

ANDERSON AMERICA - SPECTRUM-M 512 HL CNC

On behalf of Anderson America Corporation, we thank you for providing us with the opportunity to present our products for your valued consideration and approval.

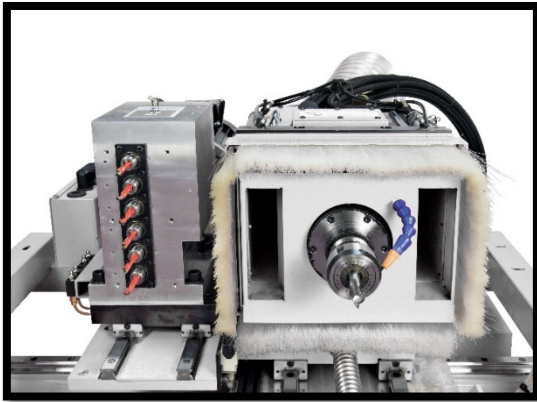


ONE (1) ANDERSON CNC ROUTER
MODEL: **SPECTRUM-M 512 HL – (5' x 12' with Auto Offload)**
(6 Spindle Multi-Drill Block)

Equipped with

1 (one) 12 HP HSK63F Router Head
With an
8-Position Automatic Tool Change Pick up Station
And
1 (one) Multiple Spindle Boring Head
Plus
Pusher / Sweeper Offload Device
With
Automatic Offload Material Conveyor

MACHINE FEATURES:

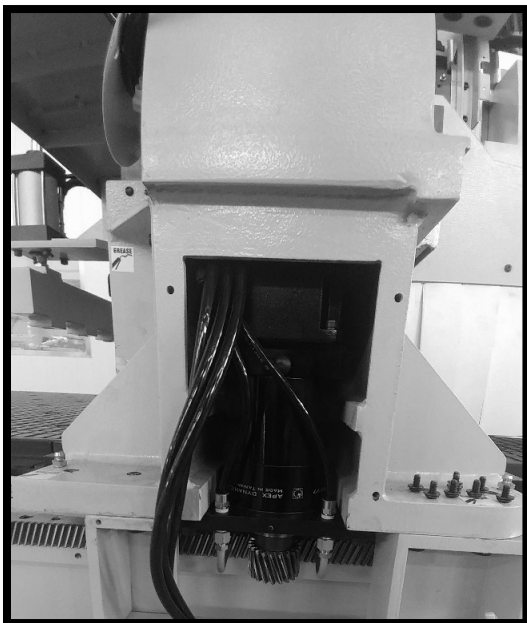


Moving gantry (stationary table) type machine equipped with 1 (one) **12 HP 4-pole air-cooled router spindle**, with grease lubricated ceramic bearings, a 6-Position Static Automatic Tool Changing System, with **tool length touch probe**, and 1 (one) 2 HP, multiple spindle boring unit with 6 independently selectable spindles for vertical boring. The spindle motor is powered by an electronic AC inverter drive system with dynamic spindle braking. **Full Torque is achieved at 9,000 RPM & Full HP is achieved at 12,000 RPM.**

fast and efficient tool change operations.

The bridge & vertical supports are **monolithic one-piece construction** for maximum stiffness and accuracy.

The X & Y axes are constructed of massive, heavy duty welded steel construction with multiple reinforcements to increase strength and absorb vibration. Z-axis spindle carriage is a specially designed Meehanite casting for high strength and inherent vibration dampening characteristics with a pneumatic counterbalance system for smooth and accurate operation.



