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Dual mass flywheel

In the ZMS the mass of a conventional flywheel has been divided in two. One part belongs, as usual, to the mass reactance of the engine. The other, however, increases the moment of inertia of the transmission.

Spring/damping system

The two masses are connected by a special spring-/damping system. A clutch disc without torsion damper separates and joins the two parts.

It is positioned between the secondary mass and the transmission. The gears are thus easier to engage and the synchroniser suffers less wear.

Damping mechanism

The greater the mass reactance of the vibrating masses, the stronger the resonance ratio and the associated torque peaks.

In the case of the dual mass flywheel this would be very evident when starting and stopping the engine.

An additional damper mechanism therefore prevents resonance overload. In normal operating conditions this damping mechanism is idle and the rotary vibrations of the engine are filtered out by the damping spring system.

Isolating the vibrations

Optimum isolation of the vibrations depends largely on the relationship between friction and spring rate.

The softer the spring, the better the isolation of the vibrations. The extremely long springs in the latest ZMS generation almost completely isolate the resonance ratio from the transmission in daily driving conditions.



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