

# **HAFCO**

# **METALMASTER**



Edition : 2.0  
Date: (05/24)

## **Instruction Manual**

# **AUTOMATIC BAND SAW**

# **EB-330FAS**

Order Code: (B080)

**MACHINE DETAILS**

<b>MACHINE</b>	Automatic Band Saw
<b>MODEL NO.</b>	EB-330FAS
<b>SERIAL NO.</b>	
<b>DATE OF MANF.</b>	

Imported by

Australia



[www.machineryhouse.com.au](http://www.machineryhouse.com.au)

New Zealand



[www.machineryhouse.co.nz](http://www.machineryhouse.co.nz)

**NOTE:**

*This manual is only for your reference. At the time of the compiling of this manual every effort to be exact with the instructions, specifications, drawings, and photographs of the machine was taken. Owing to the continuous improvement of the HAFCO METALMASTER machine, changes may be made at any time without obligation or notice. Please ensure the local voltage is the same as listed on the specification plate before operating any electric machine.*

**SAFETY SYMBOLS:**

*The purpose of safety symbols is to attract your attention to possible hazardous conditions*



**WARNING** Indicates a potentially hazardous situation causing injury or death



**CAUTION** Indicates an alert against unsafe practices.

*Note: Used to alert the user to useful information*

Fig.1

**NOTE:**

*In order to see the type and model of the machine, please see the specification plate. Usually found on the back of the machine. See example (Fig.1)*

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**PRODUCT SPECIFICATIONS**

Model: EB-330FAS	Voltage: 415V/50Hz	
Capacity: 260mm	Motor: 1.5kW	
Nett Weight: 760kg	FLC: 3.5A	
MFG Date:		

Serial No:

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## 1.1 SPECIFICATION

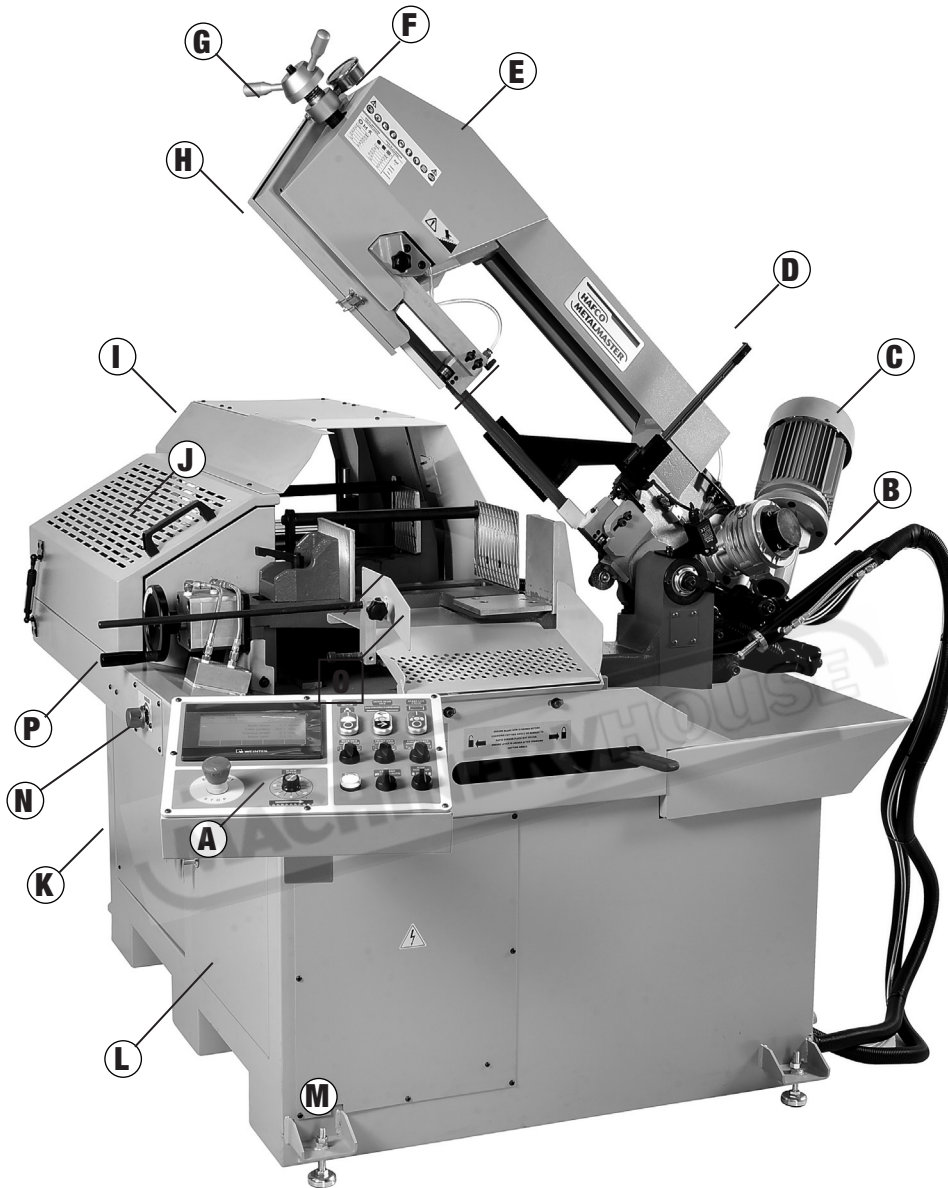
Order Code	B080
<b>MODEL</b>	<b>EB-330FAS</b>
Cutting Capacity (mm)	
Round at 90° (mm)	260
Round at 45° (mm)	240
Round at 60° (mm)	130
Square at 90° (mm)	230
Square at 45° (mm)	215
Square at 60° (mm)	130
Rectangle at 90° (mm)	345 x 230
Rectangle at 45° (mm)	225 x 215
Rectangle at 60° (mm)	150 x 130
Solid Material at 90° (mm)	100
Solid Material at 45° (mm)	80
Solid Material at 60° (mm)	50
Bundle cutting (mm)	290 x 100
Blade Size (mm)	2965 x 27 x 0.9
Blade Speeds (MPM)	25 - 85 Variable
Feed Travel Max. (mm)	500
Motor (kW/hp)	1.5 / 2
Voltage (V)	415
Machine Dimension (mm)	2800 x 1800 x 1800
Net Weight (kgs.)	760

## 1.2 PACKING CONTENTS

Machine body x 1  
 Electrical control box x 1  
 Operating instructions/parts list x1  
 Chip tray x 1  
 Rubber pad x 4



**1.3 IDENTIFICATION**



<b>A</b>	Control Box	<b>I</b>	Hitch Feed Protection Cover
<b>B</b>	Cylinder	<b>J</b>	Vice Adjustment Cover
<b>C</b>	Motor	<b>K</b>	Hydraulic System Door
<b>D</b>	Material Fast Approach Sensor	<b>L</b>	Electrical Cabinet Door
<b>E</b>	Bow Saw Arm	<b>M</b>	Cutting Vice
<b>F</b>	Tension Gauge	<b>N</b>	Down feed adjustment valve
<b>G</b>	Blade Tension Adjustment Handle	<b>O</b>	Material Moving Support
<b>H</b>	Saw Blade Protection Cover	<b>P</b>	Vice Manual Handle

## 2.1 GENERAL METALWORKING MACHINE SAFETY

DO NOT use this machine unless you have read this manual or have been instructed in the use of this machine in its safe use and operation



# WARNING

This manual provides safety instructions on the proper setup, operation, maintenance, and service of this machine. Save this manual, refer to it often, and use it to instruct other operators. Failure to read, understand and follow the instructions in this manual may result in fire or serious personal injury—including amputation, electrocution, or death.

The owner of this machine is solely responsible for its safe use. This responsibility includes, but is not limited to proper installation in a safe environment, personnel training and authorization to use, proper inspection and maintenance, manual availability and comprehension, of the application of the safety devices, integrity, and the use of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.



- ✓ Always wear safety glasses or goggles.
- ✓ Wear appropriate safety footwear.
- ✓ Wear respiratory protection where required.
- ✓ Gloves should never be worn while operating the machine, and only worn when handling the work piece.
- ✓ Wear hearing protection in areas > 85 dBA. If you have trouble hearing someone speak from one metre (three feet) away, the noise level from the machine may be hazardous.
- ✓ DISCONNECTION THE MACHINE FROM POWER when making adjustments or servicing.
- ✓ Check and adjust all safety devices before each job.
- ✓ Ensure that guards are in position and in good working condition before operating.
- ✓ Ensure that all stationary equipment is anchored securely to the floor.
- ✓ Ensure all machines have a start/stop button within easy reach of the operator.
- ✓ Each machine should have only one operator at a time. However, everyone should know how to stop the machine in an emergency.

## 2.1 GENERAL METALWORKING MACHINE SAFETY CONT.

- ✓ Ensure that keys and adjusting wrenches have been removed from the machine before turning on the power. Appropriate storage for tooling should be provided.
- ✓ Ensure that all cutting tools and blades are clean and sharp. They should be able to cut freely without being forced.
- ✓ Stop the machine before measuring, cleaning or making any adjustments.
- ✓ Wait until the machine has stopped running to clear cuttings with a vacuum, brush or rake.
- ✓ Keep hands away from the cutting head and all moving parts.
- ✓ Avoid awkward operations and hand positions. A sudden slip could cause the hand to move into the cutting tool or blade.
- ✓ Return all portable tooling to their proper storage place after use.
- ✓ Clean all tools after use.
- ✓ Keep work area clean. Floors should be level and have a non-slip surface.
- ✓ Use good lighting so that the work piece, cutting blades, and machine controls can be seen clearly. Position any shade lighting sources so that they do not cause any glare or reflections.
- ✓ Ensure there is enough room around the machine to do the job safely.
- ✓ Obtain first aid immediately for all injuries.
- ✓ Understand that the health and fire hazards can vary from material to material. Make sure all appropriate precautions are taken.
- ✓ Clean machines and the surrounding area when the operation is finished.
- ✓ Use proper lock out procedures when servicing or cleaning the machines or power tools.

### DO NOT

- × Do not distract an operator. Horseplay can lead to injuries and should be strictly prohibited.
- × Do not wear loose clothing, gloves, necktie's, rings, bracelets or other jewellery that can become entangled in moving parts. Confine long hair.
- × Do not handle cuttings by hand because they are very sharp. Do not free a stalled cutter without turning the power off first. Do not clean hands with cutting fluids.
- × Do not use rags or wear gloves near moving parts of machines.
- × Do not use compressed air to blow debris from machines or to clean dirt from clothes.
- × Do not force the machine. It will do the job safer and better at the rate for which it was designed.



### **WARNING**

***Before operating any machine, take time to read and understand all safety signs and symbols. If not understood seek explanation from your supervisor or an experienced operator.***

## 2.1 GENERAL METALWORKING MACHINE SAFETY CONT.

**HAZARDS ASSOCIATED WITH MACHINES** include, but are not limited to:

- Being struck by ejected parts of the machinery
- Being struck by material ejected from the machinery
- Contact or entanglement with the machinery
- Contact or entanglement with any material in motion

**Health Hazards** (other than physical injury caused by moving parts)

- Chemicals hazards that can irritate, burn, or pass through the skin
- Airborne items that can be inhaled, such as oil mist, metal fumes, solvents, and dust
- Heat, noise, and vibration
- Ionizing or non-ionizing radiation (X-ray, lasers, etc.)
- Biological contamination and waste
- Soft tissue injuries (for example, to the hands, arms, shoulders, back, or neck) resulting from repetitive motion, awkward posture, extended lifting, and pressure grip)

**Other Hazards**

- Slips and falls from and around machinery during maintenance
- Unstable equipment that is not secured against falling over
- Safe access to/from machines (access, egress)
- Fire or explosion
- Pressure injection injuries from the release of fluids and gases under high pressure
- Electrical Hazards, such as electrocution from faulty or ungrounded electrical components
- Environment in which the machine is used (in a machine shop, or in a work site)



### **CAUTION**

*A prepared list of safety guidelines can never be complete. Every workshop environment is different. Always consider Safety first, as it applies to your individual working conditions. Use this machine and other machinery with caution and respect. Failure to do so could result in serious Personal injury, damage to the equipment, or poor work results.*

## 2.2 SAFE WORK PROCEDURE FOR BAND SAW

**DO NOT use this machine unless you have been instructed in its safe use and operation and have read and understood this manual**



*Safety glasses must be worn at all times in work areas*



*Long and loose hair must be contained.*



*Gloves must not be worn when using this machine.*



*Sturdy footwear must be worn at all times in work areas*



*Close fitting/protective clothing must be worn*



*Rings and jewelry must not be worn.*

### PRE-OPERATIONAL SAFETY CHECKS

1. Ensure no slip/trip hazards are present in workspaces and walkways.
2. Check that all guards are in position.
3. Ensure hydraulic damping mechanism functions.
4. Check that the blade is in good condition.
5. Ensure that blade speed, blade tension and blade tracking are properly adjusted.
6. Check coolant delivery system to allow for sufficient flow of coolant.
7. Locate and ensure you are familiar with the operation of the ON/OFF starter and E-Stop.
8. Faulty equipment must not be used. Immediately report suspect machinery.

### OPERATIONAL SAFETY CHECKS

1. Lift the head of unit up and lock it in the upward position.
2. Set the angle of the vice, or check it to ensure its squareness.
3. Clamp work piece firmly into the vice. Long material must be supported.
4. Adjust blade guards to cover unused portion of blade.
5. Ensure hands are away from the blade, and then turn the machine on.
6. Allow the upper head assembly to come down slowly until the teeth are cutting the material.
7. Keep hands away from the point of operation during cutting.
8. Turn off the machine and bring it to a complete standstill if the blade is to be lifted out of an uncompleted or jammed cut.
9. Stop the machine and bring it to a complete standstill before removing scrap pieces from the vice area or making adjustments.
10. Stop the saw immediately if the blade develops a 'click', and inspect the blade.
11. Ensure the cutting head is locked in the upward position before removing work piece.

### AFTER OPERATION

1. Switch off the saw and reset all guards to a fully closed position.
2. Leave the machine in a safe, clean and tidy state.

### DO NOT

- Pushing down on the cutting head while it is cutting
- Clean away the swarf with your hand.

