



OPERATOR'S MANUAL

Metal Working



DUAL MITER SEMI AUTOMATIC BAND SAW MODEL: BS-24SA-DM

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THANK YOU & WARRANTY

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

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

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

Limited Warranty. Seller warrants to the original end-user that the Goods manufactured or provided by Seller under this Agreement shall be free of defects in material or workmanship for a period of twelve (12) months from the date of purchase, provided that the Goods are installed, used, and maintained in accordance with any instruction manual or technical guidelines provided by the Seller or supplied with the Goods, if applicable. The original end-user must give written notice to Seller of any suspected defect in the Goods prior to the expiration of the warranty period. The original end-user must also obtain a RGA from Seller prior to returning any Goods to Seller for warranty service under this paragraph. Seller will not accept any responsibility for Goods returned without a RGA. The original end-user shall be responsible for all costs and expenses associated with returning the Goods to Seller for warranty service. In the event of a defect, Seller, at its sole option, shall repair or replace the defective Goods or refund to the original end-user the purchase price for such defective Goods. Goods are not eligible for replacement or return after a period of 10 days from date of receipt. The foregoing warranty is Seller's sole obligation, and the original end-user's exclusive remedy, with regard to any defective Goods. This limited warranty does not apply to: (a) die sets, tooling, and saw blades; (b) periodic or routine maintenance and setup, (c) repair or replacement of the Goods due to normal wear and tear, (d) defects or damage to the Goods resulting from misuse, abuse, neglect, or accidents, (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 INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR DOWN TIME) ARISING FROM OR IN MANNER CONNECTED WITH THE GOODS, ANY BREACH BY SELLER OR ITS AGENTS OF THIS AGREEMENT, OR ANY OTHER CAUSE WHATSOEVER, WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY OF LIABILITY. BUYER'S REMEDY WITH RESPECT TO ANY CLAIM ARISING UNDER THIS AGREEMENT IS STRICTLY LIMITED TO NO MORE THAN THE AMOUNT PAID BY THE BUYER FOR THE GOODS.



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

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

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

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

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

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

Summary of Return Policy.

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

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

For Customer Service & Technical Support:

Please contact one of our knowledgeable Sales and Service team members at:
(920) 684-4990 or e-mail us at sales@baileigh.com



INTRODUCTION

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

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

In this manual you will find: (when applicable)

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

GENERAL NOTES

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

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

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



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



IMPORTANT

PLEASE READ THIS OPERATORS MANUAL CAREFULLY

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



SAFETY INSTRUCTIONS

LEARN TO RECOGNIZE SAFETY INFORMATION

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



Follow recommended precautions and safe operating practices.

UNDERSTAND SIGNAL WORDS

A signal word – **DANGER**, **WARNING**, or **CAUTION** – is used with the safety alert symbol. **NOTICE**, which is not related to personal injury, is used without a symbol.

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

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

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

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

DANGER

WARNING

CAUTION

NOTICE

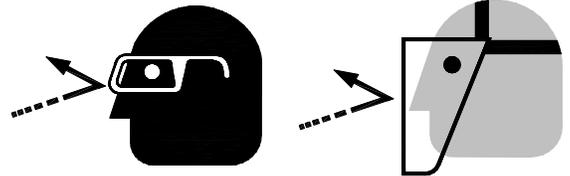


SAVE THESE INSTRUCTIONS.
Refer to them often and use them to instruct others.



PROTECT EYES

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



PROTECT AGAINST NOISE

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



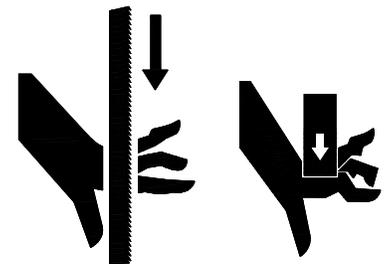
HIGH VOLTAGE

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



BEWARE OF CUT AND PINCH POINTS

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



EMERGENCY STOP BUTTON

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



CALIFORNIA PROPOSITION 65

WARNING: Cancer and Reproductive Harm.
www.P65Warnings.ca.gov





SAFETY PRECAUTIONS



Metal working can be dangerous if safe and proper operating procedures are not followed. As with all machinery, there are certain hazards involved with the operation of the product. Using the machine with respect and caution will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or ignored, personal injury to the operator may result.

Safety equipment such as guards, hold-downs, safety glasses, dust masks and hearing protection can reduce your potential for injury. But even the best guard will not make up for poor judgment, carelessness or inattention. **Always use common sense** and exercise **caution** in the workshop. If a procedure feels dangerous, don't try it.

REMEMBER: Your personal safety is your responsibility.



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

Dear Valued Customer:

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

PLEASE ENJOY YOUR BAILEIGH MACHINE!PLEASE ENJOY IT SAFELY!

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



8. **Do not force tool.** Your machine will do a better and safer job if used as intended. **DO NOT** use inappropriate attachments in an attempt to exceed the 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.

GENERAL NOTES

- Take necessary precautions while loading / unloading or moving the machine to avoid any injuries. Refer to the related chapter of this Manual for the best way of handling the machine.
- Always disconnect the machine from the power source before a blade change, carrying out any maintenance job, or any abnormal machine operation.
- Always check that the work piece is securely clamped and that long pieces are properly supported.
- If the blade gets stuck in the cut, press the emergency stop button immediately. Reset the E-stop button. In manual mode you can now raise the saw bow, open the vise, and remove the piece part. Check the blade for any broken teeth and replace blade if necessary.
- The operator should stand in front of the machine while the saw is cutting.
- Your machine is designed and manufactured to work smoothly and efficiently. Following proper maintenance instructions will help ensure this. Try and use original spare parts, whenever possible, and most importantly; **DO NOT** overload the machine or make any unauthorized modifications.





TECHNICAL SPECIFICATIONS

| | |
|---------------------------------|---|
| Round (90°) | 18.1" (460mm) |
| Round (45°) | 17.5" (445mm) |
| Round (60°) | 11.6" (295mm) |
| Square (90°) | 18.1 x 18.1" (460 x 460mm) |
| Square (45°) | 17.5" x 17.5" (445 x 445mm) |
| Square (60°) | 11.6" x 11.6" (295 x 295mm) |
| Rectangular (90°) | 17.3" x 23.6" (440 x 600mm) |
| Blade Size (H x W x L) | 1.6" X .051" x 209.84" (41 x 1.3 x 5330mm) |
| Blade Speed (fpm) | 98-298 Carbide Roller |
| Blade Guide | Carbide / Roller |
| Miter Angle | 0 - 60° (L & R) |
| Miter Adjustment | Dual Miter Swivel Head |
| Descent Control | Pressure Assist. Hydraulic |
| Return | Hydraulic |
| Drive | Belt / Pulley |
| Power Supply | 220V, 3Ph, 60hz |
| Blade Motor | 0.75kW/1HP, 60Hz, 220/440V,3 Ph, 4P, 3.5/1.8A |
| Hydraulic Motor | 1/6HP, 220V/440v ,60Hz ,3Ph, 2P, 0.4/ 0.24A |
| Coolant Motor | 1/6 Hp (124w), 220V, 3ph, 60hz, 0.4A |
| Hydraulic Capacity | 8.1gal (31L) |
| Coolant Capacity | 18.75gal (71L) |
| Shipping Dimensions (L x W x H) | 112" x 45" x 74" (2830 x 1140 x 1860mm) |
| Shipping Weight | 3,234 lbs. (1470 kgs.) |

TECHNICAL SUPPORT

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

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



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



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



UNPACKING AND CHECKING CONTENTS

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

⚠ WARNING: SUFFOCATION HAZARD! Immediately discard any plastic bags and packing materials to eliminate choking and suffocation hazards to children and animals.
If any parts are missing, **DO NOT** place the machine into service until the missing parts are obtained and installed correctly.

Cleaning

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

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

Your machine may be shipped with a rustproof waxy coating and/or grease on the exposed unpainted metal surfaces. Fully and completely remove this protective coating using a degreaser or solvent cleaner. Moving items will need to be moved along their travel path to allow for cleaning the entire surface. For a more thorough cleaning, some parts will occasionally have to be removed. **DO NOT USE** acetone or brake cleaner as they may damage painted surfaces.

Follow manufacturer's label instructions when using any type of cleaning product. After cleaning, wipe unpainted metal surfaces with a light coating of quality oil or grease for protection.



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



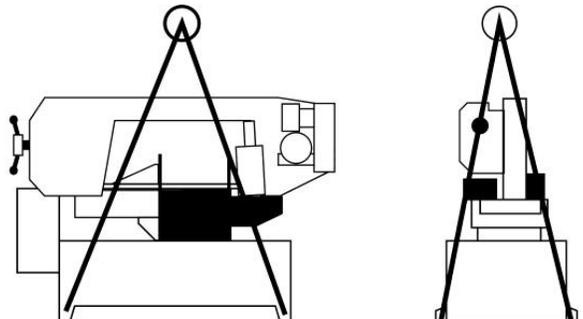


TRANSPORTING AND LIFTING

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

Follow these guidelines when lifting:

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

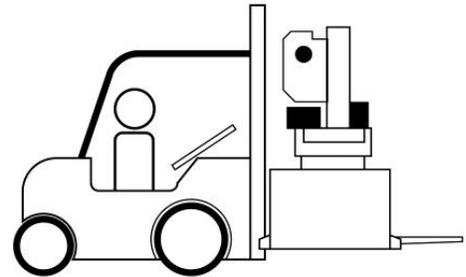


INSTALLATION

IMPORTANT:

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

- Overall weight of the machine.
- Weight of material being processed.
- Sizes of material to be processed through the machine.
- Space needed for auxiliary stands, work tables, or other machinery.
- Clearance from walls and other obstacles. Maintain an adequate working area around the machine for safety.
- Have the work area well illuminated with proper lighting.
- Keep the floor free of oil and make sure it is not slippery.
- Remove scrap and waste materials regularly, and make sure the work area is free from obstructing objects.
- If long lengths of material are to be fed into the machine, make sure that they will not extend into any aisles.
- **LEVELING:** The machine should be sited on a level surface. The accuracy of any machine depends on the precise placement of it to the mounting surface. If the unit wobbles or rocks once in place, be sure to eliminate by using shims.

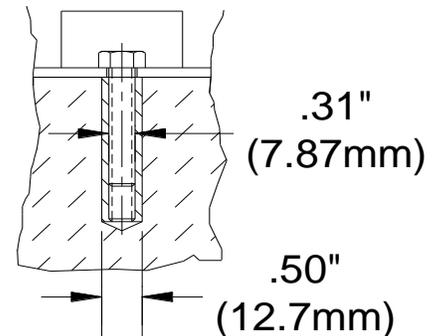




- **POWER SUPPLY PLACEMENT:** The power supply should be located close enough to the machine so that the power cord is not in an area where it would cause a tripping hazard. Be sure to observe all electrical codes if installing new circuits and/or outlets.

Anchoring the Machine

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



Tank Filling

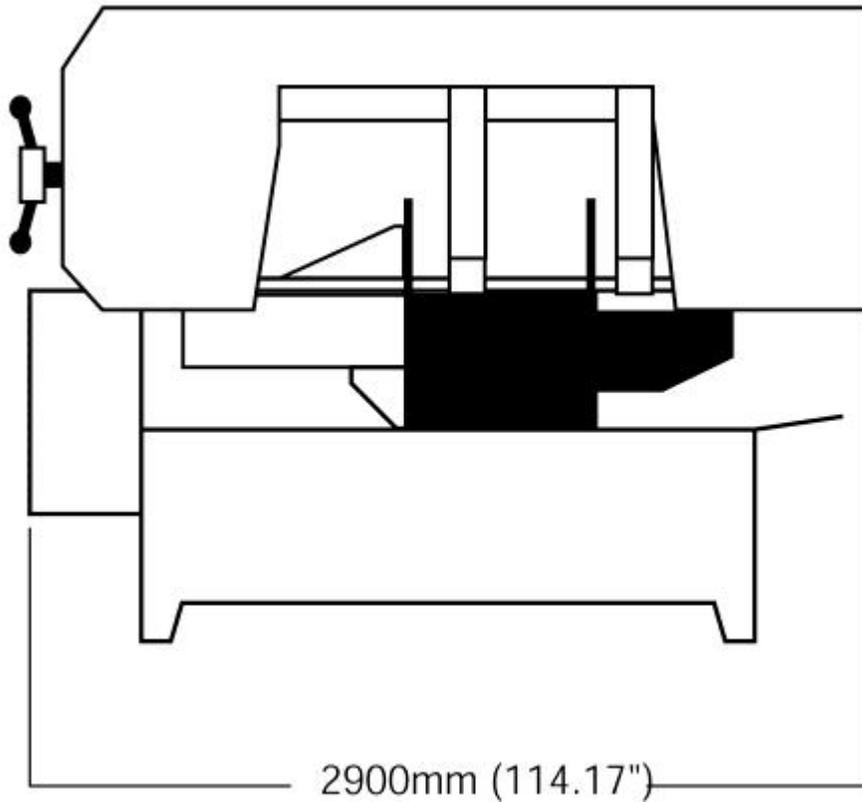
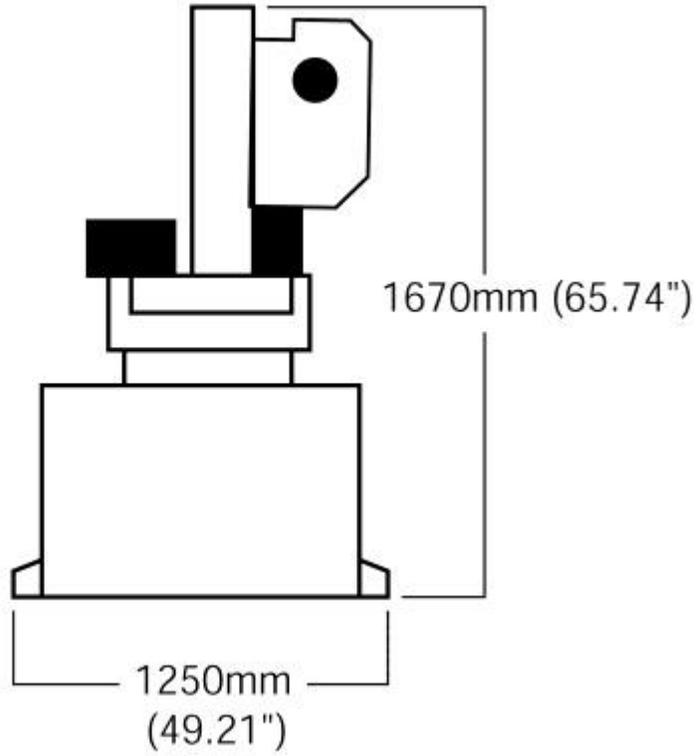
The hydraulic oil is the primary medium for transmitting pressure and also must lubricate the running parts of the pump.

After installation of the machine and before machine startup, bring the oil level up to 90% of capacity. Verify that any cylinder rams are in the retracted position to prevent overfilling of the tank. Recheck the oil level after the first few hours of operation and again after the first full week of operation.

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



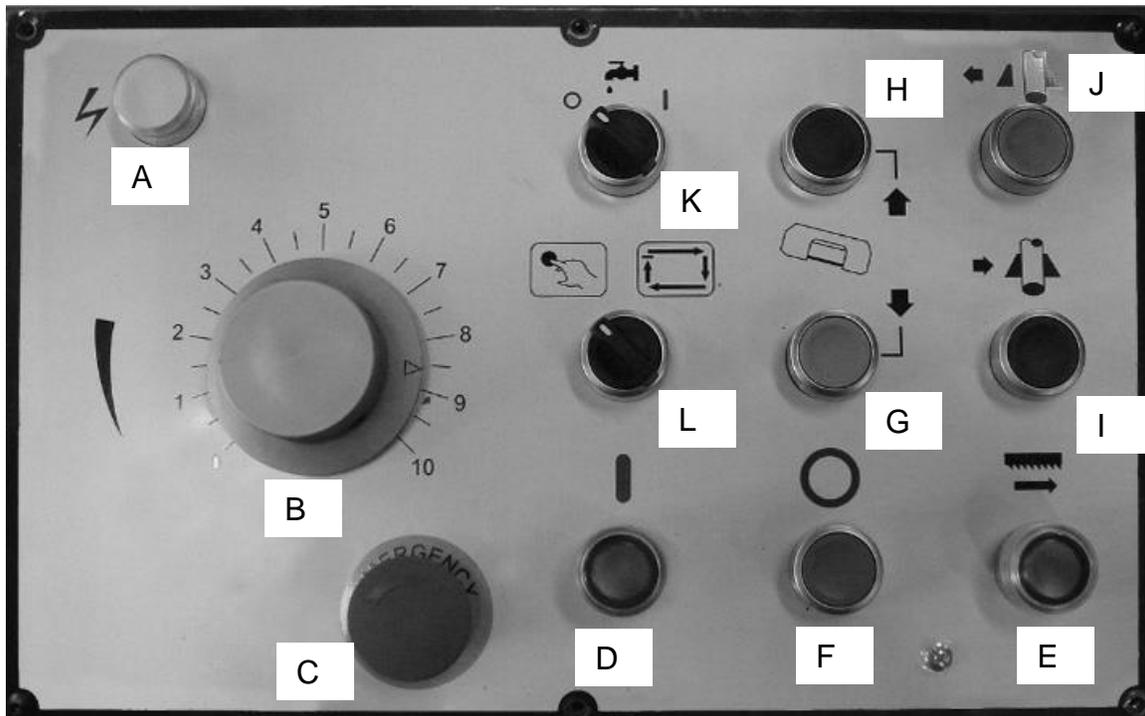
OVERALL DIMENSIONS





GETTING TO KNOW YOUR MACHINE

Control Panel

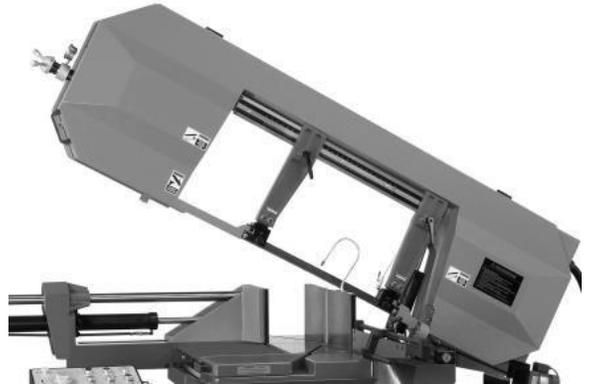


| | |
|---|---|
| A | Main Power Indicator Light – Indicates that main power is active. |
| B | Hydraulic Flow Control Valve: Turn clockwise to increase bow down rate, counter-clockwise to decrease the cutting rate. |
| C | Emergency Stop Button – Press to stop all machine functions. |
| D | Hydraulic Start Switch – Activates hydraulic power. |
| E | Start Blade – Press to start cutting cycle; blade start and the saw bow descends. NOTE: Before blade starting, press vise close button to clamp work piece well. |
| F | Stop Cutting - Press to stop cutting cycle. |
| G | Bow Down Button - Press to descend the saw bow. |
| H | Bow Up Button – Press to raise the saw bow. |
| I | Vise Close Button – Press to close the vise. |
| J | Vise open Button – Press to open the vise. |
| K | Coolant start switch – Turn right to activate or turn left to stop coolant flow. |
| L | Manual/Auto mode Switch–selects either automatic or manual operation mode. |



Saw Bow

Machine parts consisting of drive members (gear motor, variable speed motor, and flywheels), tightening and guide (blade tightening slide, blade guide blocks) of tool.



