OPERATORS MANUAL

HORIZONTAL BAND SAW

Model: BS-250M

Baileigh Industrial, Inc.
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03/2010

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THANK YOU & WARRANTY

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

2. **Inspection & Acceptance.** Buyer shall inspect all Goods within a reasonable period of time after delivery, not to exceed ten (10) days. If Buyer rejects any Goods, Buyer must first obtain a Return Authorization Number ("RAN") before returning any goods to Seller. Goods returned without a RAN 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 RAN. 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 unsaleable 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.

3. **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.

4. **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 RAN 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 RAN. 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. 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.

5. **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.

6. **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.

7. **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.

8. **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.

9. **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.

10. **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.

11. **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.

12. **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.

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:

- 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

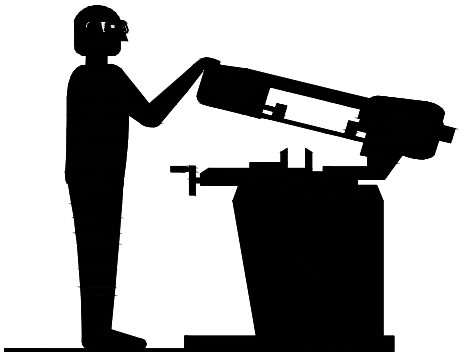
GENERAL NOTES

- After receiving your equipment remove the protective crating. 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.

- Always check that the work piece is securely clamped and that long pieces are properly supported.

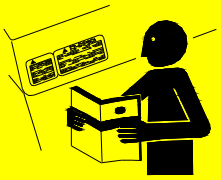
- If the blade gets stuck in the cut, press the emergency stop button immediately, and disconnect the power to the machine. Slowly open the vise and remove the piece part. Check the blade for any broken teeth and replace blade if necessary.



The operator should stand in front of the machine while the saw is cutting.

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.



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.

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.

For specific application needs or future machine purchases contact the Sales Department.
at: sales@bii1.com or phone: 920.684.4990

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

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

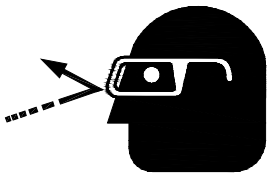
A signal word – **DANGER**, **WARNING**, or **CAUTION** is used with the safety alert symbol. **DANGER** identifies a hazard or unsafe practice that will result in severe **Injury or Death**.

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.

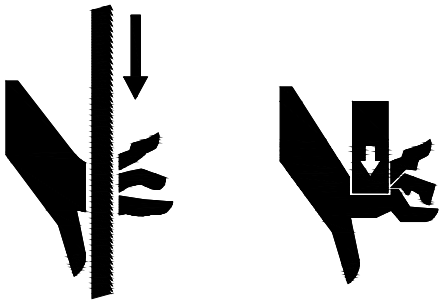
PROTECT EYES

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



BEWARE OF CUT AND PINCH POINTS

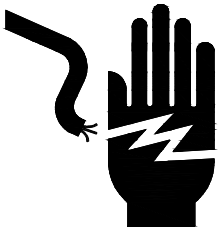
Keep hands and fingers away from the saw blade when the machine is in operation.



HIGH VOLTAGE

USE CAUTION IN HIGH VOLTAGE AREAS.
DO NOT assume the power to be off.

(MAKE SURE PROPER LOCKOUT PROCEDURES ARE FOLLOWED)



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.

Additional Safety Precautions

Turn off main power to the machine when changing the saw blade or performing any maintenance work.

- **Never** expose your hands or limbs to the cutting area while the machine is operating.
- Steel toe shoes should be worn when using this machine.
- Make sure it is possible to move freely around the machine and associated equipment. The floor should be kept clean and dry, and the surrounding area well illuminated, so that work can be performed safely.
- **Never** wear loose fitting garments or jewelry, and avoid long loose hair when operating machine.
- When the machine is **not** in use, the saw blade should **not** be moving.
- **Do not** remove any warning signs.
- Check safety equipment, such as safety covers, emergency stop buttons, safety mats, railings, light booms, ramps, and warning signs.
- Make sure electrical cables are well protected from damage. Check insulation periodically for wear.
- When moving the saw **ALWAYS** have the head lowered to the horizontal position.
- **DO NOT** overreach. Maintain proper footing and balance at all times.
- Make sure the machine is properly grounded.
- Learn the function and proper use of the "**ON-OFF**" start switch, trigger switch, blade speed knob, and the emergency stop button.
- Use the right tool. Do not force a tool or attachment to do a job it was not designed for.
- Keep visitors a safe distance from the work area.
- Safety is a combination of common sense and alertness at all times when the saw is being used.

UNPACKING AND CHECKING CONTENTS

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

WARNING: If any parts are missing, do not try to assemble the band saw, plug in the power cable, or turn the power switch on until the missing parts are obtained and installed correctly.

Technical Specifications

Cutting Capacity	○	□	▭
0°	227mm (8.93")	220mm (8.66")	260mm x 110mm (10.23" x 4.33")
45°	150mm (5.9")	145mm (5.7")	———
60°	90mm (3.54")	85mm (3.34")	———

Motor	2 HP / 110V / 1 PH / 60HZ
Drive	Gear
Blade Speed	66-280 fpm (variable)
Blade Size (H / W / L)	1" / .035" / 96.85"
Descent Control	Hydraulic w/speed adjustment
Return	Manual
Shipping Weight	475 lbs.

Features

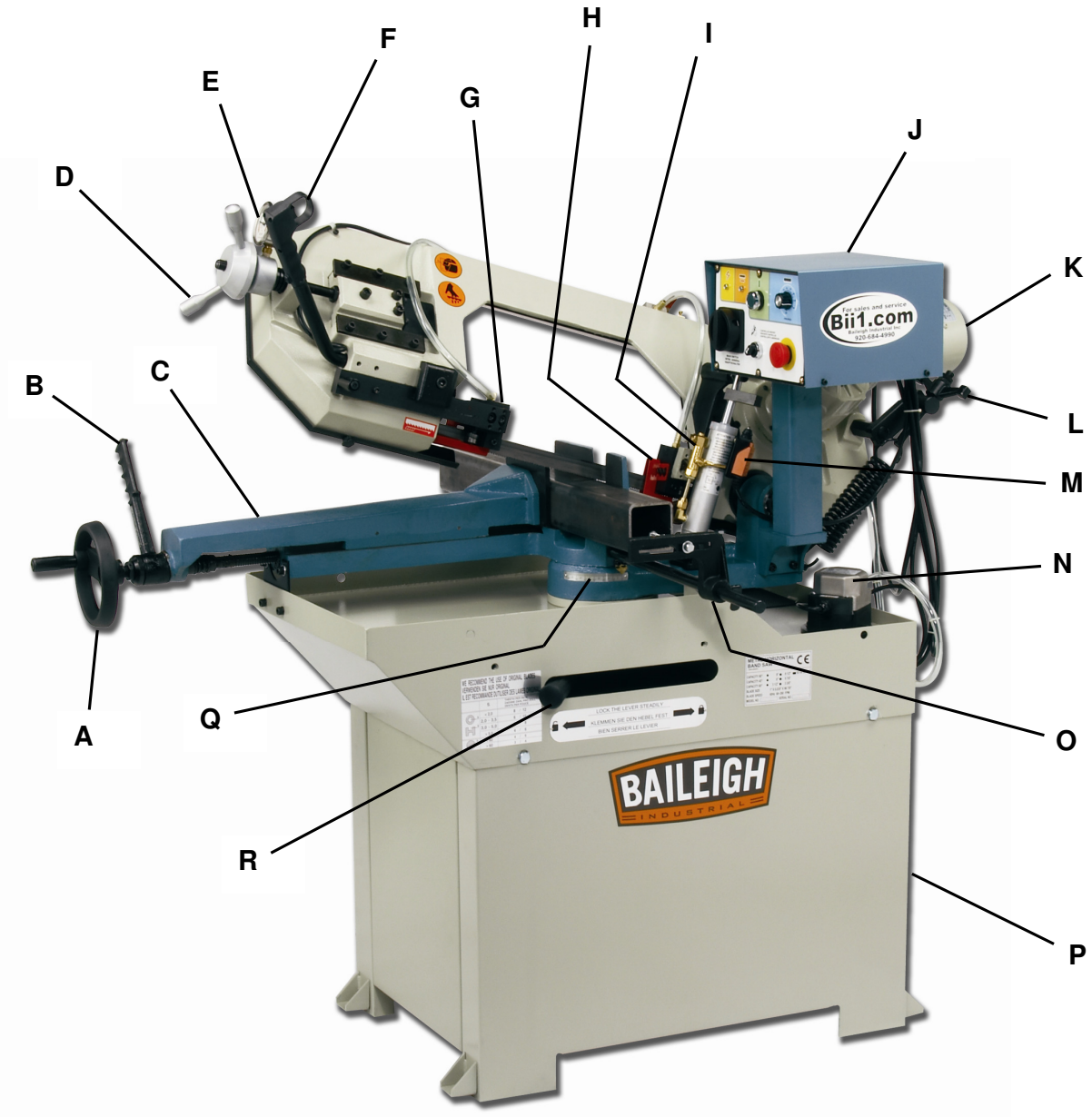
1. Designed for horizontal cutting.
2. Variable speed for cutting various metals and plastics.
3. Saw shuts off automatically when material is cut.
4. Mitering vise scale (0-60° Right)
5. 1" Blade (standard)
6. Quick vise feature for fast and easy clamping.
7. Direct gear drive

TRANSPORTING AND LIFTING THE MACHINE

Caution: Lifting and carrying operations should be carried out by skilled workers, such as truck operator, crane operator, etc. Also, it is necessary to keep in mind that having a large clearance area around the machine is important for efficient and safe working conditions.

