



OPERATOR'S MANUAL

Metal Working



VERTICAL TILT BAND SAW MODEL: BSVT-18P

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Book 1 of 2

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THANK YOU & WARRANTY

Thank you for your purchase of a machine from Baileigh Industrial Holdings LLC. 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 an 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 10 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, (e) 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 INCIDENTAL, 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 Majeure. 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 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 attorney 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 Holdings LLC 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 Holdings LLC 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@baileigh.com



INTRODUCTION

The quality and reliability of the components assembled on a Baileigh Industrial Holdings LLC 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
- Setup 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 Holdings LLC 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 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. **NOTICE**, which is not related to personal injury, is used without a symbol.

DANGER: Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING: Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION: Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE: Indicates a situation which, if not avoided, could result in property damage.

DANGER

WARNING

CAUTION

NOTICE

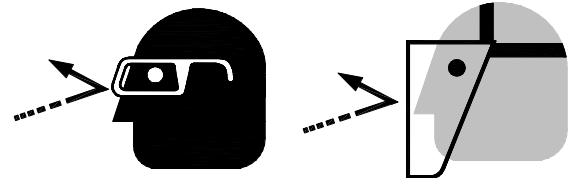


SAVE THESE INSTRUCTIONS.
Refer to them often and use them to instruct others.



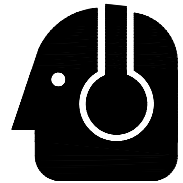
PROTECT EYES

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



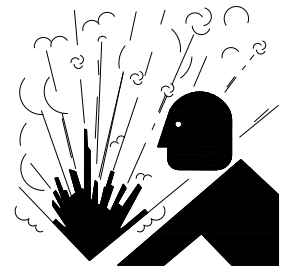
PROTECT AGAINST NOISE

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.



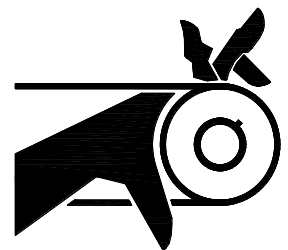
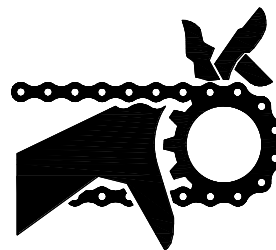
HYDRAULIC HOSE FAILURE

Exercise **CAUTION** around hydraulic hoses in case of a hose or fitting failure.



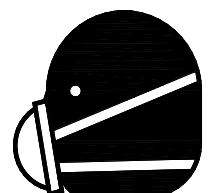
BEWARE OF PINCH POINTS

Keep hands and fingers clear of all potential pinch points. These include sprockets and chains along with belts and pulleys.



DUST HAZARD

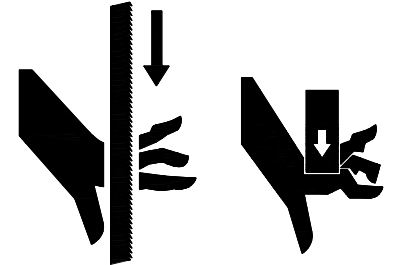
Wear appropriate dust mask. Dust created while using machinery can cause cancer, birth defects, and long term respiratory damage. Be aware of the dust hazards associated with all types of materials.





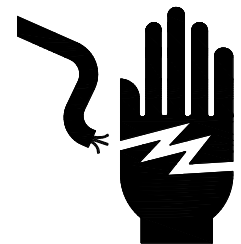
BEWARE OF CUT AND PINCH POINTS

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



HIGH VOLTAGE

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



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 will not 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

Dear Valued Customer:

- All Baileigh machines should be used only for their intended use.
- Baileigh does not recommend or endorse making any modifications or alterations to a Baileigh machine. Modifications or alterations to a machine may pose a substantial risk of injury to the operator or others and may do substantial damage to the machine.
- Any modifications or alterations to a Baileigh machine will invalidate the machine's warranty.

PLEASE ENJOY YOUR BAILEIGH MACHINE!PLEASE ENJOY IT SAFELY!

1. **FOR YOUR OWN SAFETY, READ INSTRUCTION MANUAL BEFORE OPERATING THE MACHINE.** Learn the machine's application and limitations as well as the specific hazards.
2. **Only trained and qualified personnel can operate this machine.**
3. **Make sure guards are in place and in proper working order before operating machinery.**
4. **Remove any adjusting tools.** Before operating the machine, make sure any adjusting tools have been removed.
5. **Keep work area clean.** Cluttered areas invite injuries.
6. **Overloading machine.** By overloading the machine, you may cause injury from flying parts. **DO NOT** exceed the specified machine capacities.
7. **Dressing material edges.** Always chamfer and deburr all sharp edges.



8. **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 machine's rated capacity.
9. **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.
10. **Dress appropriately.** **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.
11. **Use eye and ear protection.** Always wear ISO approved impact safety goggles. Wear a full-face shield if you are producing metal filings.
12. **Do not overreach.** Maintain proper footing and balance at all times. **DO NOT** reach over or across a running machine.
13. **Stay alert.** Watch what you are doing and use common sense. **DO NOT** operate any tool or machine when you are tired.
14. **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.
15. **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.
16. **Blade adjustments and maintenance.** Always keep blades sharp and properly adjusted for optimum performance.
17. **Keep children away.** Children must never be allowed in the work area. **DO NOT** let them handle machines, tools, or extension cords.
18. Keep visitors a safe distance from the work area.
19. **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.
20. **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.
21. **Turn off** power before checking, cleaning, or replacing any parts.
22. Be sure **all** equipment is properly installed and grounded according to national, state, and local codes.
23. Keep **all** cords dry, free from grease and oil, and protected from sparks and hot metal.
24. Inspect power and control cables periodically. Replace if damaged or bare wires are exposed. **Bare wiring can kill!** **DO NOT** touch live electrical components or parts.
25. **DO NOT** bypass or defeat any safety interlock systems.



TECHNICAL SPECIFICATIONS

Capacity Rectangular	20" x 16.25" (508 x 412mm)
Capacity Round	11.4" (289mm)
Capacity 45° Right Tilt	13.89" x 16.25" (352.8 x 412mm)
Capacity 45° Left Tilt	13.59" x 16.25" (345.1 x 412mm)
Miter Type	Saw Bow Tilt (Left and Right, 45° – 0° – 45°)
Miter Operation	Manual
Blade Cant	Fixed Position 6° Forward
Blade Size	1.0625" x .035" x 14'-0.5" [168.5"] (27 x .9 x 4280mm)
Blade Guide System	Roller Bearing Guides with Flat, Carbide Side Guides
Blade Drive	Motor to 30:1 Gear Box
Gear Box Oil Capacity	0.55qt (0.52L)
Blade Speeds	82 – 310 SFPM (25 – 95MPM)
Blade Feed Operation	Pneumatic over Hydraulic
Blade Feed Air Supply	0.5 – 1.0CFM @ 80 – 100psi (.55 – .69MPa) Pneumatic
Feed Force	0 – 150lbs (0 – 68kgs)
Vise (High x Open max.)	6" (152mm) x 18" (457mm)
Table Height	39.5" (1003mm)
Table Area (W x D)	29.375" x 29.5" (746 x 749mm)
Table T-Slots	2 @ .75" x 14.25" (2 @ 19mm x 362mm)
Saw Footprint	84.19" x 49.11" x 88.83" (2138 x 1247 x 2256mm)
Power Supply	220V, 3ph, 60hz, 10A
Blade Motor	2hp (1.5kw) 220V, 3ph, 60hz, 6A
Air-Hydro Tank Capacity	1.5qt (1.4L), SAE 10W or equivalent
Coolant Pump	220V, 60Hz, 1Ph, .35A, 32W, 2800rpm
Coolant Capacity	18.3gal (69L) Water Based
Assembled Dimensions	84.19" x 49.11" x 88.83" (2139 x 1248 x 2257mm)
Shipping Dimensions	82" x 38.25" x 87.75" (2083 x 972 x 2229mm)
Net Weight	2415lbs. (1322kgs)
Shipping Weight	3329lbs. (1510kgs)



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@baileigh.com, Phone: 920.684.4990, or Fax: 920.684.3944.



Note: *The photos and illustrations used 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. 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** place the machine into service until the missing parts are obtained and installed correctly.

Cleaning

⚠ 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.

Your machine may be shipped with a rustproof waxy coating and/or grease on the exposed unpainted metal surfaces. Fully and completely remove this protective coating using a degreaser or solvent cleaner. Moving items will need to be moved along their travel path to allow for cleaning the entire surface. 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.



Important: This waxy coating is **NOT** a lubricant and will cause the machine to stick and lose performance as the coating continues to dry.



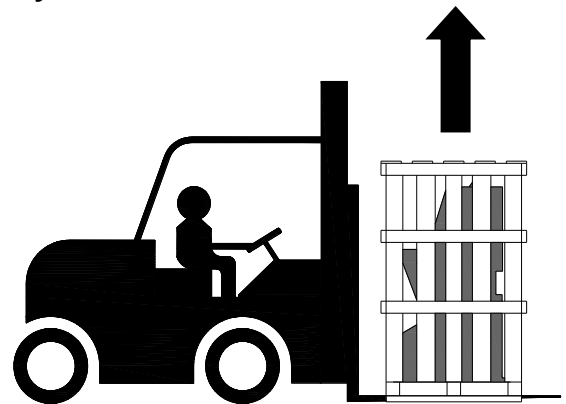


TRANSPORTING AND LIFTING

NOTICE: *Lifting and carrying operations should be carried out by skilled workers, such as a truck operator, crane operator, etc. If a crane is used to lift the machine, attach the lifting chain carefully, making sure the machine is well balanced.*

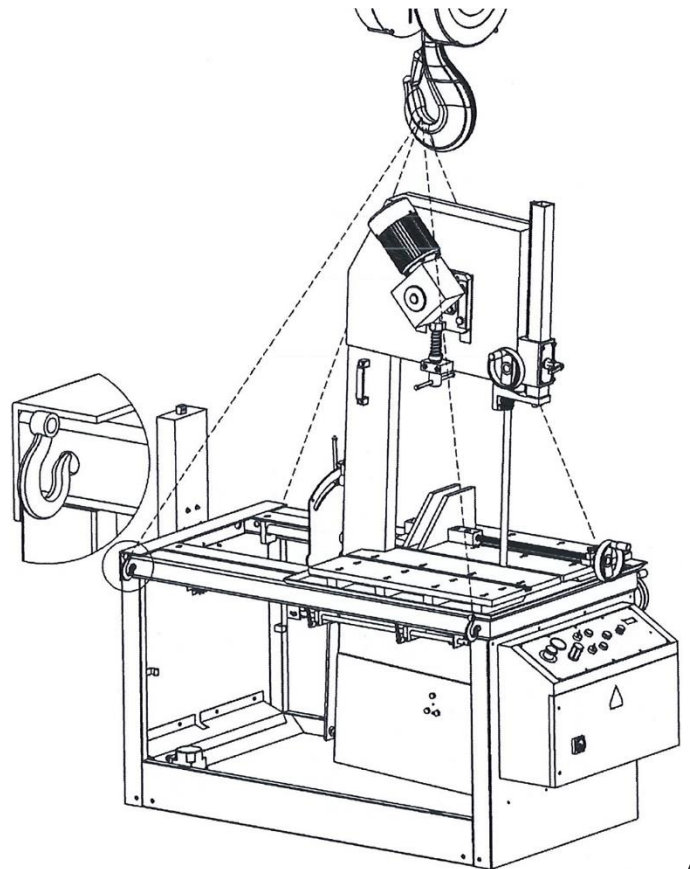
Follow these guidelines when lifting with truck or trolley:

- The lift truck must be able to lift at least 1.5 – 2 times the machines gross weight.
- Make sure the machine is balanced. While transporting, avoid rough or jerky motion, and maintain a safe clearance zone around the transport area.
- Use a forklift with sufficient lifting capacity and forks that are long enough to reach the complete width of the machine.
- Remove the securing bolts that attach the machine to the pallet.
- Approaching the machine from the side, lift the machine on the frame taking care that there are no cables or pipes in the area of the forks.
- Move the machine to the required position and lower gently to the floor.
- Level the machine so that all the supporting feet are taking the weight of the machine and no rocking is taking place.



