SmartShop|2 Elite Owner's Manual

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Scope of This Manual

This manual outlines the basic procedures for unpacking, installing, and operating the SmartShop|2 Elite.

For detailed instructions and videos, please go to www.lagunatools.com.

Customer Service

For technical support, please contact Laguna Tools: Call Customer Service at 1-800-332-4094 or email customer_service@lagunatools.com. Please note the machine type in the subject line.

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1.0 General Information and Safety

1.1 Overview

Please read and understand all warnings and operation instructions before using any tool or equipment. Always follow basic safety precautions to reduce the risk of personal injury. Improper operation, maintenance, or modification of tools or equipment could result in serious injury or property damage. Laguna Tools equipment is designed for specific and limited applications. This product should neither be modified nor used for any application other than those for which it was designed.

1.2 Safety Signs and Call-Outs

The purpose of safety signs and call-outs is to draw attention to potential hazards during the operation of the SmartShop|2 Elite. This Owner's Manual makes use of the following call-outs to describe the level of importance of each safety message:

⚠ **DANGER**

An imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ **WARNING**

A potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION**

A potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTE

A helpful tip from Laguna Tools technical staff.

1.3   Safety Warnings

1. Failure to comply with safety instructions may lead to personal injury and/or damage to the equipment. Do not operate the machine unless familiar with all safety instructions, warnings, and signs.

2. Do not operate the machine with the electrical cabinet door open–High Voltage Supply Inside.

3. The machine must be properly electrically grounded. The power supply must be connected with a permanently fixed electrical wire.

4. Keep children and non-operators away from the machine.

5. Operators must be familiar with the installation, operation, and service of the machine. Only proper operation can ensure the safe and smooth running of the machine.

⚠ WARNING

Automated machinery involves moving parts which pose a potential hazard to personnel. Be aware of machine movement at all times.

⚠ WARNING

Only allow qualified service personnel to do electrical installation or repair work, and always disconnect power before accessing or exposing electrical equipment to reduce risks.

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> ⚠ **CAUTION**
>
> *Machine bits are sharp and pose a cutting hazard. Do not
> handle without gloves or while machine is in operation.*

1.4   Additional Safety Information

1. All motion parameters have been set up by Laguna Tools. If any modifications are required, please have a professional operator perform the changes.

2. Safety Signs should be attached to places that are easy to spot.

3. Use the machine only in clean areas free from excessive moisture or flammable objects.

4. The machine must be level. Level the machine if the ground is uneven.

5. Keep the machine, electrical cabinet, and surrounding area clear of obstructions and free from excessive moisture.

6. Keep the machine, electrical cabinet, and cables away from excessive heat, flammable substances, and sharp objects.

7. Do not attempt to exceed the limits of the machine.

8. Disconnect power to all system components when not in use, when changing accessories, and before servicing. Remove the switch keys or lock-out the machine to prevent unauthorized use and child-proof the workshop.

9. Exercise care with machine controls and around keypad to avoid unintentional start-up.

10. Keep cutting tools clean and sharp.

11. Lubricate and change accessories when necessary.

12. Cables and cords should be inspected regularly.

13. Keep controls clean and dry.

14. Keep a copy of this manual for future reference.

15. Perform daily inspection of the machine for damaged, loose, or improperly adjusted parts or any condition that could affect safe operation. For your own safety, do not operate the machine with damaged parts.

16. Stay alert at all times while operating the machine.

17. Always wear safety glasses and hearing protection.

18. Know where the emergency stop switch is located.

19. Never operate machinery under the influence of drugs or alcohol, when tired, or when distracted.

20. Do not wear clothing, apparel, or jewelry that can become entangled in moving parts. Always tie back or cover long hair. Wear non-slip footwear to reduce the risk of slipping and losing control or accidentally contacting cutting tool or moving parts.

21. Never stand on the machine. Serious injury may occur if the machine is tipped or if the cutting tool is unintentionally contacted.

22. Consult the Owner's Manual or Laguna Tools for recommended accessories. Using improper accessories will increase the risk of serious injury or damage.

2.0 Receiving the Machine

Following delivery and before the driver and riggers have left, inspect the packing, invoice, and shipping documents. Next, ensure there is no visible damage to the packaging or the machine. All damage must be noted on the delivery documents and signed by the receiver and the delivery driver. Contact Laguna Tools Customer Service as soon as possible in case of damage. It is advisable to photograph and document any shipping damage. The original packaging is required to return damaged equipment to Laguna Tools.

NOTE
Sawdust may be found in the machine upon arrival. This is because the machine has been tested prior to shipment from the factory and/or Laguna Tools. Laguna Tools tests all machines prior to shipping, but some adjustments may have to be undertaken by the customer. These adjustments are covered in the various sections of this manual.

Most large machinery will be delivered on a tractor trailer 48 to 53 feet long. Please notify a Sales Representative with any Delivery Restrictions. The customer is required to have a forklift (6000 lbs. or larger is recommended) with 72-inch forks or fork extensions.

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3.0   SmartShop|2 Elite Overview

The Laguna SmartShop|2 Elite combines a heavy all-steel frame, FANUC controls, and servos running on helical rack and pinion. It can easily handle high production loads without sacrificing accuracy or cut quality. The SmartShop|2 Elite is a rugged platform with the durability and accuracy to process materials including wood, plastics, foams, aluminum, and composites.

3.1   Features of the SmartShop|2 Elite

- 12HP HSD Spindle

- 750W FANUC© Servos Drive Motors

- FANUC© Oi-MF PLUS Control System

- Up to 2,500 IPM Rapid Speed

- 12-inch Z Clearance

- 14-inch Z Travel

- 8 Position Static Tool Changer

- Allows Expansion For 4th Axis Turner

3.2   Components

Figure 3-1: SmartShop|2 Elite Components

1. **Electrical Cabinet** – The electrical cabinet will be located on the side of the machine.

2. **Dust Collection Port** – A 6-inch diameter dust collection port. Attach a stand-alone dust collection system to reduce airborne particles, dust, and chips during operation.

3. **Automatic Tool Changer (ATC) Rack** – The tool changer features eight (8) tool positions to accommodate a large range of tools. Each of the positions includes an ISO-30 tool clip. Tool positions are controlled by the CNC controller.

4. **Gantry** – The gantry straddles the table. It is moved along the length of the table by a helical rack and pinion.

5. **Vacuum Table** – The bed of the machine consists of a sturdy steel frame with a composite worktable that enables holding projects securely with vacuum.

6. **Vacuum Control Valves** – The machine has six (6) vacuum control valves that can be used to restrict vacuum to the desired vacuum table zones.

3.3   Electrical Cabinet and Control Panel

Figure 3-2: Electrical Cabinet

1. **Main Disconnect Switch** – Turn clockwise to turn on the machine power. Turn counterclockwise to turn off power to the machine.

2. **Control Display Screen** – The operator's screen, soft keys, and keypad.

3. **Control Panel** – Machine controls (see Figure 3-4).

4. **Manual Pulse Generator (MPG)** – A remote allowing the operator to manually control the tool gantry and spindle.

5. **Electrical and Ethernet Connections** – Openings for the routing of electrical cables between the electrical cabinet and the machine and a port to connect an ethernet cable.
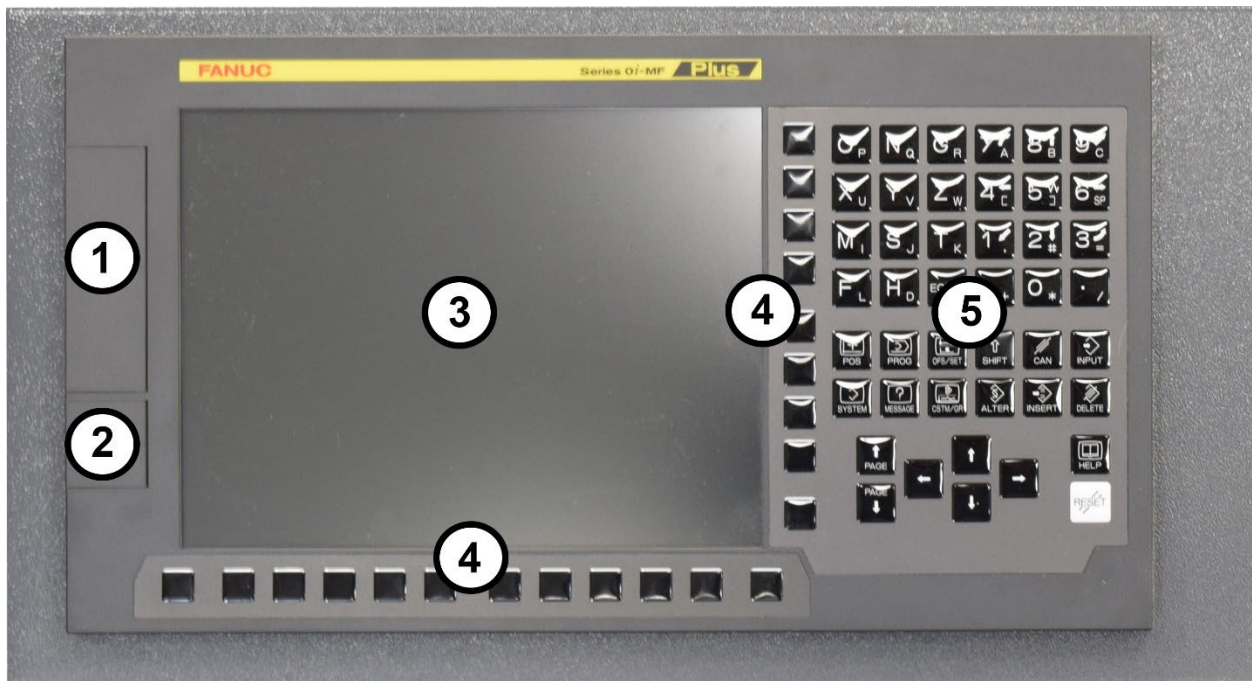
Figure 3-3: Control Display Screen

1. **Memory Card Slot** – Slot for the machine memory card.

