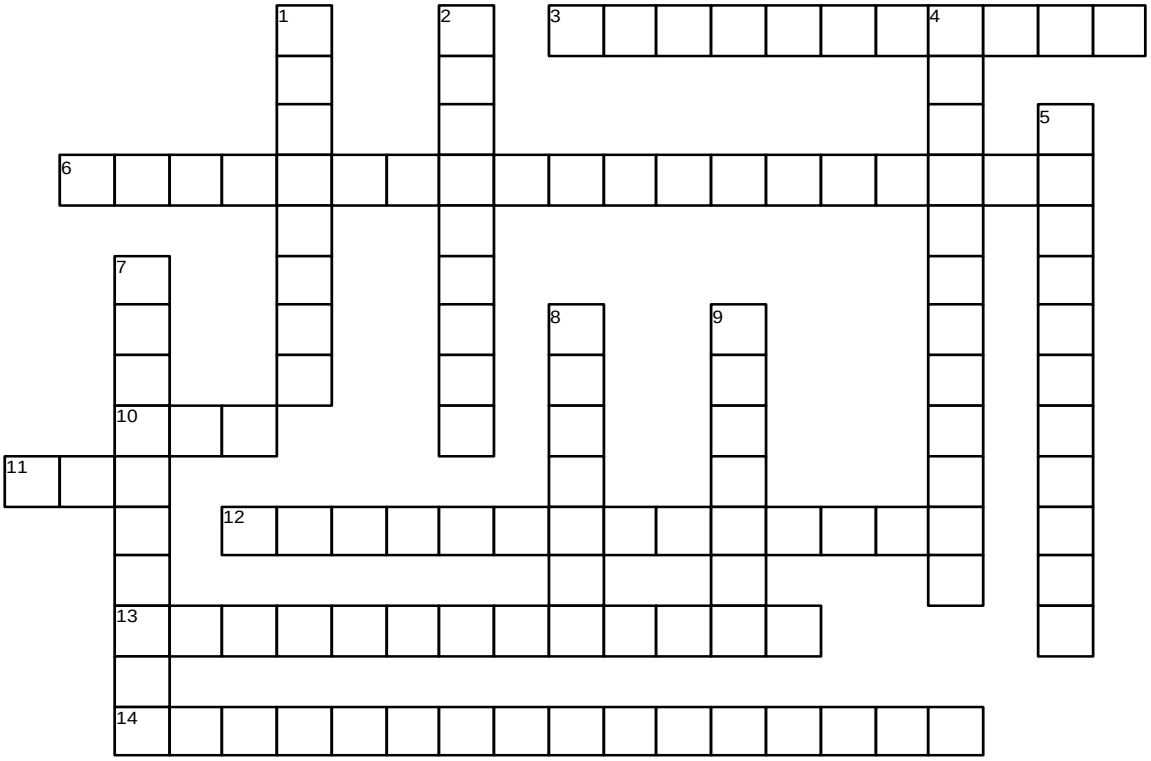
# EV and HEV HVAC Systems

Chapter 13



http://jameshalderman.com

## ACROSS

**3** The fresh air coming into the vehicle is sent through a _____ _____.

**6** _____ _____refers to the tendency of a conductor to increase its electrical resistance as its temperature increases.

**10** ___ and PHEV vehicles have engine stop-start systems, but during A/C operation the air from the ducts start to warm in 5 to 15 seconds.

**11** The abbreviation for an internal combustion engine.

**12** _____ _____ material also called phase change material (PCM) evaporator has a wax chamber in the tank end or between the tubes.

**13** An _____ _____ pump uses a DC motor to power the impeller and is used on most hybrid electric vehicles and some internal combustion engines.

**14** The _____ _____ is a highly efficient and durable design, with very good noise, vibration, and harshness (NVH) characteristics.

## DOWN

**1** When in the _____ _____, the A/C compressor is turned off and the evaporator operates at ambient temperature.

**2** The _____ _____ is the "heart" of the ICE cooling system.

**4** _____ _____ condensers exchange heat by removing heat from one fluid and transferring it to another fluid.

**5** The coolant _____ _____ tank is built very similar to a Thermos® bottle.

**7** In some vehicles, the electrical system is used to boost the heat to the passenger compartment when the ICE coolant temperature is low. One approach is to use ___ _____ built into the heater core itself.

**8** _____ into the passenger compartment is controlled by a blower motor, which sends the air through the evaporator and then into a series of passages and doors.

**9** ___ _____ (also called pet mode) is a climate control feature in Tesla and some other electric vehicles that leaves the air-conditioning or heater on when owners leave their pets in their vehicle