

AL4 Pressure Regulation Fault

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Model: 206, 306, 307, 406 with AL4 Automatic Transmission.

Symptoms

Flashing of the snow or sports light or Automatic Transmission Fault on display.

In most cases the transmission will go into the downgraded mode, or limp home. In this mode the transmission is locked in third speed to enable to continue the operation of the vehicle. This is reported by some drivers as a loss of power. The downgraded mode can be preceded by some very harsh up or down shifts. After stopping and restarting the engine, the transmission will usually return to normal operation.

Most of the time the problem appears at unpredictable intervals. Some owners experience incidences on a daily basis and others may have weeks of trouble free operation between incidents. Normally the malfunction lasts only for short periods, from a few seconds to a minute or two.

The following fault code is logged in the transmission ECU:

"Intermittent fault. Pressure regulation fault, recommendation/variation"

Cause

The pressure regulation fault code is triggered when the ECU senses a difference between the calculated pressure and the actual line pressure in the transmission. The pressure difference is caused by internal leakage. Internal leaks can be caused by mechanical wear, a leak between valve body and transmission casing, incorrect adjustment of the manual valve index spring. The most common cause however is the pressure regulation solenoid valve.

Diagnosis.

The diagnosis is not straightforward, several operations are required to eliminate possibilities.

1. Transmission fluid

- a. Check the fluid level in the transmission and rectify if as required. Low or high fluid levels are equally harmful.
- b. Save some of the drained fluid in a clean container for examination.

2. The transmission may need to be overhauled or replaced if:

3. The fluid sample is black and smells burnt, contains metal particles, plastic particles or friction material.

4. New fluid is transparent. Fluid drained from a transmission that has been in operation for some time is usually dark in colour and lacks transparency, this is acceptable and not necessarily an indication of an internal fault. Caution is to be exercised with the fluid assessment.

5. Pressure sensor

- a. With help of the diagnostic computer check the transmission line pressure.
- b. The following parameters are expected.
- c. At idle in N: 2,4 - 2,8 bars.
- d. At idle in D: 2,8 - 3,1 bars.
- e. Under full load 2200 rpm: 11,3 - 11,7 bars.
- f. If there is no change in pressures, test the sensor and sensor supply.

6. If a sensor is faulty a constant pressure of 6,5 bars is maintained by the system. This would also mean that the transmission would be in Limp Home Mode and that the fault is permanent. Since the problem usually is intermittent the pressure readings will check out OK most of the time. If no other problems have been found so far, continue with section 3.

7. Solenoid Valves

- a. Replace the pressure regulation valve and the converter lock-up valves.
- b. Make sure the 2 seals behind the valve body are correctly fitted. If necessary replace the seals.
- c. Tension the valve body bolts to 8 NM.
- d. After fitting the valve body adjust the selector index spring

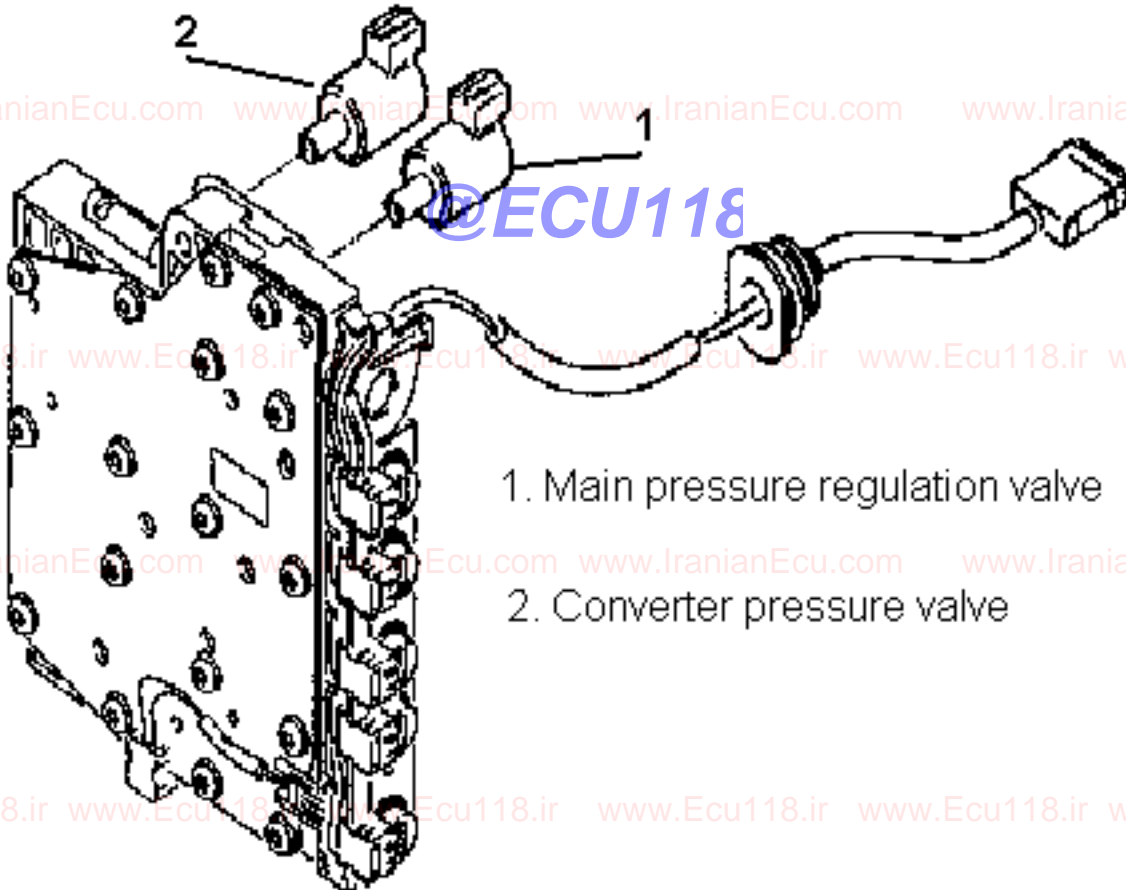
- e. Adjust the multi-function switch.
 - f. Before fitting the pan ensure the 2 magnets are present.
 - g. Fill the transmission with new fluid and adjust the level.
 - h. Update the transmission ECU software. The older software versions are not compatible with the new Borg Warner valves.
8. The operations outlined above will in most cases resolve the pressure regulation problem. If the problem can't be resolved follow step 4 or 5.

9. Valve Body

- a. Replace the valve body

10. Transmission

- a. Replace or overhaul the transmission.



1. Main pressure regulation valve

2. Converter pressure valve



Part No. For solenoid: 2574.10 (obsolete)



Part No. For new Borg Warner valves: 2574.16

Part No. For set of magnets: 2221.17

Part No. For transmission fluid. (2 litres): 9736.22

Important reminders

1. Only use genuine Peugeot transmission fluid.
2. The fluid level must be correct.
3. The correct adjustment of the manual valve index spring is very important.
4. Adjust the multi-function switch after the valve adjustment.
5. Cleanliness is absolutely essential when working on the

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