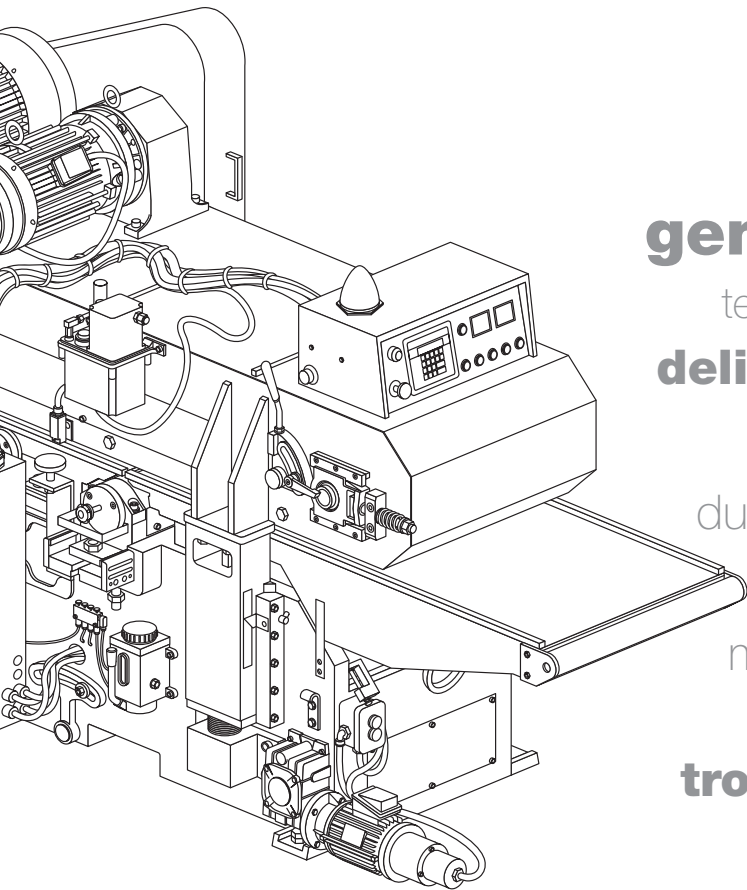


Ironwood DSP2500

User Manual




general information. features,
technical specifications, safety considerations,
delivery and installation. inspection,
pre-operation cleaning, **assembly.**
dust port connections, **safety.**
operation and adjustments.
machine controls, **maintenance.**
adjust clearance on guideways,
troubleshooting. digital controller unit.

IRONWOOD

stiles

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 **PLEASE REVIEW AND OBSERVE ALL SAFETY INFORMATION / DIRECTIVES BEFORE INSTALLING, OPERATING, OR PERFORMING MAINTENANCE ON THIS MACHINERY.**

1.0 General Information

1.1 Thank You!

Thank you for your purchase of the Ironwood DSP2500 double surface planer. At Stiles Machinery, our goal is to ensure that you are fully satisfied with your purchase. This manual is provided so that you may properly assemble, operate, and maintain your DSP2500. Should you need help, our team of dedicated service personnel are available to answer your questions and provide any resource recommendations you may need.

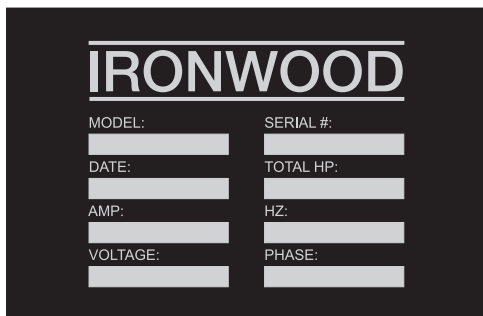
Warranty and Support

All Ironwood machines are designed to meet the exacting standards demanded by craftsmen like you. Ironwood machines include a one (1) year parts warranty and two (2) years of free 24/7 technical support beginning at date of shipment. Standard technical support remains in effect for free for the lifetime of the machine thereafter. Warranty service work is not covered by manufacturer's warranty. Stiles' service team is available for an additional charge.

1.2 Before Contacting Stiles

Please have your machine model and serial number available when contacting Stiles Machinery with questions. The machine's model and serial number are listed on the metallic plate located on the machine's frame.

Information regarding the electrical system is also listed on the metallic plate.



Machine information plate

Stiles Technical Support
616.698.6615

Stiles Parts
800.PARTS.80 (800.727.8780)

Website
www.stilesmachinery.com/ironwood/dsp-2500

Machine Model _____

Machine Serial Number _____

1.3 Features

Insert latest drawing with call-outs for features:

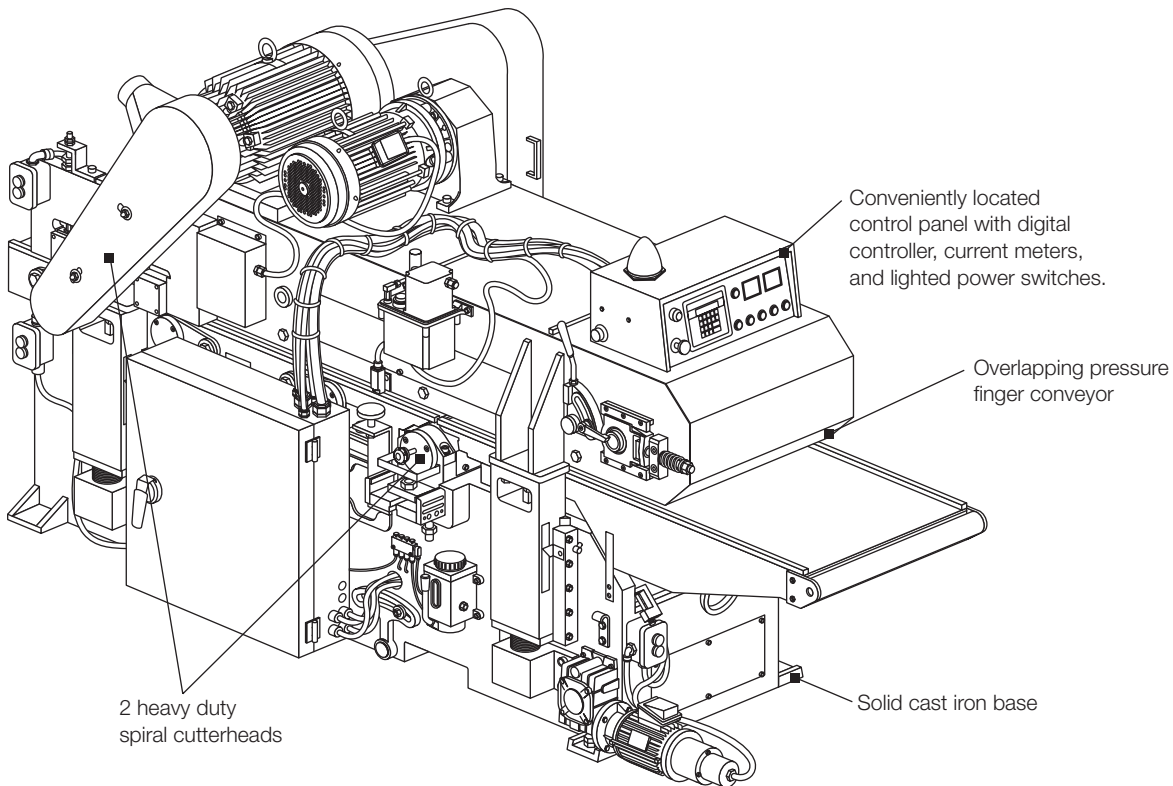
- Overlapped pressure-finger conveyor secures workpieces firmly and uniformly to maintain straightness and prevent movement
- 2 heavy-duty spiral cutterheads have six rows of 16 carbide inserts, providing high chip-rate removal rate, superior surface finishing, and reduced noise levels
- Innovative micro-switch enables quick thickness settings
- ½-hp motor raises and lowers table
- 5 hp feed motor has variable speed control (23-65 fpm)
- Heavy-duty 25 hp upper cutterhead motor and 20 hp lower cutterhead motor
- Digital controller has keypad entry for table positioning
- Powered elevation of feed mechanism allows quick, easy set-ups.
- Control panel is equipped with digital thickness readout, LED display (inch/mm), current meters, and lighted power switches for controls.

1.4 Intended Use

The Ironwood DSP2500 double-surface planer is designed and manufactured for planing two sides of a workpiece in a single operation. The lower cutterhead flattens the workpiece and the upper cutterhead planes the workpiece to the desired thickness for fast and effective planing results.

The workpiece is fed into the machine by a pressure-finger conveyor that holds the workpiece firmly for heavy-duty cutting applications. The feed speed is variable to meet a wide range of workpiece material requirements.

With hardened chrome-plated and precision ground tables, the DSP2500 ensures smooth feeding motion, quiet operation, and maximum wear resistance.



1.5 Technical Specifications

Description	Ironwood DSP2500
Max Working Width	25" (635mm)
Max Working Thickness	8" (203mm)
Min Working Thickness	9/16" (9.5mm)
Min Length of Cut	12 1/2" (317mm)
Upper Cutterhead Motor	25 hp
Lower Cutterhead Motor	20 hp
Feeding Cutterhead Motor	5 hp
Table Rise/Fall Motor	1/2 hp
Variable Feed Speed	26-78 fpm (8-24 m/min)
Cutterhead Speed	5,000 rpm
Cutterhead Diameter	5" (126mm)
Cutter Knives per Head	96
Max Stock Removal	1/2" (14mm) total / 1/4" (7mm) per head
Table adjustment – Lower cutterhead	Manual via handwheel
Table adjustment – upper cutterhead	Motorized via keypad controller
Table position display	Digital
Electrical	230v / 460v (3 phase)
Amperage	125 amps @ 230v / 62.5 amps @ 460v
Dust Port Diameter	2 ports, 6" each (150mm)
Dust Extraction Requirements	1,600 cfm @ 4,500 feet/min
Machine Dimensions (W x L x H)	105" x 45" x 68" (2667mm x 1145mm x 1725mm)
Gross Weight	7000 lbs (3175 kg)

1.6 Safety Considerations

For your safety, read these instructions thoroughly before you install and operate this machine. Always have these instructions available at the machine for reference.

Observe all codes and regulations that apply to the installation and operation of this machine.

Keep visitors at a safe distance from the workspace.

Keep children away from this and all machines. Childproof your work area!

Familiarize yourself with the safety notices used in this manual.

CAUTION

If cautions are ignored, personal injury and/or machine damage may result.

WARNING

If warnings are ignored, serious injury or death may result.

Warning Labels

This machine has warning labels attached to ensure safe operation. These warning labels are very important and should be kept clean and never removed. If warning labels become damaged or lost, contact Stiles Machinery immediately for replacements.