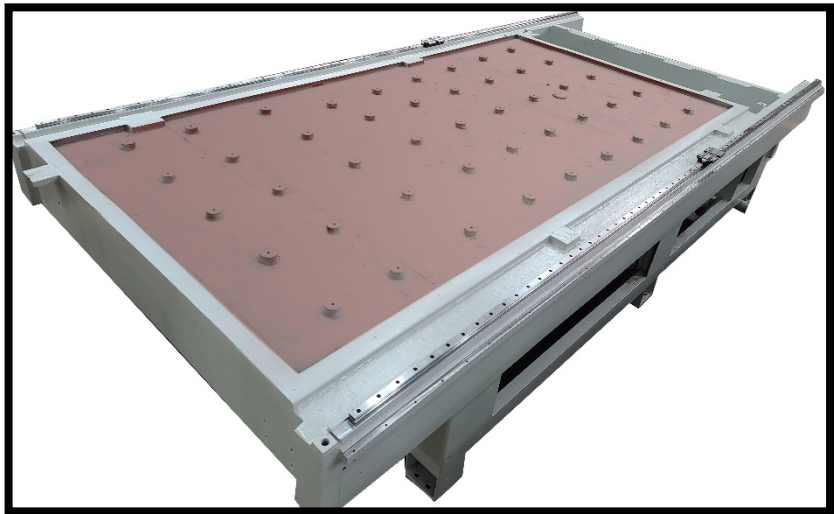
Hardened and precision **linear guide way systems** with recirculating roller linear bearings are provided for **all** primary movements in the X, Y & Z axes. Hardened and **precision ball screws** with anti-backlash ball nuts are provided for all primary movements of the Y & Z axis. The X-Axis is a **dual drive, dual support, 2-channel system**, using twin industrial grade, induction hardened, **helical racks & pinions**

The vacuum table is made of torsion resistant cast steel, covered with a **30mm thick phenolic grid table top** for the quick and easy mounting of work pieces via pods, clamps, spoil-boards, or holding fixtures.

THREE (3) pneumatically controlled Pop-up pins are included for sheet location and for Nested Based Manufacturing.

The table is configured with **THREE (3) vacuum zones**, which are automatically m-code controlled.

The vacuum zones are equipped with an electronic safety barrier & low vacuum sensor. This table & pump combination allows a wide range of flexibility in holding large & small work pieces.



Centrally located grease fittings are utilized for X, Y, & Z Axis and profiled linear guide ways. All guides are protected from dust and other contaminants by **double sealed wipers**. The operator control panel is mounted on a control arm, in front of the machine, and has a **Handheld Pendant** with separate Feed Rate and Rapid Rate Override for easy access by the operator. A dust collection hood with automatic damper system is provided for the router spindle & for the drilling block.

State-of-the-art closed loop **FANUC AC digital servo motors** are utilized on X, Y & Z axis. The FANUC Electronics and controls systems are placed into a covered & sealed electronics cabinet that is conveniently located at the back of the machine base. This space saving design eliminates many of the wires that would otherwise be stretched across your floor.



CONTROL FEATURES:

FANUC

FANUC OiM-F Controller System + Windows PC Front End User Interface

With “FAST CORNER FUNCTION”, and the following standard features:

This Anderson CNC Proudly uses the latest, Series 0i-MODEL F, with nano-resolution performance. With over **700,000 systems installed**, the 0i/0i from FANUC is by far **the world’s most popular CNC control**. Operational & programming consistency are critical to maximize productivity. Operators that already have experience with FANUC controls will be comfortable with the Series 0i in no time, with little or no additional training. Existing part programs will typically run without modification. Each operator can select their preferred language quickly from any one of the 16 supported by the 0i.

FANUC’s culture of quality ensures that our CNC systems are the most reliable available. Statistically, a FANUC hardware fault occurs only once for every 32 years of productive service (MTBF). With the commitment of a **25-year parts availability guarantee**, convenient local parts inventories, **over 34 US locations**, & economical repair & return services, you can look forward to decades of trouble-free operation with the Confidence that your machine will be available for production when you need it.

High-capacity, nonvolatile internal memory is provided for part program storage. Slots are optional for an additional 2GB of part program storage. Part programs stored in external memory cards can be edited & executed just like internal memory, providing practically unlimited capacity.

The network-ready **100-MBit Ethernet interface** allows the CNC to be integrated into a network for high-speed part program transfers & the collection of process related data. It also supports remote troubleshooting from the maintenance department anywhere around the world. The Ethernet port doesn’t use a public operating system, so it’s practically “hacker-free” & virus immune.