Vise System

A hydraulic vise is used for clamping work material. Each of the vises has a miter slot, which is good for the right or left side's angle cutting to 60°.



Base

The base is the structure supporting the saw bow (the bow pivot point and respective blocking system), the vises, and containing chip tray and coolant system.



Chip Tray

Removable chip tray for capture of chips and debris.



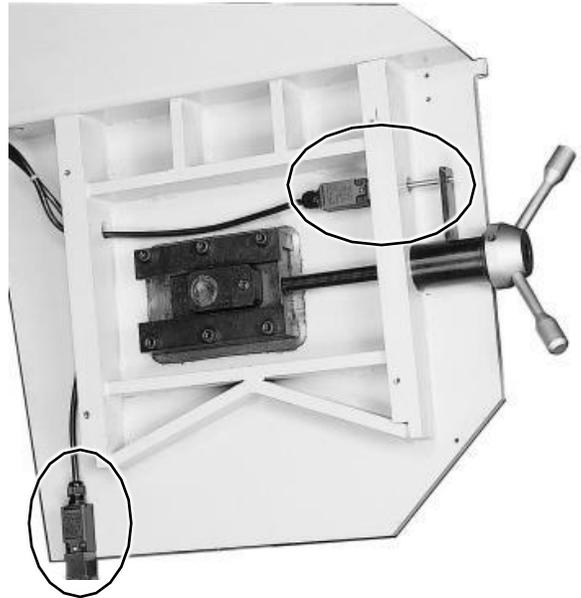


Blade Broken Micro Switch

This machine is equipped with automatic power shut-off safety device to prevent any further damage when a blade has been broken or loses tension.

When the blade tension handle is turned, the adjustment bolt presses the plunger on the switch actuates micro switch.

To keep the micro switch in proper contact with the blade's tension, an adjustment of the actuator bolt may be required.

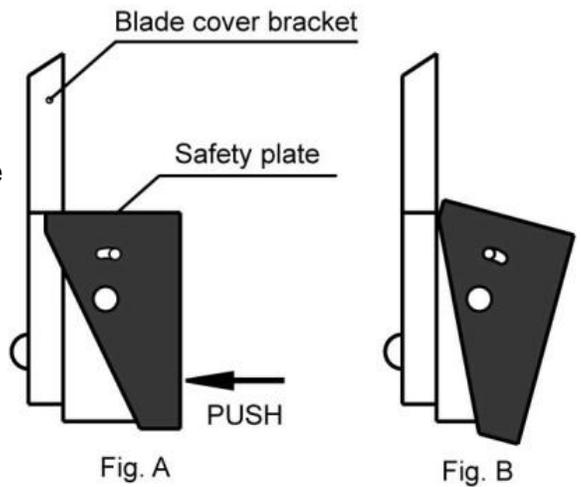


Open Blade Cover Safety Device

When blade cover is open, power will be removed from the system operation controls.

To close the blade cover:

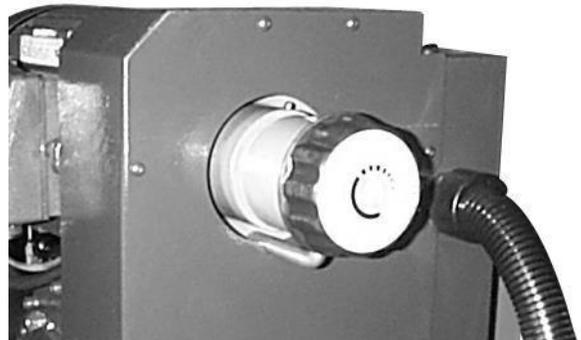
- Use one hand on the cover handle to hold the blade cover.
- Use the other hand to push in the safety plate (Fig. A), so the bracket will release (Fig. B).
- Lower the cover down slowly and carefully.



Speed Change Dial

The speed change dial adjusts the variable speed transmission in blade speed. Change only while blade is moving.

This machine has a variable speed transmission using a variable pulley - system. The speed is changed by rotating the speed changer dial to adjust the width of the pulley discs. When compressed, the pulley discs cause the belt to ride the outer edge of pulley discs and changing the speed. The speed must be changed while belt is moving.





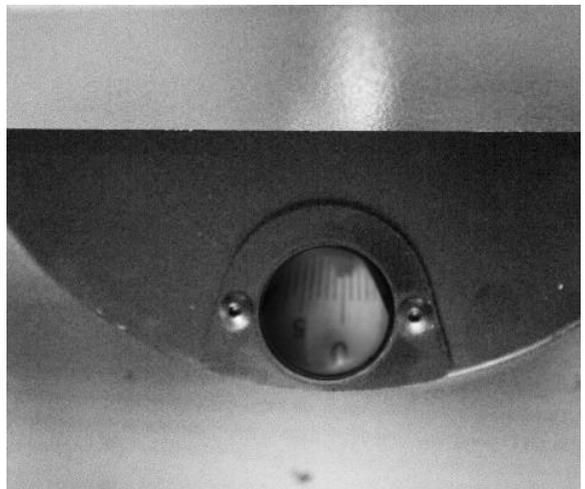
Chip Brush

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



Blade Angle Scale

The scale indicates the cutting angle of the blade. The scale has preset stops at every 15°.



Attached Coolant Device

An attached coolant device that is screwed on the front vise jaw for supply enough coolant to the cutting material. This device can be unscrewed and move to the rear vise jaw for easy both side miter cutting.





Saw Bow Upper /Lower Limit Switches

The saw bow travel is controlled by the up and down limit switches.

The up-limit switch stops the bow at the position in which it contacts the orange contact paddle. The paddle is adjustable to for easy adjustment to stop the bow up position as soon as the blade is clear of the material. This shortens the cut cycle.

Bow Height Adjusting Plate

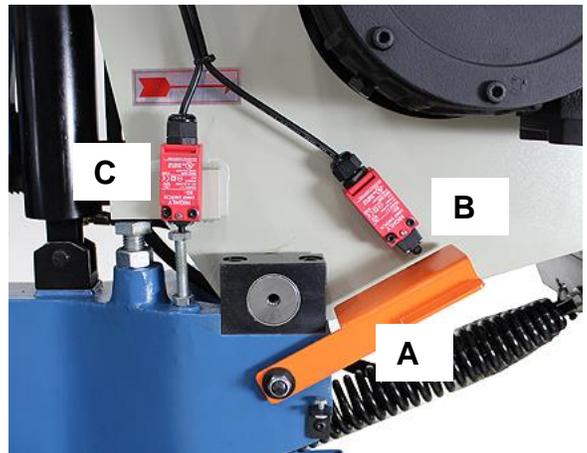
The adjusting plate (A) can be adjusted up or down by hand as needed to increase or decrease the height that the bow raises between cutting cycles.



Note: Tighten the pivot nut if the plate will not hold position.

Set the height so that the teeth of the blade are at least 0.5" - 0.75" (13 - 20mm) above the work material at the top of the stroke.

This will provide clearance for the material to advance while also reducing operation cycle time.



Bow Down Limit Switch

The bow down limit switch (C) stops the descent of the saw bow at the bottom of the cut.

The down limit switch contacts a bolt head and is set at the factory to provide a stop point at the bottom of the cut once the blade has cut through the material.

Once the down limit switch is activated, the blade will stop, and the bow will raise until it is stopped by the up-limit switch.

The material may be advanced, and the next cut will begin.

Guide Post

The guide posts are the two posts that suspend down from a rail, and straddle the blade with carbide and roller bearings to support and guide the blade through the cut.

The back side (right as shown) guide post is stationary and does not move.

The front side (left as shown) is repositioned to allow for varying material sizes. It is to be set as close to the material as possible without interfering with the blade, vise or material.





Filler Cover

The filler cover is located at the front of the saw table. The filler cover should be removed whenever the saw is cutting at an angle and when the vise is to be moved to the front side of the blade. Remove the filler cover by pulling on the handle and lifting up and off when the tabs have unlocked from the main table.



Miter Angle Lock Lever

The pivot platform is the structure that holds the saw bow and rotates horizontally for miter cutting up to 60° to the right and 60° to the left. Pull the lever to the right to release and turn bow to the desired angle. Once the bow is at the desired angle, push the lever to the left to lock the position.



⚠ IMPORTANT: When the bow is in the 90° or angled from 1° to 60° to the right, the vise must be positioned to the left side of the saw bow. The vise must be positioned to the right of the saw bow when cutting angles from 1° to 60° to the left. Failure to follow this guideline will damage the vise and possibly other saw components.

Vise System

The vise is a hydraulic system that allows it to be clamp manually and automatically. The operator can open the vise quickly and easily after the cut to remove and / or advance the material. The vise may be shifted from the left (normal) side of the bow to the right side of the bow when cutting left angles.



⚠ IMPORTANT: When the bow is in the 90° or angled from 1° to 60° to the right, the vise must be positioned to the left side of the saw bow. The vise must be positioned to the right of the saw bow when cutting angles from 1° to 60° to the left. Failure to follow this guideline will damage the vise and possibly other saw components.



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.

The mounting hardware (bolts and washers) used to assembly the accessories to the saw are installed into the mounting location holes for shipping. Remove and retain the fasteners from the mounting locations and then secure the accessory item to the saw with these fasteners.

Installing the Rear Coolant Return Tray

- The rear coolant-return tray must be installed after the machine is set in place. Install the coolant return trays first.

Installing Three Channeled L-Bracket

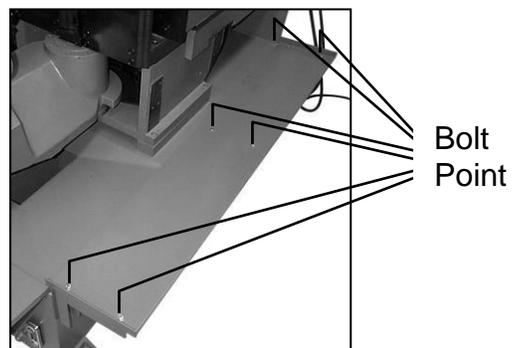
- Install three channeled L-bracket to the back of the machine stand.
- Attaching the brackets requires 6 hex head bolt, 6 spring washers, 6 washers, and 6 nuts.
- Place a spring washer and washer on each hex head bolt.
- Face the long side of the bracket up.
- Align the holes of short side of the bracket to the machine panel's holes.
- Place the 2 hex head bolts and their washers through each bracket and machine panel.
- Use a nut on the inside of the machine stand to secure each hex head bolt.



Note: Short bracket on the left side

Securing the Rear Tray

- Attaching the trays requires 6 hex head bolt, 6 spring washers, 6 washers, and 6 nuts.
- Arrange the tray rims to facing up and away from the machine.
- Place the rear return tray onto brackets at the back of the machine.
- Align the holes of the rear tray and the six- channeled L-brackets.

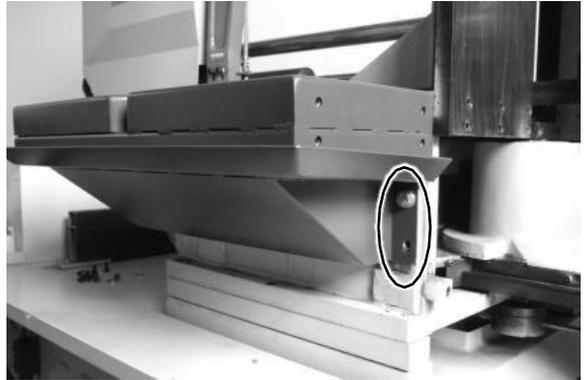




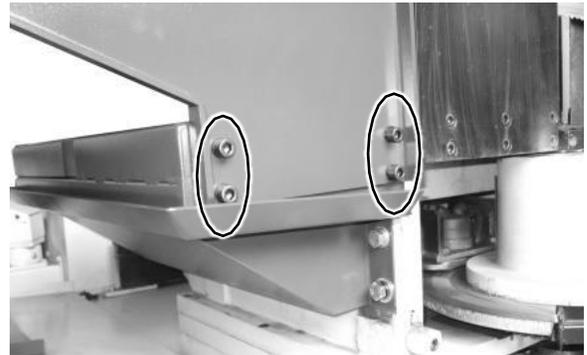
- Place 6 hex head bolts through the holes of the trays and brackets.
- Secure each hex head bolts with a washer, spring washer, and hex nut.

Install the Outlet Tray, Length Stop Device and Mobile Coolant Trays

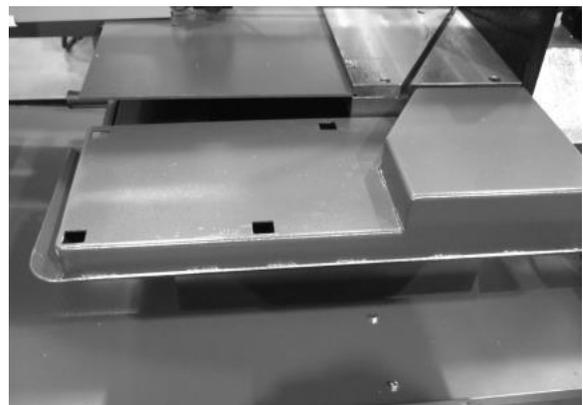
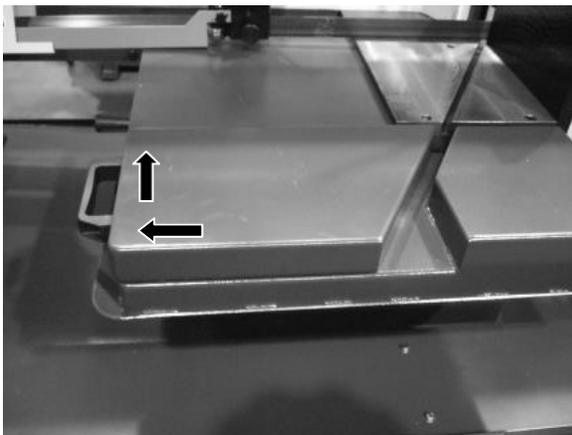
- Install the outlet tray and stop bar on to the machine after setting up the machine already as below steps:
- Assemble the outlet tray on to the machine by screw in the four screws on each side as shown.
- Tighten the four screws after making sure the top of outlet surface is level with the main table.



- Install stop device on to the outlet tray at the right side by tighten four screws.



- When miter cutting, the movable cover on the left side (outfeed side) can be removed by pull handle forward and up as indicated by the arrow direction to remove it from being cut.





- There are four slots on the cover base after removing the mobile cover for this way miter cutting.
- Install the mobile cover to the four slots and push it to the right side to secure it.
- They are two mobile coolant trays can be moved and used in miter cutting on front and rear side to prevent coolant spray on to the floor.



Mobile Coolant Tray



ELECTRICAL

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

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

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

Power Specifications

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

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

Considerations

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



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

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

Power cord connection:

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

Rotation Check

5. Once hooked up, turn on the power supply and start and then stop the coolant pump watching that the shaft rotates as indicated.
6. If not, cut the power to the machine. Swap the position of any two of the three power wires; but DO NOT change the position of the green grounding wire!





BEFORE EACH USE

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

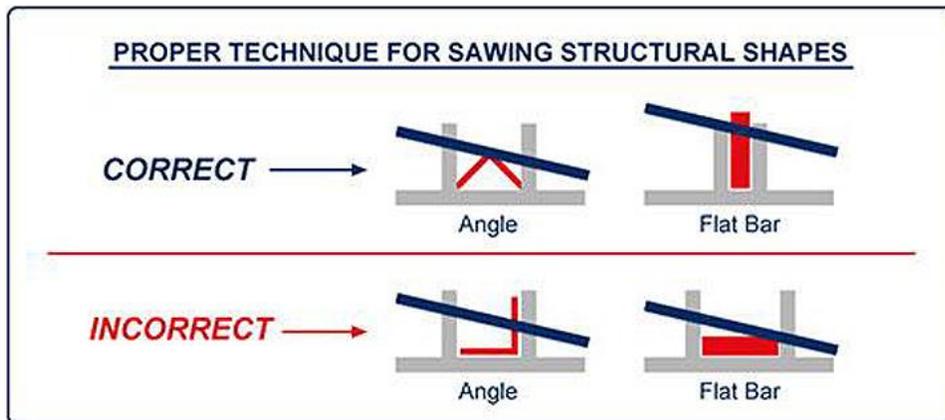
Whenever Saw is Running

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



Breaking in a Band Saw Blade

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



Metal Chip Indicators

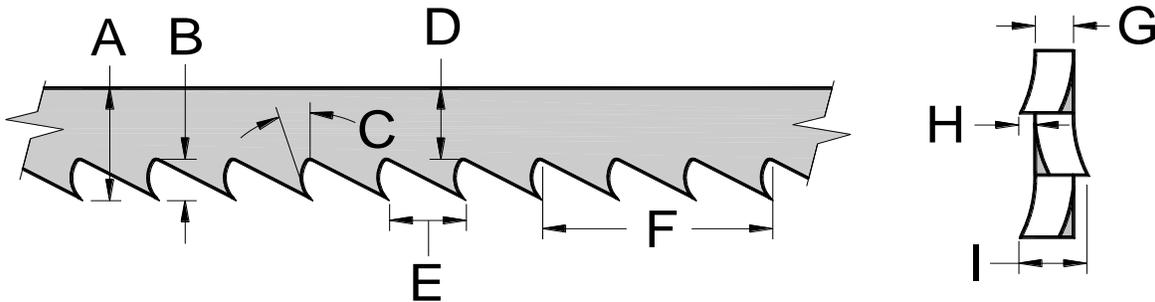
Chips are the best indicator of correct material feed force. Monitor chip information and adjust feed accordingly.

