Operating Instructions and Parts Manual

Dual Miter Horizontal Band Saw

Model BS-350M

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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 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 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. 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.

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

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

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

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-350M Dual Miter 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

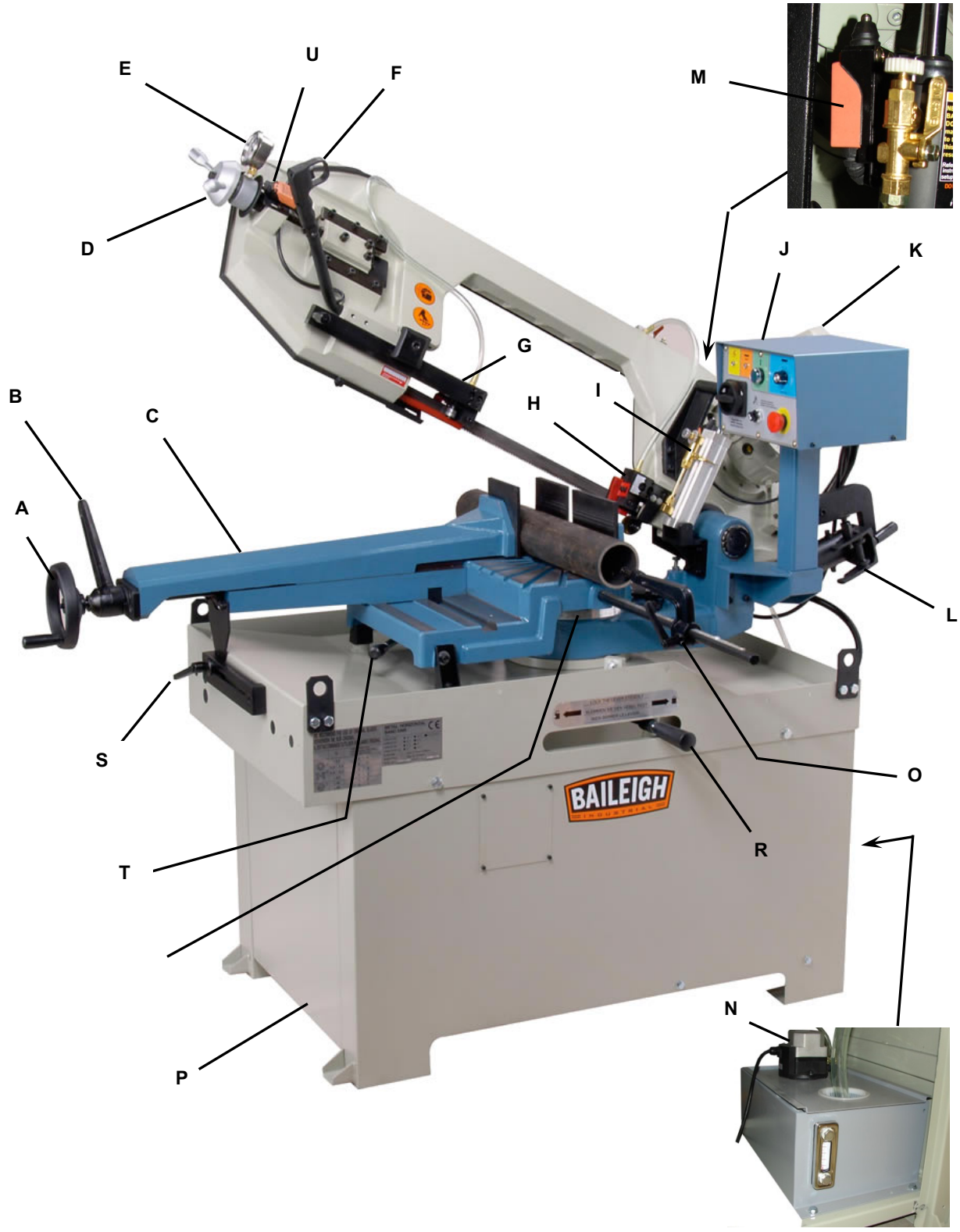


Figure 4-1

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/cm²
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 – Bottom of Stroke	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
S	Track Lock	Allows vise to slide forward or aft in tack.
T	Vise Slide Lock	Locks vise in slideways to be clear of blade for angle cuts.
U	Micro Switch – Blade Break	Shuts off saw if the saw blade breaks.

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.

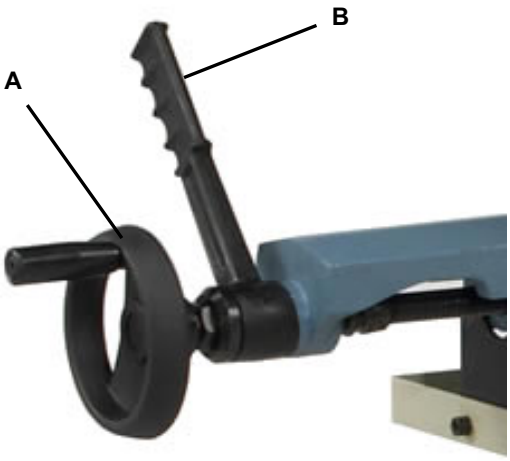


Figure 4-4

4.3 Swivel Saw Head

Angles can be cut up to 60° (Right) with vise left and 45° (Left) with vise right. Unlock the rotating saw head by pushing the miter lock lever (**R**) to the left and by retracting stop pin (**W**). 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 (as shown).

Note: Pin (W) has stops at 0° & 45° (Right).

Figure 4-5

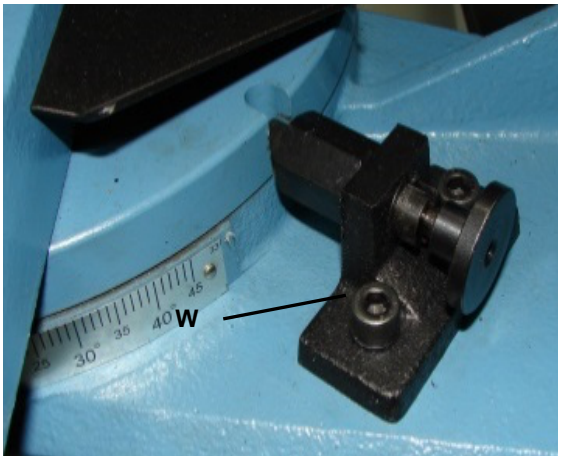


Figure 4-6

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.

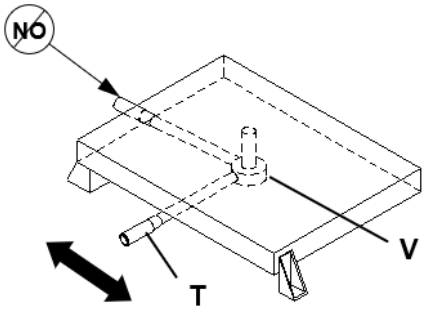
4.4 Positioning the Vise

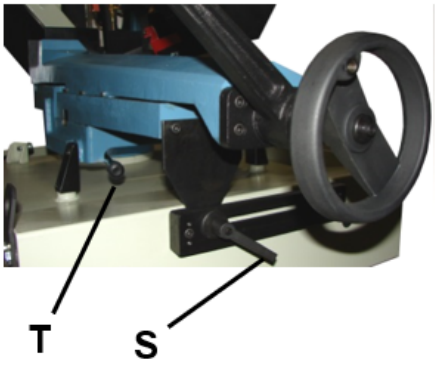
To move the vise in either direction, it must be unlocked at two points.

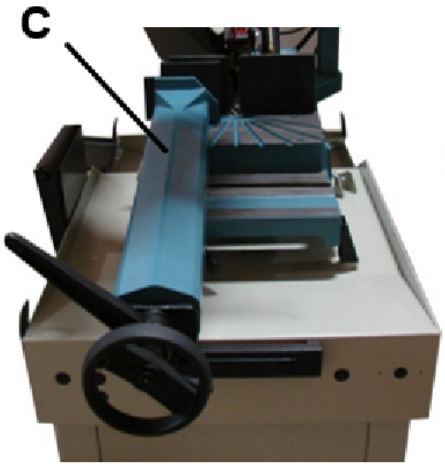
- Release the track support by turning handle (**S**) counterclockwise (**ccw**).
- Release the vise by moving the lever (**T**) to the left.
- The vise (**C**) may now be moved to the left position or the right position by pushing it with one hand on the vise and the other hand on the track handle (**S**).

IMPORTANT: Do not attempt a 90° cut with vise in the Right position. You may damage the front jaw.

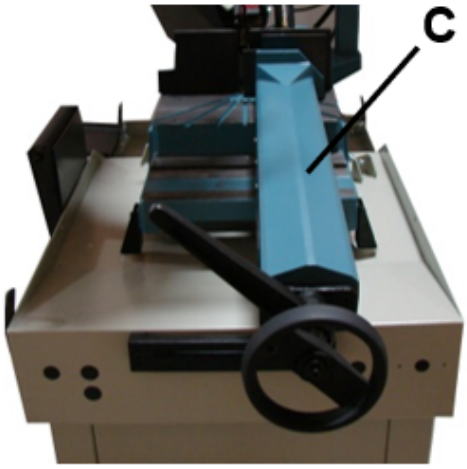
- Once in position, move the lever (**T**) to the right to lock the vise. If the lever is not between the vise/bed mounts and facing the operator, the vise will not be able to lock. If the vise lever has gone beyond or is obstructed by a mount, correct with the following procedure:
- Adjust lever (**T**) by grasping the pivot hub (**V**) and pulling down. Rotate the handle into a more suitable position. Some movement of the vise may be required.
- Release the lever hub and rotate the handle to the right to lock.
- Lock the track support handle (**S**) by turning clockwise (**cw**).







Left



Right

Figure 4-7

4.5 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 4-8

4.6 Spring Tension for Saw Bow

When set for auto mode the fork handle does not engage the sliding spring pin. Therefore there is limited spring assistance to the saw bow. When setting for manual mode the fork handle spring knob will drop into the pin hole. When manually lowering the saw bow the spring tension will now serve as a useful counterbalance for the operator.

Figure 4-9

4.7 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.