### 3. POWER SUPPLY

#### 3.1 ELECTRICAL REQUIREMENTS

Place the machine near an existing power source. Make sure all power cords are protected from traffic, material handling, moisture, chemicals, or other hazards. Make sure there is access to a means of disconnecting the power source. The electrical circuit must meet the requirements for 415V. To minimize the risk of electrocution, fire, or equipment damage, these machines should be hard wired with installation work and electrical wiring done by a qualified electrician.

**NOTE: The use of an extension cord is not recommended as it may decrease the life of electrical components on your machine.**

#### ELECTRICAL REQUIREMENTS

Nominal Voltage.....	415V
Cycle.....	50 Hz
Phase.....	Three Phase
Power Supply Circuit.....	10 Amps
Full Load Current.....	3.5 Amps

(Full load current rating is also on the specification plate on the motor.)

#### 3.2 FULL-LOAD CURRENT RATING

The full-load current rating is the amperage a machine draws when running at 100% of the output power. Where machines have more than one motor, the full load current is the amperage drawn by the largest motor or a total of all the motors and electrical devices that might operate at one time during normal operations.

Full-Load Current Rating for these machine at 415V is 3.5 Amps

It should be noted that the full-load current is not the maximum amount of amps that the machine will draw. If the machine is overloaded, it will draw additional amps beyond the full-load rating and if the machine is overloaded for a long period of time, damage, overheating, or fire may be caused to the motor and circuitry.

This is especially true if connected to an undersized circuit or a long extension lead. To reduce the risk of these hazards, avoid overloading the machine during operation and make sure it is connected to a power supply circuit that meets the requirements.



## 4 SETUP

### 4.1 UNPACKING

This machine was carefully packaged for safe transport. When unpacking, separate all enclosed items from packaging materials and inspect them for shipping damage. If items are damaged, please contact your distributor.

**NOTE: Save all the packaging materials until you are completely satisfied with the machine and have resolved any issues with the distributor, or the shipping agent.**

When unpacking, check the packing list to make sure that all parts shown are included. If any parts are missing or broken, please contact the your distributor.

### 4.2 CLEAN - UP

The unpainted surfaces of the machine have been coated with a waxy oil to protect them from corrosion during shipment. Remove the protective coating with a solvent cleaner or a citrus based degreaser.

Optimum performance from your machine will be achieved when you clean all moving parts or sliding contact surfaces that are coated with rust prevented products.

It is advised to avoid chlorine based solvents, such as acetone or brake parts cleaner, as they will damage painted surfaces and strip metal should they come in contact. Always follow the manufacturer's instructions when using any type of cleaning product.

### 4.3 SITE PREPARATION

When selecting the site for the machine, consider the largest size of workpiece that will be processed through the machine and provide enough space around the machine for operating the machine safely. Consideration should be given to the installation of auxiliary equipment. Leave enough space around the machine to open or remove doors/covers as required for the maintenance and service as described in this manual.

It is recommended that the machine is anchored to the floor to prevent tipping or shifting. It also reduces vibration that may occur during operation.

### 4.4 LIFTING INSTRUCTIONS



**WARNING** *This machine is extremely heavy. Serious personal injury may occur if safe moving methods are not followed. To be safe, you will need assistance and power equipment when moving the shipping crate and removing the machine from the crate.*



On the day that the machine arrives, make sure that a forklift or lifting device, with sufficient capacity is available to unload the machine from the vehicle. Ensure access to the chosen site is clear and that doors and ceilings are sufficiently high and wide enough to receive the machine.



#### 4.5 MOUNTING TO THE FLOOR

The machine must be mounted on a concrete slab strong enough to support the machine. The machine is supplied with machine mounts which also help with the levelling of the machine and isolating vibration. Assemble the mounts into the foot mounts



#### 4.6 MACHINE LEVELING

To set your machine up so that it operates to optimum performance, apply the following procedure

After your machine has been placed on the concrete slab floor, it then needs to be leveled. Place a level on the surface of the working table, and adjust the nuts on the machine mounts until the machine is level and does not rock.

#### 4.7 ASSEMBLY

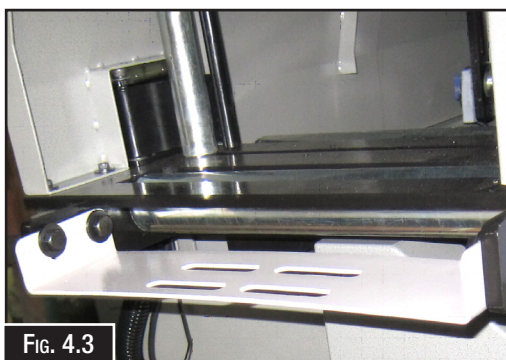
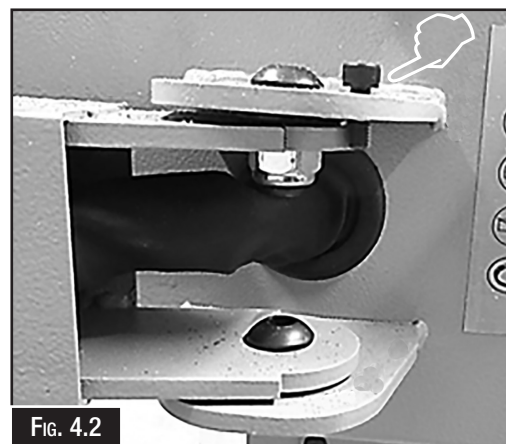
The machine must be fully assembled before it can be operated. First clean any parts that are coated in rust preventative to ensure the assembly process can proceed smoothly.

##### Control Panel

On commissioning the machine, loosen the socket head cap screw and swivel the console clockwise as far as you can. (Fig. 4.2)

**NOTE: Do not fully remove this screw.**

Then screw this Screw all the way down tightly. It is a limit stop for the control panel and prevents it from being in the way of the blade bow when the blade bow is swiveled at various angles.



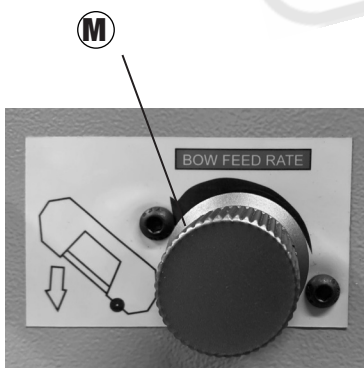
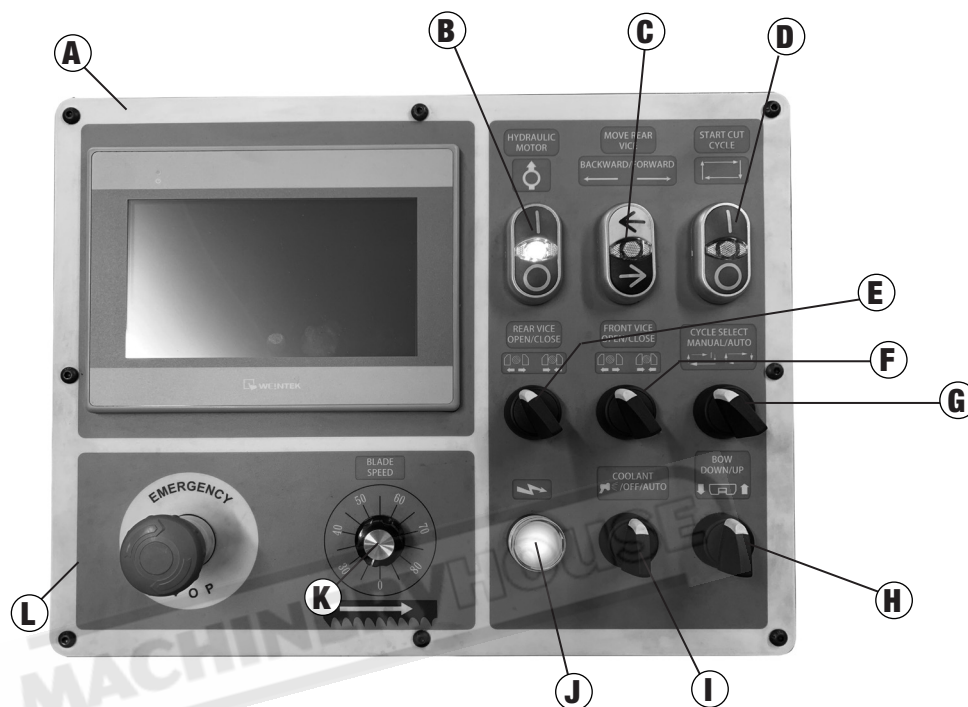
##### Chip Tray

Attach the Chip Tray on the machine in the position as displayed in Fig.4.3.



#### 4.8 CONTROLS & TERMINOLOGY

The purpose of this control overview is to provide the novice machine operator with a basic understanding of how the machine is used during operation, and the machine controls and what they do. It also helps the operator to understand if they are discussed later in this manual.



- A. **Digital Display:** 7" Touch Screen displays the program information.
- B. **Hydraulic Start:** Starts or stops the hydraulic pump.
- C. **Move Rear Vice:** Moves the rear vice towards the blade or away from the blade.
- D. **Start Cycle Cut:** Starts or stops the cycle cut when the machine is in auto or manual selection.
- E. **Rear Vice Open & Close:** This switch allows the operator to open or close the rear vice during setup and operation.
- F. **Front Vice Open & Close:** This switch allows the operator to open or close the rear vice during setup and operation.
- G. **Cycle Select:** This switch selects either Auto mode or Manual mode.
- H. **Saw Bow Up/Down:** This switch lifts or lowers the saw bow.
- I. **Coolant Switch:** Allows for the coolant to be switched on in manual mode or for auto mode.
- J. **Power Light:** Is illuminated when power is supplied
- K. **Blade Speed:** Adjusts the speed of the blade
- L. **Emergency Stop:** When pressed stops all operations breaks the power to the control panel.
- M. **Bow Down Feed:** Adjusts the rate of descent of the bow saw

1. **Insert Job:** Allows the operator to insert a program into the current job on the machine ( Fig. 4.4)

2. **Error Display:** This is when the machine shows an error. Touch the Error Display to check for the problem. ( Fig. 4.5 )

3. **Trim Cut :** When the machine is set up at “NO” trim cut it means that the program will calculate the first cut as part of the quantity. If not selected the program will allow the first cut item not to be included in the quantity. ( Fig 4.6 )

4. **Feeding Vise:** This is the rear vise of the machine which can move left and right. A short press of the button will move the vise slowly. By pressing the button for more than 2 seconds, for rapid traverse. (Fig. 4.7)

To ensure that the Blade Bow does not interfere with rear vise, make sure that the “Rear Vise Table” is move back to a minimum of 280mm position or further .

The vise also provides a system that allows some lateral movement of the vise to allow for bent material. (Fig. 4.8).

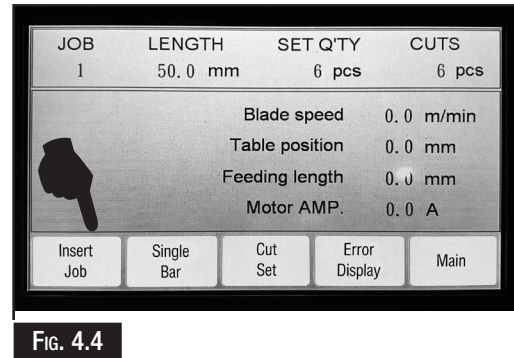


FIG. 4.4

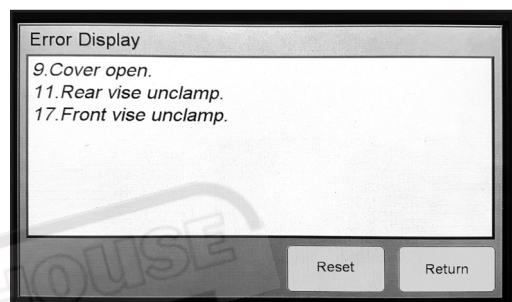


FIG. 4.5

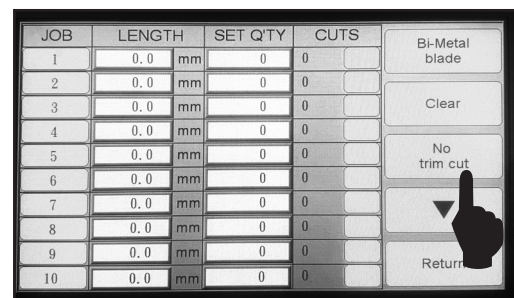


FIG. 4.6

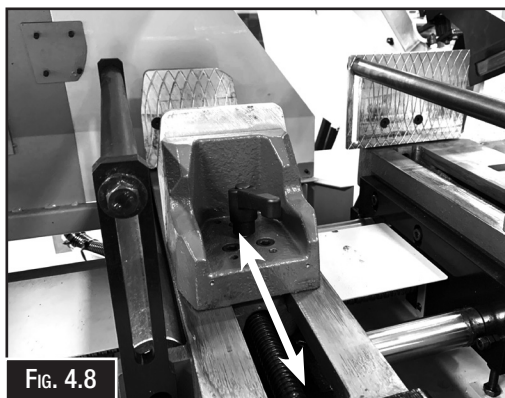


FIG. 4.8



5. **Upper Rollers:** The machine is fitted with two upper rollers, that need to move up & down to retain the cutting material when bundles are to be cut. The rollers need to be removed when cuts of more than 100 mm are required. To remove the rollers loosen and remove the two screws (one at each end of the roller) and remove the rollers. (Fig. 4.9)

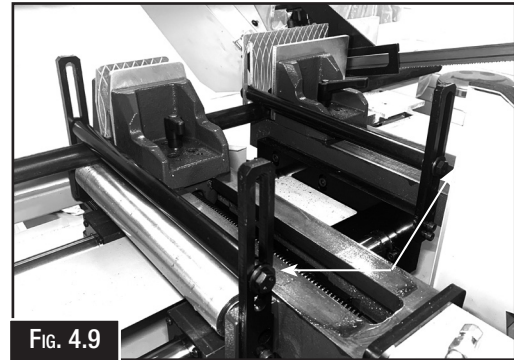


Fig. 4.9

6. **Vertical Roller:** This machine has 2 vertical rollers on each side of material entrance that keep the material from wandering during the operation. Loosen the screw on the down side of the roller . Move the Right side roller close to the cutting material. (Fig. 4.10)  
The left side roller always stay in same place.

