NULINE VECTRA CNC

INNOVATION @ WORK

MADE IN INDIA

VECTRA CNC

PCB Prototyping Machine

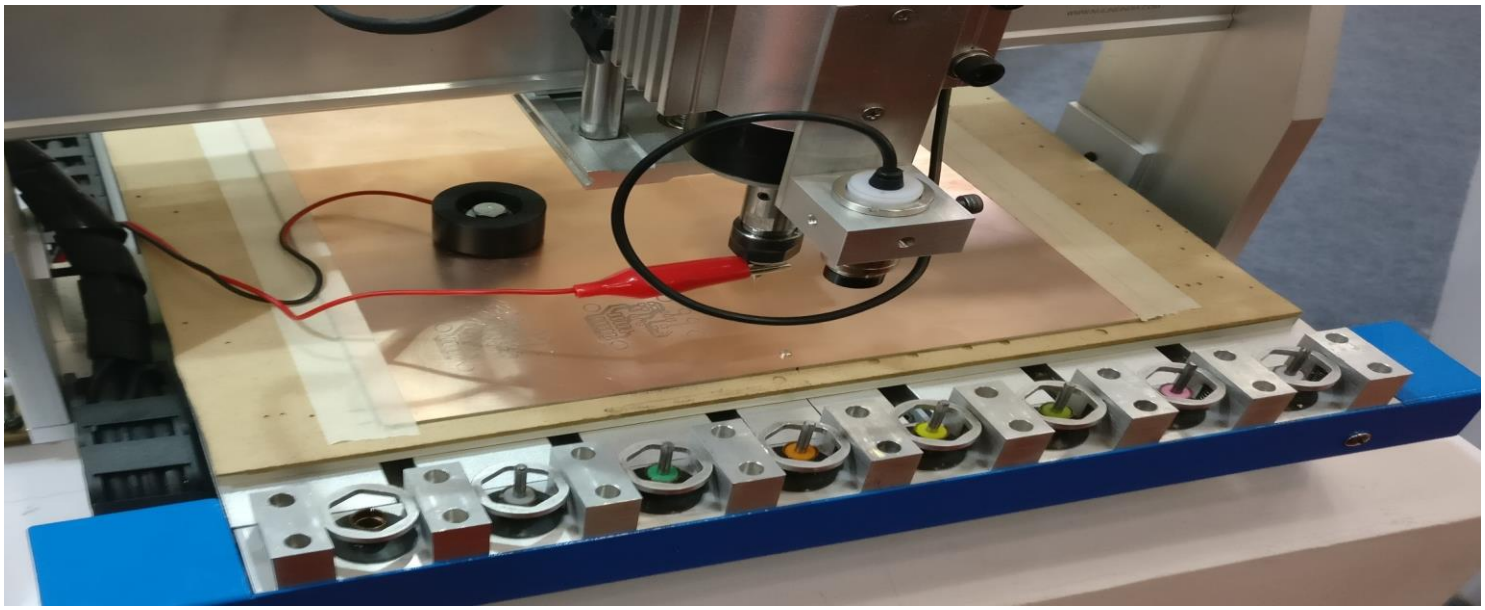
PCB PROTOTYPING

3D MODELING

8 STATION TOOL CHANGER

PROFESSIONAL CNC SOFTWARE

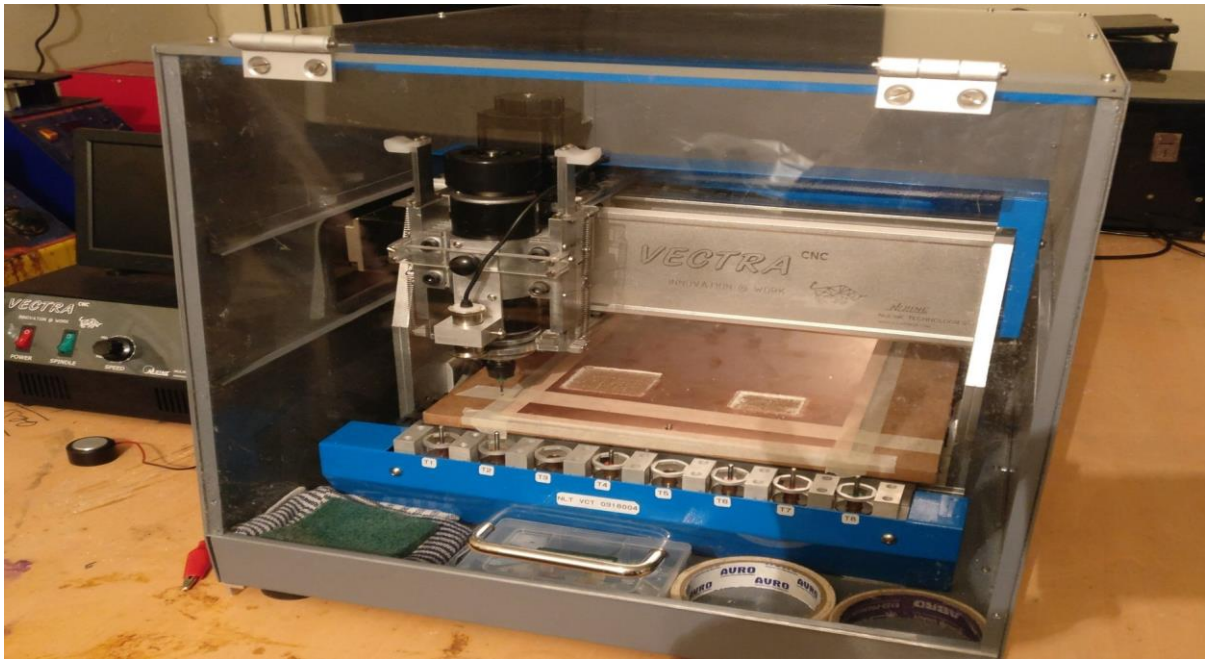
NULINE



CNC concept is the basis for manufacturing Automation leading to robotics where every movement is controlled by stepper motors. Skills development in CNC Programming, control, movement will open wide range of manufacturing automation applications which are essential for high level of productivity, repeatability and accuracy. CNC based systems are applied widely in every manufacturing process involving welding, cutting, assembly, packing in Automotive, Medical, Process control and advanced areas like Space and Nuclear. Leading industrialized nations use manufacturing automation to further their technical advancement at lower manufacturing cost.

India can grow with large scale manufacturing only with automation and for this CNC concepts are stepping stone. We need this knowledge bundled in every technical education from industrial training institute to engineering to harness the talent ready for employment in large scale manufacturing units. This will make us self sustaining and make **MAKE IN INDIA** a reality in the years to come.

Nuline Vectra Machine is a 3 Axis controlled CNC machine. The system has a large work area of 425 by 300 mm by 55mm and the 500W spindle can deliver good machining performance to work on commonly used material. The controller can be easily programmed using standard G codes for various op- erations. One can easily get the job done in Nuline Vectra Machine in quick time. Reasonable safety features pro- tects the job, machine and user from accidental movements.



SOFTWARE

Mach3 turns a typical computer into a CNC machine controller. It is very rich in features and provides a great value to those needing a CNC control package. Mach3 works on most Windows PC's to control the motion of motors (stepper & servo) by processing G-Code. While comprising many advanced features, it is the most intuitive CNC control software available. Mach3 is customizable and has been used for many applications with numerous types of hardware. Copper CAM for cam processing.

Nuline VECTRA CNC controller box is a bridge between CNC soft- ware and CNC machine. Vectra CNC is equipped with 3 Linear axis (X,Y and Z). Controller has the dedicated emergency stop push switch and supports safety limit switch by sensing the signals from limit switches from all the 3 axis. The controller comes with RPM knob to maintain the speed of spindle for different applications.

