IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 10, June 2025
Impact Factor: 7.67

3D Printed CNC Plotter Machine

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Abstract: *A 3D Printed CNC Plotter Machine is a cost-effective, customizable, and compact solution for automated drawing and engraving tasks. This project integrates 3D-printed structural components with stepper motors, a microcontroller (such as Arduino), and linear motion systems to create a precise and efficient plotting device.*

The machine operates using G-code instructions generated from vector graphics or CAD software, enabling it to draw intricate designs with high accuracy. Unlike traditional CNC machines, this version leverages additive manufacturing for easy prototyping, lightweight construction, and modularity. The design allows for modifications, making it adaptable for applications such as PCB etching, calligraphy, and laser engraving.

Key features include:

Affordable and DIY-friendly construction using 3D-printed parts.

Precision movement using stepper motors and belt-driven or lead screw mechanisms. Microcontroller-based control system for executing programmed designs.

Versatility in applications, including drawing, engraving, and laser cutting.

The 3D Printed CNC Plotter demonstrates the potential of integrating 3D printing with CNC technology, making automation accessible to hobbyists, educators, and makers. This innovation paves the way for low-cost digital fabrication and creative applications in various fields

Keywords: *3D Printed CNC Plotter*

DOI: 10.48175/IJARSCT-28830