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

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



Blade Terminology



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

Width of Blade

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

Length of Blade

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

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

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

B = the band saw pulley diameter.



Blade structure

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

Blade type

They differ essentially in their constructive characteristics, such as:

- Shape and cutting angle of tooth
- Pitch
- Set

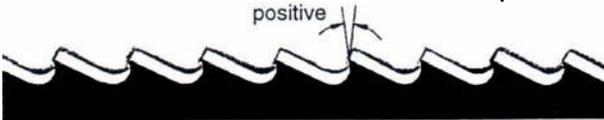
Shape and angle of tooth

REGULAR TOOTH: 0° rake and constant pitch.



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

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



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

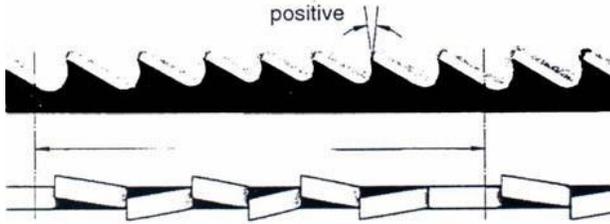
COMBO TOOTH: pitch varies between teeth and consequently varying teeth size and varying gullet depths. Pitch varies between teeth, which ensures a smoother, quieter cut and longer blade life owing to the lack of vibration.



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



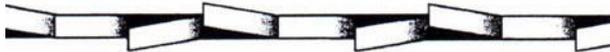
COMBO TOOTH: 9° - 10° positive rake.



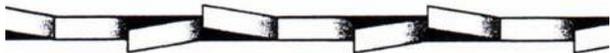
This type of blade is the most suitable for the cutting of section bars and large and thick pipes as well as for the cutting of solid bars at maximum machine capacity. Available pitches: 3-4/4-6.

SETS

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



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



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

WAVY SET: Set in smooth waves.



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

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



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

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



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



BLADE CARE

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

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

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

CHOOSING A SAW BLADE

A general purpose blade is furnished with this band saw.

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

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

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



Blade Selection Reference Table

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

HSS - HIGH SPEED STEEL
HCS = HIGH CARBON STEEL

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



Note:

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



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

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



BLADE BREAKAGE

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

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

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

Selecting Proper Blade Speed

Use the following chart for reference

| CUTTING SPEEDS FOR VARIOUS MATERIALS | | |
|---|----------------------|------------------|
| MATERIALS | BLADE SPEED (FPM) | COOLANT REQUIRED |
| Free Cutting Steel 1100 & 1200 Series Low & Medium Carbon 1008- 1045 | 256 | YES |
| 1046 – 1095 Alloy Steels | 137, 198 | YES |
| Tool Steels | 137,198 | |
| Pipe & Structures | 92, 137 | |
| Nickel Base Alloys | 137, 198 | |
| Cooper Base Alloys | 92, 137 | |
| Stainless Steels 430F, 416, 420F, 303 | 137, 198 137, 198 | YES |
| Cast Iron | 137, 198 | NO OIL BLADE |

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



MATERIAL SELECTION

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

When selecting materials keep these instructions in mind:

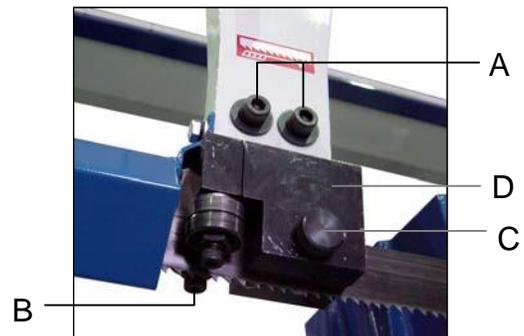
- Material must be clean and dry. (without oil)
- Material should have a smooth surface so it processes easily.
- Dimensional properties of material must be consistent and not exceed the machine capacity values.
- Chemical structure of material must be consistent.
- Buy certificated steel from the same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

MACHINE SET UP and ADJUSTMENTS

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

Thrust Roller Adjustment

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



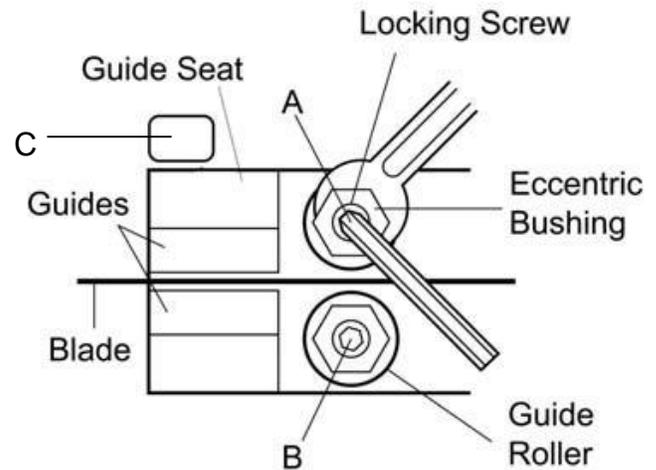


Guide Roller Adjustment



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

1. Disconnect machine from the power source.
2. Loosen blade guides by loosening guide adjustment screw (C).
3. Loosen locking screws (A) by using a hex wrench.
4. Adjust the eccentric bushings with a combination wrench until the ball bearings are snug to the blade (A). Do not pinch the blade.



Note: The blade should travel freely up and down between the ball bearings.

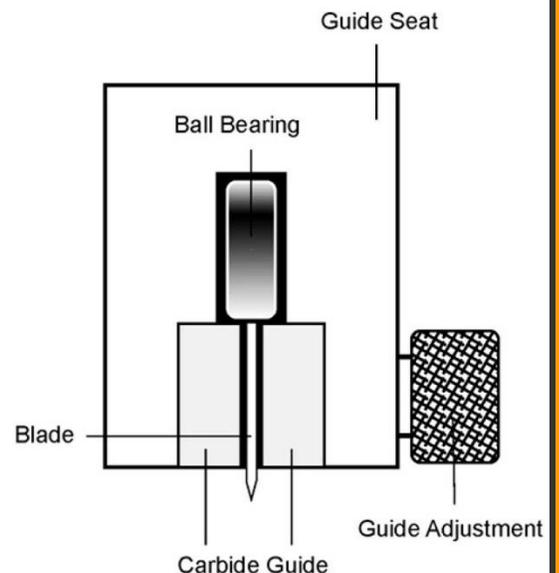
5. Tighten locking screws (A).
6. Connect machine to the power source.

Tungsten Carbide Guides Adjustment

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

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

1. For moving the blade guide posts or changing blade, the tungsten carbide guides should be released by using the guide adjusting screw.
1. In case the blade needs to be replaced, make sure to always install the correct thickness blade.
2. To adjust the carbide guides, turn the guide adjustment clockwise until it is tight, then loosen it 1/16-1/8 of a turn. This should allow the blade to be pressed down ward approximate 1/8" (3mm). This movement should be snug, but smooth.



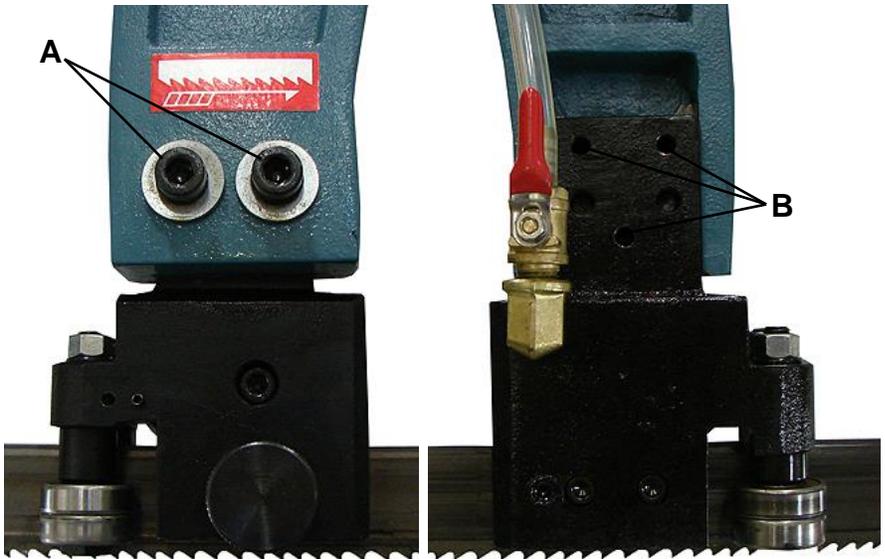


Cutting Precision Adjustment

The cutting precision has been set at the factory.

This adjustment should only be accomplished by qualified personnel that are familiar with this type of adjustment.

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





OPERATION

⚠ CAUTION: Always wear proper eye protection with side shields, safety footwear, and leather gloves to protect from burrs and sharp edges. When handling large heavy materials make sure they are properly supported. NEVER operate saw without blade guards in place.

Starting the Saw

When ready to perform a cutting operation, set up the saw to match the material to be cut.

1. Set the descent control knob to the ZERO position to prevent the bow from lowering into the material until completely ready.
2. Turn on the main disconnect on the electrical cabinet door. The power lamp will be illuminated.
1. Reset the emergency stop button to supply power to the controls.
2. Press the hydraulic pump start switch to start and run the hydraulic system.
3. Turn Mode selector switch to the left, manual operation position.
4. Press and hold the saw bow up button to raise the saw bow until the up limit switch stop travel.
5. Set the saw to the desired left or right angle. Remove the filler cover if an angle is to be cut.
6. Set the vise to a position which will clamp the material and not interfere with the saw blade and bow travel.
7. Set the guide post as close to the material as possible without interfering with the cut or the vise.
8. Set the upper limit stop plate to allow the bow to raise high enough to clear the material.
9. If desired, set the material stop to set a desired cut length.
10. Press and hold the vise open button to open the vise enough to load material.
11. Load the working material.
12. Press and hold the vise closed button until the vise closes and secures the material.
13. Verify that blade is clear of any obstructions and start the saw blade.
14. Turn Mode selector switch to the right, auto operation position.





15. Start operation by using the start button.
16. Set the blade speed as is needed for the material to be cut.
17. Start the coolant flow (C).
18. Adjust the descent control knob (G) to the rated needed for the material being cut.
19. When the cutting operation is finished the saw bow will automatically rise to the preset height ready for the next operation.

Stopping the Saw

Stopping or Emergency Stopping There are two ways to stop the machine in an event of an emergency or improper operation.

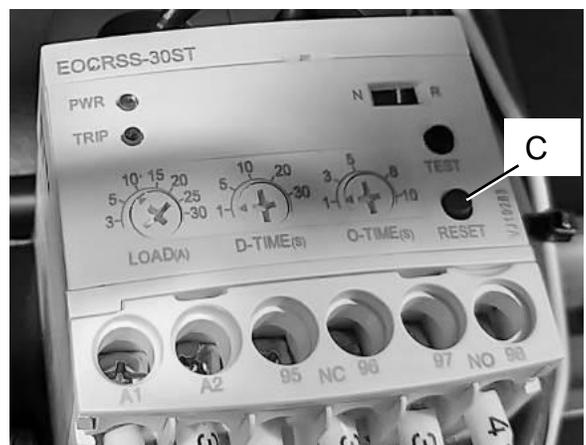
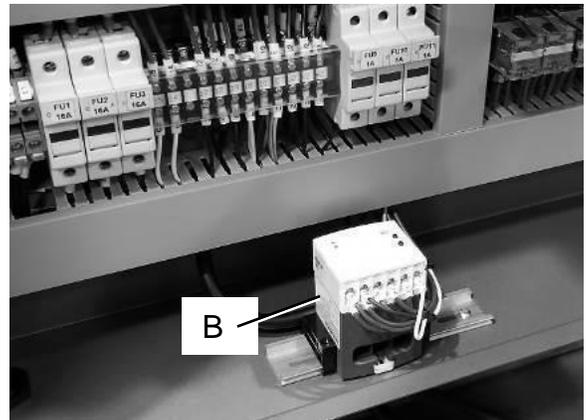
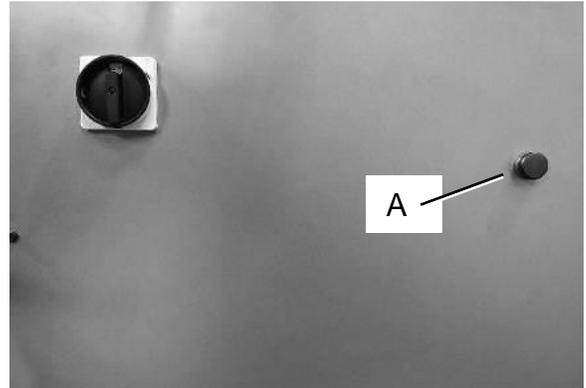
- For most situations, use the stop switch. Using the stop switch will not reset the controls and your operation setting. The blade and drive motor will stop. Then the saw bow will raise to the top position. Open the vise to check the issue. After checking, close the vise and start the cutting cycle again.
- For unsafe and emergency conditions use the emergency stop button. Using emergency stop button will stop the machine in last position. The motor and hydraulic will stop and control setting will be reset.
- To restart, the emergency stop button must be turned to release from the pressed position.



Automatic Shutoff During Machine Operation

If there are any improper operation or situation, the machine is designed to automatically shut off during the operation cycle to prevent any further damage from occurring.

- In case cutting gets tough results blade motor current rises violently, an overload relay is actuated to stop blade to prevent blade from being stuck in material. In the meantime, a red warning light (A) on electrical cabinet's door lights up.
- Overload relay (B) is installed in electrical cabinet at bottom.
- In case overload relay actuates to stop blade's running, open cabinet's door to find overload relay. Press reset button (C) of overload relay, then through regular procedures to turn machine power on and rise saw bow to safety height. Adjust cutting conditions properly and re-start working.
- Overload relay completes setup in factory before shipping. Don't change the setup.





LUBRICATION AND MAINTENANCE



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

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

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

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

Daily

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

Weekly

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

Monthly

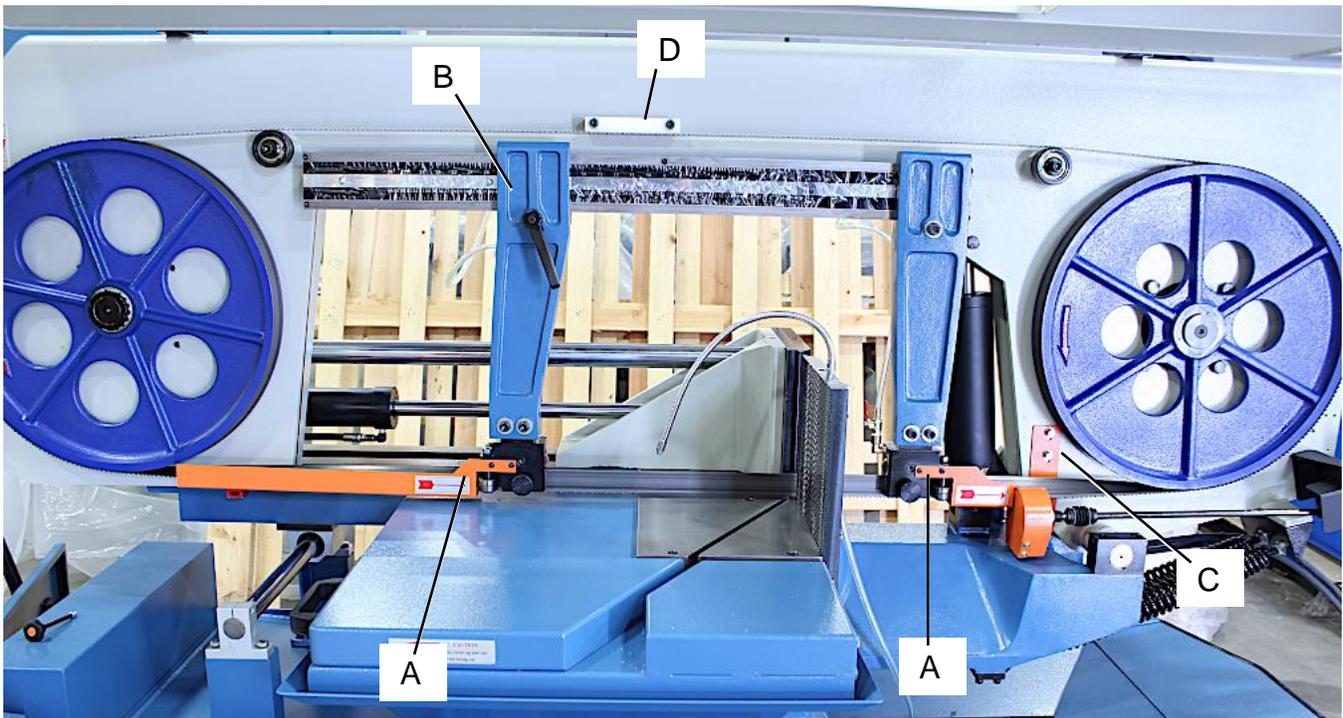
- Check the tightness of the drive wheel screws.
- Check that the blade guide bearings on the heads are in perfect running condition.
- Check the tightness of the screws for the motor, pump, and accident protection guards.



Blade Removal and Installation

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

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



1. Raise the saw bow approximately 6" in height.
2. Disconnect the machine from the power source.
3. Remove the hand bolts from each end of the saw blade cover and lift and latch the cover in the open position.
4. Remove the orange blade guards (A) from the base of the guide post and saw bow.
5. Release the tension on the carbide guides by turning the knob counter clockwise 1/4-1/2 turn.
6. Loosen moveable blade guide (B) post lock handles and slides it to the right side (toward the stationary post) as far as possible.
7. Remove the two cap screws (C) securing the chip brush to the saw bow. Allow the brush assembly to hang free while completing the blade change.



8. Release the blade tension. Turn the blade tension handle to "Loosen" position to free the blade.

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

9. Remove the old blade from both wheels and out of each blade guide.
10. Using compressed air, blow out metal chips and grit from between the bearings, blade guides, and inside of the blade guards and covers.
11. Place the new blade in the carbide guides, and then slide the blade over the wheels and under the blade guide block (D). The teeth should be pointing towards the drive side as they pass through the carbide guides. The blade teeth should protrude from 4.5mm to 5mm from the face of the blade wheels.



