

## Documents

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### **Assessment of Turbocharge System for an Existing Gas Engine**

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#### **Abstract**

S Turbocharger is a turbine driven air compressor and forced induction device powered by exhaust gases from the internal combustion engine. A turbocharger consists of two chambers connected by center housing. The two chambers contain a turbine wheel and a compressor wheel connected by a shaft which passes through the center housing. The response of the turbine to the engine exhaust, dictates the response of the compressor and thus the engine air inlet. Turbocharger response time (also known as turbo lag, is directly related to the size of the turbine and compressor wheels. Small wheels accelerate rapidly; large wheels accelerate slowly. While small wheels would seem to have an advantage over larger ones, they may not have enough airflow capacity for an engine. Therefore, to minimize turbo lag, the intake and exhaust breathing capacities of an engine must be matched to the exhaust and intake airflow capabilities of the turbocharger. The results of the current study showed that the horsepower of 347 hp and torque 380 ft-lb before turbocharge reached to 483.3 hp, torque 552 ft-lb after turbocharge at a speed of 4600 rpm. © Published under licence by IOP Publishing Ltd.

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