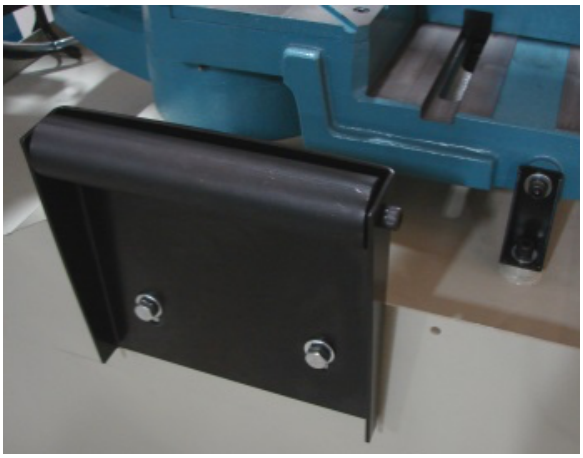


Figure 4-10

4.8 Stop Rod Assembly

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

Figure 4-11

4.9 Overall Dimensions

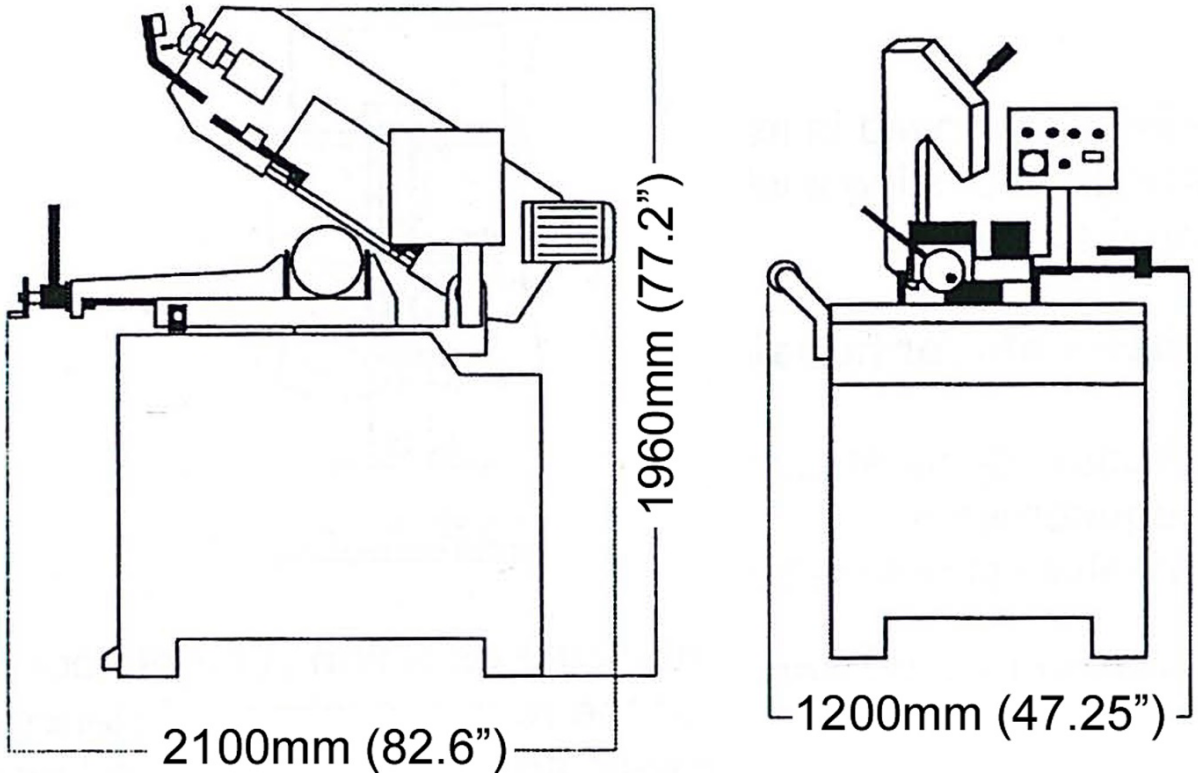


Figure 4-12

5.0 Specifications

Table 5-1

Model number	BS-350M
Stock number	BA9-1001557
Motor and Electrical	
Power Input	220V, 60Hz, 1-Phase, 12A
Main Motor	220V, 60Hz, 3Ph, 6.2A, 2hp (1.5kW), 1720 RPM
Coolant Pump	220V, 60Hz, 1Ph, .40A, 32W, 2800 RPM
General Specifications	
Capacity Rectangular 90°	13.5" x 8.5” (350 x 220mm)
Capacity Round 90° / 45° / 60°/ 45°L	10.43" / 9.5" / 5.31" / 8” (265 / 240 / 135 / 210mm)
Capacity Square 90° / 45° / 60° / 45°L	10.25" / 5.9" / 3.54" / 6.29” (260 / 150 / 90 / 160mm)
Return	Manual
Blade Speed (fpm)	66 – 280fpm (20 – 85mpm) Variable
Miter Adjustment	Swivel Head
Miter Angle	0 - 60°R, 0 - 45°L
Blade Guide	Carbide x Roller
Drive	Gear
Descent Control	Hydraulic
Weights and Dimensions	
Blade Size (H x T x L)	1” x .035” x 124.5” (26 x .9 x 3160mm)
Table Height	33.85” (860mm)
Shipping Dimensions (L x W x H)	72.5” x 29.5” x 43” (1841 x 749 x 1092mm)
Shipping Weight	902lbs (410kgs)

⚠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

⚠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.

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.

6.2 Cleanup

⚠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. Choose a location that will keep the machine free from vibration and dust from other machinery. Keep in mind that having a large clearance area around the machine is important for safe and efficient working conditions.

Follow these guidelines when lifting:

- 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 fork lift 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.

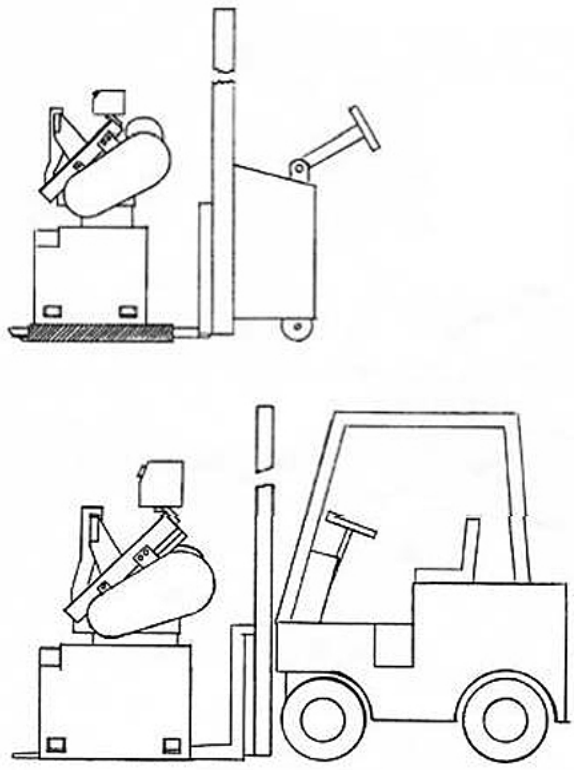


Figure 6-1

- 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.

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.

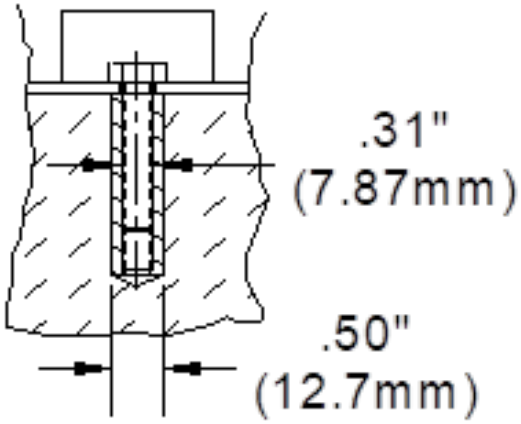


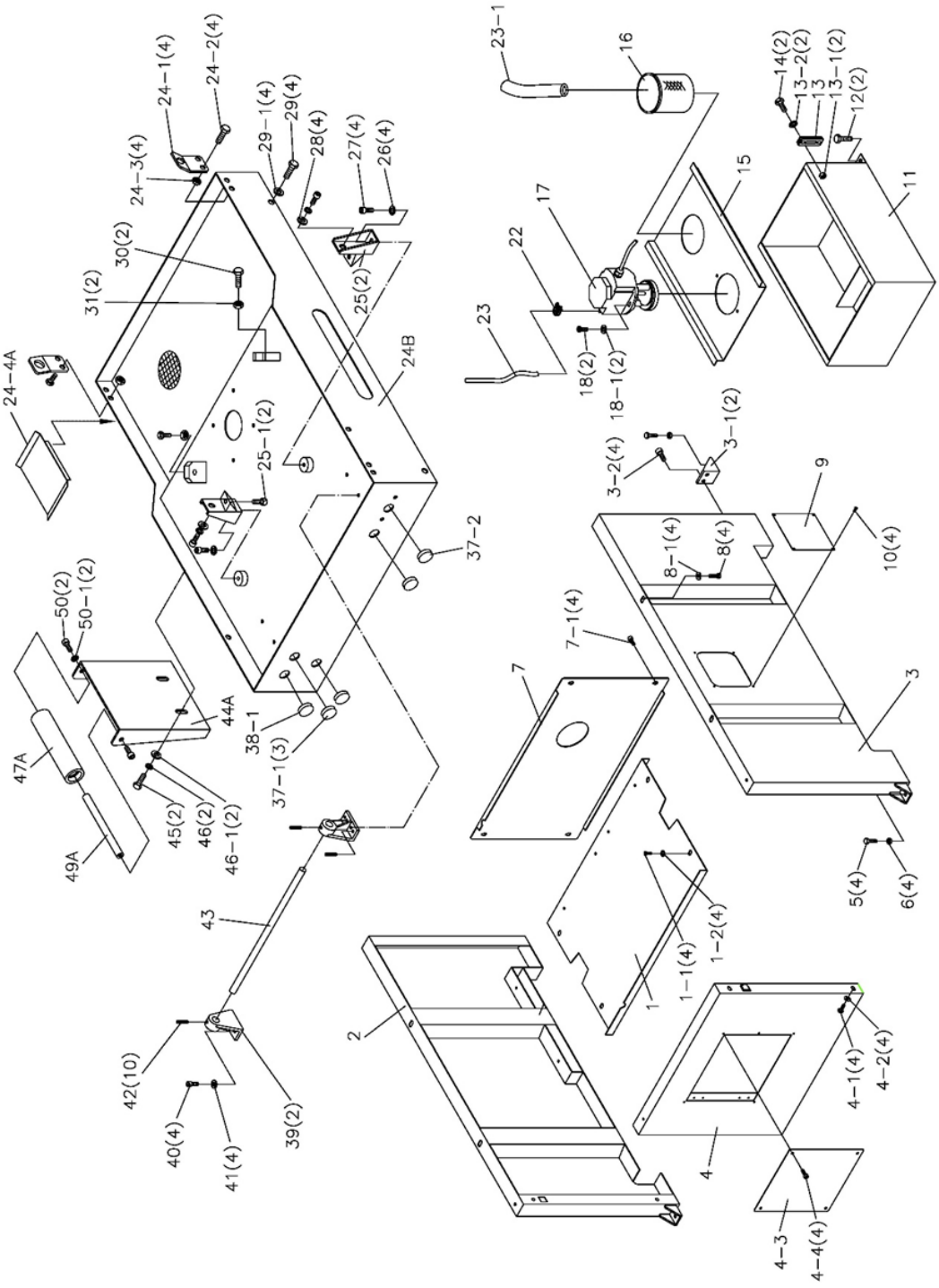
Figure 6-2

6.6 Assembly

⚠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.

1. Assemble the stand as shown. (Refer to Parts Identification Drawing for required fasteners.) Make sure all nuts and bolts are properly tightened.
2. Using the (4) lifting lugs, pick up the saw and carefully set it onto the stand and bolt together.
3. Set the coolant tank on the bottom shelf as shown and attach with hex bolts and flatwashers..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44A
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47A
49A
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46-1(2)
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2
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Figure 6-3

4. Place filter basket into hole and place drain hose into basket.

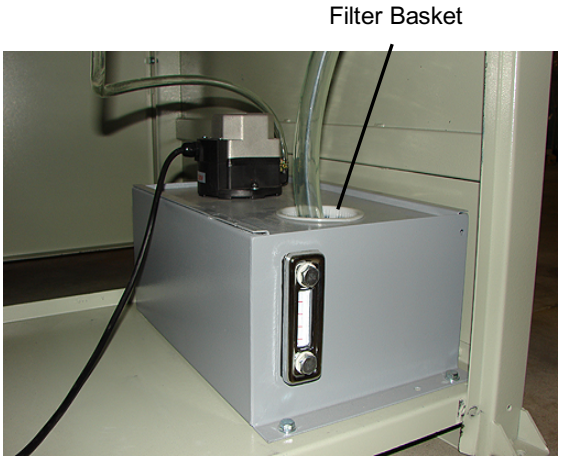


Figure 6-4

5. Attach electrical control box to the pedestal with (4) hex socket capscrews.

Figure 6-5

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 ±5%, and for the frequency is ±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 a 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

	Length		
Amp Rating	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 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 is a way that does NOT create a trip hazard.
3. Install a properly rated plug (customer supplied) onto the end of the power cord.
4. Connect the power cord to the power supply and check that the power cord has not been damaged during installation.
5. 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)

BLADE DIRECTION OF TRAVEL

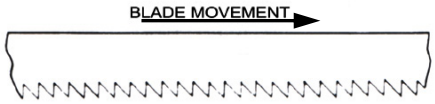


Figure 8-1

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.

