

This is where Supplier Meets Demand.



CNC Machining Centers

from CNT Motion Systems

CNTMOTION
SYSTEMS

Around-the-clock Work-week? No Problem.

CNC machining centers from CNT Motion Systems are being used worldwide by woodworkers, plastics fabricators, solid surface specialists, 3-D mold makers, signmakers, display manufacturers, tool & die makers and more. Our customers are increasing their production and meeting demand like they never imagined possible.

We build our machines to handle the most rigorous production demands. All of our machines are full size and engineered for fabricating parts around-the-clock!

New to CNC? We'll train you!

CNC technology is easier to use than ever before. You won't need to hire a specialist. We provide on-site training at the time of installation, with most customers quickly becoming skilled users.

CNT Motion will help you take your productivity to the next level!

**LOOKING FOR A
UNIQUE SOLUTION?**
Ask about our custom configurations!

CNTMOTION
SYSTEMS

7800 Susquehanna Street
Pittsburgh, PA 15208 • 412-244-5770
www.cntmotion.com

If you think CNC technology is something you can't afford, think again!

Since 1990, CNT motion Systems has been bringing affordable automation to businesses just like yours. Whether you have a small shop or multiple high-production facilities, CNC automation can help you reduce overhead and waste, while increasing productivity and efficiency.

CNT Motion's machining centers are designed for easy maintenance and built to the strictest standards using industrial-quality components. **Our machines have features only found on comparable systems typically priced in the \$100,000-\$200,000 range!**

"CNT Motion has a machine with your name on it"

Each of our full-size machines is available with a standard 60"X120" cutting area and can travel at speeds ranging from 1,000 to 2,000 inches-per-minute.

Our growing list of accessories includes high-speed (up to 40,000 RPM) spindles, tool changers, vacuum fixturing systems, dust collectors, controller cabinets and more. And, CNT Motion Systems takes advantage of the user-friendly interface of a Windows®-based PC controller.

Every one of our CNC machining centers is fully tested and inspected before it leaves our manufacturing facility. **Each machine is delivered completely assembled and pre-wired to help minimize installation and set-up fees.** (Set-up and installation usually takes less than a day.) Installation and training services are performed by our own employees — the same ones who build the machines.

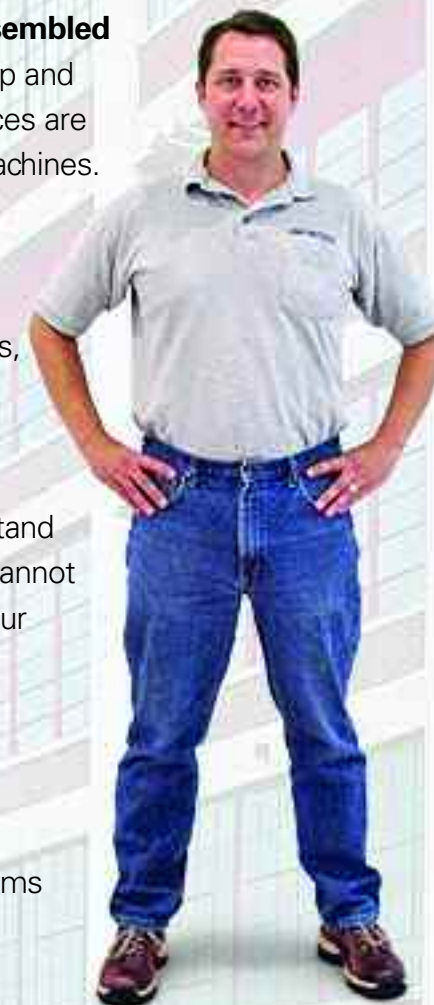
Today, the same technology that CNT Motion brought to CNC routing is being successfully applied to laser-, plasma-, waterjet- and knife-cutting applications. We have major manufacturers, high-tech government suppliers, Hollywood special effects prop makers, model makers and fine artists all applying our technology to meet the high demands of their clients. The possibilities are limited only by their imaginations.

When you call CNT Motion Systems, we'll take the time to understand your goals first-hand. Without understanding your specific needs, we cannot provide the ideal solution for you. Try us. You might be surprised how our CNC solutions can help you reach your goals.

At CNT Motion Systems, we measure our success by the success of our customers. **You deserve no less.**

Paul Cullen

Vice President, CNT Motion Systems



What's being made with our CNC Machining Centers?

High-production. Limited Runs. Prototypes.

Manufacturers from virtually every industry have realized the benefits of affordable CNC technology from CNT Motion Systems. Our machines are being used worldwide by some of the largest manufacturers in their respective markets.

Woodworkers

A four-axis CNT router is being used to create goods for a major wood products catalog company to make fluted spindles for furniture and railings.

Some of the country's leaders in staircase manufacturing are using our robust 24-foot Stair Stringer Machine to build spiral staircases.



Plastics Fabricators

CNT customers who are fabricating plastics include a major commercial manufacturer and a company making parts for computer chip dipping tanks used by high-tech Silicon Valley firms.

Curtain Wall Manufacturers

CNT customers are machining Alucobond® (an aluminum composite material) to produce pre-engineered building exterior panels.



Store Fixture and Trade Show Display Manufacturers

Chances are good that you've seen merchandise hanging on store fixtures created by one of the country's largest manufacturers, all done using CNT machines. Creative trade show and museum displays exhibiting around the world are also made with our machines, including framework, panels and applied graphics.

Solid Surface Specialists

Our machines are also being shipped internationally for solid surface fabrication. And, state-side, some of the finest homes have kitchen and bathrooms stylized with solid surface machined by CNT Motion machining centers.

Tool & Die Makers

One of CNT's customers is running five machines 24X7, 365 days a year, to make seating for rapid transit trains and stadiums. They're using our routers to machine aluminum dies for injection-molding 3-D parts including seats, grills and lighting fixtures; and they're shipping them by the trainload!

Another manufacturer uses our systems to make 3-D injector dies for PVC parts production.

Specialty Products Manufacturers

Snowboard manufacturers have found that the best way to meet the demand of this increasingly popular sport is to automate their shops. And one of our customers is the recognized world leader.



The world's number one boatbuilder, and four-time recipient of the prestigious National Marine Manufacturers Association Award for Excellence in Customer Satisfaction, is using our machines to produce world-class luxury and recreational lines.

Another CNT customer is involved in the aerospace industry, supporting engineering, design, fabrication and off-sight testing of aircraft and parts for leading aerospace companies.



Home Fabricators

Some of our largest machines (up to 12'X24' cutting area!) are being used to machine Structural Insulated Panels (SIPs) for home fabricating.

Training Institutions and Universities

Trade schools and Carpenters' Union apprenticeship training centers are taking advantage of the ease-of-use of our CNC routers to train students and workers in the latest trends in manufacturing and automation.

Here's what some of our customers are saying about us.

“CNT technical support has been outstanding! They have and will go the extra mile to ensure that the machine's up-time is maximized... The machine saves our model-making process countless hours by enabling us to accurately contour the topography and lay out line data with the laser. The completion process on our contour models is now just a matter of assembling all the puzzle pieces rather than hand-working elements to make them fit... We chose the CNT machine because CNT was able to customize the machine to our exact needs... We're very happy with them!”

Erich Kerstan
Insculp

(California-based manufacturer of 3-D topographical scale models)

“I FEEL THAT IT IS THE BEST TOOL ON THE MARKET FOR OUR INDUSTRY!”

Wayne Babjack
Carpenters Union JATC

“The supervisor of the area told me yesterday that the CNT is the best machine they have. There is a Weeke, Holzma, Homag and an Accusystems in this area. It seems there is always something wrong with them.”

Pennsylvania-based contract manufacturer (name withheld by request)

“I have known the folks at CNT Motion for many years and own one of their CNT 900 routers. I have always found them to be fair, honest and professional in their dealings with me. When I've needed technical assistance, they have been prompt in responding to my calls, even to the extent of getting back to me on a Sunday evening. I would not hesitate to recommend them to anyone looking for a new CNC router.”

Bernard H. Davis
B.H. Davis Company

(Makers of solid wood curved mouldings)

“I have experience with many CNC systems and, although they've all done the same thing, CNT goes above and beyond with their craftsmanship and customer service. They don't make a product meant to last ten years, they make a product that lasts a lifetime. Their durable equipment and great customer service MAKES me want to give them my business.”

