TECH BULLETINS

TSB - DMF02

CLUTCHTECH

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Restriction on Machining of ClutchPro Dual Mass Flywheels

When fitting a new clutch to a vehicle the flywheel should always be machined to original condition in order to prevent clutch problems caused by a worn, burnt, glazed or cracked flywheel face. However, this recommendation excludes all vehicles fitted with dual mass flywheels as the machining of dual mass flywheels is not recommended by the OE manufacturer.

The dual mass flywheel has a primary mass bolted to the engine crankshaft and a secondary mass assembled onto the primary mass by means of a bearing, a torsion damper spring assembly and a friction control assembly between the two masses. The dual mass flywheel isolates engine vibration from the transmission more effectively than a conventional torsion-damped driven plate because of the long compliant torsion damper springs inside the flywheel which move through a much longer arc than the short stiff springs in the torsion-damped driven plate, and the increased inertia effect of the secondary mass acting on the gearbox input shaft. The driven plate fitted to a dual mass flywheel is rigid and has no torsion damper.

The primary and secondary masses can normally be rotated slightly by hand relative to each other with the result that the dual mass flywheel cannot be clamped securely in order to machine the flywheel face on the secondary mass without damaging the bearing mounted between the two masses, while the two masses cannot be separated without permanent damage to the flywheel assembly.

Machining the flywheel face reduces the secondary mass which adversely affects the torsional vibration damping function of the dual mass flywheel, resulting in increased driveline vibration in the vehicle.

The friction control assembly inside the flywheel may have worn out, and the grease lubrication in the bearing and torsion damper assembly inside the flywheel will almost certainly have degenerated as a result of heat generated by clutch slipping during the service life of the clutch and flywheel in the vehicle.

ClutchPro has noted a number of cases where clutch rebuilders and machine shops have tried to recondition dual mass flywheels without success, resulting in severe driveline vibration, clutch shudder and slipping problems.

It is therefore always recommended that a new flywheel is fitted if the original flywheel is worn, burnt or heat-cracked, and ClutchPro will not provide any warranty in respect of clutch problems caused by dual mass flywheels which have not been machined or reconditioned.