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

GETTING TO KNOW YOUR MACHINE



GETTING TO KNOW YOUR MACHINE (cont.)

A	Vise hand wheel	Turning hand-wheel opens and closes vise
B	Vise lever	To quickly clamp and unclamp piece parts
C	Vise	Holds front and rear jaws for clamping
D	Blade tension hand wheel	For applying and releasing blade tension
E	Blade tension gauge	Reads tension in Kgs/cm2
F	Trigger switch	For starting saw motor in manual mode
G	Blade adjustment ass'y.	Adjusts front end of blade
H	Blade adjustment ass'y.	Adjusts rear end of blade
I	Ball valve	Starts and stops the blade descent
J	Control box	Houses the operator controls
K	Motor/gearbox	Drives the saw blade
L	Spring adjustment knob	Sets spring tension
M	Microswitch	Shuts off saw when finished cutting
N	Coolant pump	Recirculates blade coolant
O	Stop rod assembly	For setting the length of cut
P	Saw stand	Supports the saw assembly
Q	Angle indicator	Shows angular cutting degrees
R	Miter lock lever	Tightens and loosens table to set angles

GETTING TO KNOW YOUR MACHINE (cont.)

(1) Power Indicator Light (Lights "white" when power is on)
(2) Blade Start Indicator Light (Lights green when blade is moving)
(3) Start Pushbutton (Starts saw motor in Auto mode)
(4) Speed Control (Sets blade speed from 66-280 fpm) Has an **OFF** position to shut off power
(5) Main Disconnect Switch (Turns power **ON** to the saw) ***Can be locked out in the OFF position for Safety or Security***
(6) 2-Position Mode Switch (Selects between auto mode, clockwise (**cw**) and trigger control, counterclockwise (**ccw**)
(7) E-Stop Pushbutton (Saw can be stopped immediately by pressing the red palm button) Twist the button clockwise (**cw**) to reset. Resetting the E-Stop will not start the saw.

GETTING TO KNOW YOUR MACHINE (cont.)

Machine Base (figure 1)

After assembly, the machine base becomes the structure that supports the saw bow, the vise, the coolant pump, the bar stop, and the swing arm.

figure 1

Quick Clamp Vise (figure 2)

Place the piece part between the vise jaws and have it rest next to the fixed vise jaw. Rotate the hand wheel (**A**) clockwise (**cw**) to close the front jaw onto the piece and tighten. Rotate the hand wheel counterclockwise (**ccw**) to release. Vise lever (**B**) can be used to quickly lock and release the piece part by allowing a small gap between the vise and part. Then rotate lever (**B**) counterclockwise (**ccw**) to lock and clockwise (**cw**) to release.

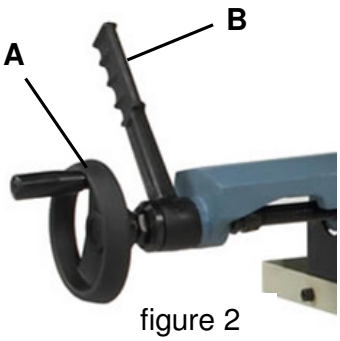


figure 2

Cutting Angle Adjustment (figure 3)

Angles can be cut up to 60°. Unlock the rotating saw head by pushing the miter lock lever (**R**) to the left. Rotate the saw head to the desired angle as shown on the angle indicator (**Q**). Lock the saw head by pushing the lock lever (**R**) to the right.

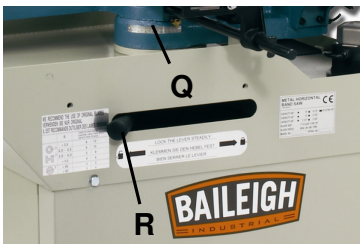


figure 3

WARNING Check that the saw blade clears all parts of the vise assembly before cutting. The blade can strike parts of the assembly (especially during miter cuts) if not properly adjusted**. Make sure saw bow is in a down or horizontal position when moving or mitering, to avoid tipping over machine.**

GETTING STARTED

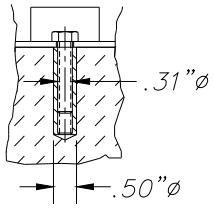
ATTENTION: HAVE ELECTRICAL UTILITIES CONNECTED TO MACHINE BY A CERTIFIED ELECTRICIAN !

Your Baileigh Machine is CE approved

Check if the available power supply is the same as required by the Band Saw (consult nameplate on machine base)

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.



Anchoring the Machine: Position the saw on a firm and level concrete floor. Maintain a min. distance of 32.00" from the wall to the rear of the machine. Anchor the saw stand to the floor as shown in the diagram to the left using bolts and expansion plugs, or tie rods sunken into the concrete.

Assembly and Setup

Assemble the stand as shown in the **Parts Identification Drawing A**, page 28 of this manual. (Make sure all nuts and bolts are properly tightened). Use a sling capable of lifting 500 lbs. (min.) and make sure the load is properly balanced. Pick up the saw and carefully set it onto the stand and bolt together. Attach electrical control box (**J**) to the pedestal (**S**) with (4) hex socket capscrews.

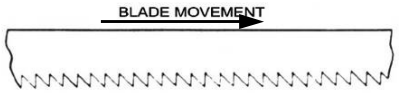
figure 4

ADJUSTING THE MACHINE

BEFORE PERFORMING THE FOLLOWING OPERATIONS, THE ELECTRIC POWER SUPPLY AND THE POWER CABLE MUST BE COMPLETELY DISCONNECTED.

Replacing the saw blade: **(Wear gloves when handling the saw blade.)**

BLADE DIRECTION OF TRAVEL



1. Raise the saw bow. (figure 5)
2. Remove the front blade guard (**T**) and the (4) knobs (**U**) holding on the main blade guard. Carefully pull out the tongue from the safety interlock switch (**V**)
3. Loosen the saw blade with the tension hand wheel (**D**) and remove it from the flywheels and the blade guide blocks.
4. Assemble the new blade by placing it first between the guide blocks and then on the face of the flywheels. (note blade direction)
5. Tension the blade, making sure it seats properly on the flywheels.
6. Reassemble the front blade guide (**T**) and the main blade guard (**W**), making sure the switch tongue engages the switch or the saw will not start.

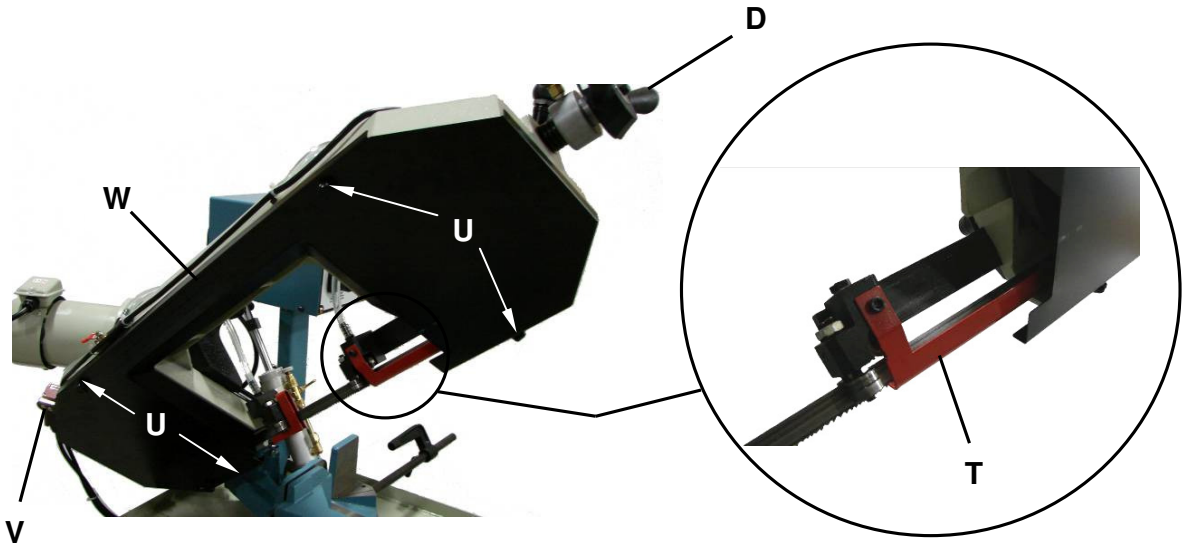


figure 5

ADJUSTING THE MACHINE (cont.)

Setting Blade Tension

Blade tension is important to the proper operation of the saw. Correct blade tension is 120 kg/cm² as measured on the saws tension gauge. (figure 6) Turning the handwheel clockwise (**cw**) will increase the tension. Counterclockwise (**ccw**) will decrease tension of the saw blade.

figure 6

Adjusting the Blade Tracking

The flywheels alignment may need some adjustment to allow the saw blade to track correctly. Improper flywheel alignment can cause damage to the saw blade or cause it to ride off the blade wheel bearings.