12. With the blade in place, turn the tension handle to the "Tighten" (center of the green range) to tension the blade.
13. Set the carbide guides. Tighten the two carbide adjustment knobs until they are tight on the blade and then loosen 1/16 – 1/8 turn.
14. Turn the blade wheels by hand a few rotations to check that the blade is tracking correctly on the blade wheels.
15. Install the blade guards and chip brush.
16. Close all covers.
17. Connect machine to power and run the blade freely for one minutes.
18. Turn the power OFF.
19. Recheck the blade tension and chip brush contact and tracking.
20. If further adjustment is necessary disconnect the saw from the power source, make adjustments, re- connect the power, and then test again.





Saw Blade Break-In

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

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

Accessing and Cleaning the Coolant System

1. Raise the bow to the maximum height and stop the machine and lock out power.
2. Clean the chips and debris from the saw and vise table.
3. Remove the drip tray.
4. Remove the chip drawer and empty the chips and clean the screens.
5. Using a suitable container, remove the drain plug and drain the coolant tank.
6. Flush and clean the tank, pump, and pump inlet and replace the drain plug.
7. Install the chip drawer.
8. Re-fill tank with coolant solution to the full level on the sight glass.
9. Install the drip tray.

Oils for Lubricating Coolant

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

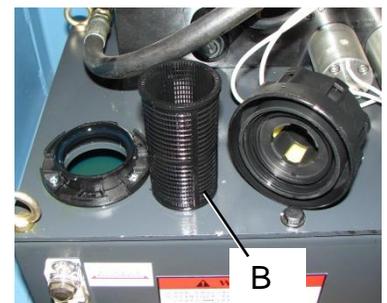
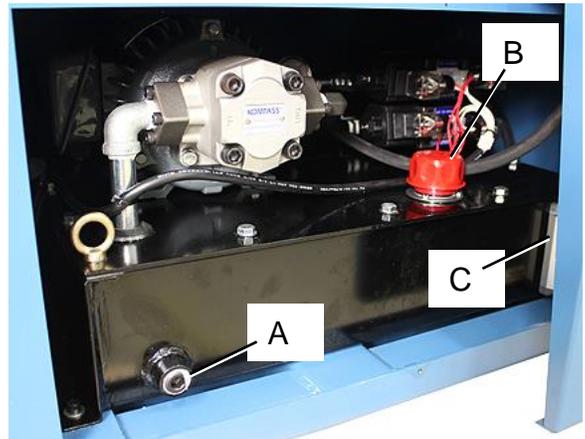


Hydraulic System

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

Change the hydraulic oil after the first 3 months of operation. Then change the oil annually or after every 3,000 hours of operation, whichever comes first.

- Keep hydraulic oil temperature between 50°F - 140° F.
 - Avoid mixing cutting fluid with the hydraulic oil.
 - Check hydraulic oil level periodically by monitoring the sight gauge on the tank.
 - Tank capacity is approximately 5.3 US gal. (20L).
1. Disconnect power to the saw.
 2. Use hydraulic oil #68 SHELL BRAND or an equivalent with similar specifications.
 3. Keep hydraulic reservoir filled to 90% of capacity.
 4. DO NOT rely totally on the oil gauge as they can sometimes indicate an incorrect level reading. Do a visual inspection with the oil fill cap removed as well.
 5. A shortage of hydraulic oil will cause hydraulic system breakdown to major mechanical components due to overheating.
 6. Change the hydraulic oil every 12 months along with the oil filter.
 7. Remove the cover panel to access the hydraulic tank.
 8. Place a suitable container under the drain plug (A) to drain the oil into. Remove plug and drain oil.
 9. If cleaning the inside of the tank, remove the bolts securing the cover to the tank and slide the cover over enough to access the inside. Replace the cover when complete.
 10. Clean filter basket (B) when filling or changing hydraulic oil.
 11. Fill to the full mark on the sight gauge (C).
 12. Operate the hydraulics to cycle each cylinder to full extension and retraction several times to purge any air from the system.
 13. Install the access cover.



Oil Disposal

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

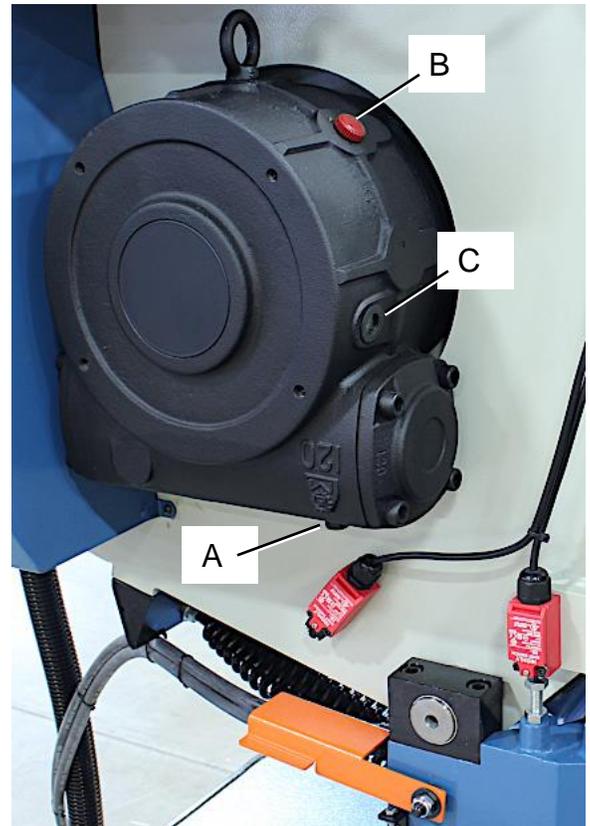


Changing Gear Oil

The gearbox requires periodic changing of oil. The oil must be changed by the first 6 months of a new machine and every year thereafter.

To change the gear box oil:

1. Lower the saw bow to as near to horizontal as the limit switch will allow.
2. Disconnect the machine from the power source.
3. Using a suitable container, remove the drain plug (A) and drain the gear oil into the container.
4. When the oil is drained, replace the drain plug (A).
5. Remove the filler/vent cap (B) and fill the gear box with oil up to center of the oil sight gauge (C). For reference use SHELL type gear oil or Mobil gear oil #90.
6. Replace the fill/vent cap (B).



Storing Machine for Extended Period of Time

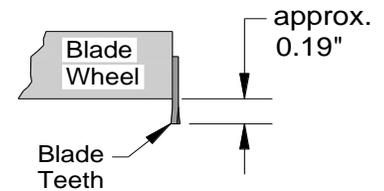
If this machine is to be inactive for a long period of time, prepare the machine as follows:

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

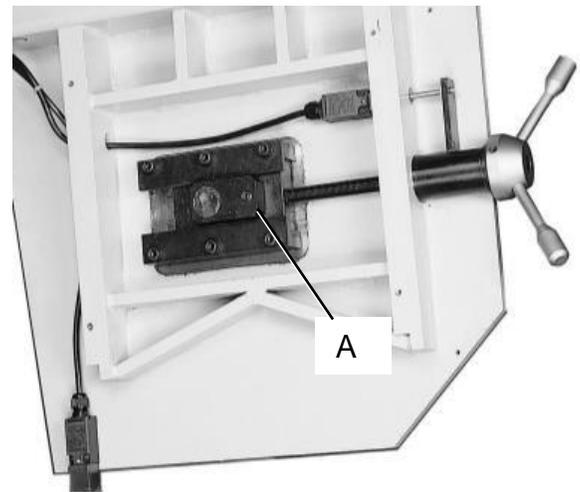


Blade Tracking Adjustment

When the blade is installed and tracking correctly, the tips of the blade teeth will be evenly positioned .17"-.19" (4.5-5mm) beyond the edge of the wheels with only light contact on the wheel flange. The blade tracking is factory set and should not require any adjustment. If a tracking problem occurs, adjust as follows:



1. Raise saw arm 4" - 6" (102 - 127mm) above the horizontal position to a usable height.
2. Disconnect the machine from the power source.
3. Remove the front side idler wheel cover.
4. Locate tracking adjustment bolt (A) on the blade tension slide block.
5. Tracking adjustment is accomplished by either raising or lowering adjusting screw (A).
6. Tracking is set properly when the tips of the blade teeth will be evenly positioned .17"-.19" (4.5-5mm) beyond the edge of the wheels with only light contact on the wheel flange.



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

7. Install and secure the front side idler wheel cover.
8. Connect machine to the power source.
9. Run the saw in pulses to observe the blade tracking. Each pulse may be slightly longer until you are confident that the blade is tracking correctly.

Hydraulic Vise Pressure

The hydraulic vise pressure can be monitored and adjusted by a pressure gauge on the base of the machine.

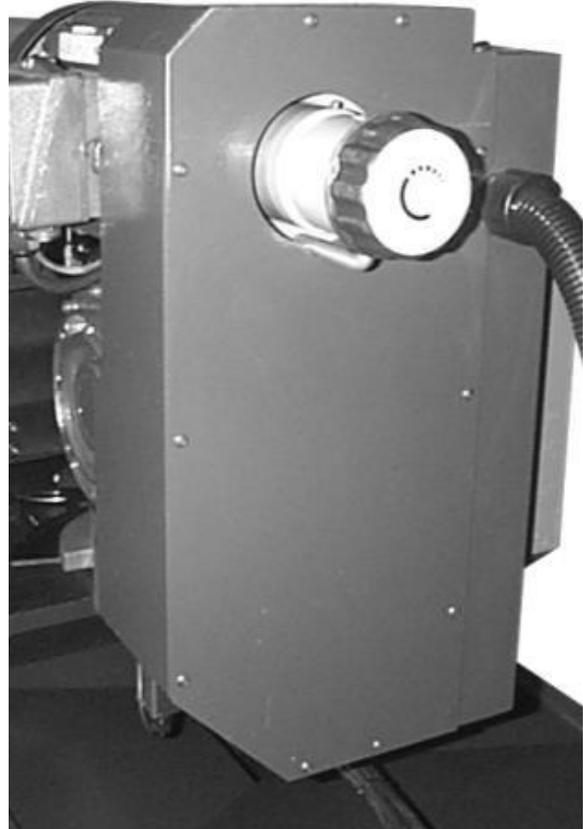
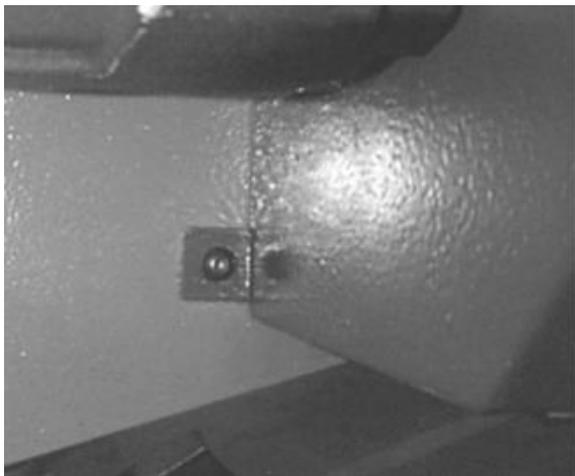
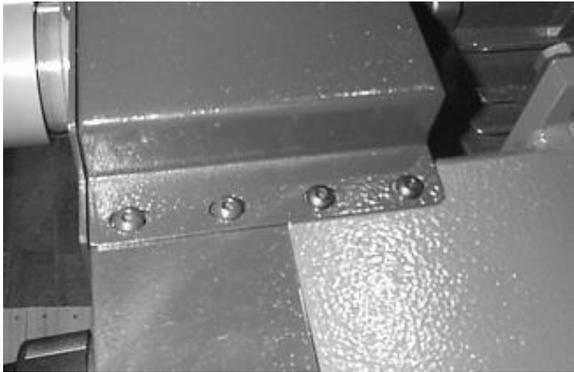
- The normal pressure is set at 35kgs/cm². This is good for most solid firm materials.
- For softer, hollow, or pipe materials reduce the pressure to approximately 25kgs/cm². Other materials may require different clamping force.
- The clamping pressure may be adjusted by a knob at the base of the pressure gauge assembly.





Changing the Transmission Belt

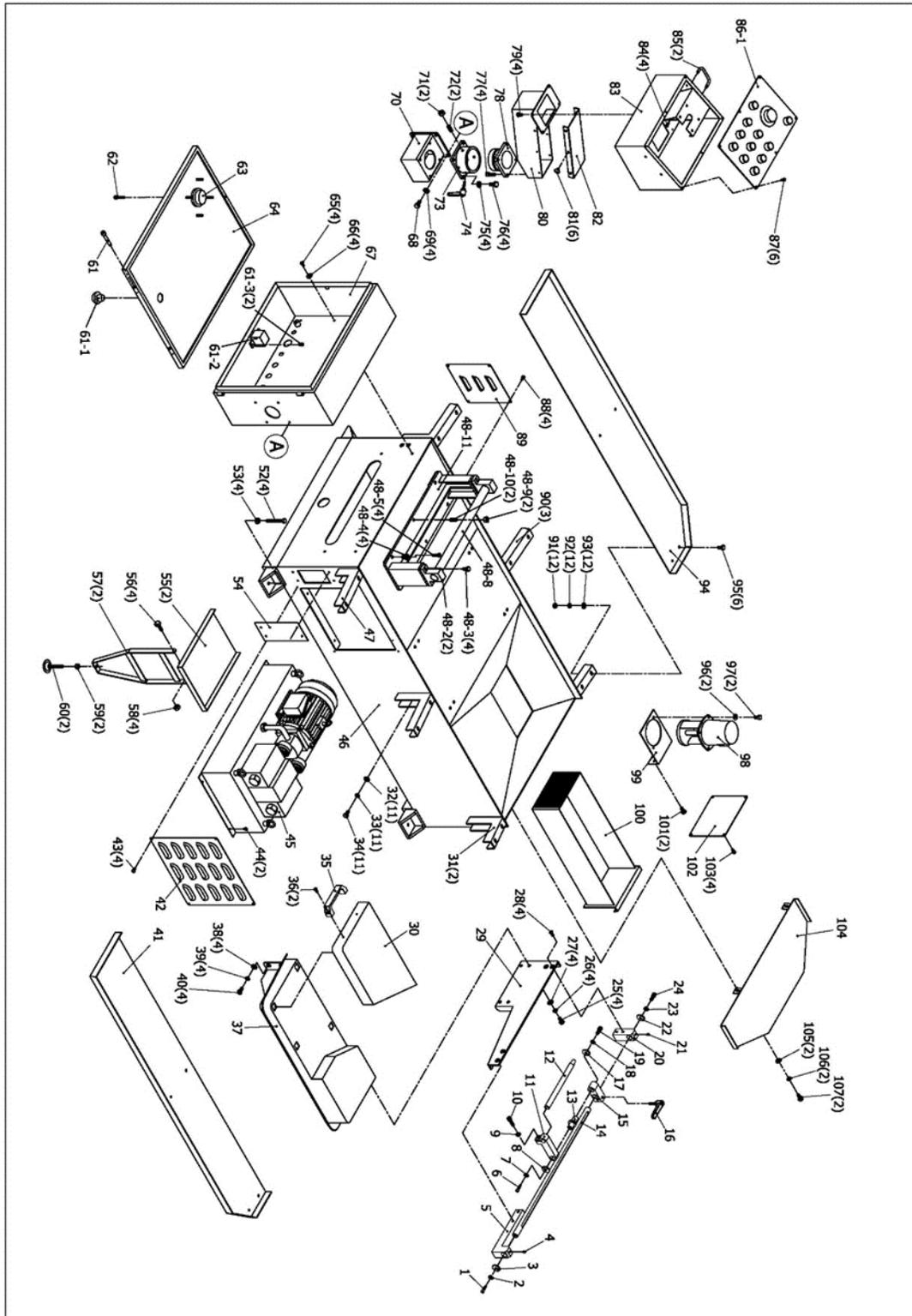
Over time and due to normal wear and tear the pulley belt will need to be changed.



1. Disconnect the machine from power supply.
2. Open the belt cover. Remove 4 screws from the top. Remove 1 screw from the front. Remove 8 screws from the cover.
3. Turn the dial counter-clockwise to open the pulley discs and loosen the belt.
4. Replace the belt.
5. Turn the dial to pretension the belt.
6. Start and run the saw with no load for 3 – 5 minutes to break in the belt.
7. Replace and secure the covers before returning the saw to service.