2. **USB Drive Slot** – Slot for a USB Drive.

3. **Display Screen** – Displays soft key functions and operation information.

4. **Soft Keys** – Keys which correspond with functions displayed on the Display Screen.

5. **Keypad** – Hard keys (keys with a static function).

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Figure 3-4: Control Panel

1. **EZ Plus Button** – Press the EZ Plus button at any time to return to the MAIN SCREEN,

2. **Cycle Start** – Executes the loaded program.

3. **Vacuum Pump One** – Turns on Vacuum Pump One.

4. **Switch ON/OFF** – Turn clockwise to turn on the Control Display Screen. Turn counterclockwise to turn off the Control Display Screen.

5. **Emergency Stop** – Press to stop all operation of the machine in the case of an emergency.

6. **Vacuum Pump Two** – Turns on Vacuum Pump Two.

7. **Feed Hold** – Halts execution of the current program.

Figure 3-5: Manual Pulse Generator (MPG)

1. **Emergency Stop** – Press to stop all operation of the machine in the case of an emergency.

2. **Enable Switch** – Press and hold to enable button functionality. This safety feature helps prevent accidental operation.

3. **Axis Select** – Turning this knob clockwise and counterclockwise selects the axis to be moved.

4. **Speed Select** – Turning this knob clockwise and counterclockwise selects the movement speed of the tool gantry and spindle.

5. **Handwheel** – Moving this knob clockwise and counterclockwise manually moves the tool gantry and spindle at the selected speed and along the selected axis.

4.0   Machine Placement

When unpacking the SmartShop|2 Elite, separate all enclosed items from the packing materials and inspect each for damage. Save the packaging materials until all issues concerning missing or damaged items have been resolved.

4.1   Placement

Select the area where the SmartShop|2 Elite will be operated. The physical environment where the SmartShop|2 Elite is located is important to safe assembly and operation. Before removing the SmartShop|2 Elite from its packaging consider the weight load, electrical installation requirements, lighting, dust collection, and space allocation available for the machine and accompanying materials.

Guidelines for properly placing the machine follow:

1. There should be sufficient area around the machine to facilitate easy access to the workpiece, perform maintenance, and provide safe egress in the event of an emergency.

2. Select a solid level floor rated to hold the weight of the SmartShop|2 Elite and workpieces under both static and dynamic loads. Laguna Tools recommends concrete flooring. Consult a licensed and experienced professional if in doubt.

3. Locate the SmartShop|2 Elite close to a power source and dust collection.

4. Allow an area for the storage of workpiece materials, finished products, and tools.

5. Leave ample space around the machine for the operator to handle both the equipment and the materials being cut.

6. Leave enough space around the machine to open or remove doors/covers as required by the maintenance described in the Owner's Manual.

4.2   Dust Collection

Allow enough space for proper dust collection from the SmartShop|2 Elite. For optimal operation, ensure that the machine is located in a dry environment free from excessive moisture, extreme weather conditions, hazardous chemicals, or airborne abrasives.

4.3   Electrical Requirements

The SmartShop|2 Elite requires permanent, direct power installed by a qualified electrician familiar with industrial best practices. Ensure that all power cords are protected from traffic, moisture, chemicals, or other hazards. For safety, always have a qualified electrician assess grounding and any further electrical needs.

4.4   Lighting

Ensure that the lighting your machine is placed under is sufficient to safely perform regular operation and maintenance. Any glares, shadows, or strobe lighting which may distract or prevent the operator from safely operating the machinery should be removed from the working area.

4.5   Unpacking Your Machine

Unpacking the SmartShop|2 Elite will require tin snips, a knife, and a wrench.

1. Using the tin snips, cut the banding that is securing the SmartShop|2 Elite to the pallet.

2. Ordered parts will be packed on the machine.

3. Professional riggers are required for installation of the SmartShop|2 Elite.

4. Approaching the machine from the long side and lift the machine by the frame taking care that there are no cables or pipes around the forklift tynes. The caterpillar track tray, vacuum hoses, air lines, and cables under the SmartShop|2 Elite are very susceptible to pinch and crush damage.

5. Lower gently to the floor.

5.0   Assembly and Setup

5.1   Fitting the Dust Hose

1. Fit a 6-inch dust hose (not supplied) to the dust collection port located at the top of the machine and secure using a hose clamp. Verify the clamp is tight.

2. The dust hose will follow the spindle head across the entire worktable. If there is insufficient slack, the hose may be damaged or broken. It is recommended that the hose be suspended from the ceiling of the shop with sufficient slack so as not to restrict movement. This will prevent the dust collection hose from becoming a tripping hazard or interfering with the machine during operation and causing damage.

5.2   Electrical Connections

The main power cable is connected to the main disconnect switch on the front of the electrical cabinet. A qualified electrician must carry out the electrical installation of the SmartShop|2 Elite.

5.3   Compressed Air Connection

The machine is supplied with an air regulator. The input air regulator will need to be adjusted to 6 bar (85 psi) once the machine has been connected to the air supply (an air pipe is not supplied). This will ensure the machine always has the minimum required air pressure. To adjust the air pressure, pull the cap down and rotate until the gauge reads the correct pressure. Once the pressure is adjusted, push the cap up.

The input regulator has a moisture trap that must be emptied if more than 1/3 full or stagnant.

Figure 5-1: Air Regulator

It is important that the air supplied to the machine is CLEAN DRY AIR. The machine will not perform consistently if the air is damp or dirty; dirt and moisture will block the valves. Damp or dirty air will damage the machine and dramatically shorten the service life of the machine.

<div style="background-color: yellow">⚠ **CAUTION**</div>

If conducting repair on the pneumatic system, close the air valve.

5.4   Connecting the Vacuum Pump

The machine is provided with a 2-inch pipe for the hose connection to the vacuum pump. Connect the other end to a vacuum pump.

5.5   Switching Out the Tooling

1. Select the desired router bit and a collet of correct size.

2. Fit the collet into the spindle nut. Press the collet into the spindle nut until it snaps into place.

<div style="background-color: blue">**NOTE**</div>

The router bit must not be fitted into the collet until the collet has been fitted into the spindle nut. With the router bit fitted in the collet, the collet cannot compress and snap into the spindle nut.

The face of the collet and the face of the spindle nut will be close to flush.

3. Thread the collet and nut assembly on the tool cone and thread by hand.

4. Press the bit into the collet. The flute of the router bit should be a minimum of 1/16 inch outside the collet. The bit should not bottom out in the tool cone.

5. Tighten the collet nut with the supplied wrench until snug. Do not over-tighten.

Figure 5-2: Assembled Tool Cone

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NOTE

Keep the collets clean and blow all dust out of the slots. Fine dust accumulates and will affect the clamping ability and cut quality.

5.6   Vacuum Table and Spoil Boards

The Spoil Board has three (3) functions:

1. **Protects the vacuum table from the router bits** - Set the depth of the router bit set to exact spoil board height. Without a spoil board, the machine would cut into the vacuum table.

2. **Transfers vacuum between the table and the workpiece** - Inexpensive Medium-Density Fiberboard (MDF) is the best material for this function.

3. **Provides a cheap, disposable work surface** – Unlike a wooden table, a disposable spoil board can be resurfaced without impacting the life of the machine.

Figure 5-3: Vacuum Table and Control Levers

5.7   Spoil Board Preparation

When you purchase your MDF spoil board it should be no thinner than ¾ inch. However, it is not recommended that your spoil board be thicker than one (1) inch.

The MDF that you purchase will not be perfectly flat. The SmartShop|2 Elite will be cutting to accuracy in the order of a few thousandths of an inch so the spoil board will need to be machined to ensure a flat surface. Over time, when the spoil board has been skimmed many times and has been reduced to ½ inch thick or less, discard it and start a new spoil board.

