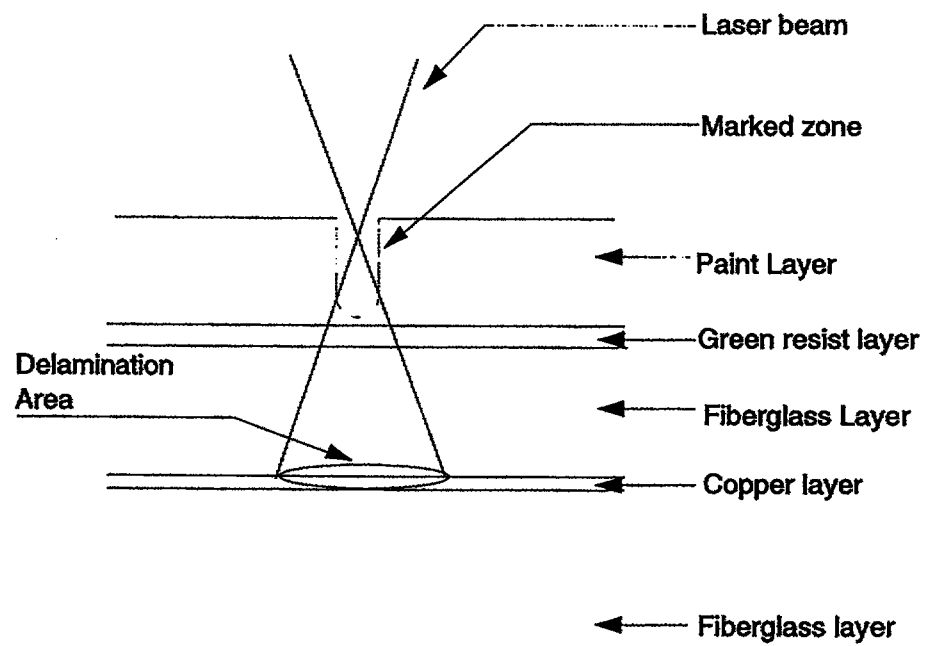


ABSTRACT

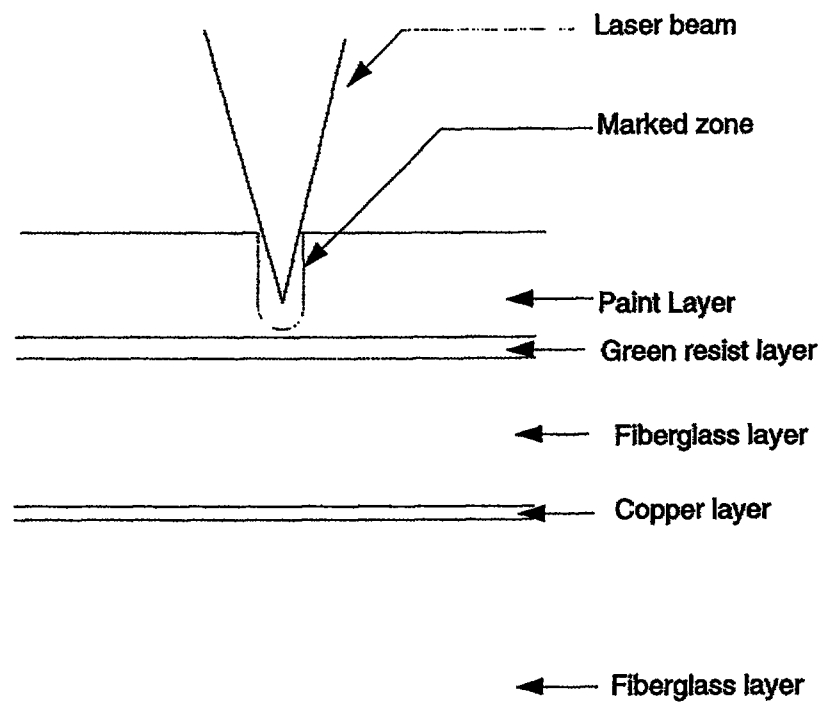
Title : Effective Method of Laser Marking on PCB