Label 1: Keep work table clean

Label 2: Conveyor will stop if oil is too low

Label 3: Warning lamp: feeding system overload

Label 4: Feed speed adjustment

Label 5: Wear ear protection

Label 6: Keep rollers clean

Label 7: Do not adjust this device

Label 8: Hazardous voltage

Label 9: Keep hands away from cutterhead and knives

Label 10: Keep hands away from rollers

Label 11: Pressure adjustment for feed conveyor

Label 12: Greasing the shaft

WARNING

Never use the DSP2500 for purposes other than its intended use. Do not modify or remove any guards or other safety features. Improper use or modifications may affect your warranty or result in serious injury or death.

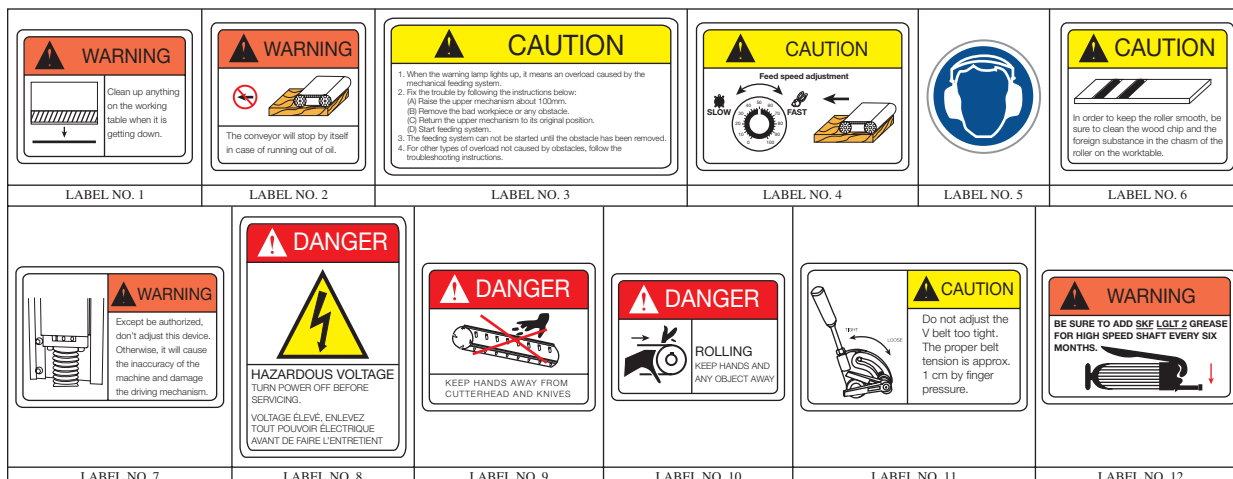
Training

This machine is intended for use by authorized, well-trained operators only.

Do not operate until you have a complete working knowledge of the machine and have been properly trained for its safe operation, correct adjustment, and use. All operators should thoroughly read and understand this manual and the workings of this machine prior to operation.

It is essential that all operators be aware of the following:

- The dangers associated with the operation of this machine.
- The use of personal protective equipment for ear and eye protection.
- The proper positioning of the operator and operator's hands relative to the cutterheads.
- The principles of machine operation.
- The safe handling of the workpiece when planing.
- The safe stacking of the workpiece before and after planing.



2.0 Facility Preparation

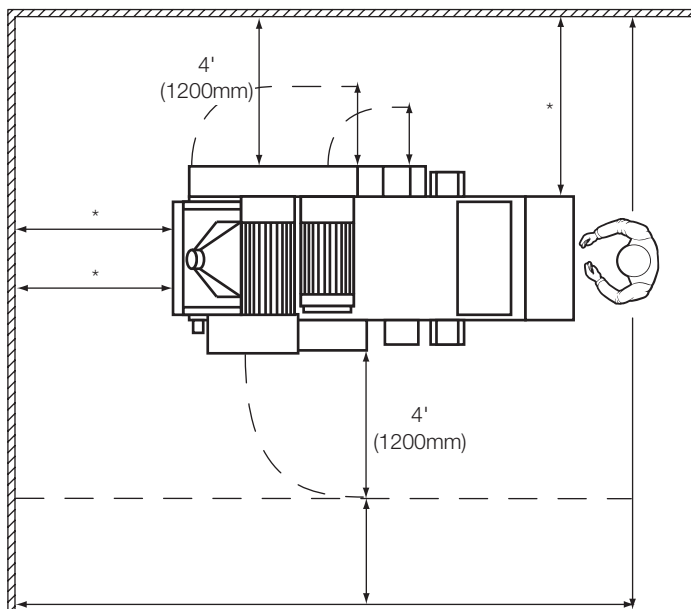
Prior to uncrating your machine confirm that your location can accommodate the Ironwood DSP2500. Follow these guidelines:

2.1 Floor

- The floor must be flat and level.
- Although no special foundations are required, a concrete floor is recommended.
- All floors must have a load-bearing strength suitable for the machine weight of approximately 7,000 pounds (3,175 kg).
- The machine need not be anchored to the floor. However, if you decide to do so, purchase high quality anchor bolts appropriate to the floor construction and material.

2.2 Work Space

- Provide adequate work space surrounding the machine.
- Provide proper non-glare, overhead lighting.
- Place the machine so that any potential kickback area is not in line with aisles, doorways, or other work and traffic areas.
- Provide adequate dust extraction system.
The dust extraction system should have a flow rate with a speed of 4,500 feet per minute at 1,600 cfm.



Machine clearance requirements*

*Actual clearance requirements may vary depending on length of material to be cut.

2.3 Power

⚠ WARNING

A licensed electrician must connect the DSP2500 to the building power source.

- Do not use extension cords.
- Be sure that the electrical current of the power source is of the same characteristics as the electrical system supplied with your machine. If other machine voltage capabilities are required, contact Stiles Machinery.

	DSP2500
Upper cutterhead motor	25 hp
Lower cutterhead motor	20 hp
Feeding cutterhead motor	5 hp
Table rise/fall motor	½ hp
Total required amperage	125 amps @ 230v / 62.5 amps @ 460v

- Ensure the machine is protected with an external over-current protective device per your local electrical codes.
- Electrical equipment operating conditions:
Air temperatures between +41°F (+5°C) and +113°F (+45°C).
Relative humidity not to exceed 50% at a maximum temperature of +113°F (+45°C).
- Electrical equipment is designed and protected to withstand the effects of transportation and storage temperatures within a range of -13°F (-25°C) to +131°F (+55°C), and for short periods of time not exceeding 24 hours at up to +158°F (+70°C).
- Ensure connection to factory ground system is wired correctly (IAW local electrical codes and NEC) and not connected to any electro magnetic interference source such as welders.

3.0 Delivery and Installation

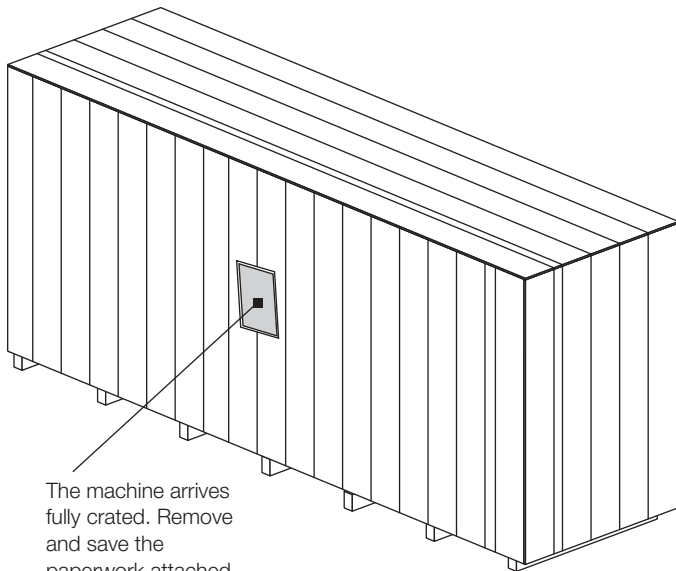
3.1 Receiving Your Machine

You will be contacted to arrange delivery. Your machine will be delivered by truck to your location. If there is no loading dock, be sure that you have informed the carrier in advance so that they deliver using a truck with a lift gate to lower the machine to ground level.

Before accepting the machine and signing the bill of lading from the carrier, please inspect crating and machine condition, note potential damage on the bill of lading, take pictures of potential damage, and contact Stiles Machinery immediately at 616.698.7500 and ask to speak with the traffic department.

The machine will arrive fully crated and secured to a pallet. Use a fork lift or crane to move the machine on its pallet as close to its final position as possible.

If you do not intend to install the machine immediately after delivery, store it in a protected, cool, and dry location.



The machine arrives fully crated. Remove and save the paperwork attached to crate.

3.2 Unpack the Machine

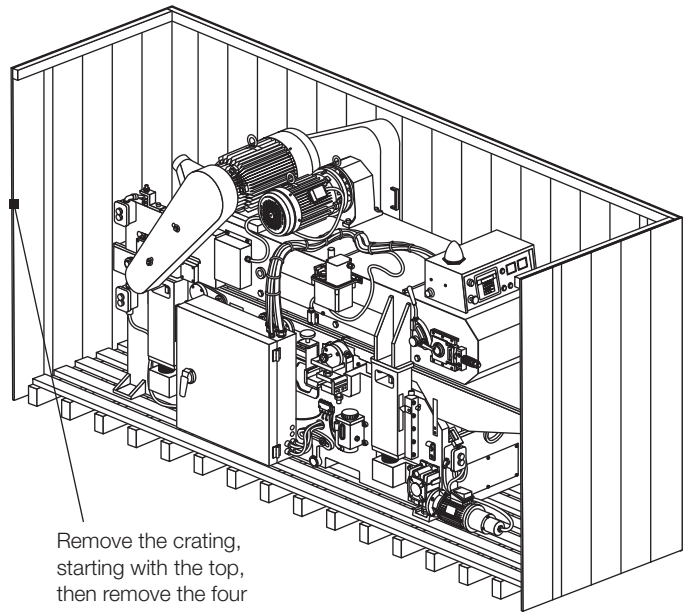
TOOLS REQUIRED:

- Hammer
- Crowbar

Unpack as follows:

Do not remove the machine from the pallet.

1. Remove and save all paperwork attached to the outside of the crate.
2. Remove the crating, starting with the top, then remove the four sides. Use caution to avoid personal injury and prevent damage to the machine's finish.
3. Remove the protective plastic from the machine, starting at the bottom.



Remove the crating, starting with the top, then remove the four sides.

Do not remove the machine from the pallet while uncrating.