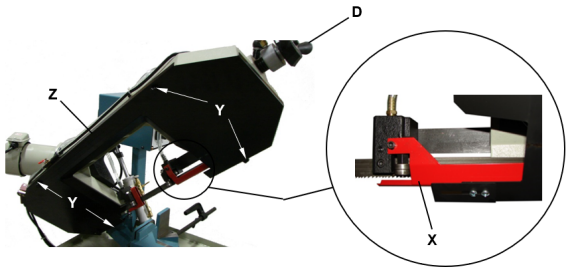


Figure 8-2

8.2 Setting Blade Tension

Blade tension is important to the proper operation of the saw. Correct blade tension is 1400 kg/cm² as measured on the saws pressure 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 Blade Breakage

If the saw is running and the blade breaks, the micro-switch (**U**) will trip and shut down all machine functions. As long as the replacement blade

duplicates the saws original blade specifications the switch should not have to be adjusted.

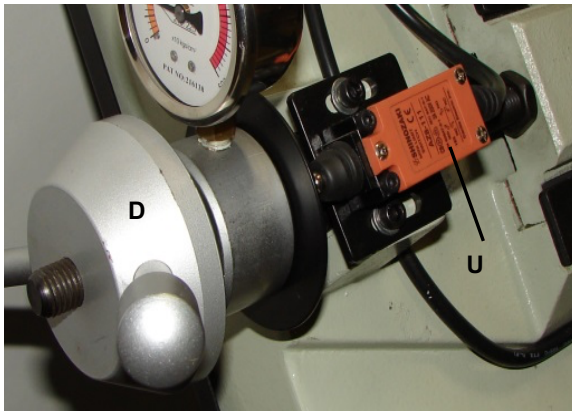


Figure 8-4

8.4 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 (AA, AB, & AC).
4. Use an Allen wrench on setscrew (AD) to adjust the blade tracking to obtain 0.19" (4.8mm) of the blade (teeth) off of the blade wheel.
5. Turning the setscrew (AD) clockwise (cw) will tilt flywheel so that the blade will ride closer to the flange.
6. Turning the setscrew (AD) 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: **(AA**, **AB**, & **AC**).

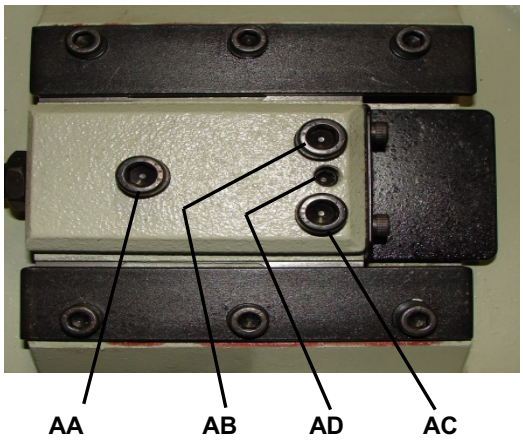


Figure 8-5

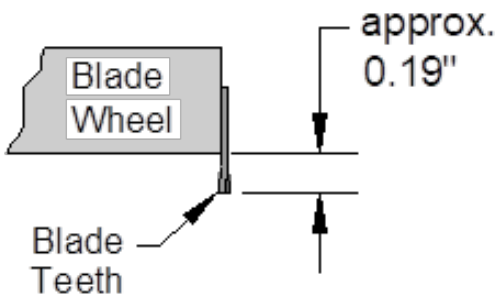


Figure 8-6

8.5 Adjusting the Blade Guide

1. Disconnect power from the saw
2. Release the extension bar for the blade guide block by loosening socket cap screw (AE) counterclockwise (ccw) and freeing up the clamping block (AF).
3. Hold the handle (AG) and slide the blade guide block as close as possible to the piece part without interfering with the cut.
4. Tighten socket screw (AE) clockwise (cw).

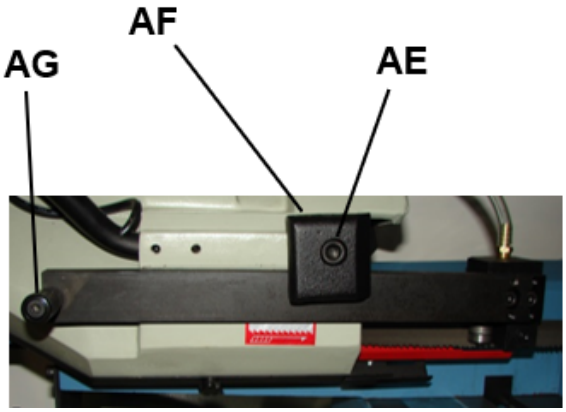


Figure 8-7

8.6 Adjusting the Angle Stops

Check the travel limits of the saw head. Verify that the left limit is set to give a cut of 45° and the right limit is set to give a cut of 60°. If not, adjust the stop bolt.

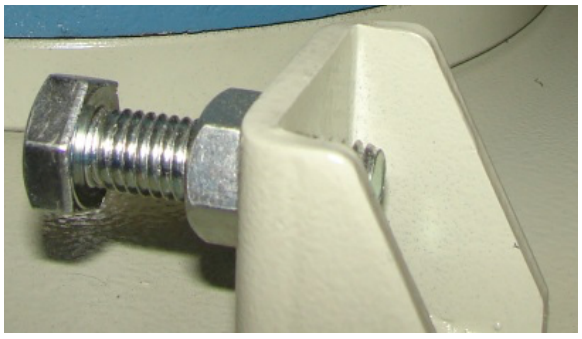


Figure 8-8

8.7 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).

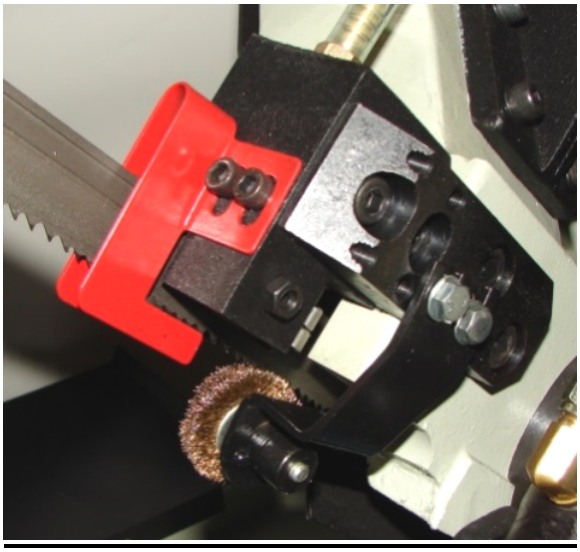


Figure 8-9

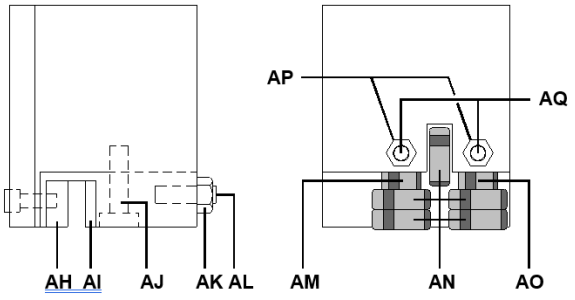


Figure 8-10

4. To mount the new blade, place the pad (AI) on the blade. Loosen the dowel and allow a distance of .001” for the sliding of the blade. Lock the nut and screw (AJ). Rotate the pins (AM) and (AO) until the bearings rest against the blade as indicated in (figure 14) and then secure the dowels (AQ) and nuts (AP).
5. Make sure that between the blade and the upper teeth of the pad (AH) there is at least .008” - .011” (2-3mm) of play. If necessary, loosen the screws that fasten the blocks and adjust accordingly.

9.0 Before Each Use

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

9.1 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.

9.2 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.

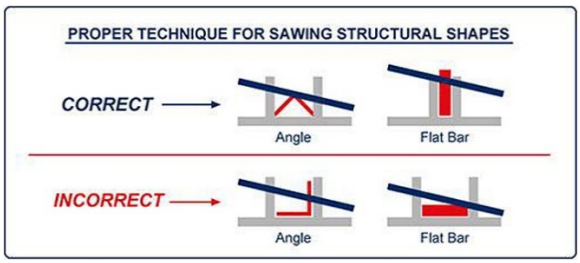


Figure 9-1

9.3 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

9.4 Blade Terminology

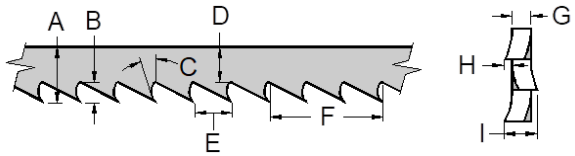


Figure 9-2

Table 9-1

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.

9.5 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.

9.6 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:

Blade Length = (2 x A) + (3.14 x 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.

9.7 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 (HHS) 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 (Cc) and molybdenum (Mo) contained in the metal alloy.

9.8 Blade Type

They differ essentially in their constructive characteristics, such as:

- Shape and cutting angle of tooth
- Pitch
- Set

9.8.1 Shape and angle of tooth

Regular Tooth: O° rake and constant pitch.

Figure 9-3

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° - 10° positive rake and constant pitch

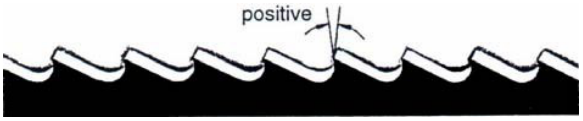


Figure 9-4

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.

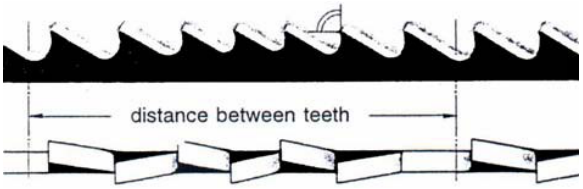


Figure 9-5

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.

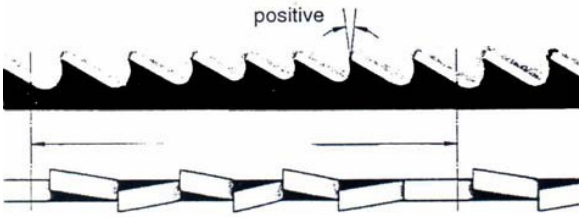


Figure 9-6

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.

9.9 Sets

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

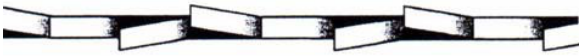


Figure 9-7

Regular Or Raker Set: Cutting teeth right and left, alternated by a straight tooth.

Figure 9-8

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.

Figure 9-9

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.

Figure 9-10

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.

Figure 9-11

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

10.0 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.

11.0 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	14	10-14tpi	10-14tpi	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	3-4tpi	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	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi
0.591		8-12tpi	6-10tpi	6-10tpi	5-8tpi	5-8tpi	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	1.4-2tpi
1.181				4-6tpi	4-6tpi	4-6tpi	3-4tpi	3-4tpi	3-4tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	2-3tpi	1.4-2tpi	1.4-2tpi	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	1.4-2tpi	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												1.4-2tpi	1-1.4tpi	1-1.4tpi	.75-1.25tpi	.75-1.25tpi	.75-1.25tpi
13.778													1-1.4tpi	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 thickness (s).