Follow these guidelines when lifting with crane or hoist:

- Always lift and carry the machine with the lifting holes provided at the top of the machine.
- Use lift equipment such as straps, chains, capable of lifting 1.5 to 2 times the weight of the machine.
- Take proper precautions for handling and lifting.





- Check if the load is properly balanced by lifting it an inch or two.
- Lift the machine, avoiding sudden accelerations or quick changes of direction.
- Locate the machine where it is to be installed, then lower slowly until it touches the floor.

INSTALLATION

IMPORTANT:

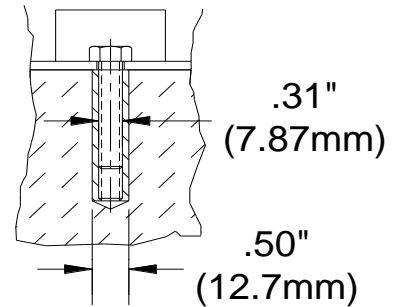
Consider the following when looking for a suitable location to place the machine:

- Overall weight of the machine.
- Weight of material being processed.
- Sizes of material to be processed through the machine.
- Space needed for auxiliary stands, worktables, 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, concrete floor. Provisions for securing it should be in position prior to placing the machine. The accuracy of any machine depends on the precise placement of it to the mounting surface.
- **FLOOR:** This machine distributes a large amount of weight over a small area. Make certain that the floor is capable of supporting the weight of the machine, work stock, and the operator. The floor should also be a level surface. If the unit wobbles or rocks once in place, be sure to eliminate by using shims.
- **WORKING CLEARANCES:** Take into consideration the size of the material to be processed. Make sure that you allow enough space for you to operate the machine freely.
- **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. Use bolts and expansion plugs or sunken tie rods that connect through and are sized for the holes in the base of the stand.
- This machine requires a solid floor such as concrete at a minimum of 4" (102mm) thick. 6" (153mm) minimum is preferred.



Tank Filling

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

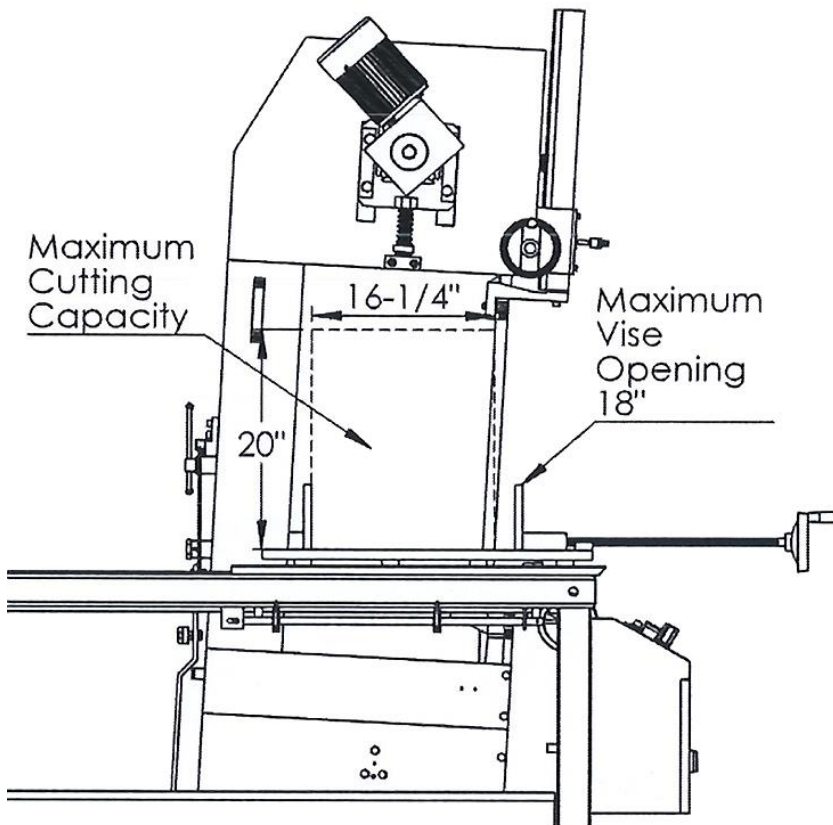
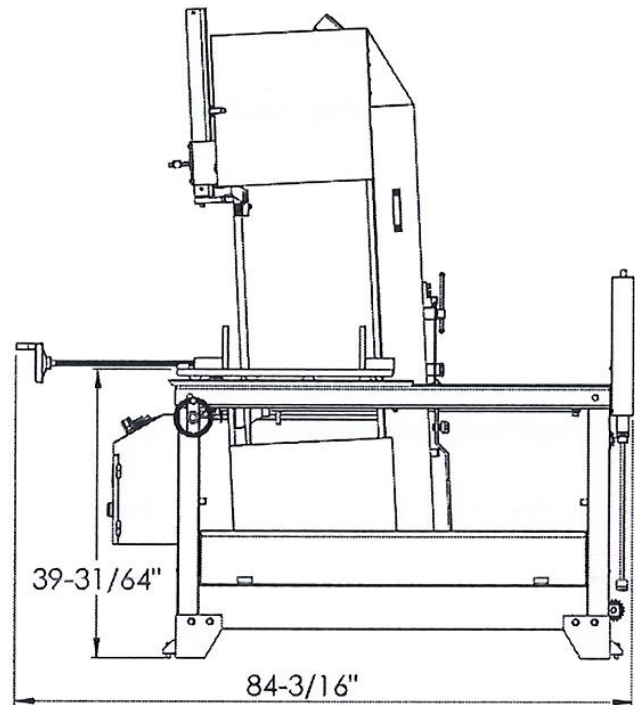
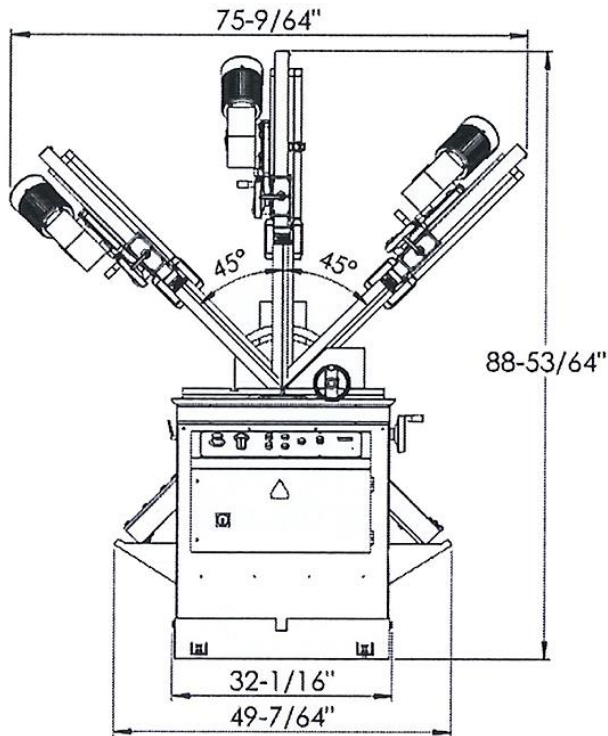
After installation of the machine and before machine startup, bring the oil level up to 90% of capacity. Refer to any labels or marking affixed to the outside of the machine, If none exist, use SAE 10W hydraulic oil or an equivalent with similar specifications. (Based upon location temperature and availability.)

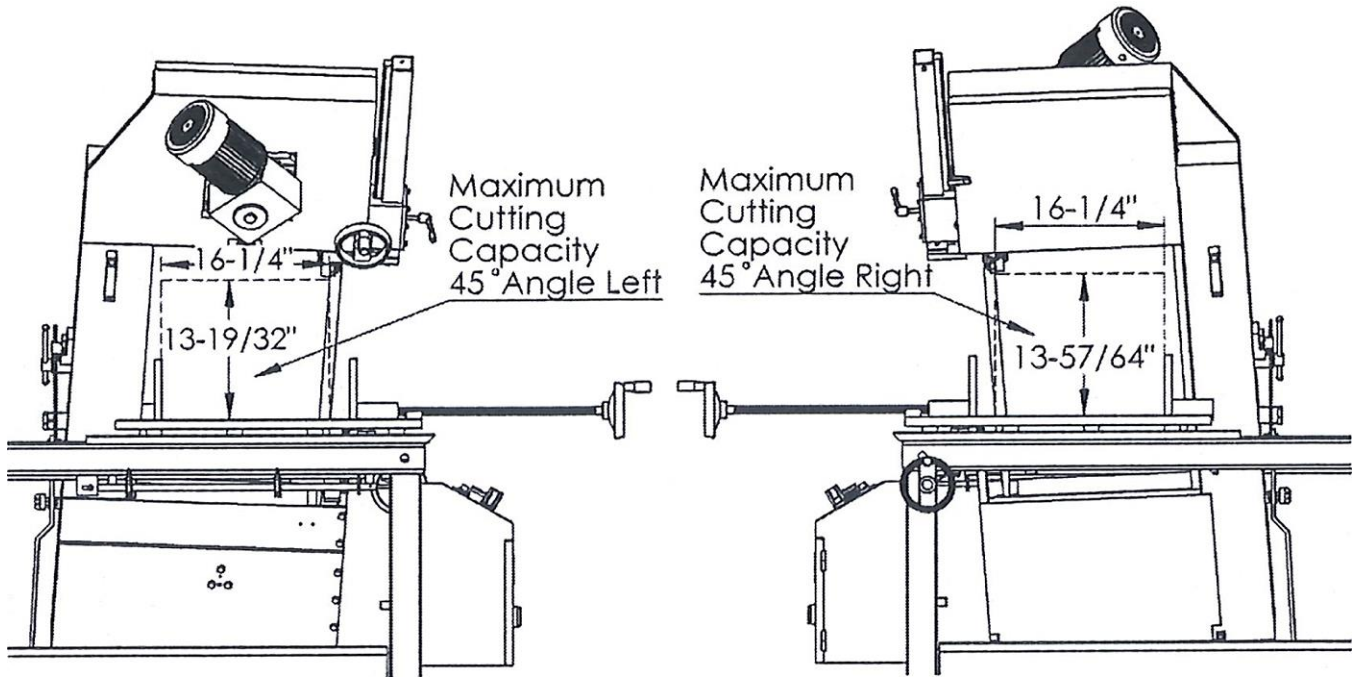
Verify that any cylinder rams are in the retracted position to prevent overfilling of the tank. Recheck the oil level after the first few hours of operation and again after the first full week of operation.