4. Remove the hardware, accessories, and tool kit that are shipped with the machine. If additional accessories are ordered, they are delivered separately.

3.3 Inspection

Save all containers and packing materials until you are satisfied that your machine has arrived in good condition. If you discover the machine is damaged after you've signed for delivery, immediately call Stiles Customer Service at 616.698.7500.

When you are completely satisfied with the condition of your equipment, you should inventory its parts.

Open and check the contents of all containers to ensure all tools, hardware, and accessories are included. The tool kit should contain the following items:

1. Adjustable wrench
2. Open end wrench set (12mm/4mm and 19mm/21mm)
3. Allen wrench set
4. 4 leveling pads
5. 3 leveling bolts and nuts (a fourth bolt is preinstalled)
6. 5 T-handle wrenches (5mm)
7. 5 knife jibs
8. 10 carbide insert knives
9. Gauge block for setting table rollers
10. Paint brush
11. Oil can
12. Touch-up paint (2-color set)
13. User manual

3.4 Move Machine to Final Position

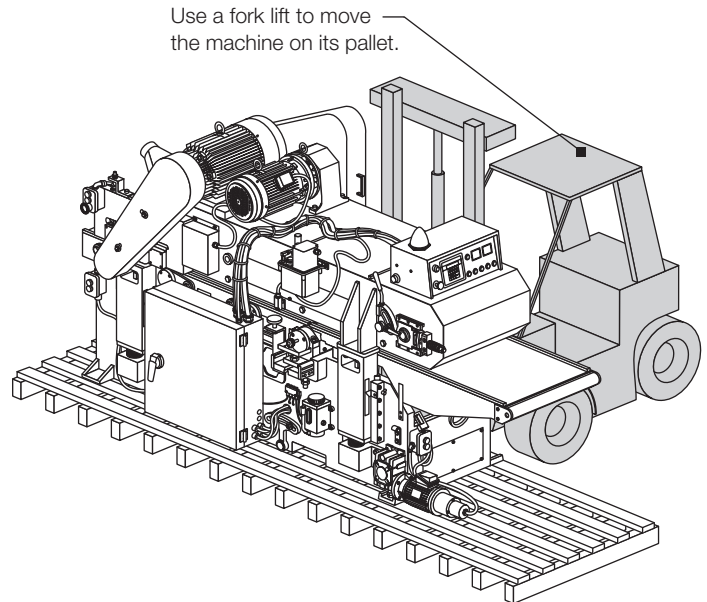
Be sure the site is properly prepared. Refer to section 2.0 for details.

Be sure the cabinet door is closed and locked before transporting.

TOOLS REQUIRED:

- Fork lift or crane

Use a fork lift or crane to move the machine on its pallet to its final location.



If using a fork lift, insert forks through the slots at the machine bottom. Make sure fork travel is clear of any obstacles or wiring.

3.5 Remove Machine from Pallet

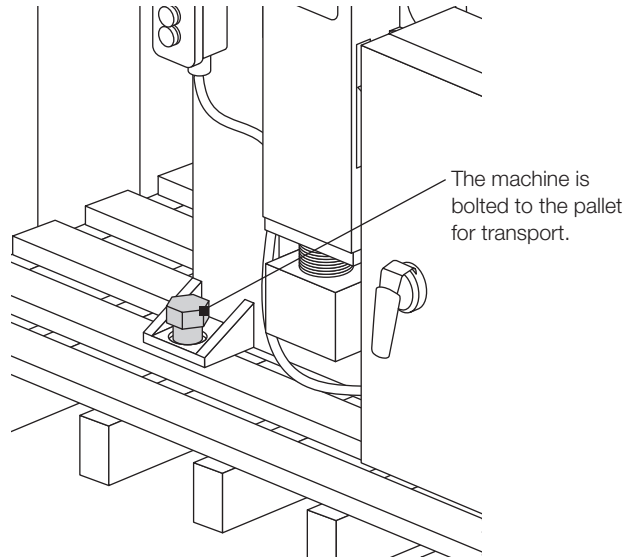
⚠ CAUTION

The DSP2500 weighs approximately 7,000 lbs (3,175 kg). For this procedure, we recommend using a fork lift or crane.

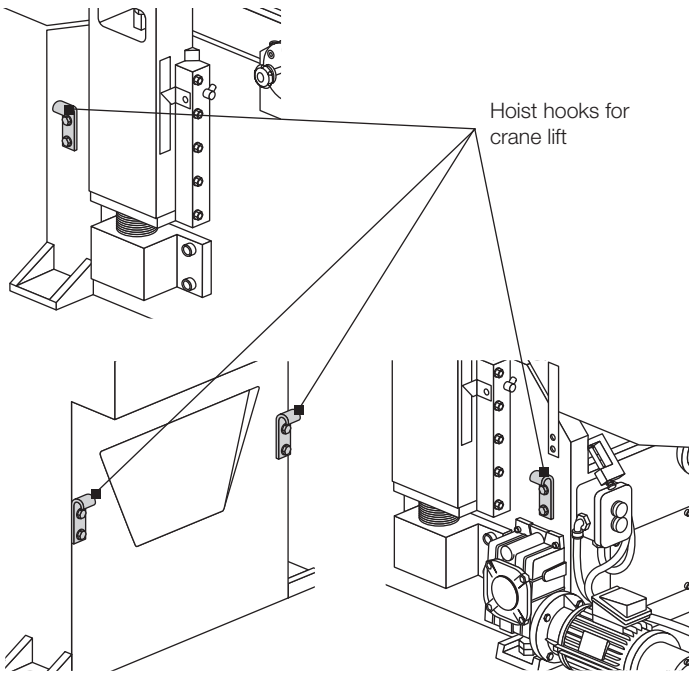
TOOLS REQUIRED:

- Adjustable wrench

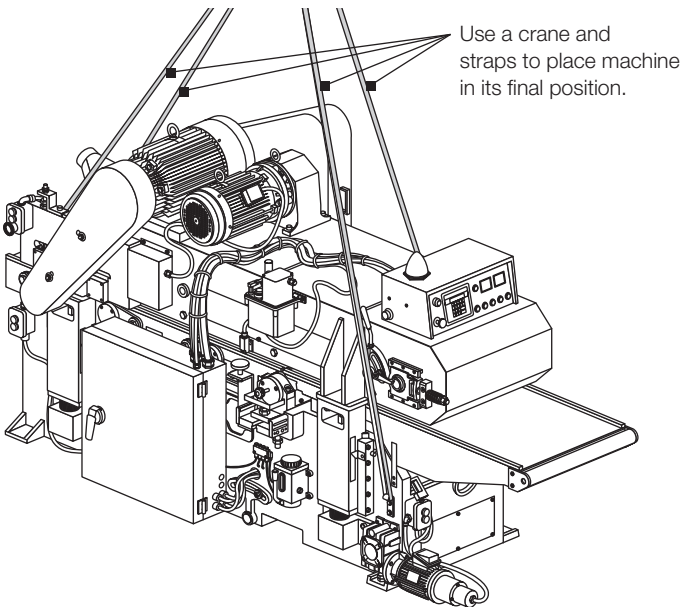
When the machine has been placed at its final location, carefully remove the machine from the pallet.



1. Remove the bolts that secure the machine to the pallet at the corners.
2. Lift the machine from the pallet by one of two methods:
 - a. Forklift
 - b. Crane with hoist hook and lift strap
3. Carefully place the machine in final position.



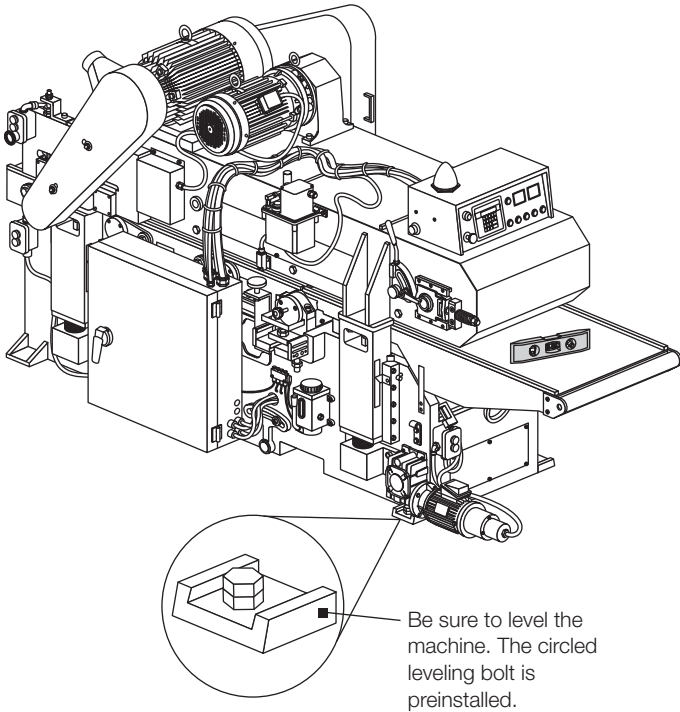
If using a crane, use a hoist hook and lift strap (suitable to lift more than 7,000 lbs) secured to the four red lifting hooks to move and place the machine. Make sure travel is clear of any obstacles or wiring.



3.6 Level

TOOLS REQUIRED:

- Bubble Level
- Adjustable wrench



Use a bubble level along the length and width of the tabletop surface to check for level. Use an adjustable wrench to adjust the 3 leveling bolts to level the machine. A fourth bolt is preinstalled under the infeed table rise/fall motor as shown.

3.7 Pre-Operation Cleaning

⚠ WARNING

Use proper cleaning agents and methods described below. Do not use gasoline or other petroleum-based solvents. There is a risk of explosion and burning if these products are used. Serious personal injury may occur.

Machine Tabletop Surface

After the machine is unpacked, remove the rust preventative oil that coats the machine. Use a soft cloth and nonflammable degreasing agent, such as Simple Green or other orange/citrus-based cleaner. Do not use abrasive pads.

Table Rollers, Feed Rollers, and Cutterheads

⚠ CAUTION

Use extreme care when cleaning the cutterheads. The knives are very sharp.

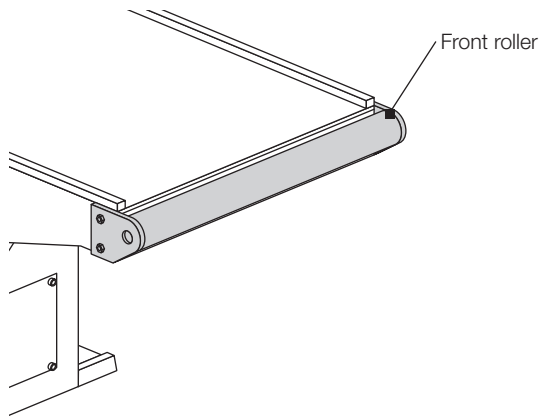
4.0 Assembly

To be assembled:

- Front roller
- Control power switch
- Dust port connections

4.1 Front Roller

The front roller attaches at the infeed end of the table for smooth feeding.