The process of using CO₂ laser to mark alphanumeric fonts, barcodes and data matrix on PCBs is a fast and precise method to attach information on PCBs without causing delamination to the boards. (Figure 1). By using a 5 kHz pulse CO₂ 25 watt laser with a beam delivery of a very small spot size created by scanning mirrors and a flat field lens and controlled by a computer (Figure 3), the laser markings on the PCB are confined to the surface to be marked without causing damage to the boards (Figures 4, 5 and 6). The small spot size allows marking of dense barcodes at any angle and area. The data for marking is generated by a computer at the instance of marking. The entire operation is automatic. The markings are permanent and tamper-proof.



YAG Laser Marking

FIGURE 1



CO2 Laser Marking

FIGURE 2

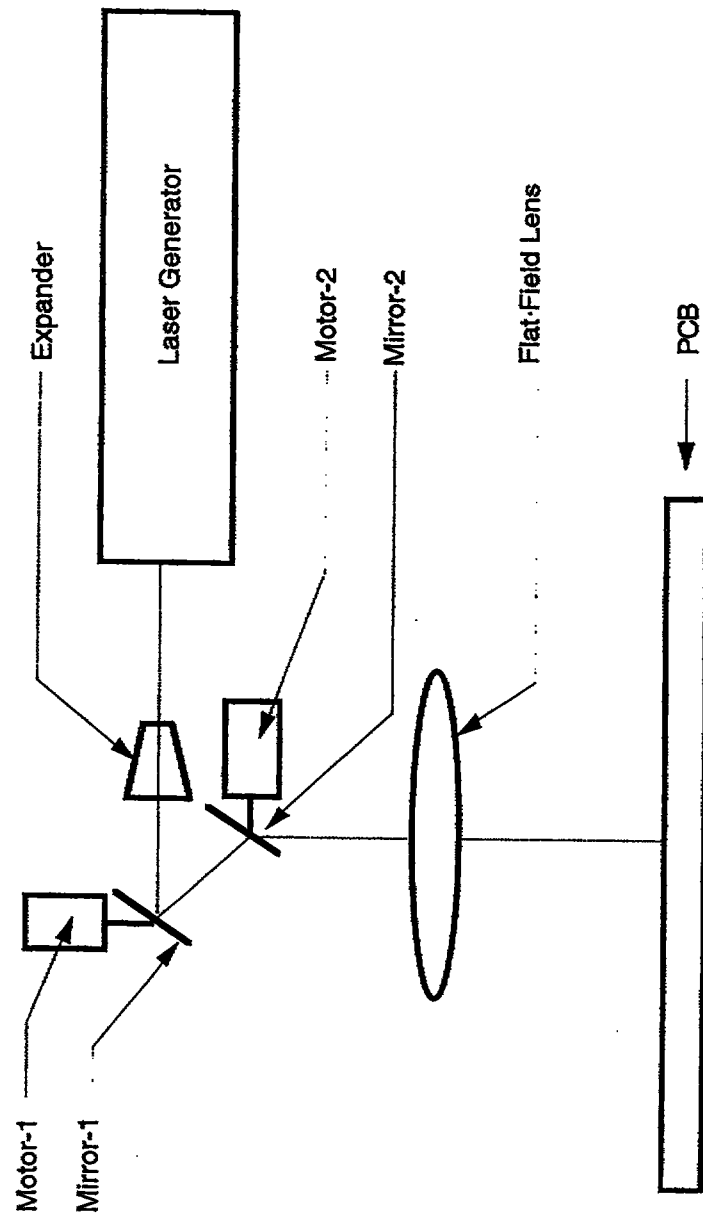


FIGURE 3

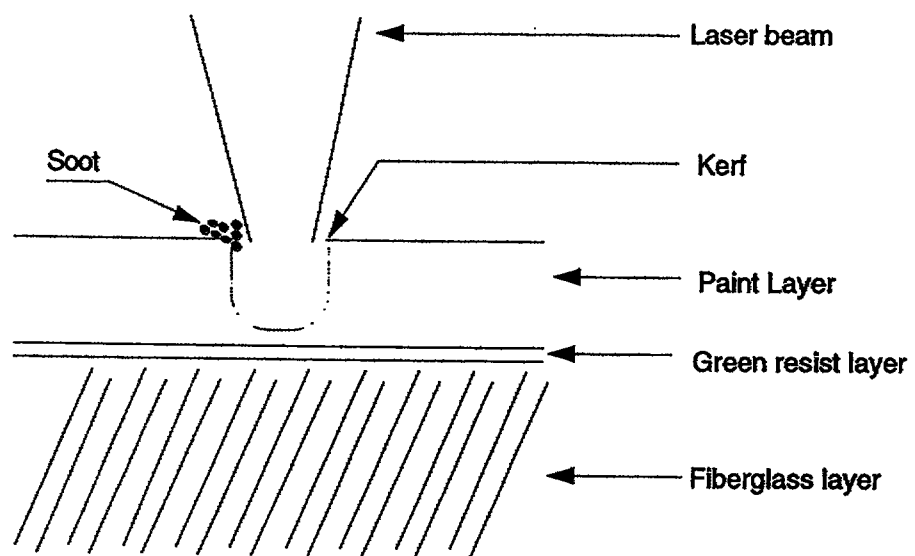


FIGURE 4

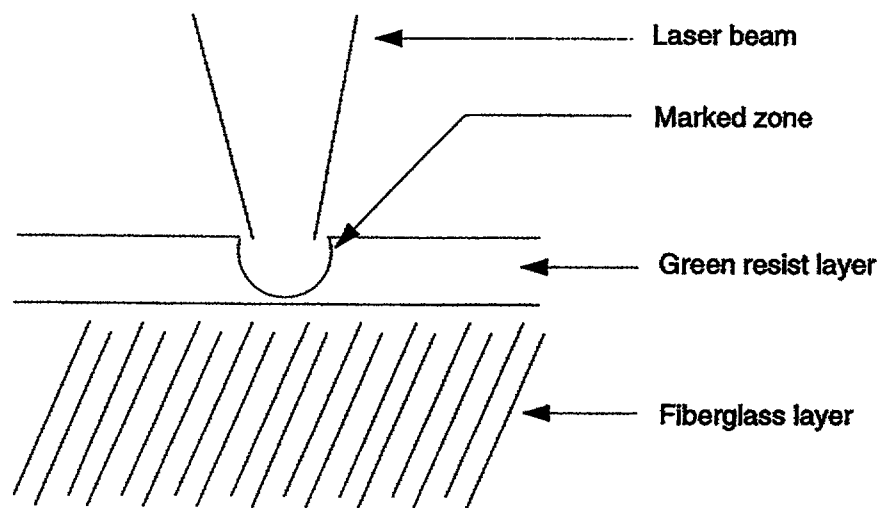


FIGURE 5

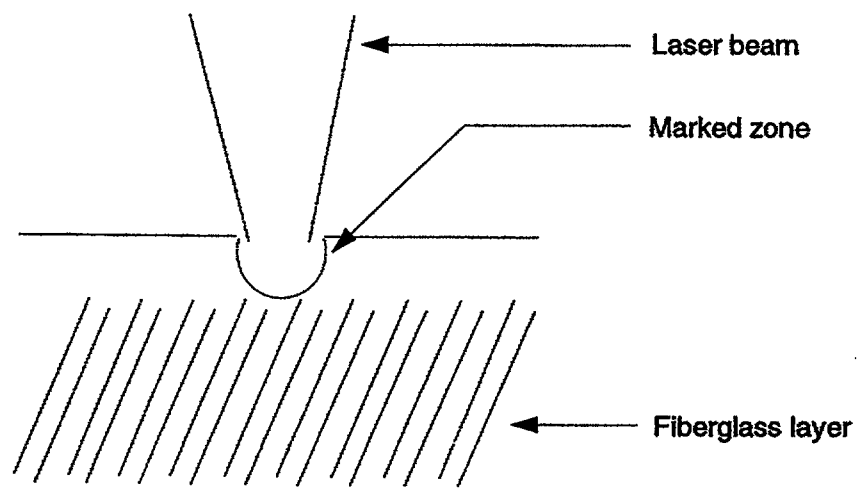
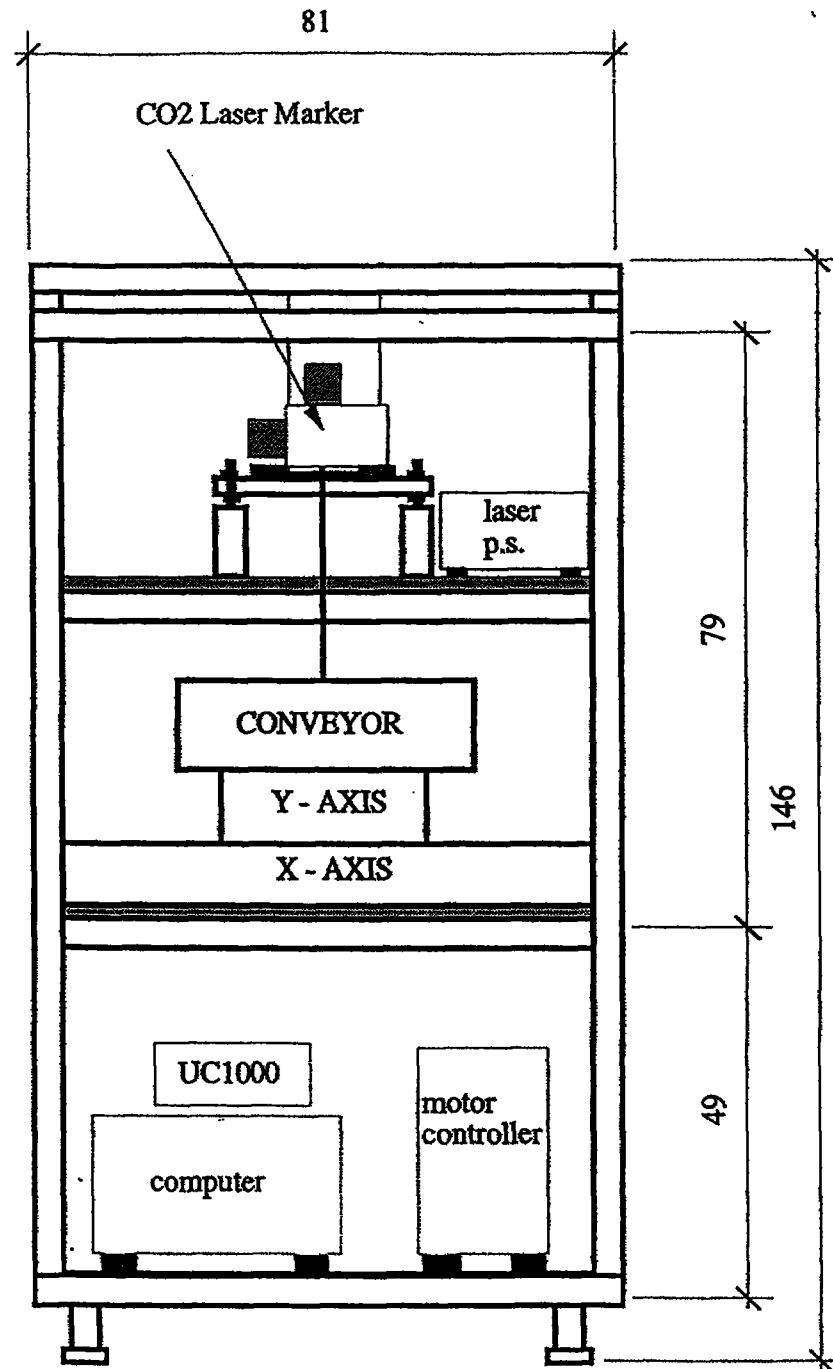