A shortage of hydraulic oil can cause hydraulic system breakdown and damage to major mechanical parts due to overheating.



OVERALL DIMENSIONS





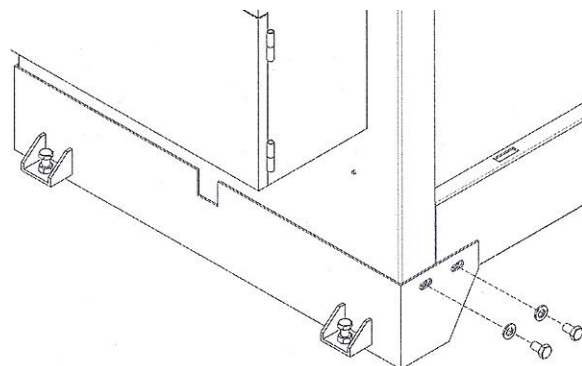


ASSEMBLY AND SET UP

⚠ WARNING: For your own safety, **DO NOT** connect the machine to the power source until the machine is completely assembled and you read and understand the entire instruction manual.

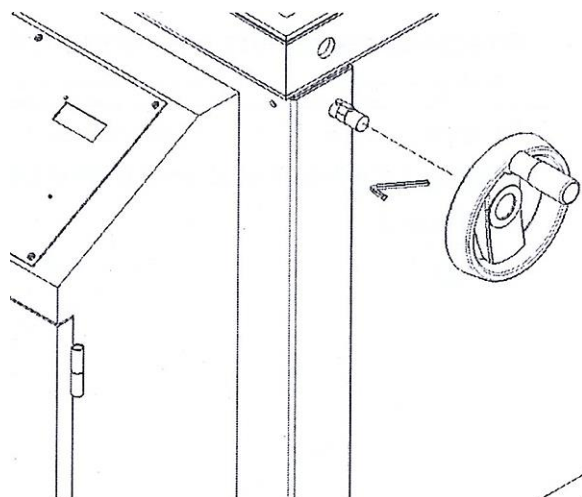
Stands

1. Position the saw in the desired location.
2. Safely raise the machine high enough to position the end stands onto the frame.
3. Secure using the M12 hex head bolts.



Manual Feed Handwheel

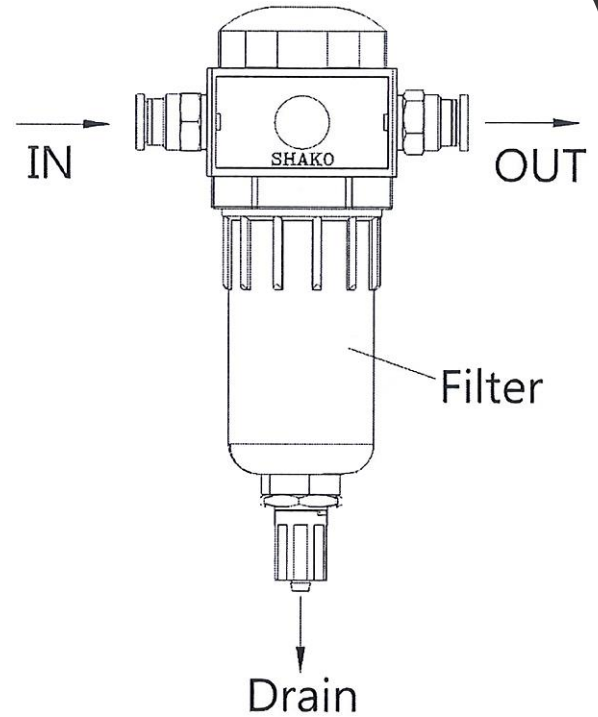
1. Remove the tape securing the key to the shaft and install the handwheel onto the shaft over the key.
2. Secure the handwheel to the shaft by tightening the set screw.





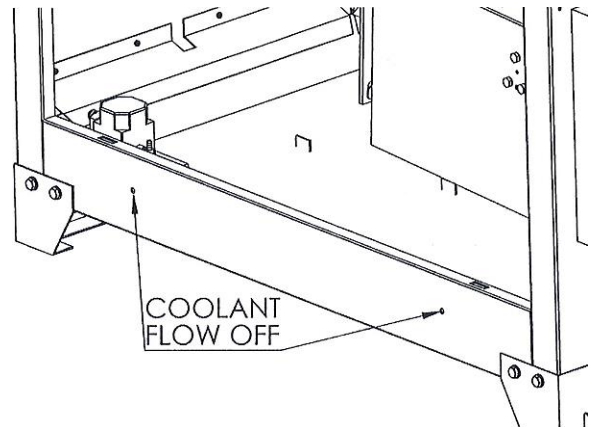
Air Supply

1. Using clean dry air regulated from 0.5 – 1.0CFM @ 80 – 100psi (.55 – .69MPa), supply air to the air filter through the 1/4" NPT inlet port.
2. Drain any accumulate moisture within the filter at least monthly.



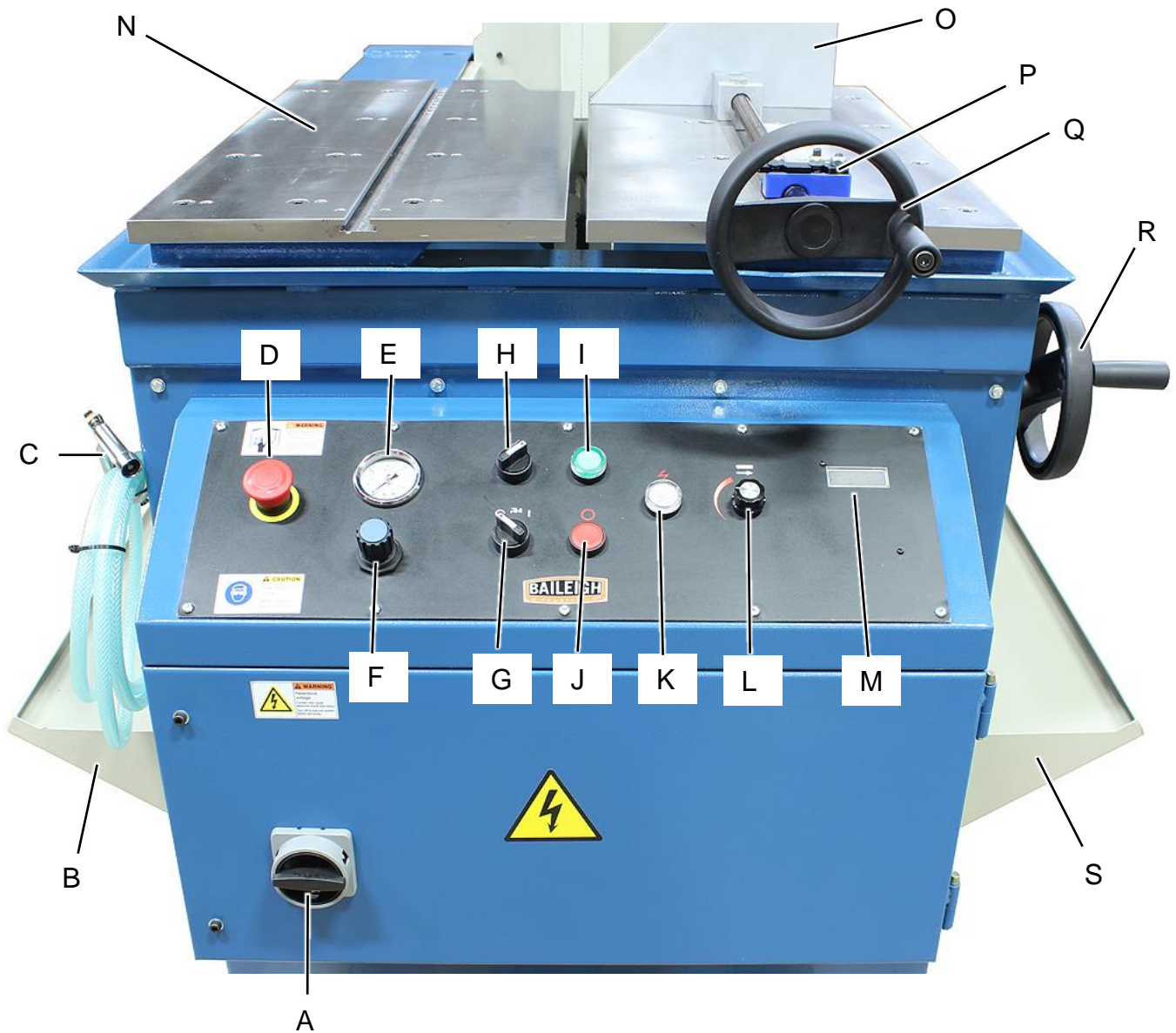
Coolant Filling

1. Fill the saw base with approximately 18.3gal (69L) of water-based coolant.





GETTING TO KNOW YOUR MACHINE





Item	Description	Function
A	Main Disconnect Switch	Turn this switch to power the machine on and off.
B	Left Coolant Drip Tray	Deflects coolant back to the reservoir.
C	Coolant Rinse Hose.	Uses coolant to spray and rinse saw chips into the base coolant tray to clear the cutting and clamping area of the saw and allow the chips to be collected for recycling.
D	E-Stop	Press to immediately stop all machine functions. To restart machine, twist it clockwise until the button disengages.
E	Feed Force Gauge	This gauge indicates the feed force of the cutting head.
F	Feed Force Knob	Sets the forward feed force of the cutting head. Pull the knob to unlock. Push the knob to lock. Turn the knob clockwise to increase force. Turn the knob counterclockwise to decrease force.
G	Coolant Switch	Turn arrow to "I" to turn on coolant flow. Turn arrow to "O" to stop coolant flow.
H	Light Switch	Turn work light on and off.
I	Start Button	Press to start band saw blade.
J	Stop Button	Press to stop band saw blade.
K	Power Indicator Light	Illuminates whenever main machine power is On.
L	Blade Speed Control Knob	Turn this knob clockwise to change the blade speed. (Surface Feet per Minute.)
M	Led Readout	Identifies blade speed in surface feet per minute.
N	Worktable	Two-piece table to support and hold the vise and the material to be cut. (Use additional support and clamping to secure larger piece of material.)
O	Vise	Used to clamp and hold the material during the cutting operation. (Use additional support and clamping to secure larger piece of material.)
P	Vise Quick Adjusting Block	When unlocked, lifting upward on the vise leadscrew will allow the vise to be pushed or pulled quickly.
Q	Vise Adjusting Handwheel	Turn the handwheel to clamp or loosen the vise plates.
R	Manual Feed Handwheel	Used to manually move the saw bow forward or reverse.
S	Right Coolant Drip Tray	Deflects coolant back to the reservoir.



