Automotive Heating and Air-Conditioning Systems, 8th Edition
Chapter 3

Name_____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

1) What is the difference between a vane compressor and a radial compressor?

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2) How is the air gap of a compressor clutch adjusted?

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3) How does an electromagnetic compressor clutch work?

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4) How does a coaxial swash-plate compressors work?

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5) What type compressors are used in air conditioning systems?

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1) Radial compressors use two double pistons that are mounted over a bearing block. The crankshaft moves the bearing block in a circular orbit that moves the pistons through their strokes. The GM R-4 compressor is the most common.
The vanes of a vane-type compressors are mounted in a rotor that runs inside a round, eccentric, or a somewhat elliptical, chamber. The vanes slide in and out of the rotor as their outer end follows the shape of the chamber. Compressors with a round, eccentric chamber have one pumping action per vane per revolution. Compressors with an elliptical housing have two pumping actions per vane per revolution.
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2) On some compressors, install the adjusting shims onto the shaft, install the drive key, and align and install the hub. On many GM compressors, the hub must be pulled onto the shaft. It should be pulled on just far enough to get the correct air gap.
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3) Electromagnetic clutches allow the compressor to be turned on and off. The clutch uses a coil of wire where a magnetic field is generated when electrical current flows through it. The magnetic field pulls the drive plate against the rotating pulley to drive the compressor.
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4) Coaxial swash-plate compressors drive the pistons through a swash plate, which is attached to the driveshaft. The swash plate is mounted at an angle so it will wobble and cause the reciprocating action of the pistons.
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5) The types of A/C compressors used on vehicles include piston compressors, vane compressors and scroll compressors.
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