1. **Disconnect power from the saw**
2. Raise the saw bow to a usable work height.
3. Loosen the hex socket cap screws (**X**, **Y**, & **Z)** (see figure 7)
4. Use an allen wrench on setscrew (**AA)** to adjust the blade as shown in (fig. 7a).
5. Turning the setscrew (**AA**) clockwise (**cw**) will tilt flywheel so that the blade will ride closer to the flange.
6. Turning the setscrew (**AA**) counterclockwise (**ccw**) will tilt the flywheel so that the blade will ride away from the flange. (If it rides too far away it will come off).
7. After the adjustment is finished, tighten the socket cap screws in this order: **(X**, **Y**, & **Z**)

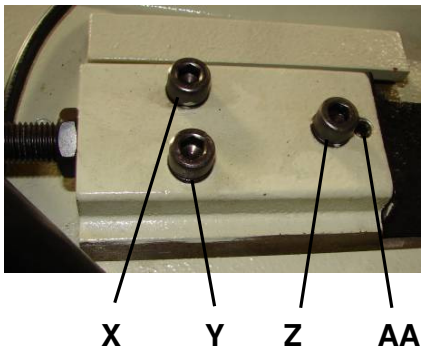


figure 7

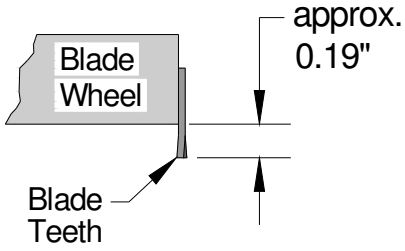


figure 7a

ADJUSTING THE MACHINE (cont.)

Adjusting the Blade Guide (figure 8)

1. **Disconnect Power From the Saw**
2. Release the extension bar for the blade guide block by turning clamp handle (**AC**) counterclockwise (**ccw**) to loosen the clamping block (**AD**).
3. Hold the revolving handle (**AB**) and slide the blade guide block as close as possible to the piece part without interfering with the cut.
4. Tighten clamp handle (**AC**) clockwise (**cw**).

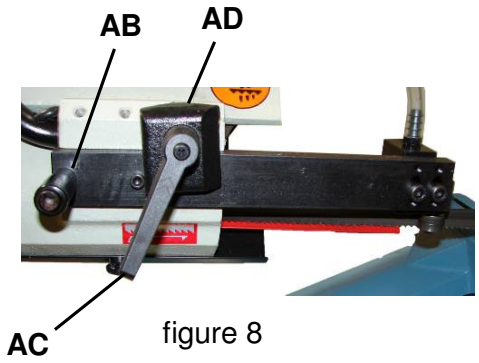


figure 8

Blade Guide Bearing Adjustment (figure 9)

ATTENTION: This is the most important adjustment on your saw. It is impossible to get satisfactory work from your saw if the blade guides are not properly adjusted. Your Baileigh Band Saw has been adjusted and power tested before leaving the factory to insure proper setting. If the guides do get out of adjustment, it is extremely important to re-adjust immediately. An improperly adjusted blade will not cut straight and serious blade damage may result. It is always best to try a new blade to see if this will correct poor cutting before beginning to adjust the blade guide bearings. If the blade becomes dull on one side and not the other, for example, it will begin cutting crooked. A blade change will correct this problem; the guide adjustment will not. If a new blade does not correct the problem, check the clearance between the blade and guides. Clearance should be from just touching to .001". Adjust as follows:

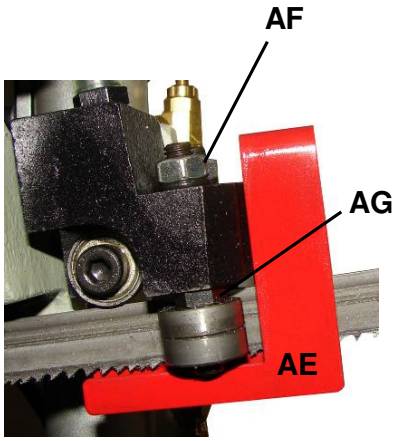


figure 9

1. **Disconnect Power From the Saw**
2. Remove guard (**AE**) for access to the bearing.
3. Loosen nut (**AF**) on the eccentric bearing.
4. Turn adjusting nut (**AG**) clockwise (**cw**) to move the bearing away from the blade.
5. Turn the adjusting nut counterclockwise (**ccw**) to move the bearing closer to the blade.
6. After adjustment, retighten nut (**AF**) and replace guard (**AE**).

THE OPERATION CYCLE

Manual Operation (figures 10, 11, & 12)

- Close the handle on the hydraulic ball valve (**I**) by turning it counterclockwise (**ccw**).
- Turn the flow control knob (**AH**) clockwise (**cw**) to shut off the hydraulic flow. This will prevent the saw bow from dropping when the ball valve is opened.
- Reduce the bow weight. Rotate the wing nut (**AI**) clockwise (**cw**) to increase the tension on the spring.
- Load piece part and clamp securely.
- Turn the main switch (**5**) to "**ON**".
  (Check to see that the indicator light (**1**) is lit)
- Set the blade speed with control knob (**4**)
- Set switch (**6**) to manual mode for trigger operation.
- While firmly holding the control handle of the saw bow, open ball valve (**I**) clockwise (**cw**).
- Fully open the flow control knob (**AH**) counterclockwise (**ccw**).
- Squeeze the start trigger to energize the blade motor and lower saw bow to begin cutting. (Light (2) will be green)
- When saw bow reaches bottom limit, the microswitch (**M**) is actuated and shuts off the saw motor.
- Return the saw bow to its start position and close ball valve (**I**).
- Unclamp and reset the piece part to continue the next cutting cycle.

figure 10

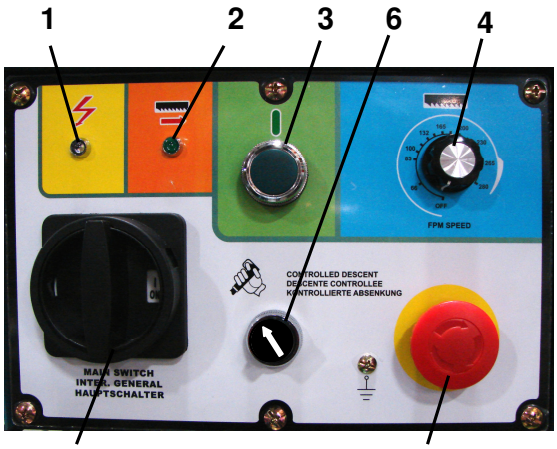


figure 11

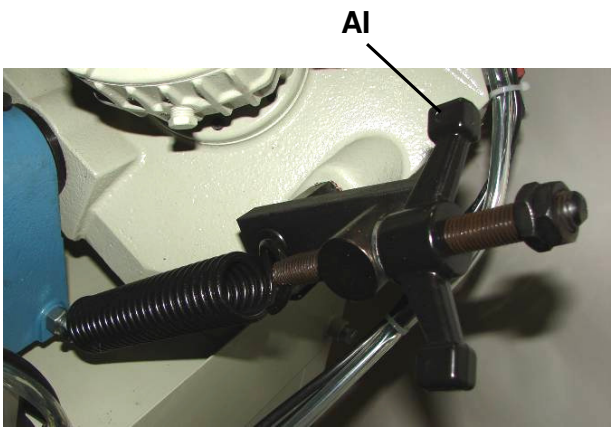


figure 12

THE OPERATION CYCLE (cont.)

If an emergency situation should occur:

Press the emergency **STOP** button (**7**) to immediately shut off all functions of the saw. To release the stop button, rotate the mushroom head clockwise (**cw**) to reset.

(**Note:** Resetting the **E-STOP** button will not start the machine.)

Auto Mode Operation

- Close the handle on the hydraulic ball valve (**I**) by turning it counterclockwise (**ccw**).
- Turn the flow control knob (**AH**) clockwise (**cw**) to shut off the hydraulic flow. This will prevent the saw bow from dropping when the ball valve is opened.
- Increase the bow weight. Rotate the wing nut (**AI**) counterclockwise (**ccw**) to decrease the tension on the spring.
- Load piece part and clamp securely.
- Turn the main switch (**5**) to "**ON**".
  (Check to see that indicator light (**1**) is lit)
- Set the blade speed with control knob (**4**)
- Set switch (**6**) clockwise (**cw**) to auto mode for hydraulic cylinder operation.
- Press the green start button (**3**). The saw motor and the coolant pump motor should both start.
- Open the ball valve (**I**) clockwise (**cw**).
- Turn the flow control knob (**AH**) clockwise (**cw**) to slow down the descent or counterclockwise (**ccw**) to speed it up.
- When saw bow reaches bottom limit, microswitch (**M**) is actuated and shuts off the saw and pump motors.
- Grasp the control handle and lift the saw bow to a height slightly above the piece part to minimize the next cut entry time.
- Close ball valve (**I**).
- Unclamp and reset the piece part to continue the next cutting cycle.

THE OPERATION CYCLE (cont.)

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 on page 11.

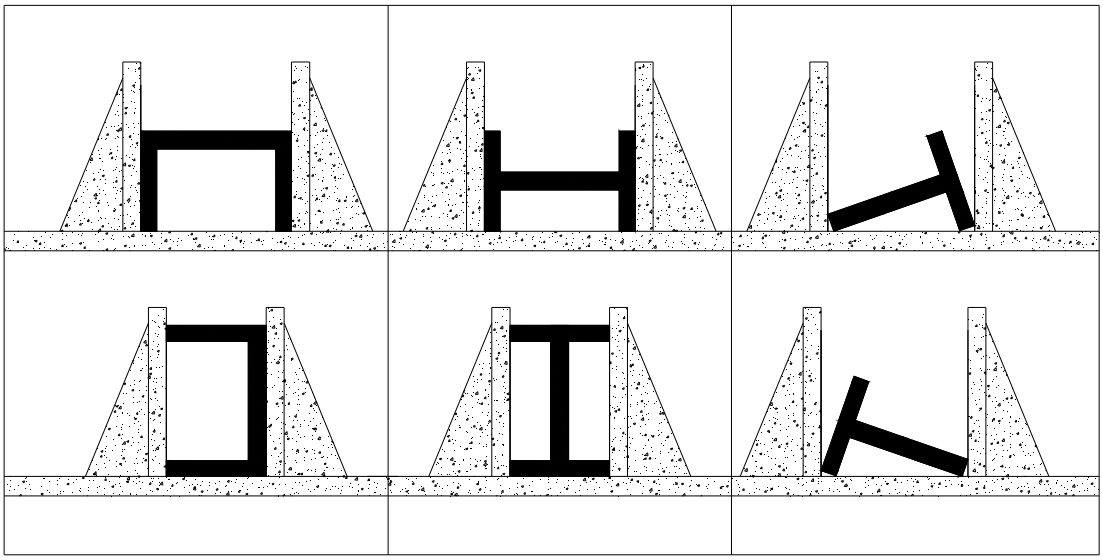


figure 13

LUBRICATION AND MAINTENANCE

MAINTENANCE SHOULD BE PERFORMED ON A REGULAR BASIS BY QUALIFIED PERSONNEL

CAUTION: Always follow proper safety precautions when working around machinery

MAKE CERTAIN POWER IS DISCONNECTED TO SAW.