1. Cut your spoil board to the size of the bed of the machine.

2. Prior to placing the spoil board onto the vacuum table, verify the table is perfectly clean and free from sawdust and dirt. If there is sawdust etc. on the table, it will change the height of the spoil board and it will not be flat. It is strongly recommended that you do not wipe or brush the table clean.

3. Turn on the vacuum.

4. Fly cut the total surface of the spoil board. Only cut the minimum needed to achieve a flat surface over the entire board. Skim the surface several times during the life of the spoil board to clean it up and skim only the minimum off the surface.

5. Once the face is flat, remove the vacuum, turn the spoil board over, and repeat the process for the other face of the spoil board.

Spoil boards are porous and will absorb moisture. Over time, the absorption of moisture will change the dimensions of the board. Day-to-day changes are normally insignificant and will occur across the entire board evenly. However, if liquids are spilled on the board, it will be absorbed and cause the board to grow in the affected area. Do not allow the board to get wet. If an accident should happen, remove the board from the machine and allow it to dry. Drying may take several days. Meanwhile, use a new board. Once the wet board has completely dried it may be possible to recut and re-use. If the board cannot be cut flat, it should be scrapped.

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6.0   Operation

6.1   Turning on the SmartShop|2 Elite

Turn on the Main Disconnect switch. Turn the SWITCH ON/OFF key clockwise to power on the Control Display Screen. The system will boot to the MAIN SCREEN. The EZ PLUS button may be pressed at any time to return to the MAIN SCREEN.

6.2   Keypad and Hard Keys

The SmartShop|2 Elite keypad is composed of hard keys (i.e. keys with a function that cannot be changed. The keypad contains Text Editing, Display Mode, and Navigation keys.

6.2.1 Text Editing (ONG) Keys

The Text Editing, or ONG, keys are used to input data into the buffer.

EOB – Semicolon.

SHIFT – Use to access the letters and symbols in subscript.

CAN – Cancel or backspace.

INPUT – Copy the text from the input buffer to the control.

ALTER – Use to overwrite selected data.

INSERT – Use to insert data at the cursor.

DELETE – Clears data in the input buffer.

6.2.2 Display Modes and Navigation Keys

The Display Mode keys are used to change the information displayed on the Control Screen. The Navigation keys are used to navigate (up, down, left, right) fields on the Control Screen.

<u>**Display Modes**</u>

POS – Displays the current position. Soft keys functions are coordinate systems: Relative, Absolute, Machine, or Distance To Go.

PROG – Displays the active program.

OFS/SET – Press to store work offsets and tool length offsets.

SYSTEM – Displays the FANUC System background.

MESSAGE – Displays the alarm or operator message screen.

Navigation Keys

Arrow Keys – Used to navigate the fields on the Control Screen.

PAGE (Up) – Navigates to the top field.

PAGE (Down) – Navigates to the bottom field.

HELP – Displays details on the current alarm, operations methods, and a parameters table.

RESET - Stops the current program or operation and reverts the program to the initial power on state.

NOTE

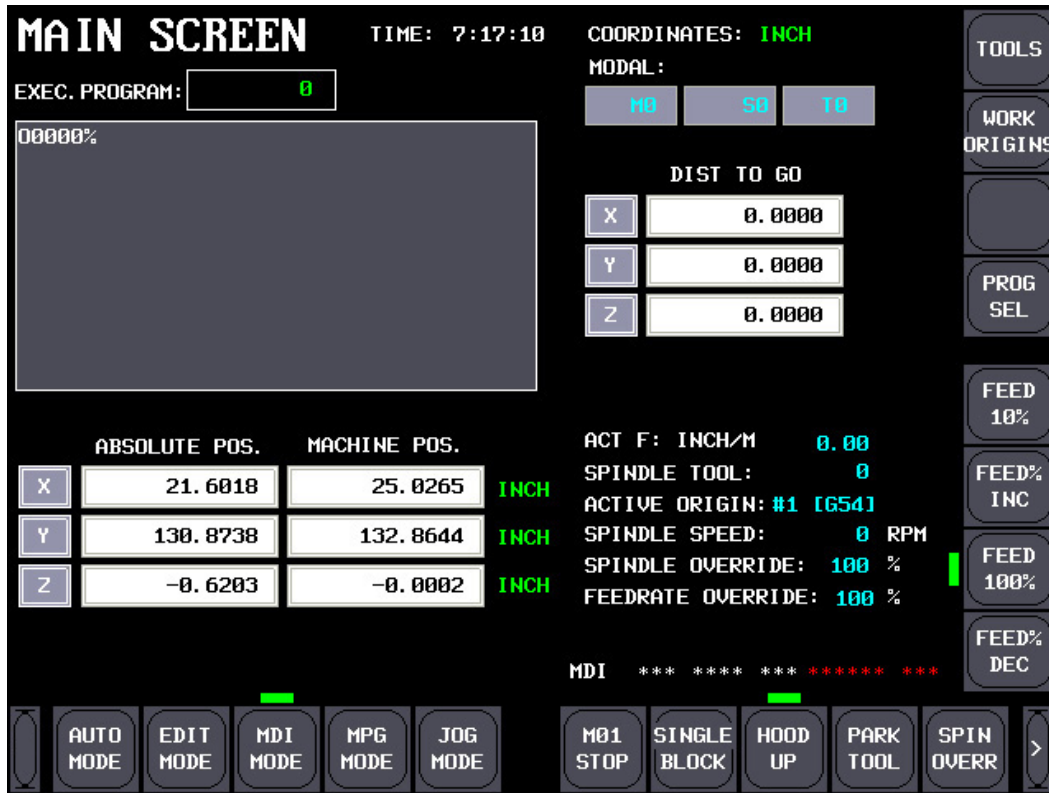*Do not press the RESET button during a tool change.*

6.3   Control Screens and Soft Keys

Press the soft key to the right of or beneath each label to activate the corresponding function.

⚠ CAUTION

Be aware the machine gantry and spindle will move when executing many of the Control Screen commands.

6.3.1 Main Screen

Screen Elements

EXEC. PROGRAM – The FANUC program number. The contents of the selected program are displayed in the box below the EXEC. PROGRAM.

TIME – The current time.

COORDINATES – Imperial or metric measuring system.

MODAL – Displays the (M0), Spindle Speed, and Tool Number.

DIST TO GO – Displays the distance remaining in a move operation.

ABSOLUTE POS. – The distance from the Home position including offsets.

MACHINE POS. – The distance from the Home position.

ACT F: INCH/M – Displays the feed-rate.

SPINDLE TOOL – Tool # currently loaded into the spindle.

ACTIVE ORIGN – Displays the currently active Origin.

SPINDLE SPEED – Current movement speed of the spindle.

SPINDLE OVERRIDE – Displays the Spindle Override rate.

FEEDRATE OVERRIDE – Displays the Feed-rate Override.

(MDI, JOG, etc) – This line displays the current mode.

Horizontal Soft Key Functions

AUTO MODE – Allows the operator to start the currently loaded program. Press the CYCLE START button to execute the program. Press FEED HOLD to halt the program.

EDIT MODE – Allows the operator to edit the program.

MDI MODE – Manual Data Input (MDI) allows the operator to manually enter and execute G-Code.

MPG MODE – Allows the operator to precisely move the spindle without modifying saved code. by spinning the MPG handwheel.

JOG MODE – Allows the operator to rapidly move the spindle using the jog interface.

M01 STOP – Enables an optional program stop if an M01 command is encountered in the program. Press CYCLE START to resume program operation. If M01 STOP is not selected, M01 commands are ignored during operation. This is often used for debugging G-Code, checking progress, or mid-operation adjustments.

SINGLE BLOCK – Causes the machine to pause after executing each of line of G-Code. To step through a program, press CYCLE START to execute each line of G-Code.

HOOD UP – Raises the dust hood.

PARK TOOL – Places the active tool into the ATC holder and leaves the spindle empty.

SPIN OVERR – Navigates to the SPINDLE screen.

> - Navigates to AUX SCREEN.

Vertical Soft Key Functions

TOOLS – Navigates to the TOOL SETTINGS screen.

WORK ORIGINS - Navigates to the WORK ORIGIN screen.

PROG SEL – Navigates to the PROGRAM SELECT screen.

FEED 10% - Sets the Feed-rate Override to 10%.

FEED% INC – Increases Feed-rate Override by 5%.

FEED 100% - Sets Feed-rate Override to 100%.

FEED% DEC – Decreases the Feed-rate Override by 5%.