ELECTRICAL

⚠ WARNING: Baileigh Industrial Holdings LLC 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 Holdings LLC 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.

Power Specifications

Your machine is wired for 220 volts, 60hz alternating current. Before connecting the machine to the power source, make sure the power source is OFF.

Before switching on the power, you must check the voltage and frequency of the power to see if they meet with the requirement, the allowed range for the voltage is $\pm 5\%$, and for the frequency is $\pm 1\%$.

Considerations

- Observe local electrical codes when connecting the machine.
- The circuit should be protected with a time delay fuse or circuit breaker with an amperage rating slightly higher than the full load current of machine.
- A separate electrical circuit should be used for your machines. 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 machine.
- 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 machine 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 qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the machine is properly grounded.
- Repair or replace damaged or worn cord immediately.

Power cord connection:

1. Turn the main disconnect switch on the control panel to the OFF position.
2. Unwrap the power cord and route the cord away from the machine toward the power supply.
 - a. Route the power cord so that it will NOT become entangled in the machine in any way.
 - b. Route the cord to the power supply in a way that does NOT create a trip hazard.
3. Connect the power cord to the power supply and check that the power cord has not been damaged during installation.
4. When the machine is clear of any obstruction. The main power switch may be turn ON to test the operation. Turn the switch OFF when the machine is not in operation.



MACHINE SETUP AND ADJUSTMENTS

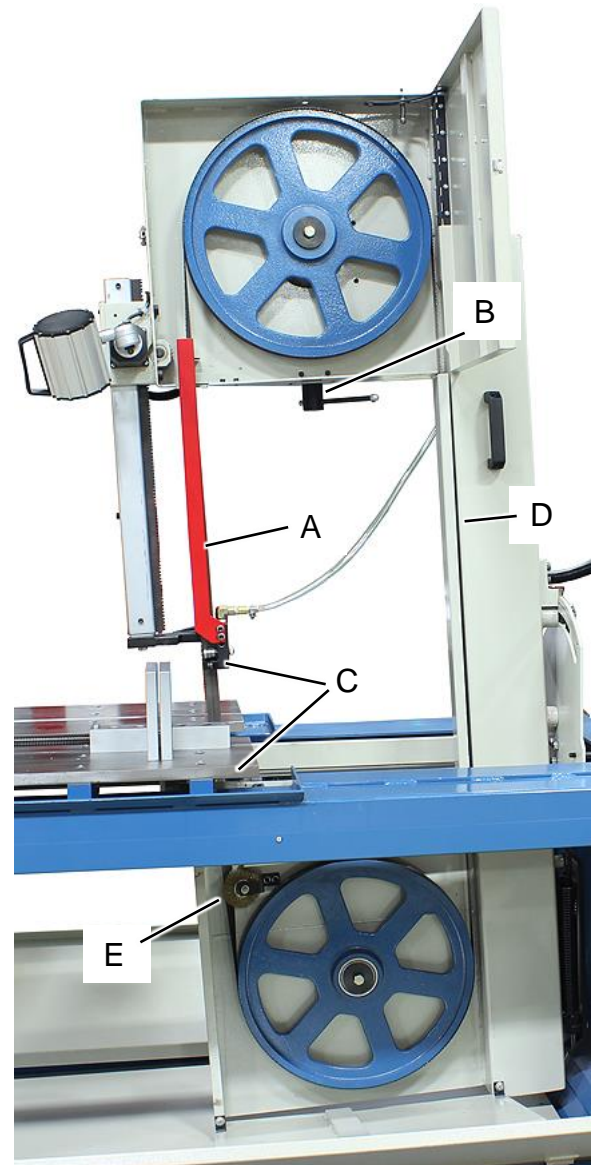
Blade Changing

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

1. Disconnect power to the machine.
2. Make certain the cutting head is locked in the vertical position.
3. Unlock the clamps on both the upper and lower blade wheel housings and open the covers.
4. Remove the front blade guard (A).
5. Loosen the blade tension handwheel (B) to lower the upper wheel.

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

1. Remove the blade from both wheels, out of each blade guide (C), out of the saw frame back guard (D), and around the chip brush (E).
2. Carefully remove the blade through the large opening in the saw table.
3. Using compressed air, blow out metal chips and grit from between the bearings, blade guides, and inside of the blade guards and covers.
4. With both hands, grasp the uncoiled blade in a vertical position with the teeth pointing towards you and down.
5. From the right side of the saw, feed the blade into the saw table opening and loop the top of the blade over the top bladewheel.
6. Working from the top down, insert the blade into the saw frame back guard (D).
7. Twist the front of the blade 90 degrees and slide it into the upper and lower blade guides (C).





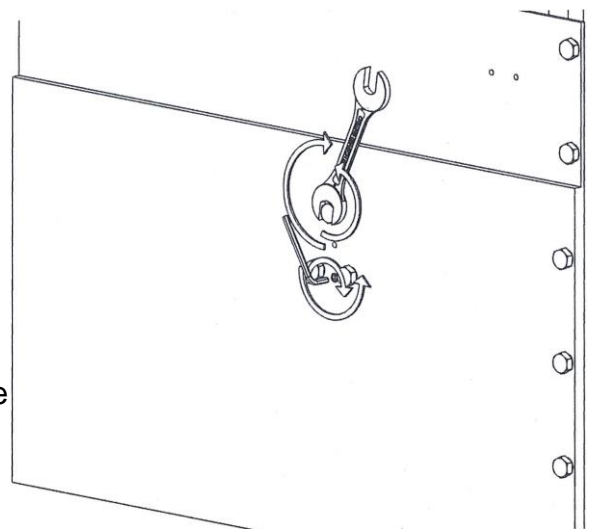
8. Slide the blade on the wheels so the back edge of the blade is approximately 1/32" from the back flange of the wheel. Check the teeth on the portion of the blade between the upper and lower blade guides to see that they point down toward the table.
9. Work the blade around the blade brush (E) and onto the lower bladewheel.
10. Turn the tension knob (B) enough to raise the upper wheel and apply tension to the blade to help prevent the blade from falling off the wheels.
11. Adjust blade brush.
12. Tension the blade by turning the tension handle counterclockwise. (Recommended blade tension is 1400 – 1600 kgs/cm²) Before proceeding, make sure all guards and covers are in place and secured.
13. Turn the feed force to "O". Push the start button on control panel and let the blade spin several times around the blade wheels.
14. Push the stop button on the control panel. Check to see if the back edge of the blade has maintained an approximate 1/32" gap from the flange on the back of blade wheels. If the blade rides against the flange or is more than 1/32" away from the flange, adjust the lower wheel tilt angle.
15. Once the blade has been installed, tensioned and tracked properly on the wheels, close the upper and lower covers.
16. Lock the clamps and secure all guards in place.
17. Start and run the blade under no load for one minute to allow the blade to track verify that it is properly positioned in the guides and guards.
18. Stop the saw and either power the machine off or return the machine to service.



Blade Tracking Adjustment

Typically, the blade should track with the back edge of the blade maintaining an approximate 1/32" gap from the flange on the back of blade wheels.

1. Loosen the three hex head mounting bolts on the back side of the lower wheel housing 1 to 1-1/2 turns.
2. Adjust the set screw to change the tracking of the blade.
3. When the tracking is correct, evenly tighten the three hex head screws.
4. Check the tracking again.

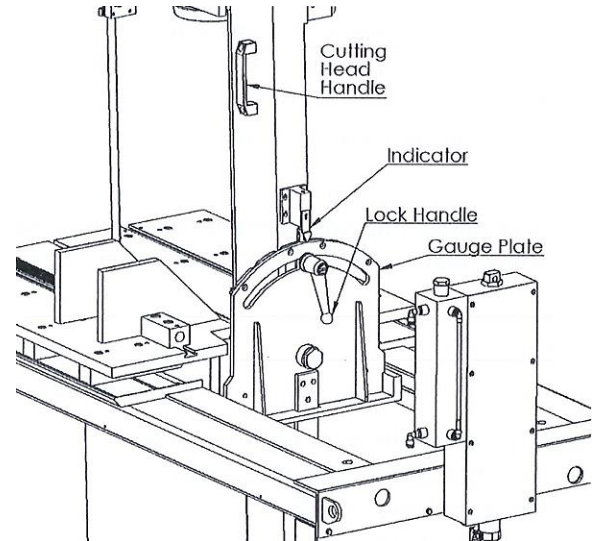




Saw Bow Tilt Adjustment

The cutting head is adjustable to make angled cuts from -45° to $+45^{\circ}$. Be sure the upper blade guide will clear any obstructions on the table before adjusting the cutting head angle. Detents are at each 15° .

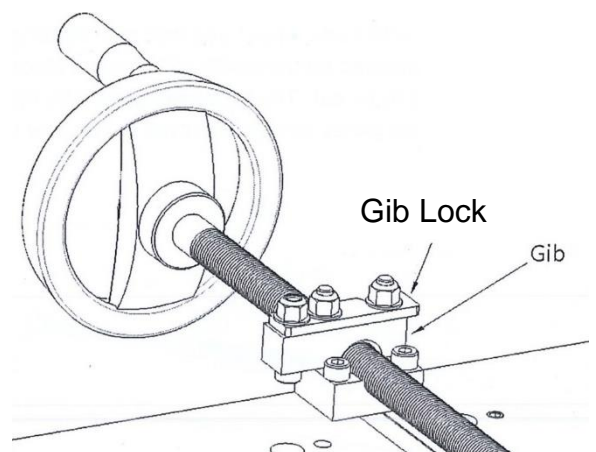
1. To adjust the cutting head angle, turn the lock handle counterclockwise.
2. Holding the cutting head handle, tilt the head to desired angle (Indicator).
3. When the desired angle is obtained, turn the lock handle clockwise to secure the cutting head for operation.



