



Operating Instructions and Parts Manual Horizontal Band Saw

Model BS-250M



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2.0 Safety Instructions

⚠ WARNING

Failure to follow these rules may result in serious personal injury

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 machines 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 appropriate. DO NOT wear loose fitting clothing or jewelry as they can be caught in moving machine parts. Protective clothing and steel toe shoes are recommended when using machinery. Wear a restrictive hair covering to contain long hair.
11. Use eye protection. Always wear ISO approved protective eye wear when operating machinery. Wear a full-face shield if you are producing metal filings. Eye wear shall be impact resistant, protective safety glasses with side shields which comply with ANSI Z87.1 specification. Use of eye wear which does not comply with ANSI Z87.1 specification could result in severe injury from breakage of eye protection.
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. 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.
19. 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.
20. DO NOT touch live electrical components or parts.
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!
25. DO NOT bypass or defeat any safety interlock systems.
26. Keep visitors a safe distance from the work area.

Familiarize yourself with the following safety notices used in this manual:

⚠ CAUTION

This means that if precautions are not heeded, it may result in minor injury and/or machine damage.

⚠ WARNING

This means that if precautions are not heeded, it may result in serious injury or death.

⚠ DANGER

This means that if precautions are not heeded, it will result in serious or fatal, injury.

Save the Instructions

3.0 About This Manual

This manual is provided by Baileigh Industrial, covering the safe operation and maintenance procedures for a Baileigh Model BS-250M Horizontal Band Saw. This manual contains instructions on installation, safety precautions, general operating procedures, maintenance instructions and parts breakdown. Your machine has been designed and constructed to provide consistent, long-term operation if used in accordance with the instructions as set forth in this document.

Technical Support handles questions on setup, operation, schematics, warranty issues, and individual parts needed. Our Technical Support department can be reached at 920-684-4990.

If there are questions or comments, please contact your local supplier or Baileigh Industrial. We can also be reached at our web site: www.baileigh.com.

Retain this manual for future reference. If the machine transfers ownership, the manual should accompany it.

⚠ WARNING

Read and understand the entire contents of this manual before attempting assembly or operation! Failure to comply may cause serious injury!

Register your product online -

<https://baileigh.com/product-registration>



4.0 Product Identification

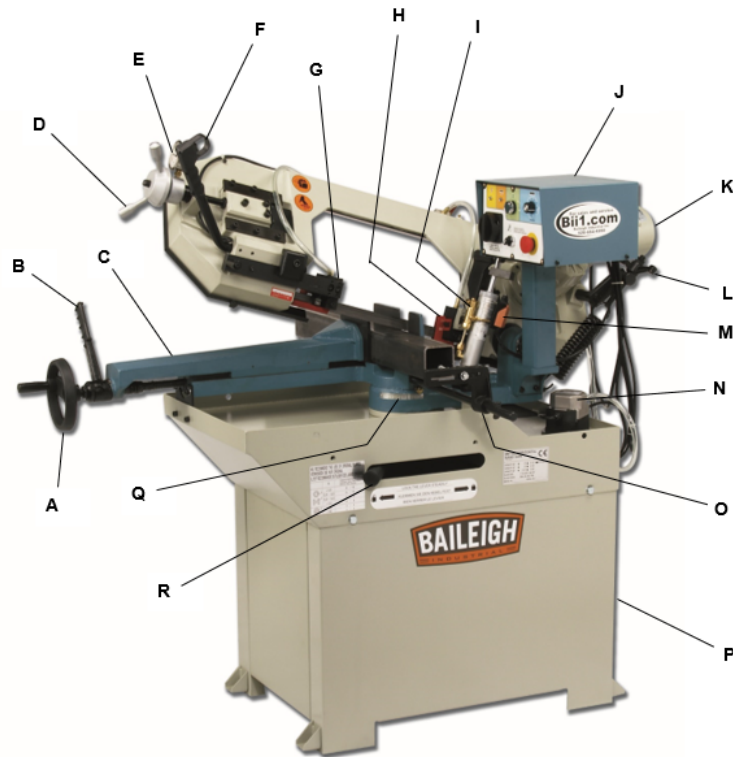


Figure 4-1

Table 4-1

Item	Description	Function
A	Vise Hand Wheel	Turning hand-wheel opens and closes vise
B	Vise Lever	To quickly clamp and unclamp material
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/cm ²
F	Trigger Switch	For starting saw motor in manual mode
G	Blade Adjustment Assembly	Adjusts front end of blade
H	Blade Adjustment Assembly	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	Micro Switch	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



