

CNC ROUTERS
LASER ENGRAVER CUTTERS
CNC MILLS & CNC LATHES
CNC PLASMA CUTTERS
CAD/CAM SOFTWARE
REPAIRS & UPGRADES OF ALL CNC



Computerized Tools
For Transforming
Ideas Into Reality



Forest Scientific Competitive Advantages

The more research you do, the more convinced that although Forest Scientific Corporation may not always be the lowest price, it is the best quality, value, and best choice for your school.

- 1. **Made bi-coastally in the USA** at our world headquarters in Tionesta, PA and in Phoenix, AZ.
- 2. Single Source, On-Site, Parts & Labor 36 month warranty on all new CNC machines made by Forest Scientific Corporation. Most of our competitors warranties are 1 year and parts only. This means that you will save the \$3,000.00- \$7,500.00 that others charge to have someone come on-site per visit from the factory if a problem occurs during the warranty.
 Do not assume other manufacturers will come to your school for free. They won't.
- 3. **On-site training** is available for you and your students to ensure a successful start. It is more effective for initial training to be on your own equipment than to go to a training site. With your approval, students are trained to assist and help train other students. **Written & video tutorials** and curriculum are available to show your students while teaching classes. Additional training is available on-site, at our Phoenix training center, and over the internet.
- 4. Free phone and internet support is available nearly 24/7. Versus being charged by the minute during restricted office hours to get help. You can talk to someone in the evening and on weekends so you are not limited to office hours. Even our CEO freely gives out his cell number to call or text.
- 5. Unless otherwise specified, all FSC machines come fully assembled. Most of our competitors erector set kits will require 40-80+ hours of your time to assemble. Our machines are often running within an hour of arrival if the electricity & airline are ready. Buy a machine, not a box of parts.
- 6. Our CNC controls connect to the computer via USB or Cat 5, not outdated parallel port, serial port, ISA ports, or other port that require a DOS or other outdated computer. Do not assume that the technology is current. Most of the companies that you get the most mail from are very out of date.
- 7. Hardened, profiled, made in Ohio, **Precision THK linear ways and bearings not just wheels on plate steel or angle iron**. These machines cannot be bumped out of place like most of the machines in the same price range. The grease fitting on each linear bearing ensure a dependable life.
- 8. All our CNC machines use industry standard Fanuc style G&M codes, not a proprietary language. Thus you are teaching marketable skills, not just playing with a dead end *toybot*. You can **use any CAD/CAM software producing industry standard G-Codes** such as Mastercam, Surfcam, Edgecam, Enroute, Vcarve, Fusion 360, SolidWorksCam, Rhinocam, Inventor with HSM, and more.
- 9. We use more powerful stepper & servo motors on our machines to be more reliable.
- 10. **Welded steel frames**, and structural aluminum hold up better in the long term than bent sheet metal and bolted angles because they will not work loose or get out of alignment over time.
- 11. FSC machines have an Emergency Stop and safety reminders for users to operate the machine safely.
- 12. Forest Scientific Corporation machines and upgrades are designed to be updated at a low cost when technology changes.
- 13. Our local dealers are caring professionals providing on-site support second to none.
 - If you have any questions or need clarification call John at 1-800-956-4056 X1001. www.forestscientific.com 1-800-956-4056 2





Dear Educators:

Thank you for reviewing this years catalog. I have decided to showcase some of the Plasma cutter work by the students from Buckeye High School in Arizona on the front cover of this years catalog. Their work can be found throughout Historic Buckeye.

We manufacture everything in the United States in Tionesta, PA and Phoenix, AZ. We provide training on-site at the time of delivery, webinars and individualized refresher training via the internet, and in our training center in Phoenix. We also hold special sessions at many of the conferences and regionally at customer sites. There is no excuse for anyone not to be able to run a Forest Scientific CNC machine. We also have Project Based Learning curriculum and tutorials with written and video modalities for teachers and students.

Forest Scientific Corporation provides a 36 month on-site parts & labor warranty on all new machines we manufacture unless otherwise noted, 24 month on-site parts & labor warranty on all lasers, and 18 month on-site warranty on all upgrades and used machines. Invest with confidence knowing that you will be well supported. If you own any older CNC machines, no matter who built it, we can update it and make it better than when it was new. When you have any questions or need creative strategies to finance your order, please do not hesitate to call me any time at 1-800-956-4056 X 1001 or call or text my cell +1-412-726-0574. If I do not answer I will call as soon as I have coverage again.

Sincerely,

John E. Martincic President, CEO sales@forestscientific.com

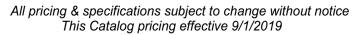


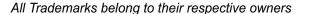
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Call for more information on Lasers and 3D printers





FabBot Series Routers and Plasma Cutters

This series was created for home shops and schools on a very limited budget

These machines come with a 3 year limited warranty, personalized online training, and control computer, unlimited phone and on line tech support.



