

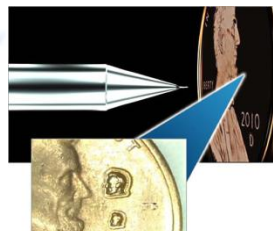
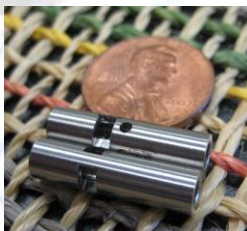
**Atometric builds CNC MicroMilling Machining Systems and provides contract MicroMachining Services.**

**The result is efficient equipment and manufacturing solutions for many materials and applications:**

- Bio-individual implantables directly machined in titanium and zirconia ceramics.
- Surgical stainless steel components production from a single setting.
- Micro-fluidic and heat transfer channels below 100 micron width and 700 micron depth in medical polymers and aluminum.
- EDM electrodes with complex blended curves MicroMachined in copper and graphite.
- Micro molds machined in tool steels.

**The G5 is Atometric's fifth generation of compact and high performance MicroMachining Center with many standard features:**

- Positioning within 0.3 microns and 2G combined axis acceleration.
- 100,000 RPM Servo spindle standard with cutting tooling from 15 microns to 3 mm diameter.
- 100m x 100m x 100m machining work volume installed in 1 m<sup>2</sup> of floor space.
- Less than 650W power consumption provides operating cost efficiency.
- Linear motor construction and 1 nanometer optical absolute scales for high reliability.
- Conductive tool probing standard, with multiple axis probing.
- Machines can be in 3, 4 or 5 axis configurations.



#### CNC Production MicroMachining Centers

5 Axis CNC Machining  
Sub-Micron Positioning  
100,000 RPM Servo Spindle  
Low Energy consumption  
Work cube (100m x 100m x 100m)  
1m x 1m Foot print

#### Application Solutions

Implantable components  
Microfluidic devices  
Micro EDM electrodes  
Sensor bodies  
Micro Heat Exchangers

Direct machine prototypes and  
Production molds and Parts.

#### Contract MicroMachining Services

Part Lots 1-1000's  
Stainless and Tool Steels, Titanium,  
Aluminum,  
Copper, Plastics,  
Ceramics and Graphite.



**The full featured 5-Axis Atometric G5 delivers precision in a compact and energy efficient package.**

**The production MicroMilling machine with lowest operating cost.**

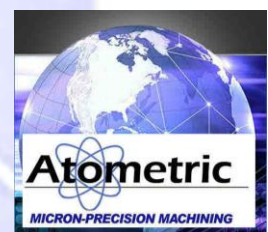
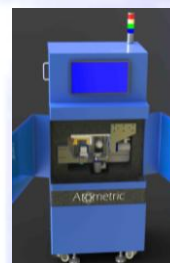
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# Atometric G5 CNC MicroMilling Machining Centers

<b>Standard Configurations</b> Table options are field upgradeable. Higher payload tables, as special.		<b>Three X, Y, Z axes.</b> <b>Four axes: X, Y, Z plus rotational table.</b> <b>Five axes: X, Y, Z plus table axes (rotate and trunion).</b>	Pallet capacity: 40kg (88 lbs.) 10kg (22 lbs.) 5 kg (11 lbs.)
<b>Machine Dimensions and Weight</b>		81 cm x 74 cm x 2.0 m and 814 kg (32" x 29" x 77" and 1,790 lbs.)	
<b>Utility Consumption</b>		<b>110 or 200/240 VAC 750 W,</b> 0.0021 m3/s air at >4.1 bar (4.5 CFM air at >60psi)	
<b>Servo Spindles</b>		<b>100,000 RPM Servo air cooled spindle as standard,</b> Options for application specific high power or alternate RPM spindles.	
<b>Speed and Acceleration</b>		Acc / Decs X, Y, Z of >2 G's; Speed maximum of 30 m/min. Note: Typical applications use Acc/Dec of ~<=2G .	
<b>Accuracy</b>	<b>XYZ</b>	0.6 µm to position, ~2 micron along path (dynamic).	
<b>Resolution</b>	<b>XYZ</b>	0.1 µm all axes individually. Linear axes have 1 nano meter resolution absolute optical scales.	
<b>Repeatability</b>	<b>XYZ +Z</b>	0.3 µm to position, ~1 micron along path (dynamic). Note additional 1 micron for Z for tool change holding variation.	
<b>Automatic Tool Changer - Standard</b>		Twenty-five tools per cartridge; With additional cartridges (25) new tools input < 30 seconds.	
<b>Tool Position Repeatability</b>		Validation of tool tip depth within one micron.	
<b>Conductive Contact Probing Standard</b>		Contact probing within one micron. G-codes supporting application usage.	
<b>Travel</b>	<b>X Y Z A B</b>	101 mm (4 inch) work envelop 202 mm (8 inch) special 3-axis config. 101 mm (4 inch) work envelop 89 mm (3.5 inch) stroke. 101 mm (4 inch) work envelop w/ table rotation. 4 <sup>th</sup> axis continuous rotation to 100 RPM turn mill, absolute encoder. 5 <sup>th</sup> axis continuous rotation to 100 RPM turn mill, absolute encoder.	
<b>File Format</b>		G-code CNC programming. With CAM option, programs semi-automatically generated from SolidWorks, ProE, ParaSolids, STL, and STEP files.	
<b>User Interface, Macro Capabilities, etc.</b>		User interface for manual, program call and G-code programs. Macros for planarizing, surface probing, tool change, part shifts, peck drilling, etc. Cimatron CAM option software package semi-automatically generates complex path multiple-tool part programs.	
<b>Major Options:</b>		<b>Options for 3, 4, or 5 axes, 100k and 200k RPM spindles, Cimatron CAM software, Camera, 5-axis contour milling, additional tool changer cartridges, work pallets and fixtures.</b>	
<b>Recirculating Coolant System</b>		Flood and directed filtered coolant, G-code directed. Micron Filtration.	



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