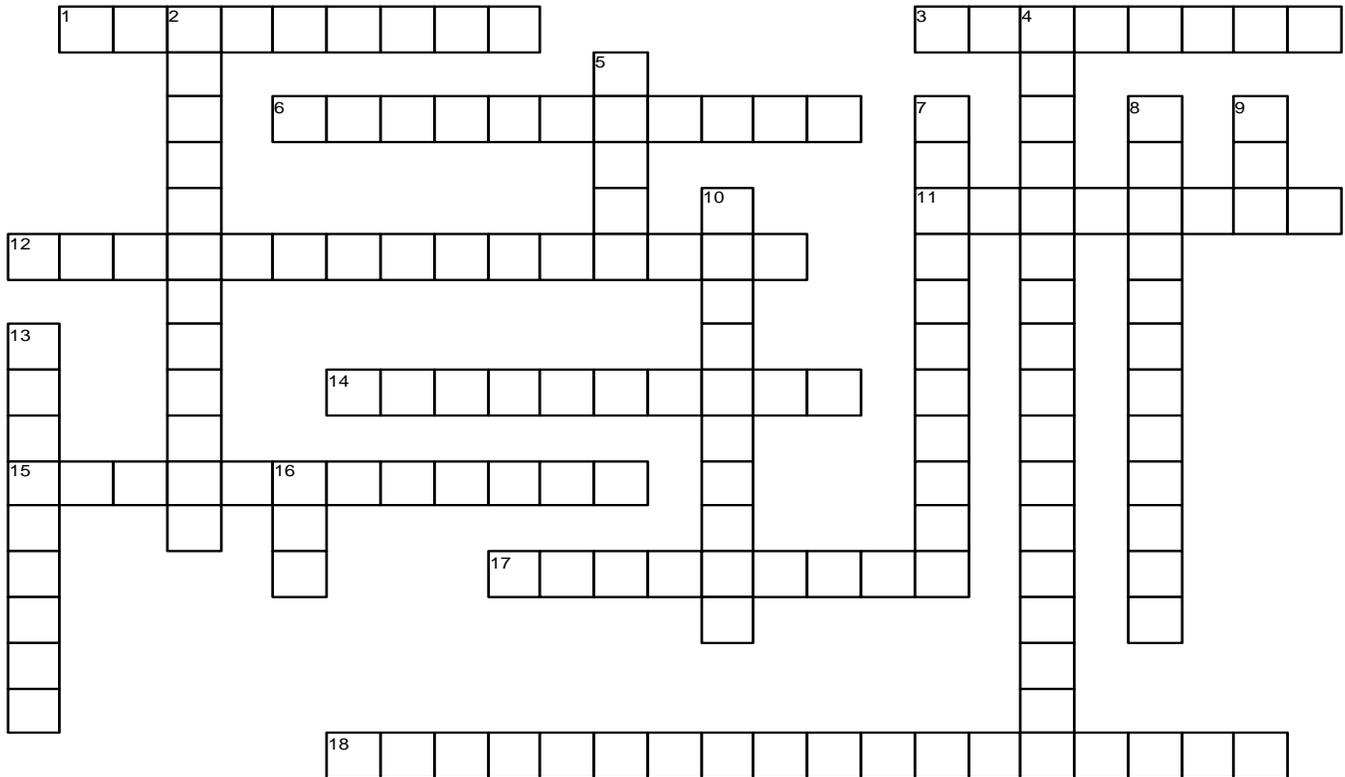


# Turbocharging And Supercharging

## Chapter 20



<http://jameshalderman.com>

### ACROSS

- 1 The \_\_\_\_\_ involves additional fuel being injected.
- 3 The delay between acceleration and turbo boost is called \_\_\_\_\_.
- 6 An \_\_\_\_\_ is similar to a radiator, wherein outside air can pass through, cooling the pressurized heated air.
- 11 The roots-type supercharger is called a \_\_\_\_\_ displacement design, because all of the air that enters is forced through the unit.
- 12 \_\_\_\_\_ systems use an air pump to pack a denser air-fuel charge into the cylinders.
- 14 \_\_\_\_\_ efficiency is a measure of how well an engine breathes.
- 15 A \_\_\_\_\_ is an engine-driven air pump that supplies more than the normal amount of air into the intake manifold and boosts engine torque and power.
- 17 A \_\_\_\_\_ is a valve similar to a door that can open and close.
- 18 An engine that uses atmospheric pressure for its intake charge is called a \_\_\_\_\_ engine.

### DOWN

- 2 A \_\_\_\_\_ uses the heat of the exhaust to power a turbine wheel and therefore does not directly reduce engine power.
- 4 The \_\_\_\_\_ was patented in 1860 as a type of water pump to be used in mines.
- 5 When air is pumped into the cylinder, the combustion chamber receives an increase of air pressure known as \_\_\_\_\_, and can be measured in PSI.
- 7 Many factory installed superchargers are equipped with a \_\_\_\_\_ that allows intake air to flow directly into the intake manifold, bypassing the supercharger.
- 8 \_\_\_\_\_ is a colorless, nonflammable gas.
- 9 The \_\_\_\_\_ features an adjustable spring design that keeps the valve closed until a sudden release of the throttle.
- 10 A \_\_\_\_\_ is a device or system added to an engine, such as a supercharger, turbocharger, or nitrous oxide, to increase power.
- 13 In a \_\_\_\_\_, such as an engine using port fuel injection, only nitrous oxide needs to be injected because the PCM can be commanded to provide more fuel when the N<sub>2</sub>O is being sprayed.
- 16 A \_\_\_\_\_ is a type of relief valve that routes the pressurized air to the inlet side of the turbocharger for reuse and is quiet during operation.