Vise plate positioning

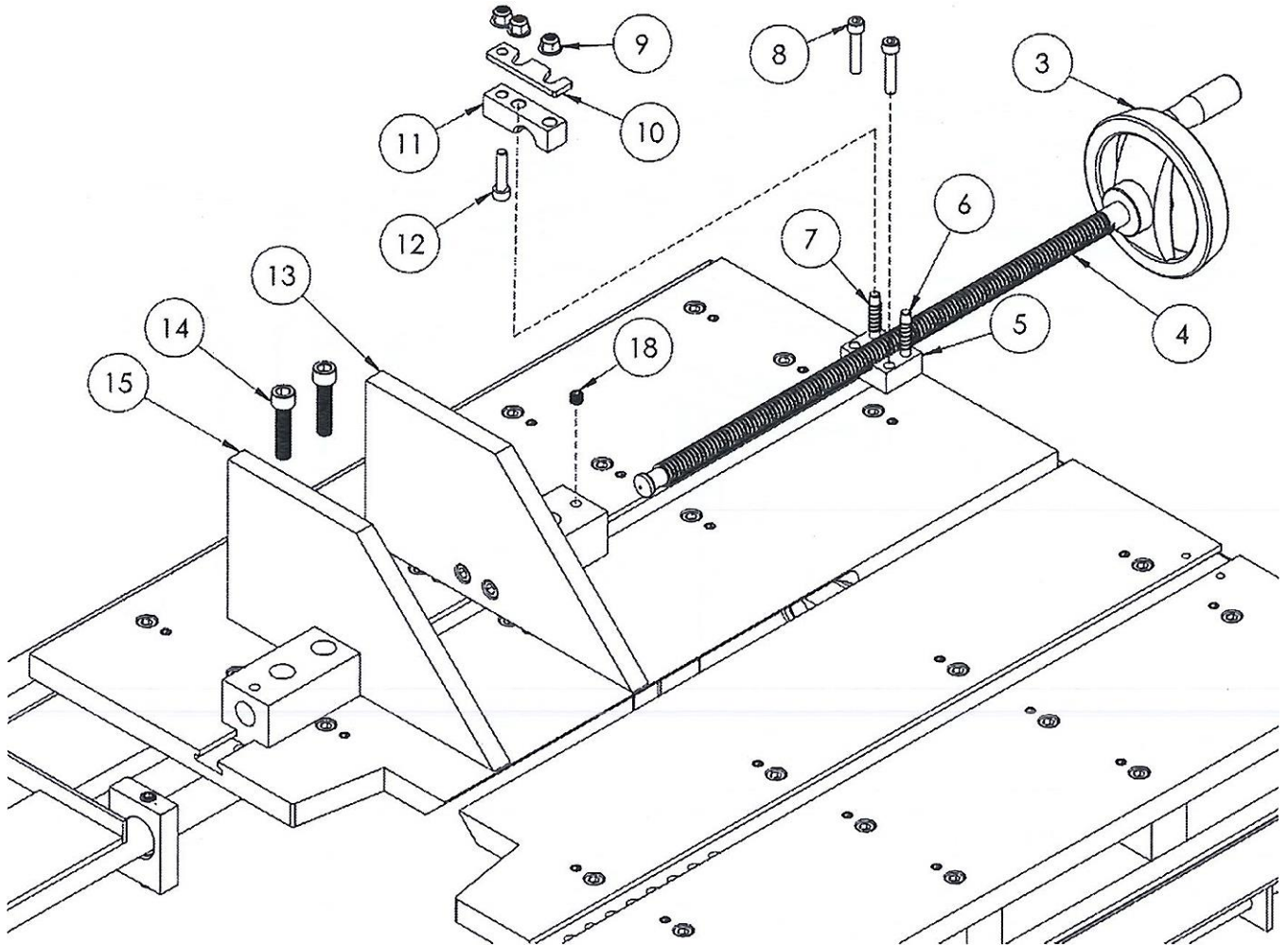
The vise system consists of a stationary rear plate and an adjustable front plate with hand wheel and half nut. Variations of this setup will be determined by the width of the work piece and the angle at which it is to be cut. The following gives only one example of how the vise plates can be mounted to the saw table.

1. Place the rear vise plate (15) in a position on the table so the hold down bolts (14) are aligned with two of the eight, threaded mounting holes in the tabletop.
2. Use a hex key to secure the rear vise plate to the tabletop with the hold down bolts.
3. Place the front vice plate (13) in the guide slot, opposite the rear plate.
4. Align the half nut assembly (5) with two threaded mounting holes in the tabletop as shown and secure the half nut assembly to the tabletop with M8x40 bolts (8).
5. Insert the lead screw with hand wheel (3 and 4) in the half nut assembly (5) while attaching it to front vise plate (13) as shown and secure with the locking set screw (18). Make sure the lead screw lies squarely in the half nut assembly for proper operation of the vise.
6. Rotate the Gib lock to Unlock the gib and allow the gib to be lifted (Shown locked).
7. Lift up on the handwheel and leadscrew assembly and push or pull on the handwheel to quickly position the front vise plate.





8. Rotate the gib lock to lock the gib. The leadscrew will now be captured to allow for the handwheel to crank clamping pressure.
9. Make sure the work piece is secure before continuing. The work piece can be undamped by turning the hand wheel counterclockwise.



- The lead screw with hand wheel may be attached to either vise plate. It is recommended that the angled edge of the plate be used when performing miter cuts and the vertical edge used when making vertical cuts in order to clamp the work piece as close to the blade as possible.
- The half nut assembly can be used in different mounting holes according to the cutting angle of the work piece.
- When the width of the work piece less than 50 mm, the rear vise plate should be move forward to securely clamp the work piece.



Feeding Stroke

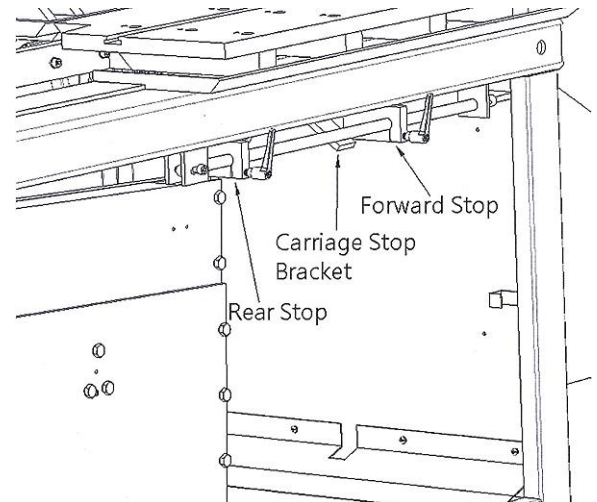
The cutting head can be fed forward or backward manually by rotating the feed handle counterclockwise or clockwise, respectively.

The saw also can be fed forward automatically by adjusting the feed force knob clockwise until the desired feed is obtained.

The stops will set a forward travel limit which will stop the blade and retract the saw bow to the start position. The forward stop should be adjusted about 1/4" (6.3mm) past the point where the blade exits a cut.

To adjust:

1. Manually feed the saw bow forward to a position in which the teeth of the saw blade are at least 1/4" (6.3mm) past the farthest thickness of the material to be cut.
2. Hold the saw bow in this position and adjust forward stop to contact the Carriage Stop Bracket.
3. Note the position of the forward stop block as compared to the scale on the side of the frame. This can then be used to fine tune the desired stop position.
4. When the stop bracket contacts the forward stop, the cutting head will automatically stop its forward movement, the blade will shut off, and the saw bow will return to the start position.
5. Set the rear stop in the same manner.





Blade Speed Adjustment

1. Always set the feed force (A) to "O" before adjusting the blade speed.
2. The blade speed readout (B) on the control panel displays the blade speed in surface feet per minute. Choice of blade speed depends on the type and thickness of metal being cut. Refer to the chart below for recommended blade speeds.



RECOMMENDED BLADE SPEED		RECOMMENDED FEED FORCE	
Material	Blade speed	Material size (solid)	Feed force (psi)
Tool, stainless or alloy steel	110-140	Up to 5"	30-60
Bearing bronze			
Medium carbon steel	180-210	5" to 12"	50-100
Low carbon steel	245-275		
Aluminum, Copper, Brass	255-285	Over 12"	80 and over

3. Push the start button on the control panel. Twist the blade speed control knob (C) clockwise to increase the blade speed, counterclockwise to reduce blade speed.
4. Once the proper blade speed is obtained, push the stop button on the control panel. Both blade speed and feed force may be adjusted as necessary while the blade is cutting.

Feed Force Adjustment

1. Feed force is indicated by the dial gauge above the feed force knob (A).
2. See the chart above for recommended feed force settings.
3. Twist the feed force knob (A) to increase or decrease the feed force setting.



Coolant flow

Coolant is applied to the blade at the upper blade guide where a valve regulates the amount of flow to the blade.

To enable or disable the coolant flow, set the coolant switch to "I" (ON) or "O" (OFF).

GuidePost

The guidepost assembly serves two purposes.

- First, it positions the orange blade guard between the piece part and the upper pulley housing to protect the operator from the exposed blade.
- Second, it positions the upper blade guides close to the piece part for support of the blade.

To properly position the guidepost:

1. Turn the main disconnect to the OFF position.
2. Hold the guidepost handwheel with one hand and loosen the guidepost lock knob.
3. Use the handwheel to raise or lower the guidepost so that the bottom of the blade guide is .25" - .5" (6.35 – 12.7mm) above the piece part and tighten the guidepost knob to hold it securely.

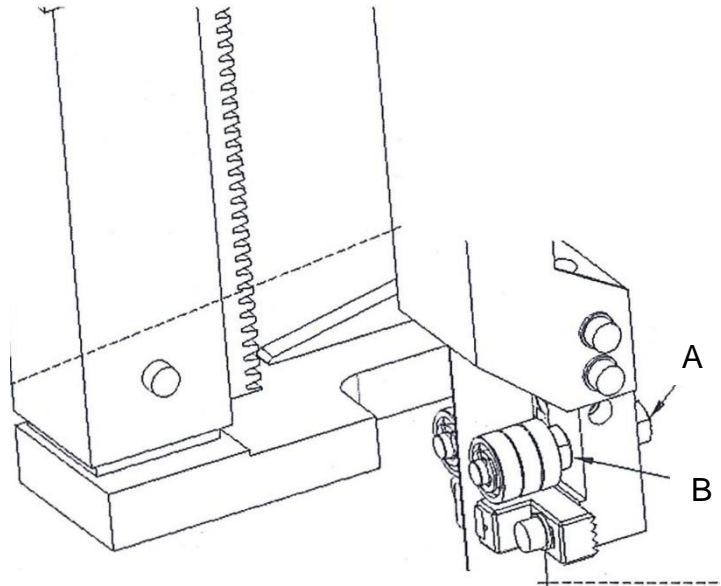




Adjusting the Blade Guides

The guide bearings are mounted on an eccentric shaft which is used to apply the guide pressure to the side of the band saw blade to hold the blade in a straight line within the cut window of the blade.