6.3.2 Auxiliary Screen
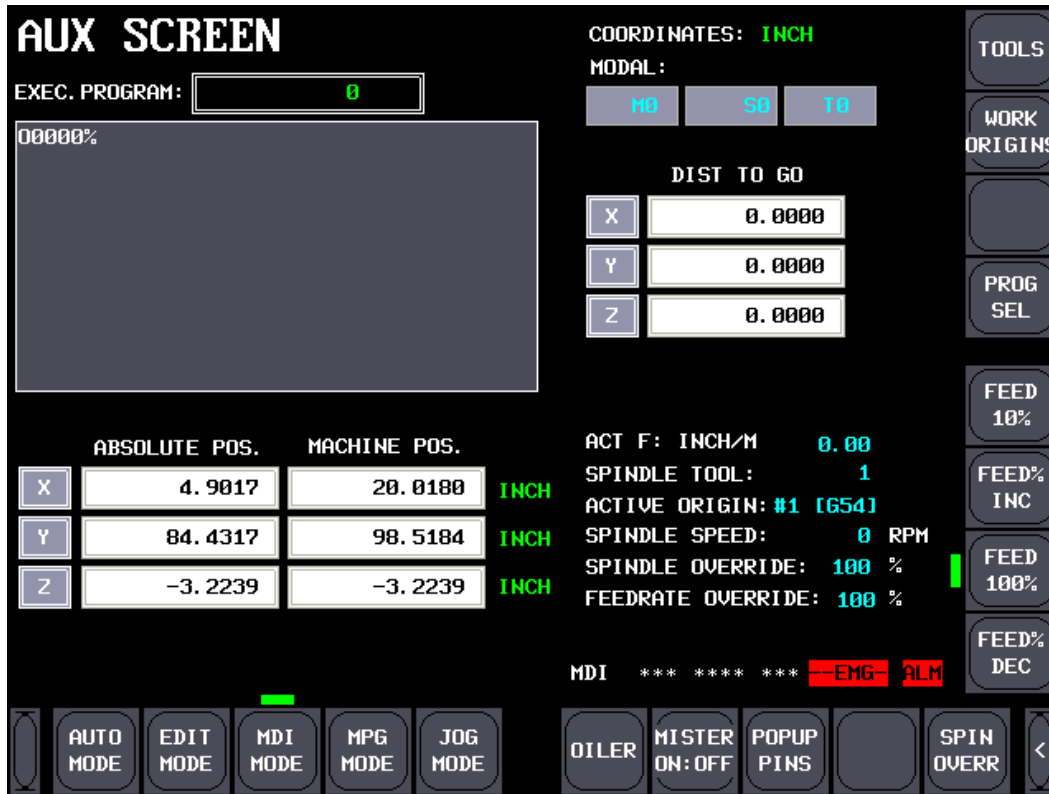
Horizontal Soft Key Functions

OILER – Activate the Automatic Oiler.

MISTER ON:OFF – Activate the optional machine mister add-on.

POPUP PINS – Raise or lower the popup pins.

> ⚠ **CAUTION**

Pins must be lowered before cutting.

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6.3.3 Tool Settings Screen
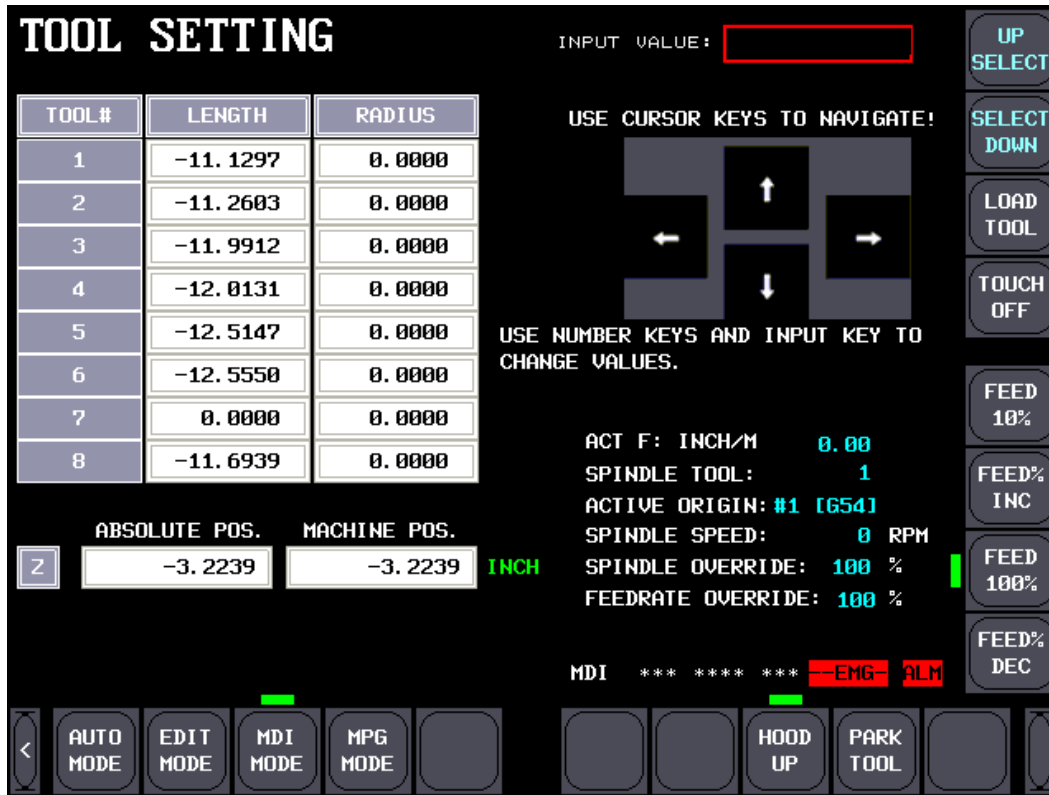
Screen Elements

TOOL# - The tool number

INPUT VALUE – Displays the input value for Tool Length or Radius.

Vertical Soft Key Functions

UP SELECT – Selects and highlights the Tool # by moving upward.

DOWN SELECT – Selects and highlights the Tool # by moving downward.

LOAD TOOL – Load the selected tool in the spindle.

TOUCH OFF – Execute Tool Touch Off for the selected tool.

HOOD UP – Raise the dust hood.

PARK TOOL – Return the active tool to the ATC.

Instructions to load a tool:

1. Highlight the tool using UP SELECT and SELECT DOWN.

2. Press LOAD TOOL.

3. The Tool # will be loaded into the spindle. If another tool is currently loaded, the system will return the tool to the rack and proceed to the selected tool. If the Tool # is already in the spindle, the machine will do nothing.

6.3.4 Work Origin Screen

Screen Elements

ORIGIN – The selected Origin point followed by the X, Y, and Z-Axis coordinates.

BUFFER – Displays input data.

SPOIL BOARD HEIGHT – Height of the spoil board in inches.

<ACTIVE – Indicates the currently active Origin point.

Vertical Soft Key Functions

UP SELECT – Move Origin selection up.

SELECT DOWN – Move Origin selection down.

TEACH ORIGIN – Save current X and Y-Axis coordinates to selected Origin value fields.

VERIFY ORIGIN – Display and verify the machine Origin. Gantry and spindle will move along X and Y-Axis to selected Origin coordinates.

⚠ CAUTION

Be aware the machine gantry and spindle will move when pressing the VERIFY ORIGIN command.

6.3.5 Program Select Screen

Screen Elements

The box on the left displays a list of programs. The box on the right displays the contents of the selected program.

DEVICE – Displays the program source.

Vertical Soft Key Functions

UP CURSOR – Move the selection up.

CURSOR DOWN – Move the selection down.

LOAD PROG – Load the selected program.