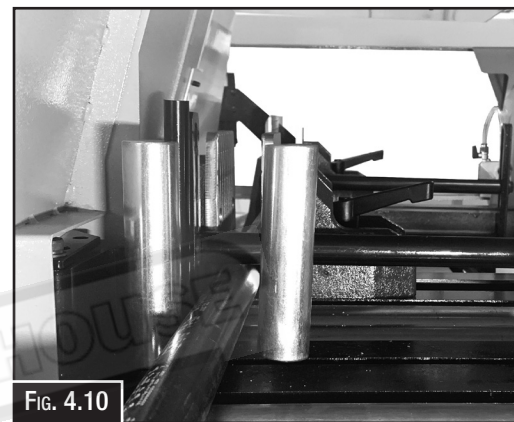


Fig. 4.10

7. **Cooling and clean system:** Turning the coolant switch (Fig. 4.11) to “auto” mode, allows the coolant to turn ON when the cycle starts and turn OFF when the cycle stops. When the coolant switch is turned to the left the coolant is diverted to the hose and spray nozzle on the back of the machine to be use when cleaning the swarf away from around the blade and vice area.

8. **Material Fence:** The material fence helps to guide the material both forward and back to keep the material in place. (Fig. 4.12)

**NOTE: The fence needs to be fully back and down when cutting at 45 degree .**

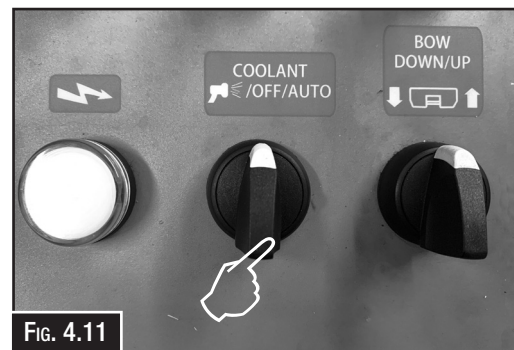


Fig. 4.11

9. **Left/Right Feeding Vise Limit Switch:** The feeding vise has two limit switches ( Fig. 4.13 ) which when touched will give the final position for left & right.

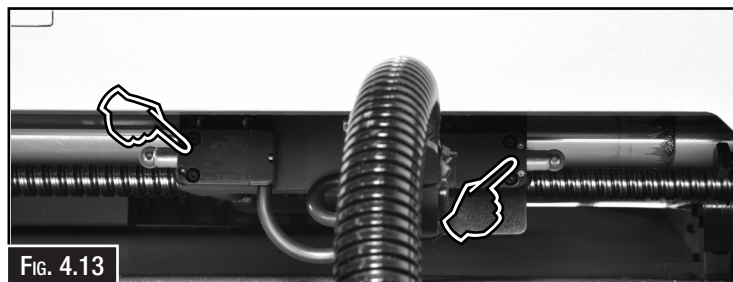


Fig. 4.13



Fig. 4.12



### 10. Sliding Blade Guide

Used to support the blade and should be moved as close as possible to the cutting area (Fig. 4.13) To move the bar, release the locking knob and slide the bar to the position, then lock the screw.



FIG. 4.13

### 11. Vice Thread Screw Lock

Used to allow the vice to move free when unlocked. Move the vice until it is approximately 7 mm off the cutting material, then lock the screw thread with the handle (Fig. 4.14)

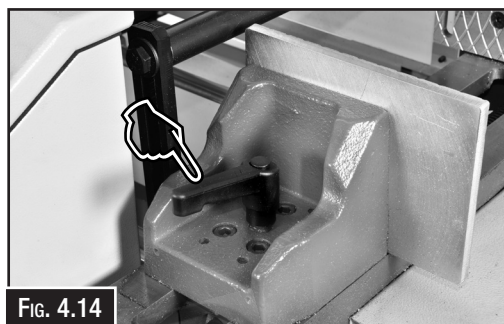


FIG. 4.14

### 12. Short Material Sensor

The machine provide a sensor (Fig. 4.15) to check the materiel left. The sensor will send the information to the controller when the material is less than 720 mm. This helps to keep the material always on the feeding vice



FIG. 4.15

### 13. No Material Sensor

The feeding vice has a sensor to check the material. The sensor will give information to the controller, if there is no material. The rear vice (Fig. 4.16) has the ability to move forward and back about 3 mm to accommodate bent material .

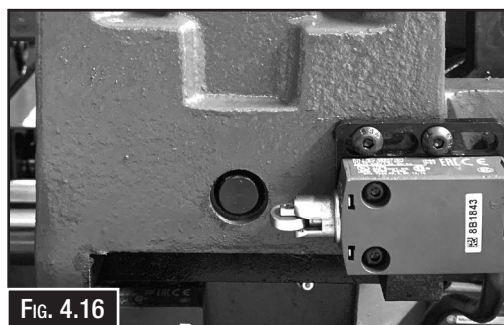


FIG. 4.16

### 14. Cutting Capacity Limit

If the capacity required is more than 200 mm square the cutting sensor need to raised by hand for the first cut. (Fig. 4.17)

**NOTE: Bow return stop is Factory set at full cut width of 290mm. The blade does not have to travel down so far for cutting shorter width workpieces so machine is supplied with an adjustable depth stop. Anti-Clockwise approximately one turn for 30 mm wide. Ensure lock nut is locked after adjustment. (See the maintenance section for details)(Fig. 4.18)**



FIG. 4.17



FIG. 4.18

## 5. OPERATION

This machine may perform many types of operations that are beyond the scope of this manual. Many of these operations may be dangerous or deadly if performed incorrectly.

The instructions in this section are written with the understanding that the operator has the necessary knowledge and skills to operate this machine. If at any time you are experiencing difficulties performing any operation, stop using the machine!

If you are an inexperienced operator, we strongly recommend that you read books, trade articles, or seek training from an experienced operator before performing any unfamiliar operations. Above all, your safety should come first!

### 5.1 MANUAL CUTTING OPERATION

The machine can be operated in two ways . The following explains the two methods.

#### Manual Cutting(Semi-automatic cycle )

1. Examine the workpiece making sure it is suitable for cutting and if the machine is fitted with the correct pitch blade for your application. Refer to blade selection guide on page 24 and blade changing procedure on page 23 to carry these steps before commencing to Step 2.
2. Turn on the Main Switch (N in Fig. 5.1). The power light (J in Fig. 5.2) must be on. If the power light is not illuminated then check the Emergency button is released (L in Fig. 5.2)
3. Start the hydraulic pump by pressing the start button (B in Fig. 5.2)

**NOTE: The machine WILL NOT start until the Cycle Select has been set to Manual mode) (G in Fig 5.3)**

4. Ensure the rear vice is open and using the Move Rear Vice button on the controller move the rear vice to its furthest point backwards (C in Fig. 5.3)
5. Raise the bow using Bow Down/Up switch. (H in Fig. 5.3)
6. Open the front vice by turning the vice hand wheel clockwise

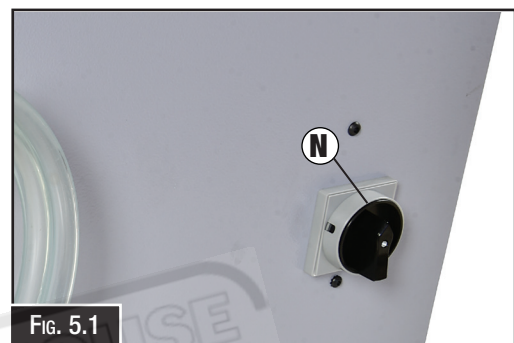


Fig. 5.1

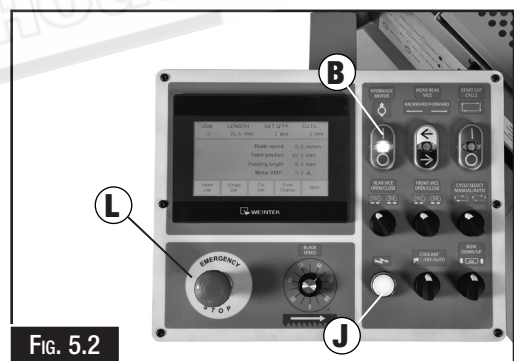


Fig. 5.2



Fig. 5.3

## 5.1 MANUAL CUTTING OPERATION CONT.

7. Place material to be cut into the vice and advance it to the length you intend to cut.
8. Clamp the material in vice by turning the handwheel anti-clockwise ensuring the workpiece is clamped in the jaws.
9. Loosen vice by turning the vice handwheel approx. half a turn allowing approx. 5mm gap between the workpiece and vice jaw.
10. Using the Front Vice selector switch on the control panel, select close and the vice will apply hydraulic pressure to clamp. Ensure material is clamped tight.
11. Adjust left hand blade guide arm as close to work piece as possible (P in Fig. 5.4)

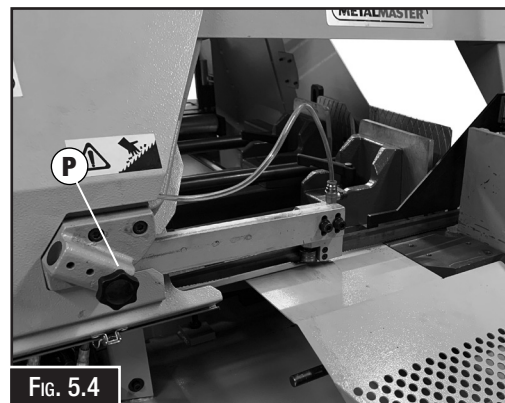


FIG. 5.4

12. Set blade speed using dial (K in Fig. 5.5) found on the controller referring to the blade speed selection guide on page 25.
13. Using the bow downfeed adjustment valve (M in Fig. 5.5) turn knob clockwise to the off position. This will ensure the feed rate is not set too fast for your initial cut.
14. Start cut cycle by selecting the ON button (D in Fig. 5.6). The bow will rapid traverse until the fast approach sensor is touching the workpiece with the blade set at approx. 10mm off the workpiece.

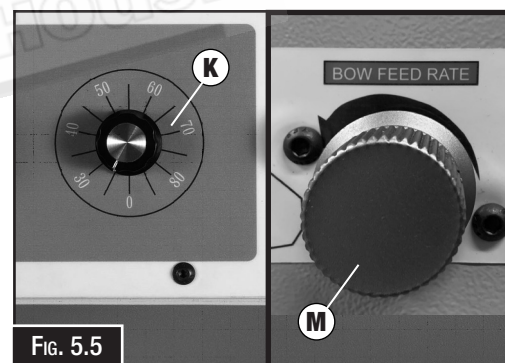


FIG. 5.5

15. Adjust cutting feed rate using the downfeed adjustment valve, setting the correct feed rate for the application.
16. At the end of the cut the bow will automatically raise until the fast approach sensor lifts off the workpiece and the blade will come to a stop.

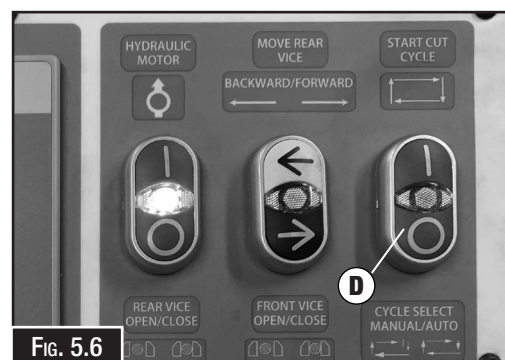


FIG. 5.6



## 5.2 AUTOMATIC CUTTING OPERATION

- Examine the workpiece making sure it is suitable for cutting and if the machine is fitted with the correct pitch blade for your application.  
Refer to blade selection guide on page 24 and blade changing procedure on page 23 to carry these steps before commencing Step 2.
- Turn Main Isolation Switch to ON position (N in Fig. 5.1).
- Twist to reset emergency stop then power indicator light on controller will light up (J in Fig. 5.7).
- To enter a program, press the “Cut Set” button on the touch screen controller. The controller allows for 20 different programs to be entered. (Fig. 5.8)
- Press the “length field” on the touch screen controller and enter the length to be cut. (Fig. 5.9)
- Press the “Set QTY field” and enter the number of pieces to be cut. (Fig. 5.9)
- Repeat steps 5 & 6 to enter additional programs.
- Select the jobs to be cut by checking the program number, the box colour will change from green to yellow meaning the program is selected. (Fig.5.9)
- Select the type of blade being used, Bi-Metal Blade or Carbide Blade.(Fig. 5.10)

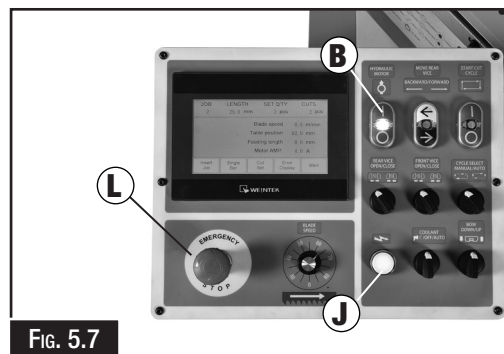


Fig. 5.7

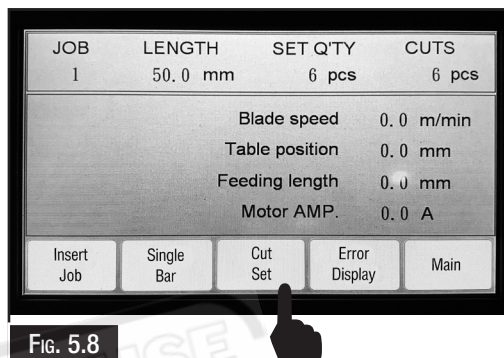


Fig. 5.8

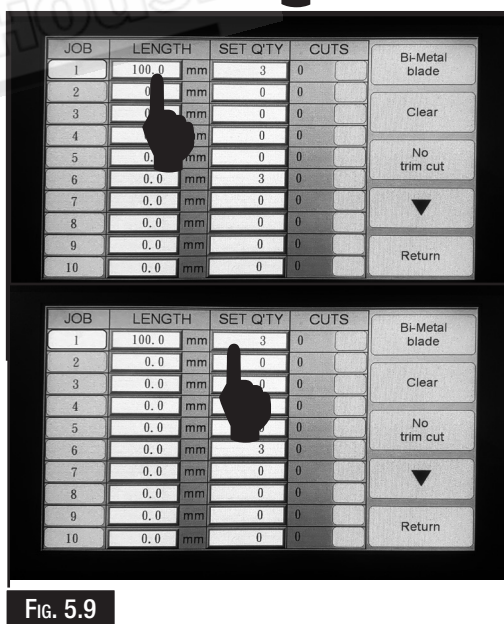


Fig. 5.9

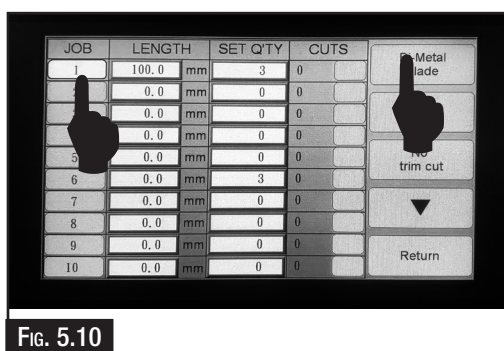


Fig. 5.10

10. Select “trim cut” or “no trim cut”. (Fig. 5.11)  
Trim cut – this mode assumes the 1st piece being cut is to clean the end of the material and is regarded as scrap.  
No Trim Cut – in this mode the material needs to be advanced to the set length as written in the program and once cut it completed it is counted as the 1st piece from the program.



