OPERATOR'S MANUAL

Book 1of 2

HORIZONTAL BAND SAW

MODEL: BS-24A

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THANK YOU & WARRANTY

Thank you for your purchase of a machine from Baileigh Industrial. We hope that you find it productive and useful to you for a long time to come.

Inspection & Acceptance. Buyer shall inspect all Goods within ten (10) days after receipt thereof. Buyer's payment shall constitute final acceptance of the Goods and shall act as a waiver of the Buyer's rights to inspect or reject the goods unless otherwise agreed. If Buyer rejects any merchandise, Buyer must first obtain a Returned Goods Authorization ("RGA") number before returning any goods to Seller. Goods returned without a RGA will be refused. Seller will not be responsible for any freight costs, damages to goods, or any other costs or liabilities pertaining to goods returned without a RGA. Seller shall have the right to substitute a conforming tender. Buyer will be responsible for all freight costs to and from Buyer and repackaging costs, if any, if Buyer refuses to accept shipment. If Goods are returned in unsalable condition, Buyer shall be responsible for full value of the Goods. Buyer may not return any special order Goods. Any Goods returned hereunder shall be subject to a restocking fee equal to 30% of the invoice price.

Specifications. Seller may, at its option, make changes in the designs, specifications or components of the Goods to improve the safety of such Goods, or if in Seller's judgment, such changes will be beneficial to their operation or use. Buyer may not make any changes in the specifications for the Goods unless Seller approves of such changes in writing, in which event Seller may impose additional charges to implement such changes.

Limited Warranty. Seller warrants to the original end-user that the Goods manufactured or provided by Seller under this Agreement shall be free of defects in material or workmanship for a period of twelve (12) months from the date of purchase, provided that the Goods are installed, used, and maintained in accordance with any instruction manual or technical guidelines provided by the Seller or supplied with the Goods, if applicable. The original end-user must give written notice to Seller of any suspected defect in the Goods prior to the expiration of the warranty period. The original end-user must also obtain a RGA from Seller prior to returning any Goods to Seller for warranty service under this paragraph. Seller will not accept any responsibility for Goods returned without a RGA. The original end-user shall be responsible for all costs and expenses associated with returning the Goods to Seller for warranty service. In the event of a defect, Seller, at its sole option, shall repair or replace the defective Goods or refund to the original end-user the purchase price for such defective Goods. Goods are not eligible for replacement or return after a period of 30 days from date of receipt. The foregoing warranty is Seller's sole obligation, and the original end-user's exclusive remedy, with regard to any defective Goods. This limited warranty does not apply to: (a) die sets, tooling, and saw blades; (b) periodic or routine maintenance and setup, (c) repair or replacement of the Goods due to normal wear and tear, (d) defects or damage to the Goods resulting from misuse, abuse, neglect, or accidents, (f) defects or damage to the Goods resulting from improper or unauthorized alterations, modifications, or changes; and (f) any Goods that has not been installed and/or maintained in accordance with the instruction manual or technical guidelines provided by Seller.

EXCLUSION OF OTHER WARRANTIES. THE FOREGOING LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. ANY AND ALL OTHER EXPRESS, STATUTORY OR IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED. NO WARRANTY IS MADE WHICH EXTENDS BEYOND THAT WHICH IS EXPRESSLY CONTAINED HEREIN.

Limitation of Liability. IN NO EVENT SHALL SELLER BE LIABLE TO BUYER OR ANY OTHER PARTY FOR ANY INCIDENTIAL, CONSEQUENTIAL OR SPECIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR DOWN TIME) ARISING FROM OR IN MANNER CONNECTED WITH THE GOODS, ANY BREACH BY SELLER OR ITS AGENTS OF THIS AGREEMENT, OR ANY OTHER CAUSE WHATSOEVER, WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY OF LIABILITY. BUYER'S REMEDY WITH RESPECT TO ANY CLAIM ARISING UNDER THIS AGREEMENT IS STRICTLY LIMITED TO NO MORE THAN THE AMOUNT PAID BY THE BUYER FOR THE GOODS.

Force Majuere. Seller shall not be responsible for any delay in the delivery of, or failure to deliver, Goods due to causes beyond Seller's reasonable control including, without limitation, acts of God, acts of war or terrorism, enemy actions, hostilities, strikes, labor difficulties, embargoes, non-delivery or late delivery of materials, parts and equipment or transportation delays not caused by the fault of Seller, delays caused by civil authorities, governmental regulations or orders, fire, lightening, natural disasters or any other cause beyond Seller's reasonable control. In the event of any such delay, performance will be postponed by such length of time as may be reasonably necessary to compensate for the delay.

Installation. If Buyer purchases any Goods that require installation, Buyer shall, at its expense, make all arrangements and connections necessary to install and operate the Goods. Buyer shall install the Goods in accordance with any Seller instructions and shall indemnify Seller against any and all damages, demands, suits, causes of action, claims and expenses (including actual attorneys' fees and costs) arising directly or indirectly out of Buyer's failure to properly install the Goods.

Work By Others; Safety Devices. Unless agreed to in writing by Seller, Seller has no responsibility for labor or work performed by Buyer or others, of any nature, relating to design, manufacture, fabrication, use, installation or provision of Goods. Buyer is solely responsible for furnishing, and requiring its employees and customers to use all safety devices, guards and safe operating procedures required by law and/or as set forth in manuals and instruction sheets furnished by Seller. Buyer is responsible for consulting all operator's manuals, ANSI or comparable safety standards, OSHA regulations and other sources of safety standards and regulations applicable to the use and operation of the Goods.

Remedies. Each of the rights and remedies of Seller under this Agreement is cumulative and in addition to any other or further remedies provided under this Agreement or at law or equity.

Attorney's Fees. In the event legal action is necessary to recover monies due from Buyer or to enforce any provision of this Agreement, Buyer shall be liable to Seller for all costs and expenses associated therewith, including Seller's actual attorneys' fees and costs.

Governing Law/Venue. This Agreement shall be construed and governed under the laws of the State of Wisconsin, without application of conflict of law principles. Each party agrees that all actions or proceedings arising out of or in connection with this Agreement shall be commenced, tried, and litigated only in the state courts sitting in Manitowoc County, Wisconsin or the U.S. Federal Court for the Eastern District of Wisconsin. Each party waives any right it may have to assert the doctrine of "forum non conveniens" or to object to venue to the extent that any proceeding is brought in accordance with this section. Each party consents to and waives any objection to the exercise of personal jurisdiction over it by courts described in this section. Each party waives to the fullest extent permitted by applicable law the right to a trial by jury.

Summary of Return Policy.

- 10 Day acceptance period from date of delivery. Damage claims and order discrepancies will not be accepted after this time.
- You must obtain a Baileigh issued RGA number PRIOR to returning any materials.
- Returned materials must be received at Baileigh in new condition and in original packaging.
- Altered items are not eligible for return.
- Buyer is responsible for all shipping charges.
- A 30% re-stocking fee applies to all returns.

Baileigh Industrial makes every effort to ensure that our posted specifications, images, pricing and product availability are as correct and timely as possible. We apologize for any discrepancies that may occur. Baileigh Industrial reserves the right to make any and all changes deemed necessary in the course of business including but not limited to pricing, product specifications, quantities, and product availability.

For Customer Service & Technical Support:
Please contact one of our knowledgeable Sales and Service team members at:
(920) 684-4990 or e-mail us at sales@baileighindustrial.com

INTRODUCTION

The quality and reliability of the components assembled on a Baileigh Industrial machine guarantee near perfect functioning, free from problems, even under the most demanding working conditions. However if a situation arises, refer to the manual first. If a solution cannot be found, contact the distributor where you purchased our product. Make sure you have the serial number and production year of the machine (stamped on the nameplate). For replacement parts refer to the assembly numbers on the parts list drawings.

Our technical staff will do their best to help you get your machine back in working order.

In this manual you will find: (when applicable)

- Safety procedures
- Correct installation guidelines
- Description of the functional parts of the machine
- Capacity charts
- Set-up and start-up instructions
- Machine operation
- Scheduled maintenance
- Parts lists

GENERAL NOTES

After receiving your equipment remove the protective container. Do a complete visual inspection, and if damage is noted, **photograph it for insurance claims** and contact your carrier at once, requesting inspection. Also contact Baileigh Industrial and inform them of the unexpected occurrence. Temporarily suspend installation.

Take necessary precautions while loading / unloading or moving the machine to avoid any injuries.

Your machine is designed and manufactured to work smoothly and efficiently. Following proper maintenance instructions will help ensure this. Try and use original spare parts, whenever possible, and most importantly; **DO NOT** overload the machine or make any unauthorized modifications.

Note: *This symbol refers to useful information throughout the manual.*

IMPORTANT

PLEASE READ THIS OPERATORS MANUAL CAREFULLY

It contains important safety information, instructions, and necessary operating procedures. The continual observance of these procedures will help increase your production and extend the life of the equipment.

SAFETY INSTRUCTIONS

LEARN TO RECOGNIZE SAFETY INFORMATION

This is the safety alert symbol. When you see this symbol on your machine or in this manual, **BE ALERT TO THE POTENTIAL FOR PERSONAL INJURY!**

Follow recommended precautions and safe operating practices.

UNDERSTAND SIGNAL WORDS

A signal word – **DANGER**, **WARNING**, or **CAUTION** is used with the safety alert symbol. **DANGER** identifies a hazard or unsafe practice that will result in severe **Injury or Death**.

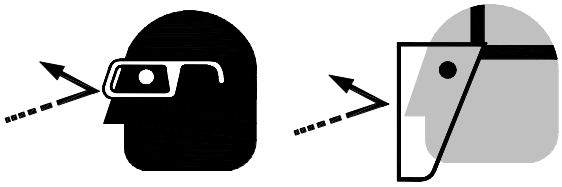
Safety signs with signal word **DANGER** or **WARNING** are typically near specific hazards.

General precautions are listed on **CAUTION** safety signs. **CAUTION** also calls attention to safety messages in this manual.

SAVE THESE INSTRUCTIONS.
Refer to them often and use them to instruct others.

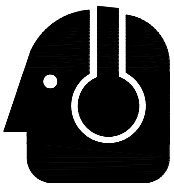
PROTECT EYES

Wear safety glasses or suitable eye protection when working on or around machinery.



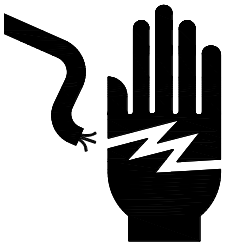
PROTECT AGAINST NOISE

Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear suitable hearing protective devices such as ear muffs or earplugs to protect against objectionable or uncomfortable loud noises.



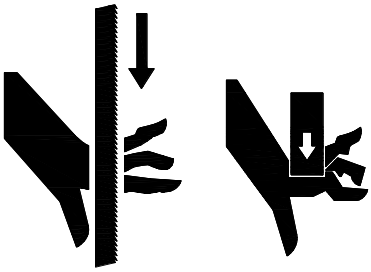
HIGH VOLTAGE

USE CAUTION IN HIGH VOLTAGE AREAS. DO NOT assume the power to be off.
FOLLOW PROPER LOCKOUT PROCEDURES.



BEWARE OF CUT AND PINCH POINTS

Moving saw blade may result in loss of fingers or limb. **DO NOT** operate with guard removed. **Follow lockout/tagout procedures before servicing.**



EMERGENCY STOP BUTTON

In the event of incorrect operation or dangerous conditions, the machine can be stopped immediately by pressing the **E-STOP** button. Twist the emergency stop button clockwise (cw) to reset. Note: Resetting the E-Stop will not start the machine.

SAFETY PRECAUTIONS

Metal working can be dangerous if safe and proper operating procedures are not followed. As with all machinery, there are certain hazards involved with the operation of the product. Using the machine with respect and caution will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or ignored, personal injury to the operator may result.
Safety equipment such as guards, hold-downs, safety glasses, dust masks and hearing protection can reduce your potential for injury. But even the best guard won't make up for poor judgment, carelessness or inattention. **Always use common sense** and exercise **caution** in the workshop. If a procedure feels dangerous, don't try it.
REMEMBER: Your personal safety is your responsibility.

WARNING: FAILURE TO FOLLOW THESE RULES MAY RESULT IN SERIOUS PERSONAL INJURY

1. **Only trained and qualified personnel can operate this machine.**
2. **Make sure guards are in place and in proper working order before operating machinery.**
3. **Remove any adjusting tools.** Before operating the machine, make sure any adjusting tools have been removed.
4. **Keep work area clean.** Cluttered areas invite injuries.
5. **Overloading machine.** By overloading the machine you may cause injury from flying parts. **DO NOT** exceed the specified machine capacities.
6. **Dressing material edges.** Always chamfer and deburr all sharp edges.
7. **Do not force tool.** Your machine will do a better and safer job if used as intended. **DO NOT** use inappropriate attachments in an attempt to exceed the machines rated capacity.
8. **Use the right tool for the job. DO NOT** attempt to force a small tool or attachment to do the work of a large industrial tool. **DO NOT** use a tool for a purpose for which it was not intended.
9. **Dress appropriate. DO NOT** wear loose fitting clothing or jewelry as they can be caught in moving machine parts. Protective clothing and steel toe shoes are recommended when using machinery. Wear a restrictive hair covering to contain long hair.
10. **Use eye and ear protection.** Always wear ISO approved impact safety goggles. Wear a full-face shield if you are producing metal filings.