Figure 4-2

1. Power Indicator Light: (Lights “white” when power is on).
2. Start Pushbutton: (Starts saw motor in Auto mode).
3. E-Stop Pushbutton: (Saw can be stopped immediately by pressing the red mushroom cap button) Twist the button clockwise (cw) to reset. Resetting the E-Stop will not start the saw.
4. Speed Control: (Sets blade speed from 20-85 mpm) 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. Blade Speed Display: Indicates the approximate speed of the blade in MPM (meters per minute).

4.1 Machine Base

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



Figure 4-3

4.2 Quick Clamp Vise

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.

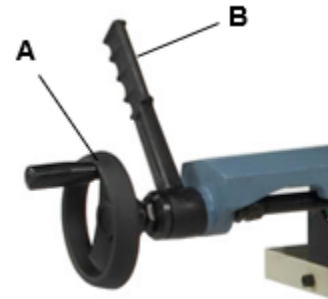


Figure 4-4

4.3 Swivel Saw Head

Angles can be cut up to 60° (Right). 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.

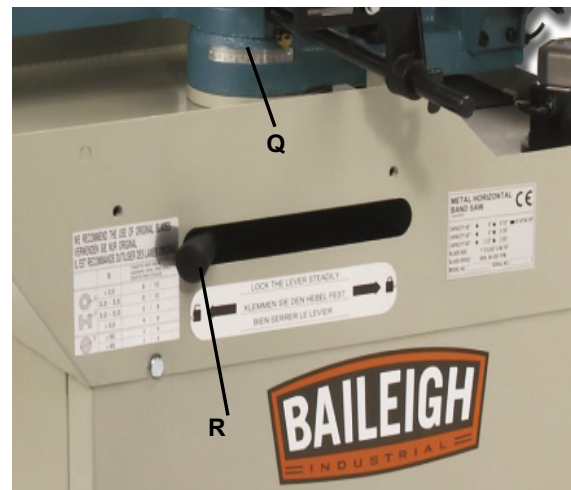


Figure 4-5

IMPORTANT: 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.