PLOT – Navigates to the PATH GRAPHIC screen.
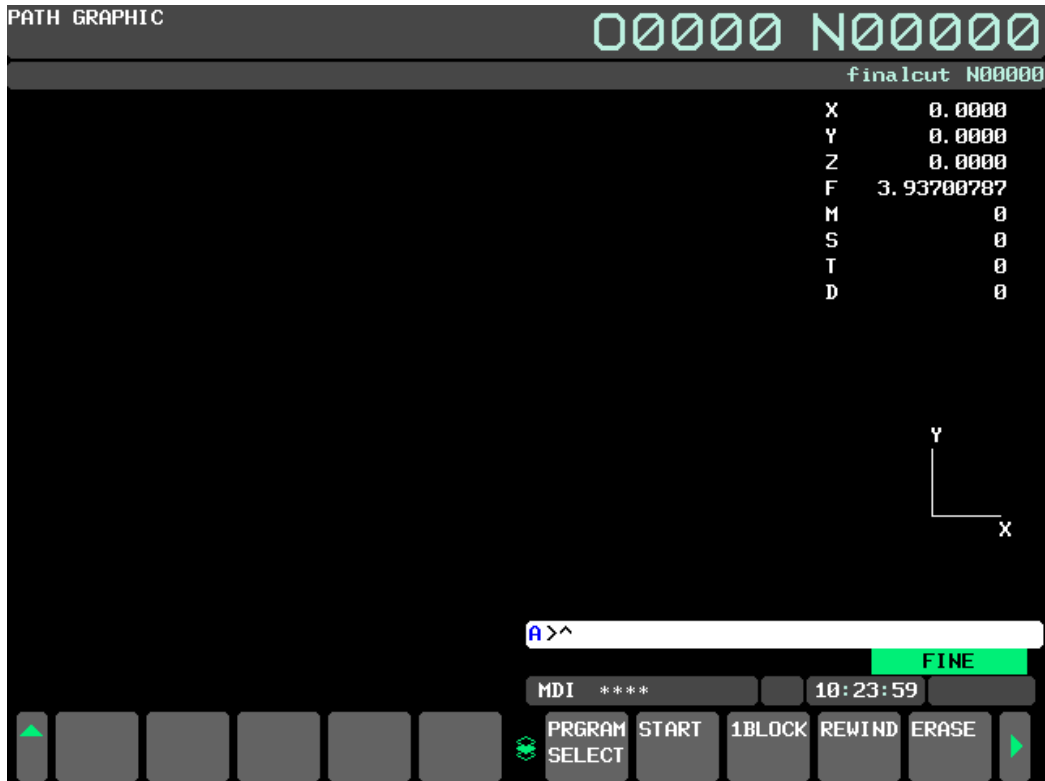
CUT STYLE – Sets the FINE SURFACE values.

```
FINE SURFACE SETTING                    00000 N00000
                        PATTERN SELECT

 PATTERN SWITCHING                 = FAST
                                   = STANDARD
                                   = FINE



       EFFECTIVE PATTERN IS SWITCHED.


                                   A>^
                                                    FINE
                                   MDI  **** *** ***   07:27:09
       ▲                              SELECT
```
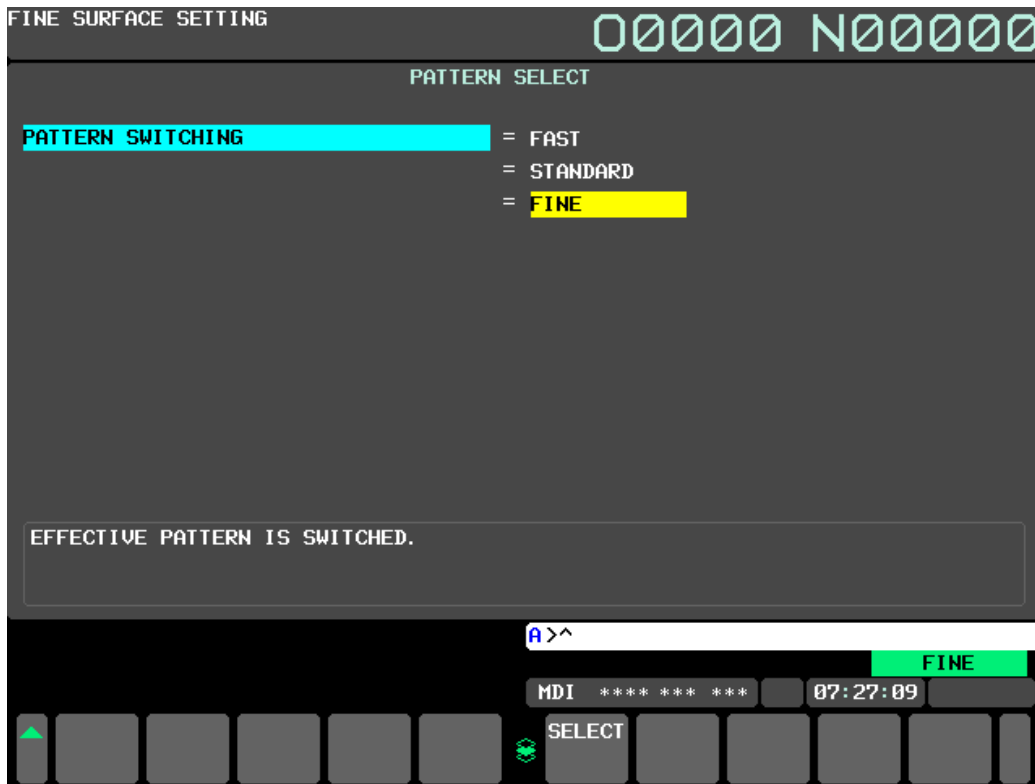
DEVICE – Opens the PROGRAM FOLDER screen.

```
PROGRAM FOLDER                          00000 N00000

 FOREGROUND FOLDER //CNC_MEM/USB_PRG/
 BACKGROUND FOLDER //CNC_MEM/
                USED PAGE        18[KBYTE]    USED FILES        27
                FREE PAGE      2128[KBYTE]    FREE FILES       984
 FOLDER: //CNC_MEM/USB_PRG/
     RETURN TO PARENT FOLDER            <FOLDER>






                                   A>^
                                   SELECT DEVICE TO DISPLAY    FINE
                                   MDI  ****            09:49:30
   ▲   CNC   CF_MEM  EMB                        USB            UNMOUN
       MEM           ETHER                                     T
```
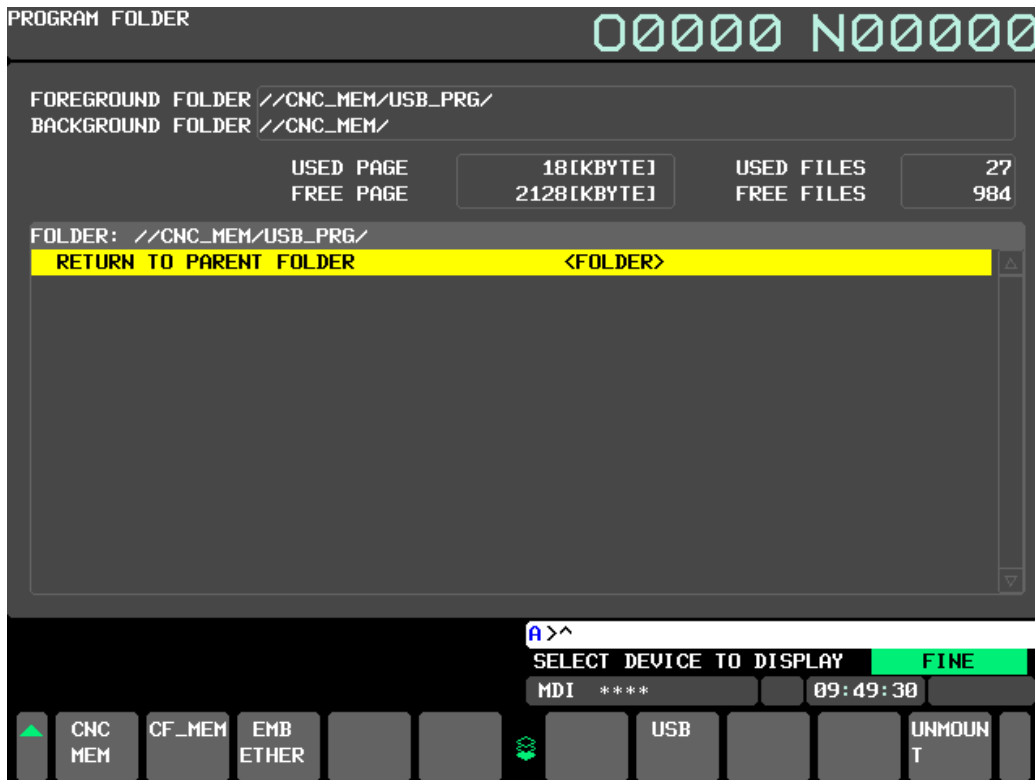
EDITOR - Opens the PROGRAM screen.