P. Zach Ali
Digital Fabrication Lab Manager
Carnegie Mellon University



CNT-1000 Series

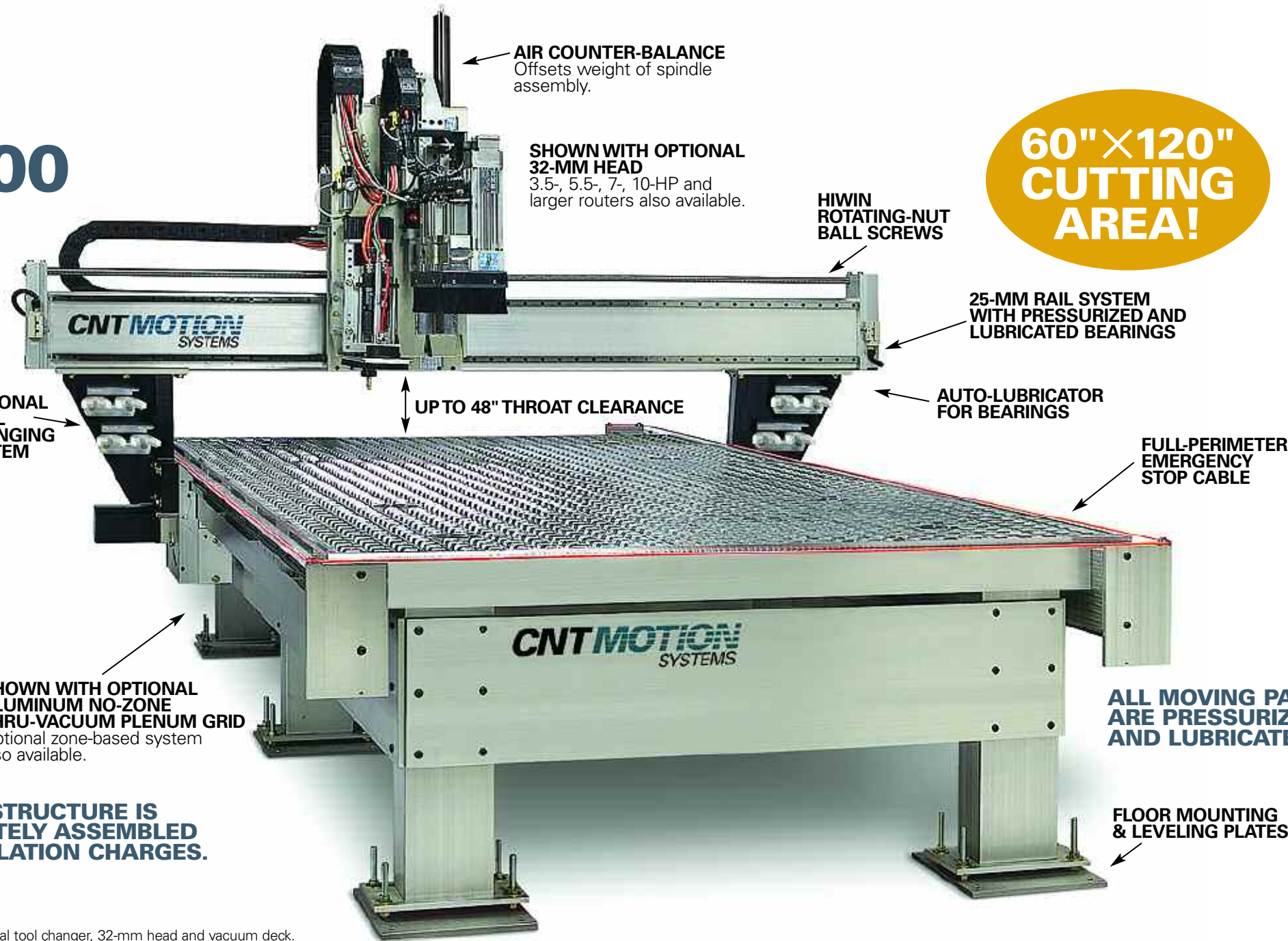
X-AXIS OVER-TRAVEL
Allows for machining of entire area by both heads.

PERFECT FOR NESTED-BASED FABRICATING!

Package includes nested-based router tooling kit.

INTEGRATED TABLE STRUCTURE IS DELIVERED COMPLETELY ASSEMBLED TO MINIMIZE INSTALLATION CHARGES.

Model shown is CNT-1000 with optional tool changer, 32-mm head and vacuum deck.



AIR COUNTER-BALANCE
Offsets weight of spindle assembly.

SHOWN WITH OPTIONAL 32-MM HEAD
3.5-, 5.5-, 7-, 10-HP and larger routers also available.

HIWIN ROTATING-NUT BALL SCREWS

25-MM RAIL SYSTEM WITH PRESSURIZED AND LUBRICATED BEARINGS

AUTO-LUBRICATOR FOR BEARINGS

FULL-PERIMETER EMERGENCY STOP CABLE

OPTIONAL TOOL CHANGING SYSTEM

UP TO 48" THROAT CLEARANCE

SHOWN WITH OPTIONAL ALUMINUM NO-ZONE THRU-VACUUM PLENUM GRID
Optional zone-based system also available.

ALL MOVING PARTS ARE PRESSURIZED AND LUBRICATED

FLOOR MOUNTING & LEVELING PLATES

60" X 120" CUTTING AREA!

*HIWIN Rotating-nut Ball Screw System
(See page 23 for more details.)*

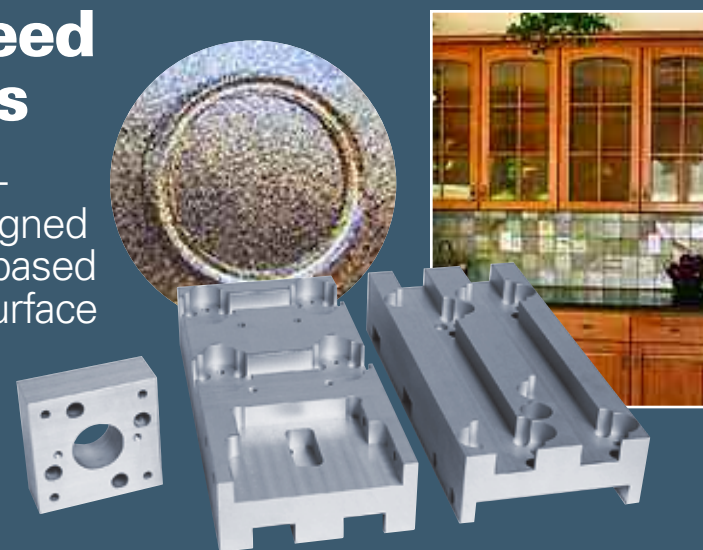
*Tool Changing System
(See page 22 for more details.)*

*Emergency Stop Button and Cable;
Tool Touch-off*

*LEFT: Detail of head assembly with optional 10-HP ISO-30 Tool Change Router and 32-mm Boring Head.
RIGHT: Oil Lubrication System (two per machine)*

The Ruggedness You Need for Heavier Applications

The CNT-1000 Series is a full-sized, Servo-powered, high-performance machine designed for heavier applications, including nested-based fabrication of plastics, hardwoods, solid surface and non-ferrous metals.



Features

- A full-sized, 60"X120" all-side-loading machining area;
- AC-brushless Servo drives providing travel speeds up to 2000 IPM;
- An IBM-compatible PC with state-of-the-art WinCNC™ motion control software and controller cabinet; and
- A full-perimeter emergency stop.

Add the optional spindles, vacuum system, dust collection system and tool changer, and you have a first-class production machine ready to handle the most-demanding jobs.

Specifications

Repeatability	.001"
Positioning Accuracy	±.002"
Cutting Area	60"X120"*
Z-axis Travel	11"*
Rapid Traverse	2000 IPM
Drive Motor	Servo
Drive System	
(Y-axis)	Helical Rack-and-pinion
(X- & Z-axes)	HIWIN Ball Screw
Controller	Windows® XP® PC
Warranty	1 Year
Weight	Approx. 4500 Lbs.

*Standard specs. Optional dimensions available. Call for details and pricing.

NOTICE: Customer may be required to provide safety matting or light curtains to comply with state or local safety regulations. Check with local authorities for more details about your specific obligations. CNT Motion Systems assumes that local safety requirements will be fulfilled prior to operation of equipment.