Fig. 5.11

11. Press the “Return” button on the controller to return to the main screen.

12. Start the hydraulic pump (Note: Cycle Select must be set to Manual mode) (B in Fig. 5.12)

13. Raise bow using Bow Down/Up switch

14. Load the material to be cut into both the front and rear vices.



Fig. 5.12

15. Clamp the material in the front and rear vices by turning the handwheels anti-clockwise ensuring the workpiece is clamped in the jaws.

16. Adjust the material top rollers by positioning them on top of workpiece to be cut. (This improves the accuracy when cutting up to 100mm diameter material).



Fig. 5.13

17. Loosen both front & rear vice by turning the vice handwheel approx. half a turn allowing approx. 5mm gap between the workpiece and vice jaws and tighten the ratchet clamps located on the top vice slides. (Fig. 5.13)

18. Clamp both the “Front Vice” & “Rear Vice” by selecting the “Close” position on selector switches on the control panel, this will apply hydraulic pressure to clamp the workpiece. Ensure material is clamped tight.

19. Adjust left hand blade guide arm as close to work piece as possible (Fig. 5.14)



Fig. 5.14



20. Set blade speed using dial found on controller referring to the blade speed selection guide on page 25.
21. Using the bow downfeed valve (Fig. 5.15) turn knob clockwise to the off position. This will ensure the feed rate is not set too fast for your initial cut.
22. Set "Cycle Select" to "Auto" on the pendant
23. Start cut cycle by selecting the ON button (Fig. 5.16). The rear vice will locate it's reference position, and the bow will rapid traverse until the fast approach sensor is touching the workpiece with the blade set at approx. 10mm off the workpiece.
24. Adjust cutting feed rate using the downfeed adjustment valve setting the correct feed rate for the application.
25. At the end of the cut the bow will automatically raise until the fast approach sensor lifts off the workpiece and the material will auto hitch feed to start the 2nd cut.
26. Step 25 will be repeated and at the end of the program the bow will automatically raise until the fast approach sensor lifts off the workpiece and the blade will come to a stop.
27. To release the material from vice, start the hydraulic pump (Note: Cycle Select must be set to Manual mode) (Fig. 5.17)
28. Open both the "Front Vice" & "Rear Vice" by selecting the "Open" position on selector switches on the control panel (Fig. 5.18)
29. Switch off Hydraulic Pump.

**NOTE: The machine will automatically turn OFF the Hydraulic system if it is not used for 20 minutes.**

**NOTE: Ensure the cut counter for your cutting list is cleared if you intend to repeat the program.**

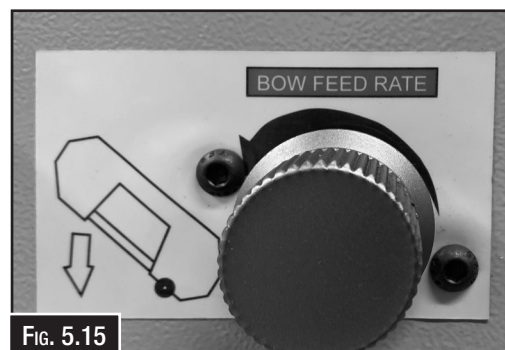


Fig. 5.15



Fig. 5.16

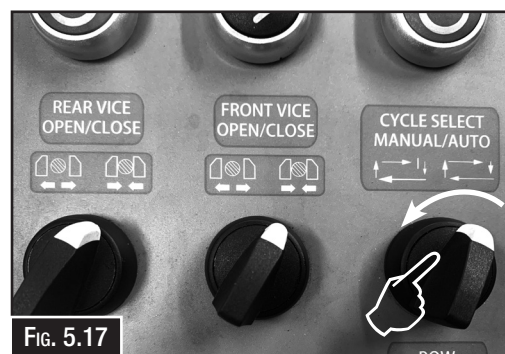


Fig. 5.17

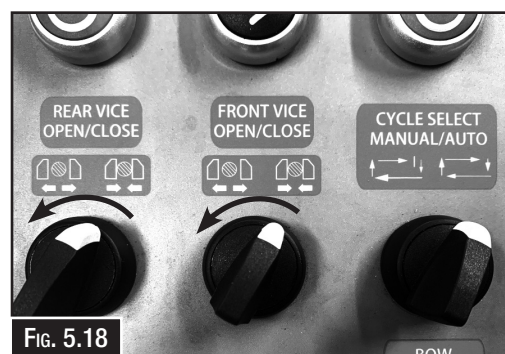


Fig. 5.18

### 5.3 ANGLE CUTTING

The machine will cut angles with a range of 0 to 60 degrees. The machine is designed to cut 0 degrees to 45 degrees in Fully-Automatic Function or Semi Automatic but will only cut 45 degrees to 60 degrees in Semi-Automatic Function.

#### To set a 45 degree angle:

1. Pull the handle ( Fig. 5.19 ) to release the saw arm
2. Flip the 45 degree fast angle stop over (Fig. 5.20) and turn the saw arm to 45 degree making sure that the body of the machine is hard up against the stop.
3. Push the handle ( Fig. 5.19 ) to lock the saw arm



Fig. 5.19

#### To set a 60 degree angle:

**⚠ WARNING** Before the angle is set, the large yellow guard (Fig. 5.20) at the rear of the machine over vice area needs to be removed. Ensure this guard is fitted back on when resetting the machine for any angle 45° or under.

1. Remove the yellow guard at the rear of the machine. (Fig. 5. 21)
2. So that the bow does not hit the “Hold Down Roller” Ensure the “Hold Down Roller” is all the way up on the front vice.
3. Pull the handle ( Fig. 5.19 ) to release the saw arm
4. Flip the 45 degree fast angle stop to the vertical position to expose the 60 degree fast stop. (Fig. 5.22) and turn the saw arm to 60 degree making sure that the body of the machine is hard up against the stop.
5. Push the handle ( Fig. 5.18 ) to lock the saw arm.

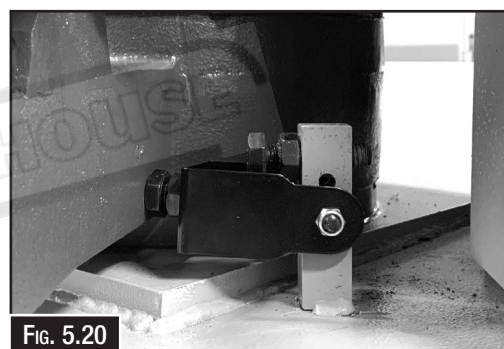


Fig. 5.20

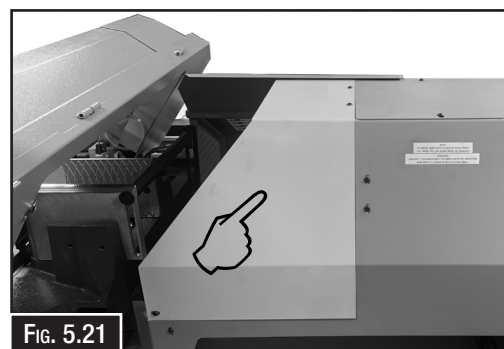


Fig. 5.21

**⚠ WARNING** When the saw arm is set to cut between 45 degrees and 60 degrees, ensure the rear vice is moved all the way back.



Fig. 5.22

### To Set Other Angles:

Angles other than 45 or 60 degree can be made by using the angle scale mounted on the base of the swivel mechanism. (Fig. 5.23)

The scale should be used as a guide only and accurate measurements should be checked with a protractor

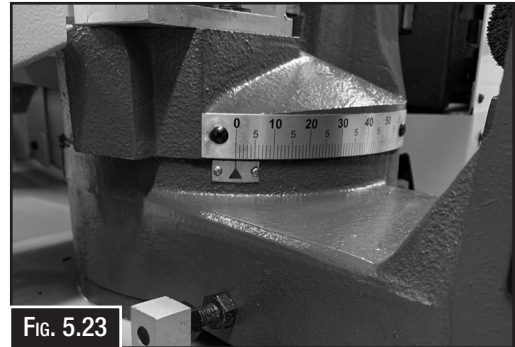


Fig. 5.23

### 5.4 CHANGING THE BLADE

Blades should be changed when they become dull, damaged, or when the teeth per inch does not suit the operation and requires a different blade.

#### To change the blade on the band saw:

1. DISCONNECT THE BAND SAW FROM POWER!
2. Raise the head of the band saw to give better access, then open the wheel access cover. (Fig. 5.24). Ensure the cover is latched so it will not drop.
3. Undo the two button head screws and remove the yellow blade guard. (Fig. 5.25)
4. Release the tension on the blade by turning the handle in the end of the blade guard anti clockwise. (Fig. 5.26)
5. Remove the blade off the two wheels and take the blade out of the blade guides.
6. Place the new saw blade into the blade guide first then place the saw blade onto the drive wheel and onto the idle wheel.
7. Turn the handle (Fig. 5.26) clockwise to tension the saw blade until the tension gauge reach the middle of green color section of the pressure gauge .
8. Close the saw blade cover and secure the clips, making sure that the guard micro switch is engaged.

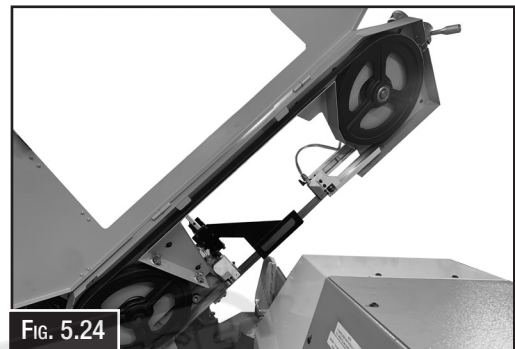


Fig. 5.24

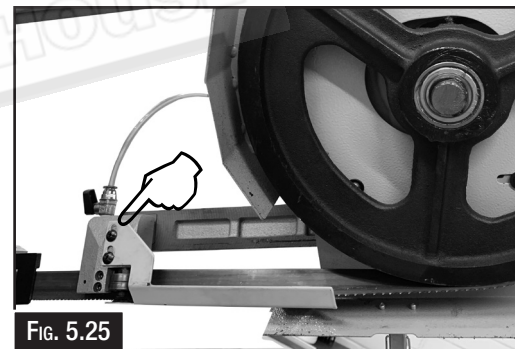


Fig. 5.25

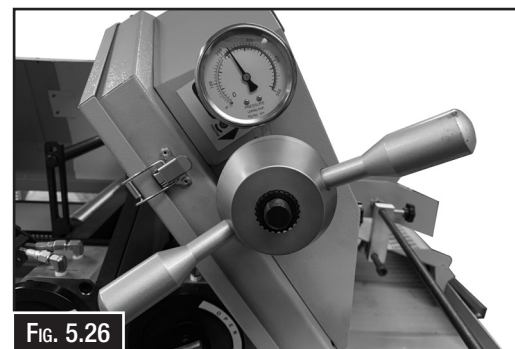


Fig. 5.26

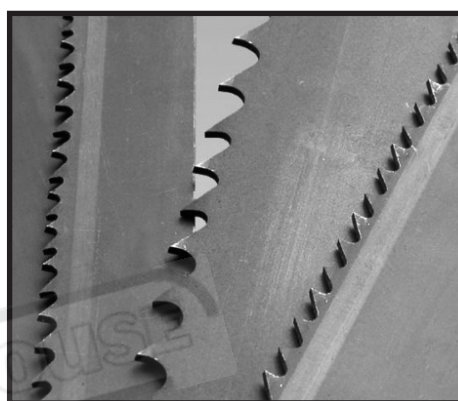
**NOTE: When replacing the blade make sure that the teeth are facing in the correct direction .**

### 5.5 BLADE SELECTION

Band saw tooth size is determined by the size of the cross section to be cut. In general cutting thinner sections requires more teeth per inch, thicker sections require coarser pitches, or less teeth per inch. To select an appropriate tooth size please refer to the table immediately below unless material to be cut is a tube, in which case refer to the larger table below. For general purpose cutting use a constant pitch blade, for more aggressive production cutting of harder to cut materials use a variable pitch blade.

#### SOLID SECTION

SECTION SIZE (MM)	CONSTANT PITCH (TPI)	VARIABLE PITCH (TPI)
UP TO 10	24 OR 18	14/18 OR 10/14
10 - 15	14	8 - 12
16 - 30	10	6 - 10
31 - 50	8	5 - 8
51 - 80	6	4 - 6
81 - 120	4	3 - 4
121 - 200	3	1 - 3
OVER 200	2 OR 1.25	1.4 - 2 OR 0.8 - 1.3



#### TUBE SECTION

WALL THICKNESS (MM)	OUTSIDE DIAMETER OF TUBE OR MAXIMUM PROFILE SECTION LENGTH (MM)													
	20	40	60	80	100	120	150	200	300	500	600	700	800	
2	14	14	14	14	14	14	10-14	10-14	8-12	8-12	6-10	5-8	5-8	
3	14	14	10-14	10-14	10-14	10-14	8-12	8-12	6-10	6-10	5-8	5-8	5-8	
4	14	14	10-14	10-14	8-12	8-12	6-10	6-10	5-8	5-8	4-6	4-6	4-6	
5	14	10-14	10-14	8-12	8-12	6-10	6-10	5-8	5-8	4-6	4-6	4-6	4-6	
6	14	10-14	10-14	8-12	8-12	6-10	6-10	5-8	5-8	4-6	4-6	3-4	3-4	
8	16	10-14	8-12	8-12	6-10	6-10	5-8	5-8	4-6	4-6	3-4	3-4	3-4	
10		8-12	8-12	6-10	6-10	5-8	5-8	4-6	4-6	3-4	3-4	3-4	3-4	
12		8-12	6-10	6-10	5-8	5-8	4-6	4-6	3-4	3-4	3-4	3-4	2-3	
15			6-10	5-8	5-8	4-6	4-6	4-6	3-4	3-4	3-4	2-3	2-3	
20				5-8	4-6	4-6	4-6	3-4	3-4	2-3	2-3	2-3	2-3	
30					4-6	4-6	3-4	3-4	3-4	2-3	2-3	2-3	2-3	
50						3-4	3-4	3-4	2-3	2-3	2-3	2-3	2-3	
75							2-3	2-3	2-3	2-3	2-3	1.4-2	1.4-2	



#### WARNING.

*Blades are very sharp. If not careful serious injury can result from touching the blades with bare hands. Leather work gloves should be worn when handling these blades*



### 5.6 SELECTING SPEEDS

This band saw has a variable speed motor that allows for variable speed of the cutting blade. The speed control can be found on the control panel.