6.3.6 Spindle Screen
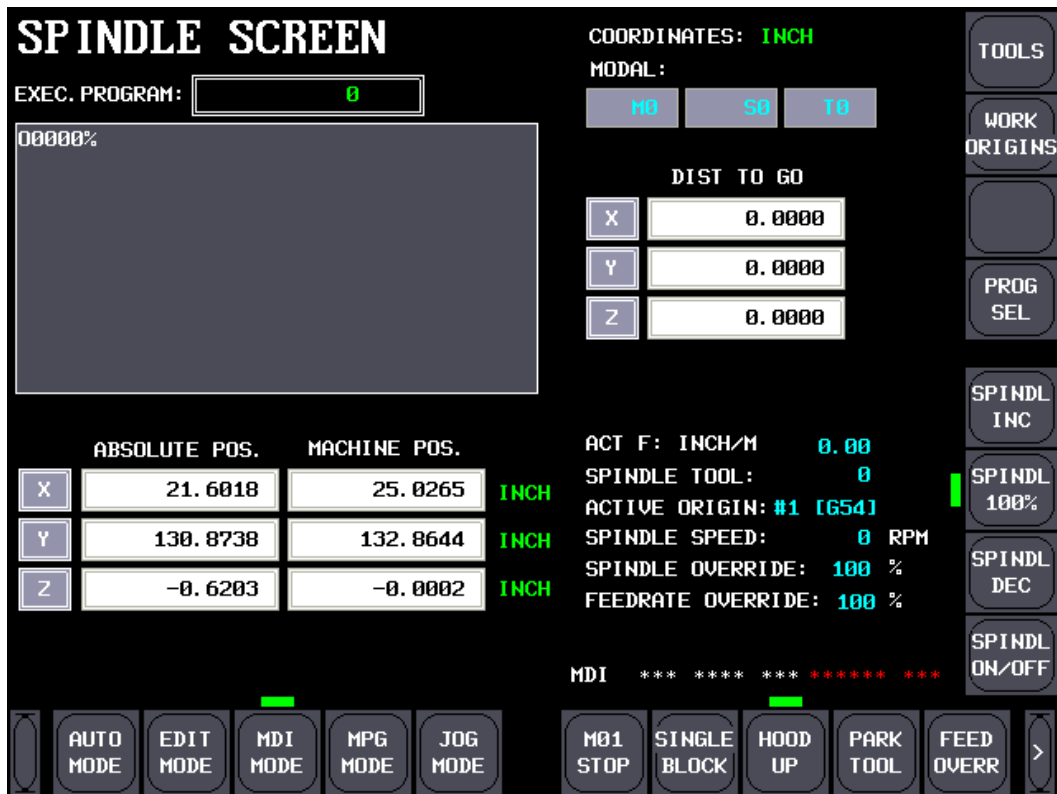
Vertical Soft Key Functions

SPINDL INC – Increase Spindle RPM by 10%.

SPINDL 100% - Increase Spindle RPM by 100%.

SPINDL DEC – Decrease Spindle RPM by 10%.

SPINDL ON/OFF – Turn the Spindle On/Off.

6.3.7 Jog Screen
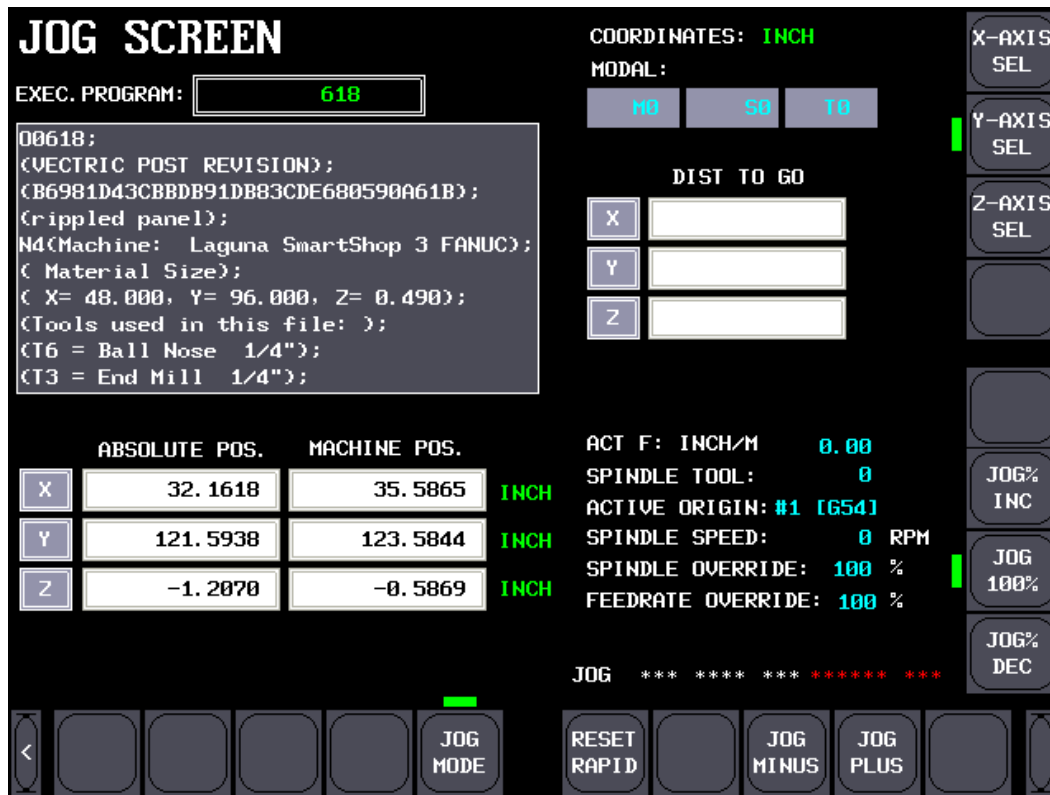
Vertical Soft Key Functions

X-AXIS SEL – Select the X-Axis.

Y-AXIS SEL – Select the Y-Axis.

Z-AXIS SEL – Select the Z-Axis.

JOG% INC – Increase the Jog speed by 5%.

JOG 100% - Increase Jog speed to 100%.

JOG% DEC – Decrease Jog speed by 5%.

JOG MINUS – Jog the selected axis in the negative direction.

JOG PLUS – Jog the selected axis in the positive direction.

X- moves the spindle left.

X+ moves the spindle right.

Y- moves the gantry to the front of the worktable.

Y+ moves the gantry to the rear of the worktable.

Z- moves the spindle down.

Z+ moves the spindle up.
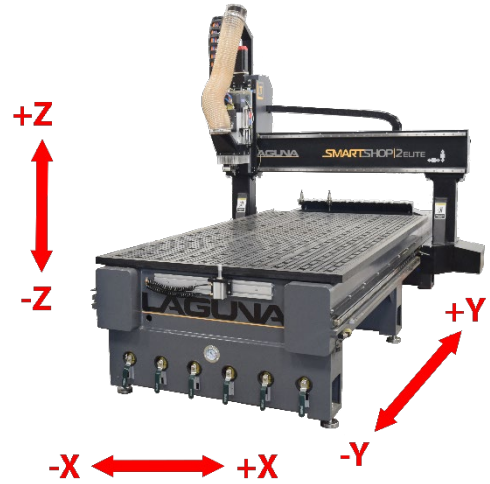
7.0   Maintenance and Troubleshooting

7.1   Cleaning the Helical Racks

The helical racks on the SmartShop|2 Elite may collect dust and debris which can interfere with the smooth operation of the gantry and spindle. Clean with a plastic brush following the angle of the grooves. Lubricate with a thin layer of lithium grease; gently wipe away excess.

7.2   Cleaning the Spindle Tray

The spindle tray will accumulate oil and may drip onto the worktable or project if not kept clean. To clean the tray, remove the four (4) Allen screws shown in Figure 7-# and wipe the tray clean.
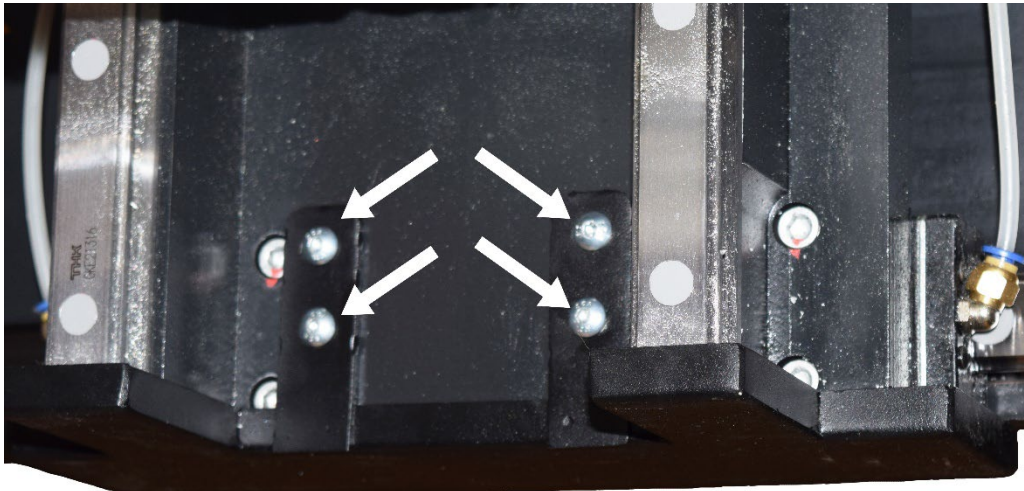
Figure 7-7: Allen Screws

Replace and tighten Allen nuts until snug; do not over-tighten.

7.3   Lubrication

The pneumatic system does not need any type of lubricant. Some types of lubricant can damage the machine and compromise its functionality.

7.4   Daily Maintenance Checks

1. Clean the machine and lubricate unpainted surfaces with a 30wt oil lubricant. Wipe off excess oil and buff the surface dry with a soft rag. Regular cleaning and lubrication will reduce the likelihood of rust forming on the machine.