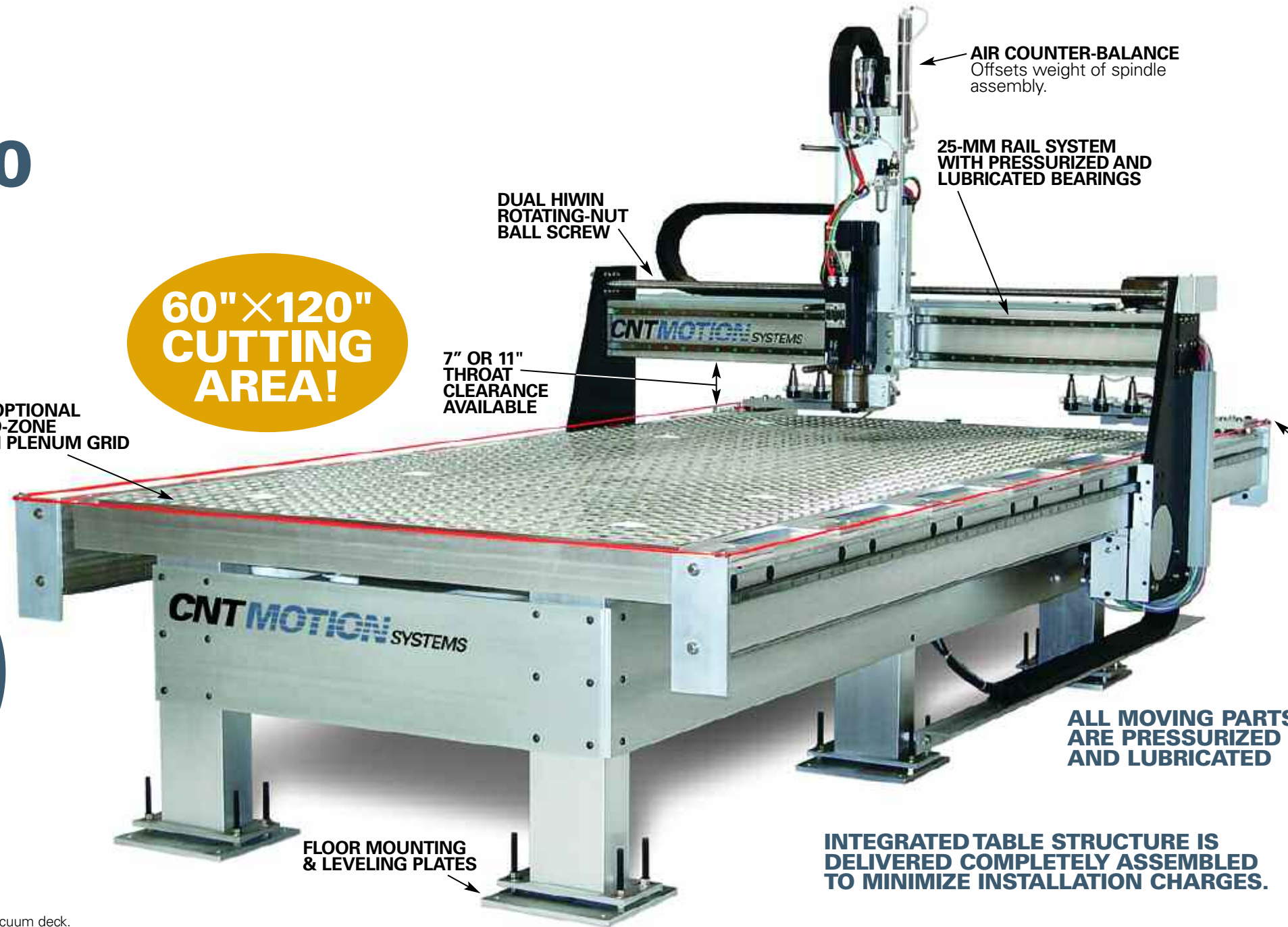
CNT-950 Series

60" X 120" CUTTING AREA!

SHOWN WITH OPTIONAL ALUMINUM NO-ZONE THRU-VACUUM PLENUM GRID

PERFECT FOR NESTED-BASED FABRICATING!

Package includes nested-based router tooling kit.



DUAL HIWIN ROTATING-NUT BALL SCREW

AIR COUNTER-BALANCE
Offsets weight of spindle assembly.

25-MM RAIL SYSTEM WITH PRESSURIZED AND LUBRICATED BEARINGS

7" OR 11" THROAT CLEARANCE AVAILABLE

FULL-PERIMETER EMERGENCY STOP CABLE

CNT MOTION SYSTEMS

ALL MOVING PARTS ARE PRESSURIZED AND LUBRICATED

FLOOR MOUNTING & LEVELING PLATES

INTEGRATED TABLE STRUCTURE IS DELIVERED COMPLETELY ASSEMBLED TO MINIMIZE INSTALLATION CHARGES.

Efficient Cable Management

Optional Dust Collection System

HIWIN Rotating-nut Ball Screw System
(See page 23 for more details.)

LEFT: 25-mm bearing block with air-lubricated pressurization system
RIGHT: Easy access for maintenance

Model shown is CNT-950 with optional 10-HP ISO-30 tool change router and vacuum deck.

A Cost-effective Solution for Most Applications

The Servo-powered CNT-950 is our most-affordable model and perfect for those new to CNC technology. It's also a great second or third machine for manufacturers looking to expand their current production capabilities.



The CNT-950 is built to the same precision standards as all of our machines and is our most flexible model—we can build it with virtually any table size. (See our Custom Configurations section.) It's also another great machine for nested-based manufacturing, so you can get the most out of your material.

Features

- A 60" X 120" machining area;
- AC-brushless Servo drives providing travel speeds up to 1000 IPM;
- An IBM-compatible PC with state-of-the-art WinCNC™ motion control software and controller cabinet; and
- A full-perimeter emergency stop

Simply add a drill motor or spindle and you'll be ready to machine your parts quickly and cost-effectively.

Specifications

Repeatability	.....	.001"
Positioning Accuracy	.....	±.002"
Cutting Area	.....	Customer-specified
Z-axis Travel	.....	7" Or 11"*
Rapid Traverse	.....	1000 IPM
Drive Motor	.....	Servo
Drive System		
(X- & Y-axes)	...	Helical Rack-and-pinion
(Z-axis)	.....	HIWIN Ball Screw
Controller	.....	Windows XP PC
Warranty	.....	1 Year
Weight	.....	Approx. 2500 Lbs.

*Standard specs. Optional dimensions available. Call for details and pricing.

NOTICE: Customer may be required to provide safety matting or light curtains to comply with state or local safety regulations. Check with local authorities for more details about your specific obligations. CNT Motion Systems assumes that local safety requirements will be fulfilled prior to operation of equipment.

Built in Response to Growing Demand

The 24-foot CNT-1000 Stair Stringer Machine is set up to hold two pairs of stringers up to 20 feet long.

The machine has two individually programmable X-axes, each attached to a Z-head for mirror-image and split-head machining to optimize material for best possible yield. A custom software program allows you to pick material type and thickness, rise and run, style of stringer (box, open, horse cut, winder, etc.) and end cuts.

Features

The standard CNT-1000 Stair Stringer Machine performs these operations with positioning speeds of 2000 IPM and includes:

- A full-sized, 60"X240", all-side-loading machining area;
- AC-brushless Servo drives;
- An IBM-compatible PC with state-of-the-art WinCNC™ motion control software and controller cabinet; and
- A full-perimeter E-stop.

ASK ABOUT OUR 16-FOOT HAND RAIL BORING MACHINE

featuring an adjustable-angle head, air-activated clamping system (for plates and rails) and Servo control.

Stair Stringer Machine

25-MM RAIL SYSTEM WITH PRESSURIZED AND LUBRICATED BEARINGS

OPTIONAL TOOL CHANGING SYSTEM

AIR COUNTER-BALANCES
Offsets weight of spindle assemblies.

DUAL HIWIN ROTATING-NUT BALL SCREW

X-AXIS OVER-TRAVEL
Allows for machining of entire area by both heads.

FULL-PERIMETER EMERGENCY STOP CABLE

CUT STRINGERS UP TO 20' LONG!

60" X 240" CUTTING AREA!

SHOWN WITH OPTIONAL EIGHT-ZONE THRU-VACUUM PLENUM GRID

FLOOR MOUNTING & LEVELING PLATES

Detail of head assembly with optional 10-HP ISO-30 Tool Change Router and air-activated black alloy piggy-back drill



Specifications

Repeatability	.001"
Positioning Accuracy	±.002"
Cutting Area	60"X240"*
Z-axis Travel	11"*
Rapid Traverse	2000 IPM
Drive Motor	Servo
Drive System	(Y-axis) Helical Rack-and-pinion (X & Z-axes) HIWIN Ball Screw
Controller	Windows XP PC
Warranty	1 Year
Weight	Approx. 7000 Lbs.

*Standard specs. Optional dimensions available. Call for details and pricing.

NOTICE: Customer may be required to provide safety matting or light curtains to comply with state or local safety regulations. Check with local authorities for more details about your specific obligations. CNT Motion Systems assumes that local safety requirements will be fulfilled prior to operation of equipment.

Stair Stringer machine shown with optional 10-HP ISO-30 tool change router and vacuum deck.

CNC Routing

Machine hardwoods, plastics, solid surface, non-ferrous metals and much, much more

CNC routing use has grown dramatically over the last two decades, primarily fueled by the advent of affordable automation into smaller businesses and specialty shops. The versatility and efficiency of CNC routing has found its way to both niche and mass-production suppliers. Major industries are utilizing the latest in nested-based parts production to grow their businesses and expand their capabilities.

Since 1990, CNT Motion has been playing an important role in this manufacturing evolution by converging ease-of-use and affordability.

CNT Motions' CNC routers are ideally suited for residential and commercial woodworking, fabricating plastics and composites, shaping and inlaying solid surface or granite countertops, machining non-ferrous metals and much more. In fact, CNT Motion uses our own routers to machine most of the structural components of the machines we sell.

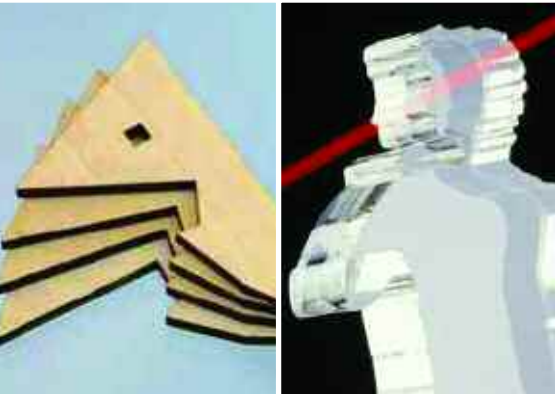
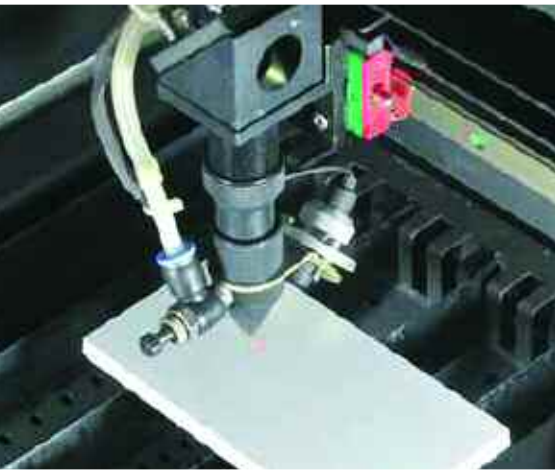
The flexibility of CNT's product engineering enables us to design custom routers for truly unique needs. Material-specific fixturing solutions and modified table configurations are frequent requests that we've been able to accommodate over the years. While our standard CNC routers are perfect for 2-D and 2-1/2-D face-cutting, our core technology is also suitable for multi-axis 3-D applications. Many CNT customers are using the latest advanced software to produce 3-D specialty parts for a wide variety of markets.

