

**ShopSABRE**

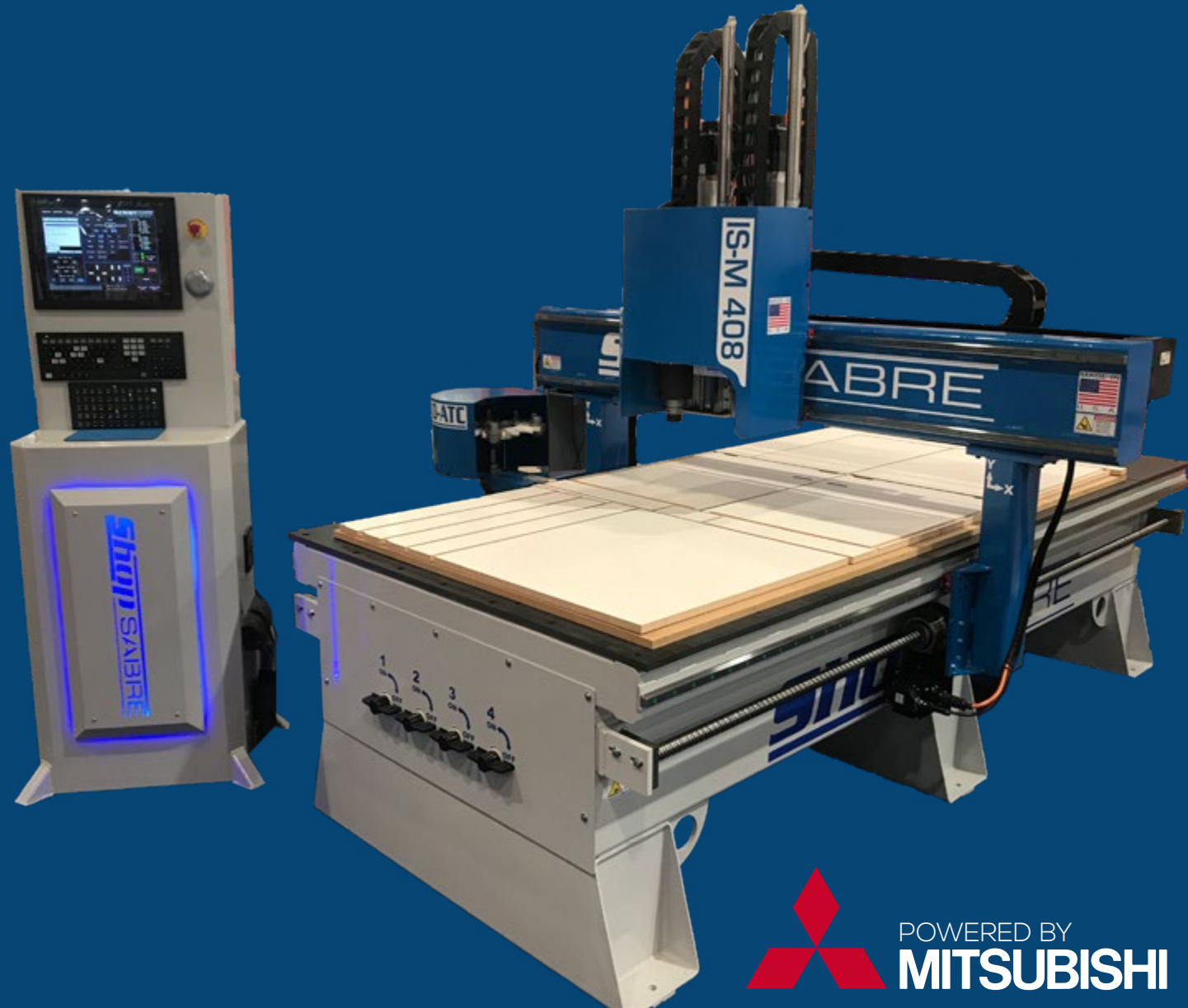
• ROUTERS • PLASMA CUTTERS •



**IS-M SERIES  
CATALOG**

**Professional CNC Router & Plasma Cutting Tables**  
*for Wood, Plastic, Metal, and More!*

# Our machines are more than just 1 or 2 projects a week machines



POWERED BY  
**MITSUBISHI**

*You the owner/operator should be able to go to the machine, turn it on, and go to work. No squaring or alignment should be required. Lower quality machines like Chinese Imports and Kit Machines might play the smoke and mirrors game but in the end, you will find yourself shopping again!*

**You can run them 24 hours a day 5 days a week  
or even more if your needs require.**

## HEAVY WALL STRUCTURAL STEEL TUBE AND PLATE FRAMEWORK

ShopSabre uses only top-rated North American steel tubes and steel plate with increased tube thickness on the IS-M Series from the standard IS Series. We do not use any extruded aluminum or sheet metal construction in our machine frames. Our systems are Heavy Wall Structural steel, fully welded with no customer assembly required. Each machine is Jig welded, Precision Aerospace Milled, Heat Treated, and Faro Measured to assure you get the most accuracy.



## SHOPSABRE USES ONLY HIGH- PRECISION COMPONENTS

We use 25MM linear guide rails with triple wiper linear guide bearing blocks on X, Y, and Z Axis. We use 2 bearing blocks on each rail to assure the cut forces are equally distributed over the rail to reduce the amount of wear and noise. The triple sealed bearing blocks assure protection and long life on the linear guide rails and bearings. The design also makes the machine a self-cleaning system without the worry of wiping down the rail. On our ShopSabre PRO, IS, and IS-M Series Routers the motion on all 3 of our axis are driven by high precision Ball Screws with the largest diameters in our class. The ShopSabre Ball Screws are Ball Matched Angular Contact Bearings to assure the highest accuracy possible. The ShopSabre CNC drives are all driven by A/C Digital Super Servo Drives with matching Amplifiers and Glass Encoder Technology with an upgraded Mitsubishi M Series Controller on the IS-M for ultimate control and performance.