Figure 9-12

12.0 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.)

13.0 Operation

⚠CAUTION

Always wear proper eye protection with side shields, safety footwear, and leather gloves to protect from burrs and sharp edges.

NEVER operate saw without blade guards in place.

13.1 Manual Operation

1. Close the handle on the hydraulic ball valve (I) by turning it counterclockwise (ccw).
2. Turn the flow control knob (AR) clockwise (cw) to shut off the hydraulic flow. This will prevent the saw bow from dropping when the ball valve is opened.
3. Reduce the bow weight: Lift the spring bolt (AS), rotate the fork handle (AT) clockwise (cw), and release the spring bolt into the hole. (Spring will now be tensioned.)
4. Load piece part and clamp securely.
5. Turn the main switch (5) to “ON”. Check to see that the indicator light (1) is lit.
6. Set the blade speed with control knob (4)
7. Set switch (6) to manual mode for trigger operation.

Figure 13-1

8. While firmly holding the control handle of the saw bow, open ball valve (I) clockwise (cw).
9. Fully open the flow control knob (AR) counterclockwise (ccw).
10. Squeeze the start trigger to energize the blade motor and coolant pump. Lower saw bow to begin cutting.
11. When saw bow reaches bottom limit, the micro-switch (M) is actuated and shuts off the saw and pump motors.
12. Return the saw bow to its start position and close ball valve (I).

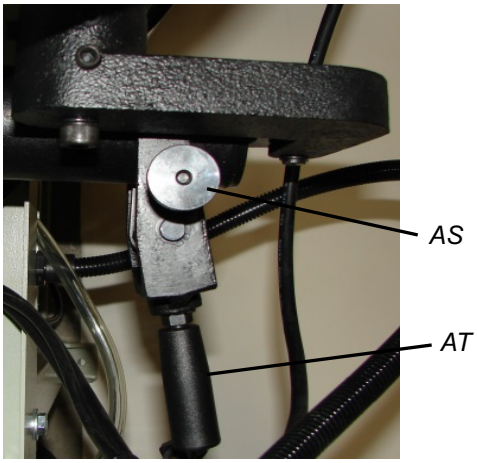


Figure 13-2

13. Unclamp and reset the piece part to continue the next cutting cycle.

IMPORTANT: If an emergency situation should occur: Press the emergency STOP button (3) 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.)

Figure 13-3

13.2 Auto Mode Operation

1. Close the handle on the hydraulic ball valve (I) by turning it counterclockwise (ccw).
2. Turn the flow control knob (AR) clockwise (cw) to shut off the hydraulic flow. This will prevent the saw bow from dropping when the ball valve is opened.
3. Increase the bow weight: Lift the spring bolt (AS), rotate the fork handle (AT) counterclockwise (ccw), and release the spring bolt. (Spring will not be tensioned.)
4. Load piece part and clamp securely.
5. Turn the main switch (5) to “ON”. Check to see that indicator light (1) is lit.
6. Set the blade speed with control knob (4)
7. Set switch (6) clockwise (cw) to auto mode for hydraulic cylinder operation.
8. Press the green start button (2). The saw motor and the coolant pump motor should both start.
9. Open the ball valve (I) clockwise (cw).
10. Turn the flow control knob (AH) clockwise (cw) to slow down the descent or counterclockwise (ccw) to speed it up.
11. When saw bow reaches bottom limit, micro-switch (M) is actuated and shuts off the saw and pump motors.
12. Grasp the control handle and lift the saw bow to a height slightly above the piece part to minimize the next cut entry time.
13. Close ball valve (I).
14. Unclamp and reset the piece part to continue the next cutting cycle.

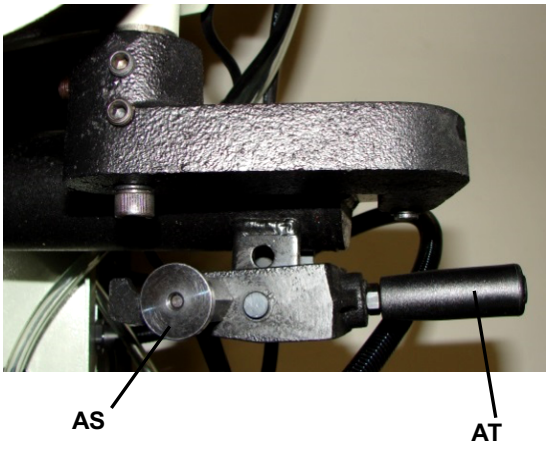


Figure 13-4

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.

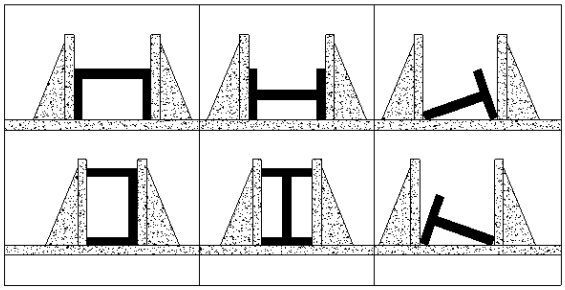


Figure 13-5

14.0 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.

15.0 Maintenance

⚠WARNING

Make sure the electrical disconnect is <u>OFF</u> before working on the machine.

⚠WARNING

Maintenance should be performed on a regular basis by qualified personnel.

⚠WARNING

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

15.1 Daily Maintenance

- Check daily for any unsafe conditions and fix immediately.
- Check that all nuts and bolts are properly tightened.
- Do a general cleaning by removing dust and metal chips from the machine.
- Inspect the saw blade for wear.
- Clean the lubricating coolant drain screen.
- Top off the coolant tank.
- Check that the blade guards and emergency stop button are in good working order.
- When through using saw for the day, raise the bow to its up position and release some of the blade tension.

15.2 Weekly Maintenance

- On a weekly basis clean the machine and the area around it.
- Apply rust inhibitive lubricant to all non-painted surfaces.
- Wipe and grease the vise screw and sliding surfaces.
- Inspect blade brush and clean if needed.
- Clean coolant pump strainer basket.
- Remove chips from inside the guard housing for the saw blade.
- Use compressed air to clean the blade guides and guide bearings.

15.3 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.
- Grease saw head pivot.

15.4 Coolant System Maintenance

1. Disconnect Power From the Saw!
2. To clean the tank, first remove the vinyl hose (AU) from the strainer basket.
3. Remove the strainer basket and lift the cover off of the tank
4. Completely empty tank and use a vacuum cleaner to remove any chips and debris.
5. Thoroughly clean the pump and inlet.
6. Fill the tank with coolant to the full mark on the sight gauge (AV).
7. Replace the cover on the tank.
8. Drop in the strainer basket and reinsert the vinyl hose.
9. Removable drip tray (AW) shown in place.

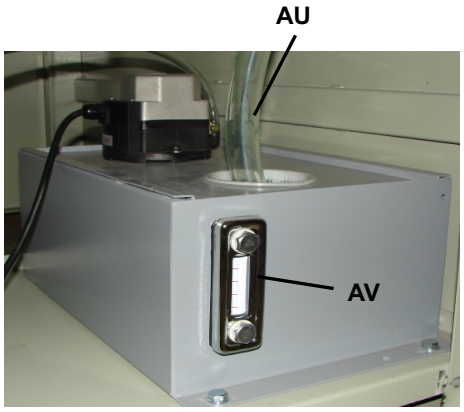


Figure 15-1

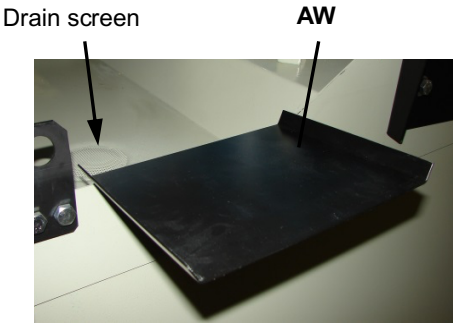


Figure 15-2

15.5 Oils for Lubricating Coolant

Any 10:1 (water to coolant) solution will work, however we recommend Baileigh Industrial 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.

15.6 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.
- Drain coolant
- Cover the machine

15.7 Gearbox Maintenance

The gearbox requires periodic changing of the oil. Complete the first change after the initial 6 months of operation and then change annually thereafter.

1. Disconnect Power from the Saw!
2. Raise the saw bow to a vertical position. Note: You may have to back off the upper travel adjusting bolt.
3. Remove the oil drain plug (AX) and drain the oil into a catch basin. Loosening oil fill plug (AY) will help oil to drain.
4. After draining, replace drain plug (AX).
5. Return the saw bow to a horizontal position.
6. Remove the fill plug (AY and add .32 quart of gear oil. (For reference use SHELL type gear oil or Mobil gear oil #90).