Typical CNC router accessories include:

- Collet-style and drilling/boring spindles
- ISO30, ISO40 and HSKF63 automatic tool changer kits
- Tooling for specialized materials and applications;
- Material hold-down systems, including T-slot decking, thru-vacuum, gasketed vacuum and multi-zone system; and
- Dust collection systems.



The flexibility of CNT's technology enables us to equip our machines for most high-production and specialty machining applications.



Laser

Cut, shape, engrave or etch virtually any material

Depending upon your production goals, either the CNT-950 or CNT-1000 models can be adapted for low-resistance laser-based fabrication.

Laser machine features include:

- Laser Power Control via pulse width modulation with the ability to adjust laser power while cutting
- Laser Temperature Monitoring
- Direct DXF Import capabilities for vector cutting
- Direct Bitmap Import capabilities for raster engraving/cutting
- Smart Rastering to eliminate white space in bitmaps

CNT Motion also offers several tools to help get the most out of your machine, including:

- Keyence laser height detection and materials measurement. (www.keyence.com)
- Faro® Laser Tracker contact measurement system to accurately measure large parts and machinery across a wide range of industrial applications. (www.faro.com)
- I-cut® Software for taking graphics files from computer drawing to precision-cut parts and varying the laser speed to manage cutting/burning. (www.mge-us.com)

Plasma

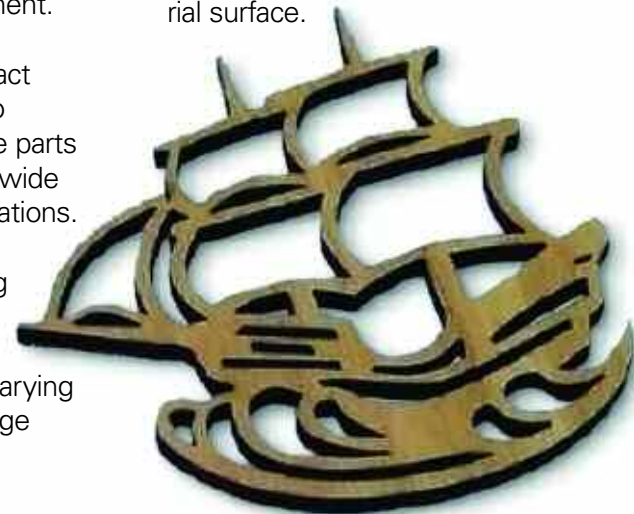
Cut steel, iron and other metals

Conventional metalworking tools fall well short of what can be accomplished with a CNC plasma cutter. Due to its unique properties, a plasma cutter can pass through metals with little or no resistance. Therefore, the CNT-950 is the ideal model to be accessorized for the lighter-duty application of plasma-cutting while keeping costs down.

The computer controller of the CNC plasma cutter enables you to adjust the torch head to make clean, sharp cuts.

CNT Motion Systems offers plasma-cutting accessories for the CNT-950, including:

- Hypertherm plasma torches
- Torch height control software for arc voltage monitoring to adjust height and maintain a fixed distance from the material surface.



Waterjet

Cut or shape, vertically or angled, with efficiency and versatility

The CNT-950 machine can be modified for waterjet cutting of virtually any part out of almost any material. If you already have waterjet equipment, we can easily retrofit it to our machine.

Among other applications, waterjet cutters have become a popular choice for mass-producing machinery components, cutting precision parts for high-tech industries and fabricating granite countertops and architectural accents. (Some of the few materials that cannot be effectively cut with a waterjet cutter include tempered glass, which shatters when cut, and certain ceramics.)

Depending upon your specific needs, CNT Motion offers several waterjet accessories to help maximize efficiency.

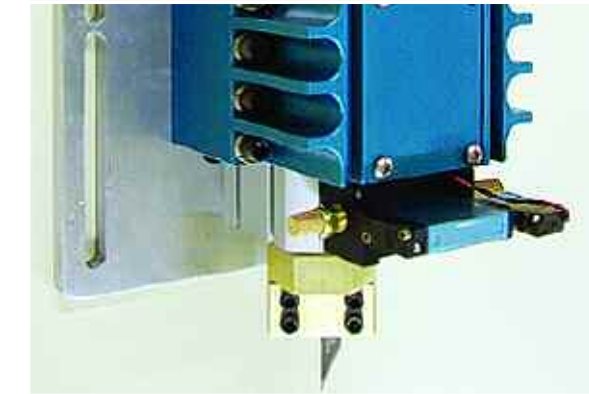
Knife

Cut, score, crease or perforate vinyl, fabric, cardboard, foam and more

The CNT-950 machine can be adapted with knife-cutting tools for many lightweight applications including, foam board point-of-purchase displays, corrugated cardboard box cutting and creasing, vinyl signmaking, furniture upholstery, gaskets, rubber, leather and more. A tangential steering system steers the knife blade as it cuts, making it ideal for highly intricate results and perfectly square corners.

The WinCNC software provides the motion control and specific features unique to each application. See page 20 for more information on WinCNC and custom software options.

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*For reference only. Yield will vary, depending upon the amount of detail per sheet, feed rate, material fixturing and loading/unloading procedure.

Industry-specific Solutions

Tables and fixturing solutions designed for special applications

CNT has been able to build machines that our competition chose not to build.

When you call CNT Motion Systems, we'll talk about your production needs before we talk about our machines. Once we completely understand your specific goals — what type of parts you need to produce, your production volume demands, what competition you're facing — we'll discuss how CNT Motion can help you achieve them.

If you have a truly unique product, we may determine that a special machine configuration will be needed in order to produce your parts. Usually a simple table variation, bridge modification or fixturing solution is all that's really needed to get maximum productivity out of your CNC machining center.

We integrate SolidWorks and finite element analysis (FEA) into the design and development of our solutions to simulate the machines and minimize deflection. We adopt laser tracking to certify positional accuracy. CNT can also incorporate UV curing capabilities into your machine if your application requires it.

Call us. We'll take the time to carefully address all of your needs to ensure that we reach an ideal solution.



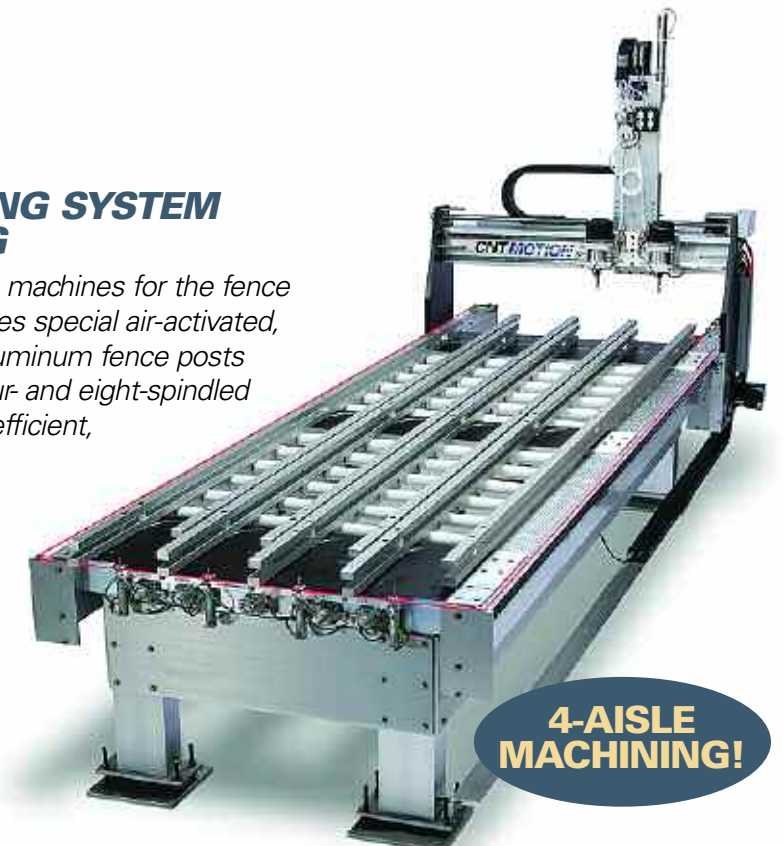
32-FOOT LONG TABLE FOR CURTAIN WALL MANUFACTURING

CNT was contacted by a Colorado-based fabricator looking to machine 30-foot long aluminum extrusions for pre-engineered commercial building exterior wall panels, known as curtain walls. The company, who has supplied over 6.5 million square feet of composite panels all over the United States, could not find anyone to fulfill their unique needs until they found CNT Motion. This was the first of several extra-long machines we've built for this company and various others.