11. **Do not overreach.** Maintain proper footing and balance at all times. **DO NOT** reach over or across a running machine.
12. **Stay alert.** Watch what you are doing and use common sense. **DO NOT** operate any tool or machine when you are tired.
13. **Check for damaged parts.** Before using any tool or machine, carefully check any part that appears damaged. Check for alignment and binding of moving parts that may affect proper machine operation.
14. **Observe work area conditions. DO NOT** use machines or power tools in damp or wet locations. Do not expose to rain. Keep work area well lighted. **DO NOT** use electrically powered tools in the presence of flammable gases or liquids.
15. **Blade adjustments and maintenance.** Always keep blades sharp and properly adjusted for optimum performance.
16. **Keep children away.** Children must never be allowed in the work area. **DO NOT** let them handle machines, tools, or extension cords.
17. **Store idle equipment.** When not in use, tools must be stored in a dry location to inhibit rust. Always lock up tools and keep them out of reach of children.
18. **DO NOT** operate machine if under the influence of alcohol or drugs. Read warning labels on prescriptions. If there is any doubt, **DO NOT** operate the machine.
19. **DO NOT** touch live electrical components or parts.
20. **Turn off power** before checking, cleaning, or replacing any parts.
21. **Be sure all equipment** is properly installed and grounded according to national, state, and local codes.
22. **Keep all cords** dry, free from grease and oil, and protected from sparks and hot metal.
23. Inspect power and control cables periodically. Replace if damaged or bare wires are exposed. **Bare wiring can kill!**
24. **DO NOT** bypass or defeat any safety interlock systems.
25. Keep visitors a safe distance from the work area.

TECHNICAL SPECIFICATIONS

Round (90° / 45°)	18” / 15” (460mm / 380mm)
Square (90° / 45°)	18”x18” / 15”x15” (460x460mm / 380x380mm)
Rectangular (90°)	15” x 24” (380 x 610mm)
Blade Size (H x W x L)	1.5” x .051” x 209.85” (41 x 1.3mm x 5330mm)
Blade Speed (Variable Speed)	65-279fpm (20-85mpm)
Blade Guide	Carbide / Roller
Miter Angle	0-45°
Miter Adjustment	Swivel Head
Table Height	32.3” (820mm)
Descent Control	Pressure Assist Hydraulic
Return	Hydraulic
Chip Removal	Hydraulic Auger
Material Feed	Hydraulic
Material Clamping / Bundling	Hydraulic
Motor, Blade	5Hp (3.72Kw)
Motor, Hydraulic	1Hp (.74Kw)
Power	220V, 3Ph
Shipping Dimensions (L x W x H)	109” x 90” x 77” (2769 x 2286 x 1956mm)
Shipping Weight	3,900lbs.(1,778kg)

TECHNICAL SUPPORT

Our technical support department can be reached at 920.684.4990, and asking for the support desk for purchased machines. Tech Support handles questions on machine setup, schematics, warranty issues, and individual parts needs: (other than die sets and blades).

For specific application needs or future machine purchases contact the Sales Department at: sales@baileighindustrial.com, Phone: 920.684.4990, or Fax: 920.684.3944.

***Note**: The photos illustrations using in this manual are representative only and may not depict the actual color, labeling or accessories and may be intended to illustrate technique only.*

***Note:** The specifications and dimensions presented here are subject to change without prior notice due to improvements of our products.*

UNPACKING AND CHECKING CONTENTS

Your Baileigh machine is shipped complete in one crate. Separate all parts from the packing material and check each item carefully. Make certain all items are accounted for before discarding any packing material.

⚠ WARNING: SUFFOCATION HAZARD! Immediately discard any plastic bags and packing materials to eliminate choking and suffocation hazards to children and animals.
If any parts are missing, do not plug in the power cable, or turn the power switch on until the missing parts are obtained and installed correctly.

Cleaning

Your machine may be shipped with a rustproof waxy oil coating and grease on the exposed unpainted metal surfaces. To remove this protective coating, use a degreaser or solvent cleaner. For a more thorough cleaning, some parts will occasionally have to be removed. **DO NOT USE** acetone or brake cleaner as they may damage painted surfaces.
Follow manufacturer's label instructions when using any type of cleaning product. After cleaning, wipe unpainted metal surfaces with a light coating of quality oil or grease for protection.

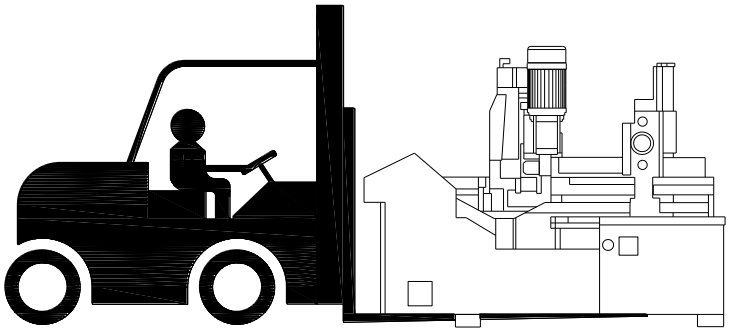
⚠ WARNING: DO NOT USE gasoline or other petroleum products to clean the machine. They have low flash points and can explode or cause fire.

⚠ CAUTION: When using cleaning solvents work in a well-ventilated area. Many cleaning solvents are toxic if inhaled.

TRANSPORTING AND LIFTING

Follow these guidelines when lifting:

- Use proper lifting techniques when moving the saw from location to location.
- Make sure the machine is balanced, level, and securely tied or strapped to the transport vehicle or device so that all the supporting feet are taking the weight of the machine and no rocking is taking place.
- While transporting, avoid rough or jerky motion, and maintain a safe clearance zone around the transport area.



INSTALLATION

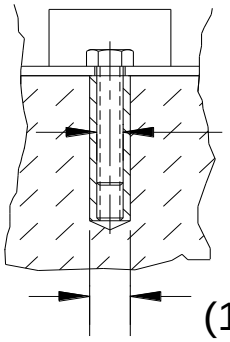
IMPORTANT:

Consider the following when looking for a suitable location to place the machine:

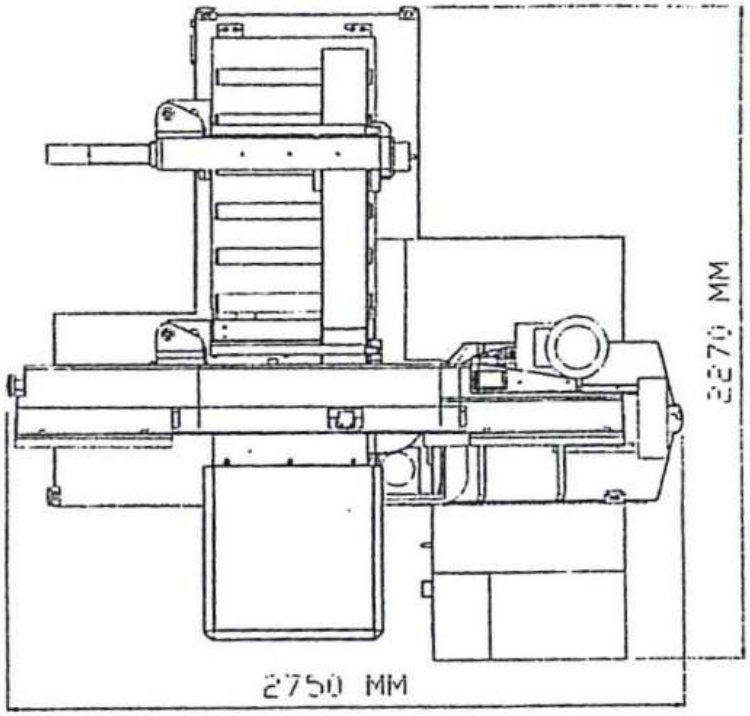
- Overall weight of the machine.
- Weight of material being processed.
- Sizes of material to be processed through the machine.
- Space needed for auxiliary stands, work tables, or other machinery.
- Clearance from walls and other obstacles. Maintain an adequate working area around the machine for safety.
- Have the work area well illuminated with proper lighting.
- Keep the floor free of oil and make sure it is not slippery.
- Remove scrap and waste materials regularly, and make sure the work area is free from obstructing objects.
- If long lengths of material are to be fed into the machine, make sure that they will not extend into any aisles.
- **LEVELING:** The machine should be sited on a level surface. The accuracy of any machine depends on the precise placement of it to the mounting surface. If the unit wobbles or rocks once in place, be sure to eliminate by using shims.
- **POWER SUPPLY PLACEMENT:** The power supply should be located close enough to the machine so that the power cord is not in an area where it would cause a tripping hazard. Be sure to observe all electrical codes if installing new circuits and/or outlets.

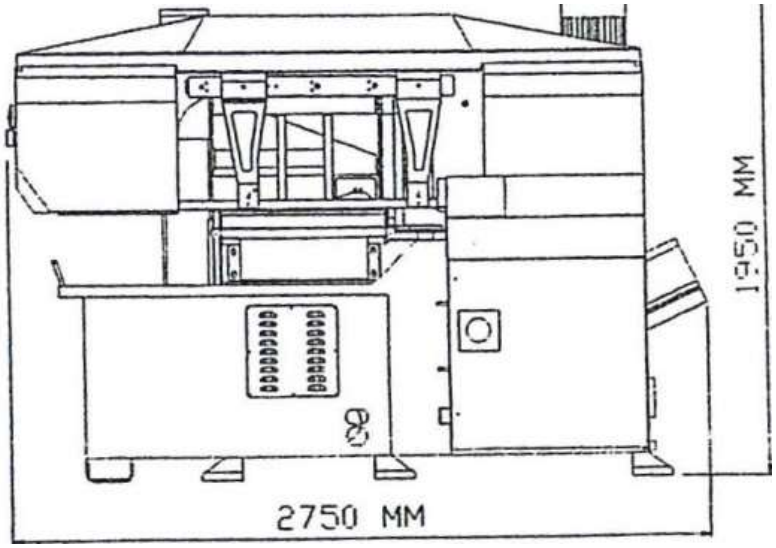
Anchoring the Machine

- Once positioned, anchor the machine to the floor, as shown in the diagram, using bolts and expansion plugs or sunken tie rods that connect through holes in the base of the stand.



OVERALL DIMENSIONS





ELECTRICAL

WARNING: Baileigh Industrial is not responsible for any damage caused by wiring up to an alternative 3-phase power source other than direct 3-phase. If you are using an alternate power source, consult a certified electrician or contact Baileigh Industrial prior to energizing the machine.

CAUTION: HAVE ELECTRICAL UTILITIES CONNECTED TO MACHINE BY A CERTIFIED ELECTRICIAN!
Check if the available power supply is the same as listed on the machine nameplate.

WARNING: Make sure the grounding wire (green) is properly connected to avoid electric shock. DO NOT switch the position of the green grounding wire if any electrical plug wires are switched during hookup.

Motor Specifications

Your tool is wired for 220 volt, 60Hz alternating current. Before connecting the tool to the power source, make sure the machine is cut off from power source.

Considerations

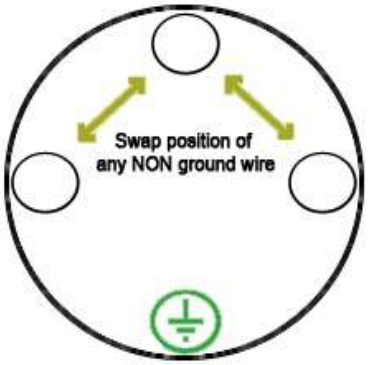
- Observe local electrical codes when connecting the machine.
- The circuit should be protected with a time delay fuse or circuit breaker with a amperage rating slightly higher than the full load current of machine.
- A separate electrical circuit should be used for your tools. Before connecting the motor to the power line, make sure the switch is in the “OFF” position and be sure that the electric current is of the same characteristics as indicated on the tool.
- All line connections should make good contact. Running on low voltage will damage the motor.
- In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.

WARNING: In all cases, make certain the receptacle in question is properly grounded. If you are not sure, have a qualified electrician check the receptacle.

- Improper connection of the equipment-grounding conductor can result in risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.
- Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.
- Repair or replace damaged or worn cord immediately.

Power cord connection:

1. Locate the power cord and verify that it has not been damaged during installation.
2. Connect the power wires to a non-fused breaker in the off position.
3. Once hooked up, turn on the power supply and start the band saw motor.
4. Check that the saw blade is running in the direction as indicated by the arrowhead on the blade guard. If not, cut the power to the machine. Swap the position of any two of the three power wires; but DO NOT change the position of the green grounding wire!



GETTING TO KNOW YOUR MACHINE

Machine Control Panel

A) Touch-Interface (Touch screen)
Press the hydraulic start button B to start.

B) Hydraulic Pump Start Switch
Press to start the pump.

C) Emergency Stop Button
Stops the machine's function.
Rotate the button to release.

D) Auto/Manual Switch
This is an operation mode selector. Manual mode is for single cutting operations and Auto mode is for multiple cutting cycles.

E) Operation Start Button
Starts the cutting operation cycle.

F) Bow Up Button and stop cycle cutting
Press to raise the saw bow and stops the machine's operation without resetting.

G) Bow Down Button
Press to lower the saw bow.

H) Bench Vise Close Button
Press to approach or clamp the work-piece.

I) Bench Vise Open Button
Press and hold to adjust the widths to desired lengths. When saw bow is not at the safe height limit, the vise will open 5mm at every one touch.

J) Shuttle Vise Close Button
Press to approach or clamp the shuttle vise on the work-piece.

K) Shuttle Vise Open Button
Press and hold to adjust the widths to desired lengths. Opens one full length when saw bow is at the safe height When saw bow is not at the safe height, the vise will open 5mm at every one touch.

L) Shuttle Vise Forward Button
Press to advance the vise or work-piece.