## COMMERCIAL-GRADE CNC CONTROLLER

The IS-M System features the world's most advanced CNC Control technology – Mitsubishi Electric. This Technology is the same technology found in many high-end mills and high precision machines around the world with price tags near 1 Million Dollars. We use an Industrial Controller technology that has been conveniently installed into a User-friendly interface developed exclusively for ShopSabre CNC by Mitsubishi Electric. This gives you the most control over your CNC system with the ease of operation.

The Machine Control to the Drives also features a high speed Fiberoptic communication bringing the ultimate to speed and performance. The Mitsubishi Electric M Series Controller features a dedicated CNC CPU as well. The ShopSabre IS-M has continuous closed loop feedback to the control allowing the machine to make adjustments while it works for best cutting performance and quality of cut. The ShopSabre includes the ability to connect your laptop direct to the machine eliminating the need to walk to a workstation to make changes to a file if necessary. ShopSabre also makes the machine completely networkable so you can utilize your businesses Internet Connection or Network for File Transfer, Storage, or On-line diagnosis/assistance.

The ShopSabre requires **NO** special training or machine setup but does offer this service for those whom prefer on-site or in person training. The M Series Controller brings the ultimate in support, stability, and performance.

The ShopSabre CNC controller has USB drive ports to assure you can plug in your flash drives and external hard drives as necessary. The M Series features a standalone control tower with integrated touch screen technology, manual pulse generator, key stroke control, and **LED** lights for the ultimate control center. The ShopSabre Controller has **EVERY** capability that our competitors offer you but with a much better price tag!