The speed can easily be adjusted by rotating the dial (Fig. 5.27)

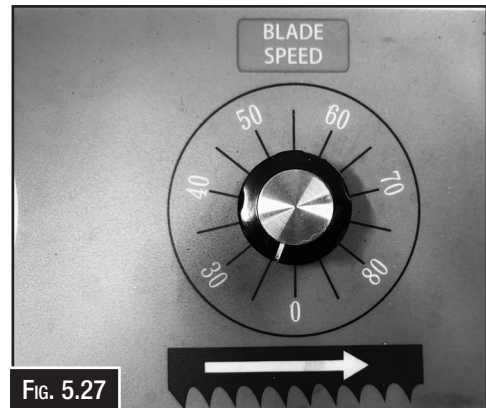


Fig. 5.27

The actual speed of the blade can be seen on the display on the control panel. The speed is displayed in Metres/Minute. (Fig. 5.28)

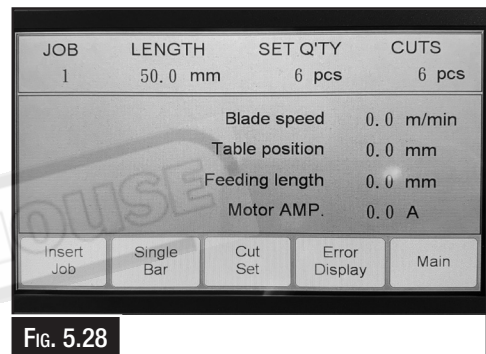


Fig. 5.28

**NOTE: The blade speed is different where the blade material differs. Blade material can be Carbon Steel, Bimetal, Carbide tipped. Most common is a Bi-Metal blade.**

**NOTE: Selecting the correct speed is important for longer blade life See table below**

MATERIAL	(M/MM)	FEED MOTION PER TOOTH(MM)	MATERIAL	(M/MM)	FEED MOTION PER TOOTH(MM)
C10, C15, ST34, ST37 STEEL UP TO 500N/MM <sup>2</sup>	30 ~ 50	0.03 ~ 0.06	ALUMINIUM AND ALLOY ALUMINIUM	600 ~ 900	0.04 ~ 0.09
C20, C40, 15Cr3 16MNC35 <sup>2</sup> STEEL UP TO 88 N/MM	20 ~ 40	0.03 ~ 0.04	ALUMINIUM AND ALLOY ALUMINIUM (PROFILES)	800 ~ 1200	0.03 ~ 0.07
38NCD4, <sup>2</sup> 50Cr3, 16MnNC35 STEEL UP TO 1200 N/MM	15 ~ 25	0.02 ~ 0.03	BRASS AND COPPER	200 ~ 300	0.04 ~ 0.06
STAINLESS STEEL	10 ~ 30	0.01 ~ 0.03	BRONZE	400 ~ 600	0.04 ~ 0.08
CASTING	30 ~ 50	0.04 ~ 0.05	SYNTHETIC MATERIALS	60 ~ 150	0.04 ~ 0.08

## 6. MAINTENANCE

### **WARNING**

**Before maintaining or cleaning the machine, turn off the circuit breaker, or disconnect the machine from the power supply. post a sign to inform other workers that the machine is under maintenance.**

For optimum performance from the machine, it is important that the machine is well lubricated and maintain. Follow the maintenance schedule listed in the following section and refer to any specific instructions given.

Maintenance must be carried out by qualified staff. The various operations for maintenance are indicated in the following pages of this manual.

### 6.1 SCHEDULE

For the best performance of the machine follow the instructions given in this section and follow the schedule laid out below.

#### Daily Check

- Loose mounting bolts
- Damaged saw blade
- Correct blade tension
- Worn or damaged power lead
- Any unsafe condition
- The machine is cleaned after use.

#### Monthly Check

- Lubricate vice screw
- Lubricate the ball screw with grease

#### Annual Check

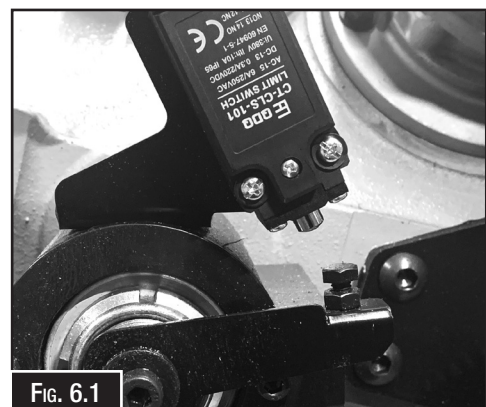
- Grease in the gear box.

### 6.2 SAW BOW RETURN STOP.

The saw bow return stop sends information to the controller when the saw bow gets to the bottom down position so that the controller can activate the bow saw lift. During the life of the machine there may be need to adjust the return stop.

#### To adjust the Stop

1. DISCONNECT THE MACHINE FROM THE POWER SUPPLY
2. Loosen the lock nut
3. Adjust the bolt in or out until the return stop is set correctly.
4. Tighten the lock nut.



**NOTE: The blade does not have to travel down so far for cutting shorter width workpieces so machine is supplied with an adjustable depth stop. (Fig. 6.1) Anti-Clockwise approximately one turn for 30 mm wide. Ensure the lock nut is locked after the adjustment has been made -**

### 6.3 BLADE GUIDE ADJUSTMENT

The blade guides are set before the machine leaves the factory but may need to be adjusted due to movement while shipping, or general wear and tear after long operation.

#### Adjust the Carbide Guides (Fig. 6.2)

1. DISCONNECT THE BAND-SAW FROM THE POWER SUPPLY
2. Make sure that the blade is correctly tensioned.
3. Raise and lock the bow saw for easy access. Slide the blade guides as close as possible together and lock in place. Remove the blade guards by loosening the button head screws.
4. Loosen the two clamp screws (Fig. 6.3) and adjust the carbide blade guides with the adjust screw, so the back of the blade just touches the carbide guide.(Fig. 6.4)
5. Tighten the clamp screws

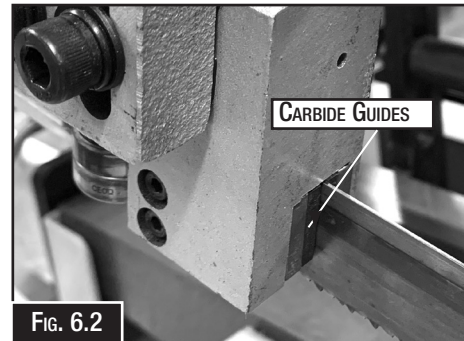


FIG. 6.2

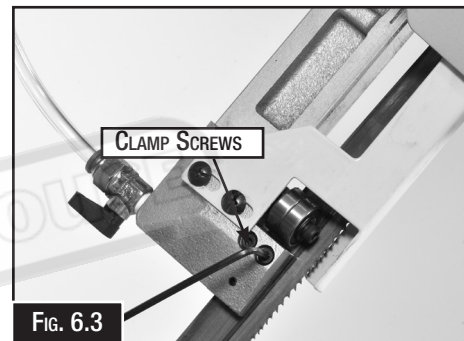


FIG. 6.3

#### Changing the Carbide Guides

1. DISCONNECT THE BAND-SAW FROM THE POWER SUPPLY
2. Raise and lock the bow saw for easy access.
3. Remove the blade.
4. Loosen the two clamp screws on each side (Fig. 6.3) and remove both the carbide blade guides, then remove the button carbide that the blade edge runs on. (Fig. 6.5)
5. Replace the carbide button guide first then replace the side guides.(These hold the button guide in place)

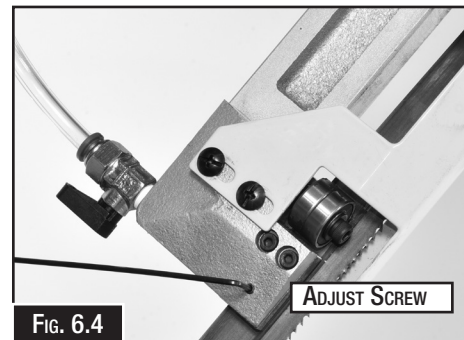


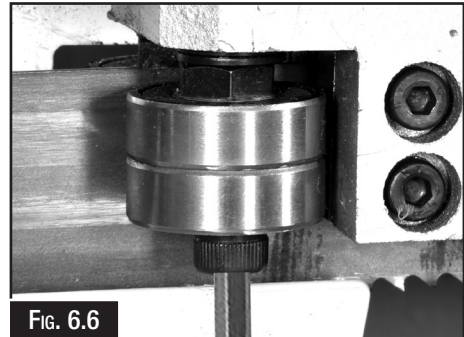
FIG. 6.4



FIG. 6.5

### To adjust the side Rollers

1. Loosen the lock nut on the top of eccentric bolt. (Fig.6.6)
2. Using a spanner on the hex section between the bearing and the casting, adjust the bearing, so it is against the side of the blade. There should be no clearance. (Fig. 6.6)
3. Tighten the lock nut making sure that the eccentric bolt does not turn.
4. Adjust the other ball bearing guide.
5. Repeat steps 1-4 on the other set of ball bearing guides on the opposite side of the saw bow.



### 6.4 ADJUSTING THE WIRE BRUSH

During the cutting operation small chips of material build up in the gulet of the bade and if not removed result in broken teeth in the blade. The wire wheel is designed to eliminate this. For this reason it is important that the wire brush is always in contact with the blade.

#### To adjust the wire wheel:

1. DISCONNECT THE MACHINE FROM THE POWER SUPPLY
2. Loosen the two socket head screws and slide the mounting plate up or down as required. (Fig. 6.7)
3. Make sure that the spring is in tension and will hold the wire brush against the blade
4. Tighten the socket head cap screws.



## **WARNING**

*The machine is the sole responsibility of the owner for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training, proper inspection and maintenance, manual availability and comprehension. The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.*



## 6.5 TROUBLESHOOTING

Review the troubleshooting and procedures in this section if a problem develops with your machine. If you need replacement parts then follow the procedure in beginning of the spare parts section or if additional help with a procedure is required, then contact you distributor.

**Note: Make sure you have the model of the machine, serial number, and manufacture date before calling.**

Symptoms	Possible Cause	Possible Solution
Breaking Teeth	Incorrect lubricant/coolant fluid	Ensure proper coolant flow.
	Material too hard	Check the cutting speed, feed speed and air pressure parameters and the type of blade you are using.
	Disc not worn--in correctly	With a new blade it is necessary to start cutting at half feeding speed. After the wearing--in period (a cutting surface of about 300 cm <sup>2</sup> for hard materials and about 1000 cm <sup>2</sup> for soft materials) the cutting and feed speeds can be brought up to normal values
	New blade inserted in a partially completed cut	The surface of the cut may have undergone work hardening. When starting work again, use a lower cutting speed and head feed speed. A tooth from the old blade may be left in the cut: check and remove before starting work again.
	Disc with excessively fine tooth pitch	The swarf wedges into the bottom of the teeth causing excessive pressure on the teeth themselves
	Work piece not clamped firmly in place	Any movement of the work piece during cutting can cause broken teeth: check the vise, jaws and clamping pressure.
Rapid Tooth Wear	Feed speed too slow	The blade runs over the material without removing it: increase feed speed.
	Cutting pressure too high	Reduce cutting pressure.
	Blade speed too high	The teeth slide over the material without cutting it: reduce the blade speed.
	Insufficient coolant	Check the coolant level and clean coolant lines and nozzles.
	Incorrect Fluid Concentration	Check and use the correct concentration.
	Material Defective	The materials may present altered zones either on the surface, such as oxides or sand, or in section, such as under-cooled inclusions. These zones, which are much harder than the blade, cause the teeth to break: discard or clean these materials.
Broken Blade	Feed speed too high	Reduce blade speed.
	Teeth in contact with material before starting the cut	Always check the position of the blade before starting a new job
	Insufficient coolant	Check the coolant level and clean coolant lines and nozzles
	Saw blade broken caused micro switch switch off (X2 OFF)	Check if saw blade is broken
	Micro switch damaged (X2)	Check if micro switch or electric cable is damaged

