

## CYLINDER PRESSURE GENERATED NOISE OF MEDIUM SPEED DIESEL ENGINE

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Ranking of noise generation mechanisms is essential for designing low noise diesel engines. Engine noise is caused by several excitations or sources of noise, such as combustion, turbo charger, piston slap, valve mechanism, fuel pumps, gears and inertia forces.

Noise generated by the cylinder pressure was studied using multipoint coherent power analysis. Cylinder pressure probes were mounted in all cylinders. Partial coherence functions were used to analyze the contribution of the cylinder pressures to the measured engine surface velocities.

The effect of different fuels, diesel and gas, was studied comparing cylinder pressures and measured vibrations and sound power levels. It is already known that a gas engine is more silent than a similar diesel engine. The reasons for the disparity are differences in combustion processes and absence of the fuel pumps in gas engines. The fuel pump causes impulsive excitations via the cam shaft to the driving gear. The importance of these phenomena was studied using a dual fuel engine.