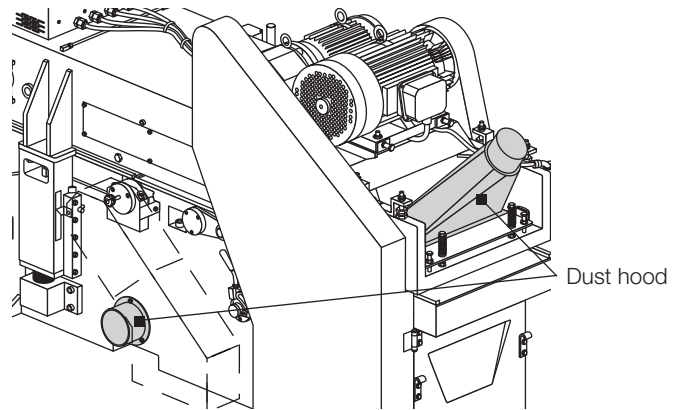
1. Remove the 2 Allen bolts from each side of the infeed table.
2. Attach the roller using the Allen bolts removed in step 1.
3. Tighten the Allen bolts to secure the roller.

4.2 Control Power Switch

The control power switch is not mounted on the machine during shipping. It is shipped inside the electrical control cabinet.

1. Remove the paper covering the mounting hole.
2. Mount the switch using the supplied hardware.

4.3 Dust Port Connections



The machine has two dust exhaust ports to remove dust from the upper and lower cutterheads.

Fit flexible hoses to the two dust hoods and connect them to the dust collector. The outlet diameter for each dust hood is 6".

5.0 Connect to Power

- Voltage – Steady state voltage +/- 10% of nominal voltage.
- Machine needs steady voltage at all times.

⚠ WARNING

Before connecting power to the machine, make sure all screws and fasteners are tightened, all mechanical functions work freely, and the cutterhead and rollers turn freely without touching the machine.

⚠ WARNING

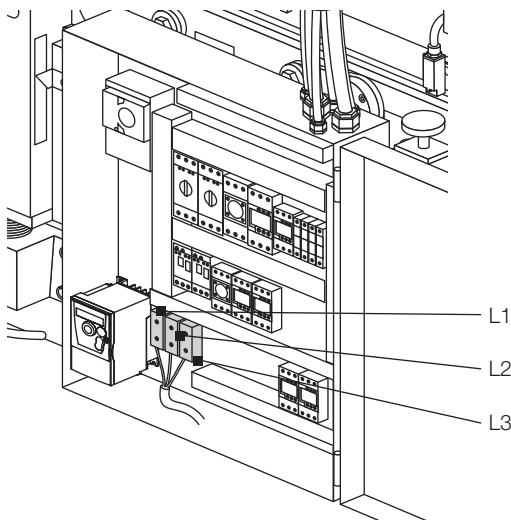
A licensed electrician must complete all connections to electrical power.

Before connecting to a power source, confirm that the electrical current of the power source is the same as the electrical system supplied with your machine. Ensure the machine is protected with an external over current protective device per your local regulating authorities.

Machine must be properly grounded to prevent electric shock. Never connect the yellow/green wire to a live terminal.

Once connected to power source, terminals are electrified even while the power switch is off.

To connect power source to the machine:



Proper wiring inside electrical cabinet

1. Open electrical cabinet
2. Remove clear plastic insulator that covers the terminals.
3. Insert source power cables through opening of electrical cabinet using the grommet on the electrical cabinet to prevent dust from getting inside.
4. Connect the three power cables to terminals L1, L2, and L3, and the yellow/green ground wire to ground terminal.

5. Replace the clear plastic insulator and the power box cover.
6. Close and secure the electrical cabinet door.

⚠ WARNING

Always shut off power at source before removing terminal box cover. Failure to comply with this action may result in electric shock.

⚠ CAUTION

We have covered some basic electrical requirements for the safe installation of your machine. These requirements may not cover all installation requirements. You must confirm that your particular electrical configuration complies with all local codes. Ensure compliance by checking with your local municipality and a licensed electrician.

6.0 Safety

WARNING

Like all power equipment, there is danger associated with the Ironwood DSP2500. Use caution and follow all safety instructions. Take every precaution to protect yourself, others around you, and the machine itself from improper use. Safety is a combination of common sense, training, and being alert at all times while operating your machine. If instructions, warnings, and cautions are not followed, serious personal injury or death may occur.

EYE PROTECTION: Always wear approved safety glasses, or a face shield when operating this machine. Only use eye protection that meets or exceeds the standards of the American National Standards Institute (ANSI).

EAR PROTECTION: Always wear ear protection during machine operation.

DRESS CODE: Do not wear loose clothing, neckties, jewelry, or gloves that can get caught in moving parts. Confine long hair and keep sleeves above the elbow.

ELECTRICAL GROUNDING: Your machine must be electrically grounded. If a cord and plug are used, make certain the machine is properly grounded. Follow the grounding procedure indicated by the National Electric Code and local regulating authorities.

GUARDS: Make certain that machine guards are in place and in good working order. The machine should never be operated without the safety guards in place.

TOOLING AND ACCESSORIES: Use only recommended tooling and accessories. Improper tooling and accessories may cause damage to your machine or personal injury. Always run at the correct speed and feed rate. Regularly maintain your tools and accessories. Knives should be sharpened and cleaned for safe, optimal performance. Follow instructions for lubricating and changing tooling and accessories.

POWER: Make sure that the starter is in an "OFF" position before connecting power to the machine.

Make certain the machine is either unplugged or electrically disconnected and locked out when performing all maintenance, cleaning, or machine adjustments. Never leave the machine running unattended. Always turn the power off and stay by the machine until the cutterheads come to a complete stop.

HOUSEKEEPING: Before turning machine on, remove all extra items on or around the machine. Keep the work area clean and free of scrap material, sawdust and other debris to minimize the danger of slipping. Use compressed air or a brush to remove chips or debris. NEVER use your hands.

7.0 Operation and Adjustments

WARNING

Do not attempt to operate machine if you are not completely familiar with its operation. Obtain immediate advice from a supervisor, instructor, or other qualified personnel.

Use of this machine requires that you give your work your undivided attention, and careless acts or not paying close attention to work being performed may result in serious injury to yourself and/or others. Never operate this or any machine under the influence of drugs, alcohol, or any medication that may impair judgment.

Dust created by manufacturing activities may be harmful to your health.

Your risks from exposure may vary. Always work in a well-ventilated area and wear safety approved, protective dust masks specifically designed to filter out microscopic particles. Utilize wood dust collection systems appropriate to your machine type.

Avoid Kickback

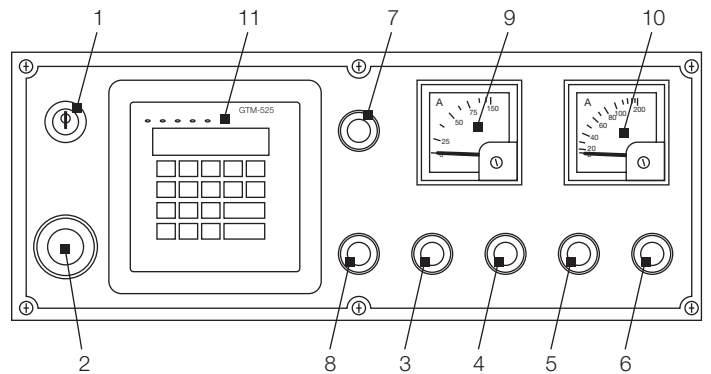
It is very important that each workpiece be carefully inspected for stock condition and grain orientation before running through the machine. The danger of kicked back material can occur when the workpiece has knots, holes, or foreign materials such as nails. It can also occur when the material is fed against the grain on the cutterheads.

CAUTION

During certain applications, it may be necessary to plane against the grain. This application requires that the operator use a shallow depth of cut and a slower feed rate.

7.1 Machine Controls

Controls are conveniently located on the machine. Familiarize yourself with the controls before operating the machine.

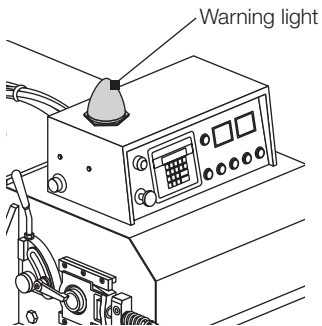


The control panel is located at the infeed end of the machine.

1. Power switch: Turns machine power on and off.
2. Emergency stop: In case of emergency, press the red emergency stop switch to stop all machine function. Turn switch to the right to release the stop before restarting the machine.
3. Lower cutterhead start switch: Press to start lower cutterhead.
4. Lower cutterhead stop switch: Press to stop lower cutterhead.
5. Upper cutterhead start switch: Press to start upper cutterhead.
6. Upper cutterhead stop switch: Press to stop upper cutterhead.
7. Feed conveyor start switch: Press to start feed conveyor running forward to feed workpieces into machine. The switch light turns on.
8. Feed conveyor stop switch: Press to stop feed conveyor. The switch light turns off.
9. Current meter: Indicates lower cutterhead motor current.
10. Current meter: Indicates upper cutterhead motor current.
11. Digital controller: Keypad entry enables automated rise/fall of the upper head for desired workpiece thickness. See section 6.2, Step 3.

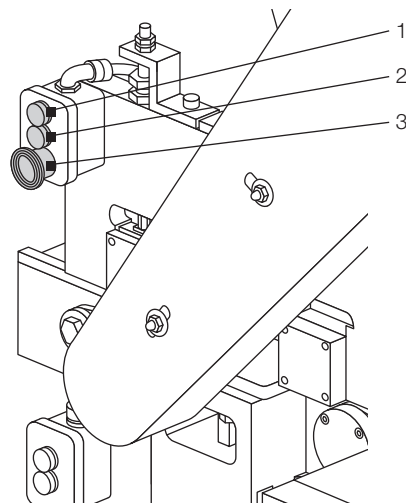
⚠ WARNING

Do not start lower and upper cutterheads simultaneously to prevent overload. The machine is wired Star-Delta and starts slowly to avoid an overload. When starting machine, start one motor at a time and wait for amperage to drop on the current meter for each motor before starting additional motors.



Warning Lamp: If the light is on, the conveyor chain may be overloaded.