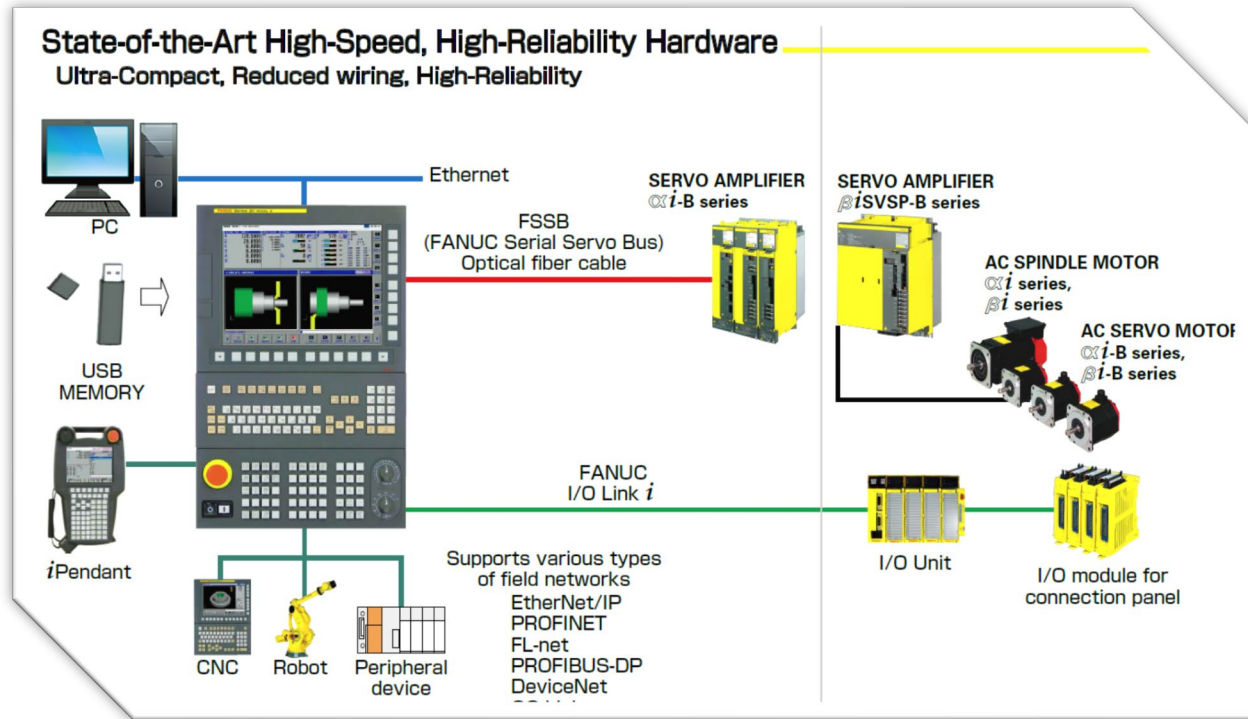
The Series 0i-MODEL F achieves the highest precision possible, with nanometer resolution standard throughout the CNC system. Fast, high resolution 16-million count-per-revolution feedback devices combine to provide a superior surface finish quality when contouring. This minimizes the need for secondary operations, reducing delivery times & part cost. High-efficiency drive systems pump energy back into the power line when the machine is decelerating, and when combined with cycle time reductions, they reduce electrical power consumption by up to 50%. Plus, the CNC system is ‘ready-to-go’ in less than 30 seconds.

The FANUC 0iMF Controller System is open architecture and will accept industry standard G-Code from any CAD/CAM or Screen-To-Machine program available. Plus, Operator training times and costs are minimized with the continuity of operation and upward compatibility to run existing programs or future programs on your CNC controller.

Downtime is minimized by separating the actual CNC control and the PC interface technologies. The PC is upgradable in the future and easily field replaced. Plus, it is easy to use, easy to learn, and provides hundreds of gigabytes of part program storage. Most CAD/CAM software packages can be installed right on the PC interface for inexpensive on-the-floor part programming capabilities.



FANUC's UNPARALLELED RELIABILITY:



In today's just-in-time manufacturing environments, downtime costs extend beyond the direct parts and labor to fix the problem. Lost production, downstream production shortages, and missed customer promises are expensive and have longer lasting effects. Downtime costs have two primary dimensions. Mean time between failures (MTBF) measures how often an equipment failure occurs. Mean time to repair (MTTR) measures how quickly equipment can get back into production.

