



For Your Insert & Rotary Tools

The MCT6000I&R is specially designed for the production of PCD or CBN tipped end mills, drill bits, reamers and special form tools with corner radius in a single continuous operation until reaching its final size.

MCT6000I&R is also capable of grinding PCD, CBN, or carbide inserts with different geometries for a variety of industries.

Cost Effective

The MCT6000I&R is the most cost effective advanced 8 axis insert & rotary tool grinder. The cost of owning one is just slightly more than the average annual salary of an experienced manual tool grinder while producing 3 to 4 times the output. Maintenance and repair of MCT machines is also simple and low cost compared to the competition.

Advanced Features

- Smooth and precise control in a compact and lightweight chassis
- In process gauging
- Integrated touch probe
- 0.0001" control resolution
- Preloaded complete tool grinding macro programs
- Conversational type programming
- Send G code programs from your PC to the MCTSamatic controller
- Optional efficiently integrated pallet/magazine autoloading system

Technical Specifications

Travel length	X-axis: 11" Y-axis: 11" Z-axis: 11" A-axis: Free spin C-axis: 230°
Work head RPM	400 RPM max
Motor type	DC servo motors
Motor resolution	X-axis: 0.000025" Y-axis: 0.000025" Z-axis: 0.000025" A-axis: 0.000025 REV C-axis: 0.001° B-axis: 0.000025"
Spindle speed	Variable 0-10,000 RPM
Spindle power	5 HP (5,000 RPM) 220 VAC 3 phase
System power	110 VAC 1,200 W
Dimensions	6' L 5' W 6.5' H
Weight	3,500 lbs.

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MCTSamatic6000I&R

CNC PCD|CBN Insert & Rotary Tool Grinder



Machine
Control
Technologies, Inc.

MCT Samatic 6000 I&R

The Machine Control Technologies MCT6000I&R is the most flexible and cost effective 8 axis insert & tool Grinder, with 6 axis CNC and 2 axis of pneumatic control. The MCT6000I&R is designed for grinding or regrinding PCD, CBN and carbide tipped rotary tools such as end mills, reamers, drill bits, counter sinks, special form tools and various geometries of indexable inserts.

The MCT6000I&R is equipped with in process gauging and allows you to grind an entire PCD ball nose end mill in one chucking until it reaches its final dimensions.



Machine Foundation

The MCT6000I&R Insert & Rotary Tool Grinder is fully enclosed and is built on a rigid and heavy-duty steel base with a floating 6" thick granite slab on top. All linear (X, Y, A, Z, /B) axis are constructed with precision linear guideways and ball screws for a smoother operation.

The tilting rotary (C) axis is capable of swiveling within 230° around the rotary center on a tilting relief angle up to 17°, allowing you to create an angle, radius or ball nose by swing grinding left/right hand rotary tools on a relief angle.

The machine is also equipped with a coolant pump, coolant reservoir and a 5u oil filtration bag all stored away within the machine base.

Software

The MCT Samatic control system uses G code programming that is flexible enough for custom tool grinding. It also includes conversational type programming menus that help you build programs for your specific tool by filling in the tool grinding information. Special custom preprogrammed macros give you the ability to store and load multiple programs in a button.

The MCT Samatic control system is also equipped with an external communication port that allows you to transfer G code programs stored or written on your PC to the controller offline.

Spindle Power

MCT6000I&R Insert & Rotary Tool Grinder are equipped with a standard speed controllable spindle driven via belt on 5 HP AC motor for easy and inexpensive maintenance (optional direct drive with higher spindle power available upon request).

Integrated Autoloader

The optional MCT integrated autoloader is an efficient and inexpensive loading system that features a tool pallet or magazine. The loading system is controlled by the same MCT Samatic CNC control which makes operation simple and reduces maintenance costs.

Touch Probe

The optional integrated touch probe can be installed to measure lead length, flute length and the flute position with the provided software and teaching functions.

Air Collet System

The MCT6000I&R comes equipped with a standard 5C air collet closer for quick and easy tool changes. The air collet closer is operated via hand valve for machines without the autoloader or by a programmable air valve for machines with the autoloader. Our air collet system improves the cycle time and results in a greater output. The collet system is capable of holding shank sizes from 3/32" to 1 1/8". Special sizes are available upon request. Optional hydraulic tool holding system is also available upon request.

CNC Controller and Driver System

The MCT Samatic CNC controller and driver array is perhaps the most compact yet flexible, CNC system for rotary tool & cutter grinding. It is independently developed by Machine Control Technologies with decades of experience in microprocessor based controller design.

Our control system and driver array are purely digital closed loop systems that can provide up to 6 axis CNC control with a servo resolution between 0.000025" and 0.0000125". The MCT Samatic control system takes advantage of the unique characteristics of the DC servomotor to provide high torque at the low feed speeds of the grinding process to produce fine finish tools. The combination of these systems creates an efficient and low cost grinding experience.

