

**AFFECTED VEHICLE****MAKE JAGUAR****MODEL XF****VERSION 3.0 D (AJV6D) 202 KW 275 HP 2993 Cm3****SYMPTOMS:**

**P22D2-77** - Turbocharger turbine inlet valve stuck open. Command position is not reachable.

**P22D3-77** - Turbocharger turbine inlet valve stuck closed. Command position is not reachable.

The vehicle displays one or several of the above-mentioned fault codes.

Fault codes recorded in the engine control unit.

Lack of engine power.

Limited performance message displayed on the dashboard.

**NOTE:** The above-mentioned symptoms are reproduced temporarily.

**POSSIBLE CAUSE/S:**

- Defect in the electrical wiring.
- Defect of the vacuum system.
- Defect in the vacuum modulator solenoid valve.
- Defect in the secondary turbocharger actuator with fixed blades.

**SOLUTION:****Repair procedure:**

- Read the fault codes recorded in the engine control unit using the diagnostic tool.
- Confirm that one or several of the fault codes that appear in the field symptoms of this bulletin are displayed.
- Confirm that the symptoms mentioned in the field symptoms of this bulletin are reproduced.
- Check the PCM software reference using the appropriate diagnostic tool.

**Perform the following process if the PCM software reference is 9X2Q-14C204-PD or with the previous letters (PA, PB, PC) and fault code P22D2-77 is recorded:**

- Check and verify the correct condition of the wiring of the secondary turbocharger actuator with fixed blades.
- Install a suitable pressure gauge between the vacuum supply line and the turbine shutdown solenoid valve.
- Start the engine and let it at idle.
- Wait for 3 minutes for the secondary fixed blade turbocharger actuator to actuate.
- Check that vacuum is generated (approximately 800 mbar).
- Check pipes if vacuum is NOT generated.
- Check the condition and operation of the vacuum modulator solenoid valve if the condition of the pipes is correct.
- Replace the vacuum modulator solenoid valve, if necessary.
- Check the condition and operation of the secondary turbocharger actuator with fixed blades if the condition of the vacuum circuit and the electrical wiring is correct.
- Replace the secondary turbocharger actuator with fixed blades, if necessary.
- Clear the fault codes recorded in the control unit using the diagnostic tool.
- Carry out an adjustment of the turbine shut-off valve using the diagnostic tool.
- Perform a road test.
- Perform a second fault code reading on the engine control unit (ECU) using the diagnostic tool and confirm that the fault codes mentioned in the field symptoms of this bulletin are NOT recorded.

**Perform the following process if the PCM software reference is 9X2Q-14C204-PD or with the previous letters (PA, PB, PC) and fault code P22D3-77 is recorded:**

- Check and verify the correct condition of the wiring of the secondary turbocharger vacuum solenoid valve.
- Check the vacuum system (check for broken, disconnected or incorrectly connected tubes).
- Replace the secondary turbocharger vacuum valve (See image 1 - A) if the condition of the vacuum system and the condition of the wiring is correct.

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- Clear the fault codes recorded in the control unit using the diagnostic tool.
  - Perform a road test.
  - Perform a second fault code reading on the engine control unit (ECU) using the diagnostic tool and confirm that the fault codes mentioned in the field symptoms of this bulletin are NOT recorded.

Secondary turbocharger vacuum solenoid valve or with its corresponding lines. Procedure 2.

**Perform the following process if the PCM software reference is 9X2Q-14C204-PE or with the following letters (PF, PG, PH) and the fault code P22D2-77 is recorded:**

- Check and verify the correct condition of the wiring of the secondary turbocharger actuator with fixed blades.
- Install a suitable pressure gauge between the vacuum supply line and the turbine shut-off solenoid valve.
- Start the engine and let it at idle.
- Wait for 3 minutes for the secondary turbocharger actuator with fixed blades to actuate.
- Check that vacuum is generated (approximately 800 mbar).
- Check the pipes if vacuum is NOT generated.
- Check the condition and operation of the vacuum modulator solenoid valve if the condition of the pipes is correct.
- Replace the vacuum modulator solenoid valve if necessary.
- Check the condition and operation of the secondary turbocharger actuator with fixed blades if the condition of the vacuum circuit and the electrical wiring is correct.
- Replace the secondary turbocharger actuator with fixed blades if necessary.
- Clear the fault codes recorded in the control unit using the diagnostic tool.
- Carry out an adjustment of the turbine shut-off valve using the diagnostic tool.
- Perform a road test.
- Perform a second fault code reading on the engine control unit (ECU) using the diagnostic tool and confirm that the fault codes mentioned in the field symptoms of this bulletin are NOT recorded.

**Perform the following process if the PCM software reference is 9X2Q-14C204-PE or with the following letters (PF, PG, PH) and fault code P22D3-77 is recorded:**

- Check and verify the correct condition of the wiring of the secondary turbocharger vacuum solenoid valve.
- Check the vacuum system (check for broken, disconnected or incorrectly connected tubes).
- Replace the secondary turbocharger vacuum valve (See image 1 - A) if the condition of the vacuum system and the condition of the wiring is correct.
- Clear the fault codes recorded in the control unit using the diagnostic tool.
- Perform a road test.
- Perform a second fault code reading on the engine control unit (ECU) using the diagnostic tool and confirm that the fault codes mentioned in the field symptoms of this bulletin are NOT recorded.

**NOTE:** For a correct repair, it is recommended to follow the instructions in the repair manual.

See image 1:

A - Turbocharger vacuum valve.

**IMAGE 1:**