## 6.5 TROUBLESHOOTING CONT.

Symptoms	Possible Cause	Possible Solution
Spindle motor will not turn	Electrical power supply	Check: the cables, plug and socket. Also check that the motor connections are in place.
	Transformer	Check that the voltages are present both on the input and output. Otherwise replace.
	Contactor	Check that the phases in it are present both on the input and output, that it is not jammed, that it closes when powered and that it is not causing short circuits. Change if any of these problems are found.
	Thermal relay	Make sure it is closed, i.e. check that the phases are present in input and output that it is not causing short circuits and responds when the reset coil is closed. If it has tripped to protect the motor, check the amperage setting, reset, and check the motor. Change if necessary
	Motor	Check that it has not burnt out, that it turns freely. Repair or replace.
Pump will not Start	Cycle Select not set correctly	Switch Cycle Select to Manual Mode
Programmed job is skipped	Trim Cut not set correctly	Ensure controller is set to Trim cut function
Programs not being cut	Cycle Select not set correctly Programmed jobs not selected Program is already completed	Switch cycle select to Auto Mode Ensure programmed jobs are selected Deselect jobs and clear cut counter
Front vice wont clamp	Cycle Select not set correctly Programmed jobs not selected Program is already completed	Switch cycle select to manual mode Select programmed jobs Set to within 5mm off your workpiece Switch cycle select to manual mode to close vice and then set to Auto mode.
Rear vice wont clamp in manual mode	Incorrect cycle selected	Rear vice is only designed to operate in Auto Mode
Job setup error	Programmed jobs not selected	Select programmed jobs
	ON button pressed in auto mode when job setting incomplete	Reenter value
Cut counter will not clear	Programmed jobs are still selected	Deselect jobs first before they can be cleared
Unable to repeat programmed job	Cut counter has not been cleared	Deselect job and then clear cut counter
Cycle start will not work	Cycle Select not set correctly Programmed jobs not selected.	Switch cycle select to Auto Mode Select programmed jobs
Coolant/hydraulic pump/ inverter overload.	Cooling pump overloaded, overload protection switch off (X24 ON)	Check if cooling pump is jammed, overloaded or electric cable damaged
	Hydraulic pump overloaded, overload protection switch off (X24 ON)	Check if hydraulic pump is jammed, overloaded or electric cable damaged
	Inverter abnormal, contact movement (X24 ON)	Check user manual for inverter abnormal troubleshoot
Job Finish	Set cut and actual cut matches	Clear cutting job or reset cutting quantity
Saw bow cover open	Saw bow cover open caused micro switch switch off (X23 OFF)	Check if saw bow cover is opened
	Door switch damaged (X23)	Check if door switch or electric cable is damaged
Hydraulic pump off	Button pressed before hydraulic pump activated	Activate hydraulic pump
Front and rear vise clamp	Button pressed while front and rear vise in clamping	Open front or rear vise

**6.5 TROUBLESHOOTING CONT.**

Symptoms	Possible Cause	Possible Solution
Fast approach touch material	Button pressed while fast approach touch material (X7 ON)	Life saw bow until fast approach rod touches micro switch
	Micro switch damaged (X7)	Check if fast approach rod or electric cable is damaged
Insert length error	Insert length error or length setting incomplete	Reenter value
Insert quantity error	Insert quantity error or quantity setting incomplete	Reenter value
No material	Micro switch activated in auto mode with no material on rear vise (X6 ON)	Insert material then start cutting
	Rear vise micro switch damaged (X6)	Check if rear vise switch or electric cable damaged
Frame up/down limit error	Fast approach rod and bottom limit switch both activated (X3/X7 OFF)	Fast approach rod touches micro switch or bottom rod break away
	Bottom limit switch damaged (X3)	Check if bottom micro switch or electric cable damaged
	Fast approach rod micro switch damaged (X7)	Check fast approach rod or electric cable damaged
Servo error	Servo motor abnormal, contact movement (X27 OFF)	Check user manual for servo motor abnormal troubleshoot
Rear limit switch	Returning touches rear limit switch (X5 ON)	Move forward to break away from rear limit switch
	Rear limit switch damaged (X5)	Check rear limit switch or electric cable damage
Feeding table cover open	Feeding table cover opened (X26 OFF)	Check if feeding table cover opened
	Feeding table cover switch damaged (X26)	Check if feeding table cover switch or electric cable damaged



**CAUTION**

*A prepared list of safety guidelines can never be complete. Every workshop environment is different. Always consider Safety first, as it applies to your individual working conditions. Use this machine and other machinery with caution and respect. Failure to do so could result in serious Personal injury, damage to the equipment, or poor work results.*



**WARNING!**

*Serious injury or death can result from using this machine BEFORE understanding its controls and related safety information. DO NOT operate, or allow others to operate, the machine until the information is understood.*

## **AUTOMATIC BAND SAW EB-330FAS**

Order Code: (B080)

Edition : 2.0  
Date: (05/24)

The following section covers the spare parts diagrams and lists that were current at the time this manual was originally printed. Due to continuous improvements of the machine, changes may be made at anytime without notification.

### **HOW TO ORDER SPARE PARTS**

1. Have your machines model number, serial number & date of manufacture on hand, these can be found on the specification plate mounted on the machine
2. A scanned copy of your parts list/diagram with required spare part/s identified.

### **NOTE: SOME PARTS MAY ONLY BE AVAILABLE AS AN ASSEMBLY**

3. Go to [www.machineryhouse.com.au/contactus](http://www.machineryhouse.com.au/contactus) and fill out the inquiry form attaching a copy of scanned parts list.



### **WARNING!**

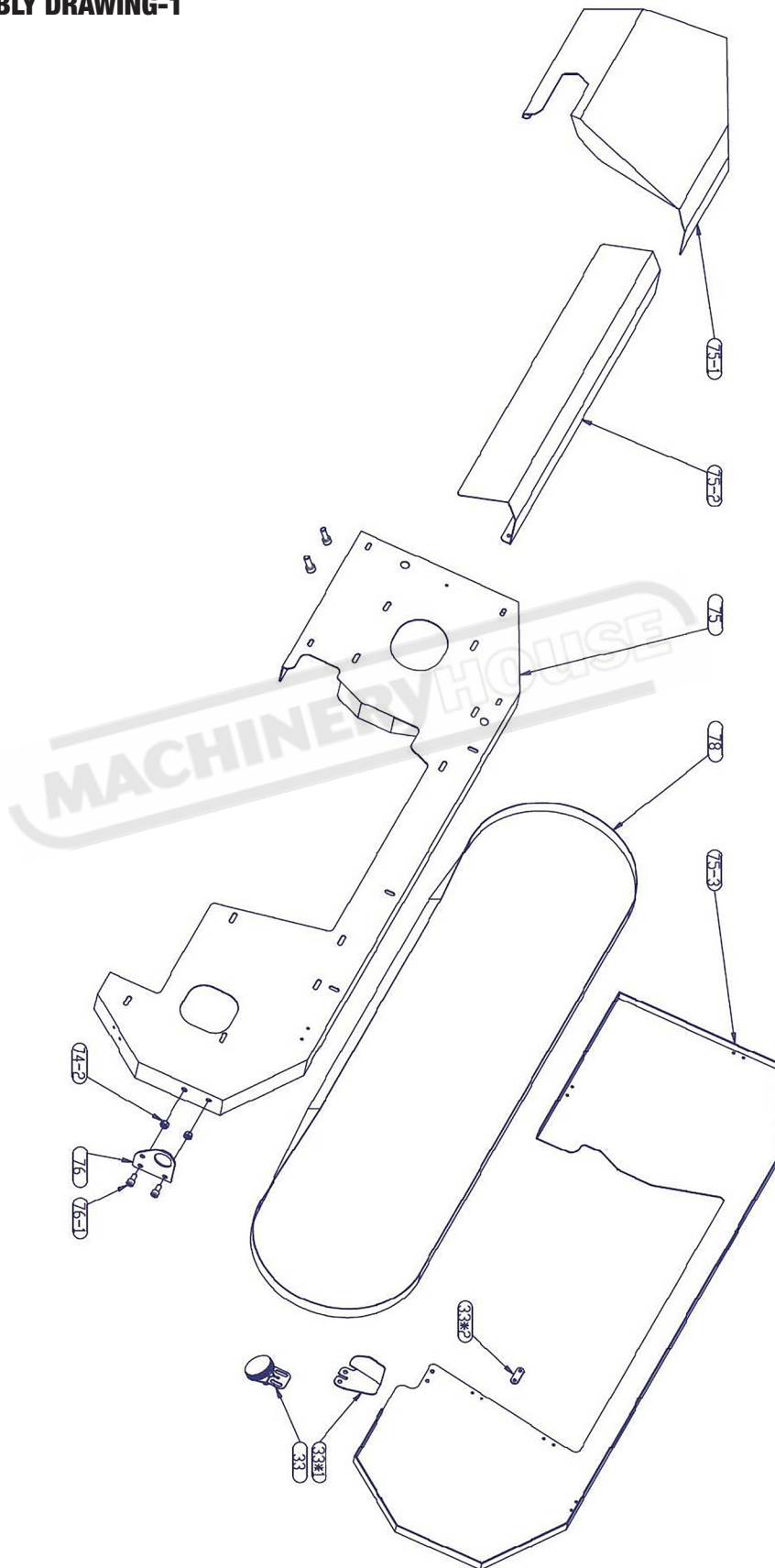
*Electricity is dangerous and could cause death  
All electrical work must be carried out by a qualified electrician.*



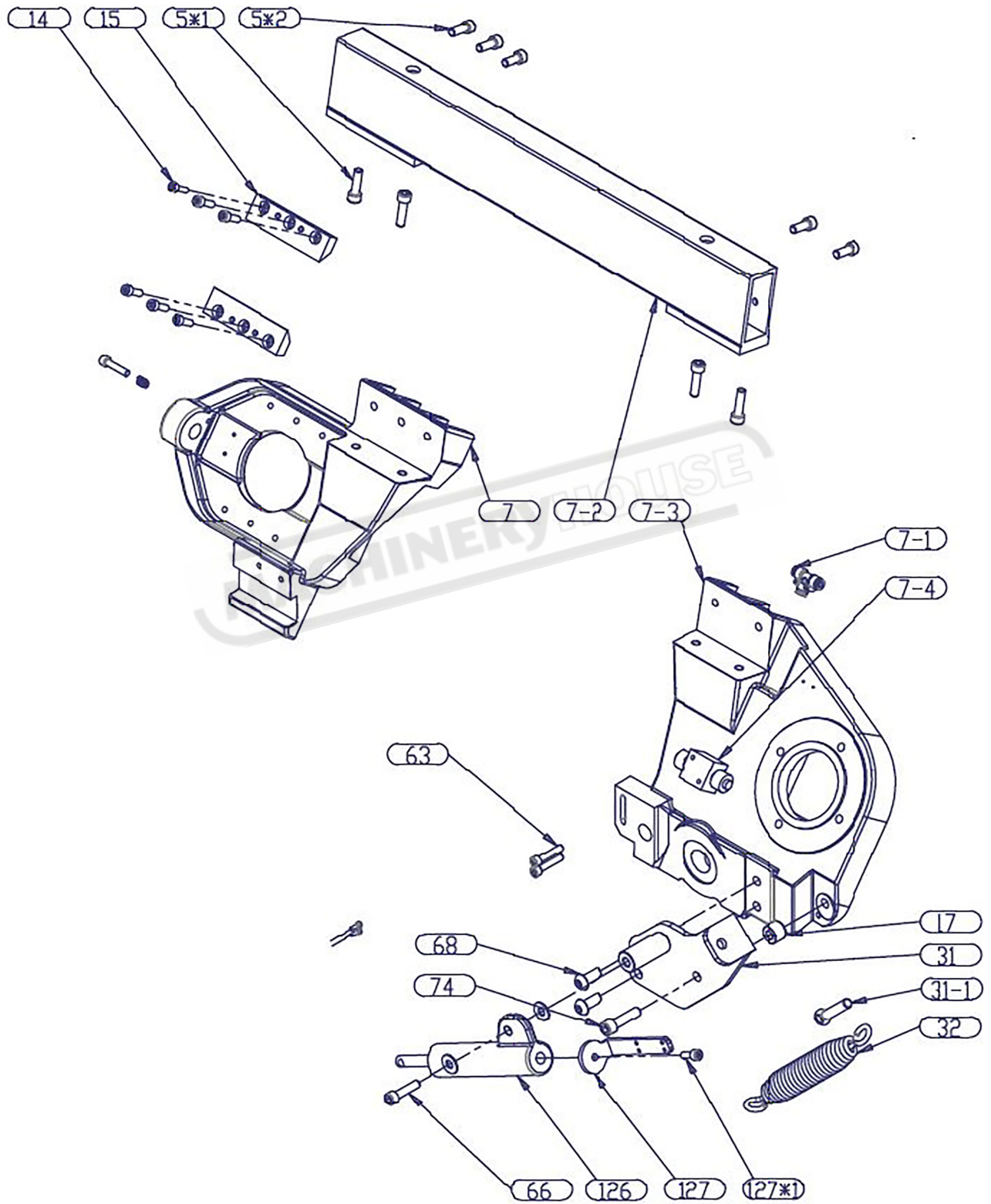
### **CAUTION**

*It is impossible to cover all possible hazards Every workshop enviroment is different. These are designed as a guide to be used to compliment training and as a reminder to users prior to equipment use. Always consider safety first, as it applies to the individual working conditions.*

