

Thesis Title	Development of Electronic Knock Control for Gasoline Engine	
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Abstract

The objectives of the study, "Development of electronic knock control for gasoline engine" are: 1) to design and build up a knock control circuit for gasoline engines; 2) to design and set up a computer control program for the knock control circuit; 3) to study an engine efficiency using the knock control circuit.

By installing the vibrating sensor on the outside surface of the first cylinder block nearby its combustion chamber, the sensor transmits dynamic vibration signals. The signal interpreting unit which links to the micro-controller. If the knock is occurred, the micro-controller will transmit a signal to delay an ignition timing. If the knock is not present, the micro-controller will function normally as per a contact breaker operation.

The control program is written on the personal computer by using the Assembly language. The program is compiled and run, then the fulfilled program is copied in the EPROM memory. Afterward, the memory is plugged into the control board. By testing the electronic knock control board on the gasoline engine at the workshop shows the following results: the engine torque and the engine power are increased to 5 - 8 % , 5 - 15 % respectively and also the engine knock can be controlled.