FabBot Desktop Series CNC Router Models

Include: Aluminum T Slot table, Hold Downs, 1-3/4HP router, wrenches, CAD/CAM, training tutorials, and starter set of bits. Operates on 110V 15A

FabBot 24" x 18" x 6" Optional enclosure w/stand for 24"X18" Optional removable Vac Table Sys	\$7,499.00 \$1,799.00 \$1,999.00
FabBot 36" x 24" x 6" Optional enclosure w/ stand for 36"X24" Optional removable Vac Table Sys	\$8,499.00 \$1,999.00 \$2,499.00

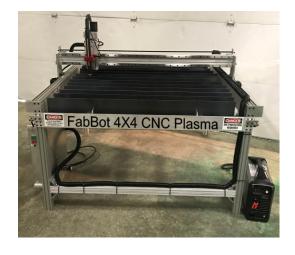


FabBot Platform Series CNC Router Models

Include: standard MDF table, 1-3/4HP router, wrenches, Aluminum frame construction with integrated stand, dust hood, CAD/CAM, training tutorials, and starter set of bits can operate on 110V 20A 6" Z Travel The floor space is about 2' larger than the work area.

FabBot 48" x 20"(fits through 36" door)	\$ 9,999.00
FabBot 48" x 48"	\$11,999.00
FabBot 48" x 96"	\$13,999.00
Optional	
MDF w/Aluminum T Slot & Clamps 4x4	\$ 799.00

MDF w/Aluminum T Slot & Clamps 4x4	\$ 799.00
MDF w/Aluminum T Slot & Clamps 4x8	\$ 999.00
Upgrade to 3-1/4 HP Router	\$ 250.00
Upgrade to 1HP 110V High Freq spindle	\$1,500.00
Upgrade to closed loop Servo version	\$1,999.00



FabBot Platform Series Plasma Models

Each of the CNC Plasma cutters below include CAD/CAM software, Auto Torch Height, Hypertherm 45 Plasma system, and training tutorials. 110V 20 A machine 240 V 50A plasma cutter

The floor space is about 2' larger than the work area.

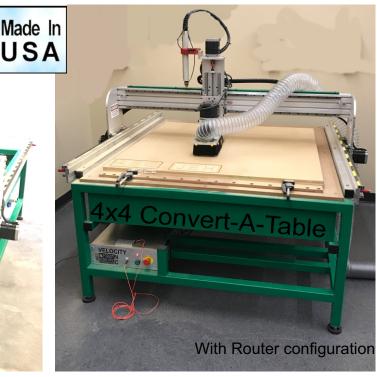
FabBot 48" x 20"(fits through 36" door)	\$12,999.00
FabBot 48" x 48"	\$13,999.00
FabBot 48" x 96"	\$15,999.00

Hypertherm Plasma Cutters Upgrades

Powermax 45 Pierce 1/2" steel and cut up to 7/8"	Comes standard - Best option for most schools
Powermax 65 Pierce 5/8" steel and cut up to 1"	\$1,000.00 upgrade
Powermax 85 Pierce 3/4" steel and cut up to 1-1/2"	\$2,000.00 upgrade
Powermax 105 Pierce 7/8" steel and cut up to 2"	\$4,000.00 upgrade
Optional Torch Break Away	\$ 799.00 upgrade

Convert-A-Table PLASMA CUTTER / ROUTER





Convert-A-Table CNC Router / Plasma Models

CAT 24" x 20"(fits through36"door) \$19,999.00 CAT 48" x 20"(fits through 36"door) \$23,999.00 CAT 48" x 48" \$26,999.00 CAT 48" x 96" \$29,999.00 CAT 60" x 120" \$32,999.00

Includes: Plasma water table, router clamping table, 3-1/4HP router, Powermax 45, Automatic Torch height, Break-a-way system, welded steel stand, dust hood, CAD/CAM, Control computer, computer arm, and starter set of bits and deluxe clamp set. Powermax 45 requires 240V50A, the rest of the machine Operates on 110V 30A 8." Z Travel Floor space 2' greater than work area.

Convert-A-Table easily changes from a CNC Router to a CNC Plasma cutter. This is a great option if you have very limited space and only need one function at a time. The disadvantages are that you only have one machine instead of 2 and these machines can not have a vacuum table system due to the conversion between router and plasma. The 48"X20" machine makes it possible to fit through a standard 36" door. With this heavy duty frame that can plow through wood with the robust 3-1/4HP router while the water table is sealed off. Remove the router table and you have the water table for plasma cutting. No other machine is designed to correctly do both Routing and Plasma cutting well. Conversion between the 2 functions takes less than 10 minutes.

FabLab or MakerSpace in a Box \$49,999.00

A complete portable, Turn-key Fab-Lab or MakerSpace on carts ideal for mutli-use areas such as within a library, elementary, or middle school classroom. Modules may be purchased A la cart or as a complete lab to meet recommendations from the Fab Foundation. On-site training and tutorials assure success with this convenient lab.