M) Shuttle Vise Backward Button
Press to retreat the vise or work-piece.

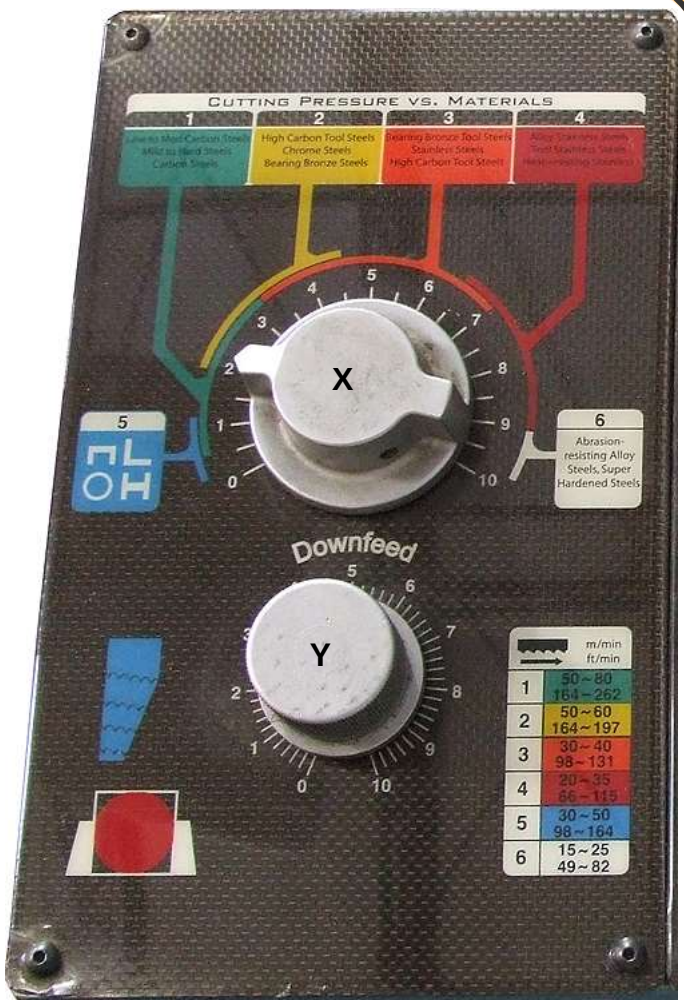
O) Work Light Switch
Press to start the work lamp and the button light will be on. Press again the lamp will turn off.

P) Coolant Switch
Press to start the coolant pump and begins coolant flow, the button light will be on. Press again the coolant pump will stop.

R) Power indicator light.
* There are five indicator lights on the control panel. They correspond to the vise and bow rise or down operation. One is for shuttle vise movement and two are for vises clamping. They will become illuminated when material is properly clamped in their respective vises or shuttle vise has reached the forward limit position. The saw bow will not start if the clamping indicator lights are not lit.

X) Cutting Pressure Knob
This switch set the rate for the cutting pressure for different materials.

Y) Bow Down-feed Knob
The switch sets powered down feed pressure.



Saw Base

The base is the structure supporting the saw bow (the bow pivot point and respective blocking system), the vise, the rollers, the feeding system, and coolant system.

Saw Bow

The saw bow consist of machine parts that include drive members (gear motor or variable speed motor, pulleys, flywheels), tensioning system, saw blade, guide assembly (guide arms and blade guide blocks), and work light.

Blade Tension Control

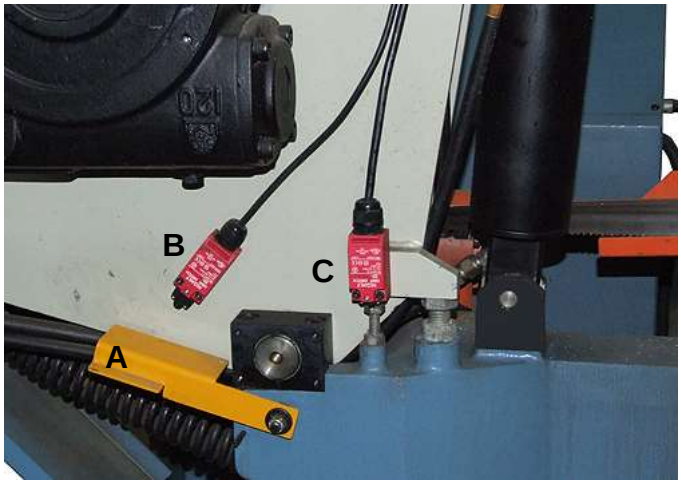
Tension the blade by turn the hydraulic handle to the tension position.
Release the blade tension when the saw will not be in use or when changing the blade.

Magnetic Sensor

This machine is equipped with automatic power shut-off safety device to prevent any further damage when a blade has been broken. This micro-switch determines the movement of the idler flywheel. If the flywheel stops turning because the blade has lost tension for any reason, the saw blade motor will stop.

Bow Height Adjusting Plate

The adjusting plate (A) can be adjusted up or down by hand as needed to increase or decrease the height that the bow raises between cutting cycles. Note: Tighten the pivot nut if the plate will not hold position.
Set the height so that the teeth of the blade are at least 0.5” - 0.75” (13 - 20mm) above the work material at the top of the stroke.
This will provide clearance for the material to advance while also reducing operation cycle time.



Bow Down Limit Switch

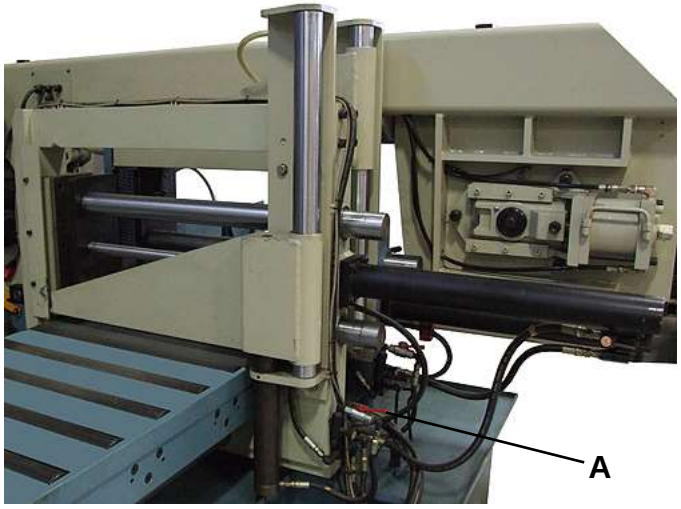
The bow down limit switch (C) stops the descent of the saw bow at the bottom of the cut. When in Auto mode, the blade continues running and the saw bow will raise up when it has reached the table. The material may be advanced and the next cut will begin.

Vise System

The vise system consists of a fixed vise and shuttle vise.
The shuttle vise is movable for extension of stock material and can be positioned to provide more support while clamping. Both jaws on the shuttle vise are hydraulic driven. This system allows flexibility and security while clamping irregular pieces.
The vises also built with vertical presses for bundle cutting.

Nestling Clamps (Optional)

Nestling clamps are used for bundle cutting operations including front and rear vertical vise. They are used to vertically press down upon a group of equally sized work-pieces. This allows cutting of multiple pieces at once. These clamps are hydraulically operated automatically.
When it is desired to not use these clamps, open the valve (A) and allow the clamp to raise to the full up position. Then rotate the handle 90° to close the valve and hold the clamp in the up position.



Chip Auger

The chip auger is driven by a hydraulic motor. It automatically starts during the hydraulic pump on.

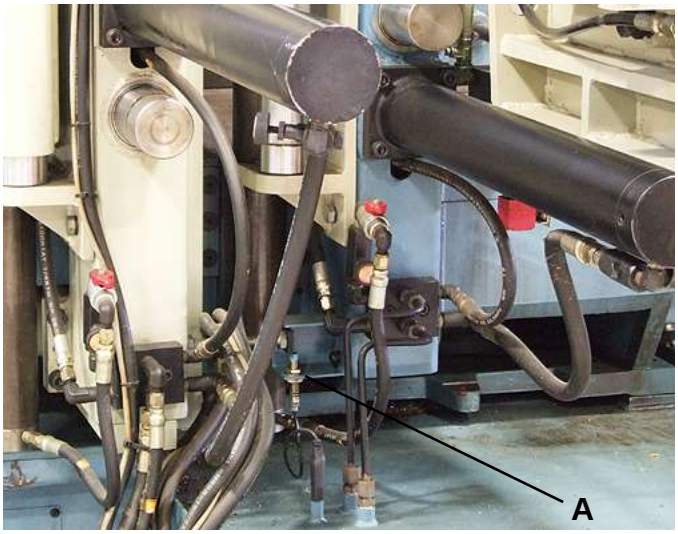
⚠ CAUTION: The chip auger presents an entanglement hazard. Keep hands, finger, hair, clothing and jewelry away from the auger and its drive system. DO NOT reach into the auger for any reason until the power has been disconnected and locked out.

Chip Brush

This model has a powered chip brush driven by an axle transfer from the motor. The chip brush is designed to clean the blade thus prolonging the life of the blade.

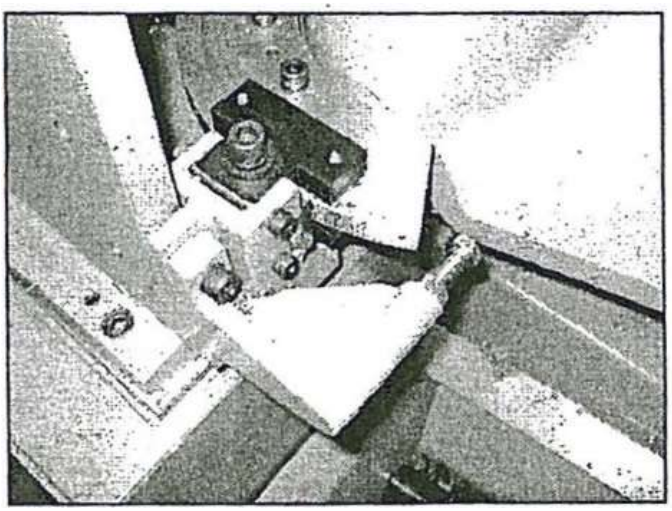
Shuttle Vise Forward Sensor

The forward sensor (A) function is when the shuttle vise moves forward to the zero position the sensor will send a signal to the PLC indicating it is ready for the next movement.



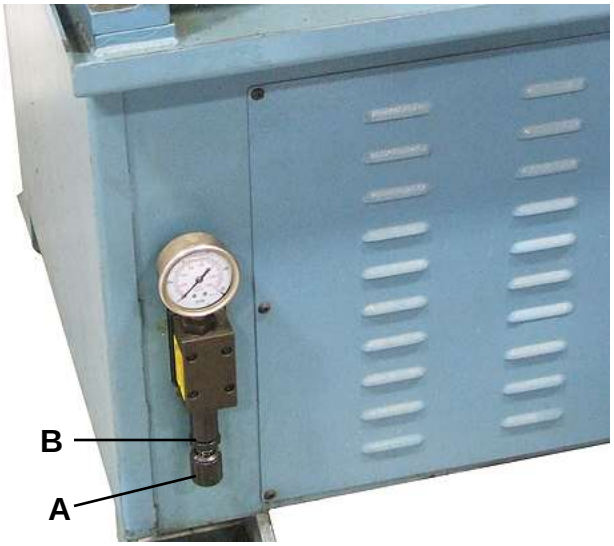
Miter Angle Lock Device

The pivot platform is the structure that holds the saw bow and rotates horizontally for miter cutting up to 45°. Miter angles are secured in place with a clamping mechanism that is operated by a lock screw. An angle scale with a pointer in clear view of the saw operator allows for accurate setting of the cutting angle. The head is easily changed to set a different cutting angle by releasing tighten screw by hex tool to loosen the Brake lever, and then manually moving the Head to the cutting angle desired.



Hydraulic Vise Pressure

The hydraulic vise pressure can be adjusted by a pressure gauge on the base of the machine. The normal pressure is set at 500psi (35kgs/cm2). This is good for most solid firm materials. For softer, hollow, or pipe materials reduce the pressure to over 355psi (25kgs/cm2). Other materials may require different clamping force. The clamping pressure can be adjusted by a knob at the base of the pressure gauge assembly.



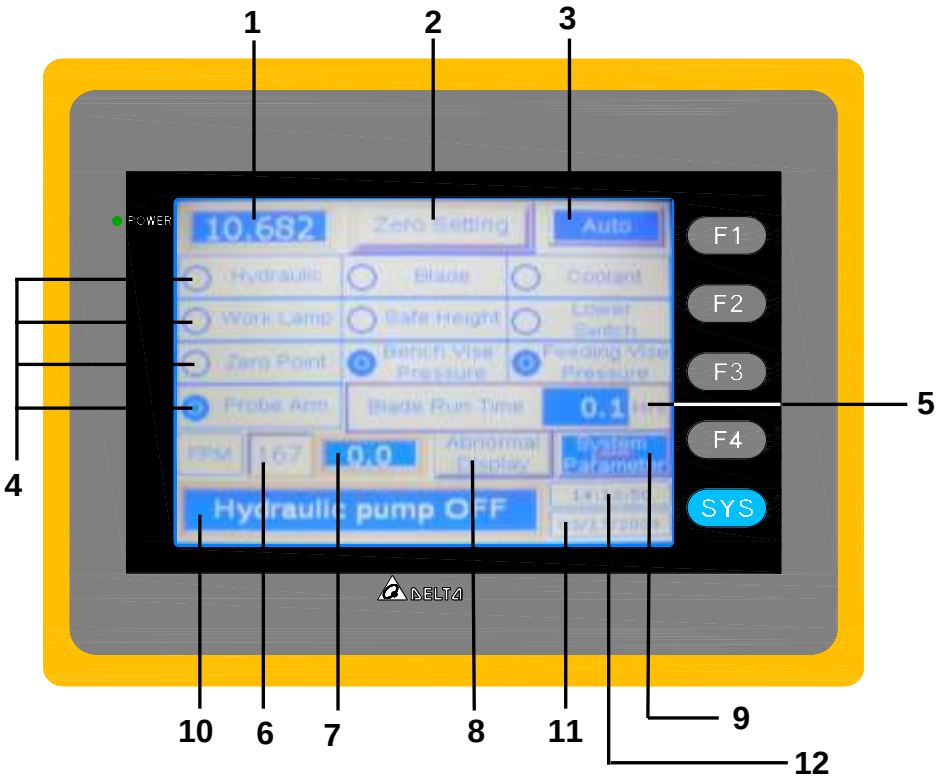
1. Start by pressing the vise close switch continuously in manual mode to have the vise clamp onto a work piece.
2. Next, unlock the fluted knob (A) by releasing fluted lock nut (B).
3. Turn the fluted knob (A) counterclockwise to decrease the pressure, clockwise to increase the vise pressure.
4. Lock the fluted nut (B) after adjustment.

