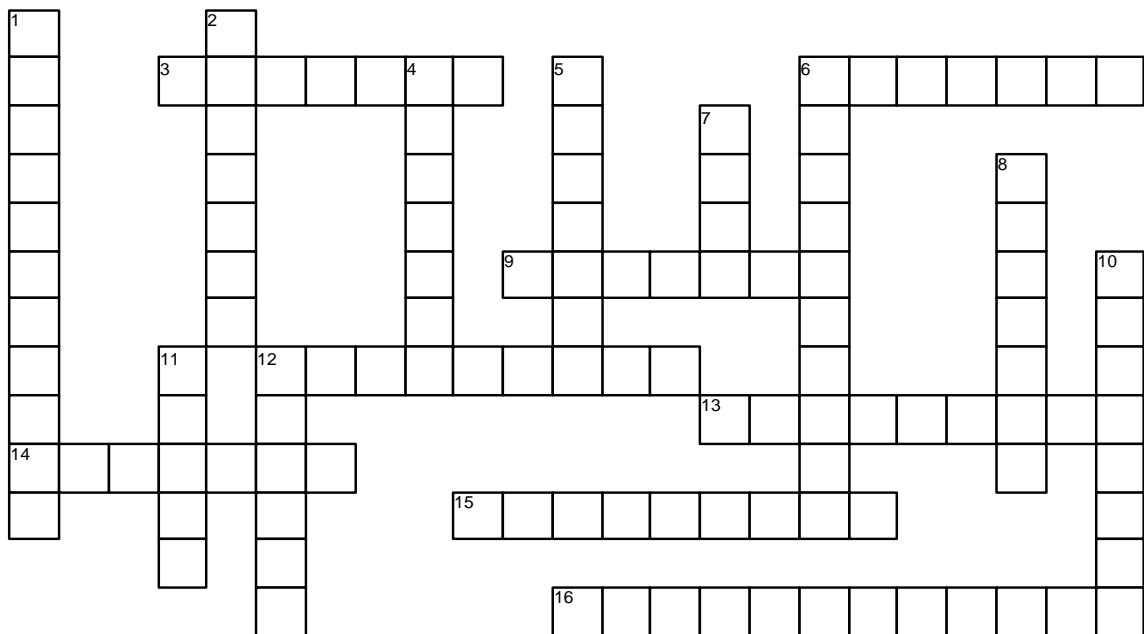


# Exhaust Systems Specialist

## Chapter 136



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### ACROSS

- 3 The \_\_\_\_ involves tapping on the catalytic converter with a rubber mallet. If the substrate inside the converter is broken, the converter will rattle.
- 6 \_\_\_\_\_ bending means measuring and comparing the old exhaust pipe to make a new one.
- 9 The \_\_\_\_\_ is used in the exhaust stream to help quiet the sound of engine combustion.
- 12 The \_\_\_\_\_ converter converts harmful-exhaust emissions into non-harmful compounds. The converter structure contains small amounts of rhodium, palladium, and platinum.
- 13 A \_\_\_\_\_ is a rapid high-pressure flame in the hose, which can occur if there are not any check valves or the check valves fails to operate due to improper installation.
- 14 The \_\_\_\_\_ flame is generally used for welding and burns about one part oxygen to one part acetylene.
- 15 The \_\_\_\_\_ flame is used for brazing and is obtained by opening the oxygen valve slightly more than the neutral flame.
- 16 \_\_\_\_\_ is the resistance to exhaust gas flow in the system, which is often due to restrictions, such as exhaust pipe blockage, mufflers, catalytic converters, or resonators.

### DOWN

- 1 The high acetylene or \_\_\_\_\_ flame is the one most commonly used by automotive technicians to heat parts or to solder.

- 2 \_\_\_\_\_ are O-ring or fabric devices that attach to brackets mounted on the underside of the vehicle to support the exhaust system. Some are welded to the exhaust system.
- 4 Heat \_\_\_\_\_ are used to protect the underbody of the vehicle from excessive heat created by the exhaust system.
- 5 The \_\_\_\_\_ manifold bolts directly to the cylinder head and mates with the cylinder head exhaust ports. Inline engines are equipped with a single exhaust manifold, while "V" design engines have one exhaust manifold for each cylinder head.
- 6 Broken \_\_\_\_\_ mounts can cause stress on the exhaust system to wear and even cause components to break.
- 7 The \_\_\_\_\_ pipe is the last pipe in the exhaust system and it carries the exhaust fumes out from under the vehicle and into the atmosphere.
- 8 The \_\_\_\_\_ card lists the length and diameter of the pipe, the distance between the center of the bends, and the rotation and depth of the bends in degrees.
- 10 A \_\_\_\_\_ can take place with improper torch operation. The flame will go out with a loud snap or pop. The torch valves should be turned off and connections and valves checked for leaks.
- 11 \_\_\_\_\_ Inert Gas (MIG) welding is an arc welding process that uses a continuous solid wire electrode heated and fed into the weld pool from a welding gun.
- 12 \_\_\_\_\_ are U-bolts that come in different sizes that correspond to the pipe diameter that secure the slip joint connections that are attached to some exhaust system components.