Outfeed End Controls

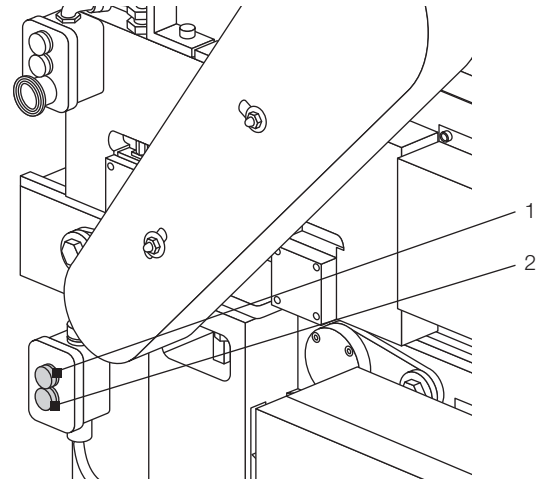


Feed Conveyor

The feed conveyor can be controlled from the outfeed side of the machine.

1. Feed conveyor start switch: Press to start the feed conveyor; when started, the conveyor runs forward to feed workpieces into machine.
2. Feed conveyor stop switch: Press to stop the feed conveyor.
3. Emergency stop: In case of emergency, press the emergency stop switch to stop all machine function. Turn the switch to the right to release the stop before restarting the machine.

Table Height



A manually operated upper table height controller is located at the outfeed side of the machine.

1. Manual rise switch: Press to raise the upper table to increase workpiece thickness.
2. Manual lower switch: Press to lower the upper table to decrease workpiece thickness.

7.2 Machine Operation

Prior to machine set-up or performing any adjustments, repair work, or troubleshooting, it is very important to check the applicable safety functions to ensure they are all in proper working condition.

To operate and adjust the machine, follow these steps.

Step 1: Check the Cutterheads

⚠ WARNING

The planing knives in the cutterheads are very sharp. Handle with extreme care when cleaning, sharpening, or replacing.

Each spiral cutterhead is equipped with 6 rows of 16 carbide inserts that house the planing knives.

The cutterheads should be inspected before each operation. Be sure the carbide inserts are secure and not fractured in any place. Loose or damaged inserts may be thrown from the machine and pose extreme danger.

Check the knives for sharpness. The knives are two sided and can be rotated when dull. Once both sides of a knife are dull, the carbide inserts should be replaced. To obtain replacements, call Stiles Parts Dept. at 1-800-727-8780. Reference part # 56-010-12005.

Changing Knives

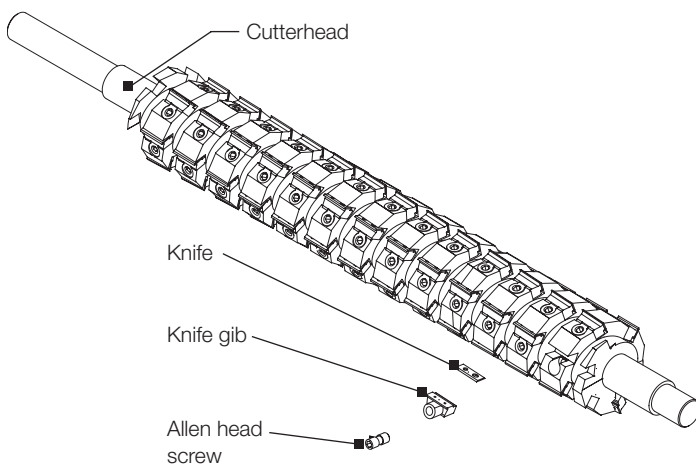
The lower cutterhead can be easily slid out for access to the cutterhead.

1. Open the v-belt guard.
2. Loosen the hand lever.
3. Shift the v-belt tension lever to release the v-belt tension.
4. Remove the v-belt from the cutterhead pulley.
5. Loosen the cutterhead lock bolts and nuts located at both ends of cutterhead block.
6. Slide the cutterhead out to access the cutterblock.

NOTE: It is important to blow out the machine and remove loose dust before pulling out the cutterhead. This ensures the cutterhead stays level and is free of debris when reconnected.

To remove and replace inserts, proceed as follows:

1. Loosen the knife gib by turning the Allen head screw into the gib.
2. Remove the gib and knife.
3. Remove the remaining knives in the same manner.
4. Thoroughly clean the knife slots and knife gibs.
5. Check the screws. If they appear worn or stripped replace them.
6. In sequence, insert the knife and knife gib into the slot of the cutterhead.
7. Fasten the knife and gib with a spacer and Allen head screw.
8. Repeat process until all knives are set in position and tight.

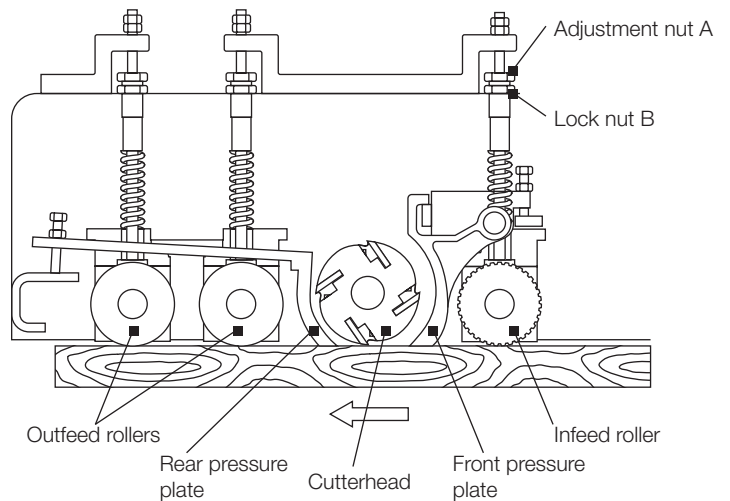


Step 2: Machine Alignment

NOTE: The DSP2500 comes pre-aligned from the factory. Do not adjust unless you are experiencing cutting issues. Call Stiles Machinery Technical Support at 616.698.6615 prior to attempting any machine adjustments.

Rollers and chipbreakers should be positioned in proper relation to the cutterhead. Use a dial indicator if necessary to check positions and make proper adjustments.

1. The cutterhead is used as the zero line reference on the dial indicator. Check both sides of cutterhead to ensure the cutterhead is level, and set the dial indicator to 0.
2. Move the dial indicator to the segmented infeed roller. The roller should be 0.1mm below the cutterhead. To adjust, loosen lock nut A and turn bolt B.



3. The front segmented chip breaker is set at the factory and should not be adjusted.
4. Move the dial indicator to the rear chipbreaker. The bar should be 0.3mm below the cutterhead. To adjust, turn the two rear screws in the back of the machine.
5. Move the dial indicator to the outfeed rollers. Each roller should be 1mm below the cutterhead. To adjust, loosen lock nut A and turn bolt B.

Step 3: Adjust Workpiece Thickness

Adjust the table height and lower cutterhead position to plane the workpiece to the desired thickness. For most applications, the lower cutterhead remains in the same position and doesn't need to be adjusted.

Upper Cutterhead Adjustment (automated)

Use the digital controller with keypad entry located on the front of the machine to set upper cutterhead height for the desired workpiece thickness. The controller automatically adjusts upper cutterhead height according to the thickness value entered.

A limit switch defines how far the tables will raise or lower. When a limit switch stop on the table comes in contact with a limit switch, the table motor switches off to prevent damage in maximum high and low positions.

Before entering the thickness value, be sure the controller is set as desired for inches or millimeters. Press the Unit key to change between inches and millimeters.

To set workpiece thickness, use the digital controller keypad.

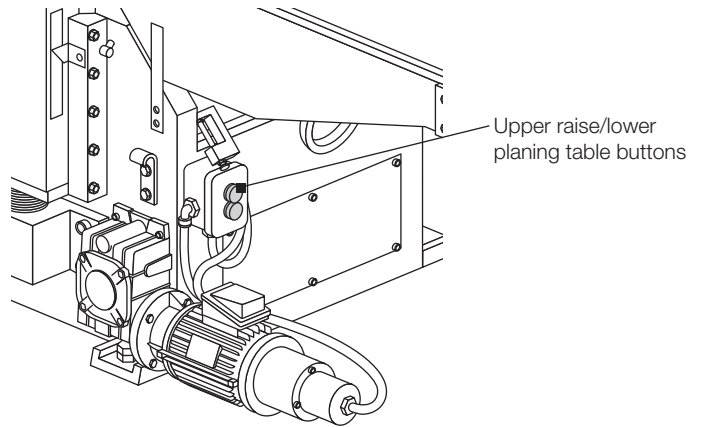
1. Press the Set key.
2. Enter the desired cutterhead height by entering the numerical value.
3. Press the green On button. The upper feed and cutterhead assembly will raise or lower to the desired height.

If a planed workpiece is not the correct size, calibrate the controller:

1. Press Set button on control.
2. On the keypad enter the actual value for workpiece.
3. Press and hold the Set button until "." on the display stops blinking. When the blinking stops, the height is calibrated.

Upper Cutterhead Adjustment (Manual)

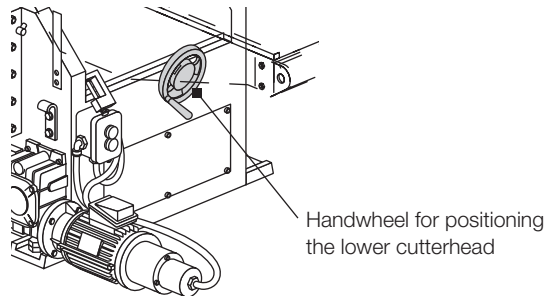
The upper table height can be adjusted manually.



1. Press the upper planing table raise or lower switch to position the upper cutterhead for desired workpiece thickness.
2. Workpiece thickness can be read using the analog scale for precise positioning.

Lower Cutterhead Adjustment

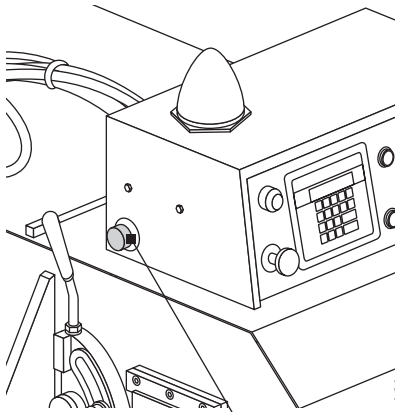
In general, the amount planed from the top and bottom of the workpiece should be roughly equal. This may require an adjustment of the lower cutterhead.



Use the handwheel to position the lower cutterhead.

To adjust, use the handwheel. The depth scale indicates thickness. A full turn raises the table by 1.5mm.

Step 4: Set Feed Speed



Speed control knob

The speed selector controls the rate of feed through the planer.

