

MultiCam[®]

CNC Cutting Solutions

Features & Specifications Guide for MultiCam Digital Express

Digital Finishing... ...Made Affordable!

The MultiCam Digital Express is loaded with features normally found on more expensive X/Y/Z cutting systems. It combines high speed digital registration with powerful routing and knife cutting capabilities in a fast, wide format sheet feed cutting platform. Companies that are looking for a versatile, affordable platform that can register, route and knife-cut at high speeds will appreciate the affordable price point of the MultiCam Digital Express.

MultiCam has been building and selling three axis positioning systems for over twenty years. With more than 7500 machines sold worldwide, MultiCam has the experience, knowledge, and service safety net to insure your productivity. MultiCam has more than 70 factory trained Technology Centers around the world.

Go ahead, read on! The MultiCam Digital Express is an affordable, configurable, production digital finishing system backed by a world class service network that you can rely on!

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Innovation. Quality. Performance.

Digital Express Specifications

No machine offers more standard features than the MultiCam.

- EZ Control with user-friendly operator interface
- All steel, stress relieved, precision machined base frame
- 25 mm linear bearings in the X and Y axes
- High-flow vacuum table
- 2" (50mm) cut capacity with all tools
- Digital AC servo drives
- Three (3) independent cutting head mounting plates
- Independent Z axis digital AC servo drives
- MultiVision digital registration system



Options Include

- 4 HP or 5.5 HP, high-speed routing spindles
- Up to three (3) tangential knife receivers
- Wide variety of knife cartridges
- Auto misting system
- Pop-up material location pins
- Bar code scanning interface
- Integrated computer work station
- High-flow vacuum pumps
- Enroute CAD/CAM software packages for enhanced workflow

Router Spindles

The standard spindle on the Digital Express is rated at 4 HP, 24,000 RPM. Spindle RPM's are variable throughout the entire operating range. The spindle utilizes an ER-25 collet which can handle tools up to 5/8" in diameter (16mm). The 4 HP collet spindle can handle even the most demanding graphics arts applications.

An optional water cooled, variable speed, 5.5 HP, 50,000 RPM spindle gives the user increased flexibility. The spindle utilizes HSK-25 tool holders and ER-16 collets. Capable of handling tools up to 3/8" in diameter (10mm), the HSK-25 tool holders can be preset off-line and tool changes accomplished by a quick change, push button release. The ultra-high RPM capabilities of the spindle allow very fine finishes utilizing small diameter tools as well as increased feed speeds and overall finished part throughput.



4 HP Spindle



5.5 HP Spindle

MultiCam EZ Knife Tangential Cutting System

The MultiCam EZ Knife cartridge system was developed to perform mechanized knife cutting, creasing, and perforation operations for the digital finishing market. Two (2) independent tangential knife receivers can be configured on all MultiCam Digital Express machines.

The EZ Knife system supports tangential drag, oscillating and ultrasonic cutting techniques. Choose from many blade types including rotary, spear point, utility, kiss cut and more. MultiCam high performance motion control systems, heavy duty construction and a popular range of table sizes bring a new level of performance and utility to knife cutting.



EZ Knife Cartridge Options

- High frequency oscillating
- Ultrasonic high frequency
- Drag knife
- Kiss cut knife
- Rotary knife
- Creasing wheel
- Perforating wheel



Oscillating



Crease



Rotary



Kiss Cut



Drag

Vacuum Pumps

Standard vacuum pump options include an 8.5 HP (225 CFM) or 17 HP (335 CFM), two stage regenerative blower. Both pumps are capable of pulling 14" HG and their high CFM capacities lend themselves well to graphic arts sheet cutting applications.



MultiVision Digital Registration System

MultiVision is standard on all Digital Express machines. It is a digital camera/software based system that can visually recognize media registration marks and automatically compensate for skew, distortion and image drift. The MultiVision system easily integrates into your existing workflow while providing the additional flexibility of utilizing state-of-the-art CAD/CAM software for enhanced tool path generation as well as high-end 3D sign and graphics applications.