PARTS DIAGRAM A





SECTION A - PARTS LIST

| Index No | Part No. | Description | Size | Q'ty |
|----------|--------------|-----------------------|---------------------|------|
| 1 | TS-0209051 | Socket Head Cap Screw | 3/8"x1"L | 1 |
| 2 | TS-0720091 | Spring Washer | 3/8" | 1 |
| 3 | BS24SADM-A3 | Washer | S1380221-3 | 1 |
| 4 | TS-0270022 | Socket Set Screw | 5/16"x5/16"L | 1 |
| 5 | BS24SADM-A5 | Position Bracket (L) | S1380221-2 | 1 |
| 6 | TS-0209051 | Socket Head Cap Screw | 3/8"x1"L | 1 |
| 7 | TS-0720091 | Spring Washer | 3/8" | 1 |
| 8 | BS24SADM-A8 | Washer | S1380221-3 | 1 |
| 9 | TS-0720091 | Spring Washer | 3/8" | 1 |
| 10 | TS-0209051 | Socket Head Cap Screw | 3/8"x1"L | 1 |
| 11 | BS24SADM-A11 | Shaft Bracket | S1380110-C | 1 |
| 12 | BS24SADM-A12 | Upper Shaft | 460D2-64 | 1 |
| 13 | BS24SADM-A13 | Shaft | S1380221-2 | 1 |
| 14 | BS24SADM-A14 | Length Scale Rod | S1380221 | 1 |
| 15 | BS24SADM-A15 | Adjusting Block | S1380110-B | 1 |
| 16 | BS24SADM-A16 | Locking Handle | TRT80- 3/8"Wx30L | 1 |
| 17 | BS24SADM-A17 | Washer | S1380221-3 | 1 |
| 18 | TS-0720091 | Spring Washer | 3/8" | 1 |
| 19 | TS-0209051 | Socket Head Cap Screw | 3/8"x1"L | 1 |
| 20 | BS24SADM-A20 | Position Bracket (R) | S1380110-A | 1 |
| 21 | TS-0270022 | Socket Set Screw | 5/16"x5/16"L | 1 |
| 22 | BS24SADM-A22 | Washer | S1380221-3 | 1 |
| 23 | TS-0720091 | Spring Washer | 3/8" | 1 |
| 24 | TS-0209051 | Socket Head Cap Screw | 3/8"x1"L | 1 |
| 25 | TS-1491031 | Hex. Cap Screw | M10x25L | 4 |
| 26 | TS-2361101 | Spring Washer | M10 | 4 |
| 27 | BS24SADM-A27 | Washer | M10 | 4 |



| Index No | Part No. | Description | Size | Q'ty |
|----------|-----------------|---------------------------|-------------|------|
| 28 | TS-0246031 | Socket Head Flat Screw | 5/16"x3/4"L | 4 |
| 29 | BS24SADM-A29 | Outlet Side Plate | 460D3-40-B | 1 |
| 30 | BS24SADM-A30 | Removable Retrieval Plate | 460D3-40-A | 1 |
| 31 | BS24SADM-A31 | Fixing Bracket | 460D3-02-B | 2 |
| 32 | BS24SADM-A32 | Washer | M8 | 11 |
| 33 | TS-2361081 | Spring Washer | M8 | 11 |
| 34 | TS-2208201 | Hex. Cap Screw | M8x20L | 11 |
| 35 | BS24SADM-A35 | Handle | 9160502 | 1 |
| 36 | BS24SADM-A36 | Big Round Head Screw | M6x12L | 2 |
| 37 | BS24SADM-A37 | Retrieval Table | 460D3-40 | 1 |
| 38 | BS24SADM-A38 | Washer | M12 | 4 |
| 39 | TS-2361121 | Spring Washer | M12 | 4 |
| 40 | TS-1492011 | Hex. Cap Screw | M12x25L | 4 |
| 41 | BS24SADM-A41 | Coolant Tray | 460D3-02-A | 1 |
| 42 | BS24SADM-A42 | Cover | 460D3-05-A | 1 |
| 43 | TS-2246082 | Socket Head Button Screw | M6x8L | 4 |
| 44 | TS-1503031 | Socket Head Cap Screw | M6x12L | 2 |
| 45 | BS24SADM-A45 | Hydraulic Unit | | 1 |
| 46 | BS24SADM-A46 | Machine Base | 460D3-01 | 1 |
| 47 | BS24SADM-A47 | Supporting Bracket | 460D3-02-C | 1 |
| 48-2 | BS24SADM-A48-2 | Support Base | SH35A | 2 |
| 48-3 | TS-1491021 | Hex. Cap Screw | M10x20L | 4 |
| 48-4 | BS24SADM-A48-4 | Adjusting Screw | 460D2-66 | 4 |
| 48-5 | TS-149105 | Hex. Cap Screw | M10x35L | 4 |
| 48-8 | BS24SADM-A48-8 | Shaft | SCF-35-570 | 1 |
| 48-9 | TS-1540081 | Nut | M12 | 2 |
| 48-10 | TS-1526041 | Socket Set Screw | M12x25L | 2 |
| 48-11 | BS24SADM-A48-11 | Shaft Bracket Set | 460D3-38-F | 1 |
| 52 | TS-1494052 | Hex. Cap Screw | M16x60L | 4 |

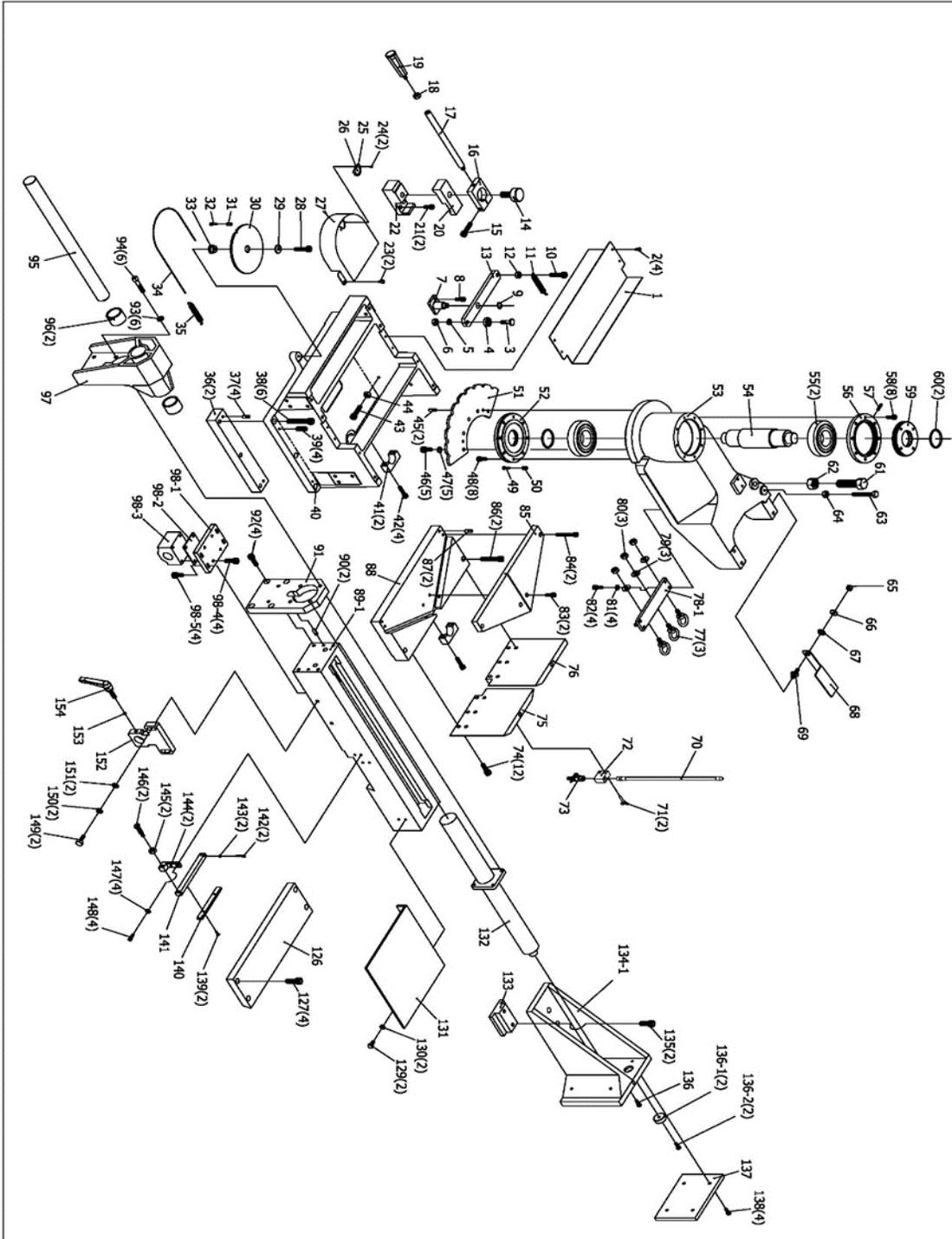


| Index No | Part No. | Description | Size | Q'ty |
|----------|----------------|----------------------------|------------|------|
| 53 | TS-2310162 | Nut | M16 | 4 |
| 54 | BS24SADM-A54 | Cover | 460D3-06 | 1 |
| 55 | BS24SADM-A55 | Movable Coolant Tray | 460D3-39 | 2 |
| 56 | TS-1482021 | Hex. Cap Screw | M6x12L | 4 |
| 57 | BS24SADM-A57 | Bracket | 460D3-39-A | 2 |
| 58 | TS-1540041 | Nut | M6 | 4 |
| 59 | TS-0640111 | Nut | 1/2" | 2 |
| 60 | BS24SADM-A60 | Adjusting Bolt | 331D4-37 | 2 |
| 61 | BS24SADM-A61 | Door Pin | | 2 |
| 61-1 | BS24SADM-A61-1 | O.L. Indicator Light | | 1 |
| 61-2 | BS24SADM-A61-2 | Blade Stuck Overload Relay | | 1 |
| 61-3 | BS24SADM-A61-3 | Socket Head Button Screw | M4x8L | 2 |
| 62 | TS-1503071 | Socket Head Cap Screw | M6x30L | 1 |
| 63 | BS24SADM-A63 | Power Switch | | 1 |
| 64 | BS24SADM-A64 | Electric Box Cover | 331D3-07 | 1 |
| 65 | TS-1502011 | Socket Head Cap Screw | M6x8L | 4 |
| 66 | BS24SADM-A66 | Spring Washer | M6 | 4 |
| 67 | BS24SADM-A67 | Electric Box (Swivel) | 331D3-06-E | 1 |
| 68 | TS-2228161 | Hex. Cap Screw | M8x16L | 4 |
| 69 | TS-2361081 | Spring Washer | M8 | 4 |
| 70 | BS24SADM-A70 | Fixing Bracket | 331D3-37 | 1 |
| 71 | TS-1540041 | Nut | M6 | 2 |
| 72 | TS-1523081 | Socket Set Screw | M6x30L | 2 |
| 73 | BS24SADM-A73 | Shaft Bushing | 331D1-18-A | 1 |
| 74 | BS24SADM-A74 | Locking Handle | M8x30L | 1 |
| 75 | TS-2361081 | Spring Washer | M8 | 4 |
| 76 | TS-2228161 | Hex. Cap Screw | M8x16L | 4 |
| 77 | TS-1482031 | Hex. Cap Screw | M6x16L | 4 |
| 78 | BS24SADM-A78 | Swiveling Shaft | 331D1-18 | 1 |



| Index No | Part No. | Description | Size | Q'ty |
|----------|----------------|--------------------------|------------|------|
| 79 | TS-2246082 | Socket Head Button Screw | M6x8L | 4 |
| 80 | BS24SADM-A80 | Swiveling Bracket | 460D3-09 | 1 |
| 81 | BS24SADM-A81 | Big Round Head Screw | M6x8L | 6 |
| 82 | BS24SADM-A82 | Cover | 460D3-09-A | 1 |
| 83 | BS24SADM-A83 | Operation Box | 331D3-08C | 1 |
| 84 | F009884 | Socket Head Button Screw | M5x8L | 4 |
| 85 | BS24SADM-A85 | Handle | A-42-C | 2 |
| 86-1 | BS24SADM-A86-1 | Control Panel | | 1 |
| 87 | F009884 | Socket Head Button Screw | M5x8L | 6 |
| 88 | TS-2246082 | Socket Head Button Screw | M6x8L | 4 |
| 89 | BS24SADM-A89 | Hydraulic Rear Cover | 460D3-05-B | 1 |
| 90 | BS24SADM-A90 | Fixing Bracket | 331D3-02-B | 3 |
| 91 | TS-2311081 | Nut | M8 | 12 |
| 92 | TS-2361081 | Spring Washer | M8 | 12 |
| 93 | BS24SADM-A93 | Washer | M8 | 12 |
| 94 | BS24SADM-A94 | Coolant Plate (L) | 460D3-02 | 1 |
| 95 | TS-2208201 | Hex. Cap Screw | M8x20L | 12 |
| 96 | TS-1482021 | Hex. Cap Screw | M6x12L | 2 |
| 97 | TS-2361061 | Spring Washer | M6 | 2 |
| 98 | BS24SADM-A98 | Coolant Pump | 1/6"x150L | 1 |
| 99 | BS24SADM-A99 | Fixing Plate | 331D3-39 | 1 |
| 100 | BS24SADM-A100 | Chip Box | 460D3-04 | 1 |
| 101 | TS-2246122 | Socket Head Button Screw | M6x12L | 2 |
| 102 | BS24SADM-A102 | Cover | 460D3-05 | 1 |
| 103 | TS-2246082 | Socket Head Button Screw | M6x8L | 4 |
| 104 | BS24SADM-A104 | Coolant Plate (Rear) | 460D3-03-A | 1 |
| 105 | BS24SADM-A105 | Washer | M8 | 2 |
| 106 | TS-2361081 | Spring Washer | M8 | 2 |
| 107 | TS-2228161 | Hex. Cap Screw | M8x16L | 2 |

PARTS DIAGRAM B





SECTION B - PARTS LIST

| Index No | Part No. | Description | Size | Q'ty |
|-----------------|-----------------|--------------------------|-------------|-------------|
| 1 | BS24SADM-B1 | Cover Plate | 460D3-26-A | 1 |
| 2 | F009884 | Socket Head Button Screw | M5x8L | 4 |
| 3 | BS24SADM-B3 | Cam Shaft | 331D2-31 | 1 |
| 4 | BB6000 | Bearing | 6000 | 1 |
| 5 | TS-2361101 | Spring Washer | M10 | 1 |
| 6 | BS24SADM-B6 | Nut | M10 | 1 |
| 7 | BS24SADM-B7 | Cam Bracket | 331D2-30 | 1 |
| 8 | TS-1504051 | Socket Head Cap Screw | M8x25L | 2 |
| 9 | BS24SADM-B9 | C Ring | S16 | 1 |
| 10 | TS-1505061 | Socket Head Cap Screw | M10x40L | 1 |
| 11 | BS24SADM-B11 | Cam Spring | 331D4-02 | 1 |
| 12 | BS24SADM-B12 | Nut | M10 | 1 |
| 13 | BS24SADM-B13 | Connecting Plate | 460D2-32 | 1 |
| 14 | BS24SADM-B14 | Locking Bolt | 331D2-27 | 1 |
| 15 | TS-1505081 | Socket Head Cap Screw | M10x50L | 1 |
| 16 | BS24SADM-B16 | Connecting Block | 331D2-28 | 1 |
| 17 | BS24SADM-B17 | Locking Rod | 460D2-29 | 1 |
| 18 | BS24SADM-B18 | Nut | M12 | 1 |
| 19 | BS24SADM-B19 | Rubber Handle | 9160501 | 1 |
| 20 | BS24SADM-B20 | Brake Plate | 331D2-26 | 1 |
| 21 | TS-1504041 | Socket Head Cap Screw | M8x20L | 2 |
| 22 | BS24SADM-B22 | Brake Bracket | 331D1-11 | 1 |
| 23 | TS-2246082 | Socket Head Button Screw | M6x8L | 2 |
| 24 | TS-1501011 | Socket Head Cap Screw | M4x6L | 2 |
| 25 | BS24SADM-B25 | Magnifier Holder | 331D3-43 | 1 |
| 26 | BS24SADM-B26 | Angle Magnifier | 331D4-09 | 1 |



| Index No | Part No. | Description | Size | Q'ty |
|----------|--------------|-----------------------|----------|------|
| 27 | BS24SADM-B27 | Cover | 331D3-25 | 1 |
| 28 | TS-1505061 | Socket Head Cap Screw | M10x40L | 1 |
| 29 | TS-2361101 | Washer | M10 | 1 |
| 30 | BS24SADM-B30 | Center Wheel | 331D2-33 | 1 |
| 31 | BS24SADM-B31 | Wire Fastener | 331D2-35 | 1 |
| 32 | BS24SADM-B32 | Hex. Cap Screw | M5x15L | 1 |
| 33 | BS24SADM-B33 | Bushing | 331D2-34 | 1 |
| 34 | BS24SADM-B34 | Steel Rope | | 1 |
| 35 | BS24SADM-B35 | Angle Spring | 331D4-03 | 1 |
| 36 | BS24SADM-B36 | Plate | 460D2-50 | 2 |
| 37 | BS24SADM-B37 | Spring Pin | 8x20L | 4 |
| 38 | BS24SADM-B38 | Socket Head Cap Screw | M12x130L | 6 |
| 39 | BS24SADM-B39 | Set Screw | M12x25L | 4 |
| 40 | BS24SADM-B40 | Table | 460D1-01 | 1 |
| 41 | BS24SADM-B41 | Fixing Block | 331D2-04 | 2 |
| 42 | TS-1505051 | Socket Head Cap Screw | M10x35L | 4 |
| 43 | TS-1505061 | Socket Head Cap Screw | M10x40L | 1 |
| 44 | BS24SADM-B44 | Nut | M10 | 1 |
| 45 | BS24SADM-B45 | Spring Pin | 8x20L | 2 |
| 46 | TS-1505021 | Socket Head Cap Screw | M10x20L | 5 |
| 47 | TS-2361101 | Spring Washer | M10 | 5 |
| 48 | TS-1504041 | Socket Head Cap Screw | M8x20L | 8 |
| 49 | BS24SADM-B49 | Hex. Cap Screw | M5x15L | 1 |
| 50 | BS24SADM-B50 | Wire Fastener | 331D2-35 | 1 |
| 51 | BS24SADM-B51 | Position Plate | 331D2-25 | 1 |
| 52 | BS24SADM-B52 | Lower Cover | 331D2-05 | 1 |
| 53 | BS24SADM-B53 | Swiveling | 460D1-06 | 1 |
| 54 | BS24SADM-B54 | Swiveling Shaft | 331D2-03 | 1 |
| 55 | BB30312 | Bearing | 30312 | 2 |



| Index No | Part No. | Description | Size | Q'ty |
|----------|----------------|--------------------------|----------------|------|
| 56 | BS24SADM-B56 | Upper Cover | 331D2-06 | 1 |
| 57 | BS24SADM-B57 | Set Screw | M6x25L | 1 |
| 58 | TS-1504041 | Socket Head Cap Screw | M8x20L | 8 |
| 59 | BS24SADM-B59 | Tighten Plate | 331D2-06-A | 1 |
| 60 | BS24SADM-B60 | Oil Ring | P60 | 2 |
| 61 | BS24SADM-B61 | Hex. Cap Screw | M20x65L | 1 |
| 62 | BS24SADM-B62 | Nut | M20 | 1 |
| 63 | TS-1491101 | Hex. Cap Screw | M10x60L | 1 |
| 64 | BS24SADM-B64 | Nut | M10 | 1 |
| 65 | BS24SADM-B65 | Nylon Nut | M10 | 1 |
| 66 | BS24SADM-B66 | Washer | S138F2-26-A | 1 |
| 67 | BS24SADM-B67 | Washer | S138F2-26-B | 1 |
| 68 | BS24SADM-B68 | Position Adjusting Plate | S138F3-29 | 1 |
| 69 | BS24SADM-B69 | Position Bolt | S20A2-01 | 1 |
| 70 | BS24SADM-B70 | Hose | SP103 1/4"x18" | 1 |
| 71 | BS24SADM-B71 | Wing Screw | M6x30L | 2 |
| 72 | BS24SADM-B72 | Hose Seat | H46A2-39 | 1 |
| 73 | BS24SADM-B73 | Coolant Switch | 1/4x1/4 | 1 |
| 74 | TS-1505041 | Socket Head Cap Screw | M10x30L | 12 |
| 75 | BS24SADM-B75 | Attached Plate (R) | 460D2-24 | 1 |
| 76 | BS24SADM-B76 | Attached Plate (L) | 460D2-23 | 1 |
| 77 | BS24SADM-B77 | Screw Holder | 1/2"x50L | 3 |
| 78-1 | BS24SADM-B78-1 | Lower Bracket | 461F3-64 | 1 |
| 79 | TS-0680061 | Washer | 1/2" | 3 |
| 80 | BS24SADM-B80 | Nut | 1/2" | 3 |
| 81 | TS-2361081 | Spring Washer | M8 | 4 |
| 82 | TS-1504051 | Socket Head Cap Screw | M8x25L | 4 |
| 83 | TS-1504041 | Socket Head Cap Screw | M8x20L | 2 |
| 84 | BS24SADM-B84 | Socket Head Cap Screw | M10x55L | 2 |