The DSP2500 is equipped with a 5 hp feed motor and variable feed speed control system that is controlled by a frequency inverter.

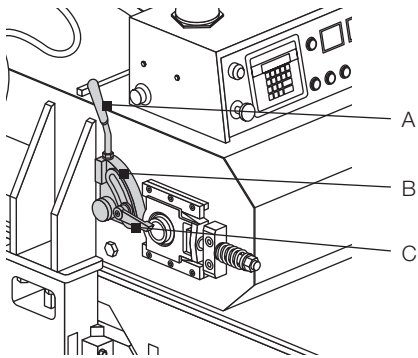
Turn the speed selector adjustment knob to control the speed.

Set the feed rate between 23 fpm-65 fpm to meet the different requirements of your material:

- Turn the variable speed adjustment dial clockwise to increase the feed rate
- Turn counterclockwise to decrease the feed rate

NOTE: Feed rates will vary based upon stock removal rate and workpiece characteristics.

Step 5: Adjust Hold-Down Pressure for Feed Conveyor



Use the adjustment lever (A) to adjust the hold-down pressure on the workpiece for the feed conveyor.

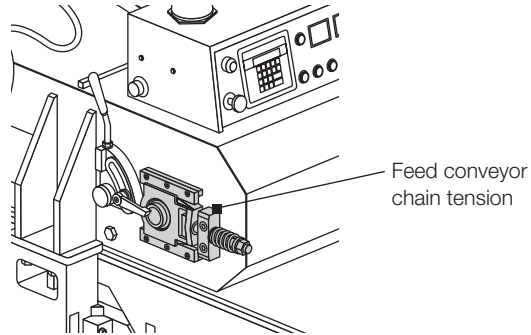
1. Loosen the hand lever (C).
2. For normal hold-down pressure, set the adjustment lever at the highest position in the groove (B). If the wood thickness is varied, set the adjustment lever at a lower position to increase hold down pressure on feed conveyor.
3. Tighten the hand lever.

⚠ CAUTION

Too much hold down pressure can cause wood to stop in the machine.

Step 6: Check Feed Conveyor Chain Tension

Maintain proper chain tension to the upper feed assembly. Make sure both chains are always tensioned uniformly.



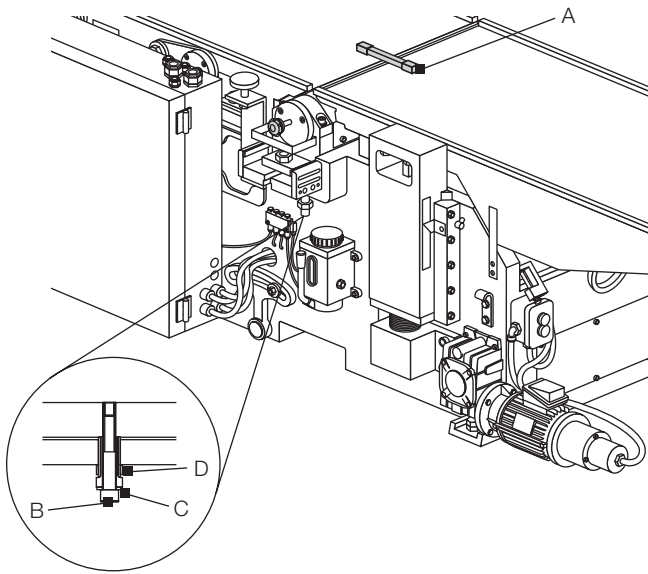
Turn the nut clockwise to increase tension. Turn counterclockwise to decrease tension.

Step 7: Adjust Table Rollers

Adjust the table rollers so they project about 0.1-0.2mm above the table surface.

1. Place the supplied block gauge over the roller. The four sides of the gauge have different values (0, 0.1, 0.2 and 0.3mm).
2. Turn the adjustment screws under both ends of the roller until it touches the gauge.
3. Ensure both sides of the table roller are equally set to ensure the roller is parallel to the table surface.

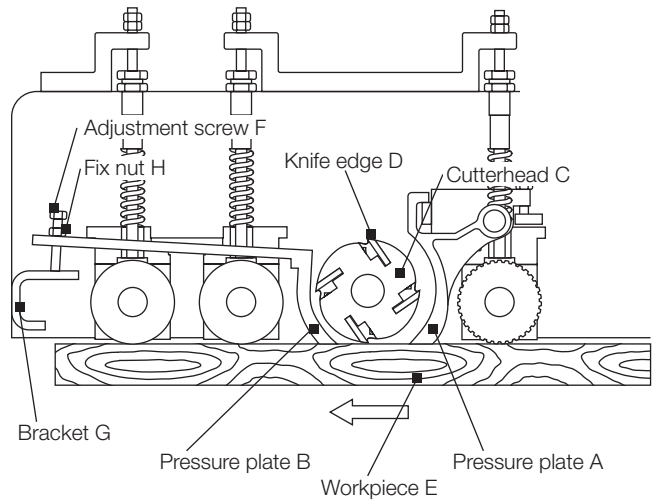
Step 8: Leveling Lower Cutterhead and Outfeed Table



The lower cutterhead must be adjusted so that the knives are the same height as the outfeed table. The cutterhead and table must also be parallel. To adjust:

1. Place the flat side of a supplied gauge (A) on the outfeed table and across the knife on the lower cutterhead.
2. Turn the cutterhead slowly and carefully until the knife-edge just touches the gauge. If the cutterhead is pushing up on the gauge block, the cutterhead needs to be adjusted down. If the cutterhead does not touch the gauge block, the cutterhead needs to be adjusted up.
3. To adjust the lower cutterhead, loosen the lock screws (B) and lock nuts (D) at both ends, then turn the adjustment screw (C).
4. Tighten the lock screws (B) and lock nuts (D).

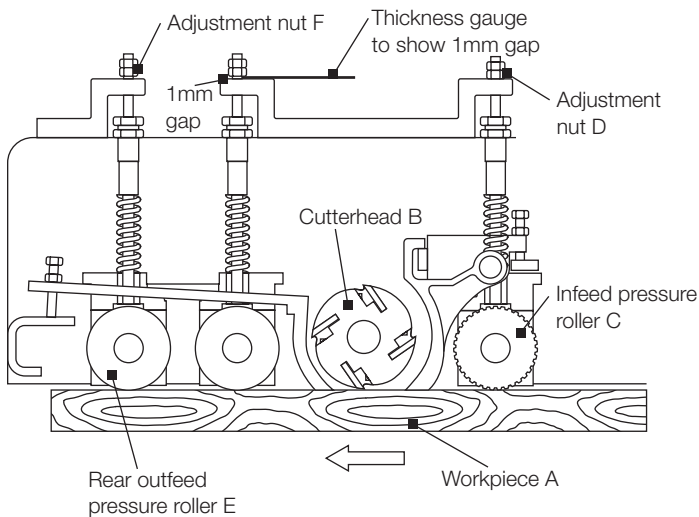
Step 9: Adjust the Rear Pressure Plate



The front pressure plate has been adjusted by the manufacturer. The rear pressure plate must be positioned .03mm lower than the workpiece.

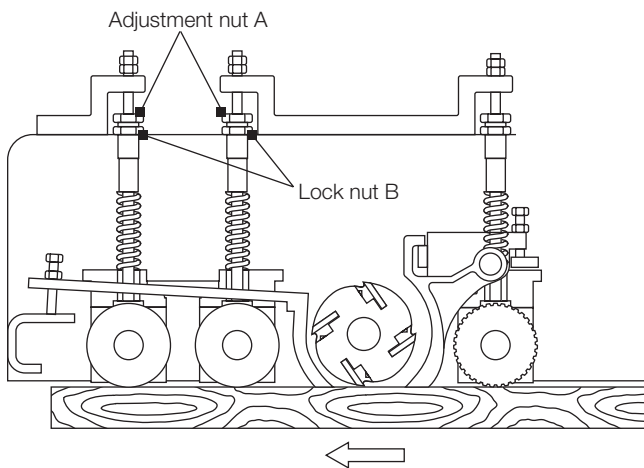
1. With power off to the machine, place a workpiece under the front (A) and rear (B) pressure plates.
2. Slowly turn the upper cutterhead (C) so that the knife edge (D) just touches the workpiece (E).
3. Loosen the lock nut (H).
4. Turn the adjustment screw (F) until it touches the bracket (G). Then turn the adjustment screw (F) again about 1/4 turn.
5. Tighten the lock nut (H).

Step 10: Check Adjustment of Outfeed Pressure Rollers



1. With all functions running, place a workpiece (A) through the machine.
2. Observe how much the nuts (F) lift off the holding bracket when the workpiece passes the outfeed rollers (E).
3. Manually adjust the lock nuts (F) until a 1mm gap is achieved.

Step 11: Adjust Pressure for Outfeed Pressure Roller



To adjust the load pressure of the outfeed pressure roller on the workpiece:

1. Loosen the lock nut (B).
2. Turn the adjustment nut (A).
3. Tighten the lock nut (B).

Step 12: Oiler

The oiler requires adjustment to properly lubricate the feed conveyor chain.

The oil rate can be changed according to the video instructions found in the following link: <http://www.youtube.com/watch?v=xT6QS2uxX-E>

Step 13: Feed the Workpiece Through the Planer

⚠ WARNING

Make sure the workpiece is free of nails, loose knots, and other defects that could cause personal injury or damage the knives.

Keep fingers and hands away from the cutting area. Keep hands away from the top surface of the board near the feed rollers.

Remove wood chips and shavings only with the power off. The main on/off power switch should be turned to the off position before any maintenance is performed on machine.

Stand to the side of the workpiece when feeding it through the planer to avoid potential injury from kickback and loose chips.

If it is necessary to stop a workpiece before it is entirely fed through the machine, hit the emergency stop button. WAIT until the cutterheads have completely stopped. Reset the emergency stop button to allow lowering the table to remove material. Do not attempt to start the feed or the cutterheads until material has been removed from the planer. Attempted removal while cutterheads are turning may cause kickback.

Never start the machine with the workpiece in contact with the cutterhead.

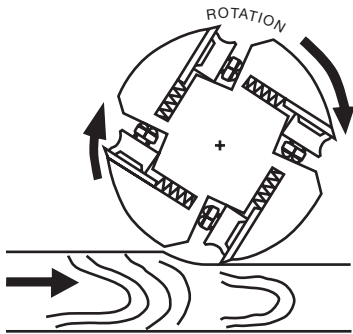
Always turn on the upper and lower cutterheads before starting the feed conveyor.

Do not start the upper and lower cutterheads simultaneously to prevent overload and tripping the breakers.

Never push or pull the board once the feed conveyor has taken the board into the machine.

Do not place hands under the feed conveyor.