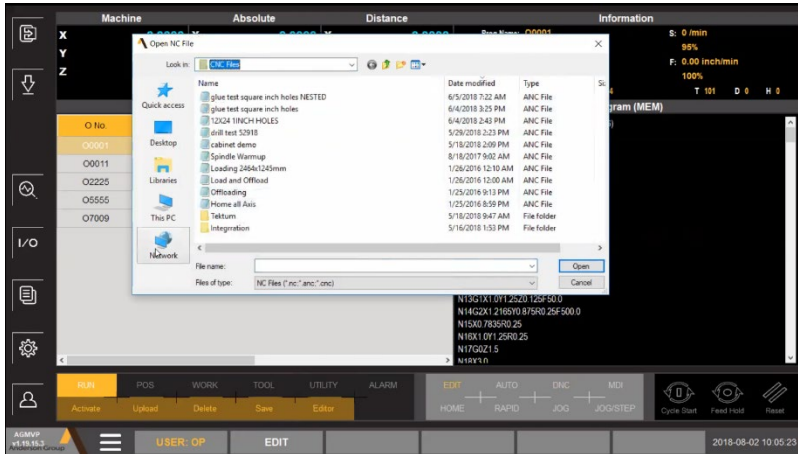
Mean time between failures (MTBF)

Every generation of FANUC CNC & drive system is significantly more reliable than the previous generation, with the latest generation Series Oi recording 32 year MTBF! FANUC's industry-leading MTBF on current CNCs is dramatically better than the nearest competitor. Machine tools with FANUC controls have less downtime, produce more parts, and support downstream production more effectively.

Mean time to repair (MTTR)

Comprehensive diagnostic and troubleshooting tools ensure a low MTTR so that equipment is back in production as quickly as possible. Anderson CNCs have an Ethernet port that can be used to remotely diagnose problems, allowing maintenance personnel and engineers to solve more problems over the phone, or at least be able to arrive on site with appropriate tools and replacement parts. Diagnostics pages provide a single, convenient location to monitor the status of the CNC and servo systems. The ladder and I/O status pages show the real-time condition of the CNC-to-machine interface. Operational and alarm message history capture the events that precede a CNC or machine system problem.

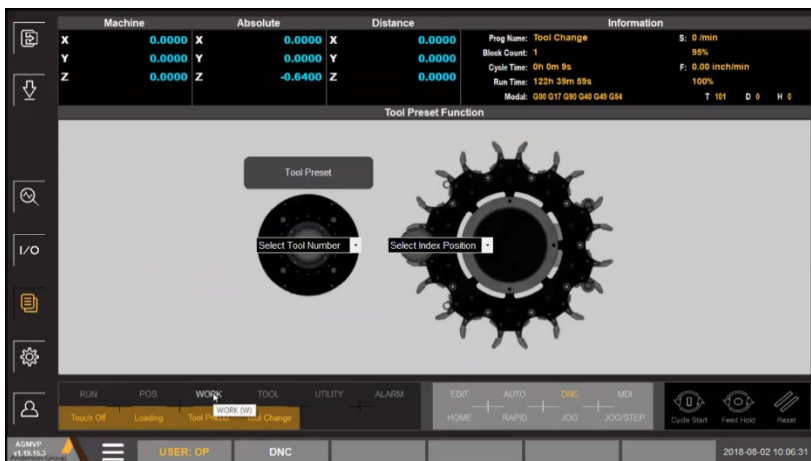
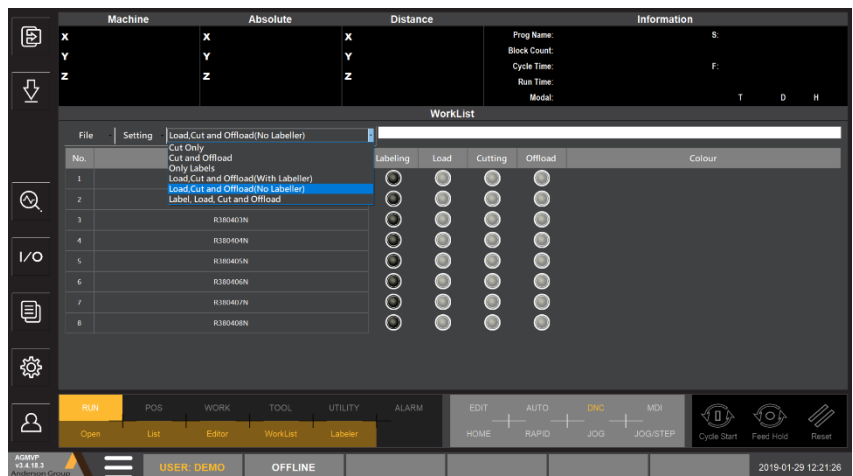
AG-MVP OPERATOR'S INTERFACE: Anderson Group – Machine Virtual Panel



