Technical Services Bulletin

The Problem

Valeo Service warranty department receive a high number of clutches being returned for a Warranty claim which display excessive diaphragm finger wear. Some also display evidence of a collapsed bearing carrier from thermal damage. The units have usually only been in service for a short period of time. The symptom is usually described as "stiff clutch pedal operation", "difficulty in selecting gears" or "loss of clutch operation".

The Cause

If the clutch cover assembly diaphragm fingers show excessive wear, or the bearing has partially worn through the fingers, a seized, stiff or worn release mechanism, the most common cause is due to the bearing having an incorrect pre load on the diaphragm fingers.

The Findings

Image 1 shows a typical cover that displays evidence of the bearing having an incorrect pre load, and clearly demonstrates the type of damage that can be seen on the cover when the clutch is removed.

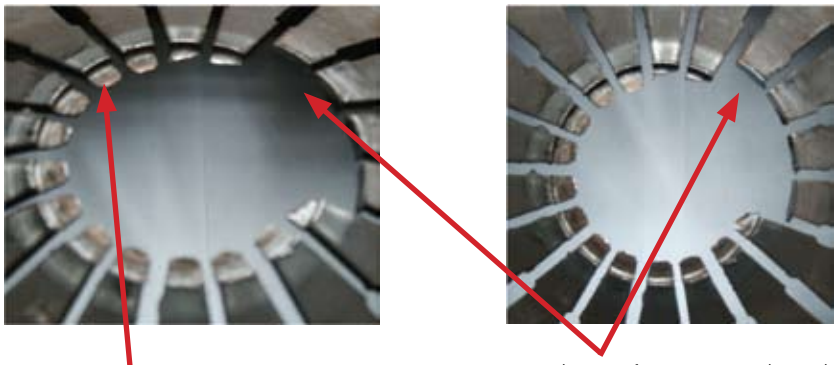

Image 1
Excessive wear and bluing of the diaphragm fingers

Diaphragm fingers worn through

T.S.B. No.:
CL003 / 08

PRODUCT:
Car and LCV Clutch

MODEL:
PSA Group, Rover 200/400/25/45

PART No.:
801117,801119

SUBJECT:
Unable to select gears/worn diaphragm fingers/ collapsed bearing

DATE:
June 2008

The cause of the failure is incorrectly diagnosed as a collapsed/failed bearing, however the real cause of the bearing failure is due to thermal damage caused by a preload fault. When the diaphragm fingers are worn to excess and the bearing face does not have a contact point on the diaphragm fingers, the outer race of the bearing will contact the fingers. This causes the outer race of the bearing to turn, resulting in the carrier becoming hot and subsequently melting. (Image 2).

Image 2
Contact with the fingers is made at this point, resulting in thermal bluing.

Outer race will turn causing carrier to become hot and subsequently melt.

The rear of the bearing will also display evidence of a heavy contact from the release fork seating pads. Heavy impressions can clearly be seen at the point the bearing locates onto the fork. (Image 3)

Image 3

Heavy/deep impression from fork pads.

This is the result of a heavy contact being applied to the bearing from the release fork being partially seized due to worn pivot point bushes and worn release arm cross shaft. A thorough examination of the release mechanism should be carried prior to the refitting of the gearbox. This Issue is addressed in TSB CL005/08. Clutches returned to Valeo that clearly exhibit evidence of bearing preload will not be accepted under warranty.

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