MACHINE INTERFACE

The colorful machine interface is a touch screen input window. It allows for the programming of operation variables. It will also display current operation parameters or errors.
Operations are conducted in menu form. The machine interface is activated when the hydraulic pump is started. Press the hydraulic start button to begin. The interface will display a start page containing the machine brand and model number.

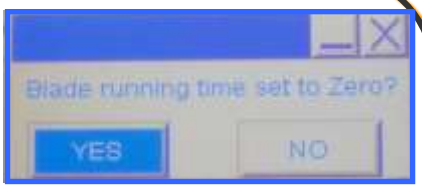
F1: Main Menu

Touch F1 button and the monitor will display the current state page.



1. Shuttle Vise Move Position – This box shows the distance the shuttle has traveled from the zero position.
2. Zero (Home) Setting – Touch to set the shuttle vise zero position before automatic cutting or to set when machine has been shut Off and turned On again. NOTE: Close front vise and open the rear vise in manual mode before setting the zero position.
3. Operating Mode – Indicates whether machine is in Manual mode or Auto mode.
4. Working Indicator Lights – The indicator lights show the machines current operating status. (Hydraulic, Blade, Coolant, Work Lamp, Safe Height, Lower Switch, Zero Point, Bench Vise Pressure, Feeding Vise Pressure, & Probe Arm.)

5. Blade Run Time – Displays time that the blade has been in service. Touch to bring up the “Blade running time set to Zero?” message after changing a blade. After selecting “Yes or No” touch the “X” to return to the main screen.

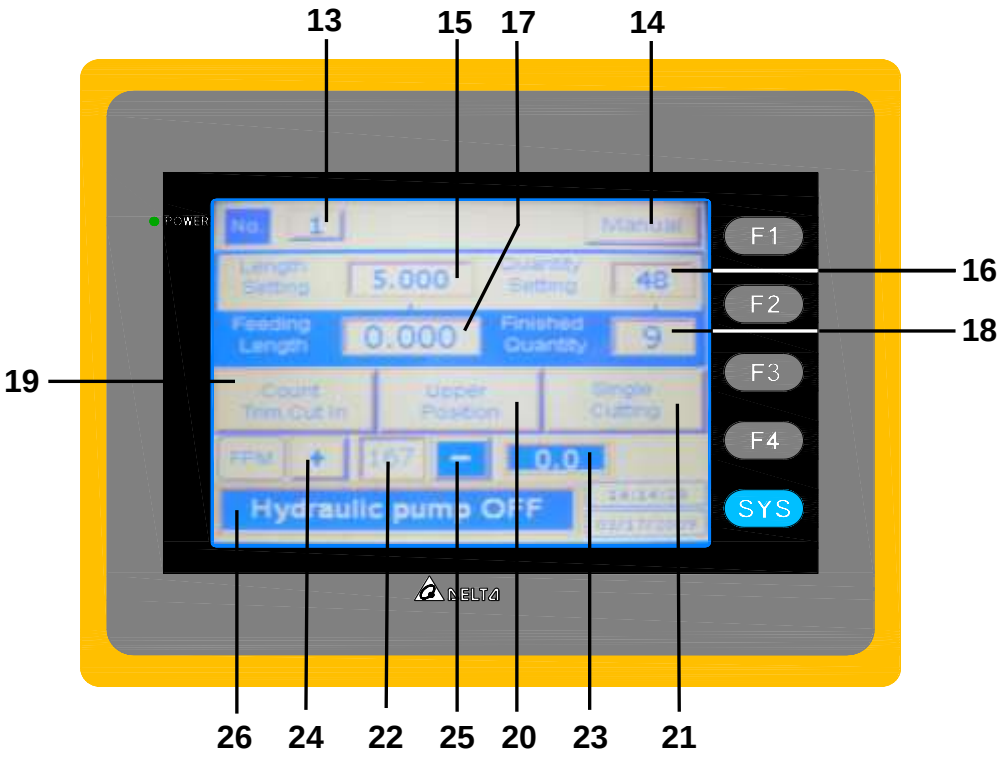


6. Set the Blade Speed – Touch to enter a value for the blade speed.
7. Blade Speed – Shows actual blade running speed.
8. Abnormal Display – Touch to show fault screen (at right). The fault screen shows the malfunction and how to solve it. It also shows prior faults with the date and time when they occurred.

9. System Parameter – A password is required to enter into this section. ONLY QUALIFIED PERSONNEL should have access to the parameter settings. Key in the password and Touch enter. Caution should be taken when making any parameter changes as they could cause a machine malfunction.
10. Main Message Display
11. Current Date
12. Current Time

F2: Current Operation

Touch F2 button and the monitor will display the executive status page.



13. Executing No. – Refers to the instruction task order. Touch to go to menu F3, Material Cutting Jobs
14. Operating Mode – Shows whether machine is in Manual or Auto mode.
15. Length Setting – Refers to the length setting of the current task.
16. Quantity Setting – Refers to the quantity setting of the current task.
17. Feeding Length – Refers to the current total length of material that has fed forward. This includes distances beyond a single shuttle stroke.
18. Finished Quantity – Refers to the number of cut pieces completed.
19. Count Trim Cut In – Touch to count trim cut out after starting automatic cutting cycle.

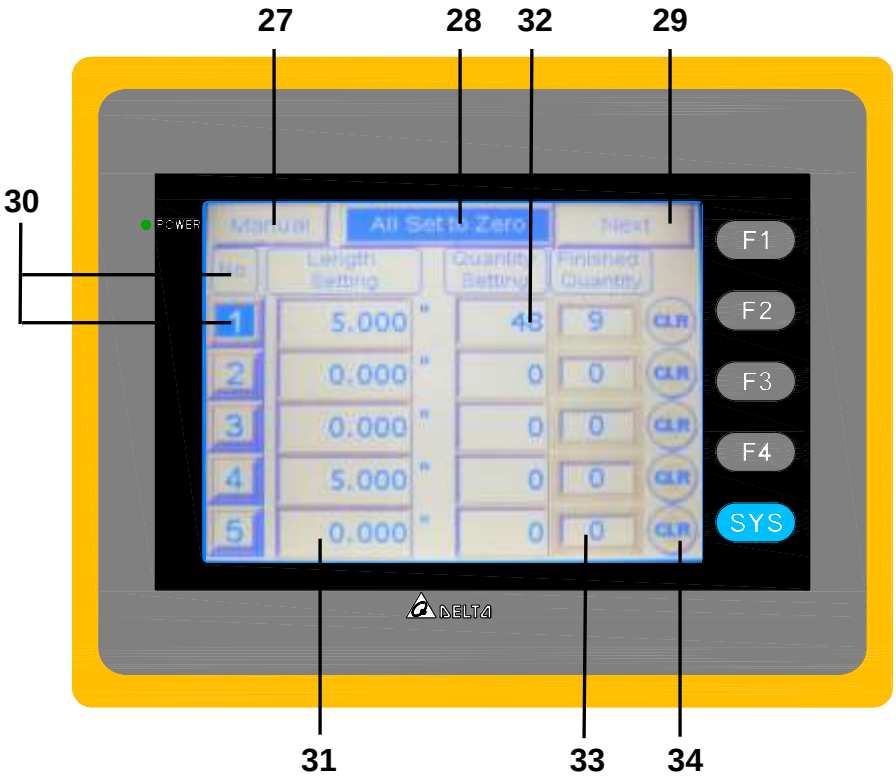
20. Upper Saw Head Stop Position – Set the saw upper or lower head stop position after finished cutting in Manual mode.
21. Single Cutting or Bundle Cutting – Touch to select Single cutting or Bundle cutting. For single cutting operation, the shuttle vise will clamp at a position in the back to prepare for the next feed. Bundle cutting means the shuttle vise will stay at the front position after feeding material forward.
22. Blade Speed (FPM) – Touch to set blade speed directly, the blade speed is read in feet per minute. After entering blade speed Touch “Enter” and then “X” to return to screen F2.
23. Shows Actual Blade Running Speed
24. (+) Touch to increase blade speed
25. (-) Touch to decrease blade speed
26. Main Message Display – Shows a machine or fault message and a possible remedy.

This table shows machine executive steps and wrong procedure.

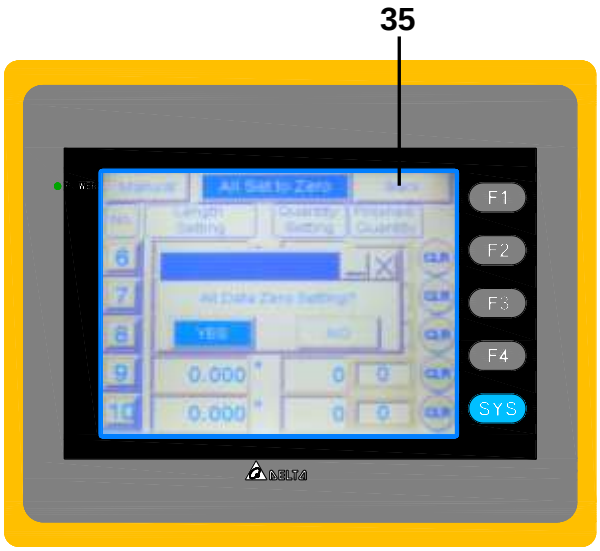
Executive messages	Remedy
1. Hydraulic pump OFF	1. Start hydraulic pump
2. Bench vise not clamping securely	2. Close bench vise until indicator light is on.
3. Front & Rear vises are clamping.	3. Open front vise or Rear vise.
4. Zero setting incomplete	4. Executive Zero setting.
5. Bow not released	5. Press bow rise button until indicator light is on.
6. Choose executive No.	6. Touch the executive No. to choose cutting job.
7. Probe arm limit switch is off.	7. Rise bow up.

F3: Sets material cutting jobs

Touch the F3 button will display cutting jobs setting



27. Shows Manual or Auto Mode
28. All Set To Zero – Touch to bring up screen “All Data Zero Setting” Yes or No. Touch “X” to return to F3 menu.
29. Next – Touch to advance to additional entry lines.



30. Job Number – Refers to the cutting task orders (1 – 10). For cutting piece parts, the saw will follow the selected jobs in sequence. Touch the task number(s) required and the box will turn blue (A). Note: The Length Setting and Quantity settings must be filled in first.
31. Length Setting – Refers to the length of cut pieces. This menu allows the user to set the variables for cutting piece parts. There are 10 total task lines available for altering the production lengths. To modify the cut length (in manual mode) Touch the Length Setting box and the screen to the right will display. Key in the cutting length and Touch the enter key.
32. Quantity Setting – Touch the Quantity Setting box. Key in the quantity and Touch the enter key.
33. Finished Quantity – Refers to the number of cut pieces completed.
34. Clear Setting (CLR) – Touch any CLR button within 2 sec. to set the length and quantity back to zero.
35. Back – Touch the back button and you will return to task lines (1 – 5)

F4 Page: Language Option

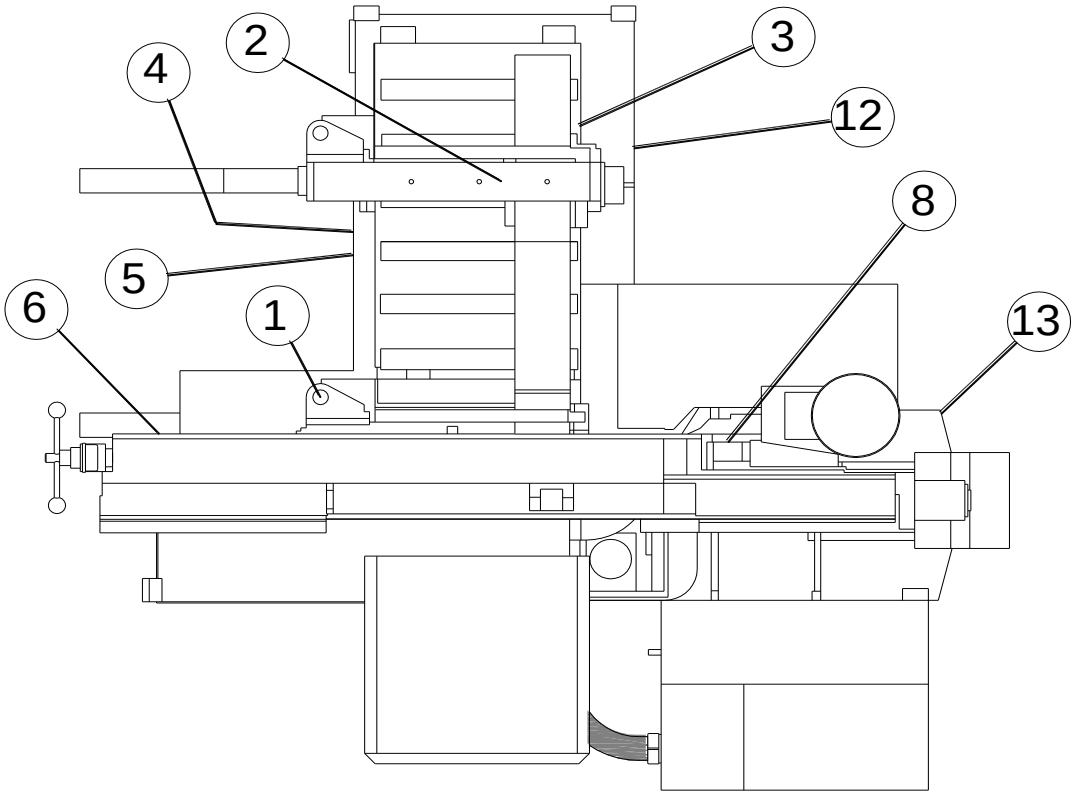
Touching the F4 button will display the following screen.
This menu allows the operator to change the user language. Touch the button of the language you desire, and then the button to return to the main menu in the language you selected.