2. Check the tool blades for chips and dullness.

3. Inspect the overall machine for damage and loose or worn parts.

4. Regularly clean the collets and spindle holes. Uncleaned spindle holes may affect cut quality and may pose a safety hazard if significantly dirty.

5. Clean the router bits.

6. Inspect the tool blades for chips and dullness.

7.5   Weekly Maintenance Checks

1. Inspect the overall machine for damage and loose or worn parts.

2. Check the dust extraction for blockages as large pieces could cause blockages.

3. Verify the electrical connectors are fitted tightly and correctly.

7.5.1 Diagnostic PMC Inputs Screens

The Programmable Machine Control Inputs and Outputs can be tested can accessing diagnostics from the SERVICE MODE Screen. A green address light verifies the input/output is +24 volts. A red light indicates the input/output is 0 volts.

DIAGNOSTIC PMC INPUTS 1 of 3

ADDRESS:	DESCRIPTION:	PIN:
X8.0	TTO (SKIP)	3
X8.1	TOOL GRIPPED	4
X8.2	TOOL RELEASED	5
X8.3	TOOL RELEASE SWITCH	6
X8.4	E-STOP	7
X8.5	CYCLE - START	8
X8.6	CYCLE - STOP	9
X8.7	SPINDLE STOPPED	10
X9.0	SPINDLE AT RPM	11
X9.1	DUST HOOD UP	12
X9.2	***	13
X9.3	***	14
X9.4	***	15
X9.5	***	16

STATUS:
OFF or 0
ON or 1

CONNECTOR:
CE75
TO
BRK2x25

PMC INPUTS
PMC OUTPUTS
PAGE UP
PAGE DOWN

I/O Card: A20B-2200-0471 (Type A)   Fuse 1 Amp.: A03B-0815-K001

DIAGNOSTIC PMC INPUTS 2 of 3

ADDRESS:	DESCRIPTION:	PIN:
X9.6	***	17
X9.7	***	18
X10.0	***	19
X10.1	X - HOME	20
X10.2	Y - HOME	21
X10.3	Y1 - HOME	22
X10.4	Z - HOME	23
X10.5	*SAFETY CURTAIN/MAT - FEEDHOLD	24
X10.6	*SPINDLE OVER TEMP ALARM	25
X10.7	*LOW PSI ALARM	26
X11.2	***	B1
X11.3	X10 - MPG	B2
X11.4	X100 - MPG	B3
X11.5	LAUNCH FP WITH PUSHBUTTON	B4

STATUS:
OFF or 0
ON or 1

CONNECTOR:
CE75
TO
BRK2x25

CONNECTOR:
CE76

PMC INPUTS
PMC OUTPUTS
PAGE UP
PAGE DOWN

I/O Card: A20B-2200-0471 (Type A)

```
DIAGNOSTIC PMC INPUTS 3 of 3
ADDRESS:          DESCRIPTION:              PIN:
 X12.2        X AXIS SELECT - MPG           A2
 X12.3        Y AXIS SELECT - MPG           A3
 X12.4        Z AXIS SELECT - MPG           A4
 X12.5        C AXIS SELECT - MPG           A5




        I/O Card: A20B-2200-0471 (Type A)
```

STATUS:
OFF or 0
ON or 1
CONNECTOR:
CE76

PMC INPUTS
PMC OUTPUTS
PAGE UP
PAGE DOWN

Vertical Soft Key Functions

PMC INPUTS – Opens the DIAGNOSTIC PMC INPUTS screen.

PMC OUPUTS – Opens the DIAGNOSTIC PMC OUTPUTS screen.

PAGE UP – Move the list up.

PAGE DOWN – Move the list down.

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7.5.2 Diagnostic PMC Outputs Screen

```
DIAGNOSTIC PMC OUTPUTS 1 of 2        STATUS:          PMC
                                                       INPUTS
ADDRESS:         DESCRIPTION:            PIN:    OFF or 0
                                                               PMC
  Y7.0  [                            ]    31     ON or 1      OUTPUTS
  Y7.1  [     SPINDLE REVERSE        ]    32    CONNECTOR:
  Y7.2  [   TOOL GRIPPER SOLENOID    ]    33      CE75
  Y7.3  [   DUSTHOOD UP SOLENOID     ]    34        TO
  Y7.4  [        POP-UP PINS         ]    35     BRK2x25
  Y7.5  [      OIL PUMP ON/OFF       ]    36
  Y7.6  [      MISTER SOLENOID       ]    37
  Y7.7  [       Z-AXIS BRAKE         ]    38                  PAGE
                                                              UP

                                                              PAGE
                                                              DOWN




        I/O Card: A20B-2200-0471 (Type A)
```
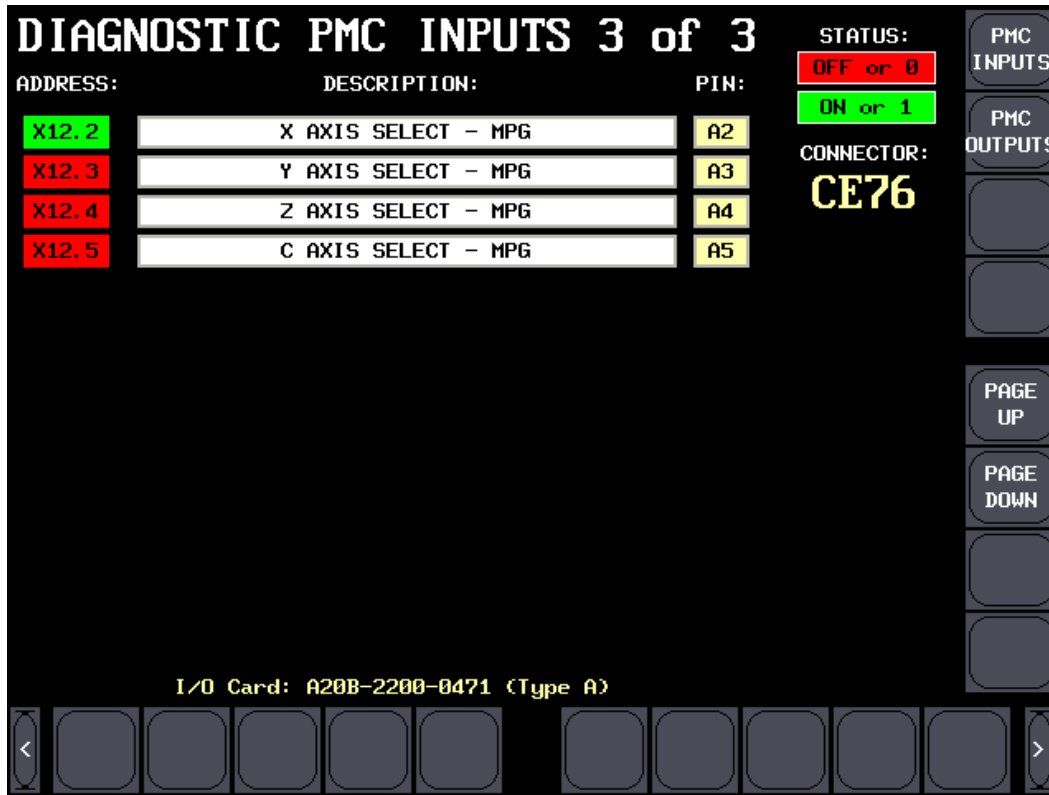
```
DIAGNOSTIC PMC INPUTS 2 of 3         STATUS:          PMC
                                                       INPUTS
ADDRESS:         DESCRIPTION:            PIN:    OFF or 0
                                                               PMC
  X9.6  [             ***            ]    17     ON or 1      OUTPUTS
  X9.7  [             ***            ]    18    CONNECTOR:
 X10.0  [             ***            ]    19      CE75
 X10.1  [          X - HOME          ]    20        TO
 X10.2  [          Y - HOME          ]    21     BRK2x25
 X10.3  [          Y1 - HOME         ]    22
 X10.4  [          Z - HOME          ]    23
 X10.5  [ *SAFETY CURTAIN/MAT - FEEDHOLD ] 24                 PAGE
 X10.6  [  *SPINDLE OVER TEMP ALARM  ]    25                  UP
 X10.7  [      *LOW PSI ALARM        ]    26                  PAGE
 X11.2  [             ***            ]    B1                  DOWN
 X11.3  [         X10 - MPG          ]    B2
 X11.4  [         X100 - MPG         ]    B3    CONNECTOR:
 X11.5  [  LAUNCH FP WITH PUSHBUTTON ]    B4      CE76

        I/O Card: A20B-2200-0471 (Type A)
```

PMC INPUTS – Opens the DIAGNOSTIC PMC INPUTS screen.

PMC OUPUTS – Opens the DIAGNOSTIC PMC OUTPUTS screen.

PAGE UP – Move the list up.

PAGE DOWN – Move the list down.