**SAW BOW ASSEMBLY DRAWING-1**

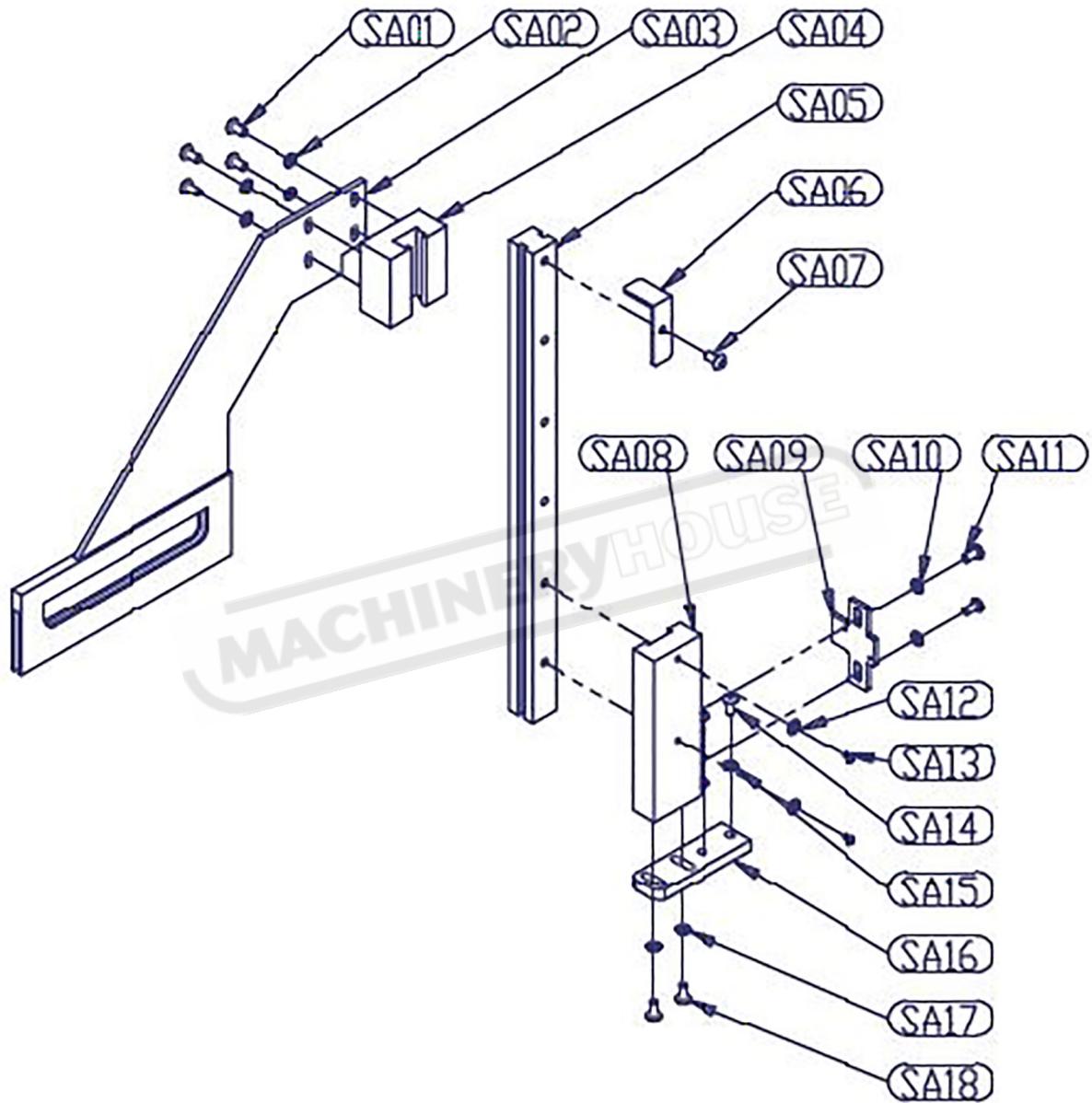


**SAW BOW ASSEMBLY DRAWING-2**

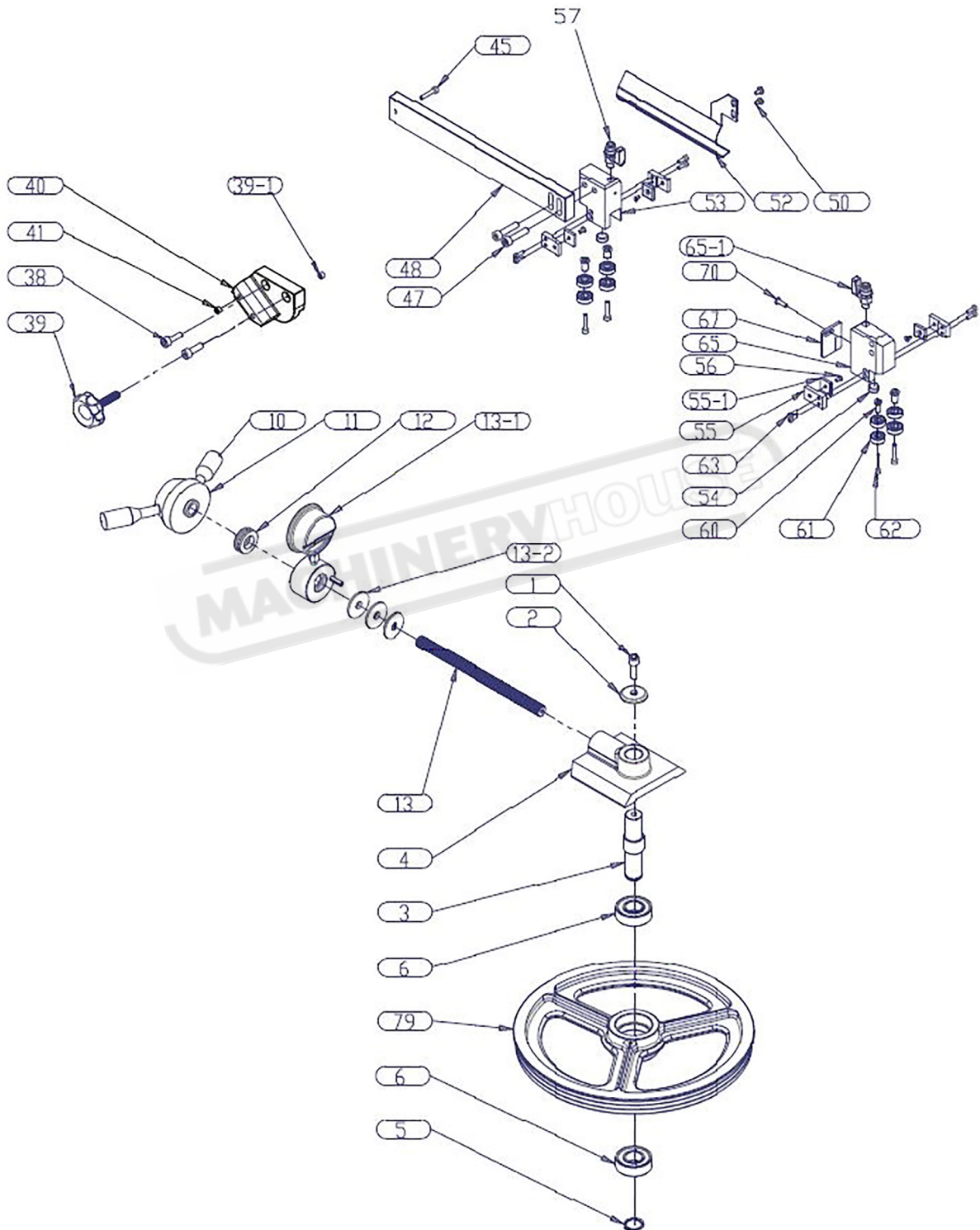




**SAW BOW ASSEMBLY DRAWING-3**

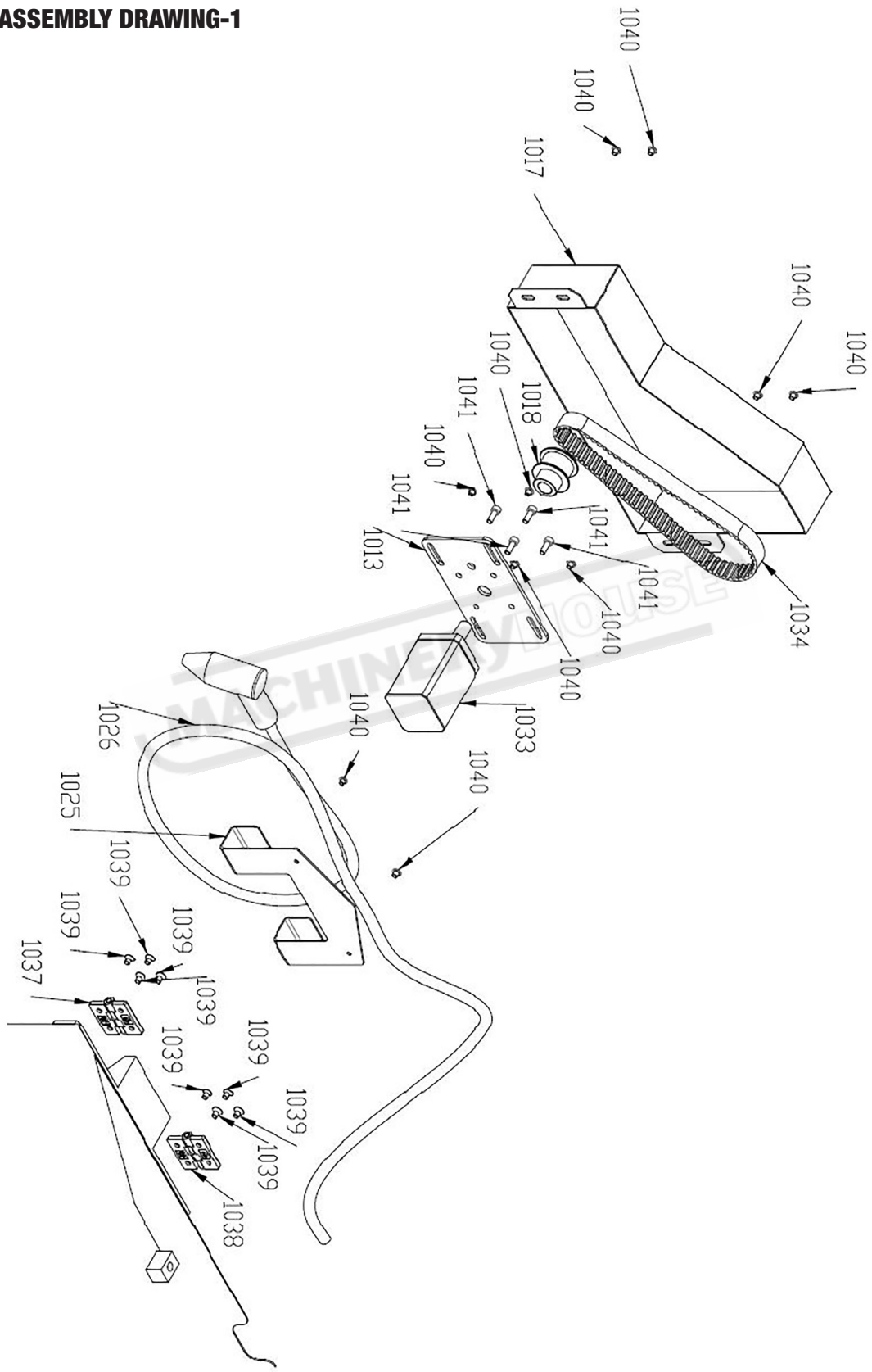


**SAW BOW ASSEMBLY DRAWING-4**

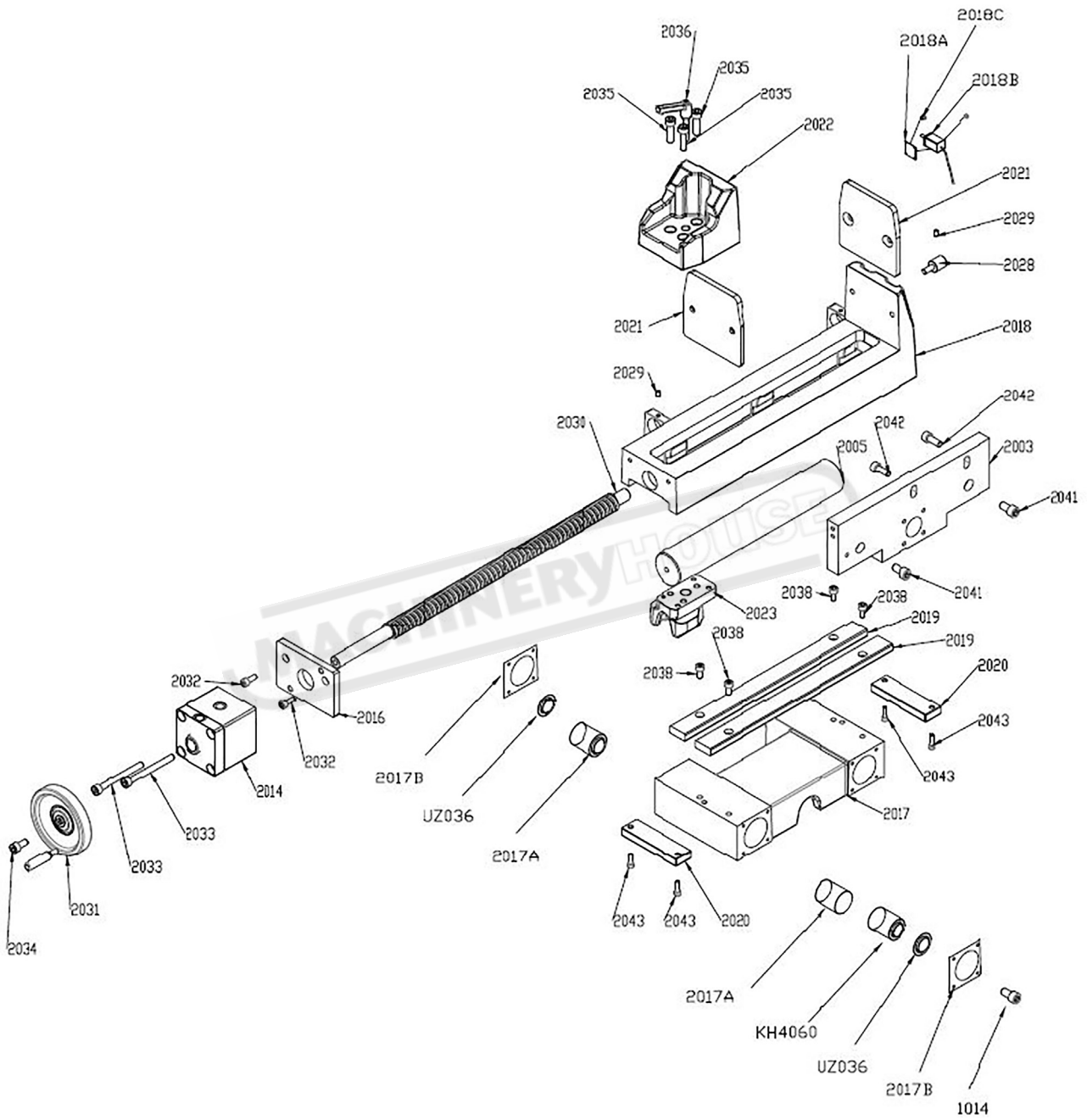




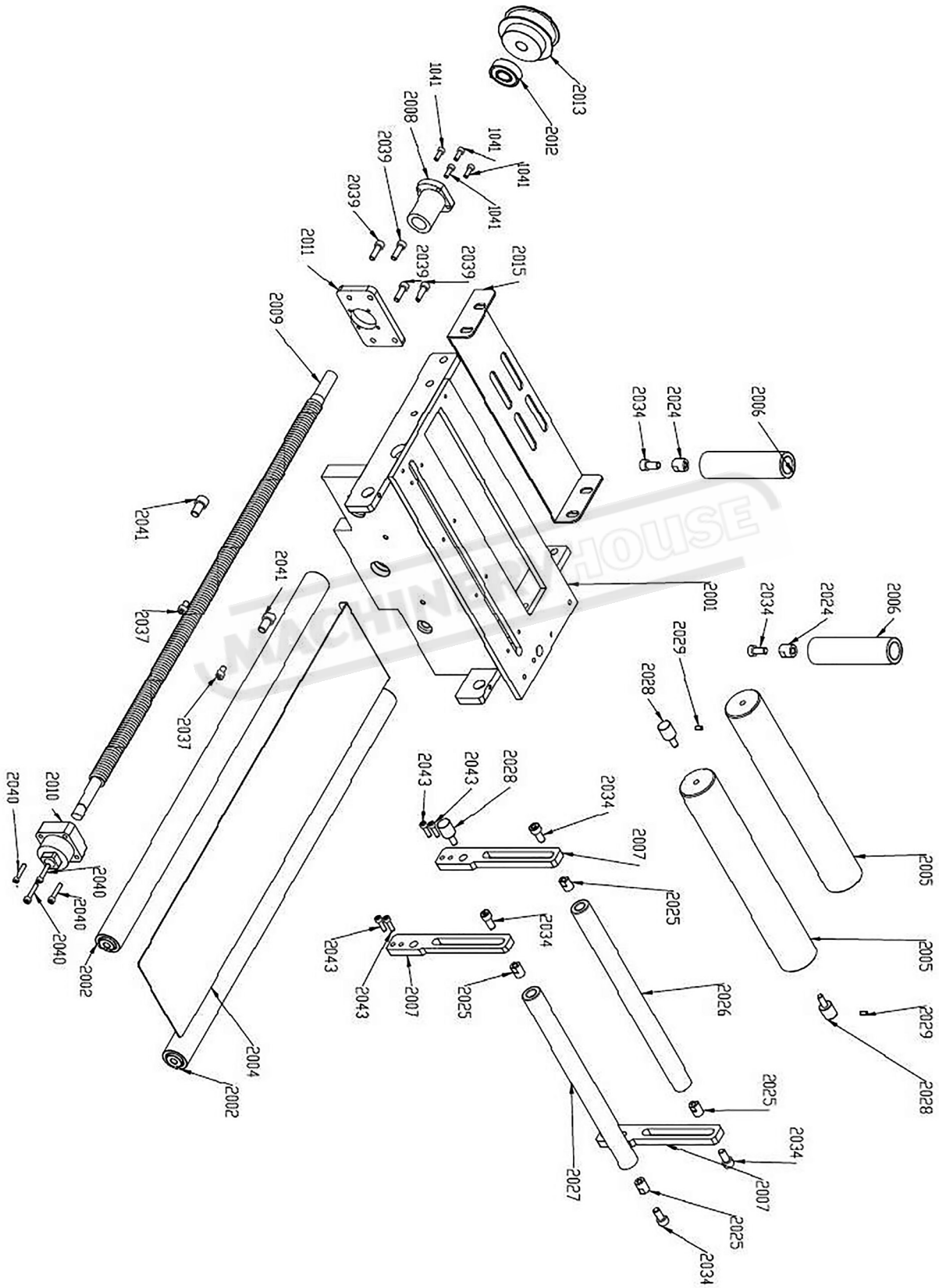
