

MultiCam®

CNC Cutting Solutions

MultiCam® 3000 Series CNC Router Feature and Specification Guide

Versatile, Feature-Rich Production Routing!

The MultiCam® 3000 Series CNC Routers are loaded with standard features normally associated with more expensive machines. The automatic tool change (ATC) 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 panel processing applications, the 3000 Series is the perfect solution for companies looking for both value and high performance in a CNC router.

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Ideal for Cutting:

- **Wood**
- **Plastics**
- **Non-Ferrous Metals**
- **Composite Materials**

And More

Innovation. Quality. Performance.

3000-R Series Specifications

No machine offers more features than the innovative and versatile MultiCam 3000 Series CNC Router.

- Heavy, all-steel gusseted plate frame construction
- 25-mm linear ball-bearing profile rails for maximum stiffness
- MultiCam EZ Control® user-friendly operator interface
- High-speed three-axis motion-control system
- 12-MB memory with unlimited file size transfer capabilities
- Standard Ethernet or RS232 direct connections
- Brushless digital ac servo drive system
- Automatic tool calibration
- EZ Suite software

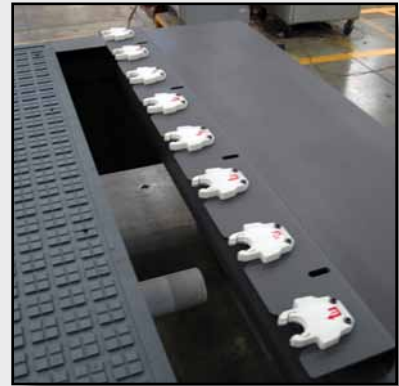


Automatic Tool Changer (ATC)

Choose from two 3000 Series CNC Router ATC options:

- **Linear Automatic Tool Changer:** This option offers a low-cost alternative to automatic tool changing. It features a linear tool rack holder mounted at the end of the material process area. An extended frame design on the 3000 Series does not reduce the standard process area. Width of this area determines the number of tool locations. The 3100 Series (50" wide) has six tool locations while the 3200 Series (60" wide) has eight, and the 3300 Series (80" wide) has 11 locations.
- **12-Tool Rotary Turret Automatic Tool Changer:** This option mounts on the end of the 3000 Series gantry that moves along the X axis. It is beneficial on dual-zone pendulum processing configurations. This accessory accommodates tool changes without crossing zones during the idle cut zone loading process.

All ATC options come standard with automatic tool calibration. Tool change routines built into MultiCam EZ Control simplify integration with your favorite CAM software. An Automatic Tool Changer solution will help reduce job times, improve accuracy and reduce setup errors.



3000-R Series Specifications

Base Frame

The MultiCam 3000 Series base is a rigid, all-steel plate frame that is welded, stress relieved and precision machined. This type of construction allows for a very accurate and smooth cutting system while reducing installation time greatly. It also essentially removes the possibility for installation errors that could affect the performance and accuracy of the system.

Dual X axes feature 25-mm linear rails, ac brushless servos, precision planetary gearboxes, rack and pinion.



Gantry

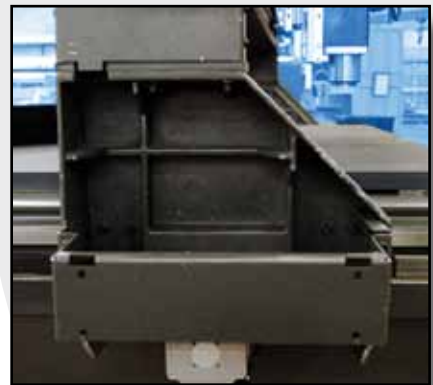
Made of a $\frac{3}{8}$ " thick steel tube, the gantry is welded, stress relieved and precision machined. MultiCam engineered it to provide a smooth, vibration-free cut.

Y axis features 25-mm linear rails, ac brushless servos, precision planetary gearboxes, rack and pinion.



Gantry Supports

In conjunction with wide X-axis bearing spacing, cast-iron gantry supports 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 covers are standard in all axes.