Visit us at cntmotion.com to see more Industry-specific Machines!

CUSTOM TABLE AND FIXTURING SYSTEM FOR FENCE MANUFACTURING

CNT Motion Systems has been manufacturing machines for the fence industry since 1995. Our fence machine features special air-activated, self-centering clamps to hold PVC, wood or aluminum fence posts ranging from 1"-8" in width. The one-, two-, four- and eight-spindled configurations deliver high production for this efficient, affordable solution.



4-AISLE MACHINING!



Air-activated, self-centering clamps for fixturing posts



Fixture and machine multiple posts at a time. (Other router spindles available.)



8-AISLE MACHINING!

FOUR HEADS CUTTING SIMULTANEOUSLY

This machine was one of five routers shipped to China for a customer who was setting up a new snowboard and ski manufacturing facility. The company that bought two of these unique four-headed machines came to us through their supplier of wood cores (also a CNT Motion customer). By producing four to eight boards at the same time, with a cycle time only minutes long, the company is producing hundreds of thousands of products a year. And, in their peak season, they're running the machines around-the-clock!



Hundreds of thousands of snowboards and skis are being produced annually in China by this and four other machines.

Visit us at cntmotion.com to see more Industry-specific Machines!



SURFBOARD SHAPING SYSTEMS

CNT has developed a unique solution for high-production surfboard manufacturing. Incorporating a specialized support system and surfboard shaping software, this machine has enabled our clients to successfully pursue this challenging market without having to develop their own automation.



CNT Motion incorporated a proprietary fixture/support system, creating a quick and easy transition to automation.

FOUR HEADS AND CUSTOM SIDE-LOADING TABLE

A renowned manufacturer of inspirational art, home decor and gifts has deployed two identical four-headed machines for 3-D high-resolution (4000 steps per inch/.0002) carving of various hardwoods—four to eight pieces at a time. To ease material loading/unloading, CNT Motion specially designed a custom 12'X4' side-loading table.



Of this customer's multiple machines in their new facility, the two CNT machines—performing 3-D carving of four to eight pieces at a time—yield the highest productivity of the entire fleet.

3-D CARVING WITH ROTATING HEAD

CNT Motion Systems designed this 11'X20' Machine with four feet of Z-travel and clearance for A2ZFX, Inc. This California-based company produces everything from Hollywood special effects to high-tech tooling for the aerospace industry. They offer prototyping and production services that utilize this CNC machining center's unique size and flexibility.

For more information about A2ZFX, Inc and their services, call 661-251-8962, e-mail questions and inquiries to info@a2zfx.com or visit their web site at www.a2zfxinc.com.

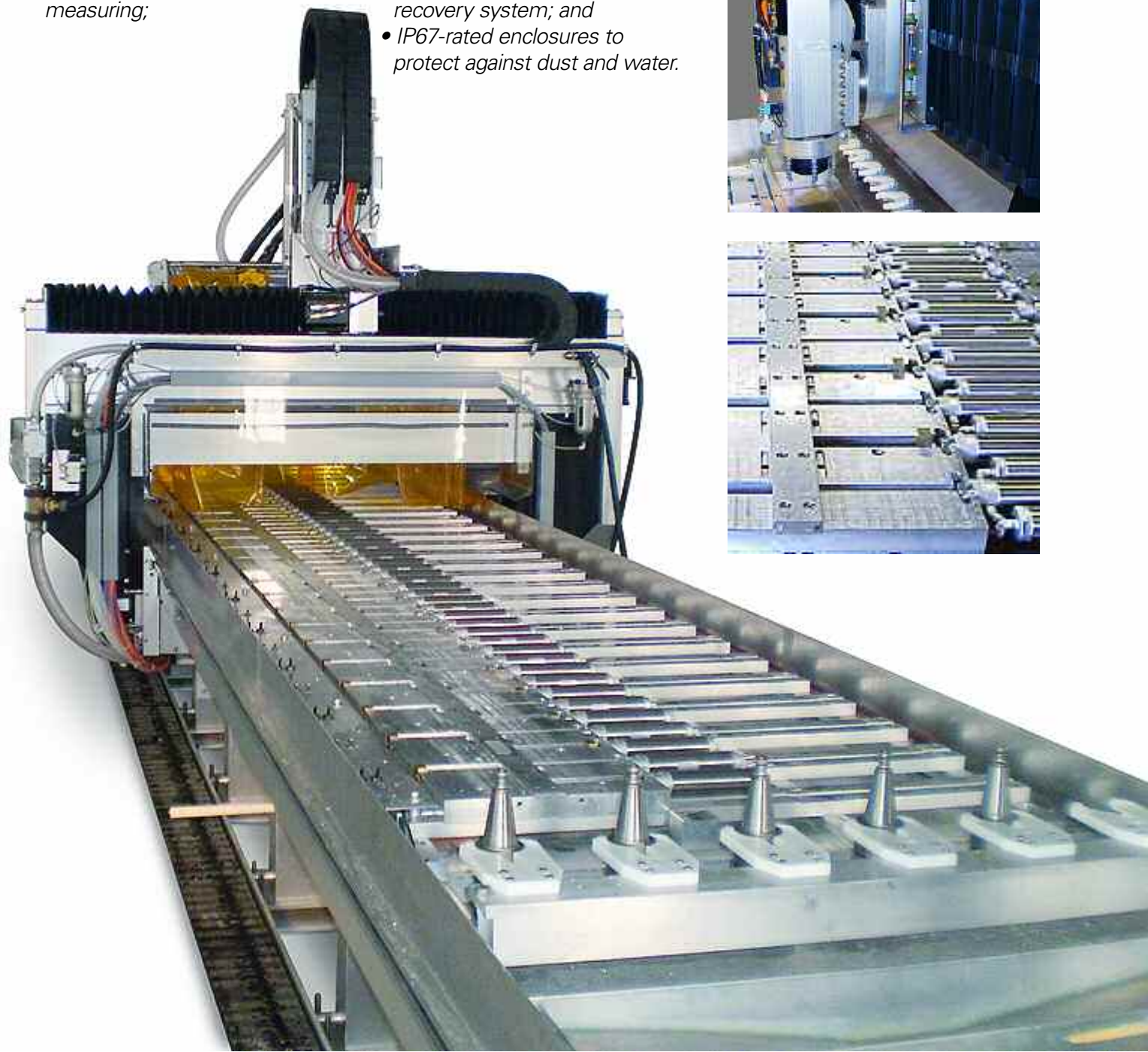


PROFILING, GRINDING AND POLISHING

One CNT customer specializes in the management of water removal and sheet formation on all types of pulp and paper machines. Their unique process combines heat and air flow to remove moisture content from pulp. Currently, they have four CNT machines (two in the U.S. and two in the APAC region) used for profiling reinforced fiberglass plastic 2" tall, 4" wide and up to 35' in length. Once machined, 2" ceramic profiles are bonded to the material and ground to within .002" tolerance over the entire length and then polished to a #5-8 finish.

These machines each feature:

- T-slot decking;
- Rotational C-axis head tilting;
- Laser height/length material measuring;
- Laser to measure tool wear;
- Pneumatic clamping system for four parts up to 35' in length;
- Flood coolant and fluid recovery system; and
- IP67-rated enclosures to protect against dust and water.



Visit us at
cntmotion.com
to see more
Industry-specific
Machines!



GRANITE AND STONE FABRICATION

A Virginia-based state-of-the-art facility has deployed two of these powerful CNT machines for high-precision stone countertop and mantle fabrication. This machine holds 30 tools (15 on-the-fly; 15 rack-mounted) and has a 72"X168" cutting area.

Other features include:

- Flat decking for vacuum pod hold-down;
- Carter laser part projection for easy vacuum pod positioning;
- Laser height/length material measuring;
- Spindle current monitoring for tooling adjustment;
- Flood coolant and fluid recovery system; and
- IP67-rated enclosures to protect against dust and water.



There have been more than one occasion where CNT has been able to build custom machines that our competition chose not to build.

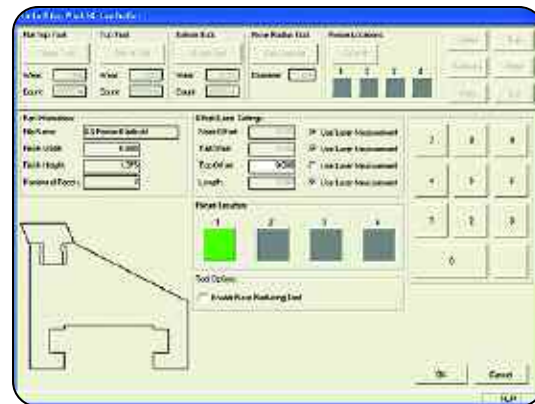
Custom Software

Simplify your manufacturing and increase your flexibility

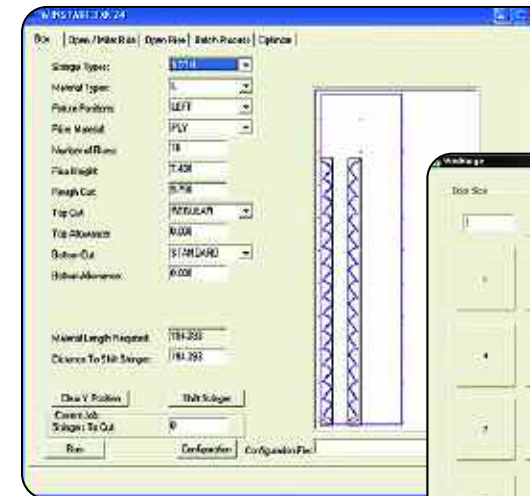
Many CNT customers have added value to their CNC machining centers by having the WinCNC team develop custom software for their specific applications. Easy-to-use interfaces can be built to simplify machine parts programming so virtually anyone can run them. Import DXF drawings, spreadsheets, or any other custom data format to increase productivity, minimize material waste and reduce the amount of operator decision-making. The ability to support marking heads, barcode scanners, label printers and other types of peripheral devices can also offer a significant advantage to customers who use WinCNC.