Easily & Quickly Load Programs or Worklists from Local Disk, Removable Storage, or Cloud Storage from a friendly and familiar Windows File Explorer Interface.

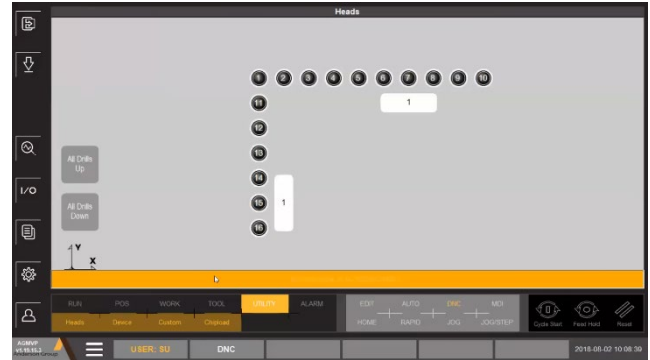
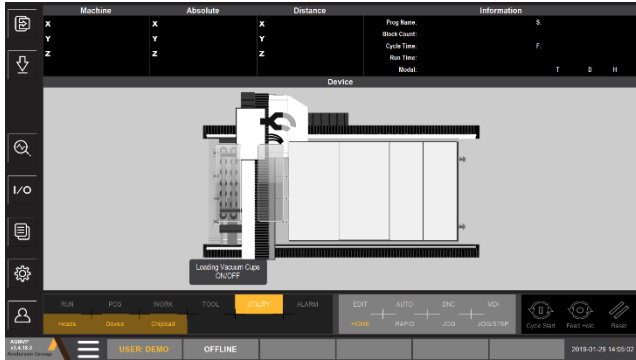
AGMVP runs on Windows 10 (or Windows 7) & is compatible with FANUC Oi-Model F & FANUC 31i control systems.

Models that include automated loading &/or automatic offloading pusher/sweeper devices include Anderson's WorkList software. Lists of individual program files can be loaded all at once and executed sequentially, with on screen status, sheet count, & count-down functions for better production & workflow management.

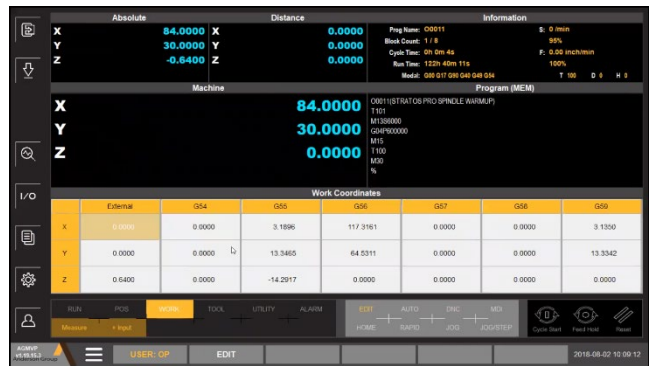


Tool lengths, tool diameters, tool locations, and tool number offsets are easy to set up, review, and change with this easy and intuitive interface.

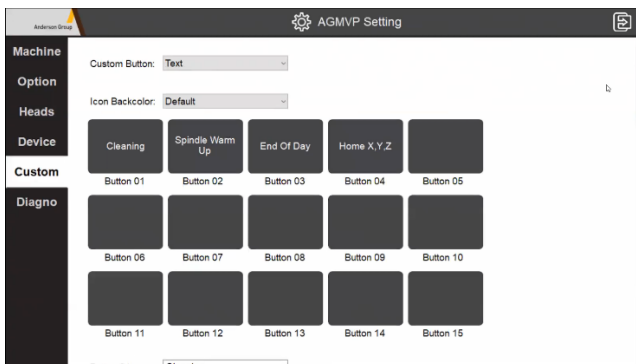
When combined with the standard automatic tool length measurement device; errors, mistakes, and crashes are minimized & often eliminated.