Digital Express Specifications

Standard Work Surface

The standard working surface is 1" thick phenolic with a high-flow grid pattern that utilizes .25" X .25" foam gasket sealing tape. The phenolic is mounted to the top of the steel base frame and then machined in place. This ensures a flat cutting surface normal to the spindle. Phenolic makes an excellent work surface because of its dependable mechanical strength and dimensional stability. Actual cutting surfaces can include LDF (light density fiberboard), perforated polycarbonate sheet or fibrous belting material for knife cutting.



Base Frame

The MultiCam Digital Express 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 essentially removing the possibility for installation errors that could affect the performance and accuracy of the system.



Gantry

The gantry is engineered for maximum stiffness from 10mm thick aircraft quality aluminum extrusion. References for the precision linear bearings and rack are engineered into the design and have excellent parallelism. The rack is mounted on the top of the extrusion in a position that minimizes swarf and chip contamination.



Gantry Supports

Gantry supports are precision machined from 2" thick, cast aluminum tooling plate using a four-axis horizontal machining center to guarantee perpendicularity. The cast aluminum support has inherent vibration dampening characteristics while giving rigid support to the gantry tube.



Linear Bearings

Standard 25 mm linear ball bearing profile rails with stainless steel spring strip covers are standard on the X and Y axes. Features include:

- 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



Drive Assembly

The transmissions on the X and Y axes are both based on an aluminum casting and feature steel cable urethane belt drives. The output pinions are supported by a dual bearing arbor with wide bearing separation for optimum stiffness. Both the X and Y axes are driven by high-torque, brushless digital AC servo drives.



Z Axis Assembly

The Digital Express utilizes three (3) 10mm precision ground Z axis screws. Each screw is held firmly in place by a precision mounting block with dual angular contact ball bearings for high axial force loads. A precision machined steel nut carries the Z-axis load. Each Z axis screw is driven by a high torque, brushless digital AC servo drive.



Automatic Tool Changer {ATC}

The Digital Express machine is available with an optional Linear Automatic Tool changing system. The frame of the table has been extended so that the tool changer does not cut into or reduce the standard working area. The number of tool locations is dependent on the width of the machine. All ATC systems come standard with Automatic Tool Calibration and the tool change routines are built into the controls which simplifies integration to your favorite CAM software.



Digital Servo Drive System

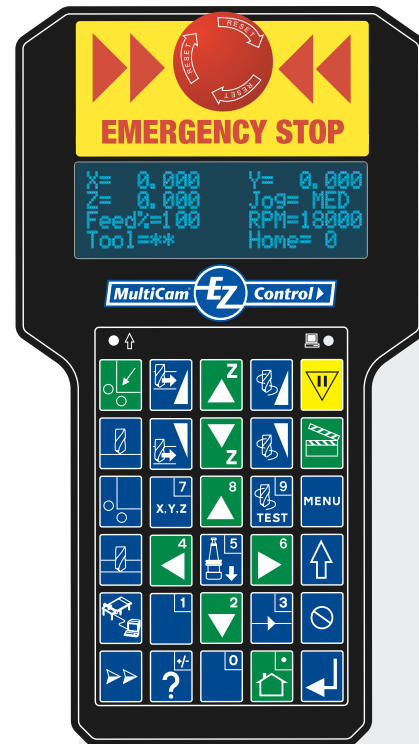
Digital servo drives and brushless digital AC servo motors combine to form a digital vector servo drive system and are standard on all MultiCam Digital Express machines. These drive systems seamlessly integrate position, velocity, and torque loops to provide uncompromised tracking accuracy, smoothness and reliability. The drives used in MultiCam servo-driven machines are the latest in a line of high-performance drives that advances the state of the art by utilizing this seamless coordination in such a way to allow all information to be shared in real time so all system functions cooperate in any situation. For example, if the torque loop senses that the AC servo motor has reached 100% torque output, it is instantly passed upstream to the servo compensator and the system delivers a coordinated response, maintaining precise control. You will realize tighter tracking, smoother motion, and faster rapid traverse - all of which yield superior machine throughput and reliability. The digital AC servo drive system used by MultiCam yields not only robust performance, but also MTBF numbers that make the competition blush. The MTBF of the digital drive system is over 80 years!