The WinCNC team can also develop parametric applications to put as much control into the hands of the machine operator as they want. The versatile and customizable development platform of WinCNC, combined with years of experience in the CNC industry, allows the team to offer very competitive development/licensing fees.

For more information about how custom software can help you get the most out of your CNC machining center, contact your CNT Motion representative or visit www.wincnc.net.



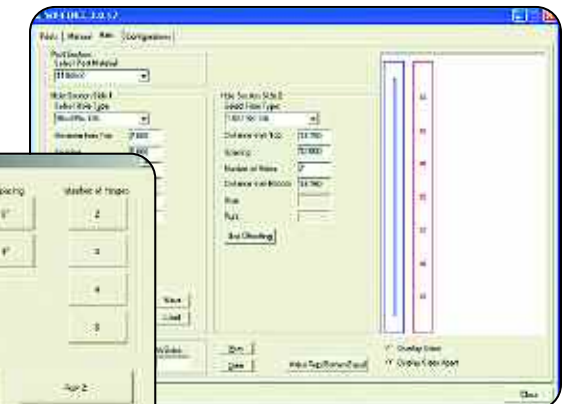
A custom ceramic/fiberglass program and front-end was written for a CNT customer. Images can be loaded from DXF and quickly displayed for the operator to select. All tool paths and operations are sent directly to WinCNC, eliminating the need for separate G-Code posting and then loading, viewing and running in WinCNC. The screens were designed for use with touch screen monitors.



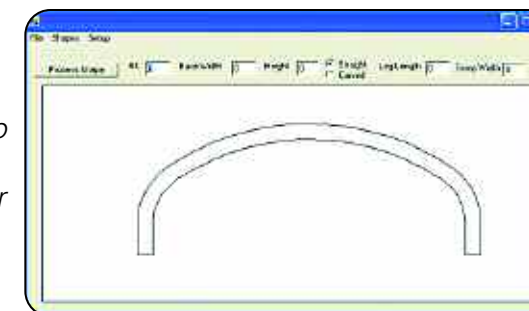
Many CNT customers have been using a stair stringer program developed by the WinCNC team. The software can be set up for machines with one or two routers. Different types of stringers can be set up parametrically with the G-code sent directly to WinCNC. A batch option enables the operator to import spread sheets of stringers from which he can pick and choose groups to cut. A materials list can also be imported so stringers and materials can be coordinated to reduce material waste. This software also has an add-on for printing custom labels.



A hinge program to cut mortises for cabinet doors was developed for a CNT customer. This program automatically generates the code and sends it directly to WinCNC. The screen interface was designed specifically for a touch-screen monitor.



The fence post and rail making program is similar to the stair stringer software, but without batch-mode support or label printing. Operators can quickly generate code that is automatically sent to WinCNC by typing in the parameters and pressing the "run" button. This software can be used on machines with up to four routers.



The Curved Moulding Wizard program is a general-purpose application for customers who make custom door and window moldings. The program outputs a G-Code file that can be loaded into WinCNC.

WinCNC™ Motion Control Software

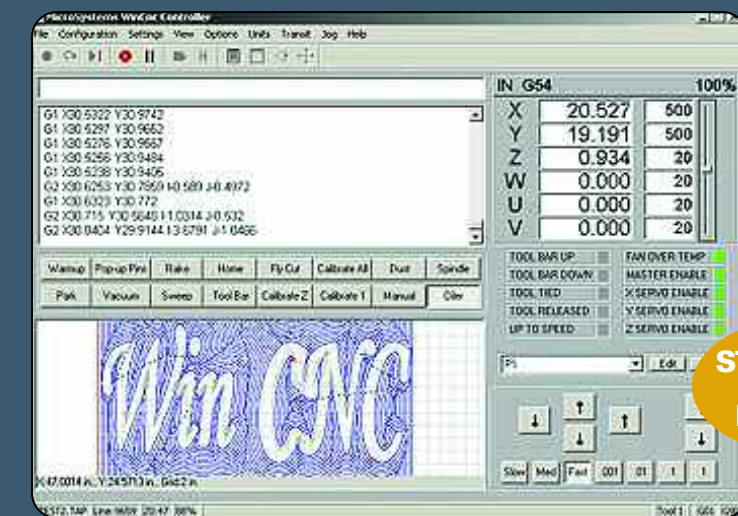
Setting the Standard for PC-based Motion Control.

Every CNT Motion machine is controlled by an IBM-compatible PC running state-of-the-art WinCNC™ Motion Control Software.

Incredibly smooth acceleration and arc moves are the result of its advanced algorithms.

Each move is buffered using proprietary real-time vector-matching routines. The result is that your machine runs as smoothly and efficiently as possible, slowing down only when necessary. The intuitive user interface is easy to learn and convenient to use. All

the features you need and expect are readily accessible via industry-standard G-Codes. Simple keystrokes provide the ability to start, pause, restart, jog and rapid-transit any axis without navigating multiple screens and windows. WinCNC is capable of driving up to six axes simultaneously at 50khz while remaining incredibly smooth and never missing a step. All major CAM packages can produce G-Code files ready to run on WinCNC.



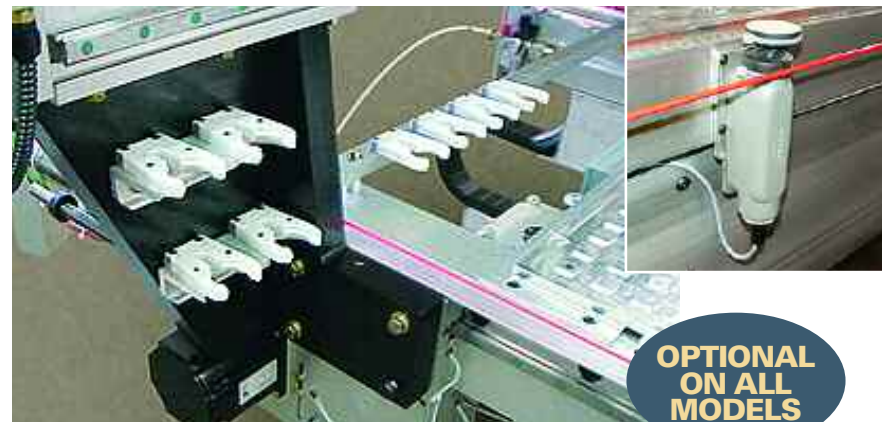
STANDARD ON ALL MODELS

Standard Features & Optional Accessories

Industrial-quality reliable components

At CNT Motion Systems, we know that purchasing a CNC machining center is one of the most important business decisions you'll ever make. And, while we engineer all of our products for performance, flexibility and affordability, we also believe that they are only as good as the quality of the components we put into them.

We use components with many years of proven success. Our component selection is driven by quality, not price, bringing consistency with no surprises. From our standard equipment, like high-load-carrying durable HIWIN bearings, to our optional tool changers and vacuum system, we provide what you need to consistently get the most out of your machine.



OPTIONAL ON ALL MODELS

TOOL CHANGING SYSTEM

CNT Motion offers tool changers for all of our standard and custom machines. The system features a 10-HP HSD, Mach Swiss, Perske or Elte ISO-30 or HSK-F63 tool changer, available in one-tool increments. Each tool changer also features ISO-40 cones with either ER32 collets (for up to 3/4" bits) or ER40 collets (for up to 1" bits).

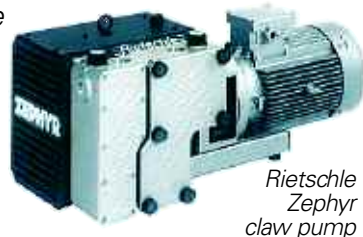
VACUUM SYSTEM WITH BLOWER

CNT Motion's vacuum system features a plenum grid made of aluminum-cast tool and jig plate. Aluminum is the material of choice of all manufacturers of heavy-duty machines due to its greater stability than plastics or composites.