- High rigidity and top-load capacities in all load directions
- Lowest possible noise level and best running characteristics
- High torque-load capacity
- Four bearing packs per axis
- 4000-pound load capacity per bearing



3000-R Series Specifications

Standard Working Surface

The standard working surface is 1" thick 80-82 Durometer phenolic with a machined grid pattern utilizing .500" x .250" foam gasket tape. Phenolic makes an excellent work surface because of its dependable mechanical strength and dimensional stability. In addition, phenolic has low-moisture absorption, resists heat and wear and is easy to repair as needed.



Precision Planetary Gearboxes

Alpha Precision Planetary Gearboxes are the top of the line in the industry. Case-hardened and finished ground high-carbon alloy steel gears guarantee the highest service life available. These gearboxes are among the many components that make the MultiCam 3000 Series a smooth, accurate and long-lasting cutting system.

- Single Stage: 10:1 gear ratio
- Efficiency: > 97%
- Low noise level
- Integrated thermal compensation
- Designed for continuous operation



Regulator Units

Machines equipped with tool-changing spindles come standard with SMC filter regulator units that include an ambient air drier.



Ball Screw Assembly

The 3000 Series ball screw assembly has 12" of Z stroke to handle a wide variety of tooling. Precision dual angular contact ball bearings support the 12-mm ball screw in a steel housing. The top of the screw is mounted to a spring-actuated fail-safe brake system. Gantry riser blocks are available to increase the throat of the machine by 4".



3000-R Series Specifications

EZ Control®

MultiCam EZ Control® is one of the most powerful yet easy-to-use motion-control systems available on machine tools today. No wonder MultiCam named its motion system EZ Control!

- Hand-held operator interface with graphic icons
- 12-MB memory with unlimited file-size transfer capabilities
- Multiple home positions
- Automatic Z surfacing
- Electronic depth safety system
- Proximity restart
- Tool compensation
- Cut speed override
- Spindle rpm override
- Standard Ethernet TCP/IP connection



Drive Assembly

High-torque, brushless digital ac servo motors coupled to zero backlash Alpha gearboxes drive both the X and Y axes. This results in high acceleration of the gantry as well as excellent cut quality.



Digital Servo Drive System

Digital servo drives and brushless digital ac servo motors form a digital vector servo drive system that is standard on all MultiCam Digital Express machines. This drive system integrates position, velocity and torque loops seamlessly to provide uncompromised tracking accuracy, smoothness and reliability.

MultiCam servo-driven machine drives are the latest in high-performance technology. They advance the state of the art by utilizing seamless coordination and allowing information sharing in real time so all system functions cooperate in any situation. Realize tighter tracking, smoother motion and faster rapid traverse — all of which yield superior machine throughput and reliability.