Module 1 Laser Engraving/Cutter station

Call for detailed information

Module 2 3D Printer Station

Module 3 CNC Router Station

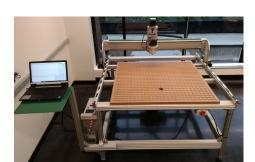
Module 4 Manual Tools Station

Module 5 Electronics Station

Many that attempt to put a lab together just buying components fail because they purchase cheap, inferior equipment and never learn how to use it. This package assures instant success and help when needed

Most popular CNC Routers The most common models used in education

Each of the CNC Routers below are fully assembled, include control computer with arm, clamping kit, CAD/CAM, MDF Table top with T slot clamping kit, tool Touch Off, and tooling kit.



Titan Series CNC Router Models

The Titan Routers are cost effective heavy duty machines made of structural aluminum. Include: standard MDF table, 3-1/4HP router. wrenches, Aluminum frame, dust hood, and starter set of bits can operate on 110V 20A 8.5" Z Travel The floor space is about 2' larger than the work area. This is a great model for upstairs and other installations requiring special handling since they are lighter weight than steel.

TitanR 24" x 20"(fits through36"door)	\$11,999.00
TitanR 48" x 20"(fits through 36" door)	\$13,999.00
TitanR 48" x 48"	\$16,999.00
TitanR 48" x 96"	\$19,999.00
TitanR 60" x 120"	\$24,999.00



Maker-Fab Series Router Models

Include: standard MDF table, 3-1/4HP router, wrenches, welded steel frame, dust hood, and starter set of bits can operate on 110V 20A 8.5" Z Travel The floor space is about 2' larger than the work area. RMF 24" x 20"(fits through 36"door) \$14,999.00 RMF 48" x 20"(fits through 36"door) \$16,999.00 RMF 48" x 48" \$19,999.00 RMF 48" x 96" \$23,999.00 RMF 60" x 120" \$28,999.00

HS Series Router Models

Standard model for education and small shop

Include: standard MDF table, 3-1/4HP router, wrenches, welded steel stand, dust hood, and starter set of bits can operate on 110V 20A The floor space is about 2' larger than the work area. HS Series routers feature Closed Loop Hybrid Servo Technology for reliable rapid speeds in excess of 500 IPM. 10.5" Z Clearance



Ideal for a serious cabinet making program.

	HS 24" x 24"	\$19,999.00
	HS 48" x 24"	\$21,999.00
	HS 48" x 48"	\$25,999.00
Arroam - 3 0	HS 48" x 96"	\$29,999.00
	HS 60" x 120"	\$33,999.00
	HSFV-ATC 4' x 4' with 5HP & 8 position ATC	\$41,999.00
	HSFV-ATC 4' x 8' with 5HP & 8 position ATC	\$45,999.00
Optional Upgrades:	HSFV-ATC 5' x 10' with 5HP & 8 position ATC	\$49,999.00

60X120 T-Slot Table Upgrade

Aluminum T-Slot Table **Vacuum Table systems includes pump & Table** 24X24 Vac System upgrade 110V \$2,500.00 48X20 or 24 T-Slot Table upg. \$ 1.395.00 \$ 2,495.00 48X48 T-Slot Table upgrade 48X24 Vac System upgrade 110V \$3,500.00 48X48 Vac System upgrade 220V3PH \$4,500.00 48X96 T-Slot Table upgrade \$ 3.100.00

\$1,500.00

48X48 Vac System upgrade 110V \$6,500.00 48X96 Vac System upgrade 220V3PH \$5,000.00 48X96 Vac System upgrade 110V \$8.500.00 60X120 Vac System upgrade \$8.000.00

6" Fourth Axis \$4,999.00 \$ 599.00 Jog Pendant

Note: High Frequency spindles are quieter and ideal if you plan .to cut metals. Spindle upgrades

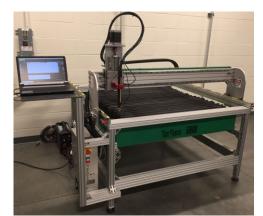
2.2HP 1PH High Freq. spindle \$ 2,500.00 5HP 3 PH High Freq. spindle \$ 3.500.00 10HP 3 PH High Freq. spindle \$ 5,900.00 5HP Manual quick change Spindle \$10,500.00

If Vac Table Sys added later add

\$ 4,300.00

Most popular CNC Plasmas The most common models used in education

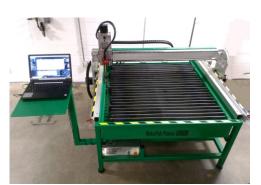
Each of the CNC Plasma cutters below include a Torch Break Away system, Automatic Torch Height, integrated water table, CAD/CAM software, Hypertherm 45 Plasma system, and control computer with arm for a Turn-Key package just plug into your electric.



Titan Series Plasma Models

The Titan Plasma cutters are cost effective heavy duty machines made of structural aluminum and come standard with a water table. The floor space is about 2' larger than the work area. This is a great model for upstairs and other installations requiring special handling since they are lighter weight than steel.

