DEVELOPMENT OF FAN SPEED ADJUSTMENT SYSTEM FOR 955 JOHN DEERE COMBINE HARVESTER BASED ON FIELD SLOPE

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SUMMARY

Harvesting Wheat by mechanical means using combine is one of farmers important concern. Although many people know combine but only few know how it works. In working with combine, the driver must know basic rule of working with combine, working of different parts, correct adjustments of different sections and how to reduce grain loss and increase harvesting efficiency. Grain loss in the cleaner section is mostly due to low air flow in the downhill and high air flow in the high hill. In this research, a system for automatic adjustment of fan speed according to ground slope was designed and implemented. In this system a magnetic sensor is used to measure fan speed. A noble mechanism for measuring ground slope together with a wire potentiometer is used. A 3 HP electromotor for providing necessary power is selected. An electronic circuit consist of an Op-Amp, relay, contactor, etc was designed to adjust fan speed according to ground slope. Another circuit in order to display speed and slope is implemented using a 8051 microcontroller. This circuit consists of a microcontroller, an ADC and LCD display. With design and installing this system, in the combine many of the formentioned problems facing combine driver can be avoided.