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! Features include:

- Hand held operator interface with graphic icons
- 12 MB of 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



Optional Workstation

The ergonomically designed computer workstation is constructed from solid steel and aircraft quality aluminum components. The stand places the computer workstation at the front of the Digital Express for easy access to the controls. The MultiCam EZ Control interface and an optional bar code reader have their own special holders that integrate to the computer workstation. The computer workstation is an easily added option to your Digital Express.



Digital Express Specifications

Standard Features



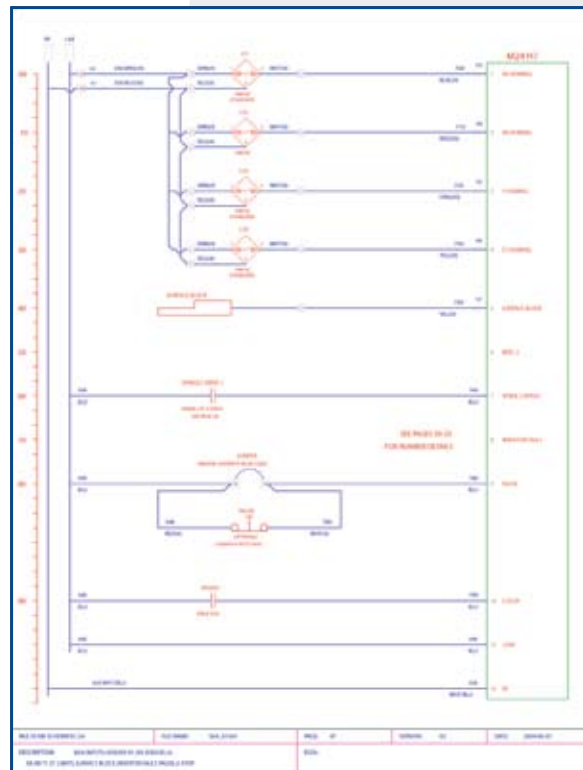
Leveling Feet



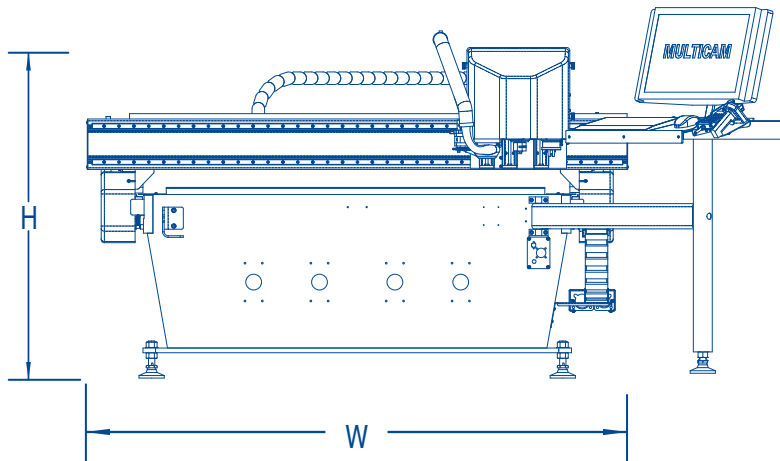
Tool Box



Operation Manual

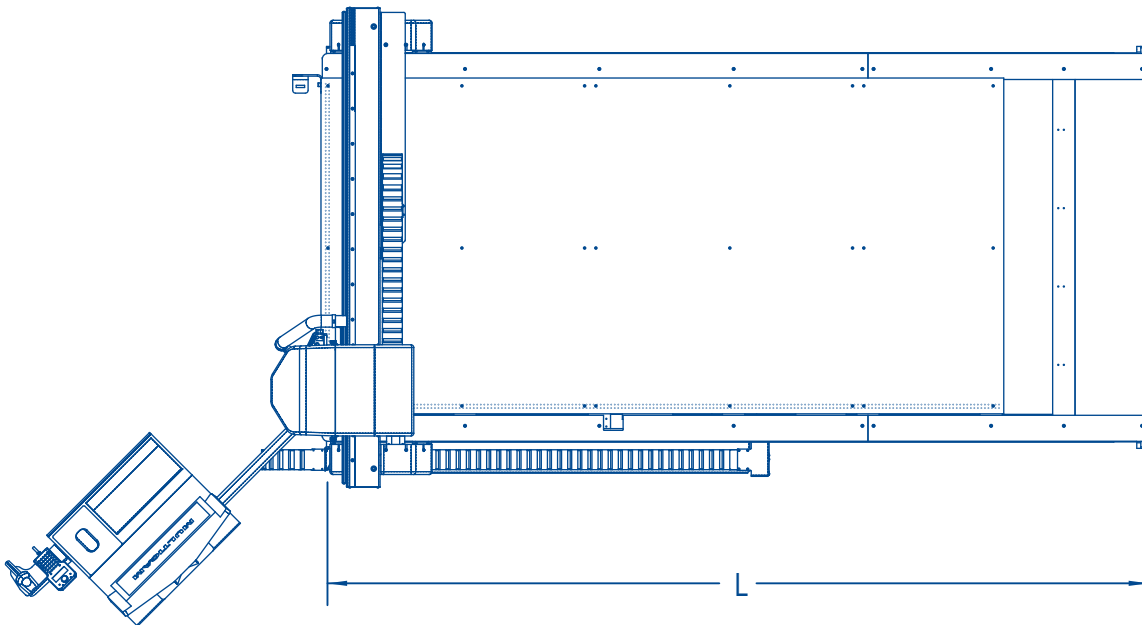


Electrical Schematics



