

# Maximum Flexibility... ...Made Affordable!



**3000 Series Router**

MultiCam's 3000 Series CNC routers are loaded with standard features normally associated with more expensive machines. The ATC (automatic tool change) option gives the user maximum machining flexibility and the all-steel, moving-gantry design allows machining of large parts while maintaining a small, space-saving footprint.

Designed for a wide range of medium-duty panel processing applications, the 3000 Series machines are the perfect solution for companies looking for both value and high-performance in a CNC router.

**MultiCam**<sup>®</sup>  
CNC Cutting Solutions

1025 West Royal Ln. DFW Airport, TX 75261 • PO Box 612048 Dallas, TX 75261 • 972.929.4070  
fax 972.929.4071 • email [sales@multicam.com](mailto:sales@multicam.com) • [www.multicam.com](http://www.multicam.com)

## 3000 Series Specifications

No machine offers more **standard** features than the MultiCam.

- All heavy steel gusseted plate frame construction
- 25mm linear ball bearing profile rails for maximum stiffness
- MultiCam EZ Control TM User-friendly operator interface
- High Speed 3-axis Motion Control
- 12 Megabytes of Memory with unlimited file size transfer capabilities
- Standard Ethernet or RS232 direct connections
- 2 phase digital brushless, synchronous electric motors are standard or Eclipse brushless AC servo system is optional
- Automatic Tool Calibration
- EZ Suite software
  - Connection Manager
  - Job Name Server
  - Job Editor
  - Job Reporter.

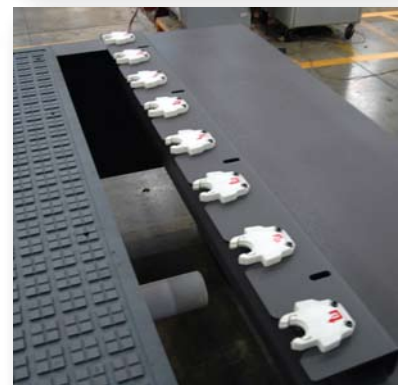
### ATC (Automatic Tool Changer)

The 3000 Series CNC Router is available with two ATC options:

- Linear Automatic Tool changer
- 12 tool rotary turret automatic tool changer

The linear ATC option for the 3000 Series offers a low cost alternative to automatic tool changing. A linear tool rack holder is mounted at the end of the material process area. The 3000 Series has an extended frame design that does not cut into or reduce the standard process area. The number of tool locations is dependent on the width of the process area. The 3100 Series (50 inch wide) has 6 tool locations while the 3200 Series (60 inch wide) has 8 locations and the 3300 Series (80 inch wide) has 11 locations.

The 12 tool rotary turret ATC option mounts to the end of the 3000 Series gantry that moves along the X-axis. The rotary tool changer option is beneficial on dual zone, pendulum processing configurations. It accommodates tool changes without crossing zones during the loading process of the idle cut zone. All ATC options come standard with automatic Tool Calibration. The tool change routines are built into MultiCam EZ Control to simplify integration to your favorite CAM software. An Automatic Tool Changer solution will help reduce job times, improve accuracy, and reduce setup errors.

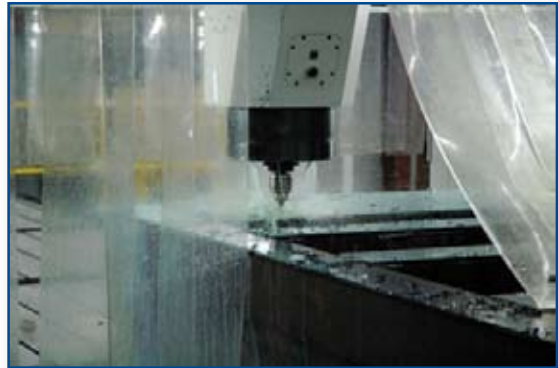


## 3000 Series Specifications

### Base Frame

The MultiCam 3000 Series base frame is a one-piece steel plate frame that is welded, stress-relieved, and precision machined. One-piece construction allows for a very accurate and smooth cutting system. While greatly reducing the amount of time needed for installation and essentially removing the possibility for installation errors that could affect the performance and accuracy of the system.