Daily Maintenance

- Do a general cleaning by removing dust and metal chips from the machine.
- Inspect the saw blade for wear.
- Top off the coolant tank.
- Clean the lubricating coolant drain screen.
- Check that the blade guards and emergency stop button are in good working order.
- When through using machine, raise the saw head to its up position and release some tension on the saw blade.

Weekly Maintenance

- Thoroughly clean the machine.
- Wipe and re-grease the vise screw and sliding surfaces.
- Remove chips from inside the guard housing for the saw blade.
- Use compressed air to clean the blade guides and guide bearings.

Monthly Maintenance

- Check the tightening of the motor flywheel screws.
- Check the blade guide bearings for wear. (replace if necessary)
- Tighten any loose bolts or screws on the gear motor, pump, and safety switches.
- Clean coolant tank (see procedure on page 24)

Six month maintenance

- Do a continuity check of the safety circuit

LUBRICATION AND MAINTENANCE (cont.)

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

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

Coolant System Maintenance (figures 14 & 15)

- **Disconnect Power From the Saw**
- To clean the tank, first remove the pipe plug (**AK**) to drain the coolant.
- Take off the screen (**AL**) by removing (4) screws.
- Remove the pump (**AM**) by taking out (2) socket cap screws.
- After tank is completely drained use a vacuum cleaner to remove all chips and debris.
- Replace the plug.
- Thoroughly clean the pump (**AM**) and replace.
- Fill the tank with coolant to approximately 1" below the screen.
- Replace the screen (**AL**)
  Removeable drip tray (**AN**) shown in place

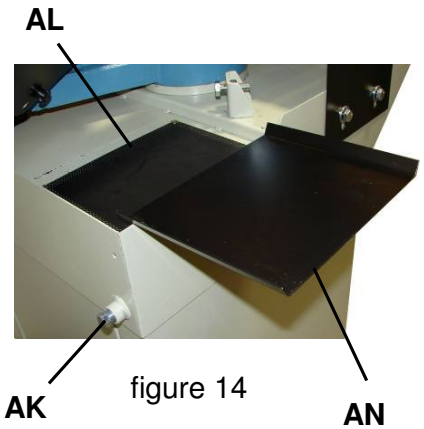


figure 14

figure 15

LUBRICATION AND MAINTENANCE (cont.)

Gearbox Maintenance (figure 16)

The gearbox requires periodic changing of the oil. Initially after 6 months and then every year thereafter. Follow the procedure below:

- **Disconnect Power From the Saw**
- Raise the saw bow to a vertical position. **Note:** You may have to back off the upper travel adjusting bolt.
- Remove the oil drain plug (**AO**) and drain the oil into a catch basin. Loosening oil fill plug (**AP**) will help oil to drain.
- After draining, replace drain plug (**AO**).
- Return the saw bow to a horizontal position.
- Remove the fill plug (**AP**) and add .32 quart of gear oil. (For reference use SHELL type gear oil or Mobil gear oil #90).

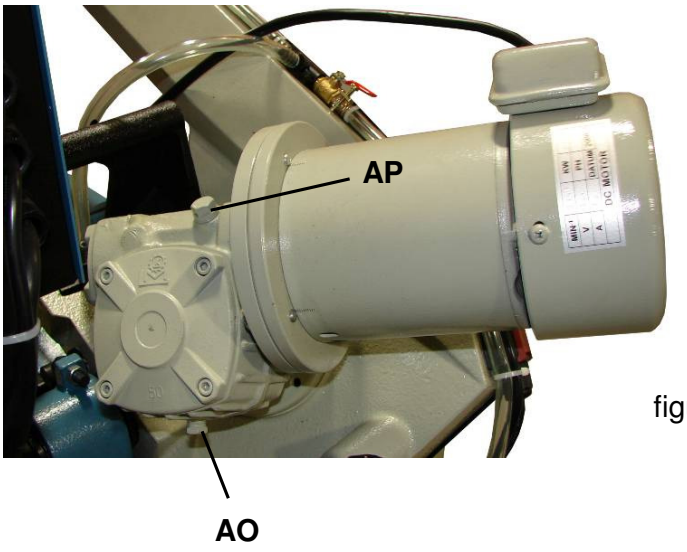


figure 16

Storing Machine for Extended Period of Time

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

- Detach the plug from the electrical supply panel.
- Clean and grease the machine.
- Release tension on the blade or remove blade.
- Cover the machine
- Drain coolant

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.

S	Outer Diameter of the Tube (inch) /Tooth pitch																
Inches	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	6-10tpi	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	6-10tpi	6-10tpi	5-8tpi	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	5-8tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	3-4tpi
0.197	14	10-14tpi	10-14tpi	10-14tpi	8-12tpi	8-12tpi	8-12tpi	6-10tpi	5-8tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	4-6tpi	3-4tpi	3-4tpi	3-4tpi
0.236	14	10-14tpi	10-14tpi	8-12tpi	8-12tpi	8-12tpi	8-12tpi	5-8tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	3-4tpi	3-4tpi	3-4tpi	3-4tpi	3-4tpi
0.315	14	10-14tpi	8-12tpi	8-12tpi	8-12tpi	6-10tpi	6-10tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	3-4tpi	3-4tpi	3-4tpi	3-4tpi	2-3tpi	2-3tpi
0.394		8-12tpi	6-10tpi	6-10tpi	6-10tpi	5-8tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	3-4tpi	3-4tpi	3-4tpi	3-4tpi	2-3tpi	2-3tpi	2-3tpi
0.472		8-12tpi	6-10tpi	6-10tpi	5-8tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	3-4tpi	3-4tpi	3-4tpi	3-4tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi
0.591		8-12tpi	6-10tpi	5-8tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	3-4tpi	3-4tpi	3-4tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi
0.787			6-10tpi	5-8tpi	4-6tpi	4-6tpi	4-6tpi	3-4tpi	3-4tpi	3-4tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi
1.181				4-6tpi	4-6tpi	4-6tpi	3-4tpi	3-4tpi	3-4tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	1.4-2tpi
2						3-4tpi	3-4tpi	3-4tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	1.4-2tpi	1.4-2tpi	1.4-2tpi
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	1.4-2tpi	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	1-1.4tpi	1-1.4tpi	1-1.4tpi
7.873											1.4-2tpi	1.4-2tpi	1.4-2tpi	1-1.4tpi	1-1.4tpi	1-1.4tpi	.75-1.25tpi
9.842												1.4-2tpi	1-1.4tpi	1-1.4tpi	1-1.4tpi	.75-1.25tpi	.75-1.25tpi
11.81													1-1.4tpi	1-1.4tpi	.75-1.25tpi	.75-1.25tpi	.75-1.25tpi
13.778														1-1.4tpi	.75-1.25tpi	.75-1.25tpi	.7-1.0tpi
15.747															.75-1.25tpi	.75-1.25tpi	.7-1.0tpi
17.716																.7-1.0tpi	.7-1.0tpi
19.685																	.7-1.0tpi

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 thinckness (s).

Metal Chip Indicators

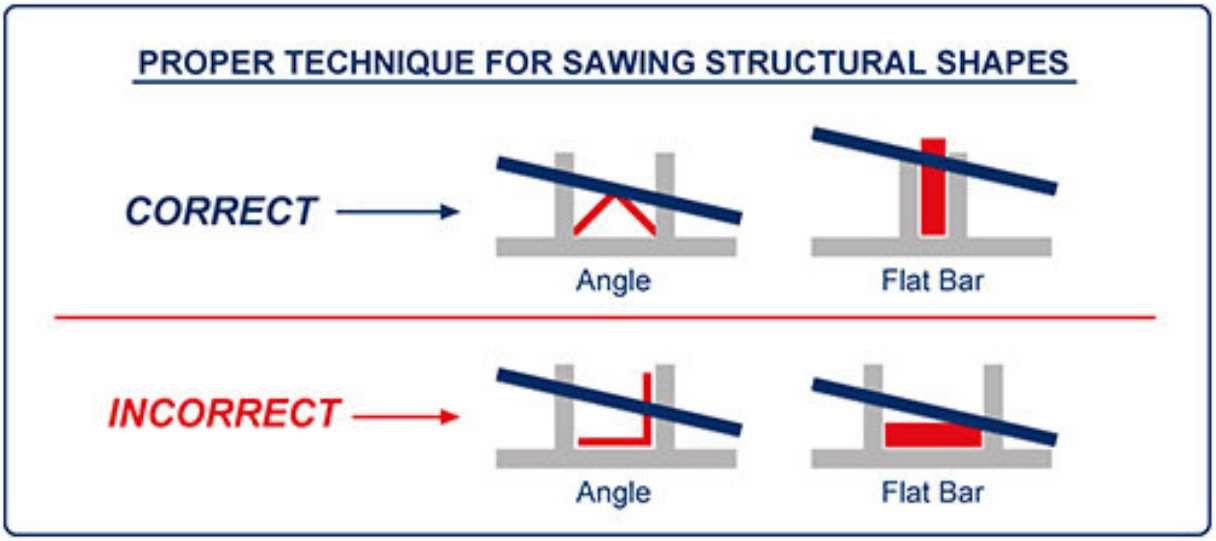
Chips are the best indicator of correct material feed force. Monitor chip information and adjust feed accordingly.

a.) **Thin or Powdered Chips** – increase feed rate or reduce saw speed
b.) **Burned Chips** – reduce feed rate and / or saw speed
c.) **Curly Silvery and Warm Chips –** optimum feed rate and saw speed

CHOOSING A SAW BLADE (cont.)

