Technical Services Bulletin

The Problem

Valeo Service warranty department receive clutches returned for a warranty claim clearly exhibiting evidence the failure of the clutch is not attributable to a manufacturing defect, but as a direct result of a faulty Dual Mass Flywheel. A failed DMF will cause rapid and severe wear to the clutch drive plate, and in some cases a drive plate failure could occur.

The Symptoms

An early indication of a worn DMF can be identified as a slipping of the clutch, which appears to happen for a few seconds when taking up drive, or power not being transmitted fully when taking off in first gear. This could be an indication the DMF has badly worn radial springs, which will result in the clutch to slip due to excessive free rotation in the secondary mass. This results in rapid premature wear to the clutch friction material.

A rattle from the transmission and engine noises at idle with the engine at operating temperature, heavy vibration and problems with power being transmitted, highlight potential damage to the DMF internal dampers.

A DMF that has suffered a failure of the radial dampers, will result in the secondary mass of the flywheel to move freely side to side, and in extreme cases the flywheel will bounce back and forth. This can some times be reproduced on the vehicle when the engine is revved momentarily if stationary and out of gear. The noise can be described as a low rumbling/metallic rattle, which can be heard around the bell housing area.

The Findings

Drive plates that exhibit signs of slippage, thermal damage to the friction material, shifting of the friction material between rivets and excessive spline wear will indicate the DMF is worn or faulty.

Before fitting a new clutch, the DMF should be checked for wear. Visually inspect the condition of the drive plate mounting face. If thermal bluing or thermal cracks in the surface are evident the flywheel should be replaced.

Image showing shifting of friction material between rivets

Also, check for excessive free rotation in the secondary mass. Free rotation up to 60 degrees indicates a total failure of the flywheel. No more than 7 degrees* (approx 5 teeth on the starter ring gear) of free movement should be evident before the resistance can be felt, more than this indicates a worn damper and total failure may be imminent.

Also check for excessive axial movement by rocking the secondary mass on its axis, as this should not exceed 1mm.

**Amount of free movement and axial movement can vary between manufacturers. Always consult a dealer for DMF tolerances, as this is a guide only.*

T.S.B. No.:
CL001 / 08

PRODUCT:
Clutch

MARQUE:
All makes with Dual Mass Flywheel

PART No.:
All part numbers applicable for DMF

SUBJECT:
Failed Dual Mass Flywheel

DATE:
March 2008

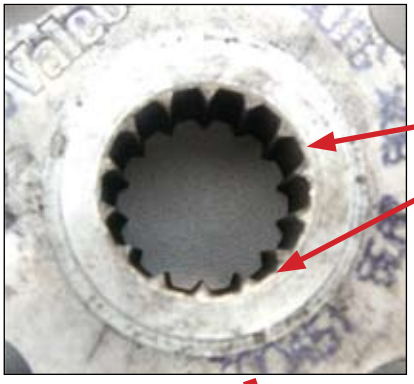
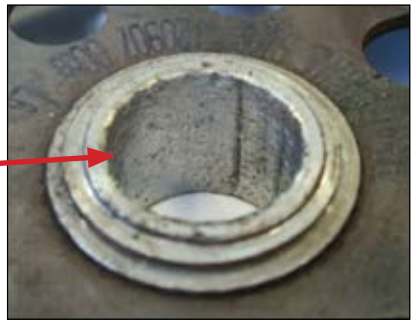
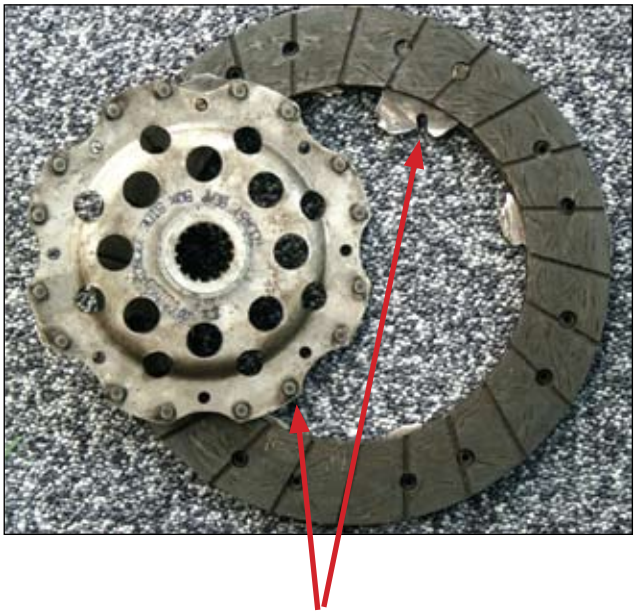


Image showing wear to spline teeth from excessive free rotation in the secondary mass

In extreme cases, the free movement in the secondary mass can result in the total loss of the drive plate hub splines





Failure of the cushioning plate riveting at the drive plate hub can also occur

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Valeo