1. DISCONNECT POWER FROM THE BAND SAW.
2. Check to make sure the guidepost is secure, and the blade has been properly tensioned.
3. Loosen the lock nut (A) while holding the adjuster (B).
4. Turn the adjuster to set the bearing to just barely touch the blade (0.003"). This clearance can be measured with a piece of thin paper which should just fit into the gap between the bearing and the blade.
5. Hold the adjuster and tighten the lock nut.
6. Set the lower blade guide bearing in the same manner.
7. When correct guide bearing adjustment is done, the blade runs smoothly and evenly without twisting or snagging anywhere along its path.





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 powerhead 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.

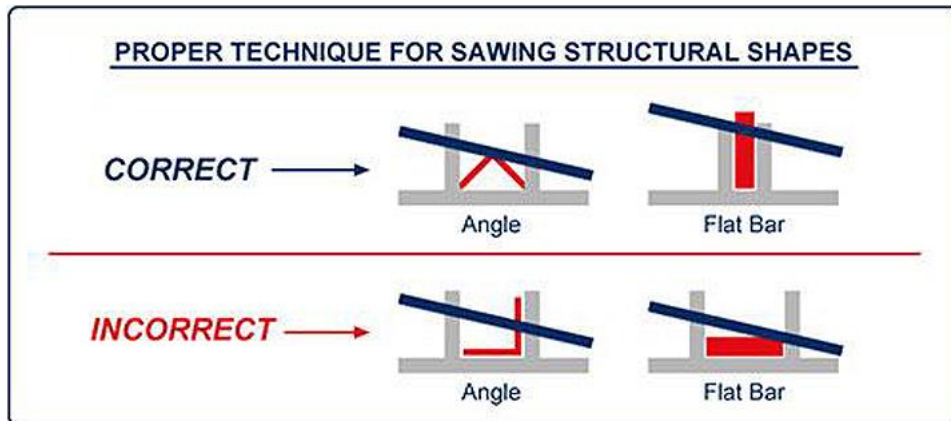
Whenever Saw is Running

- 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

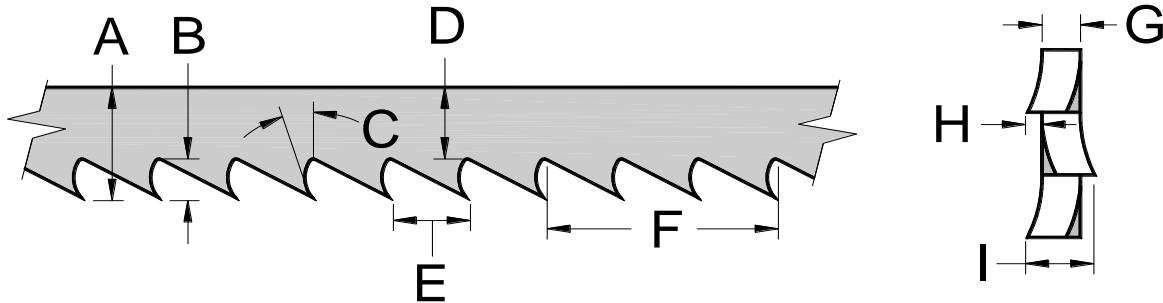
Chips are the best indicator of correct material feed force. Monitor chip information and adjust feed accordingly.

- 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 Terminology



A	BLADE WIDTH	The widest part of the blade measured from the back edge of the blade to the tip of the tooth.
B	GULLET DEPTH	The distance from the tooth tip to the bottom of the curved area.
C	TOOTH RAKE	The angle of the tooth face from a line perpendicular to the length of the blade.
D	BLADE BACK	The distance between the back edge of the blade and the bottom of the gullet.
E	TOOTH PITCH	The distance between tooth tips.
F	TPI	The number of teeth per inch when measured from gullet to gullet.
G	GAUGE	The thickness of the blade.
H	TOOTH SET	The distance a tooth is bent from the blade.
I	KERF	The width of material that is removed by the blade when cutting.

Width of Blade

The blade width determines the largest and the smallest curve that can be cut. Usually the wider a blade is, the more accurate and straighter it will cut.

Length of Blade

The length of the band saw blade can be measured with a tape measure at its circumference or by the formula below:

$$\text{Blade Length} = (2 \times A) + (3.14 \times B)$$

A = the distance in inches between the band saw pulley centers (when the upper pulley is midway in its adjustment range).

B = the band saw pulley diameter.



Blade structure

Bi-metal blades are the most commonly used. They consist of a silicon-steel blade backing by a laser welded high speed steel (HSS) cutting edge. The type of stocks are classified in M2, M42, M51 and differ from each other because of their major hardness due to the increasing percentage of Cobalt (C) and molybdenum (Mo) contained in the metal alloy.

Blade type

They differ essentially in their constructive characteristics, such as:

- Shape and cutting angle of tooth
- Pitch
- Set

Shape and angle of tooth

REGULAR TOOTH: 0° rake and constant pitch.



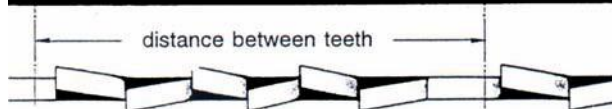
Most common form for transversal or inclined cutting of solid small and average cross-sections or pipes, in laminated mild steel and gray iron or general metal.

POSITIVE RAKE TOOTH: $9^\circ - 10^\circ$ positive rake and constant pitch.



Particular use for crosswise or inclined cuts in solid sections or large pipes, but above all harder materials (highly alloyed and stainless steels, special bronze and forge pig iron).

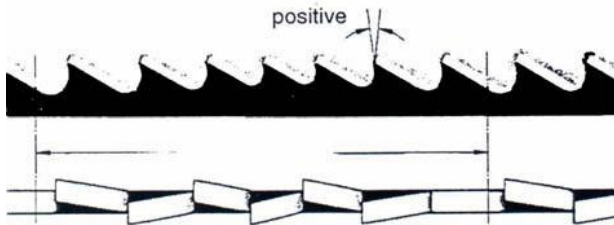
COMBO TOOTH: pitch varies between teeth and consequently varying teeth size and varying gullet depths. Pitch varies between teeth, which ensures a smoother, quieter cut and longer blade life owing to the lack of vibration.



Another advantage offered in the use of this type of blade in the fact that with an only blade it is possible to cut a wide range of different materials in size and type.



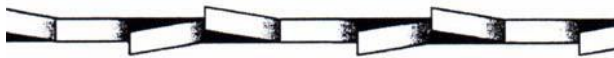
COMBO TOOTH: 9° - 10° positive rake.



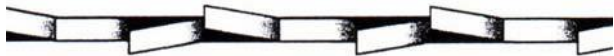
This type of blade is the most suitable for the cutting of section bars and large and thick pipes as well as for the cutting of solid bars at maximum machine capacity. Available pitches: 3-4/4-6.

SETS

Saw teeth bent out of the plane of the saw body, resulting in a wide cut in the workpiece.



REGULAR OR RAKER SET: Cutting teeth right and left, alternated by a straight tooth.



Of general use for materials with dimensions superior to 5 mm. Used for the cutting of steel, castings and hard nonferrous materials.

WAVY SET: Set in smooth waves.



This set is associated with very fine teeth and it is mainly used for the cutting of pipes and thin section bars (from 1 to 3 mm).

ALTERNATE SET (IN GROUPS): Groups of cutting teeth right and left, alternated by a straight tooth.



This set is associated with very fine teeth and it is used for extremely thin materials (less than 1mm).

ALTERNATE SET (INDIVIDUAL TEETH): Cutting teeth right and left.



This set is used for the cutting of nonferrous soft materials, plastics and wood.



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 tothing. At least 3-6 teeth should be in contact with the material while cutting. Large solid or transverse sections require widely spaced tothing 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 tothing to avoid clogging.



S	Outer Diameter of the Tube (inch) / Tooth pitch																
	0.787	1.574	2.362	3.15	4	4.724	6	7.873	11.811	15.75	19.685	23.621	27.5	31.5	35.5	39.5	59
0.079	14	14	14	14	14	14	10-14tpi	10-14tpi	8-12tpi	8-12tpi	8-12tpi	6-10tpi	5-8tpi	5-8tpi	5-8tpi	5-8tpi	5-8tpi
0.118	14	14	10-14tpi	10-14tpi	10-14tpi	10-14tpi	8-12tpi	8-12tpi	8-12tpi	8-12tpi	8-12tpi	5-8tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi
0.157	14	14	10-14tpi	10-14tpi	8-12tpi	8-12tpi	8-12tpi	8-12tpi	8-12tpi	5-8tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi
0.197	14	10-14tpi	10-14tpi	10-14tpi	8-12tpi	8-12tpi	8-12tpi	8-12tpi	8-12tpi	5-8tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi
0.236	14	10-14tpi	10-14tpi	8-12tpi	8-12tpi	8-12tpi	8-12tpi	8-12tpi	8-12tpi	5-8tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi
0.315	14	10-14tpi	8-12tpi	8-12tpi	8-12tpi	6-10tpi	6-10tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi
0.394		8-12tpi	6-10tpi	6-10tpi	6-10tpi	5-8tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi
0.472		8-12tpi	6-10tpi	6-10tpi	5-8tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi
0.591		8-12tpi	6-10tpi	5-8tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi
0.787			6-10tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi
1.181				4-6tpi	4-6tpi	3-4tpi	3-4tpi	3-4tpi	3-4tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi
2						3-4tpi	3-4tpi	3-4tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi
3								2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi
4									2-3tpi	2-3tpi	2-3tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi
6										2-3tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi
7.873												1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi
9.842														1-1.4tpi	1-1.4tpi	1-1.4tpi	1-1.4tpi
11.81														1-1.4tpi	1-1.4tpi	1-1.4tpi	1-1.4tpi
13.778														1-1.4tpi	1-1.4tpi	1-1.4tpi	1-1.4tpi
15.747														1-1.4tpi	1-1.4tpi	1-1.4tpi	1-1.4tpi
17.716														1-1.4tpi	1-1.4tpi	1-1.4tpi	1-1.4tpi
19.685														1-1.4tpi	1-1.4tpi	1-1.4tpi	1-1.4tpi

S= Wall Thickness
 If you have to cut two or more tubes lying side by side please use this table in consideration of the double wall thickness (s).



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.