4.4 Overall Dimensions

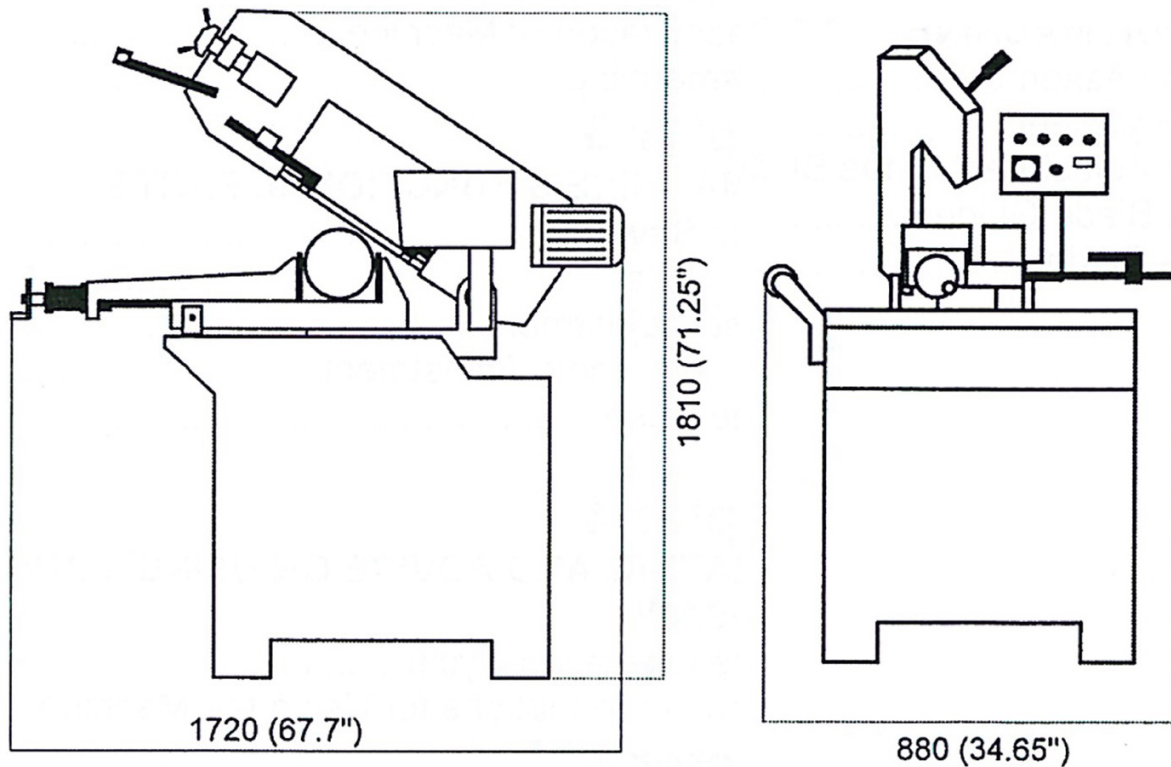


Figure 4-6

5.0 Specifications

Table 5-1

Model number	BS-250M
Motor and Power	
Power Input	110V, 60Hz, 1-Phase
Main Motor	220V, 60hz, 3Ph, 4.7A, 1.1kw, 1720rpm
General Specifications	
Capacity Rectangular 90°	10.25" x 4.25" (260 x 110mm)
Capacity Round 90° / 45° / 60°	8.66" / 6" / 3.5" (220 / 150 / 90mm)
Capacity Square 90° / 45° / 60°	8.46" / 5.875" / 3.375" (215 / 145 / 85mm)
Return	Manual
Miter Adjustment	Swivel Head
Miter Angle	0 - 60°
Blade Size (H x T x L)	1" x .035" x 96.85" (27 x .9 x 2460mm)
Blade Speed (fpm)	66 – 280fpm (20 – 85mpm) Variable
Blade Guide	Carbide x Roller
Table Height	33.07" (840mm)
Drive	Gear
Descent Control	Hydraulic
Coolant Pump	110V, 60Hz, 1Ph, .35A, 32W, 2800rpm
Weights and Dimensions	
Shipping Weight	550lbs (250kgs)
Shipping Dimensions	61" x 29" x 36.25" (1549 x 737 x 921mm)

⚠ WARNING

Read and understand the entire contents of this manual before attempting assembly or operation. Failure to comply may cause serious injury.

6.0 Setup and Assembly

6.1 Unpacking and Checking Contents

Your Baileigh Industrial 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.

⚠ WARNING

If any parts are missing, **DO NOT** place the machine into service until the missing parts are obtained and installed correctly.

6.2 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.

6.3 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.

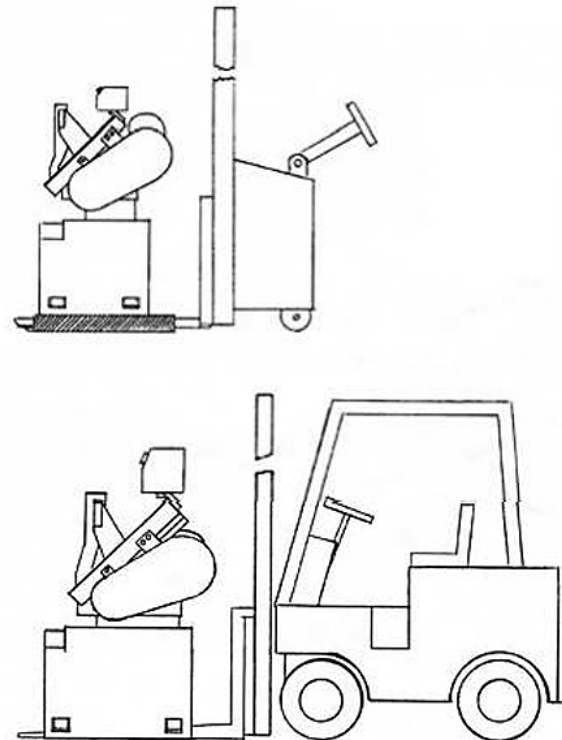


Figure 6-1

6.4 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.

