

# PCNC 1100

**PERSONAL CNC**

PRODUCT DATASHEET



## The PCNC 1100

Series II is the undisputed leader in affordable CNC milling for home or work. At over 1100 lbs and with a 5000 RPM spindle, the PCNC 1100 Series II is fully capable of cutting iron, steel, titanium, and even tough chromium alloys like 300 or 400 series stainless steel.

Whether you're in R&D, education, manufacturing, or simply have a great idea for a product, you need an affordable precision machine to make things happen. The PCNC 1100 Series II offers serious machining capability to bring your ideas to life.

Tormach's unique and proven design combines cast iron construction with PC based motion control technology to provide unprecedented affordability and value. Purchasing a Tormach gives you the peace of mind that each PCNC is manufactured to industrial quality standards and held to those standards by a 32 point inspection, on-site at the factory.

- Table Size: 34" x 9.5"
- Table Slots: 3 T-Slots 5/8"
- Travel: 18" x 9.5" x 16.25" (X, Y, Z)
- Spindle Nose to Table: 17" max
- Spindle Center to Column: 11"
- Spindle Nose Diameter: 3 3/8"
- Spindle Taper: R8
- Spindle Construction: Cartridge with spindle lock
- Spindle Drive: Vector Technology 1100W continuous, 2800W peak
- Spindle Speed: 100 to 5100 RPM
- Transmission: Belt Drive, 2 ratios
- Weight: 1130 lbs. net /1296 lbs. gross
- Shipping Dimensions: 56" x 45" x 60" (L-W-H)
- Work piece: 500 lbs. Maximum
- Max Feed Rate: 90 IPM (X,Y); 65 IPM (Z)
- Axis Drives: High Performance Stepper Motors with Microstepping Drivers
- Controller: PC-based Control, includes configured Mach3 control software program
- Power Requirements: 200-250 VAC single phase, 50/60 Hz.
- Operating Temperature Range: 45 to 100°F (7 to 38°C)
- Integrated Z-axis Power Release Brake
- Features:
  - 15 point Lubrication with Single Shot Lubrication Pump standard
  - PTFE Bonded Slideways
  - ISO/DIN P4 Grade Ballscrews



## OVERVIEW

Tormach offers a new approach to small CNC mills. Our products are focused on the needs of prototyping, R&D, and small shop operations. We base our designs on **open-architecture** principles. Open Architecture not only minimizes the initial cost, but reduces maintenance cost, and virtually eliminates any risk of obsolescence.

The PCNC 1100 Series II is designed for real work, and the machine has the strength, power, and accuracy needed to cut serious materials. Milling circuit boards, aluminum, and engineering polymers is a breeze with a machine that is built to cut materials like steel, iron, stainless steel, and titanium.

Tormach strives to provide you with the best possible value at a low cost of ownership. We only sell our machines direct. The machines are built to stock, not to order, and we pass the savings on to you. We sell machines, stands, options, and accessories on an à la carte basis so you buy only what you need. Control Software upgrades are made available at no charge. The straightforward machine design is supported with extensive technical documentation, telephone support, and warranty service on replacement parts.

## DESIGN DETAILS

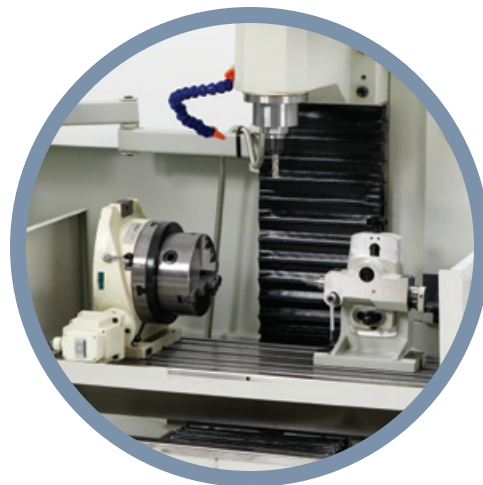
### Precision

Each PCNC1100 Series II is built from over 1100 lbs of cast iron and steel. Unlike other mills, this isn't just dead weight. Great care has been taken in design to put mass where it's needed to provide best-in-class stiffness to the frame.

Motion control is provided by high performance stepper motors with microstepping drivers. The stepper motors drive precision ground P4 grade ball screws on each axis for repeatable and accurate motion resolution.

The sliding dovetailed ways are hand-scraped cast iron, designed to withstand high loads and dampen vibrations. The ways have bonded PTFE filled acetal surfaces. Similar to brand name compounds such as Turcite® or Rulon®, PTFE compounds provide low friction and long life. The single shot lubrication system is plumbed to all slideways and ball nuts, with machined oil distribution channels in every way surface.

The Series II design incorporates sensorless vector technology in the spindle drive, providing greater power and a wider speed range than ever before. With a 230% overload capacity, the mill can muscle through the tough spots without hesitation. The spindle uses a simple, low-maintenance belt driven induction motor with two belt ratios. The spindle drive provides infinite speed control of 100 to 2000 RPM in the low ratio, and 200 to 5140 RPM in the high ratio to cover your needs from tapping to finishing.



PCNC 1100 SERIES MILL IS SHOWN HERE WITH THE OPTIONAL 4TH-AXIS AND TAILSTOCK.

