Concentric Slave Cylinders Explained





Concentric Slave Cylinders (CSCs)

Many vehicles are now fitted with a concentric slave cylinder (CSC) as opposed to the conventional release fork and bearing:



The conventional method of operation of the clutch is by cable or hydraulic actuation of a release fork, this disengages the clutch via a release bearing. CSC release bearings enable a lighter clutch pedal effort with better take-up, allowing vehicle manufacturers to dispense of the release fork, guide and bearing.

The CSC is mounted inside the gearbox bell-housing and is usually made from either modern thermo-plastics or aluminium, with intricate rubber seals and chambers within.

When a clutch is replaced it is essential that the CSC is also replaced at the same time. After many clutch actuations the rubber seals become worn and the operating position within the chamber of the CSC changes, which means the worn internal components are no longer aligned. It is imperative that the rubber seals inside CSCs are of the highest quality to ensure there is no loss of hydraulic fluid. If fluid is allowed to pass through the seals it will contaminate the friction material on the disc, which will result in clutch failure.

The CSC must not be compressed prior to fitment; this will damage the rubber seals as they are not fully lubricated.

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