OPERATION

⚠ CAUTION:

- Always wear proper eye protection with side shields, safety footwear, and leather gloves to protect from burrs and sharp edges.
- Avoid accidental starting. Make sure the main disconnect switch is off before connection to a power source.
- Don't force the bandsaw. It is safer to operate with the cutting rate for which it is designed.
- Never handhold the material during cutting. Always use a vice and clamp securely.
- Be extremely careful when cutting magnesium. Turn off cutting fluid when cutting magnesium. If fire occurs while cutting magnesium, DO NOT attempt to extinguish with water or fire extinguisher. Use graphite powder.
- Keep guards and wheel covers in place and in good working condition.
- Support long, heavy work that extends beyond the saw table. This is to include both the infeed and the outfeed side of the table.
- Always remember to turn off the machines when the work is completed. Disconnect power before adjusting, servicing or changing blade.
- Inspect damaged parts. Before further use of bandsaw, guards or other parts that are damaged should be properly repaired or replaced to assure proper operation and performance of its intended function.
- Moving parts should be kept in alignment and free from binding. Check for breakage, mounting and any other conditions that may affect the machine's operation. Any damaged part(s) or guard(s) should be properly repaired or replaced before placing the saw in service.
- Use a sharp blade and keep machine clean for best and safest performance. Follow lubrication instructions in maintenance section.
- Safety is a combination of the operator's common sense and alertness at all times when machine is in operation.
- Maintaining the bandsaw in top condition is essential for safety.
- Never alter the machine in any way. To do so may endanger the operator's safety and will void the warranty. Never operate a machine that has been altered. Serious injury may result.



PRE-OPERATION CHECKLIST

The following items should be checked at the beginning of each shift and by each new operator. This checklist is designed to maintain peak saw performance, increase blade life, reduce saw repairs, and provide a safe machine for the operator.

- Guards and covers in place and closed securely.
- Check hydraulic fluid level - fill as necessary.
- Remove unneeded tools and equipment from the work surfaces and work area.
- Inspect blade-wheels and blade guides - be sure to remove chips. Check that blade cleaning brush is aligned with the blade. Replace blade brush if worn.
- Inspect the blade - replace if worn or if missing teeth.
- Check that the proper blade is installed.
- Check the blade tension - adjust if needed.
- Visually inspect the saw for damage or leaks. **REPAIR BEFORE OPERATING.**
- Check cutting fluid - add as necessary, change if contaminated.

Operation Procedure

Operation of this bandsaw is quite simple once the function of each control and feature is understood.



1. Turn the main disconnect switch to On and allow the system to boot up.
2. Twist and release the Emergency Stop Switch.
3. Turn LAMP ON/OFF switch to ON position.
4. Raise the guide arm high enough to clear the material. If tilting the bow to the left. This will also need to clear the vise.



5. Determine the angle of the cut. Use the lock lever to loosen the saw bow and manually tilt the bow from 45° left tilt to 45° right tilt. Never rely solely on the scale markers for the correct tilt angle. Always verify the angle with a protractor.
6. Mark the material for the location and angle of the cut.
7. Place the material between the vise plates. The vise may be positioned on either side of the cut and has other forward and aft adjustments.
8. Align the cut mark with the saw blade.
9. Close the vise to clamp the material.
10. Turn the coolant switch to On to start the coolant flow. Adjust the flow at the nozzle using the ball valve located at the nozzle.
11. Press the Start switch to start the saw blade and advance the saw bow into the cut.
12. Adjust the saw blade speed using the adjustment knob on the right side of the console and monitoring the speed using the blade speed indicator. Set the speed so that the speed is ± 5 SFPM of the desired setting. Getting an exact match will be difficult.
13. Set the Feed pressure to a pressure as recommend from the pressure chart.
14. Press the "STOP" button to stop the bow movement if needed.
 - a. The saw bow will advance until the forward stop limit switch is engaged. Then the saw blade will stop, the frame will retract to the home position and wait for the next cut cycle.
15. Slowly turn the feed speed knob counterclockwise (ccw) until the feed speed is set. This value is the "Cutting Rate" from the Cutting Chart. It is listed in Surface Inches Per Minute (SIPM).
16. Once the feed rate and pressure are set, lightly tighten the lock knobs to hold these setting. This will keep the settings for as long as the same material will be cut.
17. When the cut is complete, (either by the feed stroke limits or by the operator pressing the stop button) the saw blade will stop and the saw bow will retract to the start position.
18. Once the saw frame has returned to the home position, the saw may be set for the next cut.
 - a. This will be determined by each specific project to be sawn.



NOTE: *It is recommended to check the first cut for accuracy. Make any adjustments before cutting the remaining stock. If the saw frame is not set at 0° the saw will not cut squarely.*

19. When the saw is not in operation, power the saw down by pressing the E-Stop. If leaving the saw unattended, turn the main disconnect to Off.



Causes of Inaccurate Cutting

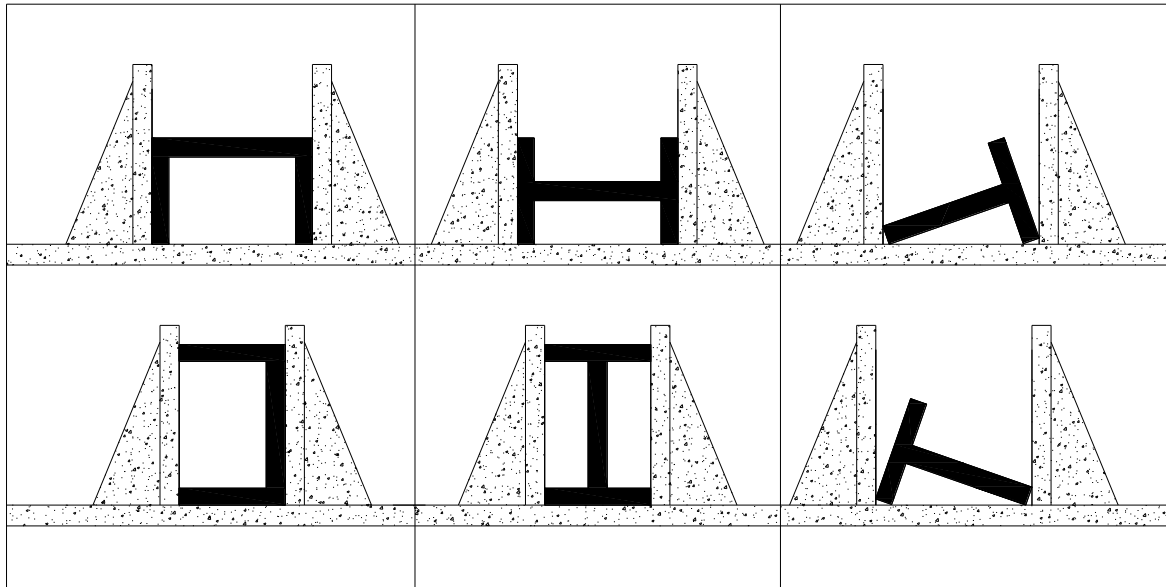
- Worn or mis-adjusted blade brush.
- Dull blade.
- Debris under the stock being cut.
- Incorrect feed rate or feed pressure settings or excessive or rapid adjusting of these settings while the cut is being made.



IMPORTANT: Do not allow excessive metal chips to buildup in the pan. The chips may be carried back into the saw causing premature wearing of the blade, blade guides and blade wheels. Clean the cutting fluid tray as often as needed.

Clamping

These examples below show ways to clamp a variety of cross sections. Always keep in mind the cutting capacity of the saw to achieve efficient saw cuts and long blade life. Do not use blades of a size different from that shown in the technical specification chart.





CUTTING RATE CONTROL

Cutting rate is defined as the number of square inches of material cut in a minute. The cutting rate is influenced by your choice of bandsaw blade, your cutting fluid, the blade speed selected, the feed pressure selected, the feed rate selected as well as the size, shape and machinability of the material you are cutting. Controlling the cutting rate is really controlling the chip size and by effectively controlling the chip size you not only control the cutting rate but also you significantly impact cutting tool life, accuracy and finish as well.

We have addressed blade and cutting fluid selection elsewhere in this manual. Blade speed should be determined by referring to information supplied to you by the company from which you purchase your bandsaw blades. The seller of the bandsaw blades should also be able to provide you with a chart that indicates the cutting rate range you should expect when using their brand of bandsaw blades on various types and sizes of material. Since each manufacturer of bandsaw blades differs in the tooth geometry they use (there are other differences as well), it is not possible for us to provide you with this information unless you have selected Peerless brand blades and cutting fluids.

Band sawing is still as much art as it is science. There are so many variables that it is virtually impossible to cover even most of the possible combinations of factors. However, in general you want to cut according to the cutting rate indicated by your bandsaw blades manufacturer's recommendation.

To accomplish this, you should:

- Use the type blade and blade pitch recommended by your bandsaw blade manufacturer.
- Determine the proper blade speed from the information provided you by your bandsaw blade manufacturer.
- Determine the desired cutting rate from the information provided you by your bandsaw blade manufacturer.
- Set the feed pressure.
- Set the feed rate.

The feed pressure is controlled by a knob on the operator's panel and is indicated by the gauge immediately above the control knob. Although the gauge is calibrated in PSI, it is not reading pressure exerted against the material. The calibration should be considered an arbitrary calibration to be used purely as a reference for the operator. This gauge might well have been just calibrated 1, 2, 3, 4 and so on. The higher the number on the gauge the greater the maximum feed pressure that will be exerted by the blade on the material. Therefore, the harder the material the higher the numbers on the feed pressure gauge. For example, a softer material such as a round aluminum bar might cut well with an approximate 110 setting on the feed pressure gauge where as a round bar of stainless steel of the same diameter might require a setting of 175 on the feed pressure gauge.



Once the feed pressure has been set, you should then set the feed rate. The location on the operator's control panel of the machine. This control regulates the maximum speed at which the blade will move forward under a given pressure. In general, this should be set to move at a rate of 7 to 10 linear inches of travel when there is no material in the saw.

Time the cut. If your cutting rate is approximately equal to the cutting rate prescribed by your bandsaw blade manufacturer, you need not make any adjustments for subsequent cuts from that same material. If you are cutting too slowly according to that recommendation, gradually increase the feed rate over the next several cuts. If you are cutting too quickly, gradually decrease the feed rate over the next several cuts.

This is sadly and admittedly not as scientific as any of us would like it to be. It is, unfortunately, less than a scientific process. It will require some experimentation on your part to find exactly the right settings for your material. When you have found the settings that are best for you be sure to record them, so you know when you cut the same job again.



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.

The maintenance jobs are listed below, divided into daily, weekly, and monthly intervals. If the following operations are neglected, the result will be premature wear of the machine and poor performance.

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.
- Check functionality of the shields and emergency stops.

Weekly

- 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.



Lubrication

All ball bearings are permanently lubricated and sealed. They require no further lubrication.

Hydraulic Oil / System

The hydraulic oil is the primary medium for transmitting pressure and 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.

Oil Disposal

Used oil products must be disposed of in a proper manner following your local regulations.

Accessing and Cleaning the Coolant System

- Clean the drain screens on the machine base and the drains on the ends of the table.
- Drain and wash out the dirt and debris from the reservoir.
- Thoroughly clean the pump and pump inlet.
- Fill the tank with coolant solution.