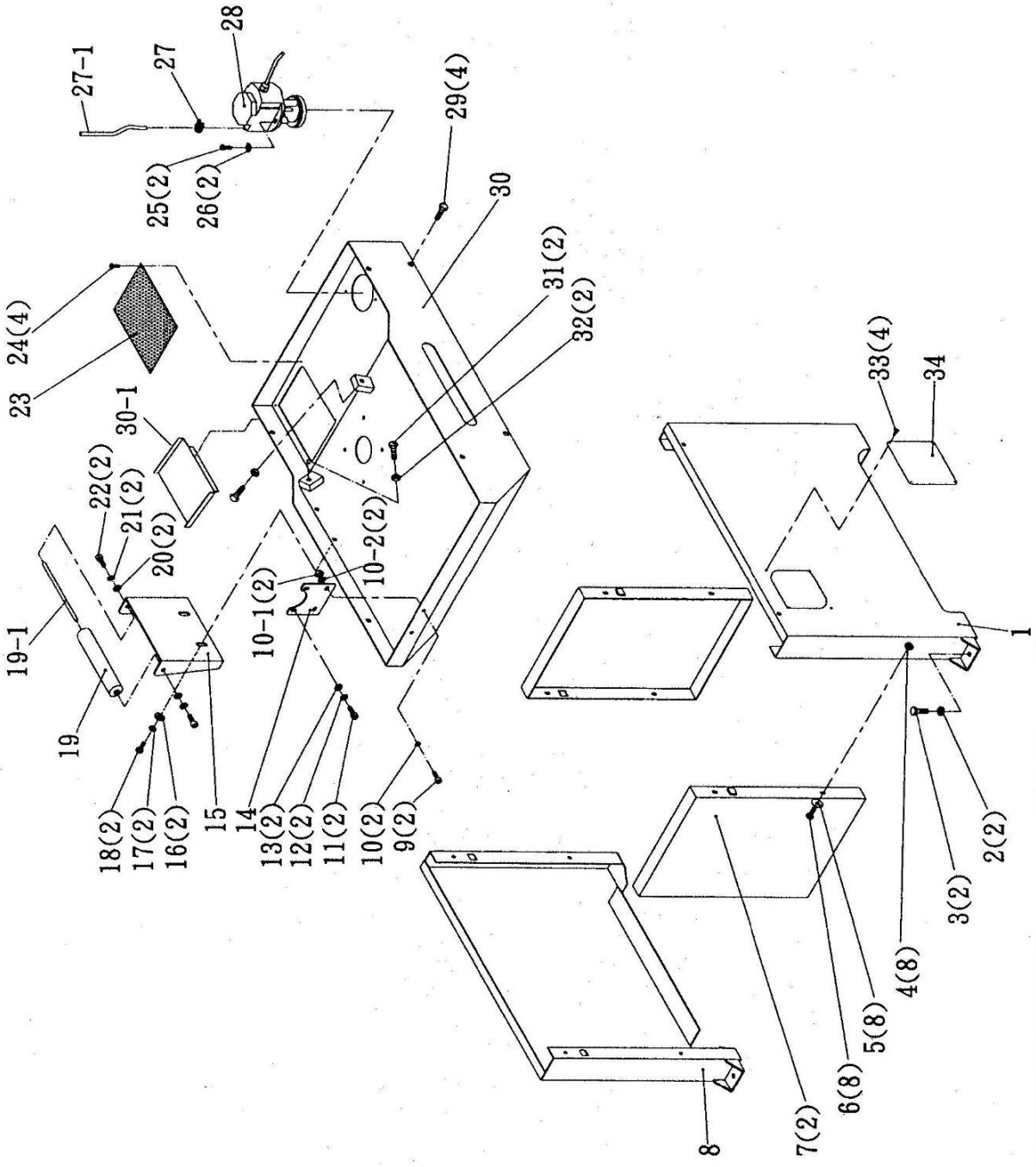
Breaking in a Band Saw Blade

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.

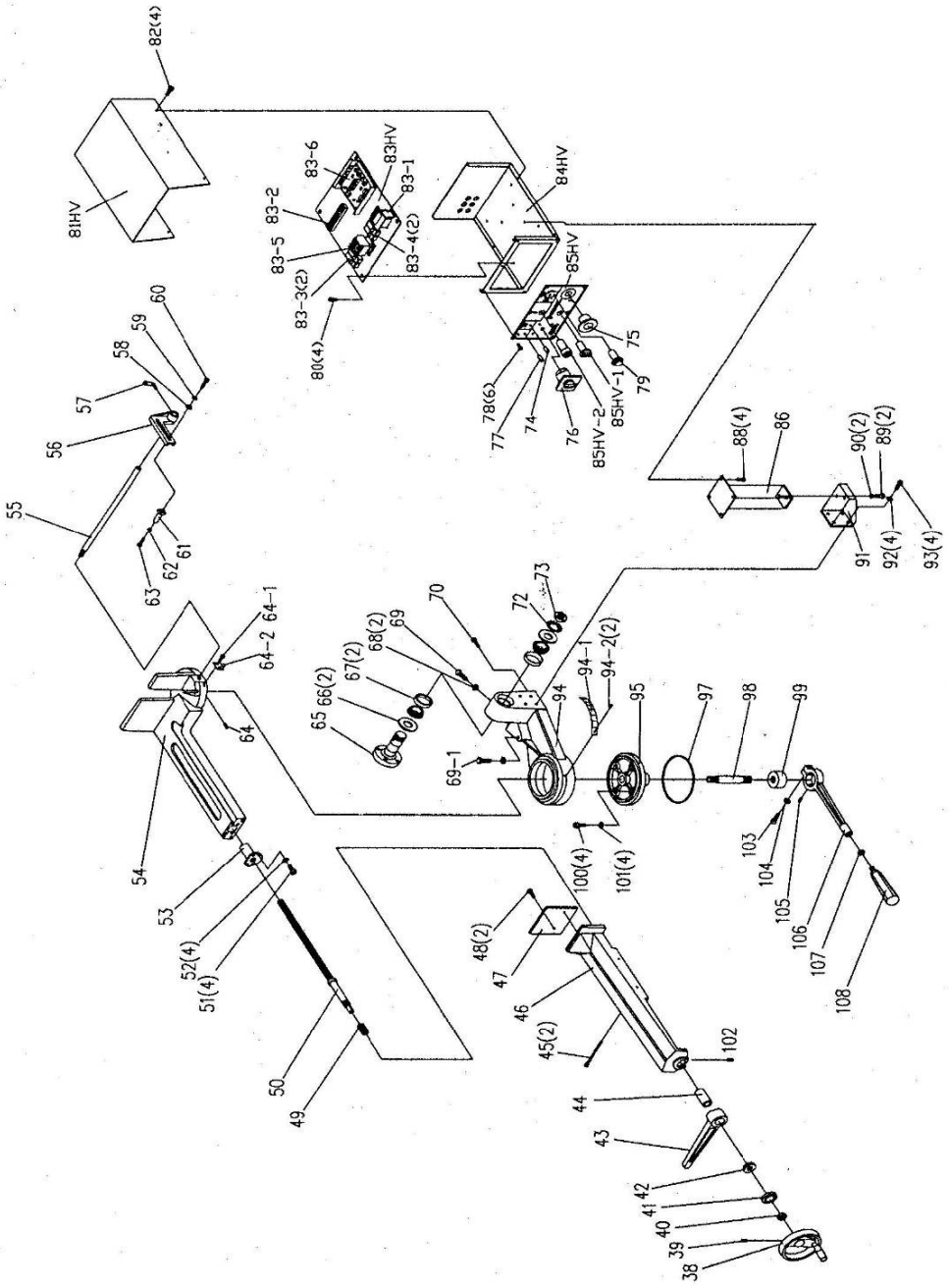


Baileigh Industrial offers a wide selection of tooth styles for various cutting applications. Please phone Baileigh Industrial at **(920.684.4990)** or fax to **(920.684.3944)** to have one of our technicians assist you in selecting the proper band saw blade for your cutting applications.