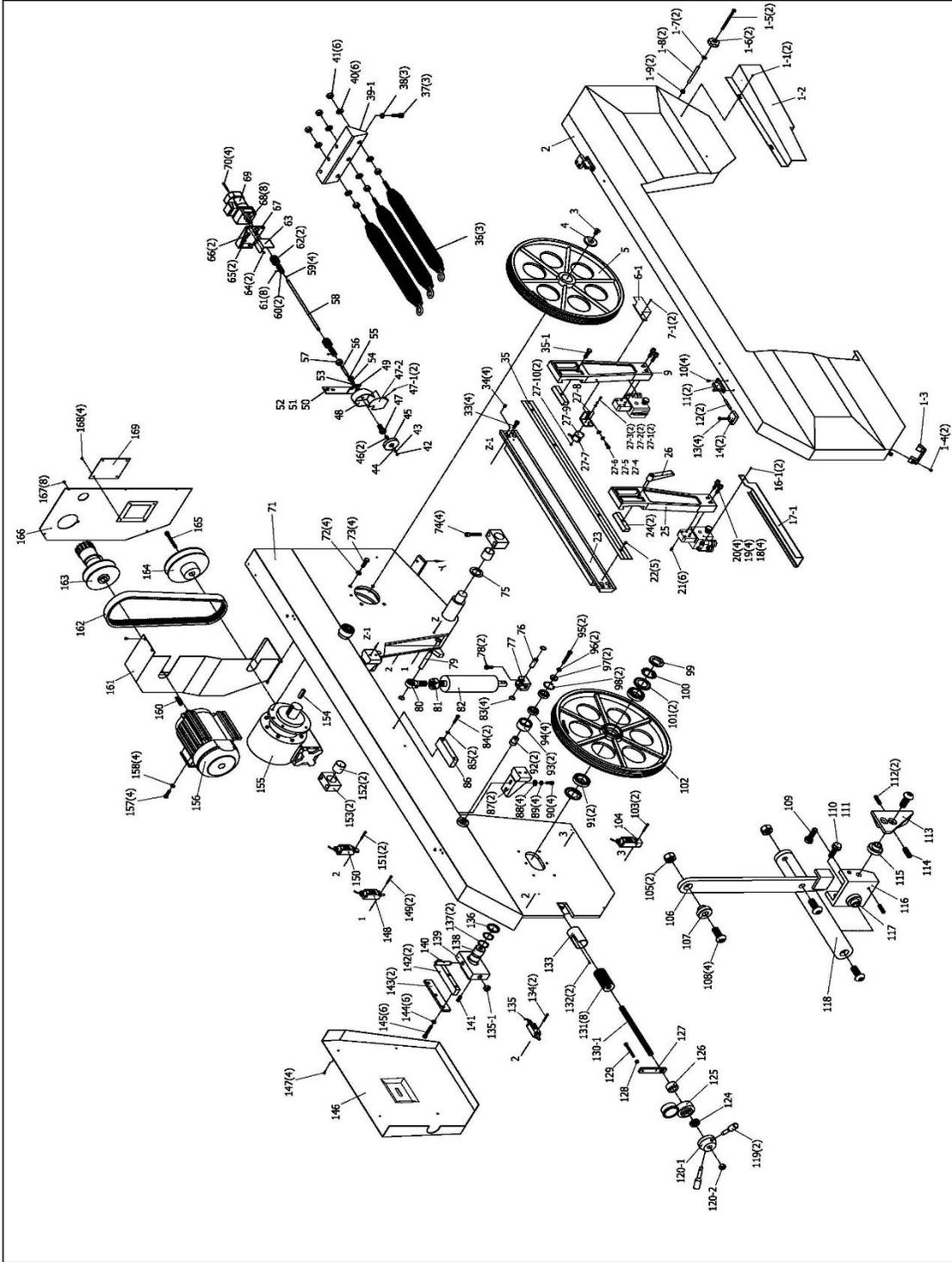
| Index No | Part No. | Description | Size | Q'ty |
|----------|-----------------|-----------------------|------------|------|
| 85 | BS24SADM-B85 | Angle Cutting Table | 460D1-03 | 1 |
| 86 | TS-1505101 | Socket Head Cap Screw | M10x60L | 2 |
| 87 | BS24SADM-B87 | Spring Pin | 8x20L | 2 |
| 88 | BS24SADM-B88 | Cutting Platform | 460D1-02 | 1 |
| 89-1 | BS24SADM-B89-1 | Vise Table | 460D1-04-B | 1 |
| 90 | BS24SADM-B90 | Spring Pin | 8x20L | 2 |
| 91 | BS24SADM-B91 | Position Plate | 460D2-65 | 1 |
| 92 | TS-1506041 | Socket Head Cap Screw | M12x35L | 4 |
| 93 | TS-2361101 | Spring Washer | M10 | 6 |
| 94 | TS-1505061 | Socket Head Cap Screw | M10x40L | 6 |
| 95 | BS24SADM-B95 | Upper Shaft | 460D2-56 | 1 |
| 96 | BS24SADM-B96 | Oilless Bearing | 45x55x40 | 2 |
| 97 | BS24SADM-B97 | Central Bracket | 460D1-21 | 1 |
| 98-1 | BS24SADM-B98-1 | Slider Block | 460D3-38-B | 1 |
| 98-2 | BS24SADM-B98-2 | Pad | 460D3-38-A | 1 |
| 98-3 | BS24SADM-B98-3 | Slider Seat | SMA35UU | 1 |
| 98-4 | TS-1504061 | Socket Head Cap Screw | M8x30L | 4 |
| 98-5 | TS-1504041 | Socket Head Cap Screw | M8x20L | 4 |
| 126 | BS24SADM-B126 | Guide Plate | 460D2-17 | 1 |
| 127 | TS-1506041 | Socket Head Cap Screw | M12x35L | 4 |
| 129 | TS-2208201 | Hex. Cap Screw | M8x20L | 2 |
| 130 | TS-2361081 | Spring Washer | M8 | 2 |
| 131 | BS24SADM-B131 | Table Plate | 460D3-26 | 1 |
| 132 | BS24SADM-B132 | Front Vise Cylinder | | 1 |
| 133 | BS24SADM-B133 | Position Block | 331D2-18-A | 1 |
| 134-1 | BS24SADM-B134-1 | Front Vise | 460D1-05-A | 1 |
| 135 | TS-1506031 | Socket Head Cap Screw | M12x30L | 2 |
| 136 | TS-1504041 | Socket Head Cap Screw | M8x20L | 1 |
| 136-1 | BS24SADM-B136-1 | Vise Cylinder Block | 460D2-88 | 2 |



| Index No | Part No. | Description | Size | Q'ty |
|----------|---------------|------------------------|---------------|------|
| 136-2 | TS-1504041 | Socket Head Cap Screw | M8x20L | 2 |
| 137 | BS24SADM-B137 | Attached Plate | 460D2-22 | 1 |
| 138 | TS-1504041 | Socket Head Cap Screw | M8x20L | 4 |
| 139 | TS-1513021 | Socket Head Flat Screw | M5x12L | 2 |
| 140 | BS24SADM-B140 | Copper Sheet | H46D2-19 | 1 |
| 141 | BS24SADM-B141 | Position Block | 460D2-86 | 1 |
| 142 | TS-1502051 | Socket Head Cap Screw | M5x20L | 2 |
| 143 | BS24SADM-B143 | Nut | M5 | 2 |
| 144 | BS24SADM-B144 | Fixing Frame | H46D2-19A | 2 |
| 145 | BS24SADM-B145 | Nut | M12 | 2 |
| 146 | BS24SADM-B146 | Adjusting Screw | H46D2-19-B | 2 |
| 147 | TS-2361081 | Spring Washer | M8 | 4 |
| 148 | TS-1504041 | Socket Head Cap Screw | M8x20L | 4 |
| 149 | BS24SADM-B149 | Steel Hex. Cap Bolt | M12 | 2 |
| 150 | TS-2361121 | Spring Washer | M12 | 2 |
| 151 | TS-2360121 | Washer | M12 | 2 |
| 152 | BS24SADM-B152 | Position Block | 460D2-87 | 1 |
| 153 | BS24SADM-B153 | Brass | H46D2-25 | 1 |
| 154 | BS24SADM-B154 | Handle | TRT80 M12x50L | 1 |



PARTS DIAGRAM C





SECTION C - PARTS LIST

| Index No | Part No | Description | Size | Q'ty |
|----------|----------------|--------------------------|------------|------|
| 1-1 | F009884 | Socket Head Button Screw | M5x8L | 2 |
| 1-2 | BS24SADM-C1-2 | Cover | 460D3-36 | 1 |
| 1-3 | BS24SADM-C1-3 | Handle | 9160502 | 1 |
| 1-4 | BS24SADM-C1-4 | Big Round Head Screw | M6x12L | 2 |
| 1-5 | BS24SADM-C1-5 | Hex. Cap Screw | M6x100L | 2 |
| 1-6 | BS24SADM-C1-6 | Nylon Knob | SK34 | 2 |
| 1-7 | TS-1550041 | Washer | M6 | 2 |
| 1-8 | BS24SADM-C1-8 | Pipe | | 2 |
| 1-9 | BS24SADM-C1-9 | Nut | M6 | 2 |
| 2 | BS24SADM-C2 | Wheel Cover | 460D3-10-C | 1 |
| 3 | TS-1517011 | Socket Head Flat Screw | M12x25L | 1 |
| 4 | BS24SADM-C4 | Driver Wheel Washer | 331D2-49 | 1 |
| 5 | BS24SADM-C5 | Driver Wheel | 460D1-13 | 1 |
| 6-1 | BS24SADM-C6-1 | Blade Guard | 460D3-13-B | 1 |
| 7-1 | F009884 | Socket Head Button Screw | M5x8L | 2 |
| 9 | BS24SADM-C9 | Guide Post (R) | 460D1-07-A | 1 |
| 10 | TS-2246162 | Socket Head Button Screw | M6x16L | 4 |
| 11 | BS24SADM-C11 | Cover Latch | 460D2-45 | 2 |
| 12 | BS24SADM-C12 | Pin | 8x70L | 2 |
| 13 | TS-2248302 | Socket Head Button Screw | M8x30 | 4 |
| 14 | BS24SADM-C14 | Latch Block | 460D2-44 | 2 |
| 16-1 | F009884 | Socket Head Button Screw | M5x8L | 2 |
| 17-1 | BS24SADM-C17-1 | Blade Guard | 460D3-12-B | 1 |
| 18 | TS-1505051 | Socket Head Cap Screw | M10x35L | 4 |
| 19 | TS-1550071 | Washer | M10 | 4 |
| 20 | TS-2361101 | Spring Washer | M10 | 4 |
| 21 | TS-1524041 | Socket Set Screw | M8x16L | 6 |



| Index No | Part No | Description | Size | Q'ty |
|----------|-----------------|-----------------------|------------|------|
| 22 | BS24SADM-C22 | Round Head Screw | M5x8L | 5 |
| 23 | BS24SADM-C23 | Guide Plate | 460D1-08 | 1 |
| 24 | BS24SADM-C24 | Locking Block | 460D2-46 | 2 |
| 25 | BS24SADM-C25 | Guide Post (L) | 460D1-07 | 1 |
| 26 | BS24SADM-C26 | Locking Handle | M12x50L | 1 |
| 27-1 | BS24SADM-C27-1 | Half Round Head Screw | M3x12L | 2 |
| 27-2 | TS-2361031 | Spring Washer | M3 | 2 |
| 27-3 | TS-1550011 | Washer | M3 | 2 |
| 27-4 | TS-1502031 | Socket Head Cap Screw | M5x12L | 1 |
| 27-5 | TS-2361051 | Spring Washer | M5 | 1 |
| 27-6 | TS-1550031 | Washer | M5 | 1 |
| 27-7 | BS24SADM-C27-7 | Laser Device | 3300419-1 | 1 |
| 27-8 | BS24SADM-C27-8 | Laser Plate | 460D2-61-A | 1 |
| 27-9 | BS24SADM-C27-9 | Laser Bracket | 3300419-2 | 1 |
| 27-10 | BS24SADM-C27-10 | Nut | M3 | 2 |
| 33 | TS-1505021 | Socket Head Cap Screw | M10x20L | 4 |
| 34 | TS-1525031 | Socket Set Screw | M10x16L | 4 |
| 35 | BS24SADM-C35 | Metal Scale | | 1 |
| 35-1 | BS24SADM-C35-1 | Hex. Cap Steel Screw | M12x50L | 1 |
| 36 | BS24SADM-C36 | Spring | 9.0x56x54N | 3 |
| 37 | TS-2249252 | Socket Head Cap Screw | M10x25L | 3 |
| 38 | TS-2361101 | Spring Washer | M10 | 3 |
| 39-1 | BS24SADM-C39-1 | Upper Bracket | 461F3-65 | 1 |
| 40 | TS-0680061 | Washer | 1/2" | 6 |
| 41 | BS24SADM-C41 | Nut | 1/2" | 6 |
| 42 | BS24SADM-C42 | Nut | M6 | 1 |
| 43 | TS-2361061 | Spring Washer | M6 | 1 |
| 44 | TS-1550041 | Washer | M6 | 1 |
| 45 | BS24SADM-C45 | Brush | 331D4-08 | 1 |



| Index No | Part No | Description | Size | Q'ty |
|----------|----------------|--------------------------|------------|------|
| 46 | BS24SADM-C46 | Oilless Bush | 1212 | 2 |
| 47 | BS24SADM-C47 | Shaft Bushing | 460D2-59 | 1 |
| 47-1 | F009884 | Socket Head Button Screw | M5x8L | 2 |
| 47-2 | BS24SADM-C47-2 | Cover | 460D3-31-D | 1 |
| 48 | BS24SADM-C48 | Brush Cover | 460D3-31 | 1 |
| 49 | BS24SADM-C49 | Fixing Bracket | 460D3-31-A | 1 |
| 50 | TS-2208201 | Hex. Cap Screw | M8x20L | 2 |
| 51 | TS-2361081 | Spring Washer | M8 | 2 |
| 52 | TS-1550061 | Washer | M8 | 2 |
| 53 | TS-2361061 | Spring Washer | M6 | 1 |
| 54 | BS24SADM-C54 | Wing Screw | M6x10L | 1 |
| 55 | TS-2246202 | Socket Head Cap Screw | M6x20L | 1 |
| 56 | BS24SADM-C56 | Brush Shaft | 460D2-59-1 | 1 |
| 57 | BS24SADM-C57 | Nut | M20 | 1 |
| 58 | BS24SADM-C58 | Transformer Shaft | 460D2-59-2 | 1 |
| 59 | BS24SADM-C59 | Key | 4x15L | 4 |
| 60 | BS24SADM-C60 | Universal Joint | L25A4-02 | 2 |
| 61 | TS-1522011 | Socket Set Screw | M5x6L | 8 |
| 62 | BS24SADM-C62 | Universal Joint Cover | L25A4-02-1 | 2 |
| 63 | BS24SADM-C63 | Universal Joint Plate | 460D3-31-C | 1 |
| 64 | F009884 | Socket Head Button Screw | M5x8L | 2 |
| 65 | BS24SADM-C65 | Chip Motor Bracket | 460D3-31-B | 1 |
| 66 | TS-2361081 | Spring Washer | M8 | 1 |
| 67 | TS-2248202 | Socket Head Cap Screw | M8x20L | 1 |
| 68 | BS24SADM-C68 | Nut | M6 | 8 |
| 69 | BS24SADM-C69 | Chip Motor | | 1 |
| 70 | BS24SADM-C70 | Socket Head Cap Screw | M6x90L | 4 |
| 71 | BS24SADM-C71 | Saw Bow | 460D3-10-A | 1 |
| 72 | TS-2361121 | Spring Washer | M12 | 4 |



| Index No | Part No | Description | Size | Q'ty |
|----------|---------------|-----------------------|------------|------|
| 73 | BS24SADM-C73 | Hex. Cap Steel Screw | M12x45L | 4 |
| 74 | BS24SADM-C74 | Socket Head Cap Screw | M12x70L | 4 |
| 75 | BS24SADM-C75 | Shaft Washer | 331D2-01-A | 1 |
| 76 | BS24SADM-C76 | Lower Shaft | 460D2-37 | 1 |
| 77 | BS24SADM-C77 | Lower Bracket | 460D1-18 | 1 |
| 78 | TS-2248202 | Socket Head Cap Screw | M8x20L | 2 |
| 79 | BS24SADM-C79 | Upper Shaft | 460D2-38 | 1 |
| 80 | BS24SADM-C80 | Eye Bearing | POS16 | 1 |
| 81 | BS24SADM-C81 | Nut | M20xP1.5 | 1 |
| 82 | BS24SADM-C82 | Lift Cylinder | | 1 |
| 83 | BS24SADM-C83 | Ring | S20 | 4 |
| 84 | TS-2248402 | Socket Head Cap Screw | M8x40L | 2 |
| 85 | TS-2361081 | Spring Washer | M8 | 2 |
| 86 | BS24SADM-C86 | Press Block | 460D2-55 | 1 |
| 87 | BS24SADM-C87 | Support Plate | 460D1-08-A | 2 |
| 88 | TS-1550071 | Washer | M10 | 4 |
| 89 | TS-2361101 | Spring Washer | M10 | 4 |
| 90 | TS-2249302 | Socket Head Cap Screw | M10x30L | 4 |
| 91 | BB32009 | Bearing | 32009 | 2 |
| 92 | BS24SADM-C92 | Guide Roller Shaft | 460D2-11 | 2 |
| 93 | BS24SADM-C93 | Guide Roller | 460D2-10 | 2 |
| 94 | BB6005 | Bearing | 6005 | 4 |
| 95 | BS24SADM-C95 | Socket Head Cap Screw | M12x60L | 2 |
| 96 | TS-2361121 | Spring Washer | M12 | 2 |
| 97 | BS24SADM-C97 | Washer | 460D2-11-A | 2 |
| 98 | BS24SADM-C98 | Ring | R47 | 2 |
| 99 | BS24SADM-C99 | Nut | AN09 | 1 |
| 100 | BS24SADM-C100 | Teeth Washer | AW09 | 1 |
| 101 | BS24SADM-C101 | Shaft Cover 32009AV | 460D4-08 | 2 |



