Torsional Vibration Measurement – Automotive Clutch

Vibration And Noise Signature Analysis

Want to measure how effective is torsional damper in clutch plate?

A set of sensors with data acquisition system and software suit, you can measure the effectiveness of the torsional dampers in clutch disc.

Torsional vibration measurement system measures the torsional vibration before the clutch disc (usually at flywheel) and after the clutch disc (usually in gear box).

A high speed inductive sensor detects passing teeth on toothed wheel and the software calculates change in velocity through flywheel on the input side and gear box's gear teeth on the output side of the clutch.

Illustration 1: Mounting Arrangment of Sensors

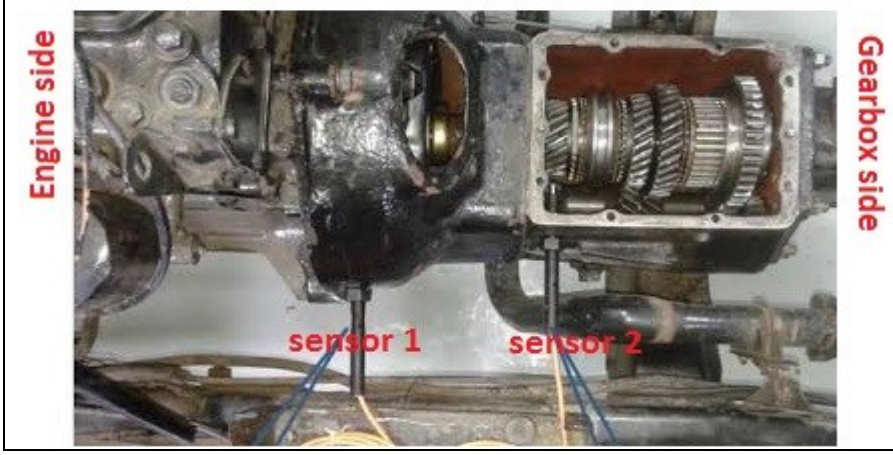
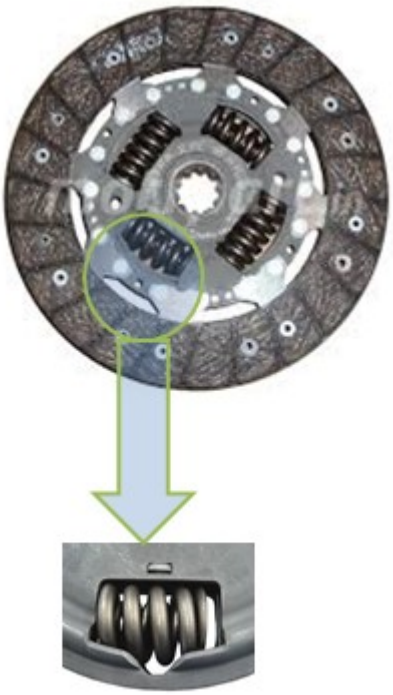


Illustration 2: Clutch Plate and Spring Arrangement for Torsional Vibration Isolation



The acquired data is processed in the torsional vibration module of nvhGeek software suit.

nvhGeek torsional vibration software module has following key features:

- Display of pulse train
- RPM curve
- Time domain measurement of torsional vibration as displacement, velocity and acceleration
- FFT graphs for torsional velocity and torsional acceleration
- Saving of acquired data in measurement file which can be read back later for detailed study
- Instantaneous and mean RPM display for input and output wheels

Illustration 3: Data Acusition Hardware

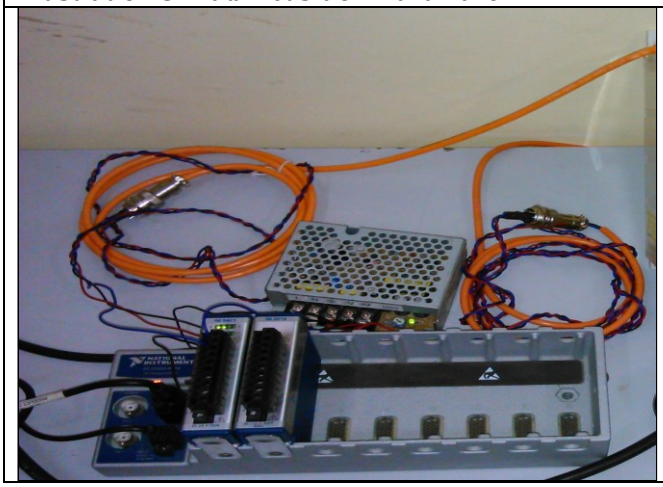


Illustration 4: Frequency Domain Torsional Vibration