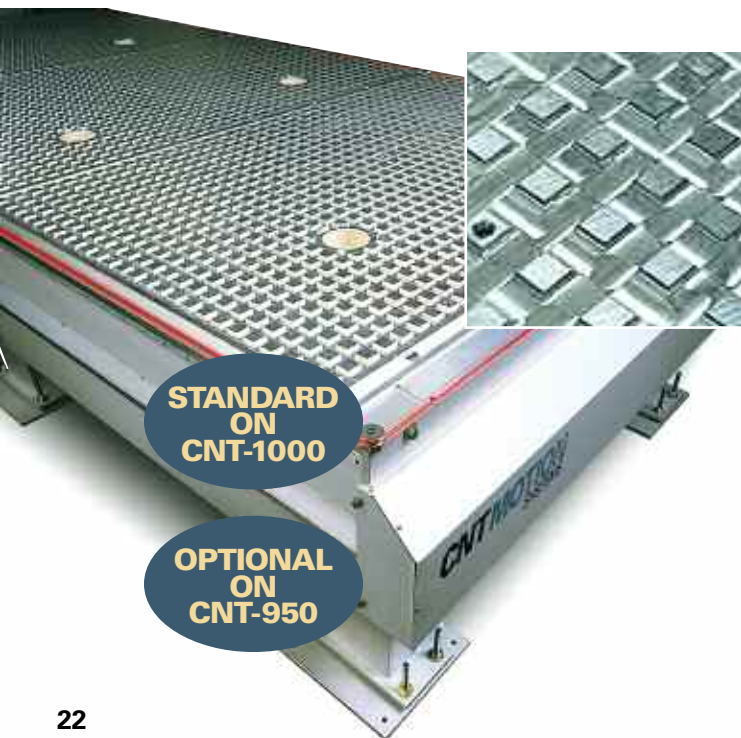
Two available blower styles are geared toward specific applications: a 25-HP FPZ regenerative blower; or a 7.5-HP Rietschle Zephyr claw pump. Give us a call and we'll talk about the basic principles of our vacuum systems and set you up with the right one to meet your fixturing needs.



FPZ regenerative blower



Rietschle Zephyr claw pump



STANDARD ON CNT-1000

OPTIONAL ON CNT-950



Standard Z-axis assembly on all models

HIWIN BALL SCREWS

HIWIN precision ball screws provide smooth and accurate vertical Z-axis movement, together with low-drive torque, high stiffness and quiet motion. Other benefits include high efficiency, reversibility, backlash elimination and high lead accuracy.

STANDARD ON ALL MODELS



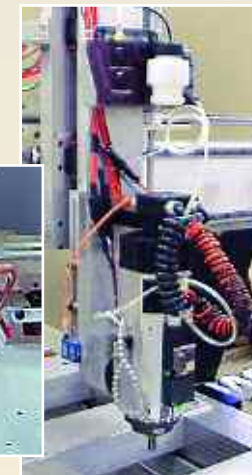
OPTIONAL ON ALL MODELS

32-MM HEAD

Allows you to drill 1-15 holes simultaneously, making your CNC machining center compatible with 32-mm applications. However, some 32-mm applications require point-to-point machines to perform end boring, which requires a special head assembly and fixturing. This system is not suited for nested-based manufacturing.

MICRO-MISTING/COOLANT SYSTEMS

For non-ferrous metal fabrication, CNT offers three different misting systems to keep your tooling and material from over-heating. We'll help you choose the best system to suit your needs.



VEGETABLE-OIL-BASED MISTING SYSTEM

- Best for light-duty applications and most-economical
- Uses minimal amount of oil to minimize spoil board contamination
- Small reservoir and leaves trace amount of oil on part.

SMC WATER-BASED MISTING SYSTEM

- Best for deep drilling and milling
- Available with small or large reservoirs
- Controls amount of fluid and air on part
- Best used with a vice or mechanical hold-down

SMC DENATURED ALCOHOL-BASED MISTING SYSTEM

- Best for sheet and extrusion work
- Leaves part cold and dry
- No contamination of spoil board
- Available with small or large reservoirs
- Use with any hold-down system

Micro-misting systems should be used with non-ferrous metals only. Be sure to observe all safety precautions and regulations. Always operate misting systems in a well-ventilated area.

COMPUTER CONTROLLER CABINET

Every CNC machining center that we sell is delivered with an IBM-compatible Pentium PC controller. This durable, steel, NEMA 12-rated, pressurized cabinet houses both the PC and the electronics for your machine and is the best way to keep your equipment protected from your workshop environment.



STANDARD ON ALL MODELS



HIWIN BEARINGS

Using recirculating balls between the rail and the block, the HIWIN four-row guideway achieves high-precision linear motion that can withstand substantial loading in perpendicular and traverse axes. HIWIN bearings also have less friction than other linear guideway systems. This world-class bearing system satisfies all the requirements of any highly accurate linear guidance system. Shown with CNT's built-in, pressurized air and lubrication system.

STANDARD ON ALL MODELS

SPINDLES, ROUTERS AND SAWS

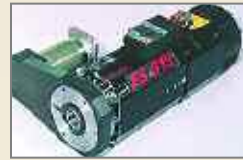
A variety of accessories are available for numerous CNC machining applications. (Download our latest price sheets for a complete listing of available accessories at www.cntmotion.com.)



5-HP HSD ER32 Colleted Router



5-HP ISO30 Tool Change Router



C-Axis Saw Aggregate ISO30



10 Hp ISO30 Router with C-Axis



C-Axis Saw Aggregate HSK-63

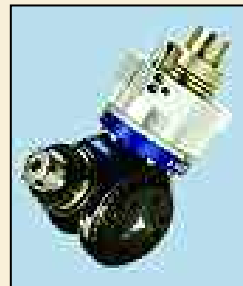
***A factory-trained representative should install accessories if they are being purchased to retrofit an existing machine. Special modifications may be necessary to operate them on your machine.**



Long-nose Tool Changer



X-line Right-angle Aggregate Spindle



X-line Adjustable Right-angle Spindle

As your manufacturing needs continue to grow, you can rest assured knowing that your machine will perform efficiently and reliably for years to come.

Third-party Software

Industry-specific CNT Software to Simplify Your Manufacturing and Increase Productivity

Many CNT customers are using advanced or third-party software packages for industry-specific production. They've simplified their manufacturing and increased their productivity. Available applications include Stair Stringers, Fencing, Hinge & Mortise, Laser Engraving, Sign Making, Grinding & Polishing and Digitizing & Scanning.

Below are just a few of our customers who are taking CNC machining to the limits of their creativity:

A2ZFX, Inc.

Special effects props, molds, prototypes, aerospace tooling
Using Rhino/VisualMill 3-D Software
www.a2zfxinc.com

B. H. Davis Company

Custom curved mouldings
Using a custom Software Wizard by WinCNC and SL-Laser for parts placement
www.curvedmouldings.com

Olde World Art

Exceptional olde world style custom doors and widows
Using Enroute Pro 3-D
www.oldeworldart.com

Insculp

3-D architectural models of developments and topography
Using Rhino/VisualMill 3-D Software
www.insculp.com

Fraughton Foundry

Large Sculptures in Bronze
Equipment: Minolta Laser Scanner with Geomagic Studio 5, 3-D Software
www.edfraughton.com

During his 40-plus-year, influential career, Ed Fraughton (right) has received many coveted awards for his works. He is also an innovator and has advanced the bronze casting and sculpture enlarging processes by utilizing CNC technology.

Fraughton recently completed a massive collaborative western wilderness and migration monument project located in Omaha, Nebraska.

Available Software

20-20 TECHNOLOGIES, INC. (FORMERLY PATTERN SYSTEMS INTERNATIONAL, INC.)

Nested-based cabinet making software with Auto Tool Path generation when used with EnRoute Wood.
www.2020technologies.com

ARTCAM

CAD modeling and CNC CAM machining software
www.artcam.com

BOBCAD-CAM

CAD/CAM software for drawing and part file generation.
www.bobcad.com

CADcode SYSTEMS

For creating and generating part files for nested-based software.
www.cadcode.com

CADlink

Complete CNC signmaking software.
www.cadlink.com

DEL CAM

Advanced CAD/CAM solutions
www.delcam.com

KCDW SOFTWARE

Nested-based cabinet making software with Auto Tool Path generation when used with EnRoute Wood.
www.kcdw.com

MASTERCAM

Complete software solutions from basic to advanced, 3-D and 5-axis applications.
www.mastercam.com

MECSOFT CORPORATION

Their VisualMill software is usually coupled with Rhino to create a complete 3-D CAD/CAM solution.
www.mecsoft.com

PLANIT SOLUTIONS, INC.