TitanP 24" x 20"(fits through36"door)	\$15,999.00
TitanP 48" x 20"(fits through 36" door)	\$17,999.00
TitanP 48" x 48"	\$19,999.00
TitanP 48" x 96"	\$22,999.00
TitanP 60" x 120"	\$24,999.00



Maker-Fab Series Plasma Models

The Maker-Fab Plasma cutters are cost effective heavy duty machines made of a welded steel frame with integrated Water Table. The extra rigidity is great for handling the abuse of students and will last for many years.

PMF 24" x 20"(fits through36"door)	\$18,999.00
PMF 48" x 20"(fits through 36" door)	\$21,999.00
PMF 48" x 48"	\$24,999.00
PMF 48" x 96"	\$27,999.00
PMF 60" x 120"	\$29,999.00



HS Series Plasma Models

The HS-Series Plasma cutters are heavier duty machines made with a larger tubular welded steel frame with integrated Water Table. The extra rigidity is great for handling the abuse of students and will stand the test of time with 24/7 commercial use. It's Closed loop HyBrid Servo control assures accuracy at the fastest speeds.

HSPB 24" x 24"	\$24,999.00
HSPB 48" x 24"	\$26,999.00
HSPB 48" x 48"	\$29,999.00
HSPB 48" x 96"	\$33,999.00
HSPB 60" x 120"	\$36,999.00

Our plasma tables have replaceable leafs that you can easily make by shearing steel so you won't need to buy expensive table parts and pay to ship them across the country.

Hypertherm Plasma Cutters Upgrades

Hypertherm Consumable Packages SEE PAGE 14

Powermax	45	Pierce 1/2" steel and cut up to 7/8" cut	Comes standard -Best of	ption for most schools
Powermax	65	Pierce 5/8" steel and cut up to 1" cut	\$1,000.00 upgrade	Require 10 SCFM
Powermay	85	Pierce 3/4" steel and cut up to 1-1/2" cu	t \$2 000 00 upgrade	@ 90 PSI compressed Air

Powermax 85 Pierce 3/4" steel and cut up to 1-1/2" cut \$2,000.00 upgrade @ 90 PSI com Powermax 105 Pierce 7/8" steel and cut up to 2" cut \$4,000.00 upgrade (Requires 480V)

Options:

8" pipe Cutter 4th Axis with Advanced pipe Cutting Software \$7,500.00 HVAC CAD/CAM stand alone \$6,000.00 with a machine \$2,500.00

Plate Marker \$2,597.00

The Michelangelo 3D Modeler

Innovative CNC router designed for classroom use TECH ED, DRAFTING, WOODWORKING, ART



Maximum Fully Enclosed size to fit through a 36" Door

TRAVEL X=35" Y=13.5" Z=8.5" Z Clearance 6.5"



\$29,999.00

Includes Vacuum table system & Dust collection system

TOOLING

Router Wrenches	1 Set
Collets	1/4", 1/2"
Starter bit set and vacuum table	e gasketting

ELECTRICAL

Main Power	110V 20A
Spindle Motor	3 1/4 HP 10K-21K RPM

Michelangelo Stepper Version X=35" Y=13.5" Z=8.5" \$22,999.00 Michelangelo Servo Version X=35" Y=13.5" Z=8.5" \$24,999.00

Michelangelo Pro X=35" Y=20" Z=8.5" includes 2.2HP High Freq Spindle and greater Y travel

will not fit through 36"door



Guitar Making CNC Router



http://www.guitarbuilding.org/



The LuthierMax Series of CNC routers was designed for guitar making in collaboration with engineers from Fender® Guitars (who are using this model) and www.guitarbuilding.org to make this machine student friendly and robust. Fixtures built into the table make it easy to machine your own guitar necks and bodies for both standard size and longer base guitars in your classroom. This is the largest fully assembled CNC router that fits through a standard 36" classroom door. Travels X49" Y20" Z8.5" Floor space approximately 76' X 34". All models (except ATC model) use 110V normal wall outlet electric. Servo & ATC models have a larger footprint that will not fit through the 36" door opening. Call for more info.

LuthierMax CNC Router Models:

LuthierMax CNC Router 110V,20A

\$16,999.00

LuthierMax Options:

Vacuum Table System \$3,500.00
Guitar Making Class Start up kit \$2,999.00
Guitar Making CNC Bit Kit \$500.00

CNC WOOD LATHE



WL4000

- * Cut up to a 40" X 10" Part
- * Hardened Profiled Rails
- * Spindle #2MT int Taper
- * Tailstock #2MT int Taper
- * Ball Drive Screws
- * Anti Backlash Nuts
- * 1 or 5 HP Spindle Motor
- * Ready for dust collector
- * Compatible with CAD/CAM
- * Uses G&M Codes
- * 36 Month On-Site warranty



WL4000 Positive Locking Tail Stock

Machines:

WL4000 Standard Stepper 120V 20A \$ 26,999.00 Hybrid Servo 120V 20A \$ 28,999.00 WL4000HY

WL4000PRO (faster & 5HP 3PH) 220V 30A 3PH \$ 37,999.00 **Used machines \$\$** CALL