3000-R Series Specifications

Standard Features



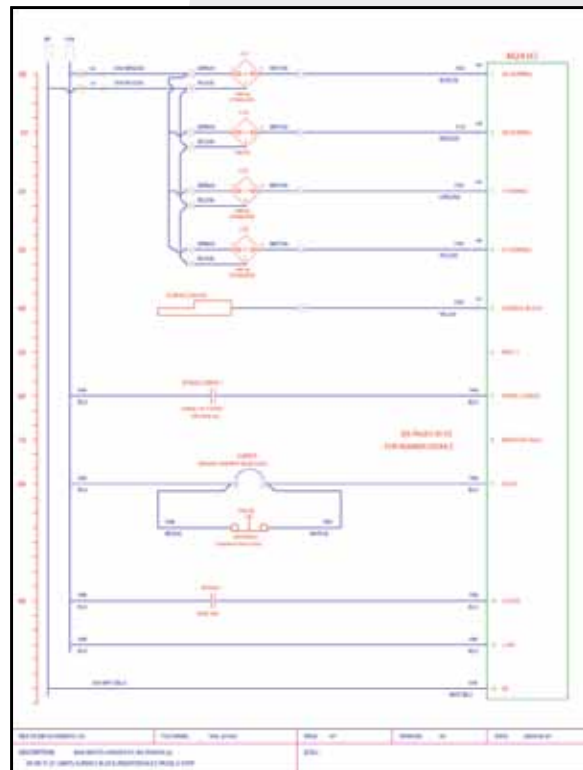
Leveling Feet



Tool Box

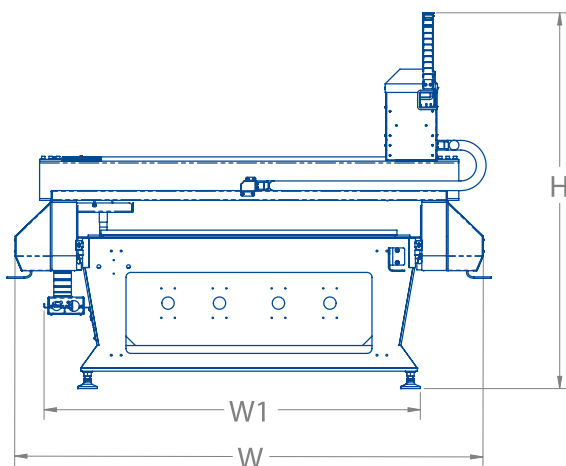
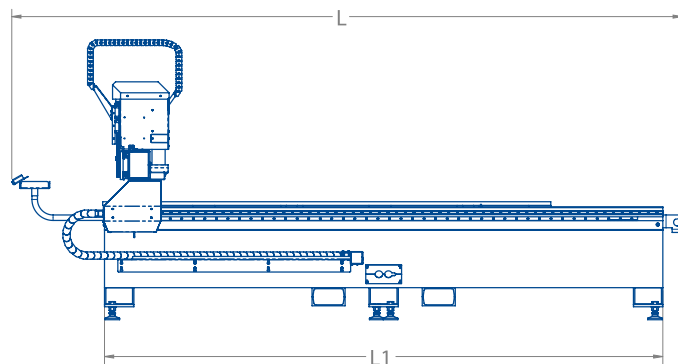
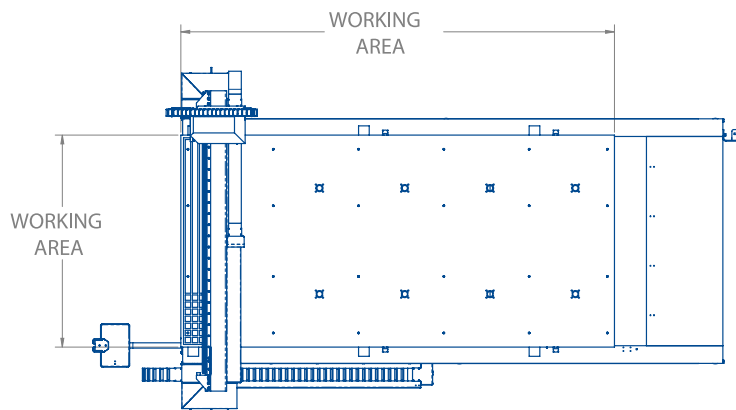


Operation Manual



Electrical Schematics

3000-R Series Specifications



MultiCam®
3000 Series

Specifications subject to change.

3000 Series Specifications (Inches)

- Z-Axis Clearance: 6"; Optional: 10"
- Z-Axis Travel: 12"
- Repeatability: +/- 0.001
- Positional Displacement Accuracy: +/- 0.005" over 10'
- Maximum Cutting Speed: 1400 IPM*
- Maximum Rapid Traverse: 2500 IPM*
- Drive System X and Y Axes: 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" for Optional Second Carriage or Wide Gantry.

3000 Series Specifications (Metric)

- Z-Axis Clearance: 152 mm; Optional: 254 mm
- Z-Axis Travel: 304 mm
- Repeatability: +/- 0.025 mm
- Positional Displacement Accuracy: +/- 0.125 mm over 3 m
- Maximum Cutting Speed: 35.5 MPM (592 MMPS)*
- Maximum Rapid Traverse: 63.5 MPM (1050 MMPS)*
- Drive System X and Y Axes: Rack and Pinion
- Drive System Z Axis: Ball Screw
- Standard Work Surface: 25-mm Phenolic

* 15.2-MPM (254-MMPS) 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 Optional Second Carriage or Wide Gantry.