PARTS IDENTIFICATION DRAWING A



PARTS IDENTIFICATION DRAWING B



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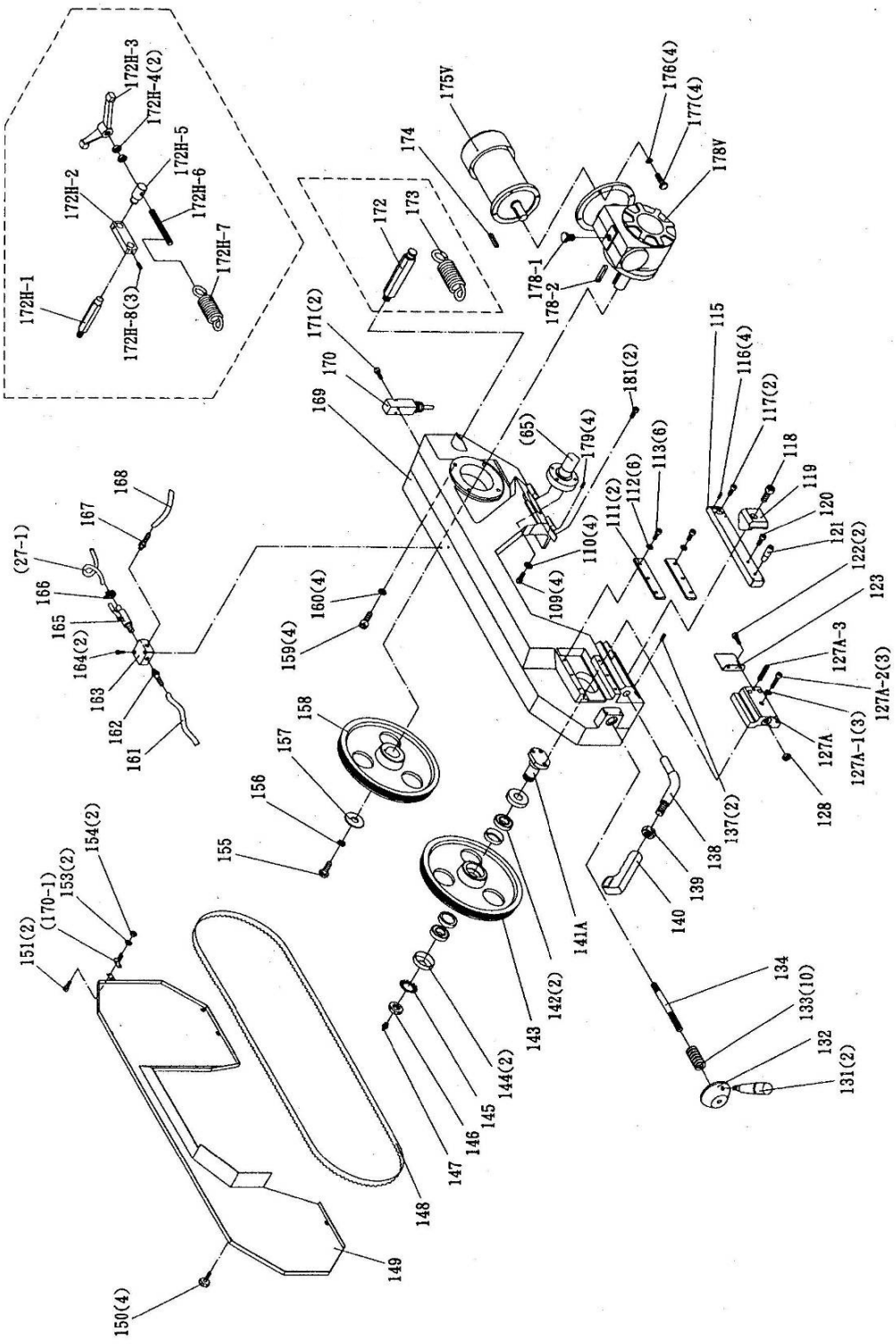

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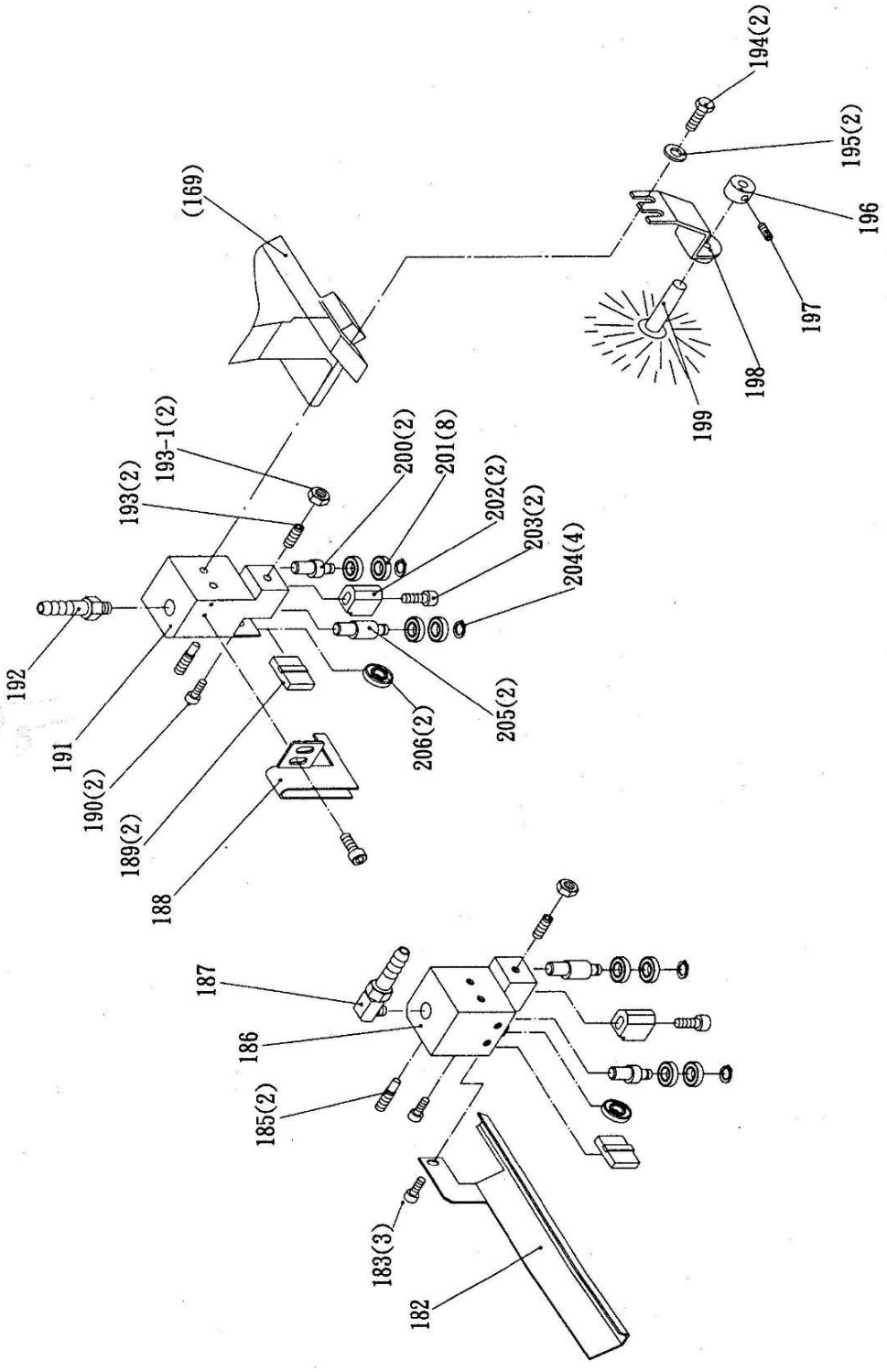
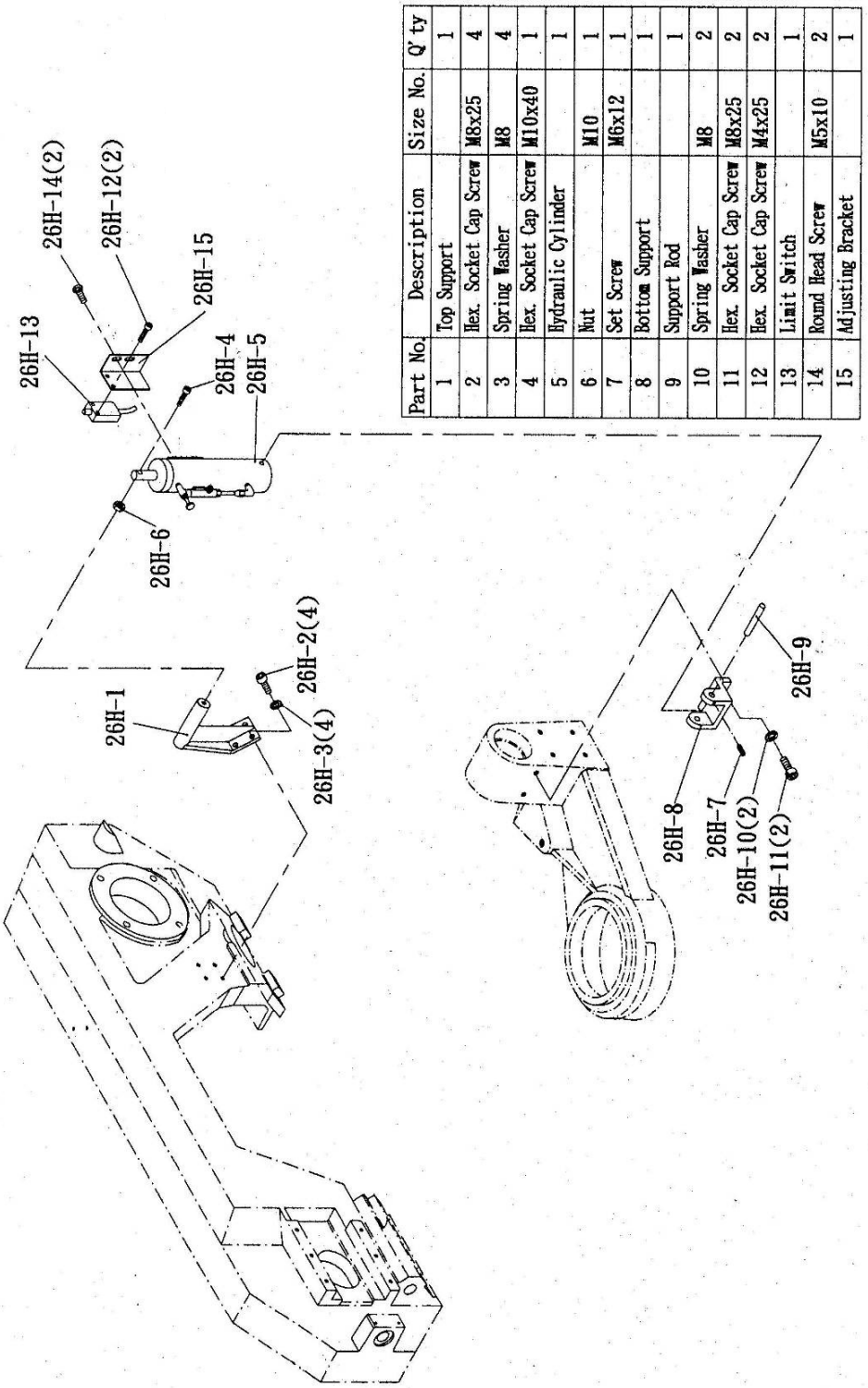


