Thesis Title	Combustion Model of Two-Stroke Gasoline Engine
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Abstract

This study investigates the mathematical model of combustion in a compact two-stroke engine. The purpose of this invention is to predict the pressure and the temperature in the cylinder during the processes of gas exchanges, compression, and combustion. The mathematical model is used to analyze the pressure and the temperature in single cylinder of a crankcase type of a two-stroke engine. Thus, the mass of the mixture in the cylinder functions with the pressure in the crankcase. Further, this model is also used to predict the pressure wave in the pipes of the two-stroke engine in order to calculate the mass trapped in the cylinder. The type of combustion model used in this model is the thermodynamic two-zone model. At the period during the combustion process, the cylinder is divided into two zones: the burnt gases and the unburnt gases. This assumption includes a uniform pressure throughout the combustion chamber but there is a different temperature in the two gas zones. No heat transfer occurs between the burnt and unburnt zones. The heat transfer occurs from the high temperature gas through the combustion chamber walls to coolants.

The calculated results were compared with those from experiment at speeds of 2000, 2500, 3000, 3500 and 4000 rpm and at throttle opening of 25, 50 and 75 percent. It was found that the pressure computed from the mathematical model is different from that from the experiment by at least 1.61 percent at the condition of 2000 rpm and throttle opening 50 percent.