Dual X-axis – 25mm Linear Rails, AC Brushless Servos, Precision Planetary Gearboxes, Rack and Pinion



### Gantry

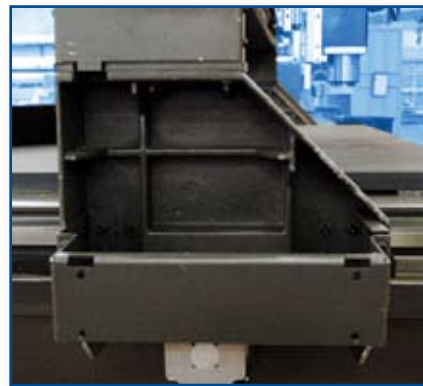
The gantry is made of a 3/8" -thick steel tube that is welded, stress-relieved, and precision-machined. The gantry has been engineered to provide a smooth, vibration-free cut.

Y axis – 25mm Linear Rails, AC Brushless Servos, Precision Planetary Gearboxes, Rack and Pinion



### Gantry Supports

The 3000 Series gantry supports are manufactured from grey iron castings. These cast iron components in conjunction with wide X-axis bearing spacing, help dampen vibration and give the structural tube gantry extremely rigid support.



### Linear Bearings

The 25 mm ball linear bearing profile rails with stainless spring steel strip cover

- High rigidity and top load capacities in all load directions
- Lowest possible noise level and best running characteristics
- High torque load capacity
- 4 bearing packs per axis
- 30,400 Nm or 22,421 lb-ft dynamic capacity per pack



## 3000 Series Specifications

### Precision Planetary Gearboxes

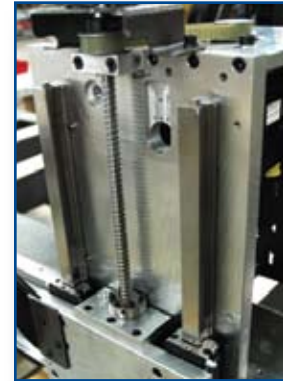
Alpha Precision Planetary Gearboxes are the top of the line in their industry. Case hardened and finished ground high carbon alloy steel gears guarantee the lowest backlash and highest service life available. Alpha Gearboxes are one of the many components that make the MultiCam a smooth, accurate, and long-lasting cutting system.

- Single Stage 10:1
- Backlash < 2 arcmin
- Efficiency > 97%
- Low noise level
- Integrated thermal length compensation
- Designed for cyclic and continuous operation
- 5-Year Manufacturers Warranty



### Ball Screw Assembly

The 3000 Series ball screw assembly has an available 12" stroke available for using specialty tools or having the ability to raise the bridge. Gantry riser blocks are available to increase the throat of the machine by 4". The 12mm ball screw is supported by precision dual angular contact ball bearings in a steel housing. The top of the screw is mounted to a spring actuated failsafe brake system.



### Standard Working Surface

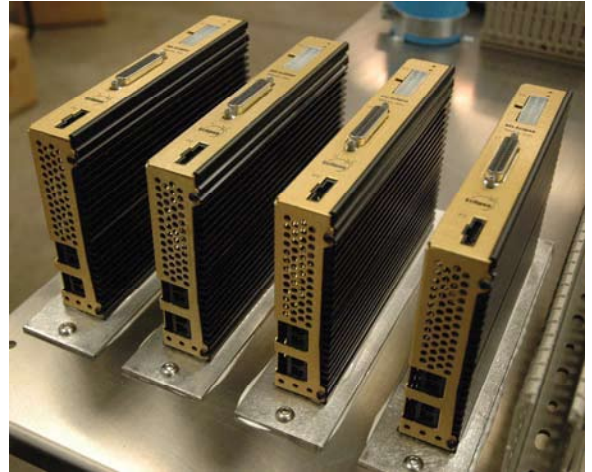
The standard working surface is 1" thick 80 - 82 Durometer phenolic with a grid pattern to utilize 0.5 x 0.250 foam gasket tape. Phenolic makes an excellent work surface because of its dependable mechanical strength and dimensional stability. In addition, phenolic has a low moisture absorption, resists heat and wear, and can be repaired as needed.



