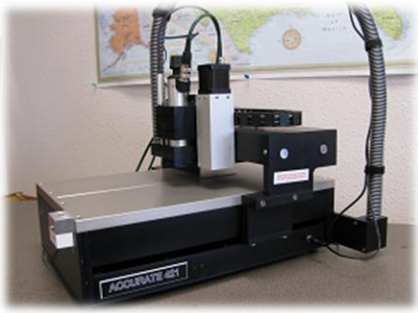


A631 PCB PROTOTYPING MACHINE



- ▶ Working Area: Large (16x12x1.3 inch)
- ▶ Tool Change: Semi-automatic, prompted by control program
- ▶ Tool Calibration: Automatic with Precise Linear Gauge
- ▶ Depth Adjustment: Constant Automatic Surface Tracking
- ▶ Spindle Speed [rpm]: 5,000 to 60,000 programmable
- ▶ Spindle Motor: 3-phase induction motor; 60K/170W
- ▶ High precision positioning system with servo feedback
- ▶ Temperature compensation for the axes and material
- ▶ Video Camera / Microscope optional

Detailed Specification:

| | |
|--|---|
| Model: | A631 |
| Working area (XxYxZ) | 406x304x33 mm, 16x12x1.3 inch |
| Machine design | Heavy duty aluminum and stainless steel platform |
| Machine table | 16 mm, 0.625 inch stress relieved high stability aluminum alloy |
| Internal Resolution (X,Y,Z) | 0.1 μm , 0.0000039 inch (0.0039 mil) * |
| Positioning Repeatability (X,Y,Z) | 1 μm , 0.000039 inch (0.039 mil) |
| Absolute Accuracy (X,Y) | up to 5 μm at 254 mm (10 inch) ** |
| Tool penetration control | Constant Automatic Surface Tracking - CAST™ , surface tracking relative to tool tip, fully programmable fully automatic. Uses a linear gauge with 1 μm , 0.039 mil resolution. |
| Tool Calibration | Precise Linear Gauge on the Z axis (0.039 mil, 1 micron resolution) |
| Spindle speed [rpm] | 5,000 to 60,000 programmable |
| Spindle motor | 3-phase induction motor; 60K/170W |
| Spindle drive | PhACdrive™ (sensorless, vector control, DSP based) |
| Tool collet | 3.175 mm, 0.125 inch |
| Spindle run out | 5 μm, 0.0002 inch max |
| Collet control | With knob on the spindle top |
| Tool Change | Semi-automatic, prompted by control program |
| Minimum drill diameter | 0.2 mm (8 mil) |
| Minimum track size | 0.1 mm (4 mil) |
| Minimum gap size | 0.1 mm (4 mil) |
| Drilling speed | Up to 180 drill cycles per minute (varies with the distance between holes) |
| Homing system | Gold plated precision needle contacts |
| Max Travel speed (X,Y,Z) | Up to 150 mm/s, 5.9 inch/s |
| X/Y/Z positioning system | 2 phase bipolar stepper motors, precision lead screws with ActiveCAM™ anti-backlash SuperNuts™ Precise Linear Encoder for X/Y axes (1 μm) and Precise Linear Gauge on the Z axis (1 μm) |
| X/Y/Z stepper drivers | PhSTdrive™ SMART stepper drive with servo closed loop control (DSP based), supporting temperature compensation for the encoder and material ** |
| Interface to PC | USB 2.0 with galvanic isolation (>1kV) |
| Spindle and vacuum start-stop | Program controlled, manual override available |
| Feed rate and Spindle speed | Program controlled, manual override available |
| Dimensions (WxDxH) | 610x483x330 mm, 24x19x13 inch |
| Weight | 40 Kg, 88 Lbs |
| Power Supply | 100~240VAC, 50/60Hz 355W (45W stand by) |
| Machine control system | PhCNC440™ 32bit high performance CNC motion controller (up to 8000 command/sec) |
| Machine control programs | Industry standard G & M codes ASCII, PHJ job files |
| Control and Edit software | PhCNC & PhCNC64, Windows based (Windows XP / Vista / 7 / 8 / 10) x86 & x64 Supporting firmware update for PhCNC440™ , PhACdrive™ & PhSTdrive™ (X/Y/Z) |
| Imports | Gerber RS-274X files; Excellon Drill and Definition files; AutoCAD DXF 2D files; CAM350 files; PhCNC printer driver. |
| Camera | Fiducial / inspection video camera / microscope (USB 2.0) optional. |
| Warranty | 1 year included in the price of the machine. It is an option to buy second and third year of warranty. |