

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Belagavi-590 018, Karnataka



A
PROJECT REPORT
ON

LASERBOT

(Approved by KSCST, IISc., Bangalore)

Submitted in partial fulfillment of the requirements of the degree of

BACHELOR OF ENGINEERING

in

MECHANICAL ENGINEERING

for the academic year

2014-2015

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2014-2015

ABSTRACT

Laserbot is a portable, Arduino powered, CNC controlled laser cutter that can cut on various surface, say Paper, Aluminium Foil, Foam, Plywood, etc. depending on the intensity of the Laser Diode. The quality of laser cut is of the all most importance in laser cutting process.

The objective is to design and develop a laser cutting machine which is portable and economical. The machine is designed to be highly precise, compact and easy to operate.

Our project is inspired by the mechanism adopted by the X-Y Plotter. And so, this uses an X-Y mechanism wherein the necessary drive is given by the drag chain, powered by Stepper motors. This is actuated by means of electronic components such as Arduino, Raspberry Pi and softwares such as GRBL Converter or Arduino IDE for the G-code conversion.

Laser Cutters are so expensive that only the Large scale industries can afford. But by the advent of the Portable Laser Cutter, this is made available to the Small scale industries as well. This can bring about a revolution in today's technology related to manufacturing and production. Also, any immediate production of a complicated design/pattern could be achieved by this.

Laserbot serves as a substitute for uneconomic Laser Cutters available in the market and is intended to expand the use of laser cutting technology by making it affordable to common man. This finds its applications in Interior Designing, Carpentry, Medical Technology, providing aid in areas such as Army, Defence etc., making of Dataplates and Industrial tags, signage, wall tattooing and for other hobbyist uses.

Keywords: laser, x-y mechanism, arduino, g-code, stepper motor, portable.