Graphically see & control the status of Vacuum Zones, Working Fields, Twin Tables, or additional peripherals, Spindles, &/or heads such as multi-drill blocks.



Tool Diameter Compensation (with 200 tool offsets) & G54-G59 Work Coordinates (with 48 extended work coordinates on 3-4 axis machines and 200 extended work coordinates on 5-axis machines) are now easy to visually inspect, verify, and quickly edit onscreen.



Commonly repeated functions or programs such as facing a spoil board or fixture, routine maintenance or cleaning, spindle warm up, beginning of day or end of day, start-up or shut-down procedures, easily become user created & user configurable function buttons.

ISO 9001 CERTIFICATION:

Nearly ALL CNC Routers manufactured in the world today are assembled from a huge parts list sourced from a long list of countries from around the world. Where they are assembled, is far less important than how well they are assembled. Anderson Industrial Corporation was one of the first CNC Router manufacturers to receive certification under

the ISO 9001 standards and we still are one of a very select few that have this certification today. Internationally recognized with four accredited international registrations, this latest achievement continues to validate our unrelenting commitment to quality, standards, and continuous improvement.



What is ISO?

The International Organization of Standardization (ISO) with headquarters in Geneva, Switzerland, is made up of national standards institutes in 162 countries. The organization promulgates worldwide commercial and industrial standards. To be certified as meeting one of these standards is to be a quality player in the global marketplace.

What does the ISO 9001 describe?

The ISO 9000 standard provides systematic control of a company's manufacturing activities to ensure that the needs and expectations of customers are consistently met.

Why is ISO Certification so important?

ISO certification is accepted as a global standard for quality system management. The ISO standard safeguards customers and users of products and services, ensuring operational consistency and reliability. It demonstrates the existence of an effective quality management system that satisfies the rigors of an independent, external audit.

To Some, ISO 9001 certification just enhances company image in the eyes of customers, employees and shareholders. For Anderson, achieving ISO 9001:2008 certification supports our ongoing commitment to quality, customers, and improvement. Our ISO certification provides measurable assurance from an independent authority that our Quality Management System is consistent and dependable, enabling continuous customer satisfaction.

TECHNICAL SPECIFICATIONS:

Table size	3700 mm x 1600 mm (146" x 63")	
Pop-Up Positioning Pins	3 – 60mm pins	
Vacuum Zones per Table	3 (three) - optimized for 4x8, 5x10, & 5x12	
Axis stroke	X axis:	3850 mm (152")
	Y axis:	1880 mm (74")
	Z axis:	200 mm (8")
Maximum Feed Rate	X-axis:	60 meters/min (2,360"/min)
	Y-axis:	60 meters/min (2,360"/min)
	Z-axis:	20 meters/min (787"/min)
Maximum Rapid Traverse	All-axis:	84.85 meters/min (3,341"/min)

Spindle #1 - Router Spindle

Spindle type	Anderson Air Cooled
Motor power	12 HP (S6): 10 HP (S1)
Spindle speed (RPM)	1000-21000
No. of changeable tools	8
Spindle nose	HSK63F taper
HSK 63F tool holders	8 sets (Holder & Locknut)
Aggregate Torque Ring	INCLUDED (for compact aggregates only)
Collet Sizes Included	(2) 1/2", (2) 3/8" (2) 1/4" & (2) 3/4" (total # of collets: 8)

Spindle #2 - Line Boring Unit

Spindle type:	Line Boring Unit
Motor Power:	2 HP
Spindle speed:	4,500 rpm
Vertical Drills:	6 x 1
Drill Shank Dia:	10 mm

(Router Spindle and Drill Head both fully cover the entire working table)

HANDHELD REMOTE PENDANT:

This Standard Feature simplifies feed rate & spindle speed overrides from anywhere around the machine, as well as an additional E-Stop function. The HPG jog wheel also allows for manual jogging of the machine, stepping manually through a program, or manual movement or verification of a single axis. This pendant comes corded for portability & convenience.