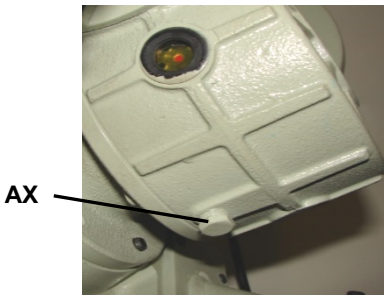


Figure 15-3

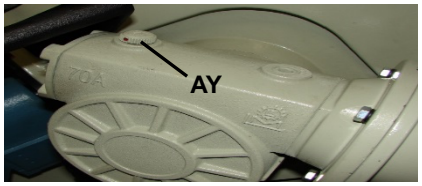


Figure 15-4

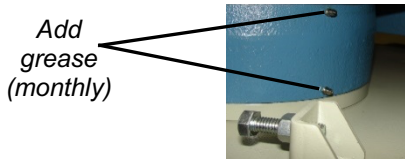


Figure 15-5

15.8 Oil Disposal

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

16.0 Troubleshooting

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

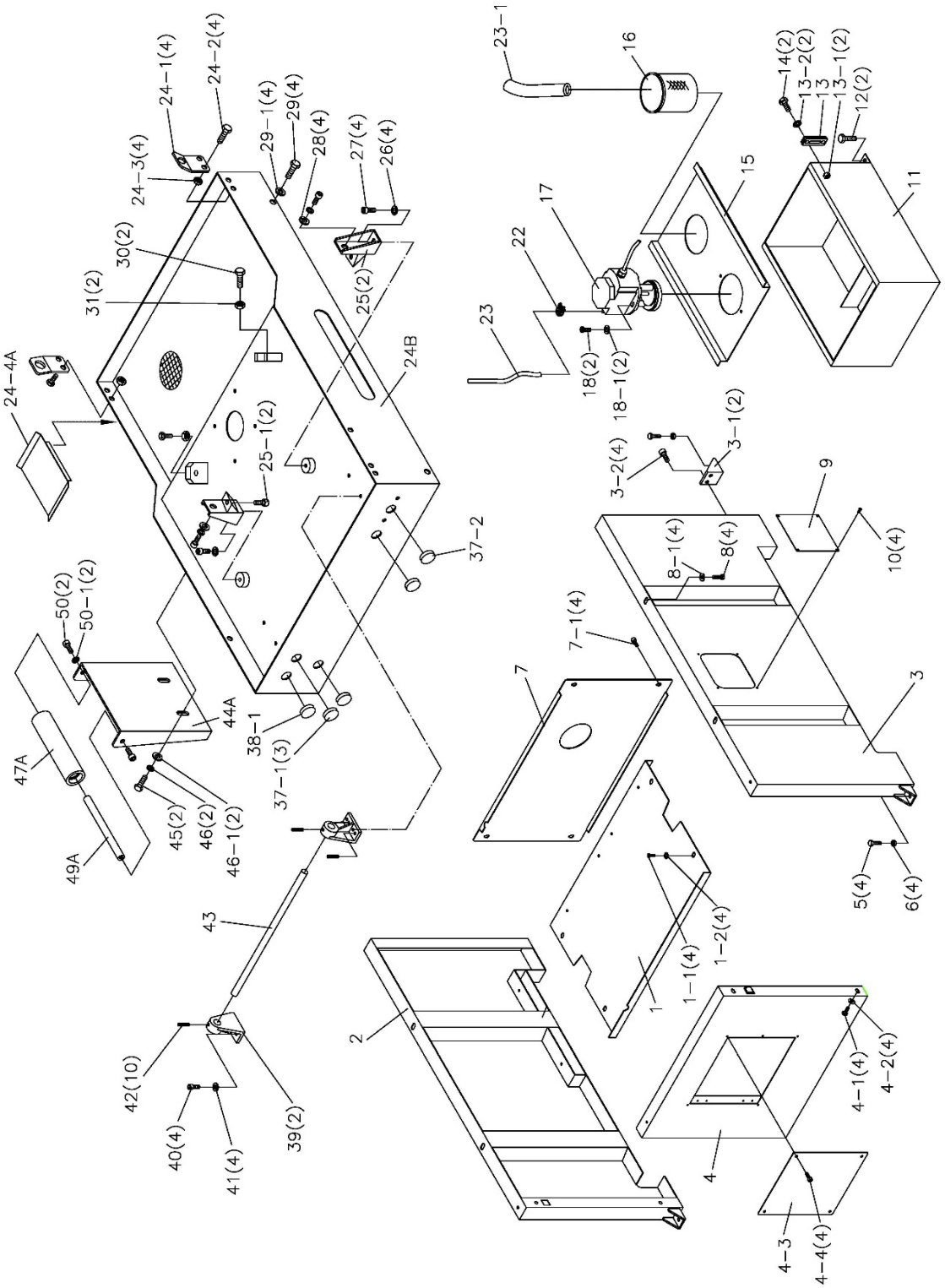
Table 16-1

SYMPTOM	POSSIBLE CAUSE (S)	CORRECTIVE ACTION
Saw Motor Does Not Stop When Cut is Finished	Actuator on cylinder does not contact switch properly.	Re-adjust actuator or switch.
	Bow down limit switch SQ3 damaged	Replace SQ3
Coolant Motor Does Not Run With Band Saw Motor	Coolant switch not turned ON.	Turn on coolant switch.
	Coolant motor M2 damaged.	Replace M2 motor.
No Power Indicator Light When Main Power Turned On	Fuse may have burned out.	Switch off main power. Replace defective fuse
	Transformer T1 damaged	Replace Transformer
	Power LED HL1 damaged	Replace (white) power LED
Excessive Blade Breakage	Material loose in vise	Clamp work securely
	Incorrect speed or feed	Adjust speed or feed
	Blade tooth spacing too large	Replace with a small tooth spacing blade
	Material too coarse	Use a slow speed blade and small tooth spacing
	Incorrect blade tension	Adjust to where blade does not slip-on wheel
	Teeth in contact with material before saw is started	Start saw and lower into work piece
	Blade rubs on wheel flange	Adjust wheel alignment
	Misaligned guide bearings	Adjust guide bearings
	Cracking at weld	Weld again, note quality of weld
Premature Blade Dulling	Teeth too coarse	Use finer teeth
	Too much speed	Decrease speed
	Inadequate feed pressure	Decrease spring tension on side of saw
	Hard spots or scale on material	Reduce speed, increase feed pressure
	Work hardening of material	Increase feed pressure by reducing spring tension
	Blade twist	Replace with a new blade, and adjust blade tension
	Insufficient blade	Tighten blade tension adjustable knob

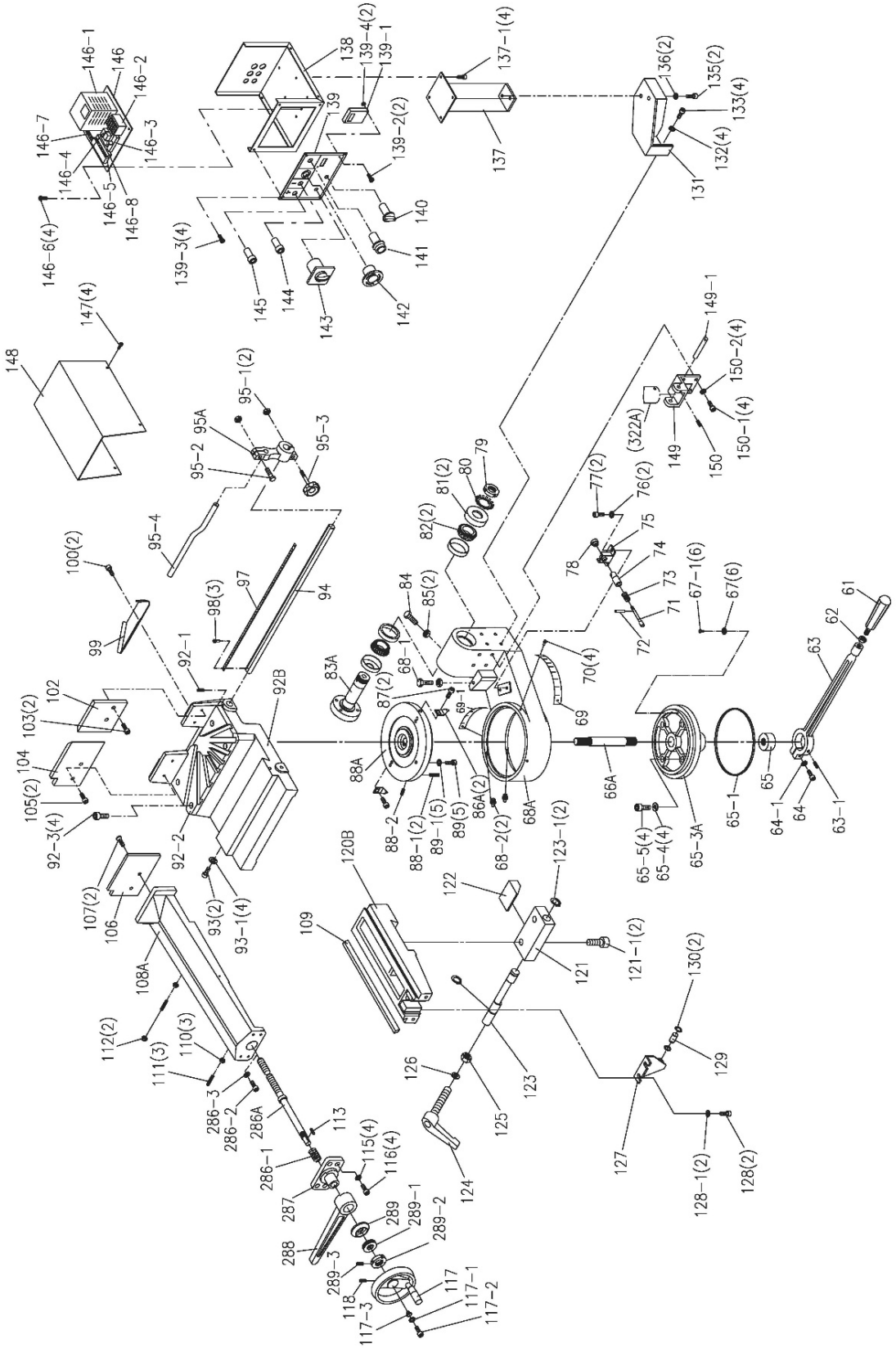
SYMPTOM	POSSIBLE CAUSE (S)	CORRECTIVE ACTION
Unusual Wear on Side/Back of Blade	Blade guides worn	Replace
	Blade guide bearings not adjusted properly	Adjust as per operators' manual
	Blade guide bearing bracket is loose	Tighten
Teeth Ripping From Blade	Teeth too coarse for work	Use finer tooth blade
	Too heavy pressure, too slow speed	Decrease pressure, increase speed
	Vibrating work piece	Clamp work piece securely
	Gullets loading	Use coarse tooth blade or brush to remove chips
Poor Cuts	Feed pressure too great	Reduce pressure by increasing spring tension on side of saw
	Guide bearing not adjusted properly	Adjust guide bearing, the clearance cannot be greater than .001mm
	Inadequate blade tension	Increase blade tension with tension knob
	Dull blade	Replace blade
	Speed incorrect	Adjust speed
	Blade guide spaced out too much	Adjust guide space
	Blade guide assembly loose	Tighten blade guide assembly
	Blade track too far away from wheel flanges	Re-track blade according to operating instructions
Poor Cuts (Rough)	Too much speed or feed	Decrease speed or feed
	Blade is too coarse	Replace with finer blade
	Blade tension loose	Adjust blade tension
Blade is Twisting	Cut is binding blade	Decrease feed pressure
	Too much blade tension	Decrease blade tension

17.0 Replacement Parts

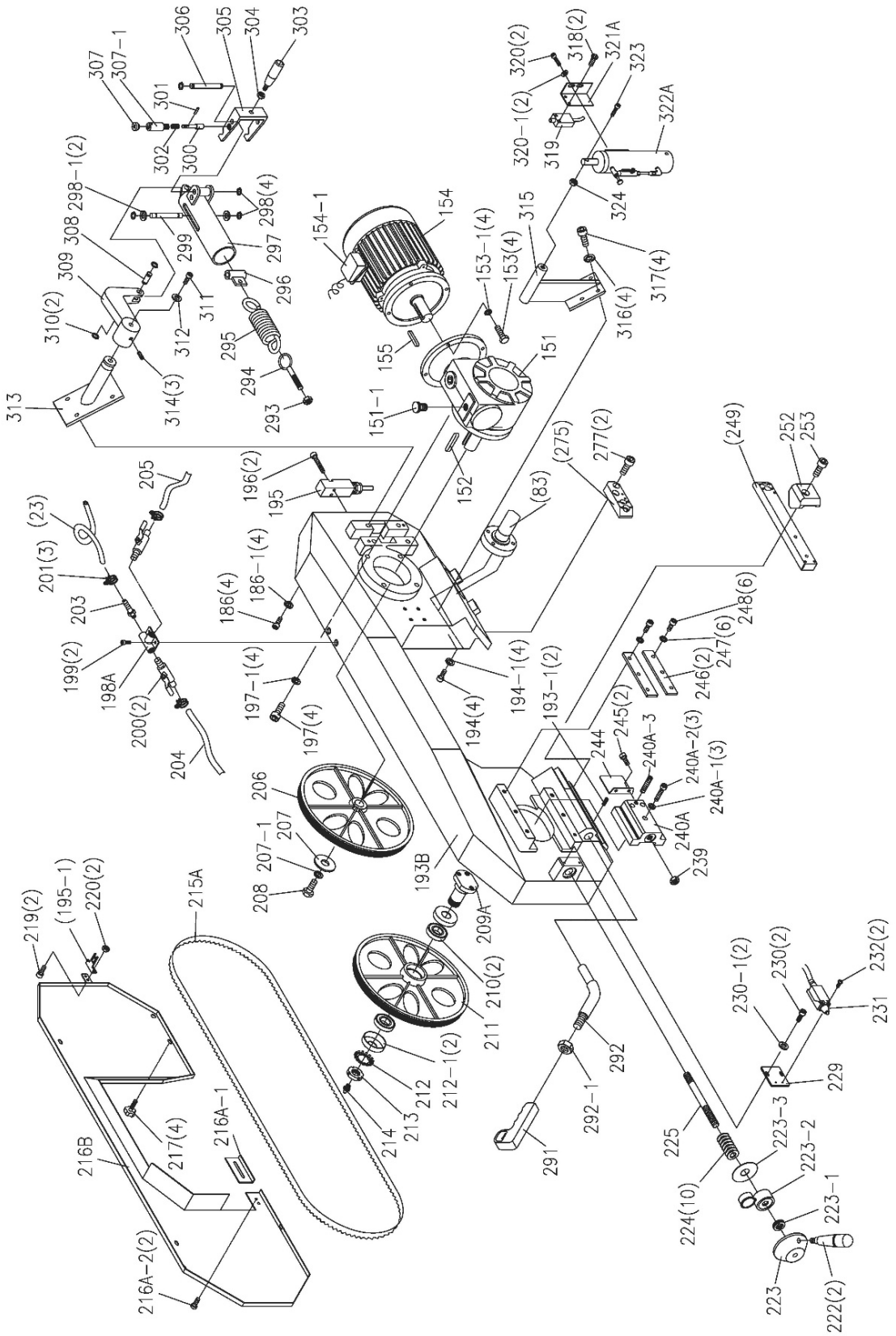
17.1.1 Band Saw Assembly – Exploded View A