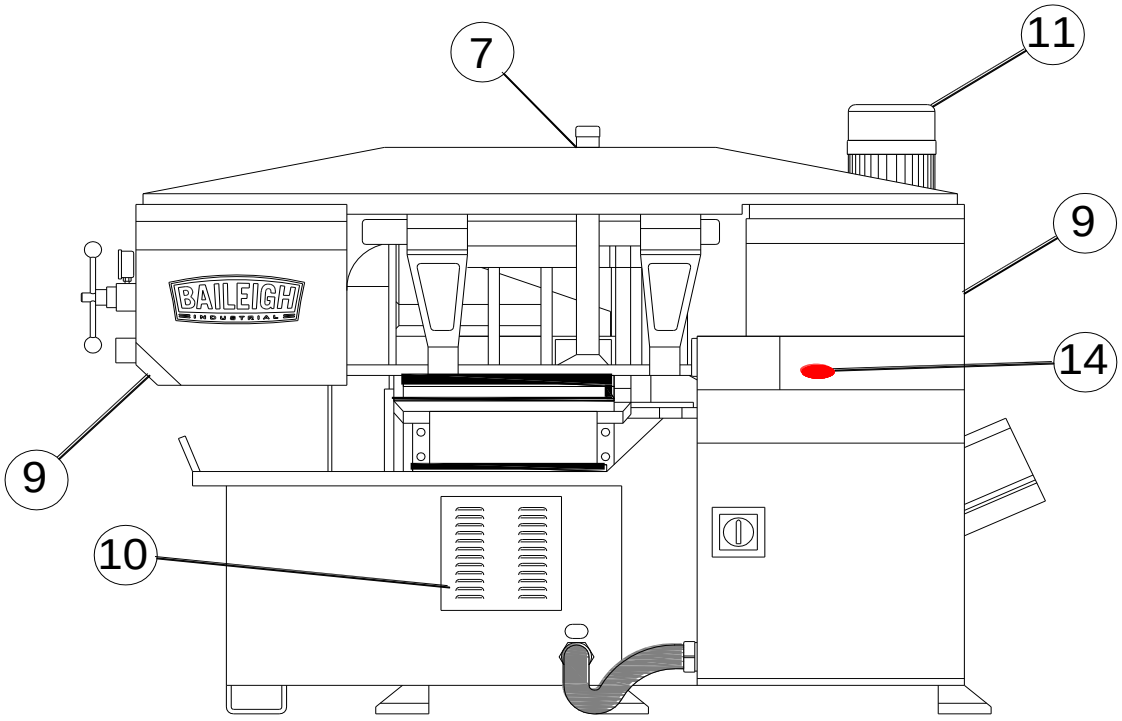
Machine Error Notices

The Interface will show error notices when machine malfunction occur. They will display the probable cause and possible remedies.
Follow the remedies to resolve the problem and press reset button to remove the Error Notice.

The diagram shows the number and location of various malfunctions.

No.	Malfunctions Display	Remedy:
1	Abnormal Forward Limit Switch	Check Forward Limit Switch.
2	No Material In The Shuttle Vise	Check Material In The Shuttle Vise
3	Abnormal Encoder Scale	Check Linear Scale Wire$. Check Linear Scale Function.
4	Abnormal Shuttle-Vise Pressure Sensor	Check Shuttle Vise Pressure Sensor Function.
5	Abnormal Bench-Vise Pressure Sensor	Check Bench Vise Pressure Sensor Function.
6	Abnormal Blade Tension	Check For Broken Blade Check For Blade Tension Check Blade Sensor
7	Abnormal Probe Arm Limit Switch	Check Probe Arm Limit Switch Check Probe Arm Sliding Function
8	Abnormal Bow Down Limit Switch	Check Bow Down Limit Switch
9	Blade Cover Opened	Check Blade Cover Limit Switch Close Blade Cover
10	Abnormal Motor Inverter	Check Motor Inverter
11	Abnormal Blade Motor.	Check Overload Relay Of Blade Motor
12	Abnormal Hydraulic Motor	Check Overload Relay Of Hydraulic Motor
13	Abnormal Coolant Motor	Check Overload Relay Of Coolant Motor
14	Emergency Button Locked	Release Emergency Button


2
3
4
12
8
5
6
1
13


7
11
9
14
9
10

BEFORE EACH USE

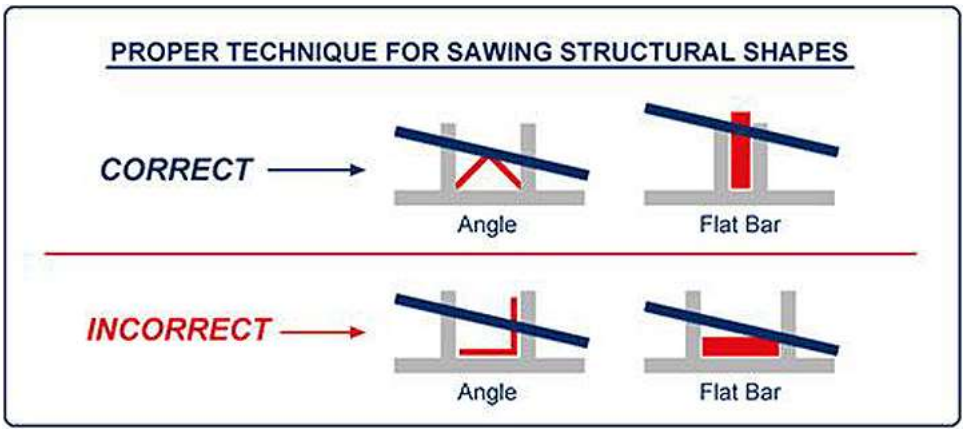
- For dusty operations, wear a face shield along with safety goggles.
- It is important to choose the right blade for the material and the type of cutting you plan to do. This saw is equipped with a bi-metallic blade which can be used to cut stainless steel, steel, iron, brass, aluminum, wood, plastic.
- Make sure the direction of rotation arrow on the blade matches the direction arrow on the saw. The blade teeth should always point downward at the front of the saw.
- Make sure the blade is sharp, undamaged and properly aligned. With the saw unplugged, push the power-head all the way down. Rotate the blade by hand checking for clearance. If the blade hits anything, make the adjustments shown in the Maintaining Maximum Cutting Capacity section.
- Never cut freehand.
- Make sure the cut-off piece can move sideways after it is cut off. Otherwise, it could get wedged against the blade and thrown violently.
- Never turn the saw "ON" before clearing everything except the work piece beneath the blade.
- Never put lubricants on the blade while it is spinning.

Whenever Saw is Running

- Never confine the piece being cut out.
- Never hold it, clamp it, touch it, or use length stops against it. It must be free to move sideways. If confined, it could get wedged against the blade and thrown violently.
- Avoid awkward hand positions where a sudden slip could cause a hand to move into the blade.
- Let the blade reach full speed before cutting.
- Feed the saw into the work piece only fast enough to let the blade cut without bogging down or binding.
- Before freeing jammed material, turn the switch off and unplug the saw. Wait for all moving parts to stop.
- After finishing a cut, keep holding the saw bow down, release the switch, and wait for all moving parts to stop before moving your hands.

Breaking in a Band Saw Blade

Sharp cutting edges with extremely small edge radii are required for high cutting capacity. To achieve the optimal tool life we recommend breaking-in the blade accordingly. The correct cutting speed is determined by the material being cut and its dimensions. It is very important that the new blade is first used with only 50% of the determined feed rate. This will avoid micro-breakages of the blade because of too large chip thicknesses. New band saw blades may tend toward vibrations and vibration sounds. In this case a slight reduction of the cutting speed is helpful. With small workpiece dimensions approximately 300cm² of the material should be cut for breaking-in. If large work piece dimensions are to be cut we recommend a breaking-in period of about 15 minutes. After breaking-in you may slowly increase the feed rate up to the determined value.



Metal Chip Indicators

Chips are the best indicator of correct material feed force. Monitor chip information and adjust feed accordingly.

- Thin or Powdered Chips – increase feed rate or reduce saw speed
- Burned Chips – reduce feed rate and / or saw speed
- Curly Silvery and Warm Chips – optimum feed rate and saw speed

Baileigh Industrial offers a wide selection of tooth styles for various cutting applications. Please phone Baileigh Industrial at (920.684.4990) or fax to (920.684.3944) to have one of our technicians assist you in selecting the proper band saw blade for your cutting applications.

BLADE CARE

The bandsaw blade is subjected to a tremendous amount of strain. Make sure to always use the appropriate feed rate for the type material you are cutting.

Be sure to select a blade of the proper width, style, and pitch that will produce the best cut in your material. Choosing the wrong blade can produce excess heat that can adversely affect the life of the blade.

A clean blade performs much better than one that is dirty. Blades that are gummed up and dirty offer more resistance when cutting through the material. This in turn creates unnecessary heat in the blade.

CHOOSING A SAW BLADE

A general purpose blade is furnished with this band saw.

To achieve a quality, economical, and efficient saw cut, the following points must be taken into consideration:

- Type of material being cut (ferrous or non ferrous)
- Material hardness and physical dimensions
- Blade descent rate
- Longitudinal speed of blade
- Blade tooth profile

Choose a tooth pitch that is suitable for the workpiece. Thin walled profiles, including tubes and pipes require close toothing. At least 3-6 teeth should be in contact with the material while cutting. Large solid or transverse sections require widely spaced toothing to allow for greater volume of chips and better tooth penetration. Soft materials such as plastics, light alloys, mild bronze, Teflon, etc. require widely spaced toothing to avoid clogging.

Blade Selection Reference Table

Cutting Material	Round Tube	Angle and H or I Beam	Solid Round or Square	Solid Round or Rectangle	Solid Round or Rectangle	Solid Round or Rectangle
	<3mm	>5mm	>50mm	>100mm	>150mm	>300mm
Sawblade	<0.12”	>0.2”	>2”	>4”	<6”	<8”
(HSS)14T	▲					
(HSS)6/10T		▲				
(HSS)5/8T			▲			
(HSS)4/6T			▲	▲		
(HSS)3/4T				▲		
(HSS)2/3T					▲	▲
(HSS)1/2T						▲
(HCS)10T	▲					
(HCS)8T		▲				
(HCS)6T			▲			
(HCS)4T				▲		
(HCS)2T					▲	▲

HSS - HIGH SPEED STEEL
HCS = HIGH CARBON STEEL

- Never use a blade finer then required to obtain a satisfactory surface finish or satisfactory flatness. (Too many teeth engaged in the work piece will prevent attainment of a satisfactory sawing rate; frequently cause premature blade wear; frequently produce "dished" cuts or the cuts are neither square nor parallel.)
- The table is not expected to be correct for all cases. It is intended as a general guide to good sawing practices. Your blade supplier or qualified engineers should be you most reliable source for correct information on operational details of saw blades and their use.

Note:

- *When cutting a thin walled pipe, angle steel, and I-beam steel, use a blade with 10T/in.*
- *When cutting pipe with a wall 1/2" or more in thickness, use a blade with 8-12T/in or 6-10T/in.*
- *When cutting angle steel, I-beam, or solid bar; cut the thinnest cross section of the material first. There must be at least three teeth cutting the material at all times.*

BLADE BREAKAGE

In some cases blade breakage is unavoidable due to the stresses that are imparted on the blade. Avoidable breakage is often the result of poor care, or poor operator judgment when it comes to adjusting or mounting the blade or blade guides.

Listed below are some of the more common reasons for blade breakage.

- Top blade guide assembly is set too high above the piece part.
- The blade is tensioned incorrectly.
- Piece part is fed into the blade too quickly.
- Blade teeth are dull or broken.
- Blade is not properly aligned with the guides.
- Forcing a large width blade to cut a small radius.
- Using a blade with an improperly finished weld joint.
- Allowing the blade to run when not in use. (**NEVER** leave an unattended blade running.)

MATERIAL SELECTION

⚠ CAUTION: It must be determined by the customer that materials being processed through the machine are NOT potentially hazardous to operator or personnel working nearby.