## SHOPSABRE HAS AN ANSWER FOR ANY BUDGET

We can build a CNC system that fits entry level needs from Porter Cable Routers all the way to a Fully Functional Tool Changer system with the Mitsubishi Motion Controller. We provide 3.25HP Porter Cable Routers, 2.2Hp HSD Spindles, 3.7HP HSD Quick Change Spindles, 4Hp HSD Spindles, 5 Hp HSD Auto Tool Changer Spindles, 9.3Hp HSD Spindles, and of course the 10HP and 13HP HSD Tool Changer Spindles. We can special order even larger spindles for those of you who need the power. All our spindles come standard with a Variable Frequency Drive (VFD) to control spindle RPM ranging from 2,000-24,000 depending on the model (*ask sales for details*).

## SHOPSABRE DOES NOT CUT CORNERS

If you purchase an Auto Tool Changer you get 10 complete positions, which include the wrenches, collets, cones and tool forks. Yes—even the wrenches are included. The ShopSabre ATC on the IS-M also features a High Precision Servo Controlled and Planetary Gear Driven Rotary Carousel tool changer. Standard ShopSabre also includes a Tool Measure switch with **ALL** of our CNC Router systems so you are not limited on tooling accuracy between changes whether manually changing or auto tool changing.

# SHOPSABRE BENEFITS LIST

- » ShopSabre puts additional time and money into assuring that each CNC system is 100% **TESTED** and Calibrated prior to leaving our facility so you won't be forced to test your own machine in the field or spend your time calibrating what should be done by the factory. The ShopSabre is designed to drop into your building and go to work. Don't pay expensive fees to have someone on-site to setup your machine; it can be done before it ever leaves the factory with ShopSabre CNC keeping installation simple, easy, and stress free.
- » ShopSabre puts more time and effort into assure each mounting bracket, Spindle Plate, and Drive Component is machined to exact specs for increased accuracy and better fitments to assure you do not get any binding or excessive wear.
- » ShopSabre CNC uses High Grade Continuous Flex Robotic CNC wiring that is specifically designed for the type of work a CNC system does. It can bend and move all day without having any issues, and the anti-interference coating assures the wires are less likely to have interference from other electronic equipment in your shop for the highest accuracy possible. Many competitors use cheap wires that can be purchased off the shelf for less money, but they still charge comparable pricing. Don't be fooled by companies who don't build quality into their systems.
- » Unlike many competitors that offer Laser calibrations by request, we do this as a part of all Production caliber machine builds using a state-of-the-art Faro Measurement system to assure our machines are as accurate as possible during manufacturing.
- » ShopSabre CNC is fully upgradable and has expansion capabilities for the growing shop. If you want to start with the basics and move to the bells and whistles down the road, almost every option (with a few exceptions) can be added after the sale in the field.
- » ShopSabre CNC designs our systems to be easy to work on so you do not need a ShopSabre technician to come into your facility to help with everything you encounter. You benefit from low operational cost and a big return on investment.
- » If you do find yourself in need of help, ShopSabre CNC offers **FREE** lifetime tech support and assistance as a part of ShopSabre "SabreNation" – because we are confident that our machines will last a lifetime. We also include remote diagnosis, Online Training, and access to our Exclusive SabreNation University Videos and can have a tech go On-Site if you request. We know our machines are the best but we want you to have the same confidence each and every time you turn the machine on.
- » ShopSabre sales are not paid on commission so the only reason for our team to recommend an option is truly to benefit your project and machine capabilities. ShopSabre sales consultants are trained on the technology and industry and not only understanding our product but understanding our industry better than our competitors. ShopSabre has no reason to encourage you to spend more money than you need to up front to perform your job. We sell on facts and the facts should sell the technology, equipment, and options.
- » Don't be fooled by the other systems on the market. We are so confident of our machines that we extend an invitation to tour our facility and view our ShopSabre CNC systems in various stages of manufacturing. With prices starting under \$20,000 you can't afford not to check us out!

