Intake And Exhaust Systems
Chapter 10

ACROSS
3  The ______ catches the large bursts of high-pressure exhaust gas from the cylinder, smoothing out the pressure pulses and allowing them to be released at an even and constant rate.
5  An upper manifold, usually called the ______, connects to the lower unit and includes the long passages needed to help provide the ram effect that helps the engine deliver maximum torque at low engine speeds.
8  The air filter is made of a chemically treated paper stock that contains tiny ______ in the fibers.
12  The size and shape of _______ engine intake manifolds can be optimized because the only thing in the manifold is air.
13  The muffler and tailpipe are supported with brackets, called ______, which help to isolate the exhaust noise from the rest of the vehicle.
14  ______ are used on new engines with tubing- or header-type exhaust manifolds.
15  Just as fuel filters are used to clean impurities from gasoline, an ______ is used to remove contaminants from the air.

DOWN
1  A resonance tube is often called a _________ _______, named for the discoverer of the relationship between shape and value of frequency.
2  Some air filter ________, especially on diesel engines, include an electrical switch used to light a dash-mounted warning lamp when the air filter needs to be replaced.
4  Many _______ have heat shields to help keep exhaust heat off the spark plug wires and to help keep the heat from escaping to improve exhaust emissions.
6  One _______ is equal to 0.000039 in.
7  To reduce the emission of NOx, engines have been equipped with ____ valves.
9  A _______ fuel injector forces finely divided droplets of liquid fuel into the incoming air to form a combustible air-fuel mixture.
10  The _______ _______ is a tube that is often designed to be long so that the exhaust gas is cooled before it enters the EGR valve.
11  The ______ _______ is also called an inlet manifold.