## 3000 Series Specifications

### Digital Servo Drives

- Improved motion performance around plasma electrical noise
- Built-in convection heat sinks keeps drives cooler in hot environments
- Servo phase delay of 35 microseconds is ultra fast providing accurate tracking during cut density changes
- New, CNC specific fourth order spline optimizes the command stream and allows smoother motion for a smoother finish.



### Hudson Motors

- Made in the USA
- Brushless, sinusoidal design with ultra-fast time constants, allow the motor to instantly respond to drive inputs. This improves tracking performance when coupled with the high-performance 3000 Series servo drive
- High-precision, stainless steel encoders won't warp under heat (like Mylar) or break with impact (like glass).
- Encoder is 2 times denser than older encoders for better tracking performance.
- Rare earth, sintered magnets for extreme power density and fade-free performance. (Most motors use cheaper, non-sintered magnets)
- Winding materials rated to 185 degrees C. for extreme environments.
- Rotor utilizes FEA-analyzed stainless steel shafts with oversized, high-precision bearings for greater long-term durability and smooth motion.



The New 3000 Series Servo Drive System supplies 70% more output power, more torque, better tracking, and smoother motion with faster rapids and higher accelerations.

# 3000 Series Specifications

## Standard Accessories



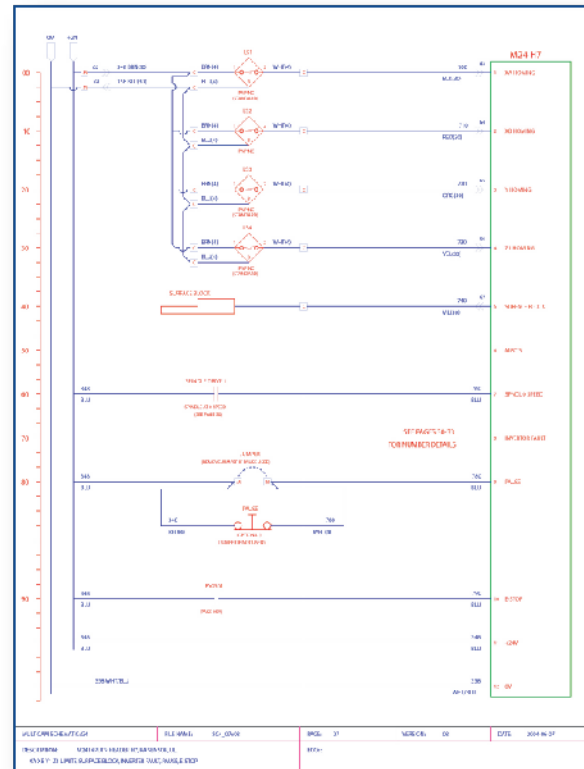
Leveling Feet



Tool Box



Operation Manual



Electrical Schematics

# 3000 Series Specifications

## 3000 Series Specs (inches)

- Z-Axis Clearance: 6" - Optional 10"
- Z-Axis Travel: 12"
- Repeatability: +/- .001"
- Positional Displacement Accuracy: +/- 0.005" over 10 feet
- Maximum Cutting Speed: 1,400 ipm \*
- Maximum Rapid Traverse: 2,500 ipm \*
- Drive System X and Y axis: Rack and Pinion
- Drive System Z axis: Ball Screw
- Standard Work Surface: 1" Phenolic

\*600 ipm cutting and rapid traverse for stepper systems

## Size Chart (inches)

MODEL	L	L1	W	W1	H	WORKING AREA	WEIGHT LBS.
3-101R	107	76	85	65	77	50 x 50	2970
3-103R	157	126	85	65	77	50 x 100	4150
3-202R	117	86	95	75	77	60.5 x 60	3260
3-204R	183	152	95	75	77	60.5 x 122	5170
3-205R	201	170	95	75	77	60.5 x 145	5630
3-304R	183	152	115	95	77	80 x 122	5920
3-305R	201	170	115	95	77	80 x 145	6310
3-306R	224	193	115	95	77	80 x 168	6520

Increase (W) by 13 inches for the optional second carriage or wide gantry.