Precision CNC Bed Mill





Rigid Fixed Gantry with moving bed available in the following sizes:

2'X20"-2.5 HP Spindle \$20,995.00 2'X20"-5 HP Spindle \$23,999.00 2'X20"-10 HP Spindle \$25,999.00

2'X20"-5 HP ATC Spindle with 4 Position ATC \$34,999.00

Materials:

Steel

Aluminum

Brass

Titanium

Wood

Plastics

Almost anything

Competitive Advantages

- 1. Arrives fully assembled
- 2. Will fit through 36" Door
- 3. Runs on G-Codes
- 4. Much faster than others
- 5. Significantly stronger spindle options
- 6. Table large enough for a vice and rotary axis

Options:

\$4,999.00 6"-4th Rotary Axis 3D Rapid prototype CAD/CAM \$ 299.00 Enclosure \$4,999.00

Optional accessory kit \$1,999.00 includes Collet Set Assortment of End Mills, 6" Vise, Hold Down Set

MITEY SERIES

Machines for educational training, prototyping, design, and industrial production worldwide

MITEY MILL

X - Travel 9" (23cm) Y - Travel 5" (13cm) Z - Travel 6.25"(15.88cm) Table 2.75" X 13" (7 X 33 cm) 110V 20A



MMSV Stepper Standard version \$ 9,999.00 MMHY Hybrid Servo Standard version \$10,999.00

MITEY LATHE



X - Travel 4.25" (10.8cm) Center Distance 8"(20cm) Swing over bed 3.5" (8cm) Swing over carriage 1.88" (4.78cm)

MLSV Stepper Standard version \$ 9,999.00 MLHY Hybrid Servo Standard Version \$10,999.00

Mitey Mill Options:

 4" Vise
 \$ 295.00

 4" 4th Axis
 \$2,999.00

 10K RPM Spindle
 \$ 300.00

Mitey Lathe Options:

Deluxe QC tooling package \$1,999.00 Threading capability \$ 999.00 Knurling tooling \$ 200.00

MITEY WOOD LATHE

18"X 4" Capacity (45 X 10 cm) 110V 20A





MWLS Stepper Version \$9,999.00 MWLHS Hybrid Servo \$11,999.00

MITEY ROUTER



Travels 18"X x 9"Y x 6.5"Z (45X x 23Y x 16Z cm) 110V 20A

MRLS Stepper Version \$9,999.00 MRLHS Hybrid Servo \$11,999.00 Upgrade to HF Spindle \$1,500.00



For a fraction of replacement cost, update old DOS machines to Windows



All Phoenix/ Magnum/ Paxton Wood Lathes VC-PMPPL Upgrade \$6,499.00



All Phoenix/ Magnum/ Paxton Routers VC-PMPPR Upgrade \$6,999.00 Vac pump \$1,999.00

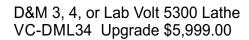


All Paxton Lathes VC-PPL Upgrade \$5,999.00

All Paxton Mills VC-PPM Upgrade \$5,999.00



D&M 3 or 4 & Lab Volt 5400 Mills VC-DMM34 Upgrade \$5,999.00





D&M 5 or Lab Volt 5500 VC-DML5 Upgrade \$6,999.00



D&M 5, 6 or Lab Volt 5600 VC-DMM5 Upgrade \$6,999.00



All Emco Compact 5 Lathes VC-CP5L Upgrade \$6,499.00



Emco Compact 5 Lathes If it has a Tool Turret Add VC-CPTT \$499.00



ALL Emco F1 Mills VC-EF1M Upgrade \$6,999.00



All Denford Routers VC-DFMR Upgrade \$5,999.00



All Denford MicroMills, Scantek, LabVolt, B&G, & Midwest VC-DFMM Upgrade \$5,999.00

All Denford MicroLathes, Scantek, LabVolt, B&G, & Midwest VC-DFML Upgrade \$5,999.00

GET OLD MACHINES OUT OF THE JUNK PILE

We Service all brands

Stretch your budget

Unlike new equipment, upgrades usually do not come out of your own budget. Most upgrades are financed through other budgets including: district repair budgets; technology funds since we are changing the computer in the machine; or through special needs funds. Once these machines are upgraded, they will be much easier for a special needs student to be successful. Upgrades often make it possible for the vocational-technical supervisor to tap into funds that otherwise would not be available. Equipment purchased under Perkins can often be repaired under Perkins. Also, it is often much easier to get school boards to approve repairs on existing equipment than purchasing new equipment. Depending on the machine, most upgrades range from ½ to 1/20th of the replacement cost of a machine and will usually allow it to operate better than new.

CNC Upgrade Price: Includes everything needed - software, electronics, install, 18 month warranty, and training. Add CAM software (see page 13) and a modern PC computer with 2 USB 2.0 Ports.