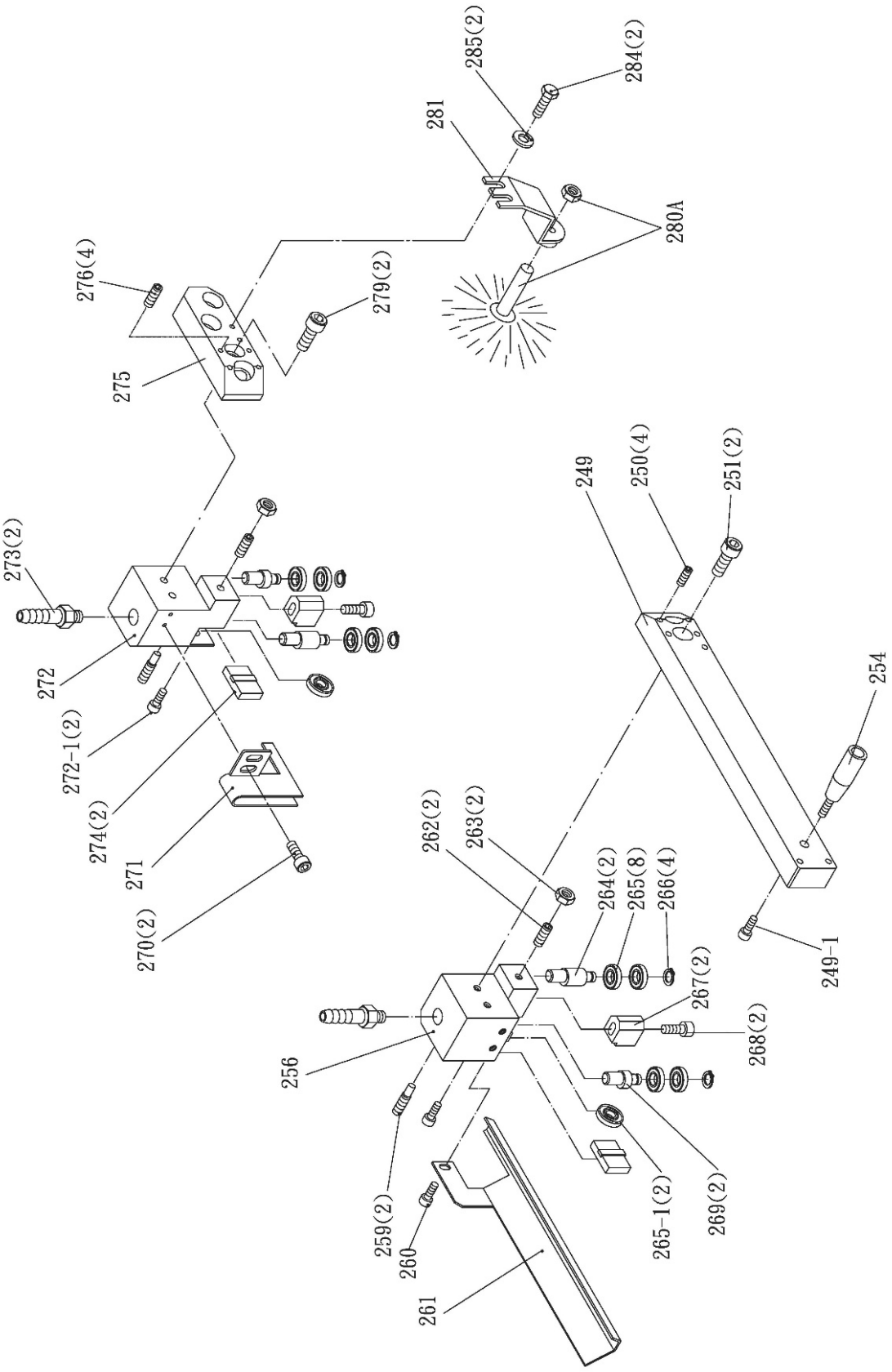
17.1.2 Band Saw Assembly – Exploded View B



17.1.3 Band Saw Assembly – Exploded View C



17.1.4 Band Saw Assembly – Exploded View D



17.1.5 Band Saw Assembly – Parts List A-D

Index No	Part No	Description	Size	Qty
1	BS350M-1N	Base (Bottom Plate)		1
1-1	JT9-TS-1490021	Hex. Cap Bolt	M8x16	4
1-2	BS350M-1N-2	Washer	8x23x2	4
2	BS350M-2N	Base (Left Part)		1
3	BS350M-3N	Base (Right Part)		1
3-1	BS350M-3N-1	Holder		2
3-2	JT9-TS-1490021	Hex. Socket Cap Screw	M8x16	4
4	BS350M-4N	Base (Front Part)		1
4-1	JT9-TS-1490021	Hex. Cap Bolt	M8x16	4
4-2	BS350M-4-2	Washer	8x23x2	4
4-3	BS350M-4-3N	Plate		1
4-4	JT9-TS-1502011	Hex. Socket Cap Screw	M5x8	4
5	JT9-TS-1492041	Hex. Cap Bolt	M12x40	4
6	BS350M-6	Nut	M12	4
7	BS350M-7N	Base (Rear Part)		1
7-1	JT9-TS-1503011	Hex. Socket Cap Screw	M6x8	4
8	JT9-TS-1491021	Hex. Cap Bolt	M10x20	4
8-1	BS350M-8-1N	Washer	10x25x2	4
9	BS350M-9	Plate		1
10	JT9-TS-1502011	Hex. Socket Cap Screw	M5x8	4
11	BS350M-11	Coolant Tank		1
12	JT9-TS-1490021	Hex. Cap Bolt	M8x16	2
13	BS350M-13	Coolant Gauge	3”	1
13-1	BS350M-13-1	Nut	M10	2
13-2	BS350M-13-2	Washer	10x10x3	2
14	BS350M-14N	Hex. Cap Bolt	M10x15	2
15	BA9-1227519	Tank Cover		1
16	BA9-1021265	Filter		1
17	BA9-1226703	Pump	50W 220V 1Ph	1
18	CM9-TS-1503061	Hex. Socket Cap Screw	M6x25	2
18-1	BS350M-18-1	Washer	6x13x1	2
22	BS350M-22	Hose Clamp	13mm	1
23	BS350M-23	Hose	5/16”x254cm	1
23-1	BS350M-23-1	Hose	1”x43cm	1
24B	BA9-1017647	Coolant and Chip Tray		1
24-1	BS350M-24-1	Plate		4
24-2	JT9-TS-1491021	Hex. Cap Bolt	M10x20	4
24-3	BS350M-24-3	Nut	M10	4
24-4A	BA9-1001562	Coolant Plate		1
25	BS350M-25	Mounting Bracket		2
25-1	JT9-TS-1490021	Hex. Socket Cap Screw	M8x16	2
26	BS350M-26	Spring Washer	M10	4
27	JT9-TS-1505021	Hex. Socket Cap Screw	M10x20	4
28	BS350M-28	Washer	10x25x2	4
29	JT9-TS-1491021	Hex. Cap Bolt	M10x20	4
29-1	BS350M-29-1	Spring Washer	M10	4
30	JT9-TS-1492041	Hex. Cap Bolt	M12x40	2
31	BS350M-31	Nut	M12	2
37-1	BS350M-37-1	Hole Cover	HP-25	3
37-2	BS350M-37-2	Hole Cover	HP-19	1
38-1	BS350M-38-1	Hole Cover	HP-22	1
39	BS350M-39N	Shaft Seat		2
40	JT9-TS-1504051	Hex. Socket Cap Screw	M8x25	4
41	BS350M-41N	Spring Washer	M8	4
42	JT9-TS-1523041	Set Screw	M6x12	10
43	BS350M-43N	Shaft	SCF16x460	1
44A	BS350M-44A	Roller Stand		1
45	JT9-TS-1492011	Hex. Cap Bolt	M12x25	2
46	BS350M-46	Spring Washer	M12	2

Index No	Part No	Description	Size	Qty
46-1	BS350M-46-1	Washer	12x28x3	2
47A	BS350M-47A	Roller		1
49A	BS350M-49A	Roller Shaft		1
50	JT9-TS-1504041	Hex. Socket Cap Screw	M8x20	2
50-1	BS350M-50-1	Spring Washer	M8	2
61	BS350M-61	Handle	M12x25	1
62	BS350M-62	Nut	M12	1
63	BS350M-63	Locking Lever		1
63-1	JT9-TS-1525031	Set Screw	M10x16	1
64	JT9-TS-1505051	Hex. Socket Cap Screw	M10x35	1
64-1	BS350M-64-1	Spring Washer	M10	1
65	BS350M-65	Shaft Nut		1
65-1	BS350M-65-1	Oil Seal	4mmx720mm	1
65-3A	BS350M-65-3A	Disk		1
65-4	BS350M-65-4	Spring Washer	M8	4
65-5	JT9-TS-1504071	Hex. Socket Cap Screw	M8x35	4
66A	BS350M-66A	Shaft		1
67	BS350M-67	DU Plate		6
67-1	BS350M-67-1	Flat Head Machine Screw	M4x8	6
68A	BS350M-68A	Swivel Arm		1
68-1	TS-1491051	Hex. Cap Bolt	M10x35	1
68-2	BS350M-68-2	Oil Inlet	1/16	2
69	BS350M-69	Scale	+45°~ -60°	1
69-1	BS350M-69-1	Scale	45°	1
70	BS350M-70	Rivet	2.3x4	4
71	BS350M-71	Pin		1
72	BS350M-72	Spring Pin	2.5x16	1
73	BS350M-73	Spring	0.8x9x30mm	1
74	BS350M-74	Bushing		1
75	BS350M-75	Bracket		1
76	BS350M-76	Spring Washer	M8	2
77	JT9-TS-1504051	Hex. Socket Cap Screw	M8x25	2
78	BS350M-78	Knob		1
79	BS350M-79	Jam Nut	M40	1
80	BS350M-80	Star Washer	M40	1
81	BS350M-81	Anti-Dust Cover	#40	2
82	BA9-1011131	Bearing	32008	2
83				
83A	BA9-1011132	Shaft		1
84	JT9-TS-2210451	Hex. Cap Bolt	M10x45	1
85	BS350M-85	Nut	M10	2
86A	BS350M-86A	Pointer		2
87	JT9-TS-1502011	Hex. Socket Cap Screw	M5x8	2
88A	BS350M-88A	Cover		1
88-1	BS350M-88-1	Spring Pin	6x20	2
88-2	JT9-TS-1524021	Set Screw	M8x10	1
89	JT9-TS-1504071	Hex. Socket Cap Screw	M8x35	5
89-1	BS350M-89-1	Spring Washer	M8	5
92B	BA1-1121	Table		1
92-1	JT9-TS-1523041	Set Screw	M6x12	1
92-2	BA9-1008547	Changeable Plate		1
92-3	JT9-TS-1490021	Hex. Socket Cap Screw	M8x16	4
93	JT9-TS-1505021	Hex. Socket Cap Screw	M10x20	2
93-1	BS350M-93-1	Washer	10x25x2	4
94	BS350M-94	Bar-Stop-Rod		1
95A	BS350M-95A	Bar Bracket		1
95-1	BS350M-95-1	Nut	M8	2
95-2	JT9-TS-1504051	Hex. Socket Cap Screw	M8x25	1
95-3	BS350M-95-3	Knob	M8x30	1
95-4	BS350M-95-4	Stop Bar		1
97	BA9-1017573	Scale		1

