

### DTC P0299: Turbocharger Underboost Problem

**NOTE:** Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information.

1. Inspect the air cleaner element.

Is the air cleaner element clogged?

**YES** - Replace the air cleaner element, then go to step 18.

**NO** - Go to step 2.

2. Check for leak or damage at these parts.

- Intake air duct (turbocharger outlet pipe)
- Intake air duct (charge air cooler inlet hose)
- Intake air duct (charge air cooler outlet tube)

Are the parts OK?

**YES** - Go to step 3.

**NO** - Repair or replace the damaged parts, then go to step 18.

3. Turn the ignition switch ON (II).

4. Clear the DTC with the HDS.

5. Select the TURBOCHARGER BYPASS CONTROL SYSTEM TEST in the INSPECTION MENU with the HDS.

Is the result OK?

**YES** - Go to step 11.

**NO** - Go to step 6.

6. Select TURBOCHARGER BYPASS CONTROL SOLENOID VALVE ON in the INSPECTION MENU with the HDS.

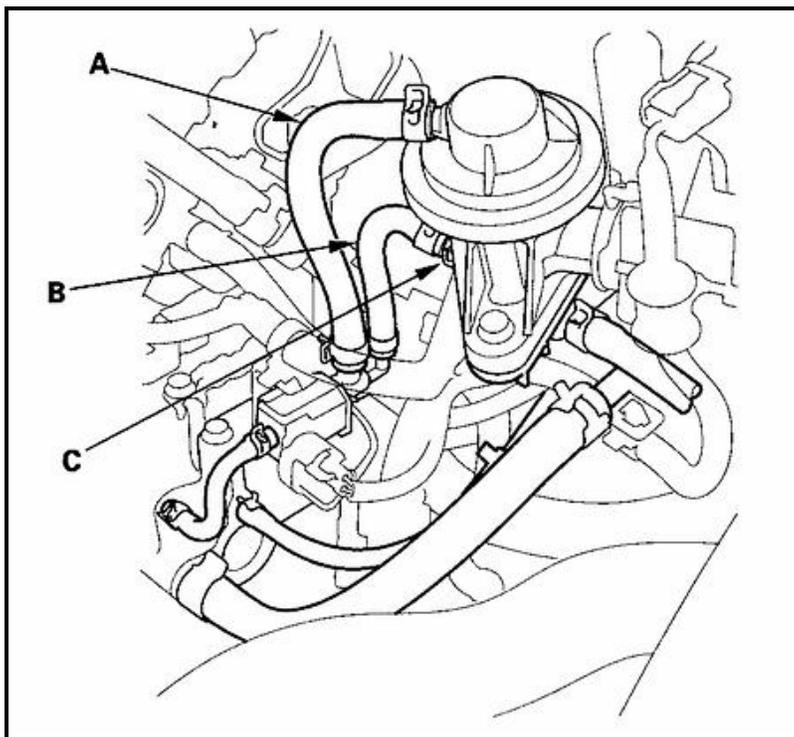
Do you hear the solenoid operating?

**YES** - Go to step 7.

**NO** - Replace the turbocharger bypass control solenoid valve, then go to step 18.

7. Turn the ignition switch OFF.

8. Remove the charge air cooler cover.



9. Check for poor connections, blockage, or damage at these parts.

- Hose (A) between the turbocharger bypass control solenoid valve and the turbocharger bypass control valve
- Hose (B) between the turbocharger bypass control solenoid valve and the turbocharger bypass control valve base
- Turbocharger bypass control valve base port (C)

Are the parts OK?

**YES** - Go to step 10.

**NO** - Repair or replace any damaged parts, then go to step 18.

10. Inspect the turbocharger bypass control solenoid valve.

Is the solenoid valve OK?

**YES** - Inspect the turbocharger bypass control valve.

**NO** - Replace the turbocharger bypass control solenoid valve, then go to step 18.

11. Select the TURBOCHARGER WASTEGATE CONTROL SYSTEM TEST in the INSPECTION MENU with the HDS.

Is the result OK?

**YES** - Go to step 12.

**NO** - Go to step 13.

12. Check for clogging or damaged in these parts:

- Turbocharger
- Warm up TWC
- Under-floor TWC
- Exhaust pipe

Are the parts OK?