PARTS IDENTIFICATION DRAWING E



Part No.	Description	Size No.	Q'ty
1	Top Support		1
2	Hex. Socket Cap Screw	M8x25	4
3	Spring Washer	M8	4
4	Hex. Socket Cap Screw	M10x40	1
5	Hydraulic Cylinder		1
6	Nut	M10	1
7	Set Screw	M6x12	1
8	Bottom Support		1
9	Support Rod		1
10	Spring Washer	M8	2
11	Hex. Socket Cap Screw	M8x25	2
12	Hex. Socket Cap Screw	M4x25	2
13	Limit Switch		1
14	Round Head Screw	M5x10	2
15	Adjusting Bracket		1

SHEET A

Item	Description	Qty
1	Base (right part)	1
2	Nut M12	2
3	Hex. cap bolt M12x40	2
4	Nut M8	8
5	Washer M8x18x2	8
6	Hex. cap bolt M8x16	8
7	Base plate	2
8	Base (left part)	1
9	Hex. soc. cap screw M8x20	2
10	Spring washer M8	2
10-1	Nut M8	2
10-2	Washer M8x18x2	2
11	Hex. soc. cap screw M8x20	2
12	Spring washer M8	2
13	Washer M8x18x2	2
14	Supporting plate	1
15	Roller stand bracket	1
16	Washer M10x21x2	2
17	Spring washer M10	2
18	Hex. cap bolt M10x20	2
19	Roller	1
19-1	Roller shaft	1
20	Washer M8x18x2	2
21	Spring washer M8	2
22	Hex. soc. cap screw M8x20	2
23	Filter net	1
24	Round head screw M5x10	4
25	Hex. soc. cap screw M6x25	2
26	Washer M6	2
27	Hose clamp 13mm	1
27-1	Hose 5/16x52”	1
28	Pump WE90	1
29	Hex. cap bolt M10x20	4
30	Coolant and chip tray	1
30-1	Black plate	1
31	Hex. cap bolt M12x40	2
32	Nut M12	2

Item	Description	Qty
33	Hex. soc. cap screw M5x8	4
34	Base front plate	1
38	Hand wheel	1
39	Set screw M8x10	1
40	Nut M20	1
41	Bearing bushing	1
42	Thrust ball bearing #51104	1
43	Lock handle	1
44	Bushing	1
45	Hex. soc. cap screw M6x100x28	2
46	Table	1
47	Plate	1
48	Flat head mach. screw M6x15	2
49	Compressed spring	1
50	Lead screw	1
51	Hex. soc. cap screw M8x20	4
52	Spring washer M8	4
53	Treaded nut	1
54	Vise	1
55	Bar stop rod	1
56	Bracket	1
57	Butterfly screw 5/16x3/4	1
58	Washer M8x18x2	1
59	Spring washer M8	1
60	Hex. cap bolt 5/16”x1”	1
61	Rod	1
62	Nut 5/16	1
63	Hex. cap bolt 5/16”x2	1
64	Set screw M8x10	1
64-1	Hex. soc. cap screw M5x8	2
64-2	Scale point	1
65	Pivot	1
66	Anti dust cover M30	2
67	Ball bearing #32006ZZ	2
68	Nut M10	2
69	Hex. cap bolt M10x30	2
69-1	Hex. cap bolt M10x25	1

SHEET B

Item	Description	Qty
70	Spring hook	1
72	Star washer M30	1
73	Nut M30	1
74	Blade start indicator light	1
75	Emergency pushbutton	1
76	Main connect switch	1
77	Power indicator light	1
78	Round head screw M5x10	6
79	Blade speed knob	1
80	Round head screw M5x10	4
81HV	Control box cover	1
82	Hex. soc. cap screw M5x8	4
83HV	Control box bottom plate	1
83-1	Transformer	1
83-2	Contacts	1
83-3	Power in fuses 12A	2
83-4	Control circuit fuses 1A	2
83-5	Magnetic connector	1
83-6	PC board	1
84HV	Control box bottom part	1
85HV	Control box panel	1
85HV-1	Manual/hydraulic brake selector	1
85HV-2	Start pushbutton	1
86	Support	1
88	Hex. soc. cap screw M5x8	4
89	Hex. soc. cap screw M8x20	2
90	Spring washer M8	2
91	Setting bracket	1
92	Spring washer M8	4
93	Hex. soc. cap screw M8x20	4
94	Swivel arm	1
94-1	Scale	1
94-2	Rivet 2mm	2
95	Disk	1
97	Oil seal 4mm	1
98	Shaft	1
99	Nut	1

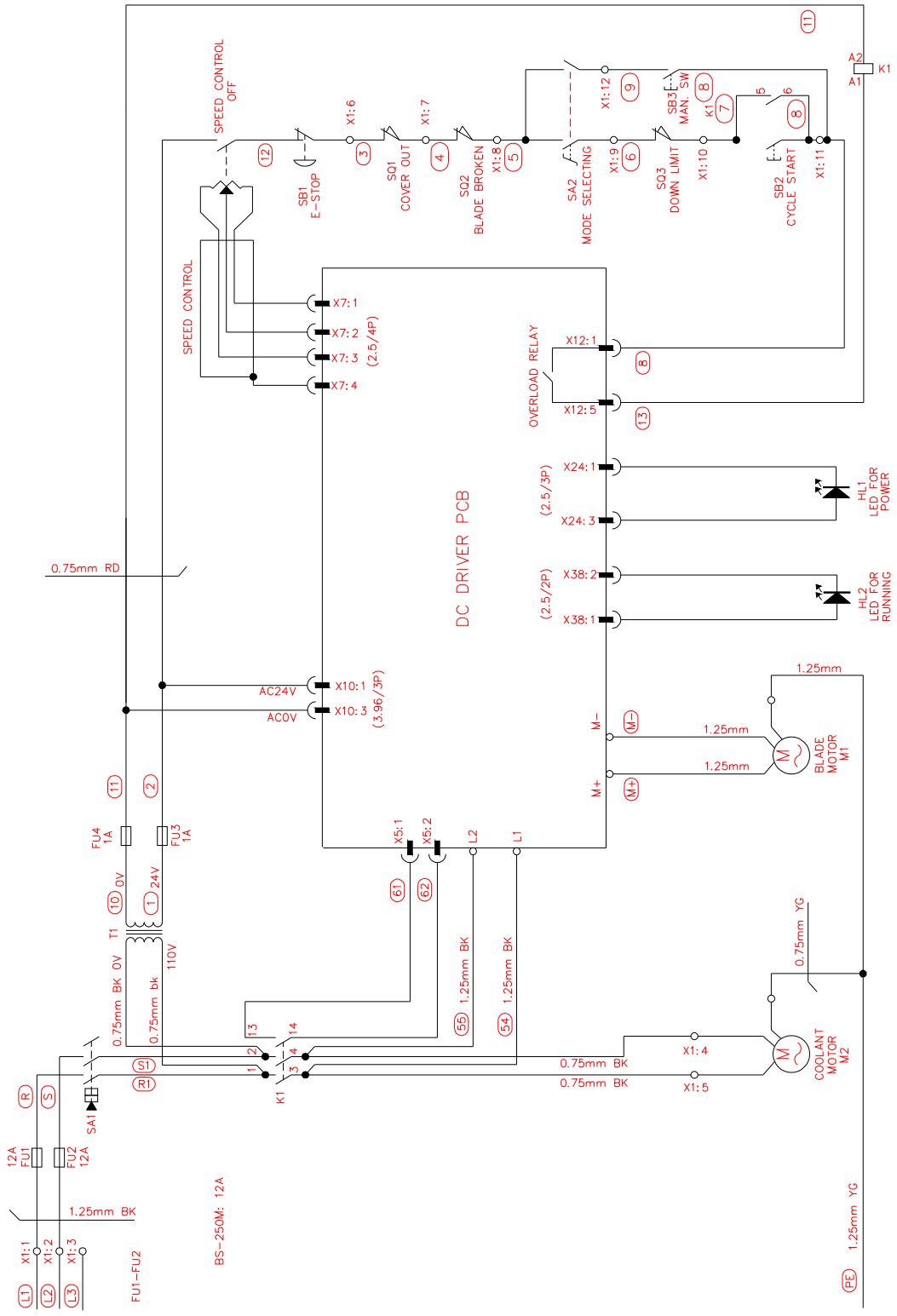
Item	Description	Qty
100	Hex. soc. cap screw M8x25	4
101	Spring washer M8	4
102	Set screw M8x10	1
103	Hex. soc. cap screw M10x35	1
104	Spring washer M10	1
105	Set screw M10x16	1
106	Locking lever	1
107	Nut M12	1
108	Handle	1
109	Hex. soc. cap screw M10x30	4
110	Spring washer M10	4
111	Gib	2
112	Spring washer M8	6
113	Hex. soc. cap screw M8x20	6
115	Front ball bearing bracket	1
116	Set screw M6x12	4
117	Hex. soc. cap screw M8x20	2
118	Hex. soc. cap screw M12x50	1
119	Setting bracket	1
120	Hex. soc. cap screw M6x8	2
121	Plastic handle	1
122	Hex. soc. cap screw M6x8	2
123	Cover plate	1
127A	Slide	1
127A-1	Spring washer M10	3
127A-2	Hex. soc. cap screw M10x45	3
127A-3	Set screw M10x25	1
128	Nut M16x2x8	1
131	Handle	2
132	Handle wheel	1
133	Thrust spring washer	10
134	Tension shaft	1
137	Set screw M8x30	2
138	Rod	1
139	Nut M16x2x8	1
140	Trigger switch	1
141A	Shaft	1