1. Turn the power selector switch to ON.
2. Inspect the feed bed to ensure no parts or foreign objects are in the machine before starting cutterheads.
3. Press the upper cutterhead motor START switch. The needle on the meter moves all the way up, then down the current level.
4. Press the lower cutterhead motor START switch as in step 1.
5. Press the feed conveyor forward START switch.
6. Feed the workpiece. Always feed the workpiece against the cutter rotation.



The maximum depth of cut is 1/4" (7mm) per head, so it may be necessary to pass the workpiece through several times to achieve the desired depth of cut.

Torque Adjustment

The warning lamp light may turn on during normal operation due to a slipping clutch. This can be corrected by resetting the torque.

1. Open the transmission guard.
2. Turn the adjustment screws (A) clockwise 180-360 degrees.
3. Close the transmission guard.

Step 14: Normal Machine Stop

WARNING

Do not stop the machine until the workpiece is completely planed and removed from the machine.

1. Press the upper cutterhead OFF switch.
2. Press the lower cutterhead OFF switch.
3. Press the conveyor feed STOP switch.
4. Turn power switch to OFF.
5. Make sure the work area is clean.

7.3 Tool Adjustments

WARNING

Tools are extremely sharp. Be careful when working with tooling as serious injury may occur.

CAUTION

Always disconnect the machine from its power source before making any adjustments.

To reduce kickback, use only tools that conform to EN 848-1:2005 and EN 848-2:2001, and that are marked MAN.

Refer to the tool manufacturer's recommendations for clamping and setting of tools.

To ensure safe and efficient cutting, the tooling should be suitable for the material being cut. The tools should be sharp and properly set.

Use extra precautions when handling tools and always use tool carriers.

8.0 Maintenance

WARNING

Before performing any type of maintenance or adjustments, make certain that the machine is disconnected from its power source and completely shut off.

WARNING

Never operate the machine until it has been properly lubricated and all necessary maintenance work has been completed.

Clean all machine parts and surrounding areas daily.

Keep a maintenance record and perform recommended maintenance checks.

8.1 Lubrication

Lubricate at the points indicated in the chart below.

Lubrication Point #	Color	Lubrication Point	Lubricant	Interval	Quantity
1	Red	Cutterhead bearing	SKF [LGLT 2/1]	720 hrs.	5cc
2	Yellow	Feed conveyor bearings	Mobil [Mobilux 2] or lithium sponified NLGI No. 2	240 hrs.	3cc
		Elevation unit bearings		1500 hrs.	
		Rear brackets		1500 hrs.	
3	Blue	Front pressure trunnion shaft	Mobil [DTE oil medium] or ISO VG 68	720 hrs.	Full oil cap
		Infeed table guideways		720 hrs.	
4	Blue	Electric lubricator: Feed conveyor chain	Mobil [DTE oil medium] or ISO VG 68	---	Up to sight glass
5	Blue	Hand lubricator: Upper planing table guideways Infeed table (option)	1 week check oil level	240 hrs.	

6	Magenta	FRL Unit (option)	ISO VG 32	---	
7	Green	Conveyor gear reducer	Mobil [Gear 630] or ISO VG 220	1 year replace	
		Elevation gear reducer			

8.2 Inspection

Feature	Interval/Situation
Cutterheads	Every use
Belt	Every 1,000 hours of use or check belt whenever it becomes frayed
Chains	Every day
Emergency stop	Every day: functional test-press
Safety guard	Every day
Roller tension	Every day
Electrical cabinet/system	Monthly check: wiring terminals loose, insulation deterioration

NOTE: After changing a setting, making an adjustment, performing repair/maintenance work, or troubleshooting, please check that all applicable safety functions are working properly before performing another operation.

8.3 Periodic Maintenance

It is important to periodically vacuum the inside of the machine, as wood shavings, dust or other debris will accumulate. Care should be taken to prevent dust from embedding on moving parts in the machine. Periodic machine cleaning increases the life of the machine and its performance.

CAUTION

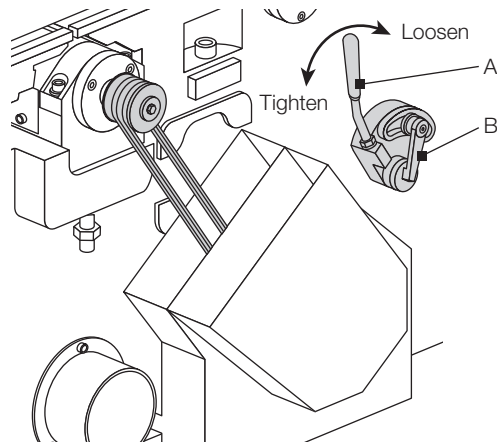
Never blow out the electrical cabinet with air.

To replace ball bearings, please contact Stiles Machinery's Parts Dept at 1-800-727-8780.

8.4 Adjust V-Belt Tension

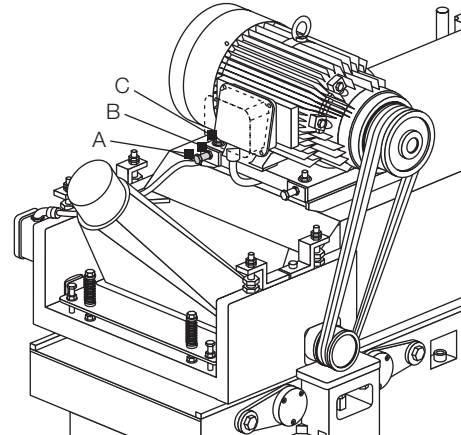
Over time, v-belt tension on the cutterheads motor may gradually loosen. The normal tension on the v-belt is 8mm deflection when pressed on its center position.

To adjust the lower cutterhead v-belt:



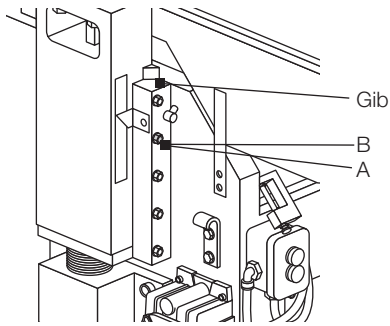
1. Loosen the adjustable hand lever clamp (B).
2. Turn the adjustable hand lever (A) counterclockwise to increase v-belt tension.
3. Tighten the hand lever clamp.

To adjust the upper cutterhead v-belt:



1. Loosen the fixing nut (B).
2. Turn the screw (A) clockwise to increase v-belt tension.
3. Tighten the fixing nut.

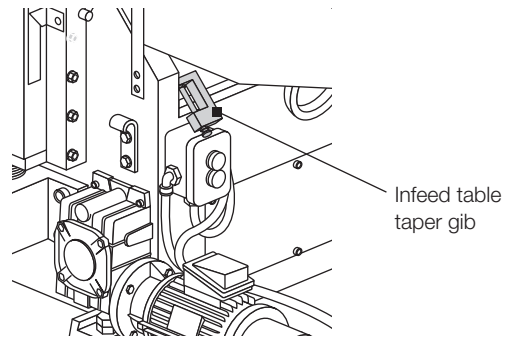
8.5 Adjust Clearance on Guideways



Over time, there will be a clearance on the guideways due to wear on the gib. To adjust the gibs:

1. Loosen the lock nut (A) on the gib.
2. Tighten the adjustment screw (B) to enable smooth guideways movement.

8.6 Adjust Clearance for Infeed Table Taper Gib



Over time, there will be a clearance on the infeed table due to wear on the taper gib. To adjust:

1. Loosen the lock nuts (A) on the gib.
2. Tighten the gib adjustment screw (B) to enable a smooth infeed table movement.
3. Tighten the lock nuts.

9.0 Troubleshooting

9.1 Machine Operation

Trouble	Possible Cause	Solution
Machine will not start.	V-belt guard open. Dust hood in wrong position. Emergency stop not reset. Infeed trip device not reset.	Check all safety switches. Close all guards. Reset emergency stop/infeed trip device.
Overload.	Poor contact on power wire terminals. Partial loss of a single phase. Cutting overload. Poor magnetic switch.	Tighten terminal screw securely. Reduce cutting load. Reduce feed speed. Replace magnetic switch.
Warning lamp lights up.	Feed conveyor overload. Check for error on inverter display	Raise the upper mechanism about 100mm; remove the bad workpiece or obstacle; return the upper mechanism to its original position; start the feed conveyor. Call Stiles Machinery Technical Support Dept
Board jammed during feeding.	Incorrect feed conveyor tension. Table roller too low. Too much cut for each pass. Feed speed too fast. Uneven wood thickness and front and rear end. Incorrect position of outfeed rollers.	Adjust feed conveyor tension. Adjust table roller position. Reduce cutting load. Reduce feed speed. Do not feed again. Adjust roller position.
Poor surface cut.	Dull cutterhead blades. Board not firmly clamped. Table loose. Bottom cutterhead not level with table. Poor hold-down on front and rear pressure plates. Table roller too high. Wood is warped.	Sharpen or replace blades. Adjust feed conveyor tension. Fix the table firmly. Adjust bottom cutterhead. Adjust hold-down on pressure plates. Adjust table roller. Do not use excessive warped wood.
Machine vibrates excessively.	Damaged tooling. Stand or bench is on uneven floor. Bad v-belt. V-belt does not have proper tension. Improper motor mounting.	Inspect, replace tooling. Reposition on flat, level surface. Replace v-belt. Adjust belt tension. Check and adjust motor mounting.
Edge splits off on cross-grain cut.	Quality of cut.	Make cross-grain cuts first then finish with grain. Use scrap block to support at end of cut.
Clip or snip appears on end of stock.	Pressure bar is set too high. Outfeed roller is set too high. Upper outfeed roller is set too low. Stock not butted. Grain running against knives.	Adjust pressure bar and rollers. Work in the direction of the grain whenever possible.

