Advanced Automotive Electricity and Electronics
Chapter 25

Name_____

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

1) What is the typical diagnostic procedure to follow when troubleshooting a fault with the electronic stability control or traction control system?

2) What sensors are used in the electronic stability control system?

3) What is the "sine with dwell" test?

4) What is the difference between oversteering and understeering?

5) What are some of the other names used to identify an electronic stability control (ESC) system?

6) What action does the traction control system perform to help the drive wheels maintain traction during acceleration?

1) The procedure usually specified by vehicle manufacturers for diagnosing ESC or TC concerns involves the following steps:
Step 1- Verify the customer concern (complaint).
Step 2 – Perform a thorough visual inspecting.
Step 3 – Check service information for the specified procedure to follow.
Step 4 – Follow the troubleshooting procedure as specified to fix the root cause of the problem.
Step 5 – Repair the fault.
Step 6 – Road test the vehicle under the same conditions that were performed to verify the fault to verify the repair.
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2) The sensors used in most Electronic Stability Control (ESC) systems include the steering wheel (handwheel) sensor, Vehicle Speed (VS) sensor, lateral acceleration sensor, and yaw rate sensor.
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3) A "sine with dwell" test is performed to verify that the electronic stability control system (ESC) can operate correctly and keep the vehicle under control.
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4) Oversteering means that the rear wheels loose traction and the vehicle can spin out of control. Understeer means that the vehicle tends to continue traveling straight when turning a corner.
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5) Some of the names include: Vehicle Stability Assist (VSA); Electronic Stability Program (ESP); Vehicle Dynamic Control (VDC); Dynamic Stability Control (DSC), and Vehicle Stability Control (VSC).
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6) The controller performs some or all of the following to help restore drive wheel traction during acceleration:
- Retard ignition timing to reduce engine torque
- Decrease the fuel injector pulse-width to reduce fuel delivery to the cylinder to reduce engine torque
- Reduce the amount of intake air if the engine is equipped with an electronic throttle control (ETC); reduced airflow will reduce engine torque.
- Up-shift the automatic transmission/transaxle. If the transmission is shifted into a higher gear, the torque applied to the drive wheels is reduced.

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