# IS-M SERIES



## POPULAR INDUSTRIES

- Proto-type Manufacturing
- Nested Based Manufacturing
  - Sign Makers
  - Engineering
  - R&D/Job Shops
- Cabinet/Door/Closet Manufacturing
- Medium Duty to High Production Shops
  - Solid Surface
  - Millwork

## PRODUCT DESCRIPTION

**CHECKMATE!** Our **NEWEST** CNC Router the IS-M Series gives you a true machine grade tool with everything you could want in a CNC router + an Industrial Grade Mitsubishi Electric Motion Control Platform. The IS-M is the first machine in the world pairing CNC Routing and M8 Series Controls. ShopSabre Routers are American built with top-of-the-line name brand components and technology all backed by our free lifetime technical support. The IS-M Series gives you the design and specs of an \$100,000+ machine for a fraction of the cost.

The IS-M series features a heavy-duty reinforced one-piece welded structural steel tube frame construction with a massive over-sized structural steel tube gantry design. Even the Gantry uprights are constructed of large tube steel. The frames and gantry assemblies are aerospace bed milled for matching tolerances and stressed released to ensure accuracy and precision from the ground up. Our IS-M Series routers feature an upgraded Frame construction available to handle even your biggest projects. This System provides you the Ultimate Stability and Performance while unlocking Speed and Accuracy not found in competitively priced systems. The Days of Imported Technology are in the past – you now can get a **TRUE** American Made Machine with a Name Brand Industrial Mitsubishi Electric Motion Controller for a competitive price to the imported machines.

The IS-M Series is built to last with upgraded precision linear bearings and advanced drive system technology consisting of massive ball screws on X, dual Y, and Z axis. The entire machine moves with the use of over-sized AC servo motors, these motors bring us AC Digital Technology with Glass Encoders. These features improve cutting quality, cutting forces, and overall machine accuracy. Unlike the typical rack and pinion drives found on the competitor's machines, ShopSabre machines are built to outlast and outperform other machines. No matter how much you use your CNC

router, you'll get the precision you need every time from the ShopSabre IS-M Series. Perfect for all high production or heavy cutting applications whether you are nested based manufacturing or one off fabrication, the state-of-the-art IS-M Series features three sizes built precisely for your needs.

The IS-M also features an optional direct bi-directional Rotary Tool Changer with a massive 10 Capacity. You also get a true closed loop continuous feedback system with Fiber-optic communication allowing the machine and motors to make necessary adjustments on the fly while cutting for ultimate performance and stability. The IS-M was designed to outperform anything priced close – the IS-M will keep your competition behind you and give you the edge you need in your industry!

## STANDARD OPTIONS

- » Fully Assembled, Tested, and Pre-Calibrated for Easy Installation
- » Access to "SabreNation" - Life-Time Support via Phone, Email, and PC Connectivity
- » Access to ShopSabre Basic Training Course (Ask for Details)
- » Vectric VCarve Pro CAD/CAM software
- » Mitsubishi Electric M Series Controller Hardware and Software with ShopSabre Interface and Fiberoptic Communication to AC Closed Loop Servo System
- » Included Control Tower with LED Lights, Touch Screen, Quick Keys, Manual Jog Wheel, and Networking Abilities
- » Precision Linear Guide Rails and Bearings on X, Y, and Z Axis
- » Large Diameter Ball Screw Drives on X, Y, and Z axis
- » Dual Drive Y Axis with 2 High Powered 1 Kilowatt A/C Brushless Closed Loop Servo Motor with Continuous Feedback and Adjustment
- » High Quality CNC Grade Wiring with Cable Guards and Carriers
- » ShopSabre Super Z Technology and Z Axis Stiffener System
- » 2D and 3D Capable (4th Axis Available)
- » Tool Measure Switch for Fast and Accurate Tool Changes
- » Accepts G-Code or DXF Files direct
- » Fiber Optic Control Communication
- » Absolute Encoder Technology with No Homing Required