SHEET C

Item	Description	Qty
142	Ball bearing #32006ZZ	2
143	Idle flywheel	1
144	Anti-dust cover M30	2
145	Star washer M30	1
146	Jam nut M30	1
147	Oil inlet 1/16(1/4x28T)	1
148	Blade	1
149	Blade cover	1
150	Knob bolt M6x10	4
151	Round head screw M4x8	2
153	Spring washer M4	2
154	Nut M4	2
155	Hex. cap bolt M10x25	1
156	Spring washer M10	1
157	Washer	1
158	Drive flywheel	1
159	Hex. soc. cap screw M10x40	4
160	Spring washer M10	4
161	Hose 5/16x40”	1
162	Pipe fitting 1/4Px5/16	1
163	Pipe fitting seat	1
164	Hex. soc. cap screw M5x30	2
165	Coolant valve 1/4Px5/16	1
166	Hose clamp	1
167	Pipe fitting 1/4Px5/16	1
168	Hose 5/16x16”	1
169	Saw arm	1
170	Limit switch AZD-S11-SA	1
170-1	Switch pin	1
171	Hex. soc. cap screw M4x35	2
172	Spring shaft	1
172-H1	Spring shaft	1
172-H2	Setting plate	1
172-H3	Handle	1
172-H4	Nut M16x2x8	2
172-H5	Bushing	1
172-H6	Adjustable shaft	1

Item	Description	Qty
172-H7	Spring	1
172-H8	Set screw M8x10	3
173	Spring	1
174	Key 6x6x30	1
175V	DC Motor	1
176	Spring washer M8	4
177	Hex. cap bolt M8x30	4
178V	Gear box	1
178-1	Vent screw	1
178-2	Key 8x8x35	1
179	Set screw M6x12	4
181	Hex. soc. cap screw M8x20	2
182	Front blade guard	1
183	Round head screw M6x8	3
185	Bolt	2
186	Front ball bearing seat	1
187	Pipe fitting	1
188	Rear blade guard	1
189	Blade guide(B)	2
190	Hex. soc. cap screw M6x12	2
191	Rear ball bearing seat	1
192	Pipe fitting 1/4Px5/16	1
193	Set screw M6x12	2
193-1	Nut M6	2
194	Hex. cap bolt M6x12	2
195	Washer M6	2
196	Brush set ring	1
197	Set screw M5x5	1
198	Bracket	1
199	Brush 1 1/2”	1
200	Eccentric shaft	2
201	Ball bearing #608ZZ	8
202	Blade guide (A)	2
203	Hex. soc. cap screw M6x25	2
204	E-ring 7Ø	4
205	Concentric shaft	2
206	Ball bearing #608ZZ	2

ELECTRICAL SCHEMATIC



TROUBLESHOOTING

WARNING **Disconnect the machine from power source before troubleshooting.**

SYMPTOM	POSSIBLE CAUSE (S)	CORRECTIVE ACTION
The Blade Drive Motor Does Not Work	1. Fuses FU1, FU2, FU3, or FU4 may have burned out.	Switch off main power. Replace defective fuse(s).
	2. Defective transformer (Power at input – no power at output).	Replace T1 (transformer).
	3. If there is no voltage between wires 11 & 13 of K1 and fuses FU3, FU4 & transformer T1 are ok :	
	Speed switch is not in “OFF” position.	Turn speed switch (ccw) to “OFF” position.
	Speed switch is not at the “OFF” position and contact is not closed.	Replace speed switch.
	E-stop pushed.	Twist the button (cw) to reset or replace the switch.
	Blade guard limit switch SQ1 open.	Replace blade guard or replace switch SQ1.
	Broken blade limit switch SQ2 Open.	Replace broken blade or replace switch SQ2.
	Bow down limit switch SQ3 opened.	Raise saw bow or replace switch SQ3.
	Move select switch SA2 has been turned to right position, but contact is not closed.	Replace move select switch SA2.
	Cycle start switch SB2 opened.	Check that cycle start button SB2 has been pressed in correct position or replace button SB2.
	Overload on the DC driver PCB1.	Too fast of advance causes overload. Switch “OFF” main disconnect switch SA1, Then switch “ON” SA1. Replace PCB1. Replace motor.

TROUBLESHOOTING (cont.)

SYMPTOM	POSSIBLE CAUSE (S)	CORRECTIVE ACTION
The Blade Drive Motor Does Not Work	4. Overload relay switch K1 bad Wires 11 & 13 of K1 have 24VAC but no response. There are no voltage outputs at (54 and 55) to the PCB1 when K1 is actuated. No. 61 and 62 (wire code) do not close after K1 actuated. 5. Check 24VAC on wires 1 & 10 (either below 22 volts or above 27 volts)	Replace overload relay switch K1. Contact Baileigh Service at (920.684.4990)
Saw Motor Does Not Stop When Cut is Finished	Actuator on cylinder does not contact switch properly. Bow down limit switch SQ3 damaged	Re-adjust actuator or switch. Replace SQ3
Coolant Motor Does Not Run With Band Saw Motor	Coolant motor M2 damaged.	Replace M2 motor.
No Power Indicator Light When Main Power Turned On	Fuses FU1, FU2, FU3,or FU4 may have burned out. Transformer T1 damaged Power LED HL1 damaged PCB1 damaged	Switch off main power. Replace defective fuse(s) Replace Transformer Replace (white) power LED Replace PCB1
Operating Indicator Light Does Not Work When Saw Motor is Running	Run LED HL2 damaged PCB1 damaged	Replace (green) run LED Replace PCB1

TROUBLESHOOTING (cont.)

SYMPTOM	POSSIBLE CAUSE (S)	CORRECTIVE ACTION
Excessive Blade Breakage	1. Material loose in vise 2. Incorrect speed or feed 3. Blade tooth spacing too large 4. Material too coarse 5. Incorrect blade tension 6. Teeth in contact with material before saw is started 7. Blade rubs on wheel flange 8. Misaligned guide bearings 9. Cracking at weld	1. Clamp work securely 2. Adjust speed or feed 3. Replace with a small tooth spacing blade 4. Use a slow speed blade an small tooth spacing 5. Adjust to where blade does not slip on wheel 6. Start saw and lower into work piece 7. Adjust wheel alignment 8. Adjust guide bearings 9. Weld again, note quality of weld
Premature Blade Dulling	1. Teeth too coarse 2. Too much speed 3. Inadequate feed pressure 4. Hard spots or scale on material 5. Work hardening of material 6. Blade twist 7. Insufficient blade	1. Use finer teeth 2. Decrease speed 3. Decrease spring tension on side of saw 4. Reduce speed, increase feed pressure 5. Increase feed pressure by reducing spring tension 6. Replace with a new blade, and adjust blade tension 7. Tighten blade tension adjustable knob
Unusual Wear on Side/Back of Blade	1. Blade guides worn 2. Blade guide bearings not adjusted properly 3. Blade guide bearing bracket is loose	1. Replace 2. Adjust as per operators manual 3. Tighten
Teeth Ripping From Blade	1. Teeth too coarse for work 2. Too heavy pressure, too slow speed 3. Vibrating work piece 4. Gullets loading	1. Use finer tooth blade 2. Decrease pressure, increase speed 3. Clamp work piece securely 4. Use coarse tooth blade or brush to remove chips

TROUBLESHOOTING (cont.)

SYMPTOM	POSSIBLE CAUSE (S)	CORRECTIVE ACTION
Motor Running Too Hot	1. Blade tension too high 2. Drive belt tension too high 3. Gears need lubrication 4. Cut is binding blade 5. Gears aligned improperly	1. Reduce tension on blade 2. Reduce tension on drive belt 3. Check oil bath 4. Decrease feed and speed 5. Adjust gears so that worm is in center
Poor Cuts	1. Feed pressure too great 2. Guide bearing not adjusted properly 3. Inadequate blade tension 4. Dull blade 5. Speed incorrect 6. Blade guide spaced out too much 7. Blade guide assembly loose 8. Blade truck too far away from wheel flanges	1. Reduce pressure by increasing spring tension on side of saw 2. Adjust guide bearing, the clearance can not be greater than .001mm 3. Increase blade tension with tension knob 4. Replace blade 5. Adjust speed 6. Adjust guide space 7. Tighten blade guide assembly 8. Re-track blade according to operating instructions
Poor Cuts (Rough)	1. Too much speed or feed 2. Blade is too coarse 3. Blade tension loose	1. Decrease speed or feed 2. Replace with finer blade 3. Adjust blade tension
Blade is Twisting	1. Cut is binding blade 2. Too much blade tension	1. Decrease feed pressure 2. Decrease blade tension

P.O. Box 531 Manitowoc WI 54221-0531
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ERROR: stackunderflow
OFFENDING COMMAND: ~

STACK:
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