Continued

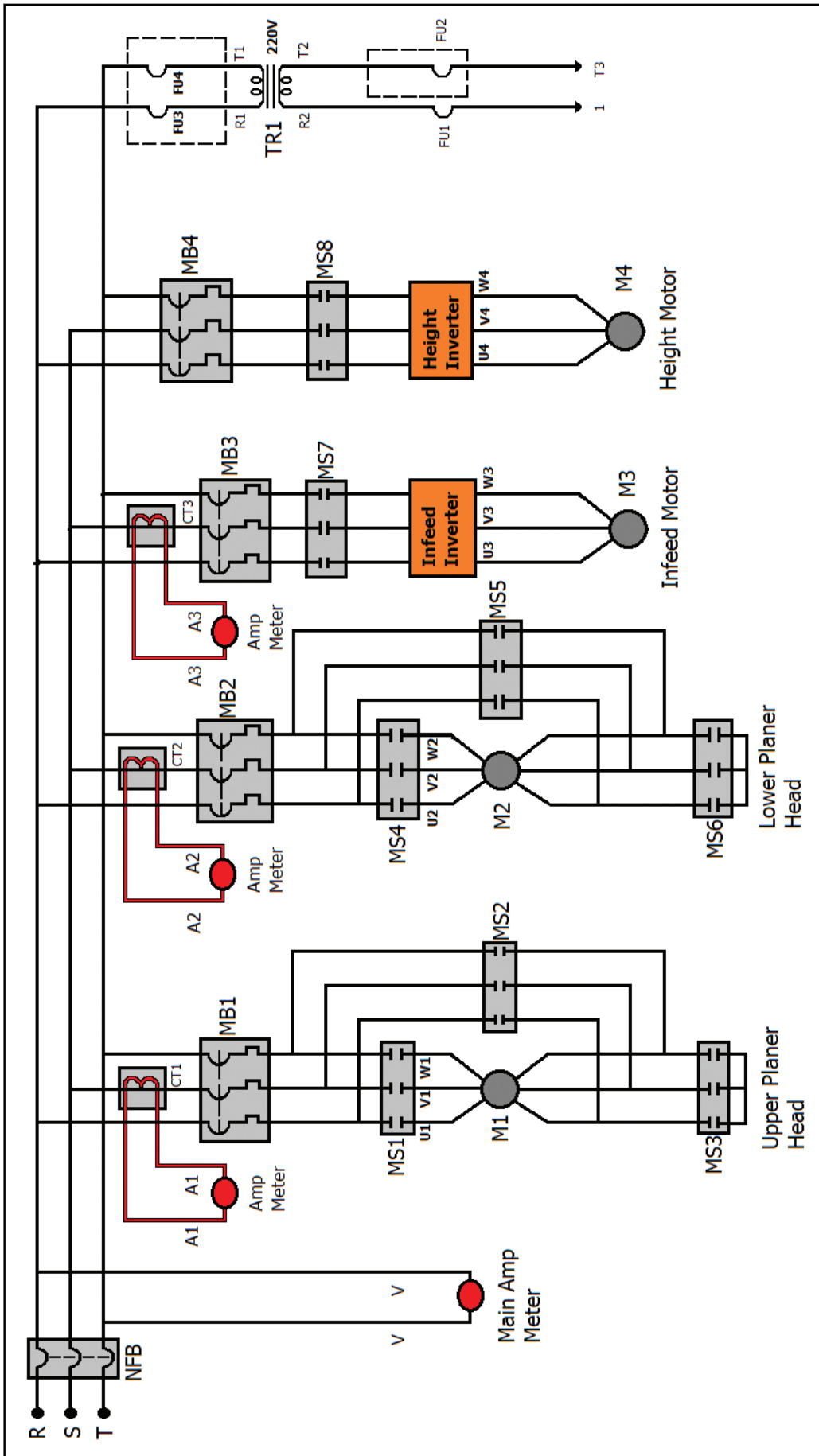
Trouble	Possible Cause	Solution
Knives tear out stock.	Feed is set too fast. Moisture content is not ok. Cut is too heavy. Cutting angle is too large. Grain running against knives Knives are dull.	Adjust feed speed. Ensure you measure the moisture content of the wood. Sharpen or replace knives. Work in the direction of the grain whenever possible. Sharpen or replace knives.
Knives raise the grain.	Feed is set too fast. Cutting angle is too large. Moisture content is too high Cut is too heavy. Knives are dull.	Adjust feed speed. Be sure stock is dry. Sharpen or replace knives.
Variation in height of cut.	Variation in pressure that holds workpiece down on table.	Adjust roller pressure. Adjust feed speed.
Uneven cuts (cuts not smooth).	Feeding stock too quickly. Grain running against knives. Cutting too deep.	Adjust feed speed. Work in the direction of the grain whenever possible. Make several passes on deep cuts.
Chip marks on stock.	Blower system not strong enough. No suction. Feed is set too fast. Knives are dull. Exhaust pipe is connected with too large on angle to main blower pipe.	Increase suction on blower system. Adjust feed speed. Sharpen or replace knives. Reinstall exhaust pipe.
Panels are tapered across width.	Planer bed is out of parallel with cutterhead. Knives not set evenly in cutterhead.	Adjust using a dial indicator. Check cutterhead carbide inserts and reinstall if not set evenly.
Undesired glossy finish.	Knives are dull. Feed is set too slow.	Replace or sharpen knives. Adjust feed speed.
After cut, wave mark appears at the front end of the wood.	Poor hold-down on the front pressure plate.	Adjust the front pressure plate position.
After cut, wave mark appears at rear end of the wood	Poor hold-down on rear pressure plate.	Adjust the rear pressure plate position
Overcut at front end.	Wood is warped.	Use a light cut. Cut twice.

9.2 Digital Controller Unit

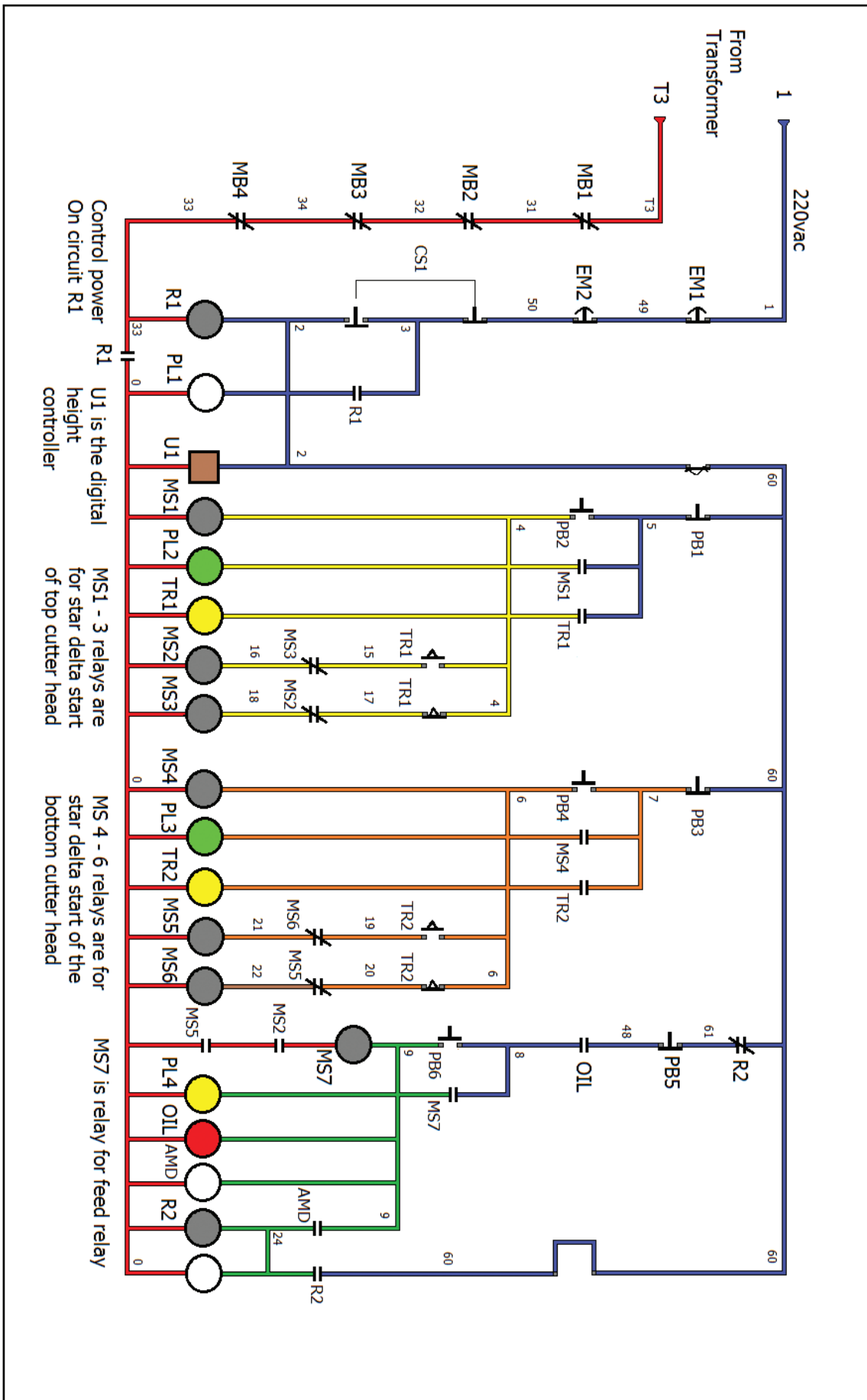
Trouble	Possible Cause	Solution
The display fails to show figures.	Electric pressure of the power 220V or AC110V is not normal.	Re-input correct electric voltage.
	Fuse is burned out and fused or broken.	Replace with new 1A fuse.
	If the above two conditions are normal then the control unit is broken and needs repair.	Contact the supplier for repair.
The display shows figures but the figures are abnormal.	Figures shown are incorrect.	Correct the dimension of the control unit in accordance with the actual dimension.
	Parameter is incorrect.	Calculate correct parameter and input again.
	If the above 2 points do not provide a solution, then the controller needs to be reset.	Turn off machine power and turn on again. If the problem persists contact the supplier for repair.
The display shows figures but when the up-down motor is in operation the figure fails to change accordingly.	The proximity switch is failing.	If the instruction lights fail, change the proximity switch.
	Distance between the induction unit and induction sheet is more than 1mm.	Adjust the distance between the induction unit and induction sheet to less than 1mm.

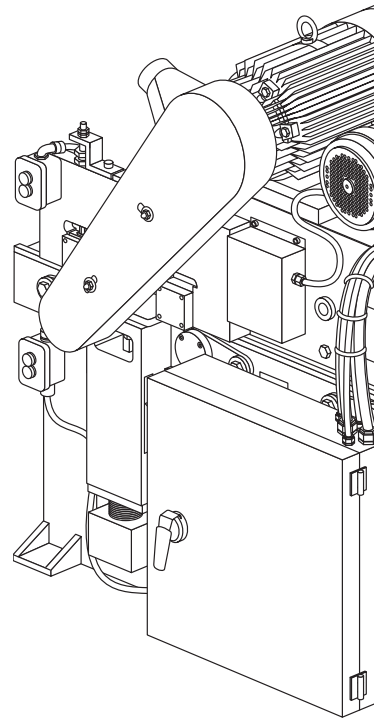
If you cannot resolve your issue, contact Stiles Technical Support at 616.698.6615.

9.3 Electrical Diagrams



9.3 Electrical Diagrams (Continued)





IRONWOOD

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stiles

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