AUTOMATIC TOOL LENGTH MEASUREMENT:

Includes stationary measurement device for touching off tools and to automatically set "Z" Heights & Tool Lengths. This device can also be used for setting the lengths of drills.



FREE REMOTE DIAGNOSTICS:

Remote Diagnostic Services are provided free to the original purchaser for as long as they own the machine. Anderson America can help troubleshoot & diagnose the machine remotely, via a customer provided High Speed TCP/IP Internet connection. This service helps to minimize downtime, saves on potential travel expenses, and even allows our technician to walk you through many challenges screen by screen.

LIFETIME PHONE SUPPORT:

Telephone Support Services for machine & parts troubleshooting are provided free to the original purchaser for as long as they own the machine. Anderson America uses this to help your trained operators and maintenance personnel troubleshoot or diagnose a machine issue, operations question, or parts need. Please note that our comprehensive support is not intended to be a substitute for training. This service is available from 8AM to 5PM EST Mon-Fri. After hours support or parts requests are handled via email.

ELECTRICAL INFORMATION:

Voltage: 208V, 240V, or 480V - 3 Phase / 60 cycles – (Multi-Tap Transformer Included)

Note: If the actual measured leg-to-leg Operational Voltage cannot be maintained within +/- 3%, a voltage transformer will have to be installed at customer's expense. Specific requirements for compliance with local electrical codes and regulations are the sole responsibility of the customer. Always check with an electrician before designing protective devices, wiring and switchgear.

Dust Collection requirement ... 1570 cfm @ 4500 fpm Velocity

Compressed Air requirement ... 100 PSI / ¾" connection, minimum 6 cfm, up to 12cfm

Recommended environmental temp....Celsius 5 - 35 degrees, (Fahrenheit 41-95 degrees)