IF YOU DO NOT SEE YOUR MACHINE, CALL FOR A QUOTE

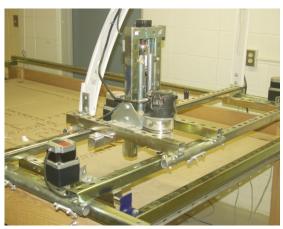
Upgrade Older Forest Scientific Velocity based Controls Upgrade Older Forest Scientific Centroid based controls \$2,900.00 \$8,995.00



Light Machines CNC Router VC-LMCR Upgrade \$6,499.00



Light Machines Spectralight Mill or Spectralight Lathe Upgrade \$5,999.00



All Shopbot Routers VC-SHOPB Upgrade \$5,999.00 OR

VC-SHOPBCL\$7,999.00 for Closed loop version



Light Machines
Pro Light Lathe or Mill
VC-PL
Upgrade \$6,499.00
ProLight with ATC \$7,999.00



All Techno Routers
Gantry style & Davince
Under 2'X2'
VC-Techno
Upgrade \$5,999.00
Servo \$7,999.00

Techno LC Servo Routers	\$7,999.00
Techno Plasma cutters	\$9,999.00
AXYZ Millenium Routers	\$7,499.00
AXYZ 4x4 & 4x8 Routers w/o ATC	\$8,999.00
AXYZ 4x4 & 4x8 Routers with ATC	\$9,999.00

EZROUTER, PlasmaCAM, & Torchma	te upgrades
without ATH	\$5,999.00
with ATH if existing plasma is adequat	e \$7,999.00
Complete with ATH & Powermax 45XI	\$9,999.00

Optional Preloaded Notebook computer \$ 999.00

IF YOU DO NOT SEE IT HERE CALL FOR HELP

Hypertherm Powermax Consumables

	:-!-			1-:4-
Essent	iais	consu	mables	KITS

851512	Powermax 45 XP Essential consumables kit	\$239.00
851467	Powermax 65 Essential consumables kit	\$250.00
851470	Powermax 85 Essential consumables kit	\$250.00
851473	Powermax 105 Essential consumables kit	\$254.00
851476	Powermax 125 Essential consumables kit	\$286.00



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\$ 23.80

PowerM	ax 45 -85 C	utting Consumab	les
220857	Swirl Ring	45-85A	

	Ohmic retaining Ca		\$ 49.00
	Shield 45-85A		\$ 19.90
228763	Bulk pack of 10 2	20817 Shields	\$189.00



Ohmic Retaining Cap

Fine Cut

220948	SWIRL RING:PMX FINECUT SHIELD:PMX FINECUT MECHANIZED Nozzle Fine Cut 30-45A 5 Pack	\$ 22.20 \$ 16.00 \$ 39.90
	Standard Electrode 45-105 5 Pack Bulk pack of 25 220842 standard electrodes	\$ 53.00 \$239.00
	Copper Plus Long life Electrode 5 Pack Bulk pack of 25 220777	\$ 58.50 \$272.00



Nozzle

Powermax 65

220819	Nozzle 45-65A 5 Pack		\$ 39.50
228759	Bulk pack of 25 220819	nozzles	\$189.00



Electrode

PowerMax 85

220816	Nozzle 65-85A	5 Pack	\$ 39.50
228760	Bulk pack of 25	220816	\$179.00



	- 1-1- 3
11-4500 Powermax 45 XP consumables kit	\$499.00
11-6500 Powermax 65 Essential consumables kit	\$499.00
11-8500 Powermax 85 Essential consumables kit	\$499.00
11-1050 Powermax 105 Essential consumables kit	\$499.00



Swirl Ring

Powermax 45XP Only Marking consumables 420542 Shield \$ 18.00 420415 Nozzle \$ 8.00

These consumables are commodities subject to price variation.





Powermax 45XP Marking examples



Dust Control Computer Security Cabinet \$999.00



Dust Collector Package Includes dust collector 100' hose 4 clamps \$999.00

5 Stage Desiccant Drying System \$999.00

CNC Accessories

Most common educational use excerpts from our tooling catalog Part # Cutting **Shank Length Price**

Dia Dia Straight bottom cutting Panel cutting bit 49-SST198 Str. 2 flute bit 1/8" 1/4" 2-1/2"

\$21.00 49-SST220 Str. 2 flute bit 1/4" 1/4" 2-1/2" \$25.00 24-102-0885P Str. plunge bit 1/2" 1/2" 2-1/2" \$35.00

Economy Upspiral Flat bottom end mill 1/8" 1/4" 2" 24-106-0202 1/8" Up \$25.00 49-SRU118 1/4" Up 1/4" 1/4" 2-1/2" \$25.00 49-SRU153 1/2" Up 1/2" 1/2" \$49.00

Small Bits (BN=ball nose FN=flat nose) 1-1/2" \$34.00 31-VSC3dfn-500 2 flute 1/64" 1/8" 1-1/2" \$38.00 1/8" 31-VSC3dbn-500 2 flute 1/64" 1/16" 1/8" 1-1/2" \$20.00 31-VSC3dfn-503 2 flute 31-VSC3dbn-503 2 flute 1/16" 1/8" 1-1/2" \$22.00 1/32" 31-VSC3dfn-501 2 flute 1/8" 1-1/2" \$23.00