| Index No | Part No | Description | Size | Q'ty |
|----------|-----------------|--------------------------|------------|------|
| 102 | BS24SADM-C102 | Idle Wheel | 460D1-12 | 1 |
| 103 | TS-1501091 | Socket Head Cap Screw | M4x35L | 2 |
| 104 | BS24SADM-C104 | Limit Switch | AZD-S11 | 1 |
| 105 | BS24SADM-C105 | Nut | M8 | 2 |
| 106 | BS24SADM-C106 | Short Bracket | 460D3-27-A | 1 |
| 107 | BS24SADM-C107 | Spacer | 460D3-27-C | 1 |
| 108 | TS-2248252 | Socket Head Button Screw | M8x25L | 4 |
| 109 | TS-2208201 | Hex. Cap Screw | M8x20L | 1 |
| 110 | TS-2208201 | Hex. Cap Screw | M8x20L | 1 |
| 111 | TS-2361081 | Spring Washer | M8 | 1 |
| 112 | TS-1521051 | Socket Set Screw | M4x12L | 2 |
| 113 | BS24SADM-C113 | Safe Locker | 460D3-27-4 | 1 |
| 114 | BS24SADM-C114 | Spring | | 1 |
| 115 | BS24SADM-C115 | Spacer | 460D3-27-6 | 1 |
| 116 | BS24SADM-C116 | Holding Bracket | 460D3-27-2 | 1 |
| 117 | BS24SADM-C117 | Bracket Bush | 460D3-27-5 | 1 |
| 118 | BS24SADM-C118 | Long Bracket | 460D3-27 | 1 |
| 119 | BS24SADM-C119 | Handle | 3500217 | 2 |
| 120-1 | BS24SADM-C120-1 | Handwheel | 3500216 | 1 |
| 120-2 | BS24SADM-C120-2 | Nylon Nut | M20 | 1 |
| 124 | BB51105 | Bearing | 51105 | 1 |
| 125 | BS24SADM-C125 | Blade Tension Gauge | 460D4-12 | 1 |
| 126 | BS24SADM-C126 | Screw Bushing | 460D2-16-B | 1 |
| 127 | BS24SADM-C127 | Plate | 460D2-48 | 1 |
| 128 | BS24SADM-C128 | Nut | M8 | 1 |
| 129 | TS-1490111 | Hex. Cap Screw | M8x60L | 1 |
| 130-1 | BS24SADM-C130-1 | Lead Screw | M20x425L | 1 |
| 131 | BS24SADM-C131 | Disc Spring | 502225 | 8 |
| 132 | BS24SADM-C132 | Spring Pin | 5x12L | 2 |



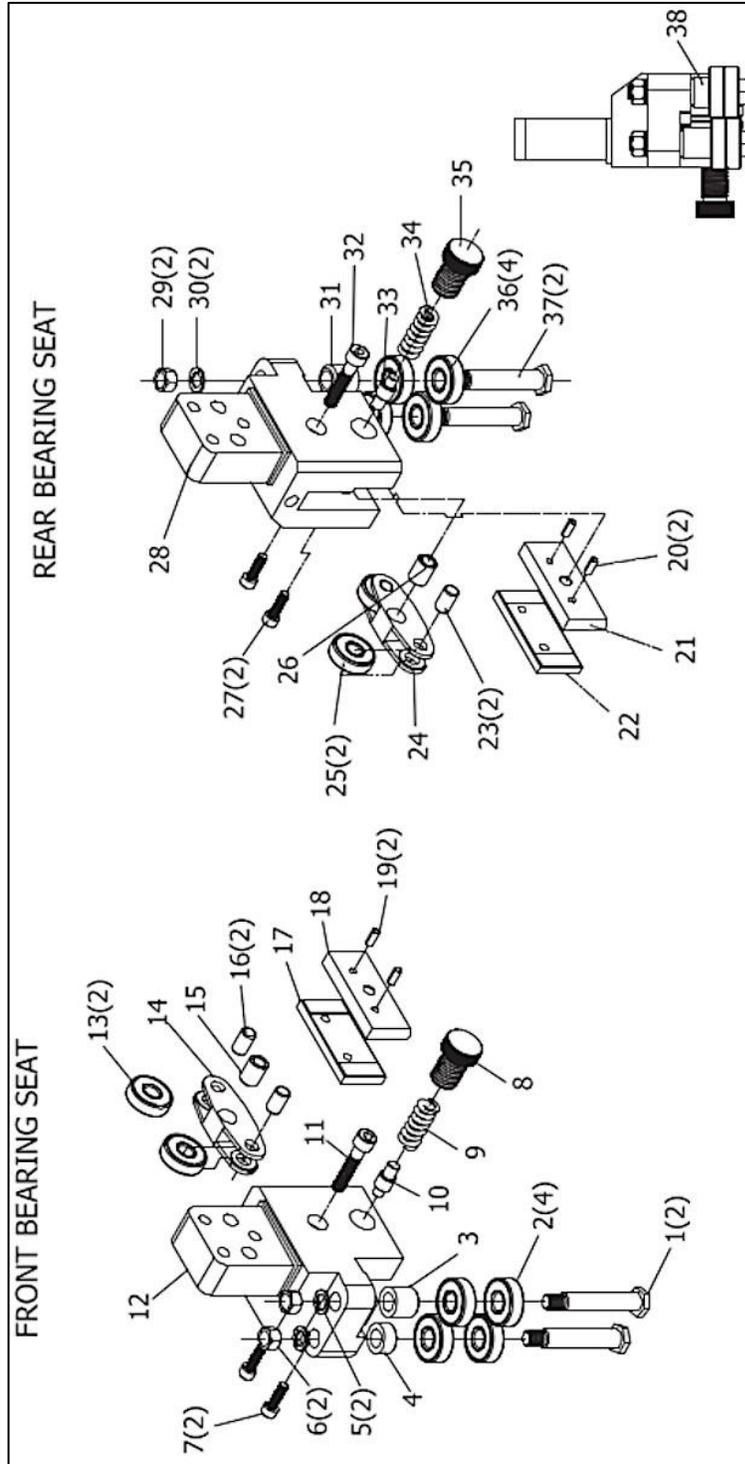
| Index No | Part No | Description | Size | Q'ty |
|----------|-----------------|---------------------------------|------------|------|
| 133 | BS24SADM-C133 | Spring Bush | 460D2-47 | 1 |
| 134 | TS-1501091 | Socket Head Cap Screw | M4x35L | 2 |
| 135 | BS24SADM-C135 | Limit Switch | AZD-1001T | 1 |
| 135-1 | BS24SADM-C135-1 | Nut | M20 | 1 |
| 136 | BS24SADM-C136 | Idle Wheel Washer | 460D2-12-C | 1 |
| 137 | BS24SADM-C137 | Ring | S45 | 2 |
| 138 | BS24SADM-C138 | Idle Wheel Shaft Set (type 120) | 460D2-12 | 1 |
| 139 | BS24SADM-C139 | Slide (type 120) | 460D2-13 | 1 |
| 140 | BS24SADM-C140 | Pin | 16x90L | 1 |
| 141 | TS-1526041 | Socket Set Screw | M12x25L | 1 |
| 142 | BS24SADM-C142 | Slide Guide | 460D2-14 | 2 |
| 143 | BS24SADM-C143 | Slide Plate | 331D2-15 | 2 |
| 144 | TS-2361101 | Spring Washer | M10 | 6 |
| 145 | BS24SADM-C145 | Socket Head Cap Screw | M10x60L | 6 |
| 146 | BS24SADM-C146 | Idle Wheel Cover (Type 120) | 460D3-11-A | 1 |
| 147 | TS-2246082 | Socket Head Button Screw | M6x8L | 4 |
| 148 | BS24SADM-C148 | Limit Switch | AZD-1001T | 1 |
| 149 | TS-1501091 | Socket Head Cap Screw | M4x35L | 2 |
| 150 | BS24SADM-C150 | Limit Switch | ED-1-3-32 | 1 |
| 151 | TS-1501091 | Socket Head Cap Screw | M4x35L | 2 |
| 152 | BS24SADM-C152 | Oilless Bearing | 4040 | 2 |
| 153 | BS24SADM-C153 | Spacer | 331D2-02-A | 2 |
| 154 | BS24SADM-C154 | Key | 14x9x50 | 1 |
| 155 | BS24SADM-C155 | Gear Reducer | 120#1/40 | 1 |
| 156 | BS24SADM-C156 | Motor | 5HP | 1 |
| 157 | TS-1491041 | Hex. Cap Screw | M10x30L | 4 |
| 158 | TS-2361101 | Spring Washer | M10 | 4 |
| 160 | BS24SADM-C160 | Key | 10x8x40 | 1 |
| 161 | BS24SADM-C161 | Wheel Box (Type 120) | 460D3-15 | 1 |



| Index No | Part No | Description | Size | Q'ty |
|----------|---------------|--------------------------------------|------------|------|
| 162 | BS24SADM-C162 | Belt | 1922V504 | 1 |
| 163 | BS24SADM-C163 | Speed Controlled Wheel (Variable) | 460D4-16 | 1 |
| 164 | BS24SADM-C164 | Speed Controlled Wheel (Fixing) | 460D4-16 | 1 |
| 165 | BS24SADM-C165 | Socket Head Cap Screw | M8x65L | 1 |
| 166 | BS24SADM-C166 | Wheel Box Cover (Type 120) | 460D3-16 | 1 |
| 167 | F009884 | Socket Head Button Screw | M5x8L | 8 |
| 168 | F009884 | Socket Head Button Screw | M5x8L | 4 |
| 169 | BS24SADM-C169 | Cover Plate | 460D3-16-A | 1 |



PARTS DIAGRAM D





SECTION D - PARTS LIST

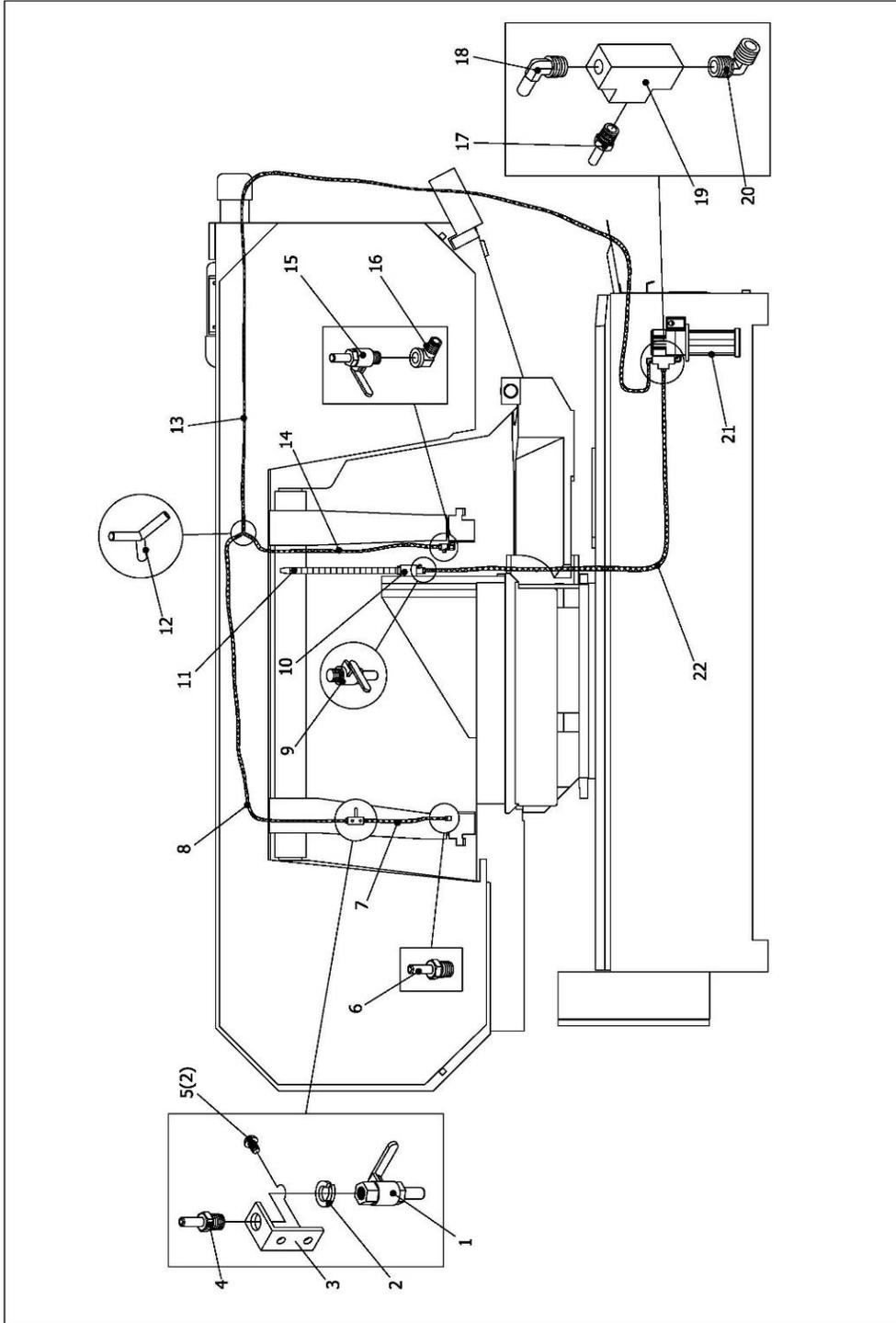
| Index No | Part No | Description | Size | Q'ty |
|----------|--------------|-----------------------|-----------|------|
| 1 | BS24SADM-D1 | Bearing Long Shaft | L46F2-54 | 2 |
| 2 | BB6201 | Bearing | 6201 | 4 |
| 3 | BS24SADM-D3 | Bearing Sleeve (Long) | 460D2-63B | 1 |
| 4 | BS24SADM-D4 | Bearing Sleeve | L46F2-55 | 1 |
| 5 | TS-2361101 | Spring Washer | M10 | 2 |
| 6 | TS-2311101 | Nut | M10 | 2 |
| 7 | TS-1503051 | Socket Head Cap Screw | M6x20L | 2 |
| 8 | BS24SADM-D8 | Adjusting Screw | 460D2-25 | 1 |
| 9 | BS24SADM-D9 | Adjusting Spring | 460D4-11 | 1 |
| 10 | BS24SADM-D10 | Guide Pin | 3500210 | 1 |
| 11 | TS-1504081 | Socket Head Cap Screw | M8x40L | 1 |
| 12 | BS24SADM-D12 | Left Guide Block | 460D1-09B | 1 |
| 13 | BB6200 | Bearing | 6200 | 2 |
| 14 | BS24SADM-D14 | Bearing Bracket | 460D1-22 | 1 |
| 15 | BS24SADM-D15 | Shaft Sleeve | 460D2-27 | 1 |
| 16 | BS24SADM-D16 | Bracket Shaft | | 2 |
| 17 | BS24SADM-D17 | Guide Carbide | 460D2-26 | 1 |
| 18 | BS24SADM-D18 | Guide Carbide | 460D2-26A | 1 |
| 19 | BS24SADM-D19 | Spring Pin | D5x12L | 2 |
| 20 | BS24SADM-D20 | Spring Pin | D5x12L | 2 |
| 21 | BS24SADM-D21 | Guide Carbide | 460D2-26C | 1 |
| 22 | BS24SADM-D22 | Guide Carbide | 460D2-26B | 1 |
| 23 | BS24SADM-D23 | Bearing Shaft | | 2 |
| 24 | BS24SADM-D24 | Bearing Bracket | 460D1-22 | 1 |
| 25 | BB6200 | Bearing | 6200 | 2 |
| 26 | BS24SADM-D26 | Shaft Sleeve | 460D2-27 | 1 |
| 27 | TS-1503051 | Socket Head Cap Screw | M6x20L | 2 |
| 28 | BS24SADM-D28 | Right Guide Block | 460D1-10B | 1 |



| Index No | Part No | Description | Size | Q'ty |
|----------|--------------|-----------------------|----------|------|
| 29 | TS-2311101 | Nut | M10 | 2 |
| 30 | TS-2361101 | Spring Washer | M10 | 2 |
| 31 | BS24SADM-D31 | Bearing Sleeve (Long) | 460D2-63 | 1 |
| 32 | TS-1504081 | Socket Head Cap Screw | M8x40L | 1 |
| 33 | BS24SADM-D33 | Guide Pin | 3500210 | 1 |
| 34 | BS24SADM-D34 | Spring | 460D4-11 | 1 |
| 35 | BS24SADM-D35 | Adjusting Screw | | 1 |
| 36 | BB6201 | Bearing | 6201 | 4 |
| 37 | BS24SADM-D37 | Bearing Long Shaft | L46F2-54 | 2 |
| 38 | BS24SADM-D38 | Bearing Sleeve | L46F2-55 | 1 |



