Automotive Steering, Suspension, and Alignment, 8th Edition
Chapter 5

Name_____

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

1) What precautions are needed to be adhered to when performing a stall test?

2) What is the purpose and function of a torque converter?

3) What are the three elements inside a torque converter?

4) How much torque is a torque converter able to multiply?

5) What is the difference between rotary flow and vortex flow?

1) A stall test can severely damage the transmission if done incorrectly. During a stall test, the dynamic fluid pressure inside a converter becomes very high, because there is a lot of turbulence. Because so much heat is generated, stall tests should not be conducted for more than 5 seconds, followed by a cooling period. Exercise caution when performing a stall test for several reasons: personal safety, and the chance of possible damage to the vehicle and transmission. Direct any bystanders away from the front or rear of the vehicle.
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2) The torque converter is located between the engine and the transmission/transaxle and performs the following functions.
1. Transmits and multiplies engine torque.
2. Acts as a clutch between the engine and the transmission/ transaxle.
3. Allows slippage, which makes it possible for the transmission to be engaged even when the vehicle and wheels are stopped.
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3) The three major parts of the torque converter include:
- Impeller
- Turbine
- Stator

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4) Most passenger vehicle torque converters have a STR between 1.68:1 and 2.1:1. For most converters, this means that the torque converter is able to double the torque of the engine at the stall speed of the converter.
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5) Most of the fluid energy is lost as the fluid bounces off the turbine vanes. The fluid moves toward the center of the turbine, driven there by the continuous flow of fluid from the impeller. As energy leaves the fluid, the flow slows down and returns to the center of the impeller vanes, where the impeller will pick it up and keep it circulating. This flow is called a vortex flow. The clockwise flow of fluid leaving the impeller, in the direction of engine rotation, is called rotary flow.
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