

## CHAPTER V



### CONSTRUCTION OF THE REGULATOR

An assembly and constructional detail of the prototype of the automatic voltage regulator for alternator is illustrated throughly in this chapter. The constructional design is based on the simplicity of construction, compact in size and convenient in operation.

#### 5.1 Printed Circuit Wiring Board

The sensing circuit (rectifier and filter), comparator, error amplifier, firing circuit and stabilizing network were assembled on the printed circuit board as illustrated in Figure 5.1 and the component layout of those circuits on the printed circuit board is illustrated in Figure 5.2

#### 5.2 Power Controller Stage Assembly

The bridge rectifier diodes ( $D_8 - D_{11}$ ), flywheel diode ( $D_{12}$ ) and silicon controlled rectifiers ( $SCR_1$  &  $SCR_2$ ) of the power controller stage were mounted on the same heat-sink as shown in Figure 5.3

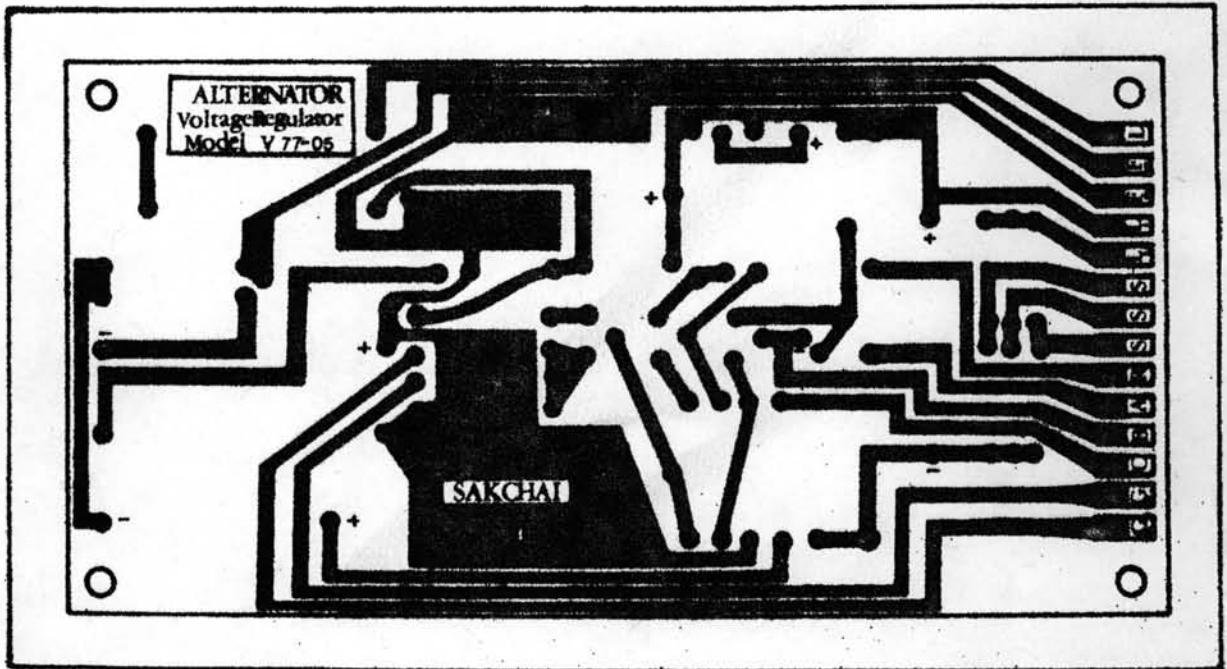


Figure 5.1 : Printed Circuit Wiring Board

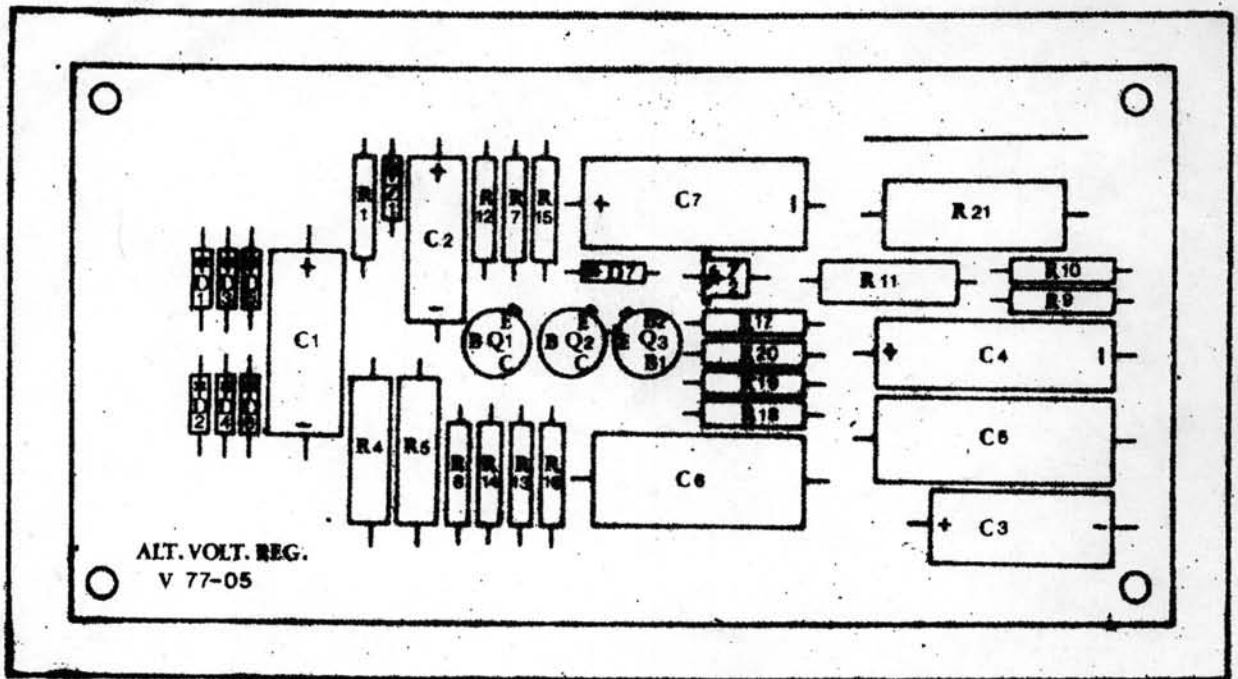


Figure 5.2 : Layout of Components on the Printed Circuit Board.

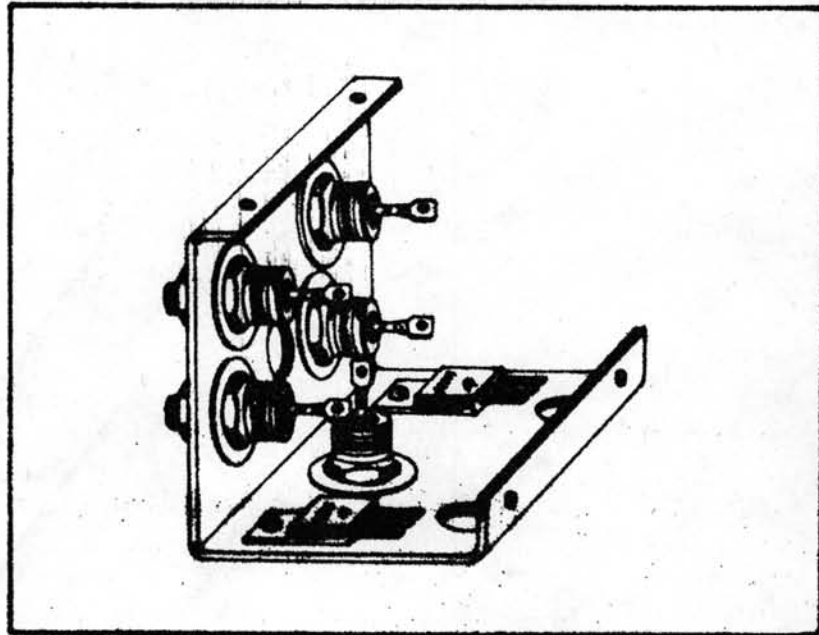


Figure 5.3 : Components Layout of Power Controller Stage.

### 5.3 Completed Regulator Assembly

The completed assembly of the voltage regulator for alternator is illustrated in Figure 5.4. The overall dimensions of this regulator assembly are 95 mm width x 160 mm length x 80 mm height and has only 1.5 kilograms weight.

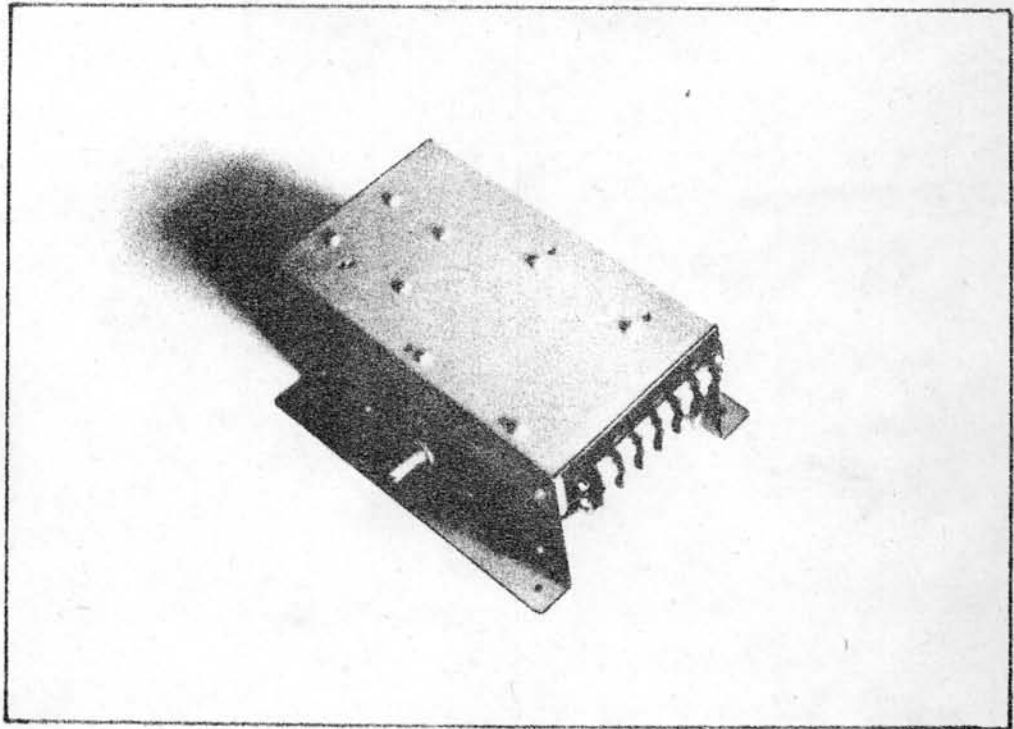


Figure 5.4 : Assembly of the Automatic Voltage Regulator  
for Alternator