When selecting materials keep these instructions in mind:

- Material must be clean and dry. (without oil)
- Material should have a smooth surface so it processes easily.
- Dimensional properties of material must be consistent and not exceed the machine capacity values.
- Chemical structure of material must be consistent.
- Buy certificated steel from the same vendor when possible.

MACHINE SET UP and ADJUSTMENTS

WARNING: Unless specifically needed to complete the procedure, make sure the electrical disconnect is OFF before working on the machine.

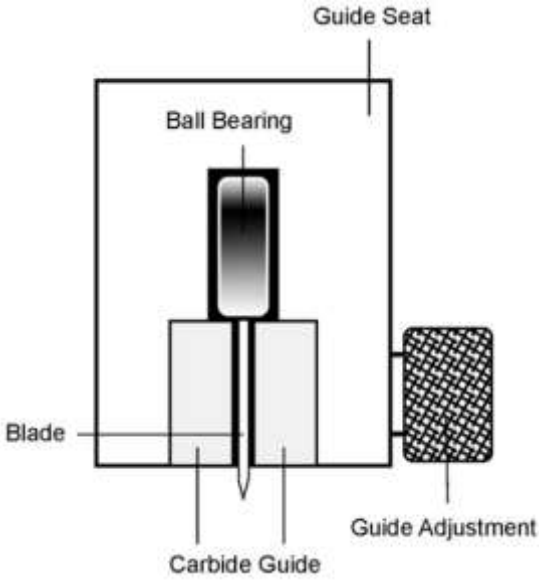
Choose a proper saw blade by select the saw blade best suited to the work-piece to be cut. Size the shape of the work-piece, and type of material should all be considered when selecting the saw blade to be used.

Tungsten Carbide Guides Adjustment

The blade is guided by the upper ball bearings, side ball bearings, and tungsten carbide guides.

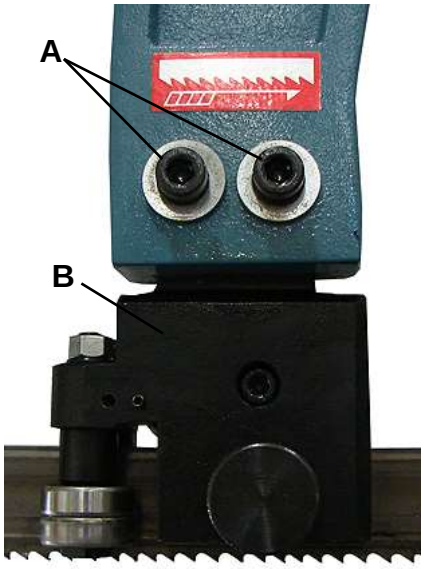
When ready to cut the work piece, the carbide guide must be adjusted by adjusting the screws to properly compressed blade. The tungsten carbide blades should touch, but not pinch the blade.

1. For moving the blade guide posts or changing blade, the tungsten carbide guides should be released by using the guide adjusting screw.
2. In case the blade needs to be replaced, make sure to always install 1.3mm thick blade.



Thrust Roller Adjustment

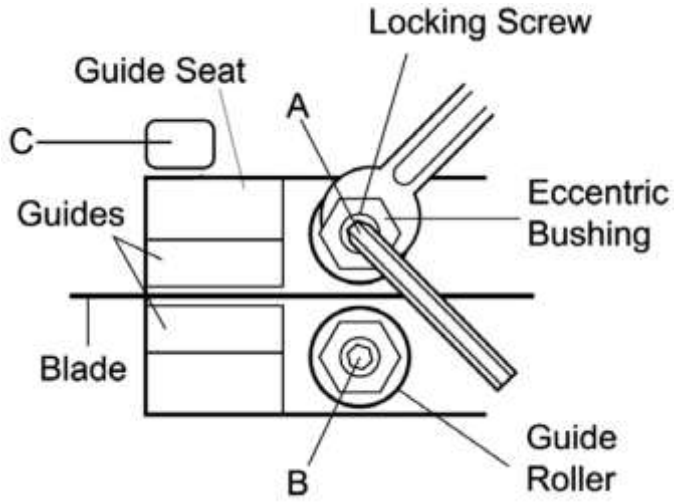
1. Disconnect machine from the power source.
2. Loosen two hex socket cap screws (A)
3. Move guide seat (B) up or down until a clearance of .003" to .005" between back of blade and thrust roller is obtained.
4. Tighten two hex socket cap screws (A).
5. Repeat for other blade guide assembly.
6. Connect machine to the power source.



Guide Roller Adjustment

Note: *Only bearing (A) is adjustable. Bearing (B) is fixed.*

1. Disconnect machine from the power source.
2. Loosen blade guides by loosening guide adjustment screw (C).
3. Loosen locking screws (A) by using a hex wrench.
4. Adjust the eccentric bushings with a combination wrench until the ball bearings are snug to the blade (A).

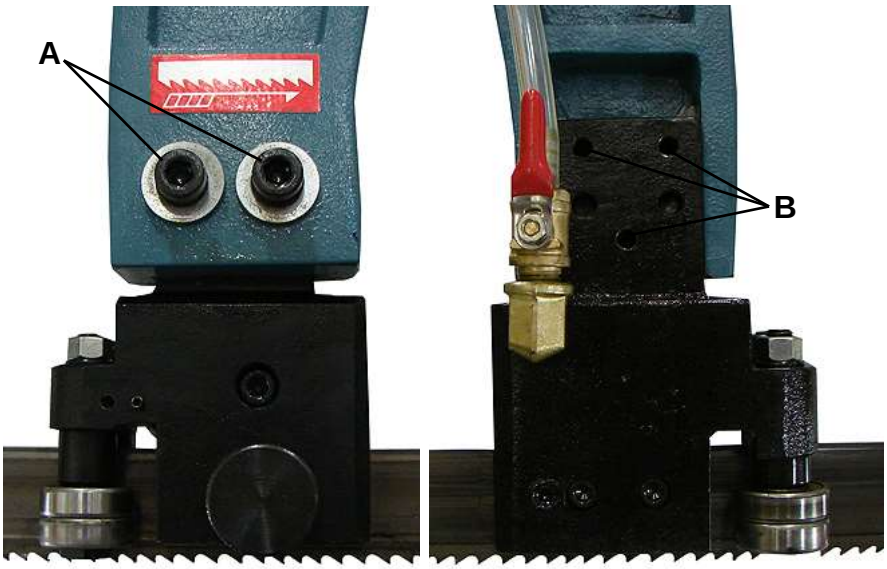


Note: *The blade should travel freely up and down between the ball bearings. Do not pinch the blade.*

5. Tighten locking screws (A).
6. Connect machine to the power source.

Cutting Precision Adjustment

The cutting precision has been set at the factory.
This adjustment should only be accomplished by qualified personnel that are familiar with this type of adjustment.

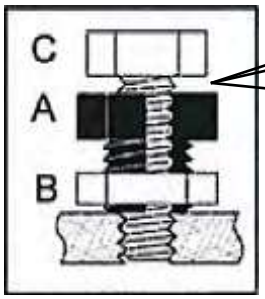


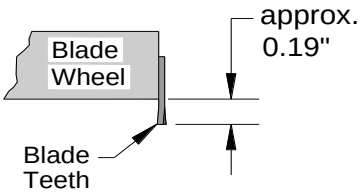
1. Disconnect the machine from power supply.
2. Loosen the adjusting bolts (A) slightly.
3. On the back side of the guide, adjust the three setscrews (B) to adjust the alignment of the guide blocks so that the blade tracks perfectly straight between the guides.
4. After adjusting, tighten the adjusting bolts (A).

Blade Tracking Adjustment

This adjustment must be accomplished by qualified personnel that are familiar with this type of adjustment and the dangers associated with it.
The blade tracking is factory set and should not require any adjustment. If a tracking problem occurs, adjust the machine as follows:

1. Raise saw arm to a usable height.
2. Disconnect the machine from the power source.
3. Locate tracking adjustment bolt on the backside of the saw bow behind the flywheel.
4. Loosen hex cap screw C, located on the top of the tracking nut B.
5. Tracking adjustment is accomplished by either raising or lowering adjusting screw B.
6. Tracking is set properly when the back of the blade lightly touches the wheel flange.





Note: *O*ver tracking (allowing blade back to rub hard against wheel flange) will damage the blade wheels and blade.

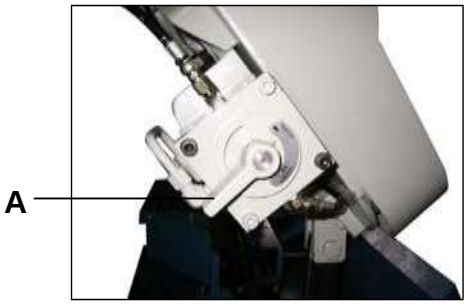
7. Secure the locking bolt A. Tighten hex cap screw C and tracking nut B.
8. Connect machine to the power source.

Blade Removal and Installation

⚠ WARNING: Disconnect the machine from the power source before making any adjustments or repairs! Failure to comply may result in serious injury!

Blade changes are periodically required when they become worn or to match the properties of varying materials.

1. Raise the saw bow approximately 6" in height.
2. Disconnect the machine from the power source.
3. Loosen the wingnut on the blade brush so it pivots away from the blade.
4. Remove the blade guards from the base of the guide post and saw bow cover.
5. Open the saw bow covers.
6. Release the tension on the carbide guides by turning the knob counter clockwise 1/4" turn. Loosen left blade guide post lock handles and slides it to the right side as far as possible.
7. Release the blade tension. Turn the blade tension handle (A) to "Loosen" position to free the blade.



⚠ CAUTION: Even dull blades are sharp to the skin! Use extra caution handling band saw blades! Wear gloves for protection from the sharp blade!

8. Remove the old blade from both wheels and out of each blade guide.
9. Using compressed air, blow out metal chips and grit from between the bearings, blade guides, and inside of the blade guards and covers.
10. Place the new blade in the carbide guides, and then slide the blade over the wheels. The teeth should be pointing towards the drive side as they pass through the carbide guides. The blade teeth should protrude from 4.5mm to 5mm from the face of the blade wheels.
11. With the blade in place, turn the tension handle (A) to the "Tighten" to tension blade.
12. Set the carbide guides. Turn the two carbide locking handles clockwise to the locked position. Jog the blade a few rotation to check that the blade is not moving in or out on the blade wheels.
13. Close all covers and fasten all guards.

14. Connect machine to power and run the blade freely for one minutes.
15. Turn the power OFF.
16. Recheck the blade tension and chip brush.
17. If further adjustment is necessary disconnect the saw from the power source, make adjustments, re- connect the power, and then test again.

Saw Blade Break-In

When a new blade is used, be sure to first break in the blade before using it for extended operation.
Failure to break in the blade will shorten the service life of the blade, and result in less than optimum efficiency. To break in the blade, proceed as follows:

1. Reduce the blade speed setting to one half of its normal setting.
2. Lengthen the time required for cutting to 2-3 times that of normal.
3. The break-in operation can be considered sufficient if all unusual noises or metallic sounds have been eliminated. For instance, to completely break in the blade, a minimum of five complete cuts of a 8” (200mm) diameter work-piece will be required.
4. After the break-in operation has been completed, return the blade speed and feed rate to their normal setting.

OPERATION

⚠ CAUTION: Always wear proper eye protection with side shields, safety footwear, and leather gloves to protect from burrs and sharp edges.
NEVER operate saw without blade guards in place.

Vise Operation

- The vises can be opened to full stroke when saw bow is raised to the highest limit. If the saw bow at a position below the highest limit, the vises will only open 0.2” (5mm). They will only open one cycle of 0.2” (5mm) even if the Bench or Shuttle vise open buttons are pressed.
- The shuttle vise will not move material when the bench vise is clamped.
- The shuttle vise will not move material if the approach sensor is active.
- When closing the vises, the bench vise must be closed first.
- If the vises are to be open, then start the shuttle vise.

Securing the Work-piece

- Raise the saw frame to the full height.
- Open the vise wide enough for the material.
- Place work-piece onto the roller table.
- Gently push the work-piece through the vertical rollers and shuttle vise, taking care not to hit the vertical rollers.
- The machine will automatically clamp the material in auto mode and the vise can close a full stroke to do so.
- In manual mode, use the vise close buttons.

Adjusting the Guide Posts

The blade-guide posts adjust horizontally to control the spacing of the blade guides. Having the blade exposed to the minimal amount provides better safety protection and a more accurate cutting by reducing blade flexing.

- Refer to the scale to adjust the distance.
- For most spacing changes, unlock the left guide post by loosening the handle.
- Grip the posts and move horizontally.
- Use the handle (A) to lock into position.

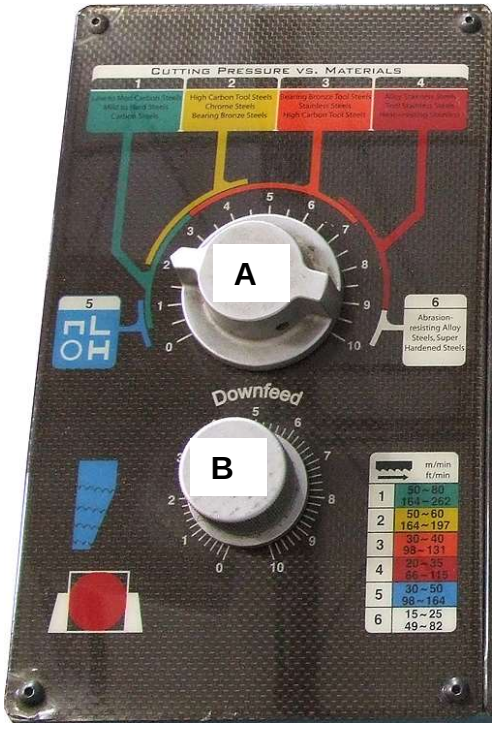
Setting the Miter Angle

This machine can make miter cuts up to 45°.
There is an angle scale with indicator for quick and accurate miter angle setting.
Always lock the horizontal rotation before performing any cutting operation.