## MACHINE SPECS

Traversing Speed	2100IPM Standard
Cutting Speed	2000IPM Standard (tooling, material, hold down dependent)
Resolution	.0003-.0005"
Repeatability	+/- .001"

## CUTTING AREA

IS-M 408	50" x 98" x 12"
IS-M 510	65" x 122" x 12"
IS-M 612	74" x 146" x 12"

## CONSTRUCTION

Table	Welded Aerospace Milled Structural Steel Construction
Gantry	Welded Aerospace Milled Structural Steel Construction
Linear Rails	25mm Precision HiWin Rails
Foot Print	IS-M 408: 96" x 123" x 98" IS-M 510: 108" x 147" x 98" IS-M 612: 120" x 171" x 98"
Weight	5000-7000 lbs
Power Requirements	30amp / 220 Volt Single or Three Phase Compatible <small>(Some Accessories Require Additional Power – Ask for Details)</small>



## LINEAR GUIDES

This machine like all our equipment is built with Large Linear Guide Rails and Bearings reducing the maintenance and wear you would find on smaller bearing systems. These bearings are the top of the line and built for longevity and easy maintenance.



## INDUSTRIAL MOTORS

The motors on this machine are anything but low power. You get two 1 Kilowatt motors on the Y Axis alone giving you maximum speeds, increased cutting ability, and dependability that cannot be matched. Name Brand Recognized Systems that are A/C Digital Closed Loop Brushless motors with Glass Encoder Technology increases ability and provide a maintenance free solution.



## BALL SCREW DRIVES

This system is very similar to what you see from higher priced systems. We cut no corners and put over-sized Industrial Ball Screw drives on all axis. This includes dual drive Y Axis giving you more power, accuracy, and dependability.



## CONTROL STAND

Mobile yet industrial, this control stand houses all the electronics and gives the operator a clean and easy operating center.



## CONTROLLER

The IS-M Features the M Series Controller by Mitsubishi Electric which includes a dedicated CNC CPU with unprecedented high-speed processing, smartphone-like touch screen, high Speed and high accuracy, High Resolution Encoders, and Fiber-Optic communication for the ultimate in performance and cutting.



## STEEL FRAMES

These machines are FEA Engineered and Designed, 100% Welded, Precision Milled, and Heat Treated Structural Steel Frames, Large Over-Sized Tube Bases, and Powerful Steel Gantries. The machines are all precision Aerospace Milled and Faro Laser Tested to assure the machine is accurate and true which will provide you better cuts and more accurate products.



# IS-M ROUTER SERIES

## CONFIGURATION:

- » Welded steel structural tube frame, stressed released, and precision aerospace milled
- » Welded Steel Gantry with precision machining and stress released technology
- » Tube Steel gantry uprights
- » Fully FEA Engineered and Designed for Better Performance
- » Faro Laser Tested and Measured
- » X Axis: AC Digital Servo Driven with Ball Screw Drive and Linear Guide Rails and Bearings
- » Y Axis: AC Digital Dual Servo Driven with Dual Ball Screw Drives and Linear Guide Rails and Bearings
- » Z Axis: AC Digital Servo Driven with Ball Screw Drive and Linear Guide Rails and Bearings
- » All Motors are High Powered Name Brand A/C Brushless Digital Servo Motors with Amplifiers, Fiberoptic Communication, and Glass Encoder Technology with Continuous Feedback.
- » Machines are 100% American Designed, Engineered, Supported, and Manufactured!
- » The Y Axis (Long Axis) is Dual Drive with 1 Kilowatt Motors

## STANDARD FEATURES:

- » 12" Gantry Clearance with 16" of Z Travel
- » 2100 IPM Rapid Movement on X and Y Axis
- » Industrial Ball Screw Drives on All Axis
- » Upgraded Super Z Axis Technology for Rigid Tooling and Machining and Increased Performance
- » Precision Linear Guide Rails and Bearings