6.5 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.

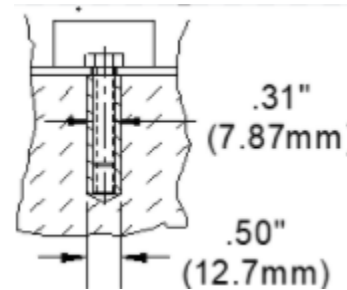


Figure 6-2

6.6 Assembly

Assemble the stand as shown in the BS-250M – Exploded View A, 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 6-3

6.6.1 Return Stroke Limiting Device

A hydraulic cylinder is used to control the drop rate of the saw bow. The hydraulic cylinder is ideal when cutting thin walled or stainless steel sections as they require a constant drop rate to achieve a fine cut edge.



Figure 6-4

6.6.2 Support Roller

A device that helps support longer sized material. The roller assists stock moving through the vise. It is adjustable by loosening (2) hex bolts.

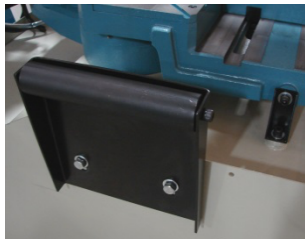


Figure 6-5

6.6.3 Stop Rod Assembly

The stop rod is used when cutting duplicate parts thus eliminating the need to measure each piece.



Figure 6-6

7.0 Electrical Connections

⚠ 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.

7.1 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 $\pm 1\%$.

7.2 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.

7.3 Extension Cord Safety

Extension cord should be in good condition and meet the minimum wire gauge requirements listed below:

Table 7-1

Amp Rating	Length		
	25ft	50ft	100ft
1-12	16	16	14
13-16	14	12	12
17-20	12	12	10
21-30	10	10	No
Wire Gauge			

An undersized cord decreases line voltage, causing loss of power and overheating. All cords should use a ground wire and plug pin. Replace any damaged cords immediately.

7.4 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 table toward the power supply.
 - a. Route the power cord so that it will NOT become entangled in the saw bow, saw blade, or counterbalance assembly 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 saw blade is clear of any obstruction and raised up off of the limit switch. The main disconnect may be turn ON to test the saw operation. Turn the main disconnect to OFF when the saw is not in operation.

8.0 Adjustments

⚠ WARNING

Make sure the electrical disconnect is OFF before working on the machine.

⚠ WARNING

Always follow proper safety precautions when working on or around any machinery.

8.1 Replacing the Saw Blade

Wear gloves when handling the saw blade.

1. Raise the saw bow.
2. Remove the front blade guard (X) and the (4) knobs (Y) holding on the main blade guard. (Carefully pull out the tongue from the safety interlock switch)
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 (X) and the main blade guard (Z), making sure the switch tongue engages the switch or the saw will not start.

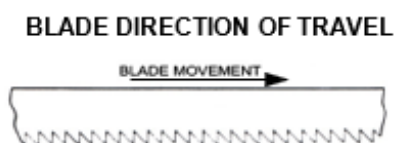


Figure 8-1

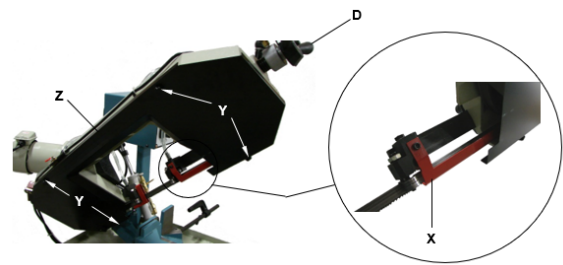


Figure 8-2

8.2 Setting Blade Tension

Blade tension is important to the proper operation of the saw. Correct blade tension is 1200 kg/cm² as measured on the saws tension gauge.

Turning the handwheel (D) clockwise (cw) will increase the tension. Counterclockwise (ccw) will decrease tension of the saw blade.