- Unlock the saw bow. Raise the lock screw by the hex tool.
- Rotate the saw bow. Check the angle scale for the desired angle.
- Set the miter angle. Lower the lock lever.

Cutting Feed Rate

Select suitable cutting feed pressure (A) and down rate (B) for the work-piece to be cut. This varies according to the size and shape of the work-piece, type of material, and what type of saw blade is being used. As a guide for materials: cutting hard, wide, tube, or structural materials, must to be done at a slower rate than mild steel bar. For the concerns the saw blade, high-speed steel is better than carbon steel and bi-metal alloy is better than high-speed steel.
Roughly. The materials are listed on the control panel. Please refer to it for proper cutting pressure and feed rate setting.



- Curled shaving indicate correct feed rate.
- Thick discontinuous chips indicate too much feed rate. Turn knob counterclockwise.
- Powdery chips indicate too little feed rate. Turn knob clockwise to increase feed rate.

CUTTING CYCLE

Before you start to cut the work-piece, you must inspect that:

- The work-piece is well clamped.
- The saw blade is suitable for the material being cut.
- The blade-guide post is secure and the hand wheel is tightened.
- Sufficient tension is placed on the saw blade.
- The wire brush is properly positioned.
- There is sufficient cutting fluid in the trough, and it is in good condition.
- The feed length is set to the correct distance.

Manual Operation

Reference Set Up Operation Preparations for detailed instructions for some of the procedures below.

1. Connect the main power, and turn ON the main disconnect switch.
2. Press the Hydraulic Start button.
3. Use the Auto/Manual Switch to select “MANUAL” mode.
4. Place the work-piece onto the vise.
5. Close the shuttle vise using the shuttle vise close button.
6. Use the shuttle vise Forward and Backward buttons to move the material to the desired cut position.
7. Clamp the work-piece with the bench vise using the Bench Vise Button.
8. Adjust the left guide post to as close as possible to the without interfering with the material or the vise jaws.
9. Set the Blade Speed in manual mode. Use the F1 button. The F2 +/- can set the blade speed in auto mode.
10. Set the Bow Down-feed rate.
11. Press Operation Start Button to start the cutting operation cycle.

12. Press coolant switch to start the coolant pump and indicator light will on. The chip auger will also start turning. The saw bow will begin to descend quickly until the probe arm touches the work-piece. Then the blade descent speed will slow to the down feed rate setting.
13. After completion of the cut, the saw blade will stop at the lower limit position. The bow stop location can be set at upper position or lower position in manual cutting mode.
14. Press the Bow up button to raise the saw bow.

Stopping the Machine

In event of an emergency, press either the Emergency Stop Button, or the Bow up Switch, to stop all machine functions.

Initial Trim Cut

When inserting a new work-piece in automatic mode, the first cut-piece will not be the proper size unless an end-cut is performed. This initial cut will zero material length so that further cuttings will be performed accurately.

- Begin by inserting the material. Have the material slightly past the blade cut off line.
- Perform all the Automatic Operation setting procedures.
- Switch the operation to manual mode by using the Auto/Manual Switch.
- Start the initial trim cut with automatic mode. The initial trim cut can be set to count trim cut in or trim cut out by pressing the F2 button to go to the Current Operation screen and then pressing the Trim Cut button ion the touch screen after starting the auto cutting.

Automatic Operation

Reference Set Up Operation Preparations for detailed instructions for some of the procedures below.

1. Connect the main power, and turn ON the main disconnect switch.
2. Press the Hydraulic Start button.
3. Use the Auto/Manual Switch to select the manual mode.
4. Clamp the work-piece.
5. Use the Auto/Manual Switch to select the automatic mode.
6. Set the cut-piece variables in the Machine Interface. Refer to the F3 Sets cutting jobs, and chooses executing section for additional details.
7. Adjust the left guide post to as close as possible to the without interfering with the material or the vise jaws.

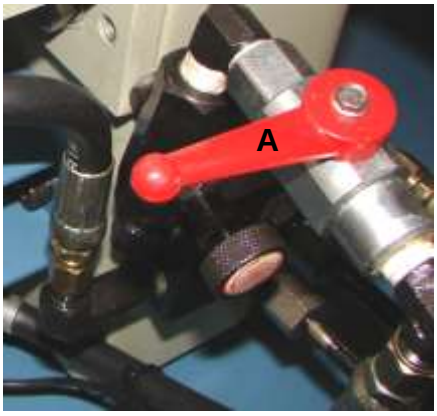
8. Set the Blade Speed. Use the F2 +/- to set the blade speed in auto mode.
9. Set the Bow Down-feed speed.
10. *If starting with a new work-piece; refer to The Initial Trim Cut procedures.
11. Press Operation Start Button to start the operation cycle.
12. Press the coolant pump start switch to start the coolant pump. The saw bow will begin to descend quickly until the probe arm touches the work-piece. Then the blade descent speed will slow to the down feed rate setting.
13. After completion of the cut, the saw blade will stop at the lower limit position.
14. The saw head will rise and work-piece will feed for the next cut.
15. The cycle will continue until all commands have been completed. The machine will stop and the motor will turn off.

Stopping the Machine

In event of an emergency, press either the Emergency Stop Button, or the Bow up Switch, to stop all machine functions. It is recommended using the Bow up Switch, because the emergency stop button will cancel all machine setting. When using the Bow up Switch, the work-piece will remain clamped.
Also the machine can be stop between task cycles switching to manual mode with the Auto / Manual Switch. Using this switch will cause the machine to stop at the end of current task.

Bundle Cutting

- Refer to the Nestling Clamps for additional detail.
- Follow either the Manual Operation procedures or the Automatic Operation procedures.
- Open the hydraulic ball valves (A, shown closed) on the side of front vise and feeding vise so that the handles are in line with the hoses.
- Clamping operations are the same. The switches that operate the vises also operate the vertical motion of the nestling clamp. So, if opening the shuttle vise then the nestling clamp on the shuttle vise will rise up. And if closing the shuttle vise the nestling clamp on the shuttle vise will lower to press the material.



Special Operation for a Jammed Blade

While you are cutting a work-piece, if the saw blade suddenly jams in the work-piece, press the frame raise button to lift the saw frame immediately.
The saw blade jamming in the work-piece is most likely because of:

- Slippage occurring between saw blade and drive wheel. Tension placed on the saw blade is not sufficient.
- Slippage occurring between drive belt and motor pulley. Tension on drive belt is not sufficient or belt is worn.
- Broken teeth on the saw blade.
- The saw blade is dull and too blunt.
- The tooth spacing on saw blade is too fine for material being cut.
- Feed rate is too fast for material being cut and blade being used.

Selecting the Proper Blade Speed

Use the following chart for reference

CUTIING SPEEDS FOR VARIOUS MATERIALS		
MATERIALS	BLADE SPEED (MPM)	COOLANT REQURIED
Free Cutting Steel 1100 & 1200 Series Low & Medium Carbon 1008-1045	70	Yes
1046- 1095 Alloy Steels Tool Steels Pipe & Structures Nickel Base Alloys Cooper Base Alloys	40-60 40-60 30-40 40-60 30-40 30-40	Yes
Stainless Steels 430F, 416, 420F, 303	40-60 40-60	Yes
Cast Iron	40-60	NO Oil Blade

- Blade speeds higher than recommended will quickly dull the blade. Blue chips are evidence of excessive blade speed.
- Lower than recommended speeds will not prolong blade life, and will require a reduced feed rate - reduced speeds may be helpful in reducing vibration, and will increase blade life in that case.

LUBRICATION AND MAINTENANCE

⚠ WARNING: Make sure the electrical disconnect is OFF before working on the machine.
Maintenance should be performed on a regular basis by qualified personnel.
Always follow proper safety precautions when working on or around any machinery.

Daily

- Check daily for any unsafe conditions and fix immediately.
- Check that all nuts and bolts are properly tightened.
- Give general cleaning to the machine to remove accumulated shavings.
- Clean the lubricating coolant drain hole to avoid excess fluid.
- Top off the level of lubricating coolant.
- Check blade for wear.
- Raise the saw frame to the top position and partial slacken the blade to avoid useless yield stress.
- Check functionality of the shields and emergency stops.

Weekly

- On a weekly basis clean the machine and the area around it.
- Lubricate threaded components and sliding devices.
- Apply rust inhibitive lubricant to all non-painted surfaces.
- Thoroughly clean the machine to remove shavings, especially from the coolant tank.
- Removal of pump from its housing, cleaning of the suction filter and suction zone.
- Clean the filter of the pump suction head and the suction area.
- Use compressed air to clean the blade guides (guide bearings and drain hole of the lubricating and cooling tank).
- Clean flywheel housings and the race of the flywheels.

Monthly

- Check the tightness of the drive wheel screws.
- Check that the blade guide bearings on the heads are in perfect running condition.
- Check the tightness of the screws for the motor, pump, and accident protection guards.

Oils for lubricating coolant

Considering the vast range of products on the market, the user can choose the one most suited to their own requirements, using as reference the type SHELL LUTEM OIL ECO. THE MINIMUM PERCENTAGE OF OIL DILUTED IN WATER IS 8 - 10 %.

Oil Disposal

The disposal of these products is controlled by strict regulations. Follow all local regulation for proper disposal.

Special maintenance

Special maintenance must be conducted by skilled personnel. We advise contacting your nearest dealer and/or importer. Other protective and safety equipment, devices (of the reducer), the motor, the motor pump, and other electrical components also require special maintenance.

