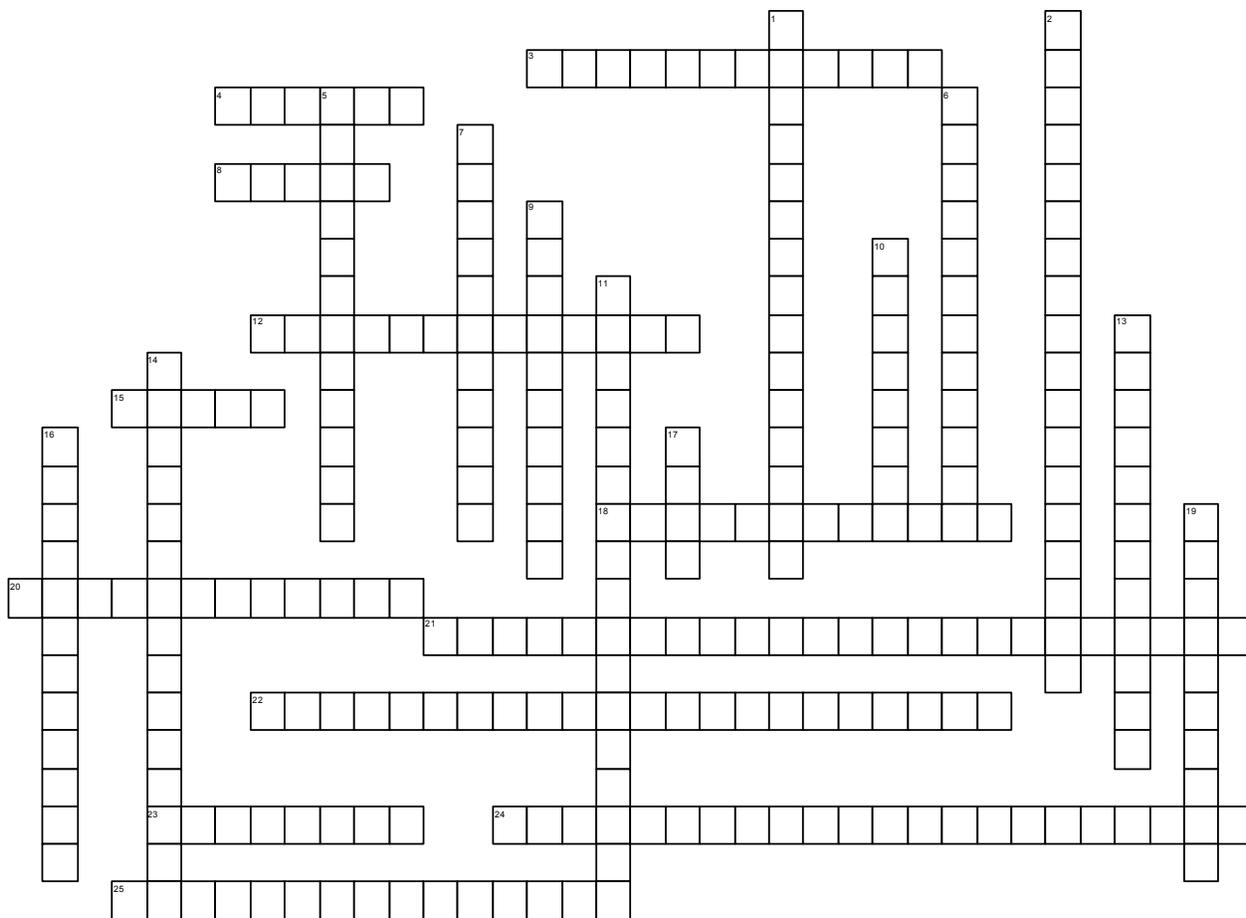


Gasoline Engine Operation

Chapter 15



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ACROSS

- 3 _____ is the volume displaced or how much air is moved by all of the pistons.
- 4 The _____ of an engine is the distance the piston travels from top dead center to bottom dead center.
- 8 A _____ is a complete series of events that continually repeats.
- 12 All automotive and truck engines are constructed using a solid frame, called a _____.
- 15 _____ engines are often used in Porsche and Subaru vehicles.
- 18 A _____ uses the heat of the exhaust to power a turbine wheel and therefore does not directly reduce engine power.
- 20 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.

- 21 If engine combustion occurs within the power chamber, the engine is called an _____.
- 22 When one overhead camshaft per cylinder is used, the design is called a _____ design.
- 23 The valves are opened by a _____.
- 24 When two overhead camshafts per cylinder head are used, the design is called a _____ design.
- 25 Mechanical force is converted into useful _____.

DOWN

- 1 The pressure developed within the combustion chamber is applied to the head of a piston

to produce a usable _____.

- 2 If atmospheric air pressure is used to force the air-fuel mixture into the cylinders, the engine is called _____.
- 5 An oil pump forces the oil through the oil filter and then into _____ in the crankshaft and block.
- 6 A _____ is a one-way piston movement either from top or bottom or bottom to top of the cylinder.
- 7 During the intake stroke, the _____ is open and the piston inside the cylinder travels downward, drawing a mixture of air and fuel into the cylinder.
- 9 _____ is the chemical energy in fuel is converted to heat energy by burning of the fuel at a controlled rate.
- 10 A piston moves up and down, or reciprocates, in a _____.
- 11 Engines convert the chemical energy of the gasoline into heat within a power chamber that is called a _____.
- 13 The Mazda RX-7 and RX-8 represent the only long-term use of the _____.
- 14 The first _____ engine was developed by a German engineer, Nickolaus Otto, in 1876.
- 16 The piston forces the residual burned gases out of the combustion chamber through the _____ and into the exhaust manifold and exhaust system.
- 17 The diameter of the cylinder is called the _____.
- 19 The piston is attached to a _____ with a connecting rod.