Nuline VECTRA Machine offers GAUGE BLOCK probing to set the tool

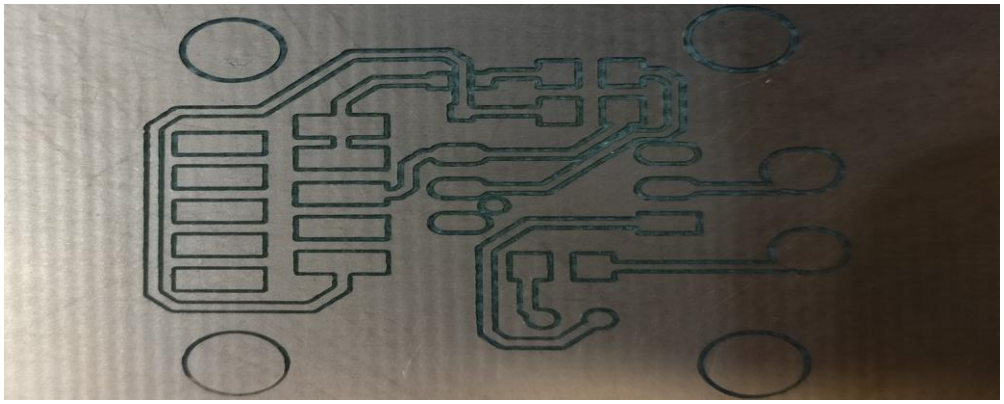
Technical Data Sheet

Working area	425 x 300 x 55 mm
Spindle Motor	Variable speed 500W, 0-12000RPM air cooled
Maximum Operating Speed	4000 mm/min
Engraving/Craving Speed	300-3000 mm/min
Tool change	Software Controlled 8 stations Tool change for tool Pick up and Drop
Repeat Positioning Accuracy	0.05mm
Camera Vision	Camera view and review software driven with camera monitoring station
Spindle Collet Type	1/8 inch, 3.175mm; ER11
Controller	CNC controller with spindle speed control, Limit Switch control and Depth control input
Command Code	G code
Protection	Emergency stop button
Software	MACH 3, CopperCAM
Cabinet	Hood Cabinet
Computer Interface	Onboard Parallel Port and USB Cable for USB connect to PC
Accessories	Auto checking tool cutter
Operating Voltage	220-240V / 50Hz
PC Computer Hardware	HP/LENOVO/DELL/ZEBRONICS Fully Loaded PC i5 /4GB/256GB SSD with monitor 22 inch and Preloaded Mach3 and copper CAM
Material	PCB, Acrylic, MDF Board
Operations	Single Sided/double sided PCB milling, drilling, engraving and cutting
Application	Rapid Prototyping, Technology Research, Teaching, Student Project, PCB Engraving/Milling, Model making
Tools and Consumables	Necessary Tools Bits and consumable like copper clads will be provided
Dust Extraction unit	Yes Handheld Dust Extractor will be supplied along with machine
Weight	48 KG

APPLICATIONS

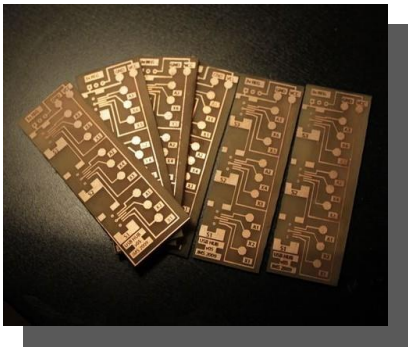
The time it takes to develop a new product from design to manufacturing is critical in an on-demand world. This is especially true in the design phase. Traditionally, a model is designed and the assembly of a prototype is outsourced to a third party. This method is time-consuming and costly. As a result, more manufacturers are turning to in-house rapid **Prototyping**, such as using a ***Prototyping CNC machine*** for various applications.

Traditional outsourcing can take a week or more for a prototype to arrive due to transit time. In addition, internal development can cause more lag. Due to the time and expense involved, educational institutions and R&D centres hesitate to request a prototype until they have something close to a finished model. Time and expense are less of an issue for in-house prototyping, as a physical model can be built on-site the same day.This can significantly reduce the timeline of overall development.

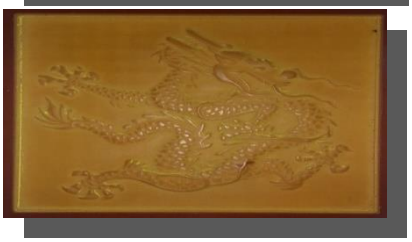


PCB Prototyping

Especially during development fabricating a prototype quickly and with flexibility is key. This allows developers to test ideas and easily make changes. The Rapid Prototyping method turns a sheer idea into a sample circuit board, which is ultimately used to manufacture the new product.



Once the circuit board single or double-sided has the conducting paths, the circuit is tested. If faults are detected or changes are requested, the data layout can quickly be modified. Thus, a new prototype is created quickly and easily, without the use of chemicals and your data always remains in-house.



3D Modelling

Nuline Vectra CNC Prototyping Machine

A Made in India Product of Nuline Technologies, Bangalore , India