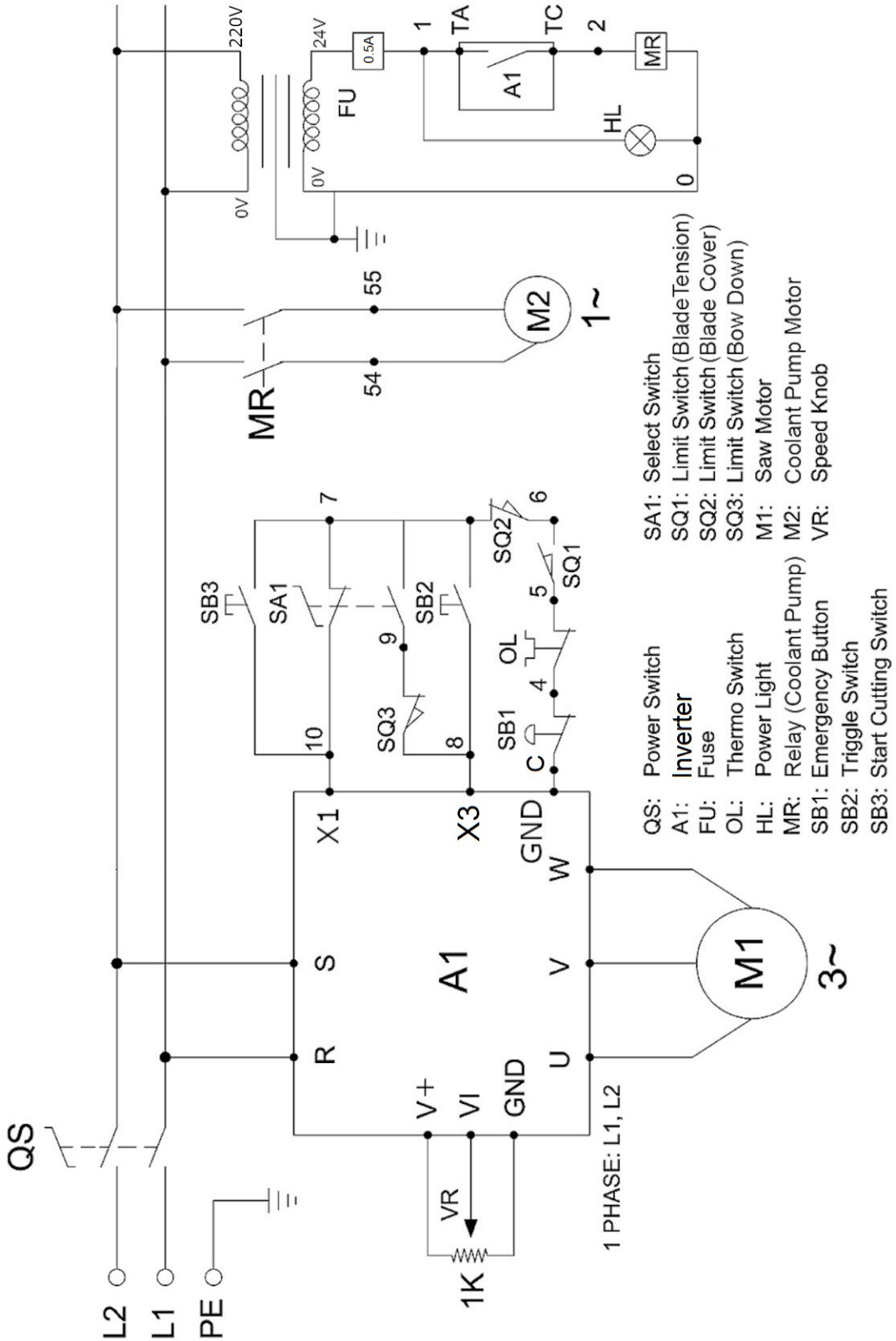
Index No	Part No	Description	Size	Qty
98	BS350M-98	Rivet	2.3x4	3
99	BA9-1232090	Chip Gutter		1
100	JT9-TS-1503011	Hex. Socket Cap Screw	M6x8	2
102	BA9-1010866	Vise Jaw - Right (23030867 and lower)		1
	BS350M-102N	Vise Jaw - Right (23040868 and higher)		1
103	BS350M-103	Hex. Socket Cap Screw	M6x15	2
104	BA9-1010887	Vise Jaw - Left (23030867 and lower)		1
	BS350M-104N	Vise Jaw - Left (23040868 and higher)		1
	BS350M-VJA	Vise Jaw Assembly (including 102,104) (23040868 and higher)		
105	BS350M-105	Hex. Socket Cap Screw	M6x15	2
106	BA9-1020013	Vise Jaw - Front		1
107	BA9-1020523	Flat Head Machine Screw	M6x16	2
108A	BA9-1226683	Movable Vise		1
109	BS350M-109	Dovetail Plate		1
110	BA9-1020524	Nut	M5	3
111	BA9-1020525	Set Screw	M5x25	3
112	BS350M-112	Nut	M5	2
113	BA9-1226687	Key	5x5x15	1
115	BA9-1020526	Spring Washer	M8	4
116	JT9-TS-1504041	Hex. Socket Cap Screw	M8x20	4
117	BS350M-117	Hand Wheel	6-1/2”	1
117-1	BA9-1020528	Spring Washer	M6	1
117-2	CM9-TS-1503061	Hex. Socket Cap Screw	M6x25	1
117-3	BS350M-117-3	Bushing		1
118	JT9-TS-1524021	Set Screw	M8x10	1
	BS350M-TVSA	Table and Vise Seat Assembly (including 92B~93-1,109,120B~126) (serial no. 20061924 and higher)		
120B	BS350M-120B	Vise Seat (Wedge type)		1
121	BS350M-121	Position Seat		1
121-1	JT9-TS-1505021	Hex. Socket Cap Screw	M10x20	2
122	BS350M-122N	Block		1
123	BS350M-123	Eccentric Shaft		1
123-1	BS350M-123-1	Ring	S-18	2
124	BS350M-124N	Handle	M10x25	1
125	BS350M-125N	Nut	M10	1
126	BS350M-126N	Spring Washer	M10	1
127	BS350M-127N	Linear Bearing Bracket		1
128	JT9-TS-1504041	Hex. Socket Cap Screw	M8x20	2
128-1	BS350M-128-1N	Spring Washer	M8	2
129	BS350M-129N	Bearing		1
130	BS350M-130N	Ring	S-28	2
131	BS350M-131	Electric Box Holder		1
132	BS350M-132	Spring Washer	M8	4
133	JT9-TS-1504041	Hex. Socket Cap Screw	M8x20	4
135	JT9-TS-1505031	Hex. Socket Cap Screw	M10x25	2
136	BS350M-136	Spring Washer	M10	2
137	BS350M-137	Support		1
137-1	JT9-TS-1502011	Hex. Socket Cap Screw	M5x8	4
138	BA9-1226667	Control Box Bottom Part		1
139	BS350M-139	Control Box Panel		1
139-1	BS350M-139-1	Blade Speed Indicator		1
139-2	BS350M-139-2N	Round Head Screw	M3x20	2
139-3	BS350M-139-3N	Round Head Screw	M5x8	4
139-4	BS350M-139-4N	Nut	M3	2
140	BS350M-140	Manual / Auto Selector		1
141	BS350M-141	Blade Speed Knob		1
142	BS350M-142	Emergency Switch		1
143	BS350M-143	Main Connect Switch		1
144	BS350M-144	Start Push Button		1

Index No	Part No	Description	Size	Qty
145	BA9-1009971	Indicator Light		1
146	BS350M-146	Control Box Bottom Plate		1
146-1	BA9-1021036	Inverter	RM6S2-2002E1	1
146-2	BS350M-146-2	Transformer		1
146-3	BA9-1001164	Fuse	0.5A	1
146-4	BA9-1226699	Relay		1
146-5	BS350M-146-5	Terminal Connector		1
146-6	BS350M-146-6N	Hex. Socket Cap Screw	M4x5	4
146-7	BS350M-146-7	Grounding Plate		1
146-8	BS350M-146-8	Wire Channel		1
147	JT9-TS-1502011	Hex. Socket Cap Screw	M5x8	4
148	BS350M-148	Control Box Cover		1
149	BS350M-149	Supporting Bracket		1
149-1	BS350M-149-1	Shaft		1
150	JT9-TS-1524021	Set Screw	M8x10	1
150-1	JT9-TS-1504041	Hex. Socket Cap Screw	M8x20	4
150-2	BS350M-150-2	Spring Washer	M8	4
151	BA9-1011827	Reduction Unit		1
151-1	BS350M-151-1	Vent Screw		1
152	BS350M-152	Key	8x7x30	1
153	JT9-TS-1490041	Hex. Cap Bolt	M8x25	4
153-1	BS350M-153-1	Spring Washer	M8	4
154	BA9-1013797	Motor	2Hp 220V 3ph	1
154-1	BS350M-154-1	Junction Box		1
155	BS350M-155	Key	8x7x40	1
186	JT9-TS-1505051	Hex. Socket Cap Screw	M10x35	4
186-1	BS350M-186-1	Spring Washer	M10	4
193B	BA9-1228731	Saw Arm		1
193-1	JT9-TS-1524021	Set Screw	M8x10	2
194	JT9-TS-1505051	Hex. Socket Cap Screw	M10x35	4
194-1	BS350M-194-1	Spring Washer	M10	4
195	BS350M-195	Limit Switch		1
195-1	BS350M-195-1	Switch Pin		1
196	CM9-TS-1501081	Hex. Socket Cap Screw	M4x30	2
197	JT9-TS-1505051	Hex. Socket Cap Screw	M10x35	4
197-1	BS350M-197-1	Spring Washer	M10	4
198A	BS350M-198A	T Connecter		1
199	JT9-TS-1502041	Hex. Socket Cap Screw	M5x16	2
200	BA9-1226706	Coolant Switch	1/4Px5/16	2
201	BS350M-201	Hose Clamp	13mm	3
203	BS350M-203	Pipe Fitting	1/4Px5/16	1
204	BS350M-204	Hose	5/16”x120cm	1
205	BS350M-205	Hose	5/16”x50cm	1
206	BA9-1226728	Drive Flywheel		1
207	BS350M-207	Washer		1
207-1	BS350M-207-1	Spring Washer	M10	1
208	CM9-TS-1491031	Hex. Cap Bolt	M10x25	1
209A	BS350M-209A	Idle Flywheel Shaft		1
210	JT9-BB-32007	Bearing	32007	2
211	BS350M-211	Idle Flywheel		1
212	BA9-1013408	Star Washer	M35	1
212-1	BS350M-212-1	Anti-dust Cover	35mm	2
213	BS350M-213	Jam Nut	M35	1
214	BS350M-214	Oil Inlet	1/16	1
215A	BS350M-215A	Saw Blade	27x0.9x3160mm HSS 3/4T	1
216B	BA9-1021267	Blade Cover		1
216A-1	BA9-1017766	Coolant Tray		1
216A-2	BS350M-216A-2	Round Head Screw	M6x8	2
217	BA9-1015879	Plum Screw	M6x12	4
219	BS350M-219	Round Head Screw	M4x8	2