**YES** - Intermittent failure, the system is OK at this time.

**NO** - Repair or replace any damaged parts, then go to step 18.

13. Select TURBOCHARGER WASTEGATE CONTROL SOLENOID VALVE ON in the INSPECTION MENU with the HDS.

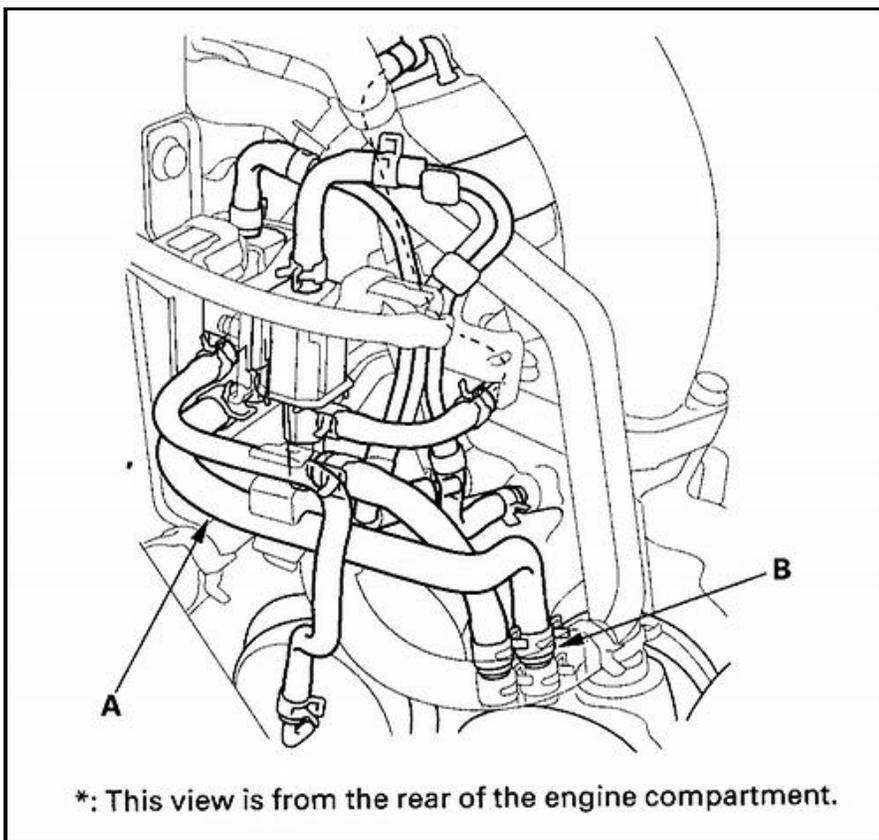
Do you hear the solenoid operating?

**YES** - Go to step 14.

**NO** - Replace the turbocharger wastegate control solenoid valve, then go to step 18.

14. Turn the ignition switch OFF.

15. Remove the charge air cooler.



16. Check for blockage or clogging at these parts:

- Hose (A) between the turbocharger wastegate control solenoid valve and intake air duct (turbocharger inlet connecting tube)
- Intake air duct (turbocharger inlet connecting tube) port (B)

Are the parts OK?

**YES** - Go to step 17.

**NO** - Repair or replace any damaged parts, then go to step 18.

17. Inspect the turbocharger wastegate control solenoid valve.

Is the solenoid valve OK?

**YES** - Check the turbocharger and turbocharger wastegate control actuator. Repair or replace any faulty parts, then go to step 18.

**NO** - Replace the turbocharger wastegate control solenoid valve, then go to step 18.

18. Install the parts in the reverse order of removal.

19. Turn the ignition switch ON (II).

20. Reset the PCM with the HDS.

21. Do the PCM idle learn procedure.

22. Start the engine. Hold the engine speed at **3,000 rpm** without load (in Park or neutral) until the radiator fan comes on, then let it idle.

23. Test-drive under these conditions:

- Engine speed above **3,800 rpm**
- REL TP SENSOR above **59 deg**
- Transmission in D position
- Drive at least **4 seconds**

24. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0229 indicated?

**YES** - Check the turbocharger bypass control solenoid valve, turbocharger wastegate control solenoid valve, and its connecting hose and port, then go to step 1.

**NO** - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

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