PARTS DIAGRAM E



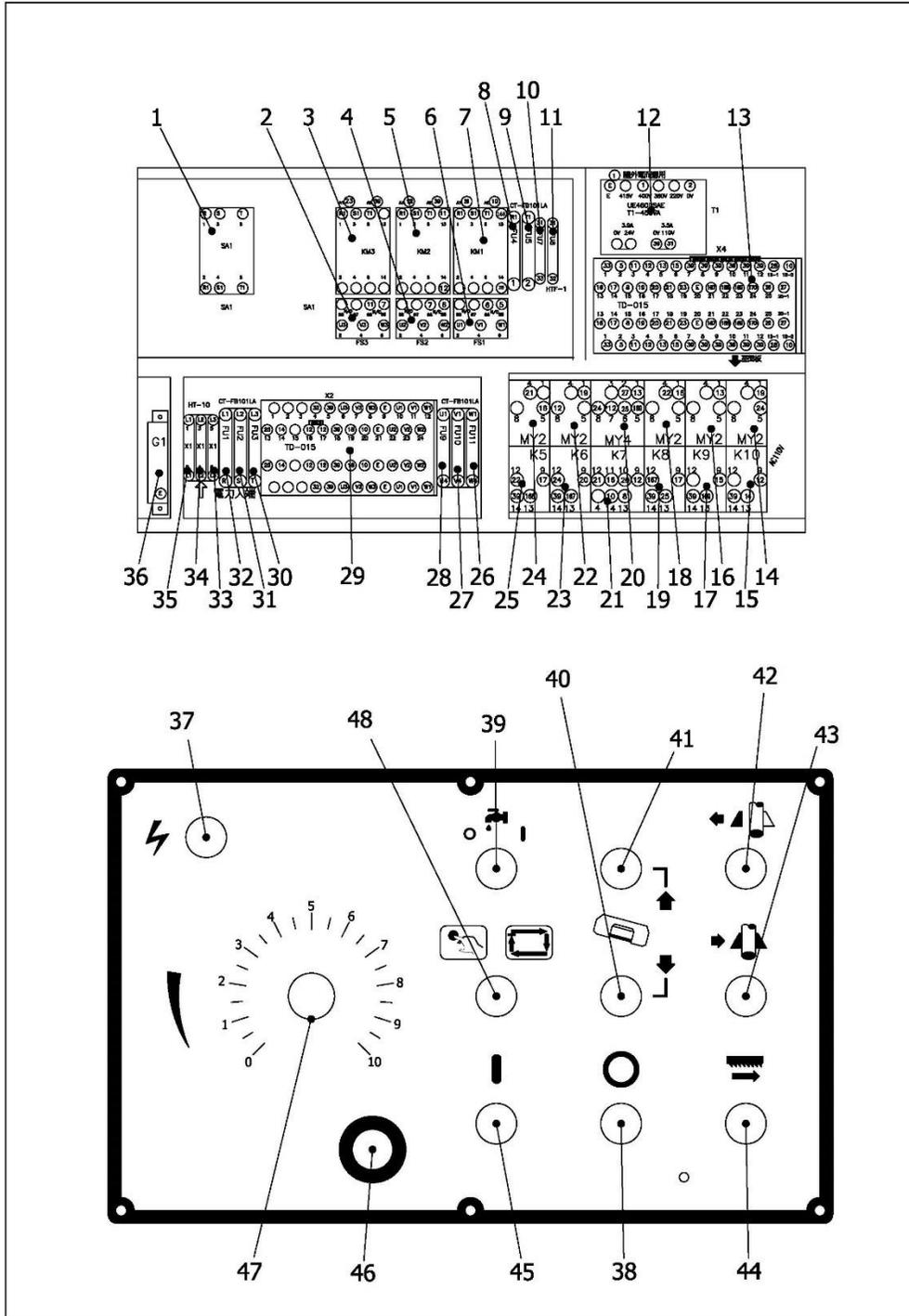


SECTION E- PARTS LIST

| Index No | Part No. | Description | Size | Q'ty |
|----------|--------------|----------------------|---------------------------------|------|
| 1 | BS24SADM-E1 | Cock | 1/4x1/4" | 1 |
| 2 | TS-2361121 | Spring Washer | M12 | 1 |
| 3 | BS24SADM-E3 | Fixing Bracket | 331D3-22 | 1 |
| 4 | BS24SADM-E4 | Fitting | 1/4x1/4" | 1 |
| 5 | BS24SADM-E5 | Big Round Head Screw | M6x8L | 2 |
| 6 | BS24SADM-E6 | Fitting | 1/4x1/4" | 1 |
| 7 | BS24SADM-E7 | Hose | 185mmX1/4" | 1 |
| 8 | BS24SADM-E8 | Hose | 2215mmX1/4" | 1 |
| 9 | BS24SADM-E9 | Cock | 1/4x1/4" | 1 |
| 10 | BS24SADM-E10 | Nozzle Set | H46A2-39 | 1 |
| 11 | BS24SADM-E11 | Nozzle | 1/4"x18"L | 1 |
| 12 | BS24SADM-E12 | Y Fit | L25A4-60 | 1 |
| 13 | BS24SADM-E13 | Hose | 2700mmX1/4" | 1 |
| 14 | BS24SADM-E14 | Hose | 1580mmX1/4" | 1 |
| 15 | BS24SADM-E15 | Cock | 1/4x1/4" | 1 |
| 16 | BS24SADM-E16 | 90° Fitting | 1/4x1/8" | 1 |
| 17 | BS24SADM-E17 | Fitting | 3/8x1/4" | 1 |
| 18 | BS24SADM-E18 | 90° Fitting | 3/8x1/4" | 1 |
| 19 | BS24SADM-E19 | Fitting Set | 3/8" | 1 |
| 20 | BS24SADM-E20 | 90° Fitting | 1/2x3/8" | 1 |
| 21 | BS24SADM-E21 | Coolant Pump | 1/6HPx150L 220V/440v ,3Ph,2P | 1 |
| 22 | BS24SADM-E22 | Hose | 1400mmX1/4" | 1 |



PARTS DIAGRAM F





SECTION F- PARTS LIST

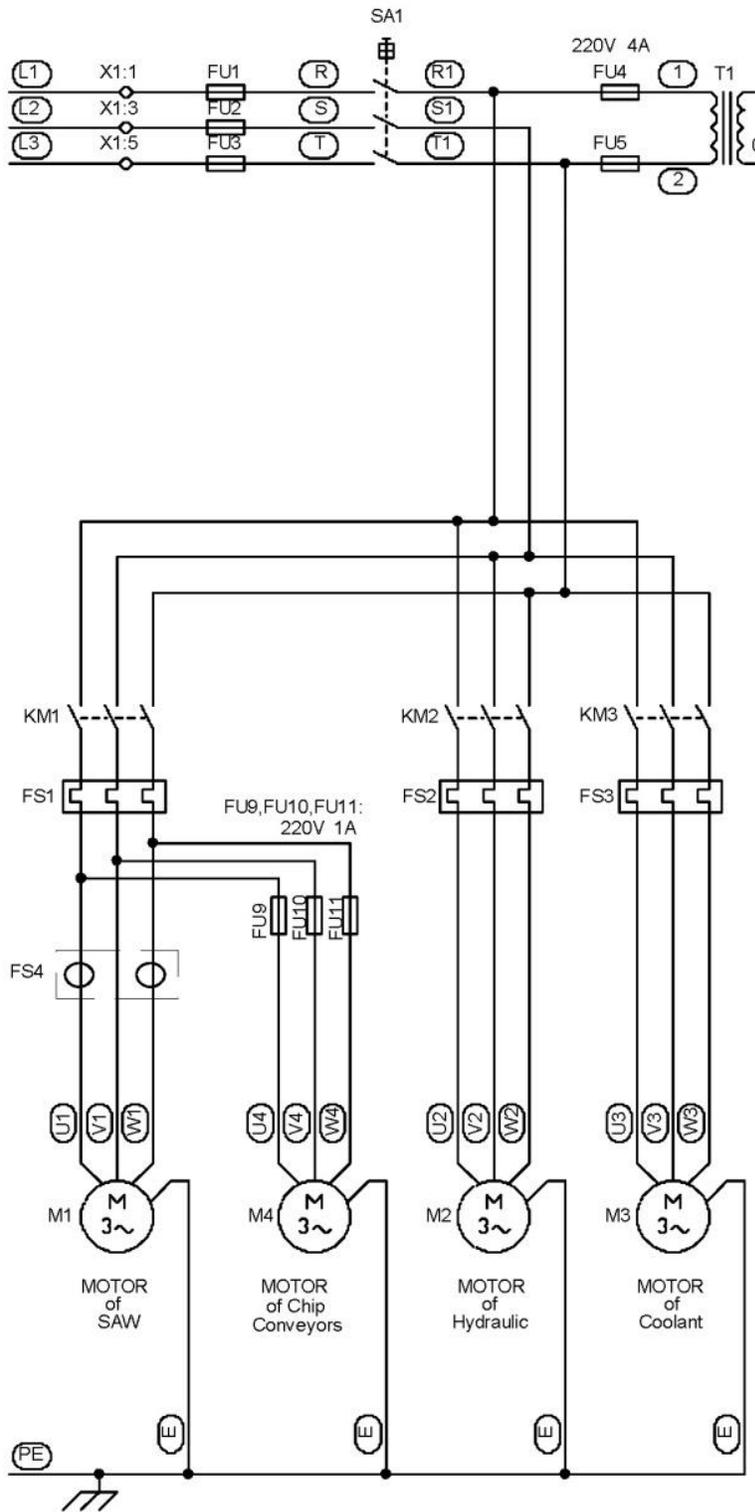
| Index No | Part No. | Description | Size | Q'ty |
|----------|--------------|---------------------------|-----------|------|
| 1 | BS24SADM-F1 | Power Switch | | 1 |
| 2 | BS24SADM-F2 | Coolant Overload Relay | | 1 |
| 3 | BS24SADM-F3 | Coolant Magnetic Switch | | 1 |
| 4 | BS24SADM-F4 | Hydraulic Overload Relay | | 1 |
| 5 | BS24SADM-F5 | Hydraulic Magnetic Switch | | 1 |
| 6 | BS24SADM-F6 | Blade Overload Relay | | 1 |
| 7 | BS24SADM-F7 | Blade Magnetic Switch | | 1 |
| 8 | BS24SADM-F8 | Transformer Power in Fuse | FU4 4A | 1 |
| 9 | BS24SADM-F8 | Transformer Power in Fuse | FU5 4A | 1 |
| 10 | BS24SADM-F10 | AC110V Fuse | FU7 3.15A | 1 |
| 11 | BS24SADM-F11 | AC110V Fuse | FU8 0.5A | 1 |
| 12 | BS24SADM-F12 | Transformer | 450VA | 1 |
| 13 | BS24SADM-F13 | Terminal Block | | 1 |
| 14 | BS24SADM-F14 | Relay Base | MY2 | 1 |
| 15 | BS24SADM-F15 | Relay | | 1 |
| 16 | BS24SADM-F14 | Relay Base | MY2 | 1 |
| 17 | BS24SADM-F17 | Relay | | 1 |
| 18 | BS24SADM-F18 | Relay Base | MY2 | 1 |
| 19 | BS24SADM-F19 | Relay | | 1 |
| 20 | BS24SADM-F20 | Relay Base | MY4 | 1 |
| 21 | BS24SADM-F21 | Relay | | 1 |
| 22 | BS24SADM-F14 | Relay Base | MY2 | 1 |
| 23 | BS24SADM-F23 | Relay | | 1 |
| 24 | BS24SADM-F14 | Relay Base | MY2 | 1 |
| 25 | BS24SADM-F25 | Relay | | 1 |
| 26 | BS24SADM-F26 | Fuse | FU11 1A | 1 |
| 27 | BS24SADM-F26 | Fuse | FU10 1A | 1 |



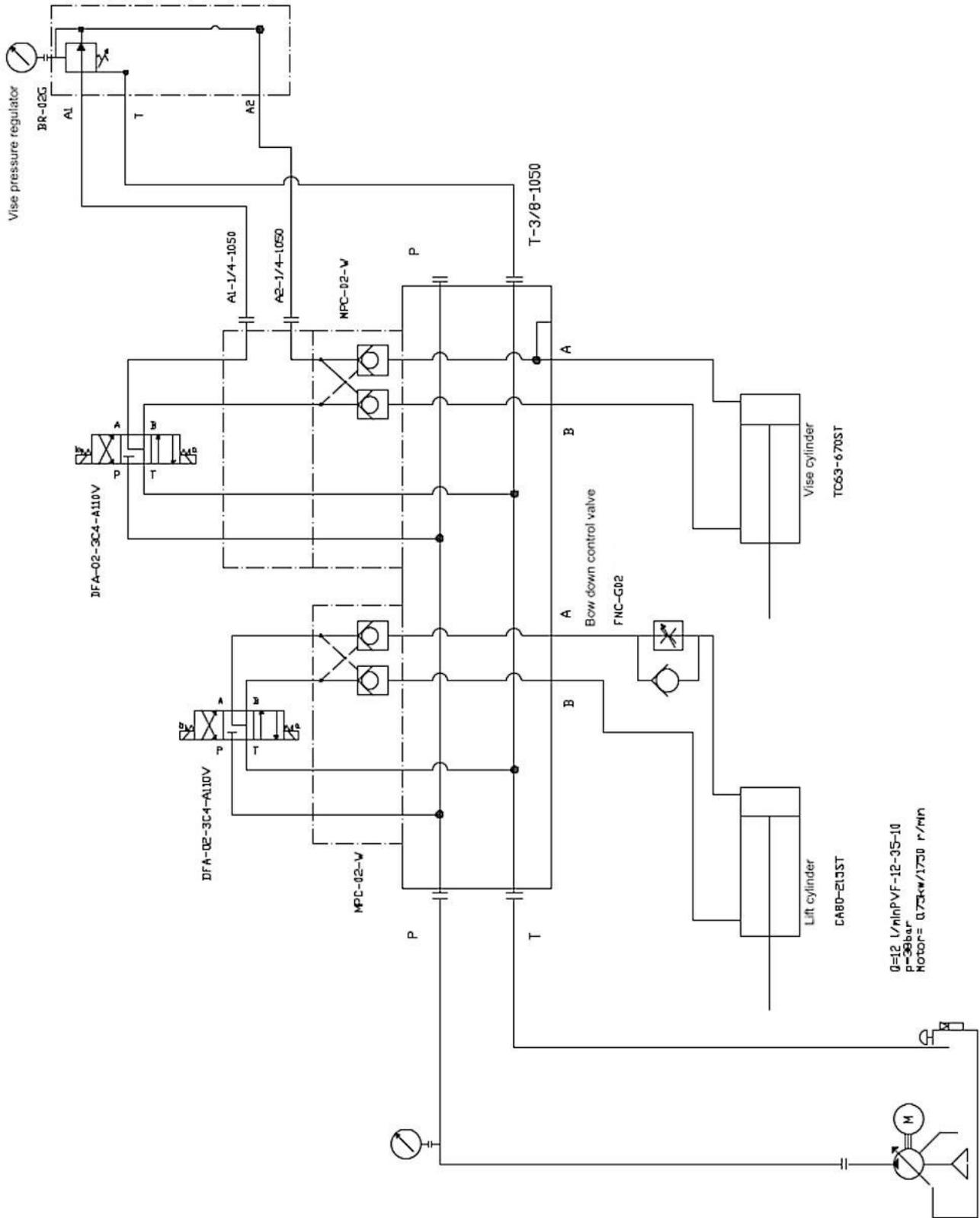
| Index No | Part No. | Description | Size | Q'ty |
|----------|--------------|---------------------------|---------|------|
| 28 | BS24SADM-F26 | Fuse | FU9 1A | 1 |
| 29 | BS24SADM-F29 | Terminal Block | | 1 |
| 30 | BS24SADM-F30 | Power in Fuse | FU3 25A | 1 |
| 31 | BS24SADM-F30 | Power in Fuse | FU2 25A | 1 |
| 32 | BS24SADM-F30 | Power in Fuse | FU1 25A | 1 |
| 33 | BS24SADM-F33 | Power in Terminal | | 1 |
| 34 | BS24SADM-F33 | Power in Terminal | | 1 |
| 35 | BS24SADM-F33 | Power in Terminal | | 1 |
| 36 | BS24SADM-F36 | Grounding Plate | | 1 |
| 37 | BS24SADM-F37 | Power Indicator Light | | 1 |
| 38 | BS24SADM-F38 | Blade Stop Button | | 1 |
| 39 | BS24SADM-F39 | Coolant Start Switch | | 1 |
| 40 | BS24SADM-F40 | Bow Down Button(Green) | | 1 |
| 41 | BS24SADM-F41 | Bow Up Button(Black) | | 1 |
| 42 | BS24SADM-F42 | Vise Open Button(Green) | | 1 |
| 43 | BS24SADM-F43 | Vise Close Button(Black) | | 1 |
| 44 | BS24SADM-F44 | Blade Start Button | | 1 |
| 45 | BS24SADM-F45 | Hydraulic Start Button | | 1 |
| 46 | BS24SADM-F46 | Emergency Stop Button | | 1 |
| 47 | BS24SADM-F47 | Cutting Feed Rate Valve | | 1 |
| 48 | BS24SADM-F48 | Select Switch | | 1 |



ELECTRICAL SCHEMATIC



HYDRAULIC DIAGRAM



Q=12 l/min
 P=38bar
 Motor= 0.73kw/1750 r/min



TROUBLESHOOTING

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

| PROBLEM | PROBABLE CAUSE | REMEDY |
|--|--|---|
| Cut is not square vertically. | Carbide guide adjustment incorrect Feed rate excessive Blade worn Guide arms too far apart Blade pitch incorrect | Adjust the carbide guide Reduce the feed rate Replace blade Adjust guide arms Change blade |
| Cut is not square horizontally. | Angle is not set correctly. Material is not square in vise. Angle pointer is out of adjustment. Material is not secure in the vise. | Adjust angle again Reset material Readjust it. Reset vise. |
| Head cylinder creeps: A) in hold B) in feed position | Cylinder cup seal defective. 3 position valve defective Hydraulic hose leaking | Replace cup seal Replace Change it Loosen jam nut and readjust Pointer with feed rate at zero |
| Blade tracking incorrect | Improper tension. Tracking needs adjustment. Wheel is worn or in poor condition. | Adjust it Replace it |
| Blade stalls in cut | More tension needed. Excessive feed rate Blade pitch incorrectly. | Reduce feed rate Change blade |
| Blade vibrating excessively | Blade speed too fast. More blade tension needed Guide arms too far apart. Feed rate too slowly. Carbide guides worn or loose. | Slow blade speed Adjust it. Increase feed rate. Adjust or replace it. |
| Excessive blade breakage. | Excessive blade tension Excessive feed rate. Top guides damaged. | Reduce blade tension Reduce feed rate Replace top guide. |
| No coolant flow. | No coolant Check coolant ports for blockage Line blockage Coolant pump inoperable | Add the coolant Blow out lines with compressed air Replace it |
| Blade will not start. | Lift head off limit switch. | Adjust it |



| | | |
|--|---|--|
| | Control fuse blown. Push reset button. | Replace fuse. |
| Machine stops before cut is complete. | | Adjust saw bow down limit switch bolt or runs on after cut is completed. |

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