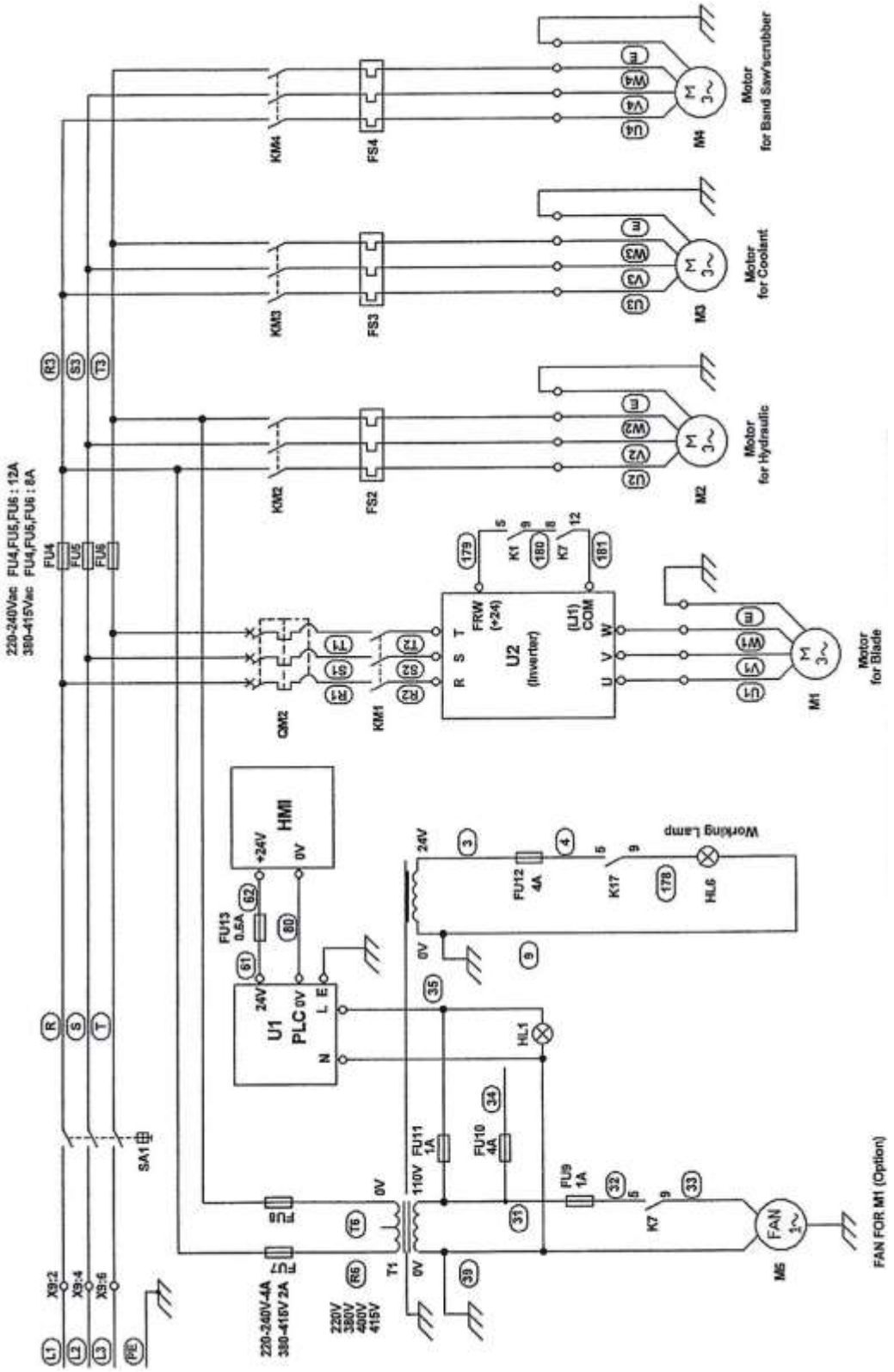
Hydraulic Oil

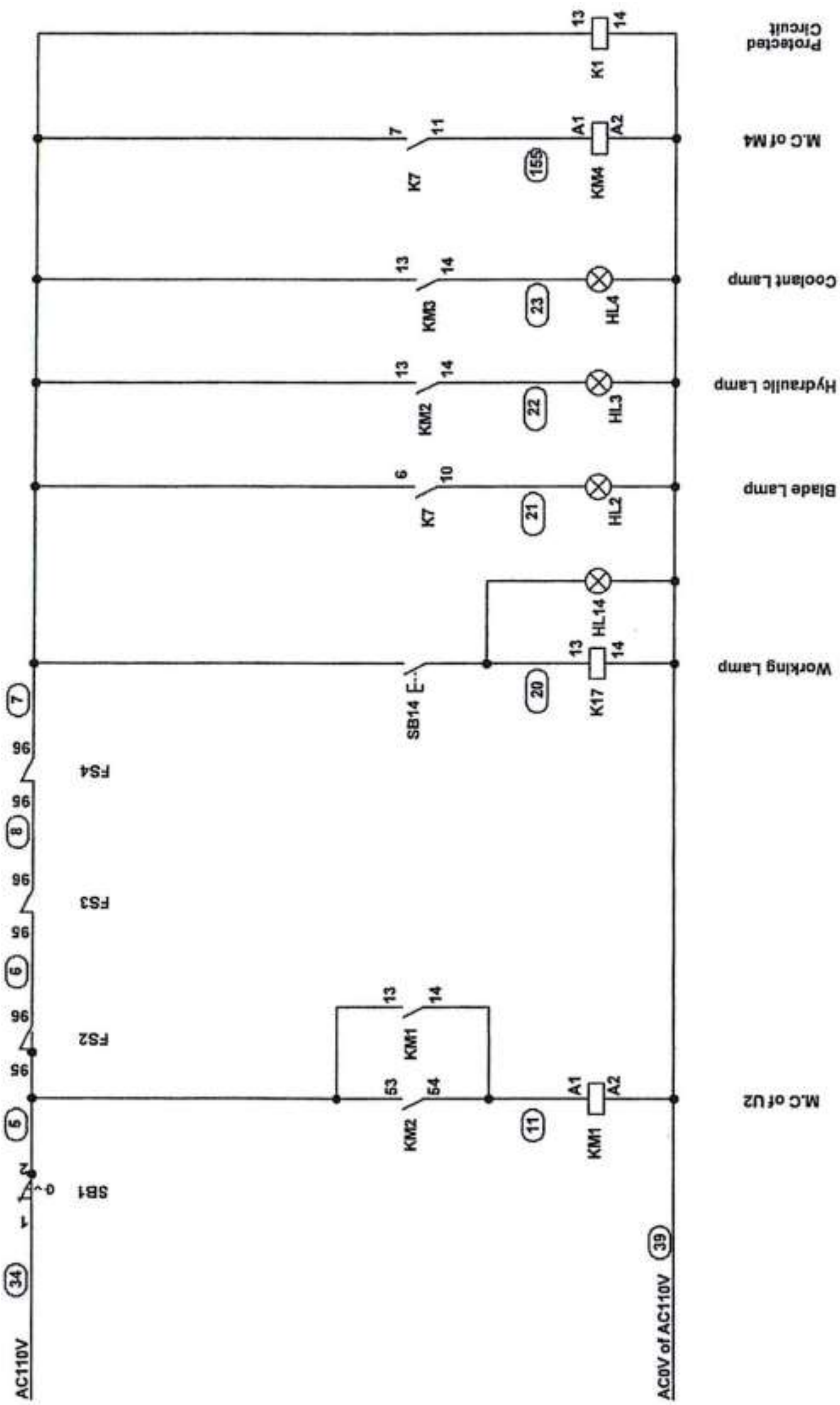
The hydraulic oil is the primary medium for transmitting pressure and also must lubricate the running parts of the pump.

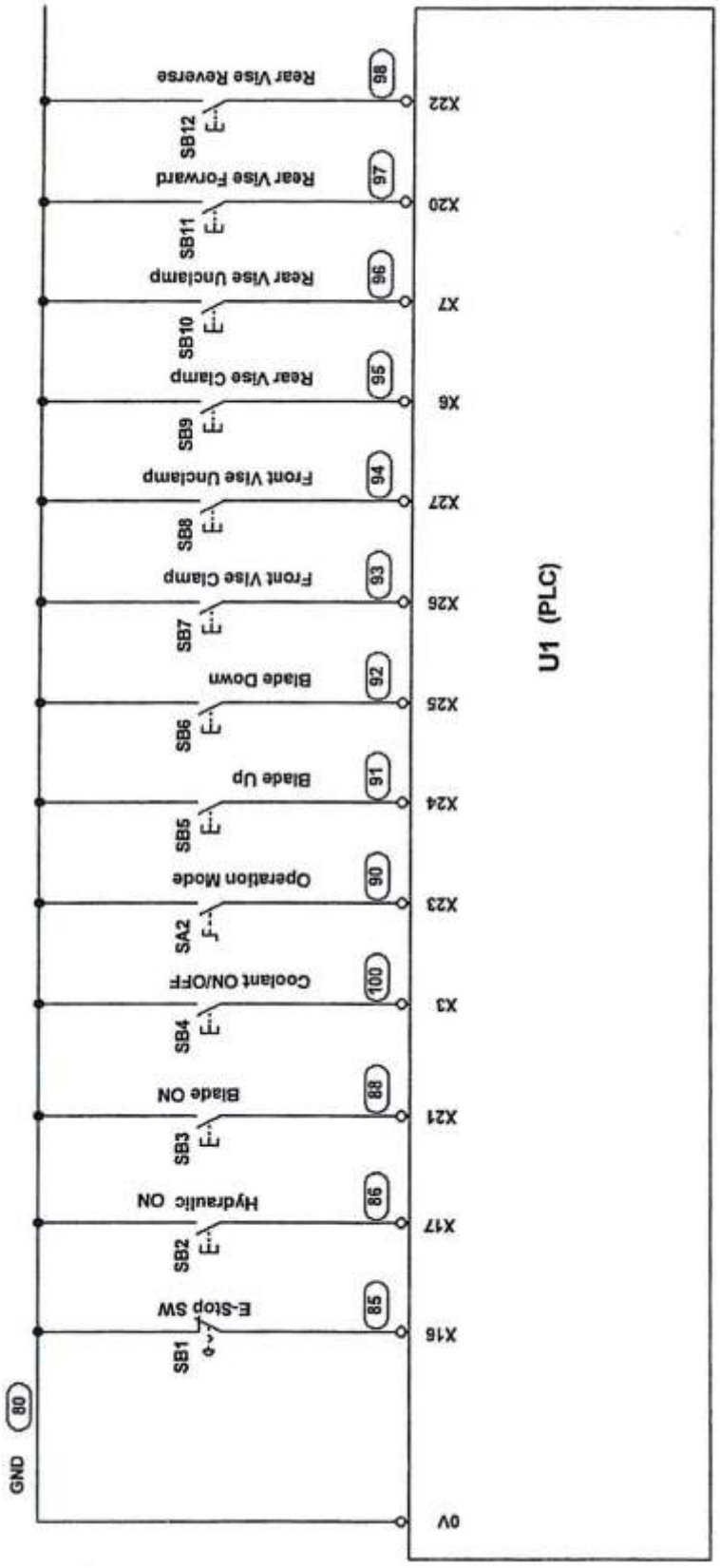
1. Use hydraulic oil #68 SHELL BRAND or an equivalent with similar specifications.
2. Keep hydraulic reservoir filled to 90% of capacity.
3. DO NOT rely totally on the oil gauge as they can sometimes indicate an incorrect level reading. Do a visual inspection with the oil fill cap removed as well.
4. A shortage of hydraulic oil will cause hydraulic system breakdown to major mechanical components due to overheating.
5. Change the hydraulic oil every 12 months along with the oil filter.

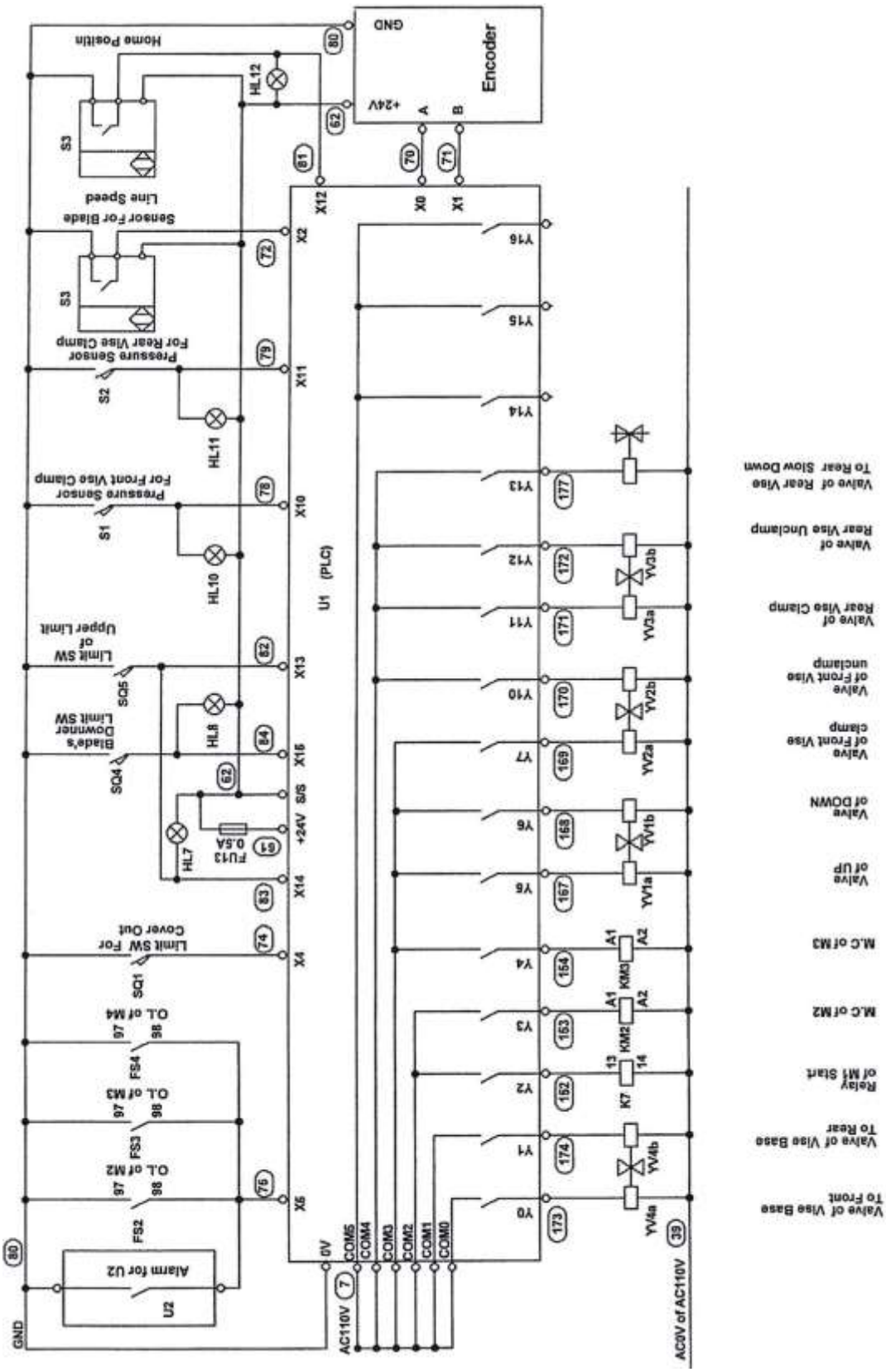
***Note**: Proper maintenance can increase the life expectancy of your machine.*

ELECTRICAL SCHEMATICS




AC110V
AC0V of AC110V
Protected Circuit
M.C of M4
Coolant Lamp
Hydraulic Lamp
Blade Lamp
Working Lamp
M.C of U2
K1
KM4
K7
KM3
KM2
HL4
HL3
HL2
HL14
K17
SB14
FS4
FS3
FS2
SB1
KM1


U1 (PLC)
0V
GND
80
SB1
E-Stop SW
85
X16
SB2
Hydraulic ON
86
X17
SB3
Blade ON
88
X21
SB4
Coolant ON/OFF
100
X3
SA2
Operation Mode
90
X23
SB5
Blade Up
91
X24
SB6
Blade Down
92
X25
SB7
Front Vise Clamp
93
X26
SB8
Front Vise Unclamp
94
X27
SB9
Rear Vise Clamp
95
X6
SB10
Rear Vise Unclamp
96
X7
SB11
Rear Vise Forward
97
X20
SB12
Rear Vise Reverse
98
X22


Encoder
GND
+24V
A
B
Home Positin
Sensor For Blade
Line Speed
Pressure Sensor
For Rear Vise Clamp
Pressure Sensor
For Front Vise Clamp
Limit SW
of
Upper Limit
Blade's
Downner
Limit SW
Limit SW For
Cover Out
O.L. of M4
O.L. of M3
O.L. of M2
Alarm for U2
U1 (PLC)
Valve of Rear Vise
To Rear Slow Down
Valve of
Rear Vise Unclamp
Valve of
Rear Vise Clamp
Valve
of Front Vise
unclamp
Valve
of Front Vise
clamp
Valve
of DOWN
Valve
of UP
M.C of M3
M.C of M2
Relay
of M1 Start
Valve of Vise Base
To Rear
Valve of Vise Base
To Front
AC110V
AC0V of AC110V

NOTES

NOTES

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