

Brake System Vacuum Source Test

Important:

- Engine temperature, accessory load, and elevation level will affect engine vacuum.
- Vacuum readings will decrease by approximately 2.7 kPa (0.8 in Hg) for every 305 m (1000 ft) of elevation above sea level.

1. Disconnect the engine vacuum hose from the vacuum brake booster check valve.
2. Install a vacuum gauge to the engine vacuum hose.
3. Start the engine and allow the engine to idle until normal operating temperatures are reached.
4. With the vehicle in PARK or NEUTRAL with the park brake on, the engine idling, and the air conditioning (A/C) system OFF, check to see if the engine vacuum reading is within the specified normal engine vacuum range.

Specification

47-68 kPa (14-20 in Hg)

5. Turn the ignition OFF.
6. If the engine vacuum reading is within the specified normal range, proceed to step 10.
7. If the engine vacuum reading is NOT within the specified normal range, inspect the engine vacuum hose for the following conditions.
 - Loose connection to the engine.
 - Collapse, deformation or contamination.
 - Cracks, cuts, or brittleness.
8. If any of these conditions were found with the engine vacuum hose, replace the hose, then repeat steps 2 [dash] 4.
9. If none of these conditions were found with the engine vacuum hose, then there is an engine vacuum source condition, check the engine vacuum system.
10. Remove the vacuum brake booster check valve from the booster.
11. Install the check valve to the engine vacuum hose.
12. Install the vacuum gauge to the check valve.
13. Start the engine and allow the engine to idle in park or neutral with the park brake on and with the A/C system OFF, until normal operating temperatures are reached.
14. Turn the ignition OFF.
15. Visually inspect the engine vacuum reading is maintained within the specified normal engine vacuum range.

Specification

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16. If the engine vacuum reading is maintained within the specified normal range, proceed to step 18.
17. If the engine vacuum reading is NOT maintained within the specified normal range, replace the vacuum brake booster check valve, then repeat steps 11 15.
18. Inspect the vacuum brake booster check valve grommet for the following conditions:
 - Loose connection to the vacuum brake booster.
 - Deformation or contamination.
 - Cracks, cuts or brittleness.
19. If any of these conditions were found with the check valve grommet, replace the grommet.

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