FIGURE 6

CO 2 XY FRONT VIEW ver.1



All dimensions are in centimetres

FIGURE 7

CO2 XY SIDE VIEW ver.1

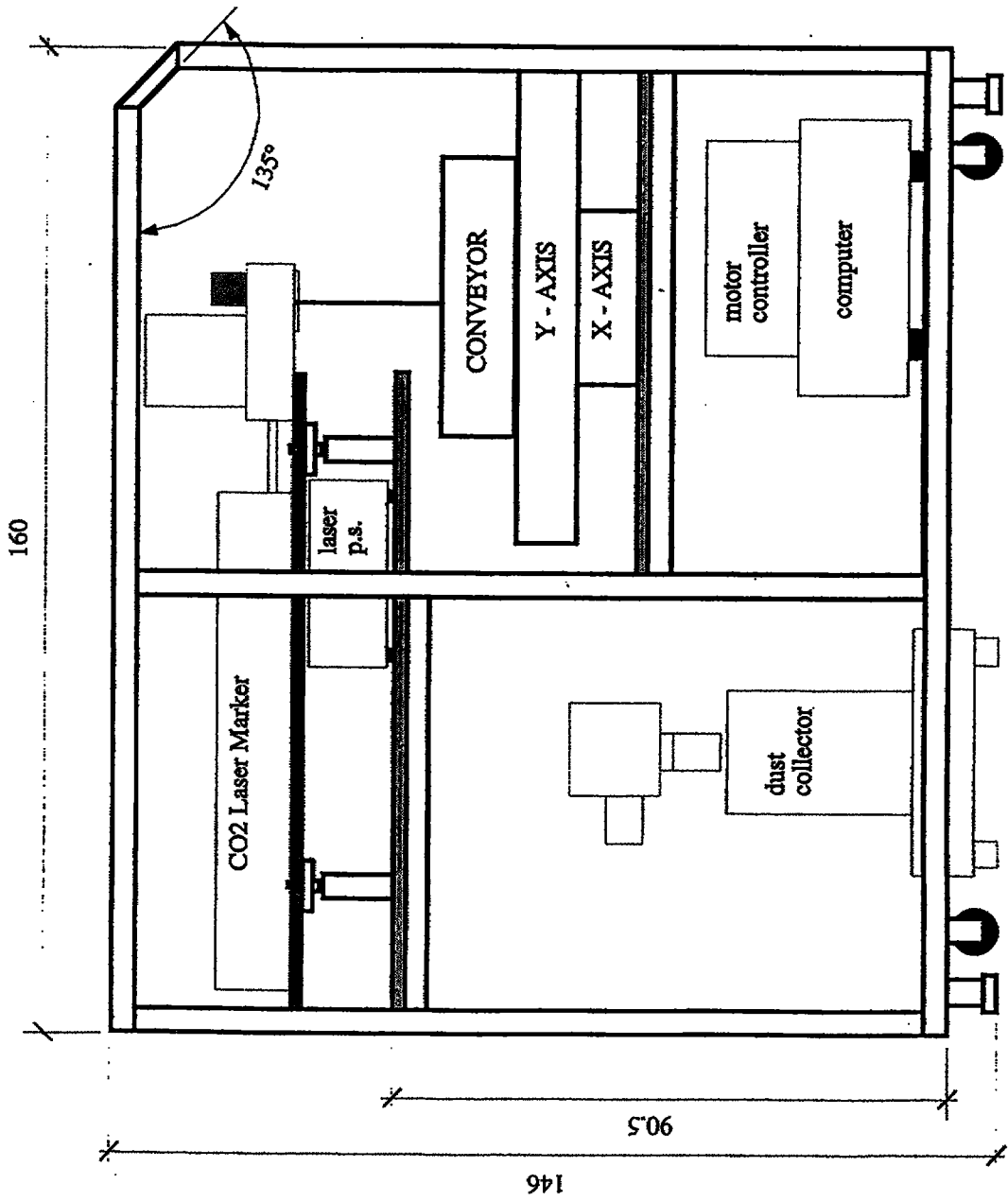


FIGURE 8

All dimensions are in centimetres