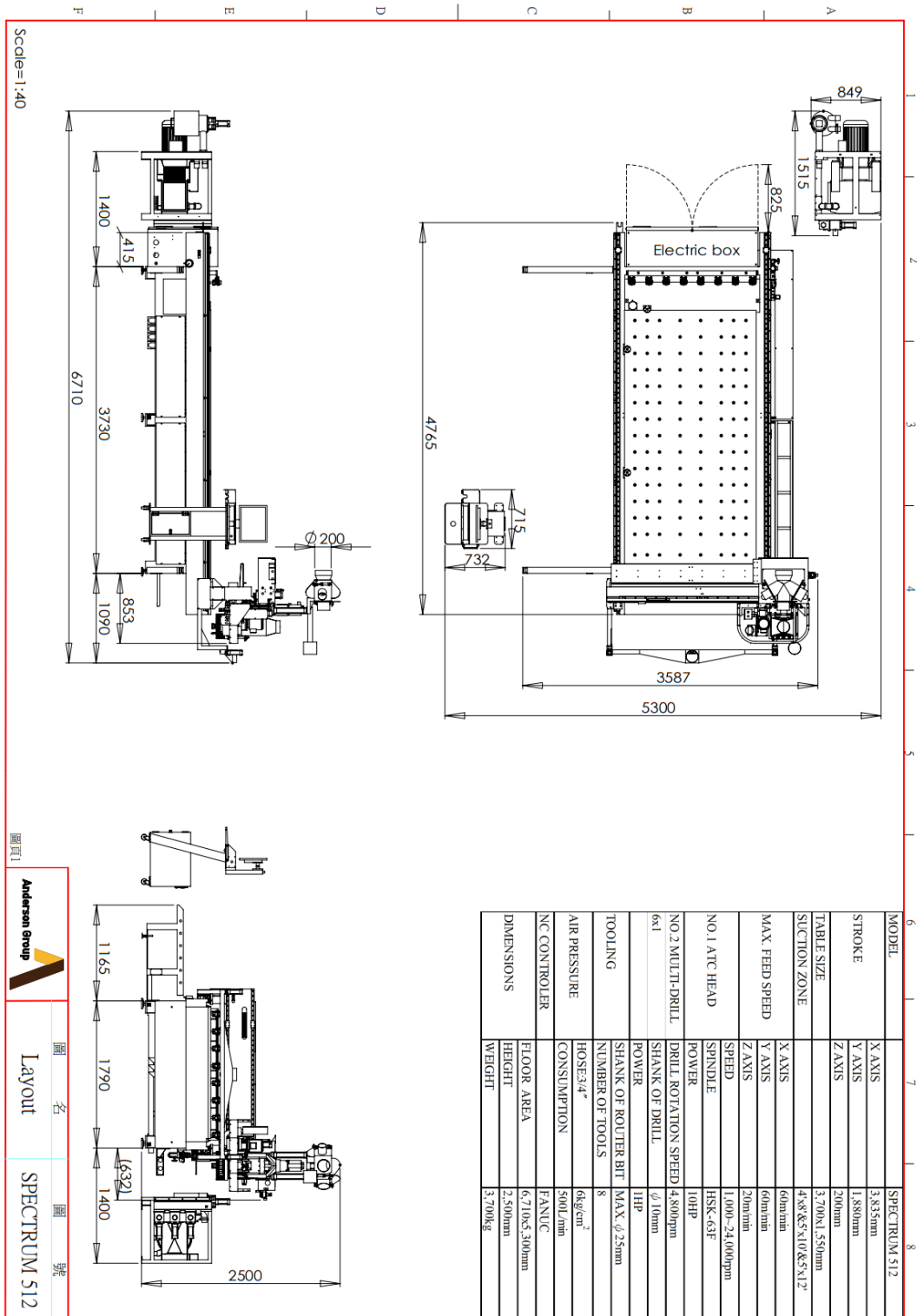
<u>ANDI CNC Router With Standard Spindle 12HP (S6) – 10HP (S1)</u>	<u>Voltage: 208 Volts</u>	<u>Voltage: 240 Volts</u>	<u>Voltage: 480 Volts</u>
Machine Only: No Vacuum Pumps connected internally	55 Amps	50 Amps	25 Amps
Machine & 1 (one) 9HP Becker: One Vacuum Pumps connected internally	90 Amps	80 Amps	40 Amps
Machine & 2 (two) 9HP Becker: Two Vacuum Pumps connected internally	110 Amps	100 Amps	50 Amps
3 (third) 9HP Becker: Third Vacuum Pumps <u>connected externally</u>	33 Amps	28 Amps	14 Amps
1 (one) 25HP Becker & No Machine Vacuum Pump connected externally	72 Amps	68 Amps	34 Amps
1 (one) 25HP Decker & No Machine Vacuum Pump connected externally	72 Amps	68 Amps	34 Amps
1 (one) 40HP Decker & No Machine Vacuum Pump connected externally	111 Amps	104 Amps	52 Amps
1 (one) 30HP Atlas & No Machine Vacuum Pump connected externally	N/A	N/A	39 Amps
1 (one) 40HP Atlas & No Machine Vacuum Pump connected externally	N/A	N/A	50 Amps
1 (one) 50HP Atlas & No Machine Vacuum Pump connected externally	N/A	N/A	62 Amps

OPTIONAL AUTOMATIC MATERIAL OFFLOAD WITH KNIFE-TYPE PUSHER/SWEEPER:



The Anderson **AUTOMATIC MATERIAL OFFLOAD SYSTEM** is designed to Un-Load a previously machined full sheet of nested parts, in one smooth motion. Then this system would rely on an external or manual system to reload the next full sheet to be machined

- *A CNC controlled blast gate system maximizes your dust collection efficiency by diverting all of the collection to the router head while machining, to the drill block while drilling, & then to the sweeper when cleaning off dust & debris from the table. Then, the Pusher/Sweeper FULLY and cleanly offloads the already machined sheet of nested parts all the way onto the offload conveyor.*
- *The optional offload conveyor has the convenience of maximum cleanliness and reliability. Two parts detection eye sensors advance parts to the end of the conveyor as they are removed by the operator.*
- *An optional Touch Screen Manual Labeling Station can be placed at the end of the optional conveyor for convenient operator access. Labeling systems and software are normally recommended by &/or provided by your Design Software Provider.*
- *Every Spectrum-M is pre-configured for this system to be field retrofitted when your business is ready.*



圖號1



圖名
Layout

圖號
SPECTRUM 512

• Note: Outfeed Conveyor not shown above