Products include Cabinet Vision and Cabnetware, for nested-based cabinet making software, and Alpha Cam for creating and generating part files for nested-based software.
www.planitsolutions.com

SA INTERNATIONAL

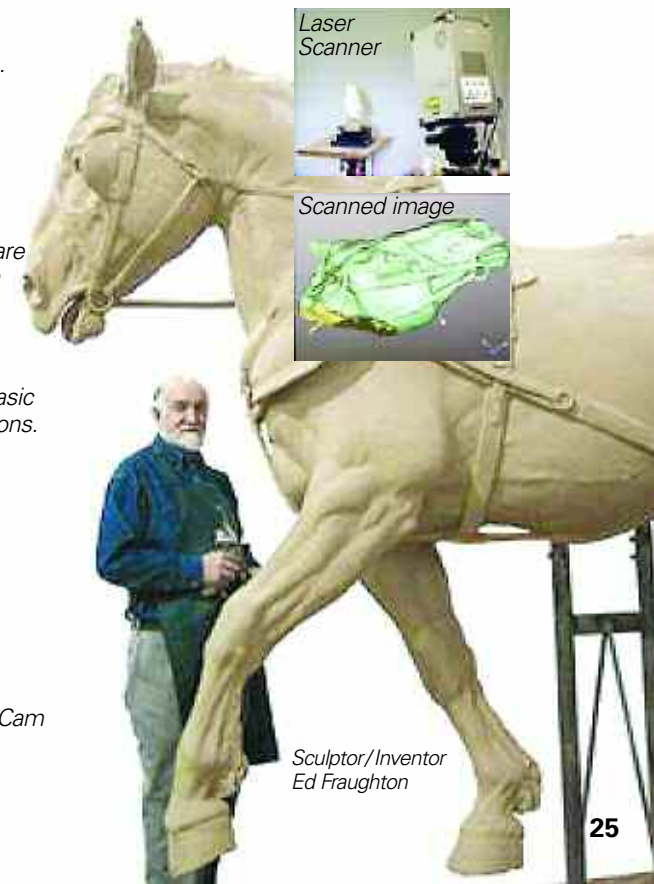
Products include EnRoute, for creating and generating part files for nested-based software, and Flexi8, for advanced signmaking.
www.saintl.biz

RHINO

Rhinoceros NURBS modeling for Windows. Rhino supports polygon meshes, point clouds and other design, drafting, CAM, engineering, analysis, rendering, animation and illustration software.
www.rhino3d.com

SURFCAM

Complete software solutions from basic to advanced, 3-D and 5-axis applications.
www.surfcam.com



Sculptor/Inventor Ed Fraughton

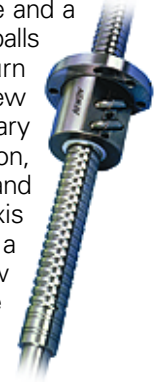
Before You Buy...

Commonly asked questions about our CNC machining centers

What's the difference between a helical rack and ball screw assembly?

A helical rack assembly has a long linear gear that meshes with a rotating helical gear to provide linear motion. The Y-axes on both the CNT-950 and CNT-1000 are helical rack-driven.

A ball screw assembly (as used on CNT's X- and Z-axis assemblies) consists of a screw spindle and a nut, integrated with balls and the balls' return mechanism. The screw rotates to convert rotary motion into linear motion, or torque to thrust, and vice versa. The X-axis on the CNT-1000 is a rotating nut ball screw assembly where the nut rotates to create linear motion, while the screw is stationary.



What's the difference between a stepper and servo?

Both stepper and servo drives provide basically the same cutting results. Primarily, a stepper is an "open-loop" system, and a servo is a "closed-loop" system. In a closed-loop system, there is constant signal feedback from the encoder (or motor) to the servo drive. This feedback tells the servo drive exactly where it is within its move. Thus, the servo drive can adjust its power output, as needed, to complete the move. The servo is more powerful, has quicker acceleration time and positioning speed. All of CNT Motion's CNC machining centers are servo-driven.

What size machines do you offer?

Both the CNT-950 and 1000 Series offer 48"X96", 60"X120" or 60"X144" standard cutting areas. Special requests for custom lengths and widths on both models will be addressed on an individual basis.

What horsepower spindle do I need?

As with most subjective questions, the type and thickness of your material, the type of tooling you're using and the nature of your part(s) will determine what type of spindle you need. CNT Motion will happily assist you to determine the ideal spindle for your needs.

How much Z-axis travel distance is there? Can you make it longer?

The standard Z-axis throat clearance is 11" on the CNT-1000 Series, but can be modified up to 48". On the CNT-950 Series, throat clearances of 7" and 11" are available, although we have done up to 16". However, the thickness of your decking material will reduce these amounts accordingly. Special requests for custom Z-travel distances will be addressed on an individual basis.

How accurate are your machines?

Each of CNT Motion's machines have a positioning accuracy of ± 0.002 inches over the entire length of the machine. However, improper tooling and feed rates may affect accuracy.

How fast will my machine go? How fast can it cut my parts?

CNT Motion's 950 Series has positioning speeds of up to 1000 inches-per-minute. The 1000 Series can move transversely at up to 2000 inches-per-minute. However, your cutting speed (feed rate) will depend upon various factors, including:

- Rigidity of set-up—Vibration is a major source of tool wear and poor finish. The less vibration you have, the quicker you can feed your cutting tool, and, consequently, the smoother finish you will get.
- Machine environment—Other variables that affect every machining application are spindle horsepower, rigidity and runout, collet condition, fixturing system and tool sharpness.
- Number of flutes—Single flute tools should generally be fed at a slightly higher rate (approximately 10%) than double-flute tools.
- Bit diameter—A 3/8" bit can be fed 10% faster than a 1/4" bit. A 1/2" bit can be fed 20% faster than a 1/4" bit.
- Depth of cut—Your feed rate should be decreased approximately 25% for each multiple of the depth of cut. (If depth is two times, reduce by 25%; if depth is three times, reduce by 50%.)
- Spindle speed—The faster the RPM of your spindle, the quicker you can cut your parts. Standard RPM on tool changers is 24,000.



Tooling catalogs typically provide feed charts as a reference tool. CNT provides a tooling catalog with each purchase and offers a 25% discount on tooling purchases. (Minimum order applies. Ask for details.)

How do you program the machine to cut parts? Is it easy to do?

WinCNC, the motion control software we use, is based on standard G-Codes. The G-Codes provide a source code comprised of inches/mm and axis movements which can be edited and understood by others. Most CAM packages will generate G-Codes from the drawings you create. It's actually quite simple.

What other software, other than what's included with the machine, do I need?

No extra software is needed to actually run the CNC machine. However, your specific needs will determine if you need any specialized software (AutoCAD, etc.) to create your part files and CAM them.

How do I fixture my material?

The size of your part, type of material and production goals will determine the most suitable method. Generally, a vacuum system is the most efficient method of fixturing your material. CNT Motion offers vacuum systems with either a regenerative blower or claw pump. A rotary blower is usually better for smaller parts.

You can also mechanically fixture your material with clamps, screws or double-stick tape. These methods would most likely require you to use a tabbing method of cutting your parts. With tabbing, you edit a few very slight vertical Z-moves along the outer edges of your part file. This will leave the part attached to the main stock by small "tabs" similar to the way plastic model kits are made. Once cut, your part can be twisted free of the material and the remainder of the tabs can be removed with a sharp knife or sanding block.

Can I use your CNC machining center as a point-to-point machine?

Point-to-point applications would not make the best use of our machines. Point-to-point machining typically requires that your machine be able to perform end-boring functions, which require special head assemblies and fixturing.

Do I really need to enclose my computer?

CNT Motion strongly recommends that you use an enclosure to protect your computer controller from the airborne particulates typically found in a workshop environment. A pressurized computer controller cabinet comes standard with each of our machines to protect your computer. It also houses all of the electronics for your CNC machine.

Is a maintenance kit available for purchase?

Every CNT machine is designed with preventative maintenance in mind; so a formal maintenance kit is unnecessary. Upon delivery and training, your CNT representative will provide you with all the direction and information you'll need to maintain your machine and keep it running optimally and without problems.

What kind of field support do you offer?

Our experienced technicians understand a broad range of automation applications and can provide support by phone or at your facility. (Some fees may apply.) Regional expertise may also be available. Additionally, each machine is pre-configured for remote desktop support. This enables our technicians to troubleshoot your system via an Internet connection. (High-speed Internet connection is required for remote desktop support.)

Do you offer training?

Training in the operation of CNT Motion's equipment is available at the time of installation. Additional training

is also available, but our customers usually adapt to it quite easily. Call for details and pricing.

How long does installation and initial training take?

Since our machines are delivered completely assembled and pre-wired, installation usually takes half a day. Our recommended initial training lasts 2-1/2 days or more, if necessary.

How are the machines delivered?

Our CNC machines are delivered on a flat-bed truck, tarped and fully assembled. For unique loading dock requirements, special provisions can be made to accommodate your facility.

Do you offer leasing?

Leasing our machines is available through third-party establishments. You can use your own leasing company, or we can provide you with a list of companies we use.

Are there any machines in my area that I can observe?

CNT Motion Systems has customers throughout the country and overseas. If there is one in your area and you wish to visit their facility, we will contact them and arrange a visit.

Warranty Information

CNT Motion Systems stands behind every machine we build. And we back them up with a warranty that ensures quality and dependability.

We warrant every component we manufacture against defects in workmanship, materials and construction when used under normal operating conditions and in accordance with provided specifications for a period of one (1) year from the date of delivery. We will repair or replace, at our option, any of our products found to be defective during the warranty period.

Call for complete details of the CNT Motion Systems Policies Terms and Conditions.

Be sure to visit
www.cntmotion.com
for the latest updates,
product offerings
and operating tips.

There's always something exciting going on at CNT Motion Systems. And the best way to stay on top of what we're up to is to make regular visits to our website. You'll find out about our latest advances in our machine designs, our growing list of optional accessories, product upgrades, up-to-date pricing, operator tips and more.



CNT MOTION
SYSTEMS

SERVING THE CNC INDUSTRY SINCE 1990.

7800 Susquehanna Street • Pittsburgh, PA 15208
412-244-5770 • www.cntmotion.com

Due to market fluctuations, CNT Motion Systems reserves the right to modify component specifications. Component modifications will be done either by upgrades or replacement of similar components.

Purchaser is responsible for electrical service and connections to machinery.

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