### Versatility

Each mill features a R8 spindle with a 3 3/8" nose diameter. This can be used in combination with the innovative quick-change **Tormach Tooling System® (TTS)** or any generic R8 tooling such as that commonly used with Bridgeport-style Mills.

The machine can be used with either computer or manual control. You can just as easily use the mill for a manual facing operation as you can for a 10,000 line CNC program with just a few flicks of a switch. Manual control for spindle and coolant is also integrated in the machine console.

Substantial overlap between the high and low belt ratios makes belt changes infrequent. When needed, the belt pulley change takes about 30 seconds.

Each PCNC comes standard with a multipurpose input port. This port can be configured to integrate a variety of accessories, including an automated tool setter and digitizing probe.



## Control

The PCNC 1100 integrates a PC-based controller with a hard wired console for safety and convenience.

The console includes:

- Machine Start
- Emergency Stop
- Spindle Key Switch Lockout
- Spindle Auto/Manual
- Spindle Speed and Direction
- Coolant On/Off/Auto
- Computer On/Off
- LED Status Indicators
- Multipurpose Input Port

The machine control software is easy to learn yet comprehensive in functions and features. Those new to CNC will appreciate the simplified, single control screen which provides clear and simple graphics with all of the buttons and information displays needed to run most programs. It's a great way for a beginner to get started.



**MANUAL OPERATIONS AND SET UP ARE A BREEZE WITH THE ELECTRONIC JOG SHUTTLE CONTROLLER HANDWHEEL.**

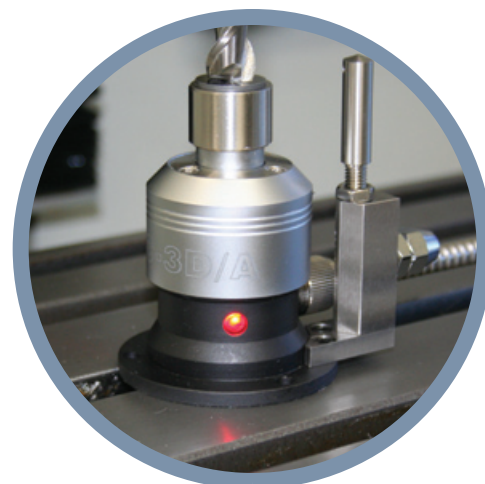


**THE PCNC 1100 INTEGRATES A PC-BASED CONTROLLER WITH A HARD WIRED CONSOLE FOR SAFETY AND CONVENIENCE.**

Advanced users will appreciate the comprehensive control screens, which include information displays for all functions and features. Software features include:

- Conversational Operations
  - Engraving and Text Milling
  - Pocketing
  - Drilling Circular Patterns
  - Drilling Grid Patterns
  - Keyway Cutting
  - Thread Milling
  - Plus many more
- Integrated support for reversing tapping heads
- Integrated support for Tormach® touch probe
  - One button - center to vise corner
  - One button - center to a hole
  - Center on arc segment
  - Automatic work height setting
- Automatic tool setting, with Tormach® tool setter option

- Code Length to 10 million lines
- Online Code Editing
- Automatic Multi-pass with Z depth management
- 3D Part Program and Path Graphics
- Zoom, Rotate, and Jog Follow Graphics
- Programmable Spindle Speed
- Start at any line
- Single Line Mode
- Programmable Tool Change Position
- Machine Diagnostic Displays
- Programmable Keyboard Jog Controls
- Job run time estimator
- Elapsed time display
- 253 Entry Tool Table
- Large MDI with MDI History Recall
- Program Simulate Run
- 4th Axis Control
- Online G and M Code Help
- On screen diagnostics



**THE MULTI-PURPOSE INPUT PORT LETS YOU INTERFACE ACCESSORIES LIKE THE ELECTRONIC TOOL SETTERS (SHOWN), TOUCH PROBES AND OTHER TOOLS.**

## ABOUT TORMACH

The people at Tormach are dedicated to delivering tools, accessories, and components of unprecedented value in the world of CNC and motion control. Whether you're involved in R&D, education, short run production, or simply an entrepreneur with an idea, you need to make things. Tormach products allow you to make what you need easier, quicker, and more affordably. We want to help make your goal a reality, to enable your ideas. Our mission is to empower people who make things. Whether you're cutting parts with our machine tools or building your own equipment using our components, our focus is to manifest your concepts and help you bring your ideas into reality.

## ORDERING, PAYMENT & SHIPPING

Quotations can be requested online using our web based quotation system, or through FAX, email, or over the phone. Machines and accessories can also be ordered using our secure web shopping cart. Payment can be made by check, credit card, or wire transfer. Machines and machine stands are shipped via truck freight in North America, while accessories are normally shipped via package service (UPS, USPS, FedEx). Tormach ships worldwide in cooperation with established international freight forwarding companies.

## WARRANTY AND SUPPORT

Machines and accessories are warranted for 12 months. Warranty service is limited to repair or replacement of components with telephone support, there is no on-site field service staff. Replacement parts are stocked at our Wisconsin facility. **Additional information is available at [www.tormach.com](http://www.tormach.com).**



## ENABLING YOUR IDEAS

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