



# HYDRAULICS: DAMPERS + ISOLATORS

## TIPS + TRICKS

APPLICATION  
ALL Models

### Benefit of Clutch System

The clutch system is installed between the engine crankshaft and the input of transmission to give us the ability of changing gears and vehicle stand still while the engine is in idle state. The release and engagement is made via cable or hydraulic.

The Hydraulic clutch system consist of Clutch Master Cylinder (CMC), Clutch Slave Cylinder (CSC), Concentric Slave Cylinder Bearing (CSCB) and Hoses, example see **Fig. 1, 2, 3 & 4** respectively

### Benefit of Clutch System

Due to the internal combustion which happens in the engine, low frequency vibrations are generated and crankshaft imbalance is produced. These results are transmitted by the clutch cover through clutch bearing and hydraulic column to the pedal as hydraulic pulsations. This pulsation is felt by the driver when the driver depresses the pedal which results in uncomfortable feeling.

To eliminatethe problem there are three possible solutions:

- A. Damping the pulsation amplitudes
- B. Isolating the clutch circuit from the master cylinder
- C. Modulating the pulsation frequency by increasing the vibration frequency from the engine

### HYDRAULIC DAMPERS



Master Cylinder CMC Fig.1



Clutch Slave Cylinder CSC Fig.2



Concentric Slave Cylinder Bearing CSCB Fig.3



Hoses Fig.3

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