

VW 01P

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TECHNICAL INFORMATION BULLETIN

01P Lock-Up Slip or Judder

Over the last couple of years we have observed customers having problems with a lock up slip or judder on VW Caravelle/Transporter vehicles with 2.5TD engines and 4 speed 01P transmissions. This can be worse or more evident when vehicles are hot and when the engine is running within it's peak torque range, in the mid to lower half of the rev range. We have had Torque converters sent to us for investigation of this fault, when they are opened no mechanical fault is evident other than a glazing or polishing effect on the lock up lining and on the base of the converter where it engages, which is the result of the fault rather than the cause. In a similar way to band and friction components in the transmission, deglazing and replacing the lining will improve or even cure the condition by making the surfaces more grippy but the condition will return after a short while if this is all that is done and the root cause is not addressed.

From a technical point of view the lock up application in these T/C's (as in many others) is a simple piston applied by converter pressure, which is constantly inside the T/C when the engine is running. The Lock up plate (piston) is held in the disengaged or off position by a modulated oil feed (converter release pressure) to the underside; this feed is at a higher pressure than converter pressure and is controlled via the TCC solenoid on the valve body. To engage the lock up converter clutch the TCU commands the TCC solenoid to exhaust the converter release pressure to the sump allowing the lock up plate (piston) to be applied by converter pressure. After consultation with several of our customers who have experienced this fault we feel the problem is caused by various factors and would suggest the following to keep the vehicles that leave your workshops running smoothly.

1. The hydraulic integrity of the valve body must be perfect with no valve/bore wear in the lock up circuit or solenoid allowing a "leak off" of fluid into the Lock up release circuit. Sonnax® supply a comprehensive range of valve and tool kits to repair these valve bodies, call us for further information
2. The fitting of a large external air – oil cooler in place of the original heat exchanger to better control excessive heat caused by use of these vehicles as Taxi's or work vans. Sonnax® supply a kit to connect cooler hoses to the transmission, our part No. **AG4.COO01**.
3. Replace TCM, VW will not admit this last solution and the part number has apparently not changed, but it would appear that they have updated the TCU by changing the shift strategy to generally improve the drive quality of these vehicles by moving shift points and Lock up engagement away from the peak engine torque area. This seems to help by moving the lock up engagement further up the rev range and out of the high torque area, which is constantly trying to "tear" the piston and its mating surface apart.

The higher vehicle weights of these particular vehicles and larger high torque diesel engines mean the lock up lining is subjected to considerable stress, making it the weakest link, and the first point of failure in the power train if everything is not perfect.