TECH BULLETINS

TSB - FW02

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Machining the Flywheel When Fitting a New Clutch

Before fitting a new clutch, carefully inspect the flywheel for wear or damage. Minor scoring and grooving marks can be removed by machining, but if the contact surface is deeply scored, the flywheel must be replaced. Scoring and grooving prevent the driven plate from contacting the flywheel evenly, resulting in clutch shudder and slipping problems. Surface glazing and heat marks must be removed by machining in order to prevent clutch slipping and shudder problems. Investigation of clutch non-release, slipping and shudder problems has shown that a worn, damaged or incorrectly machined flywheel causes many of these problems.

When fitting a new clutch to a vehicle it is essential that the flywheel is machined.

If the flywheel surface is heat-cracked or the flywheel runout exceeds 0.1mm, the flywheel must be replaced, as it is almost impossible to correct these faults by machining. A cracked or distorted flywheel is also a serious safety risk as it could burst while in the vehicle and cause severe injury to the driver and passengers. Flywheel runout must be measured with a dial indicator gauge mounted on the engine as illustrated in the sketch below.

Care must be taken to ensure that the specified flywheel profile is maintained by machining the cover assembly-mounting surface by the same amount as the contact surface. Where the flywheel has a step or recess, this must be machined exactly in accordance with the vehicle manufacturer's specifications in order to prevent clutch non-release and slipping problems.

The flywheel surface finish is also of critical importance, a flywheel finish too smooth will encourage a shudder type problem.

NOTE: NOT MACHINING FLYWHEELS WILL VOID WARRANTY

Finally, the flywheel dowel pins, bolt holes and starter motor ring gear must be checked for damage. Damaged or missing dowel pins must always be replaced in order to ensure correct location of the cover assembly on the flywheel, thereby preventing clutch problems caused by misalignment. Old dowel pins should not be re-used, as they will almost certainly have been damaged during removal from the flywheel. Due to the introduction of new non-asbestos friction materials, it has become essential to machine the flywheel surfaces to avoid clutch problems.

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1800 CLUTCH (258824)