- » Machine Mounted Continuous Flex Robotic CNC Grade Wiring
- » Auto Tool Measuring Technology
- » Absolute Encoder Technology with Mitsubishi M Series Control System
- » ShopSabre Quick Dust Skirt
- » Emergency Stop Switch
- » Vectric VCarve Pro CAD/CAM Software
- » Nesting Capabilities
- » Industrial Mitsubishi Electric Machine Controller with online, phone, and email support

## POPULAR OPTIONS AND FEATURES

### (OTHER OPTIONS MAY BE AVAILABLE)

- » HSD Spindles (ISO and HSK Spindle Clamp System available)
- » Rotary Carousel Auto Tool Changer System Available in 10 Position
- » Vertical Drill Spindles (Boring Heads)
- » Table Reference Pins (Pop-Up Pins)
- » Rotary 4th Axis (Lathe) System
- » HiFlow Vacuum Hold Down Systems with 4 Zone Grid and High Flow Pumps (Becker and FPZ)
- » Tooling Packages
- » Software Packages
- » Dust Collectors





# A BUSINESS BORN OF NECESSITY, HARD WORK, AND INSPIRATION

## BACKGROUND

Years ago Jim Bombardo, founder of ShopSabre, had an idea to build a CNC machine to do crafts for his wife's business. Jim knew that if he did not have a machine capable of producing parts, he would have many long hours of back breaking work to do by hand. With a background in engineering and software, he started the project of building his own CNC machine.

After the initial days and weeks of research, Jim knew that he had to have a system that was an industrial design which would provide fewer headaches and years of problem-free service. His first machine was a full ball screw driven machine with industrial components throughout. Now he could produce parts for hours with ease and great precision.

After running the machine for some time, friends and acquaintances saw it and were amazed by its fully welded construction, power, precision and overall quality. After getting offers to sell it and hours of convincing, Jim sold the machine and decided he would build another for himself. Armed with experience and new ideas, the second machine went together much quicker, and Jim was once again convinced to sell it.

During the construction of the third machine, Jim had done further research in the CNC market and was amazed that no one offered an industrial quality machine under \$60,000. The only machines on the market were small bolt-together machines, and the components being used were simply hobbyist in quality. After seeing everything and doing this research, Jim decided to take this third machine to the Woodworkers show in Atlanta.

During the show he received a lot of attention and accolades for the machine design. When the show was finished they had over a dozen request for orders. Every client was willing to wait for the machine as they understood the quality and components put into each one.

After arriving back home, a facility was constructed for the manufacturing of the new CNC machines, and ShopSabre was born. Jim had started with himself, four sons, and his wife.

ShopSabre is a self-funded company and the machines are constructed from the ground up with every component being closely monitored to ensure it works flawlessly. ShopSabre's philosophy is simple: Customer Service is Everything. Each machine is tested for hours before it leaves to ensure power, precision, quality and reliability.

Currently there are over 5,000 machines around the world in over 29 countries. ShopSabre CNC has experienced enormous growth in the past few years, and has received recognition from some of the largest manufacturers of cabinets, aerospace parts and equipment, signs and many other industries. Business owners and engineers are seeing that you do not have to spend \$100k or more on a machine that can produce precision parts three shifts a day every day of the week.

ShopSabre is continuing to be on the cutting edge of CNC technology with the release in January '08 of its fastest and most powerful machine under \$100,000. ShopSabre's ability to monitor every part of the build cycle and every industrial component put into the machine each one is built to perfection before it leaves regardless if it is a router, spindle, laser, plasma, tangential knife or other product.

Jim is still personally involved in the construction and assembly of nearly every machine. With new products in the works and growth continuing at an astonishing rate, ShopSabre will continue to be a leader in affordable CNC machines.

# Buy your Second Machine the First Time

**ShopSABRE**  
• ROUTERS • PLASMA CUTTERS •

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*IS-M Series Catalog  
Updated: 3-24-20*