8.0 Warranties

Dealer Machinery Warranty

New woodworking machines sold by Laguna Tools carry a two-year warranty effective from the date of dealer invoice to customer/end-user. Machines sold through dealers must be registered with Laguna Tools within thirty (30) days of purchase to be covered by this warranty. Laguna Tools guarantees all new machines sold to be free of manufacturers' defective workmanship, parts, and materials. We will repair or replace, without charge, any parts determined by Laguna Tools, Inc. to be a manufacturer's defect. We require that the defective item/part be returned to Laguna Tools with the complaint. The end-user must request a Return Material Authorization (RMA) number from Customer Service. Include the RMA number with any and all returned parts/components requesting warranty coverage*. Any machines returned to Laguna Tools must be returned with packaging in the same manner in which it was received. A part or blade is being returned must have adequate packaging to ensure it is not damaged during shipping. In the event the item/part is determined to be damaged due to lack of maintenance, cleaning, or misuse/abuse, the customer will be responsible for the cost to replace the item/part, plus all related shipping charges. This limited warranty does not apply to natural disasters, acts of terrorism, normal wear and tear, product failure due to lack of maintenance or cleaning, damage caused by accident, neglect, lack of or inadequate dust collection, misuse/abuse or damage caused where repair or alterations have been made or attempted by others.

* The issue of an RMA number is for reference only; it DOES NOT indicate acceptance of the warranty claim.

CNC Limited Warranty

New CNC machines sold by Laguna Tools carry a one-year warranty effective from the date of shipping. Laguna Tools guarantees all new machines sold to be free of manufacturers' defective workmanship, parts, and materials. We will repair or replace, without charge, any parts determined by Laguna Tools, Inc. to be a manufacturer's defect. If the defective item/part is determined to be damaged due to lack of maintenance, cleaning or misuse/abuse, the customer will be responsible for the cost to replace the item/part, plus all related shipping charges. This limited warranty does not apply to natural disasters, acts of terrorism, normal wear and tear, product failure due to lack of maintenance or cleaning, damage caused by accident, neglect, lack of or inadequate dust collection, misuse/abuse or damage caused where repair or alterations have been made or attempted by others.

Laguna Tools, Inc. is not responsible for additional tools or modifications sold or performed (other than from/by Laguna Tools, Inc.) on any Laguna Tools, Inc. woodworking machine. Warranty may be voided upon the addition of such described tools and/or modifications, determined on a case-by-case basis. Software purchased through Laguna Tools, Inc., is not covered under this warranty and all technical support must be managed through the software provider. Normal user alignment, adjustment, tuning, and machine settings are not covered by this warranty. It is the responsibility of the user to understand basic woodworking machinery settings and procedures and to properly maintain the equipment in accordance with the standards provided by the manufacturer.

Parts under warranty are shipped at Laguna Tools, Inc.'s cost either by common carrier, FEDEX ground service, or a similar method. Technical support to install replacement parts is primarily provided by phone, fax, e-mail or Laguna Tools Customer Support Website. The labor required to install replacement parts is the responsibility of the user. Laguna Tools is not responsible for damage or loss caused by a freight company or other circumstances not in our control. All claims for loss or damaged goods must be notified to Laguna Tools within twenty-four (24) hours of delivery.

Please contact our Customer Service Department for more information. Only NEW machines sold to the original owner are covered by this warranty.

For warranty repair information, call 1-800-332-4094.

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No Modifications Allowed or Sold

Laguna Tools, Inc. is not responsible for additional tools or modifications sold or performed (other than from/by Laguna Tools, Inc.) on any Laguna Tools, Inc. woodworking machine. Warranty may be voided upon the addition of such described tools and/or modifications, determined on a case-by-case basis. Normal user alignment, adjustment, tuning, and machine settings are not covered by this warranty. It is the responsibility of the user to understand basic woodworking machinery settings and procedures and to properly maintain the equipment in accordance with the standards provided by the manufacturer. Parts, under warranty, are shipped at Laguna Tools, Inc.'s cost either by common carrier, FEDEX ground service or a similar method. Technical support to install replacement parts is primarily provided by phone, fax, e-mail, or Laguna Tools Customer Support Website. The labor required to install replacement parts is the responsibility of the user. Laguna Tools is not responsible for damage or loss caused by a freight company or other circumstances not in our control. All claims for loss or damaged goods must be notified to Laguna Tools within twenty-four (24) hours of delivery. Please contact our Customer Service Department for more information. Only new machines sold to the original owner are covered by this warranty.

For warranty repair information call 1-800-332-4094.

Laguna Tools Warranty

WARRANTY & REGISTRATION

THANK YOU!

Welcome to the Laguna Tools® group of discriminating woodworkers. We understand that you have a choice of where to purchase your machines and appreciate the confidence you have in the Laguna Tools® brand.

Through hands-on experience, Laguna Tools® is constantly working hard to make innovative, precision products. Products that inspire you to create works of art, are a joy to operate, and encourage your best work.

Laguna Tools®
Imagination, Innovation, and Invention at Work

WARRANTY & REGISTRATION

Every product sold is warranted to be free of manufacturers' defective workmanship, parts, and materials. For any questions about this product, the intended use or what it was designed for, customer service, or replacement parts, please contact our customer service department:

Laguna Tools® Customer Service
2072 Alton Parkway, Irvine, California 92606, USA
1-800-332-4049
customerservice@lagunatools.com
www.lagunatools.com/why/customer-service/
8AM. to 5PM PST, Monday through Friday

For warranty claims or to report damage upon receiving – please reach out to our warranty department:

Laguna Tools® Warranty Service
2072 Alton Parkway, Irvine, California 92606, USA
1-949-474-1200
customerservice@lagunatools.com
www.lagunatools.com/rpolicies/warranty
8AM to 5PM PST, Monday through Friday

REGISTRATION

To prevent voiding this warranty, all products sold must be registered within thirty (30) days of receiving the product. Registering the product will enable the original purchaser to receive notifications about important product changes, receive customer service, and be able to file a warranty claim against defective workmanship, parts, or materials.

REGISTER HERE!

https://lagunatools.com/policies/warranty/

WHO IS COVERED

The applicable warranty covers only the initial purchaser of the product from the date of receiving the product. To file such claims, the original purchaser must present the original receipt as proof of purchase.

WHAT IS COVERED

The warranty covers any defects in the workmanship of all parts and materials that make up the machine unless otherwise specified. Any part, determined by Laguna Tools®, to have a defect will be repaired or replaced (and shipped), without charge. The defective item/part must be returned to Laguna Tools® with the complaint and proof of purchase in the original packaging that it was received in. In the event the item/part is determined to be not covered by this warranty, the customer will be responsible for the cost to replace the item/part and all related shipping charges.

WARRANTY LIMITATIONS

This limited warranty does not apply to natural disasters, acts of terrorism, normal wear and tear, product failure due to lack of maintenance or cleaning, damage caused by accident, neglect, or lack-of inadequate dust collection. The warranty may be voided against proof of misuse/abuse, damage caused where repair or alterations have been made or attempted by others, using the product for purposes other than those described as intended use (unless with consent by Laguna Tools®), modification to the product, or use with an accessory that was not designed for the product. It is the responsibility of the user to understand basic woodworking machinery settings and procedures and to properly maintain the equipment in accordance with the standards provided in this manual.

LENGTH OF WARRANTY

All new machines and optional accessories sold through an authorized dealer carry a two-year warranty effective the date of receiving the product. Machines sold for either commercial or industrial use have a one-year warranty. Wearable parts like throat plates, bandsaw guides, etc., have a ninety-day warranty.

Table A-1 Warranty Lengths

2 Year – New Machines Sold Through an Authorized Dealer
2 Year – Accessories Sold as Machine Options (excluding blades)
1 Year – Machines Sold for Commercial or Industrial Use
1 Year – Blades and Accessories outside of Machine Options
90 Days – Wearable Parts

Aside from being free of defects upon receiving, consumable parts, like cutters and abrasives, are not covered by this warranty unless otherwise stated by Laguna Tools®. These parts are designed to be used at the expense of the operator and are available for replacement or inventory purchase. The determination of a consumable part will be made on a case-by-case basis by Laguna Tools®.

SHIPPING DAMAGE

Laguna Tools® is not responsible for damage or loss caused by a freight company or other circumstances not in the direct control of Laguna Tools®. All shipping-related claims for loss or damage goods must be made to Laguna Tools within twenty-four hours of delivery.

HOW TO RECEIVE SUPPORT

To file a warranty-claim please contact the warranty department at 1-949-474-1200. To receive customer service or technical support please contact the customer service department at 1-800-332-4094. Parts, under warranty, are shipped at the expense of Laguna Tools® either by common carrier, FedEx ground services or similar method. Technical support to install replacement parts is primarily provided by phone, fax, email, or the Laguna Tools Customer Support Website.

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