Figure 8-3

8.3 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).
4. Use an Allen wrench on setscrew (AA) to adjust the tilt of the flywheel. make the distance between the flywheel and the back of blade are approximately 0.012"~0.019" (0.30~0.50mm), as shown.
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 screws in this order: (X, Y, & Z).

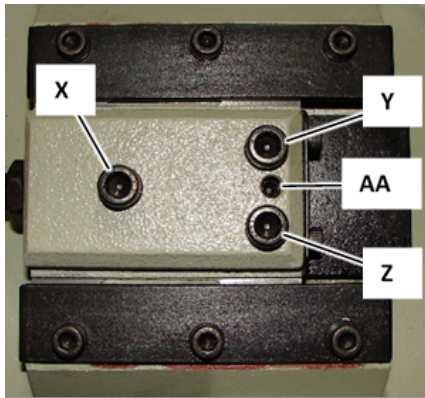


Figure 8-4

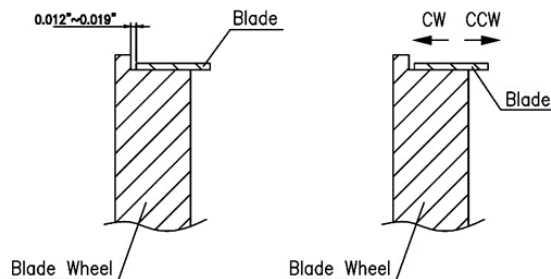


Figure 8-5

8.4 Adjusting the Blade Guide

1. Disconnect Power From the Saw
2. Release the extension bar for the blade guide block by loosening socket capscrew (AC) counterclockwise (ccw) and freeing up the clamping block (AD).
3. Hold the handle (AB) and slide the blade guide block as close as possible to the piece part without interfering with the cut.
4. Tighten socket screw (AC) clockwise (cw).

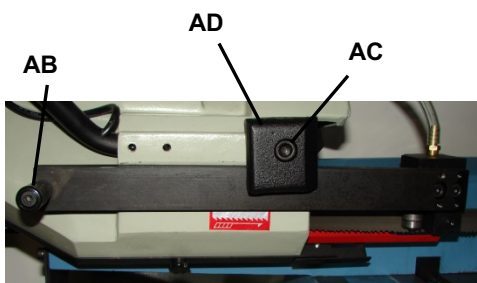


Figure 8-6

8.5 Blade Guide Bearing Adjustment

IMPORTANT: 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 Industrial 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.

1. Disconnect Power From the Saw.
2. Loosen nut (AK), screw (AJ), and loosen dowel (AL) which widens the gap between the pads.
3. Loosen the nuts (AP) and the dowels (AQ) and then rotate the pins (AM) and (AO) to widen the gap between the bearings (AN).
4. To mount the new blade, place the pad (AI) on the blade. Loosen the dowel and allow a distance of .001\"
5. Make sure that between the blade and the upper teeth of the pad (AH) there is at least .008\"

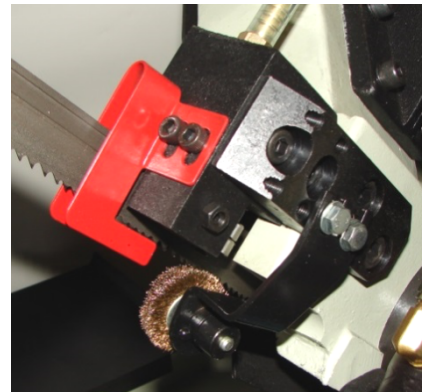


Figure 8-7

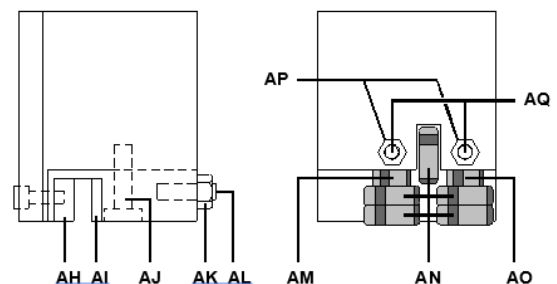


Figure 8-8