Digital Express Specifications

- Z-Axis Clearance: 3" (76 mm)
- Z-Axis Travel: 5" (127 mm)
- Repeatability: +/- .001" (.025 mm)
- Positional Displacement Accuracy: +/- 0.005" (.13 mm) over 10 feet
- Maximum Cutting Speed: 1,400 IPM (35.6 M/min)
- Maximum Rapid Traverse: 2,400 IPM (60.0 M/min)
- Drive System X and Y axis: Rack and Pinion
- Drive System Z axes: Ball Screw
- Drives: Brushless Digital AC servo
- Standard Work Surface: 1" Phenolic

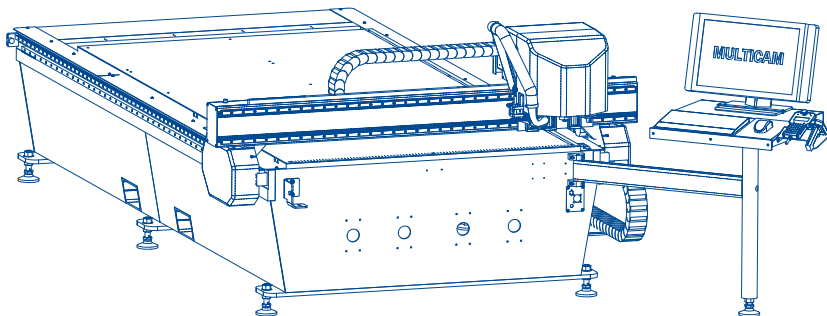


Size Chart (inches)

MODEL	L	W	H	WORKING AREA	WEIGHT LBS.
D-202	88	84	51	60 x 60	2302
D-103	128	74	51	100 x 50	2612
D-204	148	84	51	120 x 60	3157
D-304	148	104	51	120 x 80	3828

Size Chart (metric)

MODEL	L	W	H	WORKING AREA	WEIGHT Kg
D-202	2235	2134	1295	1524 x 1524	1043
D-103	3251	1880	1295	2540 x 1270	1183
D-204	3759	2134	1295	3048 x 1524	1430
D-304	3759	2642	1295	3048 x 2032	1734



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