An ECU block diagram of this system functioning with the 8-bit microcomputer in current use is shown in Fig.9. In order to implement this system, it was necessary to use a T5A41 microcomputer for engine control, and another T5A41 for transmission control. T5A41 is the top-of-the-line product in the series. This configuration necessitates the use of serial I/O with direct memory access function for the transmission of data between the two microcomputers. The data communicated in this manner includes information concerning engine speed, intake manifold pressure and torque control-related data. Furthermore, fail-safe logic must be utilized between the two microcomputers, and therefore the two microcomputers operate in accordance with a master-slave relationship. The engine control microcomputer functions as the master, and is provided with a backup IC and a watchdog timer on its power supply IC to

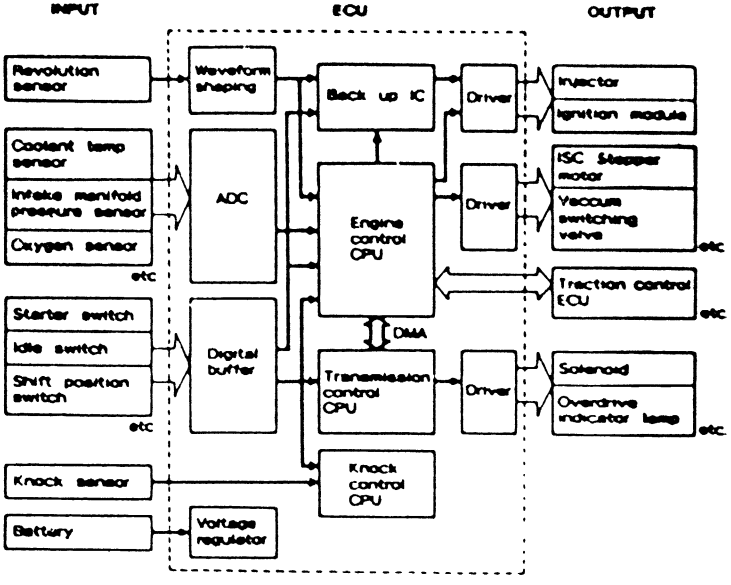

Fig. 9 Block Diagram of ECU with 8bit Microcomputer

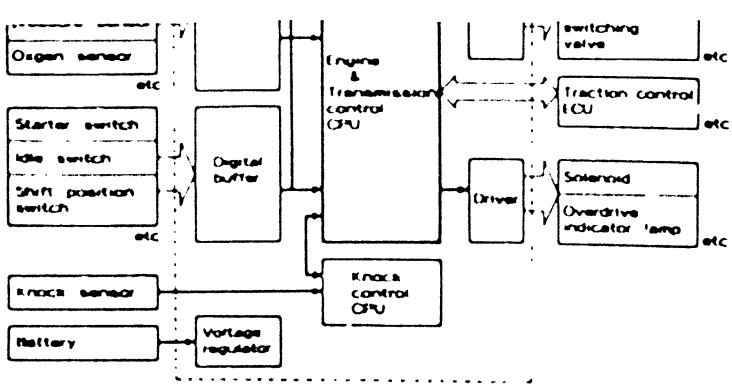

Fig. 10 Block Diagram of ECU with 16bit Microcomputer

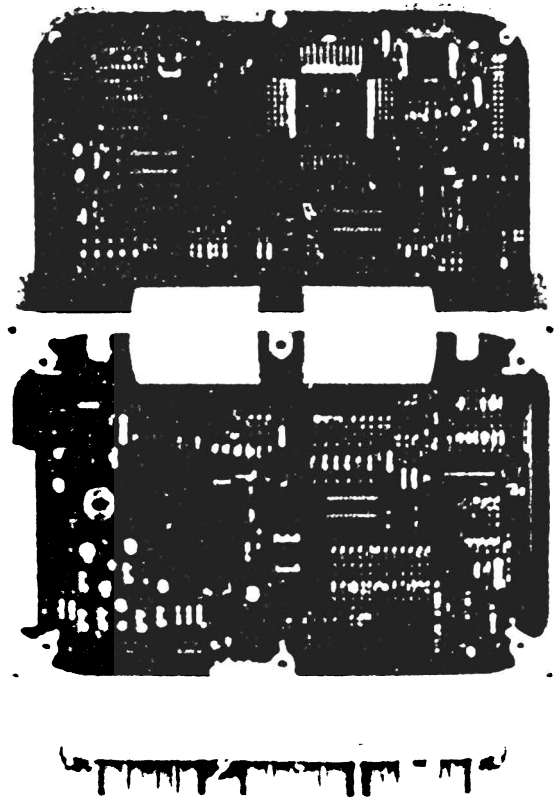

Fig. 11 Photograph of ECU with New 16bit Microcomputer