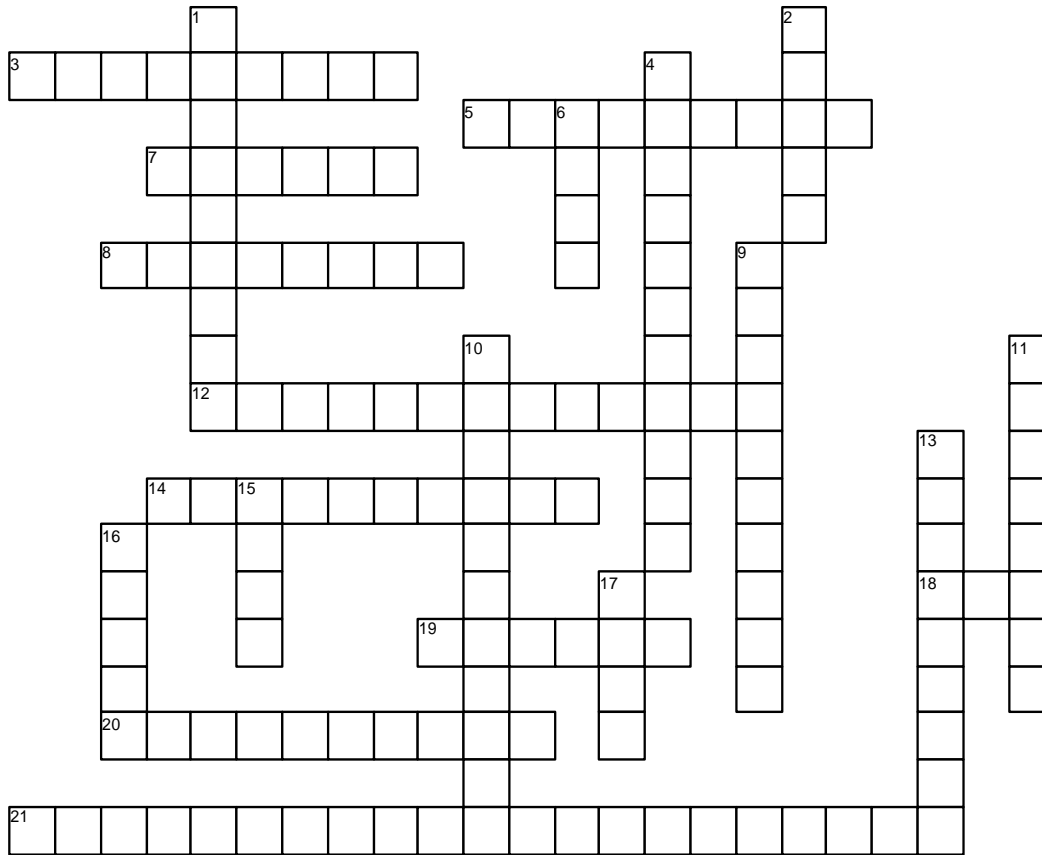


# Automatic Transmission Fluid, Filters, And Coolers

## Chapter 2



<http://jameshalderman.com>

### ACROSS

- 3 \_\_\_\_\_ inhibitors prevent corrosion of the nonferrous parts.
- 5 \_\_\_\_\_ index improvers change the fluid viscosity with change in temperature so that fluid thickness and shift characteristics remain stable.
- 7 \_\_\_\_\_ friction modified ATF includes Dexron VII, Mercon V, ATF +4, and ATF WS.
- 8 \_\_\_\_\_-modified ATF types include Dexron.
- 12 A \_\_\_\_\_ traps the foreign particles at the outer surface.
- 14 The \_\_\_\_\_ in well-designed oil coolers continuously mixes the fluid.
- 18 \_\_\_\_\_ is added to make ATF red.
- 19 a \_\_\_\_\_ is 1 millionth of a meter or 39 millionths of an inch.
- 20 \_\_\_\_\_ keep the transmission

clean and the valves free from sticking by keeping foreign items in suspension until they are removed by the filter.

- 21 \_\_\_\_\_ fluid is a highly refined oil with a viscosity similar to SAE 20W-20 oil and is specifically designed for use in automatic transmissions.

### DOWN

- 1 Friction \_\_\_\_\_ change a fluids coefficient of friction.
- 2 \_\_\_\_\_ deactivators form a protective film to inhibit oxidation of metal surfaces.
- 4 Type F ATF is an example of \_\_\_\_\_ modified ATF.
- 6 \_\_\_\_\_ swelling agents produce a slight swelling of the elastomers to compensate for any wear that occurs.
- 9 In most transmissions, the fluid

returning from the torque converter and cooler \_\_\_\_\_ the transmission.

- 10 A \_\_\_\_\_ traps particles as they try to pass through the filter material.
- 11 \_\_\_\_\_ agents reduce friction and prevent scoring and seizure of metal parts against each other.
- 13 \_\_\_\_\_ inhibitors reduce oxidation and decomposition of the fluid, which can produce varnish and sludge.
- 15 \_\_\_\_\_ inhibitors prevent rust from forming on the iron and steel parts.
- 16 Toyota uses \_\_\_\_\_ standard ATF fluid. It is formulated to provide lower viscosity at normal operating temperatures.
- 17 \_\_\_\_\_ inhibitors prevent formation of air bubbles and foam in the fluid.