Down Spiral bits (prevent chipping on top) 49-SRD203 1/8" 1/4" 2" \$25.00 49-SRD218 1/4" 1/4" 2" \$25.00 3" 1/2" 1/2" 49-SRD253 \$49.00

1/32"

1/8"

1-1/2" \$24.00

\$495.00

\$ 89.00

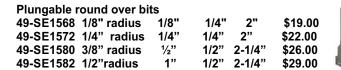
\$ 19.00

\$249.00

\$249.00

\$599.00

\$599.00



Compression up/down spiral

\$ Item # Shank 7/8" 24-107-0402 1/4" 1/4" \$38.00

31-VSC3dbn-501 2 flute

·			7.0.00			- 100
15 1/2"	1-1/8"	1/2"	\$67.00			1
ies Accesso	ories					
Mill						
1/8 End Mi	II 3/8 sh	ank		\$	19.00	
3/16 End N	//ill 3/8 s	hank		\$	19.00	1
1/4 End Mil	I 3/8 sha	ank				
		3/16,1/	4,5/16,3/8	\$	99.00	
				\$1	125.00	
20 Milling V	'ise 4"			\$2	250.00	
3/8 End Mill	Holder			\$	75.00	
1/4 End Mill	Holder					
1/8 End Mill	Holder					
				\$	10.00	
Step block h	nold dov	vn set				
1/4" drill Ch	uck, wit	h acces	ss	\$	65.00	
High-speed	Belt mil	I or lath	ne .	\$	42.00	
Lat	he					
Lathe Live (Center			\$	80.00	
60° Carbide	tool bit					
		4" SQ)				
Cut Of Too	l Blade					
Cut-off Too	l Holder	& Tool		\$	95.00	
1/4" Tool Po	ost			\$	75.00	
ecialty Rout	er Tooli	ng				
	ies Accesso Mill 1/8 End Mi 3/16 End Mi 1/4 End Mil 3/8 End Mill piece set 1 Milling Vise 20 Milling V 3/8 End Mill 1/4 End Mill 1/8 End Mill 5/32 Hex T-d Step block h 1/4" drill Ch High-speed Lat Lathe Live (60° Carbide Right Hand, h Cut Of Too Cut-off Too 1/4" Tool Po	ies Accessories Mill 1/8 End Mill 3/8 sh 3/16 End Mill 3/8 sh 3/16 End Mill 3/8 sh 3/8 End Mill 3/8 sh is piece set 1/8, 5/32, Milling Vise 2" 20 Milling Vise 4" 3/8 End Mill Holder 1/4 End Mill Holder 1/4 End Mill Holder 1/8 End Mill Holder 5/32 Hex T-driver Step block hold dow 1/4" drill Chuck, wit High-speed Belt mil Lathe Lathe Live Center 60° Carbide tool bit Right Hand, HSS (1/1) Cut Of Tool Blade Cut-off Tool Holder 1/4" Tool Post	ies Accessories Mill 1/8 End Mill 3/8 shank 3/16 End Mill 3/8 shank 1/4 End Mill 3/8 shank 3/8 End Mill 3/8 shank piece set 1/8, 5/32, 3/16,1/9 Milling Vise 2" 20 Milling Vise 4" 3/8 End Mill Holder 1/4 End Mill Holder 1/4 End Mill Holder 1/8 End Mill Holder 5/32 Hex T-driver Step block hold down set 1/4" drill Chuck, with acces High-speed Belt mill or lath Lathe Lathe Live Center 60° Carbide tool bit Right Hand, HSS (1/4" SQ) Cut Of Tool Blade Cut-off Tool Holder & Tool	ies Accessories Mill 1/8 End Mill 3/8 shank 3/16 End Mill 3/8 shank 1/4 End Mill 3/8 shank 3/8 End Mill 3/8 shank piece set 1/8, 5/32, 3/16,1/4,5/16,3/8 Milling Vise 2" 20 Milling Vise 4" 3/8 End Mill Holder 1/4 End Mill Holder 1/4 End Mill Holder 1/8 End Mill Holder 5/32 Hex T-driver Step block hold down set 1/4" drill Chuck, with access High-speed Belt mill or lathe Lathe Lathe Lathe Live Center 60° Carbide tool bit Right Hand, HSS (1/4" SQ) Left Hand, HSS (1/4" SQ) Cut Of Tool Blade Cut-off Tool Holder & Tool 1/4" Tool Post	ies Accessories Mill 1/8 End Mill 3/8 shank 3/16 End Mill 3/8 shank 1/4 End Mill 3/8 shank 3/8 End Mill 3/8 shank spiece set 1/8, 5/32, 3/16,1/4,5/16,3/8 Milling Vise 2" 20 Milling Vise 4" 3/8 End Mill Holder 1/4 End Mill Holder 1/4 End Mill Holder 1/8 End Mill Holder 5/32 Hex T-driver Step block hold down set 1/4" drill Chuck, with access High-speed Belt mill or lathe Lathe Lathe Live Center 60° Carbide tool bit Right Hand, HSS (1/4" SQ) Left Hand, HSS (1/4" SQ) Cut Of Tool Blade Cut-off Tool Holder & Tool 1/4" Tool Post	ies Accessories