Oils for Lubricating Coolant

Any 10:1 (water to coolant) solution will work, however we recommend Baileigh Coolant 20:1 (water to coolant) biodegradable metal cutting fluid. It has excellent cooling and heat transfer characteristics, is non-flammable, and extends tool and machine life. Each gallon of concentrate makes 21 gallons of coolant.

Pneumatic Care

Start with clean and dry. Follow your compressor manufacturer's instructions for proper maintenance, filtering, and moisture control and removal.

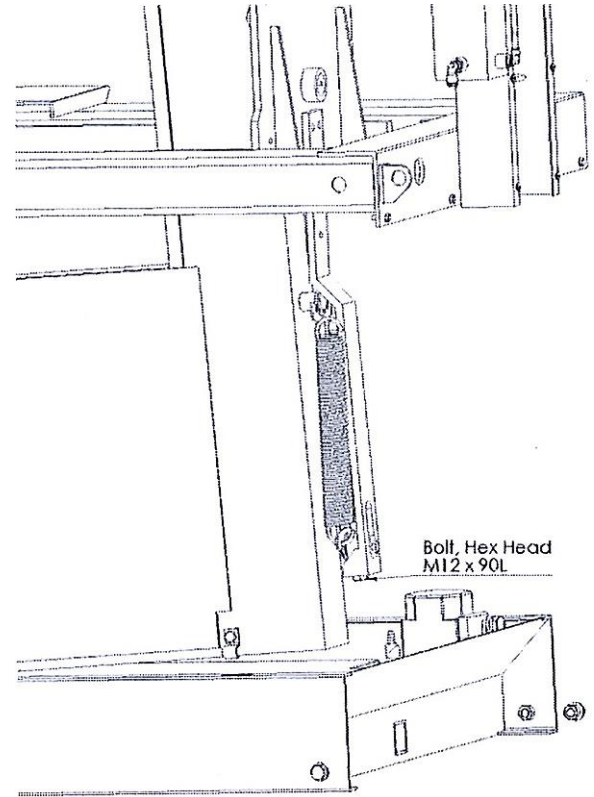
Use a 10W pneumatic air tool oil in an oiler set at the lowest setting to provide enough oil to the system to maintain good lubrication. Once started, do not allow the air system to run dry.



Bow Tilt Tension Adjustment

The springs used to assist with tilting the saw bow may be adjusted to provide more or less tension to help support the saw bow during the tilting function. Too much tension may prevent the bow from tilting to the full angle. Too little tension may allow the bow to tilt too easily.

1. Disconnect the saw from the power supply.
2. Loosening the M12 x 90L bolt will lessen the tension of the springs. This will allow the bow to tilt more easily but may be harder to hold in position.
3. Tightening the M12 x 90L bolt will increase the tension of the springs. This will help support the bow during a tilt but may prevent full tilting angle.



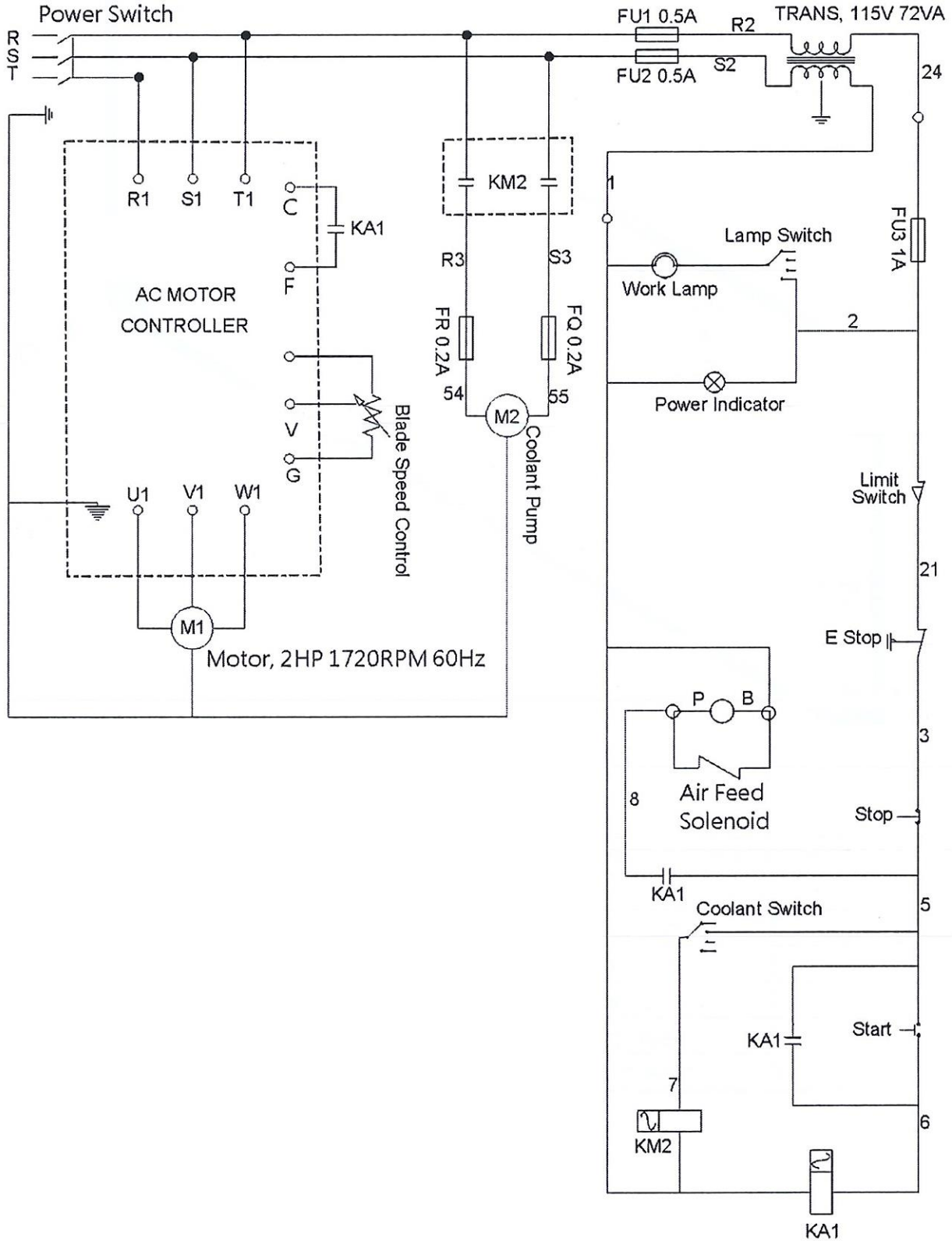
Storing Machine for Extended Period of Time

If this machine is to be inactive for a long period of time, prepare the machine as follows:

- Disconnect the electrical supply from the power panel.
- Empty and clean the coolant reservoir.
- Clean and grease the machine.
- Cover the machine.

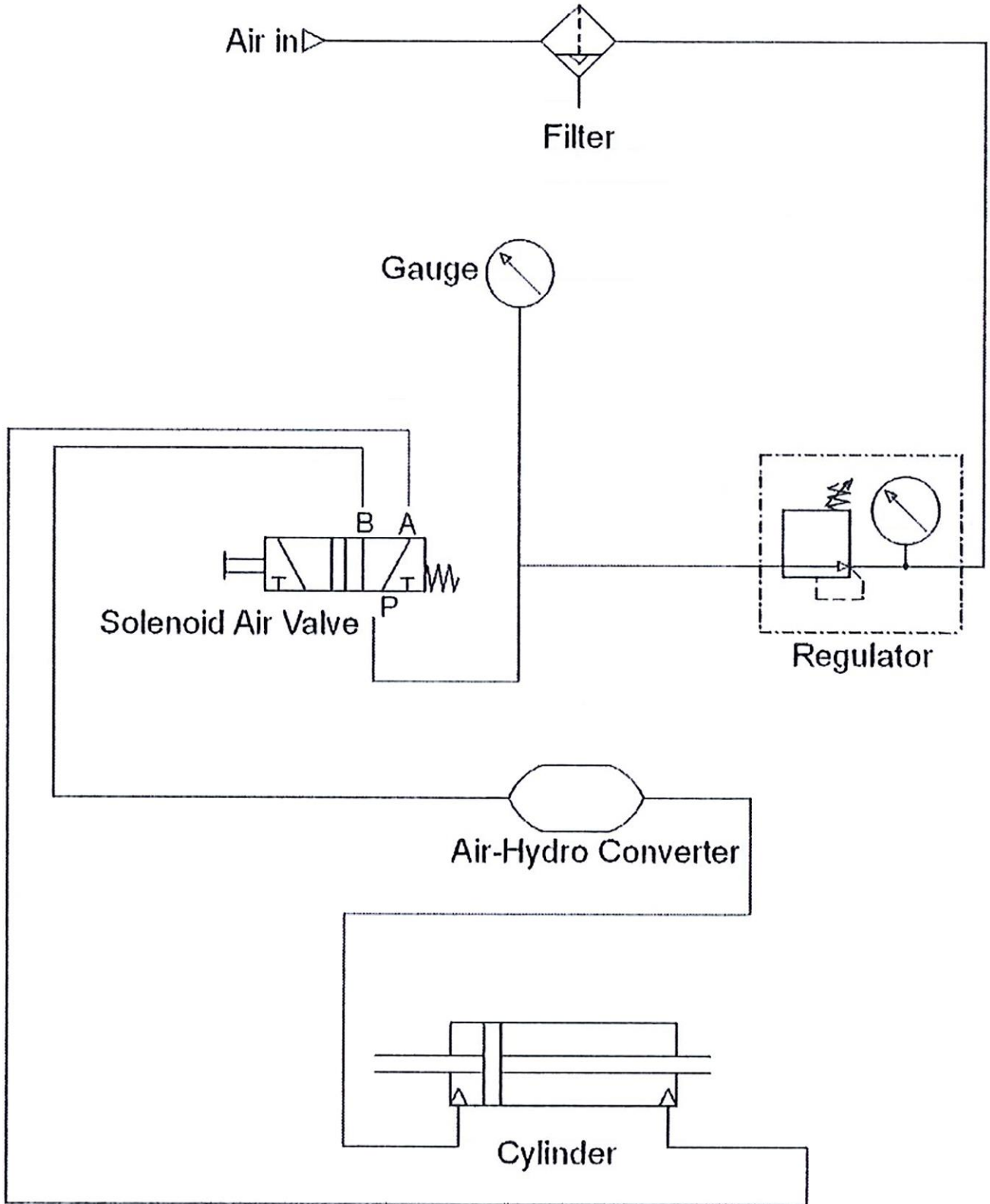


ELECTRICAL DIAGRAM





PNEUMATIC / HYDRAULIC DIAGRAM





NOTES



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