Index No	Part No	Description	Size	Qty
220	BS350M-220	Nut	M4	2
222	BS350M-222	Handle		2
223	BS350M-223	Handle Wheel		1
223-1	JT9-BB-51103	Thrust Bearing	51103	1
223-2	BA9-1226796	Blade Tension Gauge		1
223-3	BS350M-223-3	Plate		1
224	BS350M-224	Special Spring Washer		10
225	BS350M-225	Tension Shaft		1
229	BS350M-229	Plate		1
230	CM9-TS-1503031	Hex. Socket Cap Screw	M6x12	2
230-1	BS350M-230-1	Washer	6x13x1	2
231	BS350M-231	Limit Switch		1
232	JT9-TS-1501071	Hex. Socket Cap Bolt	M4x25	2
239	BS350M-239	Nut	M16	1
240A	BS350M-240A	Slide Bracket		1
240A-1	BS350M-240A-1	Spring Washer	M10	3
240A-2	JT9-TS-1505071	Hex. Socket Cap Screw	M10x45	3
240A-3	JT9-TS-1525051	Set Screw	M10x25	1
244	BS350M-244	Cover Plate		1
245	JT9-TS-1503011	Hex. Socket Cap Screw	M6x8	2
246	BS350M-246	Gib		2
247	BS350M-247	Spring Washer	M8	6
248	JT9-TS-1504041	Hex. Socket Cap Screw	M8x20	6
249	BA9-1001372	Blade Guide Movable Rod		1
249-1	JT9-TS-1503011	Hex. Socket Cap Screw	M6x8	1
250	JT9-TS-1523041	Set Screw	M6x12	4
251	JT9-TS-1504041	Hex. Socket Cap Screw	M8x20	2
252	BS350M-252	Setting Bracket		1
253	JT9-TS-1506071	Hex. Socket Cap Screw	M12x50	1
254	BA9-1012475	Handle	M6x60	1
256	BA9-1001563	Guide Bracket		1
259	BS350M-259	Bolt		2
260	JT9-TS-1503011	Hex. Socket Cap Screw	M6x8	1
261	JT9-TS-1503011	Blade Guard		1
262	JT9-TS-1523041	Set Screw	M6x12	2
263	BS350M-263	Nut	M6	2
264	BA9-1226688	Centric Shaft		2
265	JT9-BB-608ZZ	Ball Bearing	608ZZ	8
265-1	JT9-BB-608ZZ	Ball Bearing	608ZZ	2
266	BS350M-266	E-Ring	E-7	4
267	BA9-1226792	Blade Guide		2
268	CM9-TS-1503061	Hex. Socket Cap Screw	M6x25	2
269	BA9-1226726	Eccentric Shaft		2
270	JT9-TS-1503011	Hex. Socket Cap Screw	M6x8	2
271	BA9-1226756	Blade Guard		1
272	BA9-1001564	Guide Bracket		1
272-1	JT9-TS-1503011	Hex. Socket Cap Screw	M6x8	2
273	BS350M-273	Pipe Fitting	1/4Px5/16	2
274	BA9-1226793	Blade Guide		2
275	BS350M-275	Ball Bearing Bracket		1
276	JT9-TS-1523041	Set Screw	M6x12	4
277	JT9-TS-1491021	Hex. Socket Cap Screw	M10x20	2
279	JT9-TS-1504041	Hex. Socket Cap Screw	M8x20	2
280A	BA9-1001569	Brush	Ø50	1
281	BS350M-281	Brush Clamp		1
284	JT9-TS-1482021	Hex. Cap Screw	M6x12	2
285	BS350M-285	Washer	6x13x1	2
286A	BS350M-286A	Lead Screw		1
286-1	BS350M-286-1	Spring	5x31x35mm	1
286-2	CM9-TS-1504031	Hex. Socket Cap Screw	M8x16	1
286-3	BA9-1020534	Washer	8x23x2	1

Index No	Part No	Description	Size	Qty
287	BS350M-287	Setting Seat		1
288	BS350M-288	Lock Handle		1
289	BS350M-289	Bearing Bushing		1
289-1	JT9-BB-51104	Bearing	51104	1
289-2	BS350M-289-2	Nut	M20x30x9P1.5	1
289-3	BS350M-289-3	Set Screw	M5x5	1
291	BA9-1001565	Trigger Switch		1
292	BA9-1001566	Pipe		1
292-1	BA9-1001567	Nut	M16	1
293	BA9-1013687	Nut	M12	1
294	BA9-1013688	Spring Hook		1
295	BA9-1013689	Spring	7.5x50x190mm	1
296	BA9-1013690	Spring Seat		1
297	BS350M-297	Spring Bushing		1
298	BS350M-298	Ring	S-12	4
298-1	BS350M-298-1	Washer	M10	2
299	BS350M-299	Shaft		1
300	BS350M-300	Pin		1
301	BS350M-301	Spring Pin	2.5x16	1
302	BS350M-302	Spring	0.8x9x30mm	1
303	BS350M-303	Handle	M10x70	1
304	BS350M-304	Nut	M10	1
305	BS350M-305	Adjusting Bracket		1
306	BS350M-306	Shaft		1
307	BS350M-307	Knob		1
307-1	BS350M-307-1	Bushing		1
308	BS350M-308	Shaft		1
309	BS350M-309	Arm		1
310	BS350M-310	Ring	S-12	2
311	JT9-TS-1505031	Hex. Socket Cap Screw	M10x25	1
312	BS350M-312	Spring Washer	M10	1
313	BS350M-313	Post		1
314	JT9-TS-1525031	Set Screw	M10x16	3
315	BA9-1001501	Hydraulic Cylinder Post		1
316	BS350M-316	Spring Washer	M8	4
317	JT9-TS-1504051	Hex. Socket Cap Screw	M8x25	4
318	JT9-TS-1533032	Round Head Screw	M5x10	2
319	BS350M-319	Limit Switch		1
320	JT9-TS-1503011	Hex. Socket Cap Screw	M6x8	2
320-1	BS350M-320-1	Washer	6x13x1	2
321A	BS350M-321A	Adjusting Bracket		1
322A	BA9-1010903	Hydraulic Cylinder		1
323	JT9-TS-1505061	Hex. Socket Cap Screw	M10x40	1
324	BS350M-324	Nut	M10	1
	BA9-1231457	Blade Direction Label (not show)		
	BA9-1021093	Motor Fan Cover (not show)		
	BA9-1010015	Flow Control (not show)		

18.0 Wiring Diagram



18.1 Inverter Fault Codes and Troubleshooting

18.1.1 Descriptions

The inverter equips with complete protective functions. If protective function is activated, power transistors will be turned off and display will show what fault is. After proper troubleshooting, to short RST STOP and COM, or press RESET in keypad, inverter will operate.

18.1.2 Protections and troubleshooting:

Table 18-1

Protections and display	Functions	Trouble Shooting
Over current for loss speed (acceleration)	During acceleration, if output current exceeds the stall prevention limit during acceleration (F_070), acceleration will be terminated. Until output current is less than the setting value, acceleration will be continuous.	Increase acceleration time or use the higher capacity inverter.
Over voltage for loss speed (deceleration)	During deceleration, too high regenerative voltage will cause termination of deceleration. Until the regenerative voltage is not too high, deceleration will be continuous.	Increase deceleration time or use dynamic brake unit.
Over current O.C.	Output current exceeds 220% of rated current of inverter. Inverter is shutdown.	Output terminals (U.V.W.) short-circuited, overload, acceleration time too small, start at free running, or mismatched characteristics of motor.
Over voltage O.E.	Due to the higher regenerative voltage or voltage of power source, the main circuit DC voltage exceeded the over voltage detection level. 200V series : Approx. DC410V 400V series : Approx. DC820V	Increase deceleration time, or use high braking torque and dynamic brake unit. Decrease input voltage.
Over load O.L.	Motor overload protection operates by build-in electronic thermal overload relay.	Decrease motor load.
Over load OL1	RM5G series 150% inverter rated output current for one minute. RM5P series 120% inverter rated output current for one minute.	Use high-capacity inverter
Over heat O.H.	When the temperature of heat sink is too high or external thermal relay to be activated, inverter is shutdown	Improve the cooling system or clear heat sink.
Protections and display	Functions	Trouble Shooting
Under voltage L.E.	The main circuit DC voltage is decreased 33% of rated value, inverter will display “LE”.	Increase the capacity of power source for avoiding line voltage of power source to be decreased significantly.
"－－－－ "and the set frequency display alternately	Forward/Reverse operation error (When F_001=0)	Check the wiring of FWD and REV terminals.
GF protection	Protection for unbalanced output current. Break of fuse inside the inverter	Check the leakage current of motor. Change inverter
EEr	EEPROM error	Change inverter
Err_00, Err_01	Disconnection of operating keypad, KP-201C or KP-202C.	Check keypad and inverter connections
S.C.	Break of fuse inside the inverter. Break of IGBT module	Change inverter
PAdF	KP-202C is removed in running.	Resume KP-202C

Protections and display	Functions	Trouble Shooting
Ad_Err	AD converter fault	Change inverter
OLO	Overload detection	Lower the motor load
thr	External fault detection	Check the external fault input terminal
db.	When the inverter is stop, the main circuit DC voltage exceed the voltage detection level. 200V series: Approx. DC385V 400V series: Approx. DC785V	Check the power supply voltage.
PUF1	First time you enter wrong	Please enter the correct password
PUF2	Second time you enter wrong	Please enter the correct password
PUF3	Third time you enter wrong	Enter the wrong password more than three times, please turn off and restart the power on to enter the correct password.
LOC	Parameter locking	-
ULOC	Parameter Password Unlock	-

Note: *The LE error message will display briefly when power is removed from the machine. This is normal as it is accurately reading a loss of power.

19.0 Warranty and Service

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

Inspection & Acceptance. Buyer shall inspect all Goods within ten (10) days after receipt thereof. Buyer's payment shall constitute final acceptance of the Goods and shall act as a waiver of the Buyer's rights to inspect or reject the Goods unless otherwise agreed. If Buyer rejects any merchandise, Buyer must first obtain a Returned Goods Authorization ("RGA") number before returning any Goods to Seller. Goods returned without 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 an 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 an 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 an 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, (f) defects or damage to the Goods resulting from improper or unauthorized alterations, modifications, or changes; and (f) any Goods that has not been installed and/or maintained in accordance with the instruction manual or technical guidelines provided by Seller.

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

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

Force 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, lightning, 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 Industrial issued RGA number PRIOR to returning any materials.
• Returned materials must be received at Baileigh Industrial in new condition and in original packaging.
• Altered items are not eligible for return.
• Buyer is responsible for all shipping charges.
• A 30% re-stocking fee applies to all returns.
Baileigh Industrial makes every effort to ensure that our posted specifications, images, pricing, and product availability are as correct and timely as possible. We apologize for any discrepancies that may occur. Baileigh Industrial reserves the right to make any and all changes deemed necessary in the course of business including but not limited to pricing, product specifications, quantities, and product availability.

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

20.0 Notes

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