Individual 3-D Router Bits

Cutting Shank Length Price Dia Dia 1/8" 1/4" 2" 49-SRU103 (Flatnose) \$39.00 49-SBNU125 (Ballnose) 1/8" 2" 1/4" \$39.00 49-SRU123 (Flatnose) 1/4" 1/4" 3" \$39.00 49-SBNU250 (Ballnose) 1/4" 1/4" 2-1/2" \$39.00 31-SPCLE250(Ballnose/) 1/4/" 1/4" 4" \$79.00 3" 1/2" 1/2" 49-SRU153 (Flatnose) \$49.00 49-SRU167 (Flatnose) 1/2" 1/2" 4" \$69.00 3" 49-SBNU500 (Ballnose) 1/2" 1/2" \$79.00 31-SPCLE500 (Ballnose) 1/2" 1/2" 4" \$89.00

пер	Ω.	ΛTC	Tool	Holders	Ω	Callata
пои	Ox /	AIL	1001	Holders	Ōι	Collets

52-A1741H0001	ISO30 ATC Tool Holder	\$275.00
52-7501A9300	ISO 30 tool forks	\$150.00
55-04232-1/8	ER32 Collet 1/8"	\$75.00
55-04232-1/4	ER32 Collet 1/4"	\$75.00
55-04232-1/2	ER32 Collet 1/2"	\$75.00
55-04232-05	ER32 Collet 5MM	\$75.00
55-04616	ER32 Wrench	\$40.00
55-04615	ER25 Wrench	\$40.00
55-04225-1/8	ER25 Collet 1/8"	\$75.00
55-04225-1/4	ER25 Collet 1/4"	\$75.00
55-04225-1/2	ER25 Collet 1/2"	\$75.00

Lettering V-G	roove bit	CUT DIA	Shank	
49-SLIN062	10 Degree	1/16"	1/4"	\$35.00
24-132-9002	60/90 Double	ended bi	t 1/4"	\$50.00
49-SCVG260	90 Degree	1/4"	1/4"	\$18.00
49-SCVG264	60 Degree	1/4"	1/4"	\$16.00
49-SE1502	90 Degree	1/2"	1/4"	\$19.00
49-SE1503	90 Degree	1/2"	1/2"	\$21.00
49-SE1560	60 Degree	1/2"	1/2"	\$21.00

Spoil Board Bit

For resurfacing your MDF table or spoil boards 49-spoil-25-2spoil board bit \$299.00 49-spoil-insert inserts 10 pack \$ 24.99 49-spoil-screw replacement screw \$ 3.25 49-spoil--wrench replacement wrench \$10.00



1/2"Router Collet 34-42950 1/4"Router Collet 34-42999 \$23.00 3/8"Router Collet 34-42975 \$23.00 \$25.00 3HPPorter Cable Rout Wrench 34-42596 53-RB102 1/4" to1/8" Collet reducer \$23.00 49-SE6390 1/2" to1/8" Collet reducer \$17.00

CNC Router/Wood Lathe Accessories

Vacuum Table Gasketing / hold down supplies

\$99.00 Router Gasket (Forest Scientific Vac pump 11-800 \$99.00 Router Gasket (softer for Venturi Magnum routers) 11-801 \$35.00 1/16"X1/2"Adhesive router gasket 23-8694k11 1/8"X1/2"Adhesive router gasket 23-8694k16 \$39.00 3/16"X1/2"Adhesive router gasket 23-8694k17 \$45.00 1/4"X1/2"Adhesive router gasket 23-8694k12 \$49.00 **Double sided Masking tape** 23-76405A13 \$13.00

CNC Wood Lathe tooling

FS Wood Lathe Tool	;	30-46-415	\$ 99.00
Universal Carbide Cutter	(magnum)	28-700	\$125.00
HSS Cutter Big Lathe	(magnum)	28-720	\$120.00
HSS Cutter Small Lathe	(magnum)	28-735	\$120.00
Modify HSS holder for ca	11-901	\$180.00	

Replacement parts for Magnum/Phoenix

Replacement Venturi 29-NZHI13BS-T01-T02 \$119.00 Replacement Flexi motor coupling 11-425 \$ 99.00 **Phoenix EZM Belt** 32-2L200 \$ 16.00 Limit Switches (magnum) 39-SW128-ND \$ 15.00

56-D2 Razor Cardboard cutter

57-Replacement Pen set

11-328 Vinyl Cutting head

57-Pen Router Bit with pens 1/2" Shank

VC-Jog Velocity remote jog pendant

57-Diamond Drag Engraving Bit 1/4" Shank

57-Diamond Drag Engraving Bit 1/2" Shank

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