## 3000 Series Specs (metric)

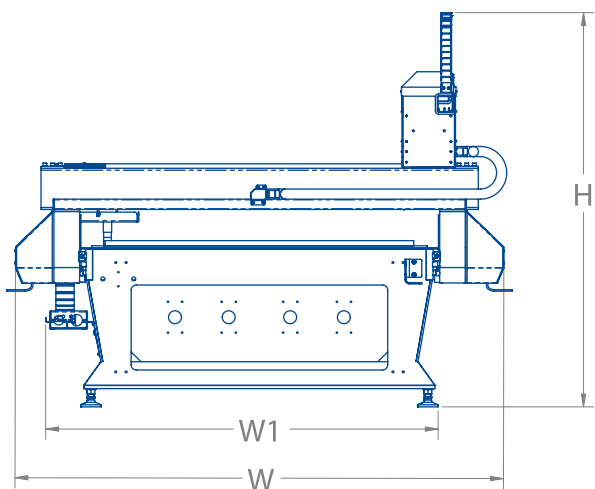
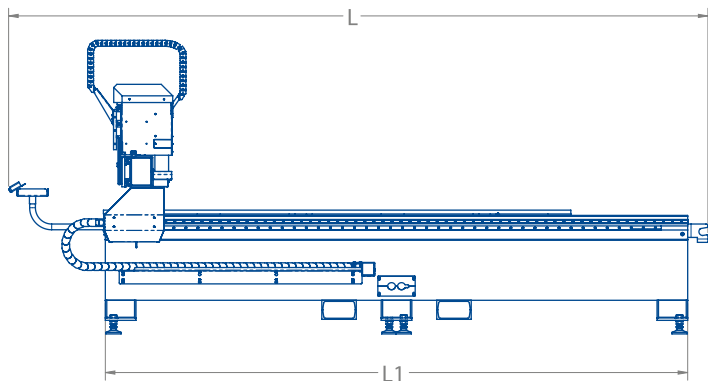
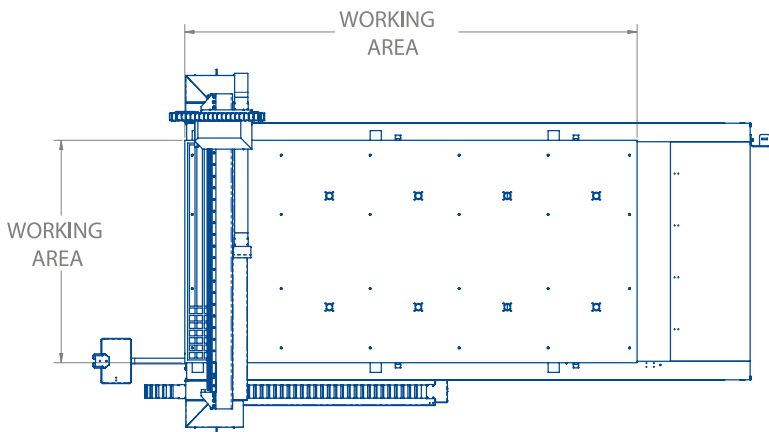
- Z-Axis Clearance: 152 mm - Optional 254 mm
- Z-Axis Travel: 304 mm
- Repeatability: +/- .025 mm
- Positional Displacement Accuracy: +/- 0.125 mm over 3 meters
- Maximum Cutting Speed: 35.5 m/min (592 mm/sec) \*
- Maximum Rapid Traverse: 63.5 m/min (1050 mm/sec) \*
- Drive System X and Y axis: Rack and Pinion
- Drive System Z axis: Ball Screw
- Standard Work Surface: 25 mm Phenolic

\*15.2 m/min (254 mm/sec) cutting and rapid traverse for stepper systems

## Size Chart (metric)

MODEL	L	L1	W	W1	H	WORKING AREA	WEIGHT Kg
3-101R	2717	1930	2159	1651	1956	1270 x 1270	1350
3-103R	3987	3200	2159	1651	1956	1270 x 2540	1886
3-202R	2971	2184	2413	1905	1956	1524 x 1524	1481
3-204R	4648	3860	2413	1905	1956	1524 x 3099	2350
3-205R	5105	4318	2413	1905	1956	1524 x 3657	2553
3-304R	4369	3860	2921	2413	1956	2032 x 3099	2690
3-305R	5105	4318	2921	2413	1956	2032 x 3658	2868
3-306R	5689	4902	2921	2413	1956	2032 x 4267	2957

Increase (W) by 330 mm for the optional second carriage or wide gantry.



**MultiCam**  
3000 Series