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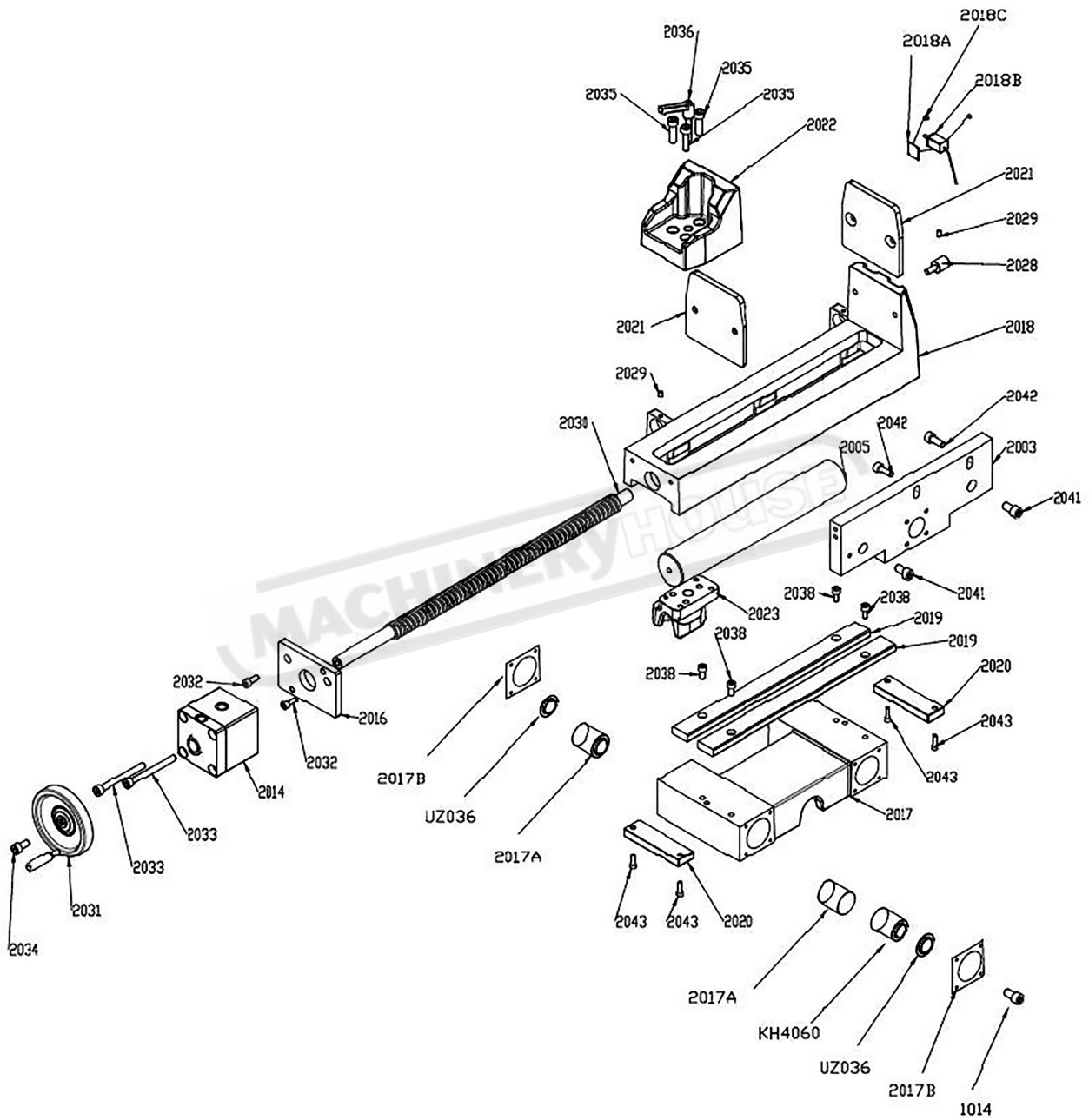
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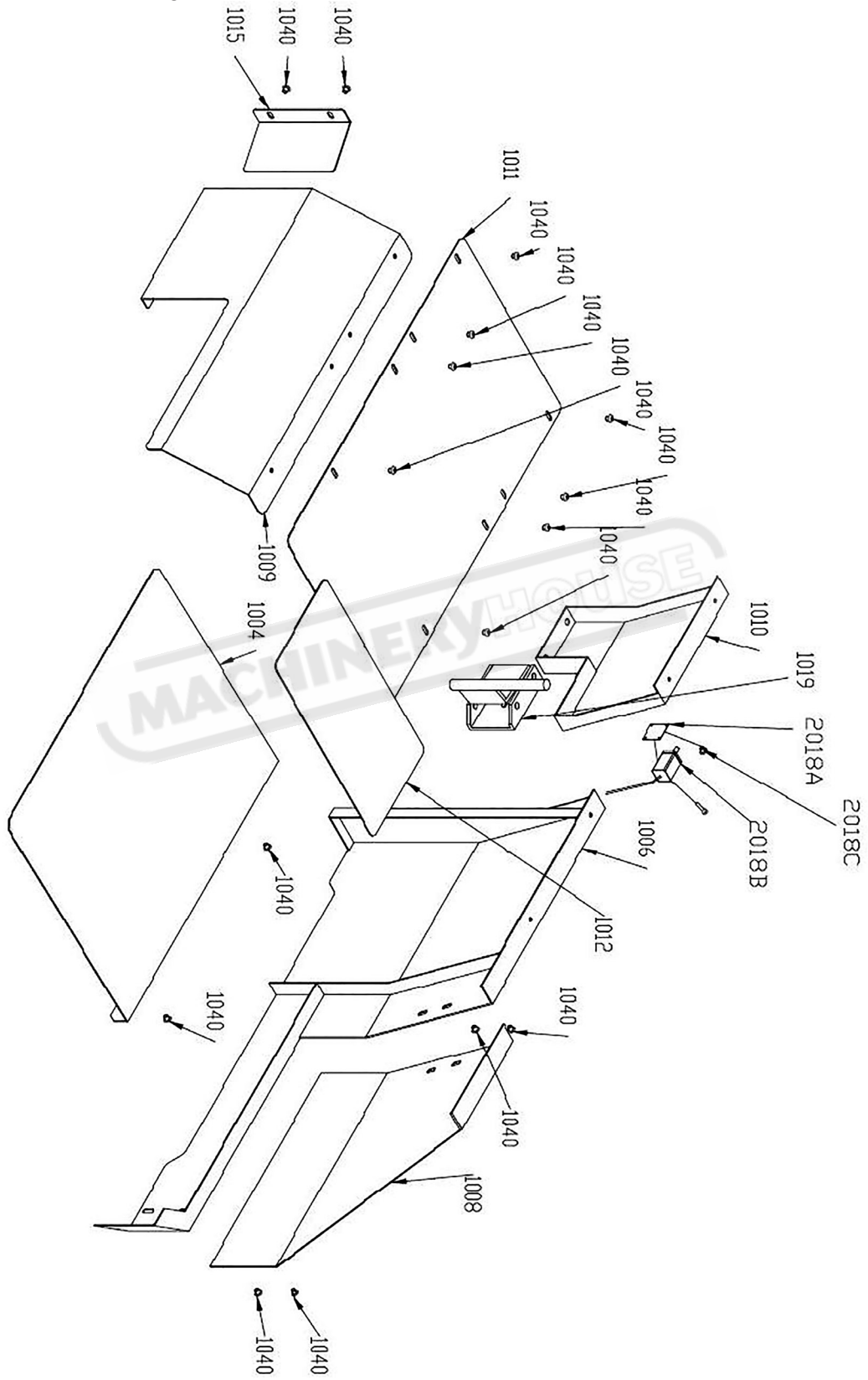
**BASE ASSEMBLY DRAWING-3**



**BASE ASSEMBLY DRAWING-4**



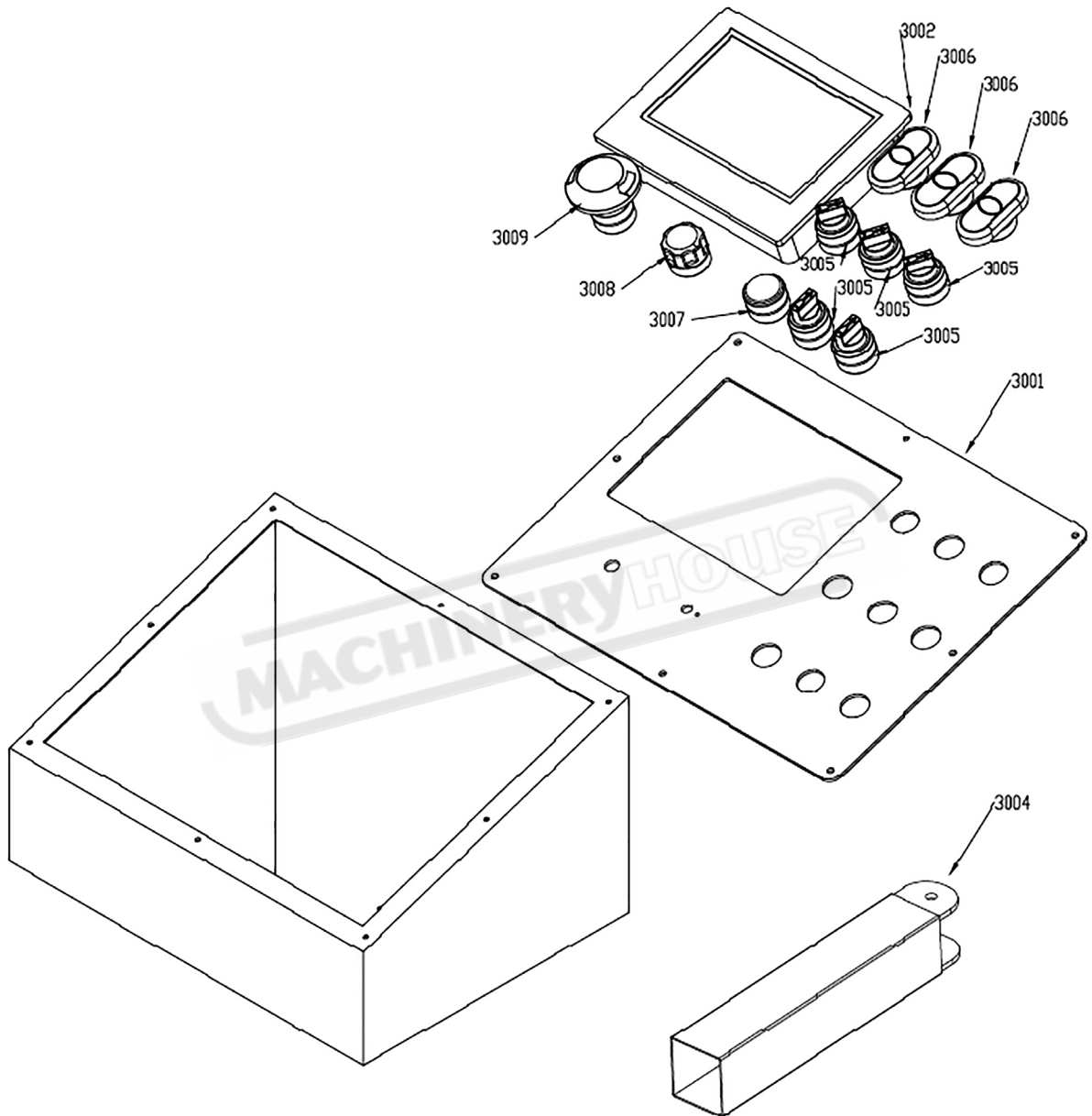
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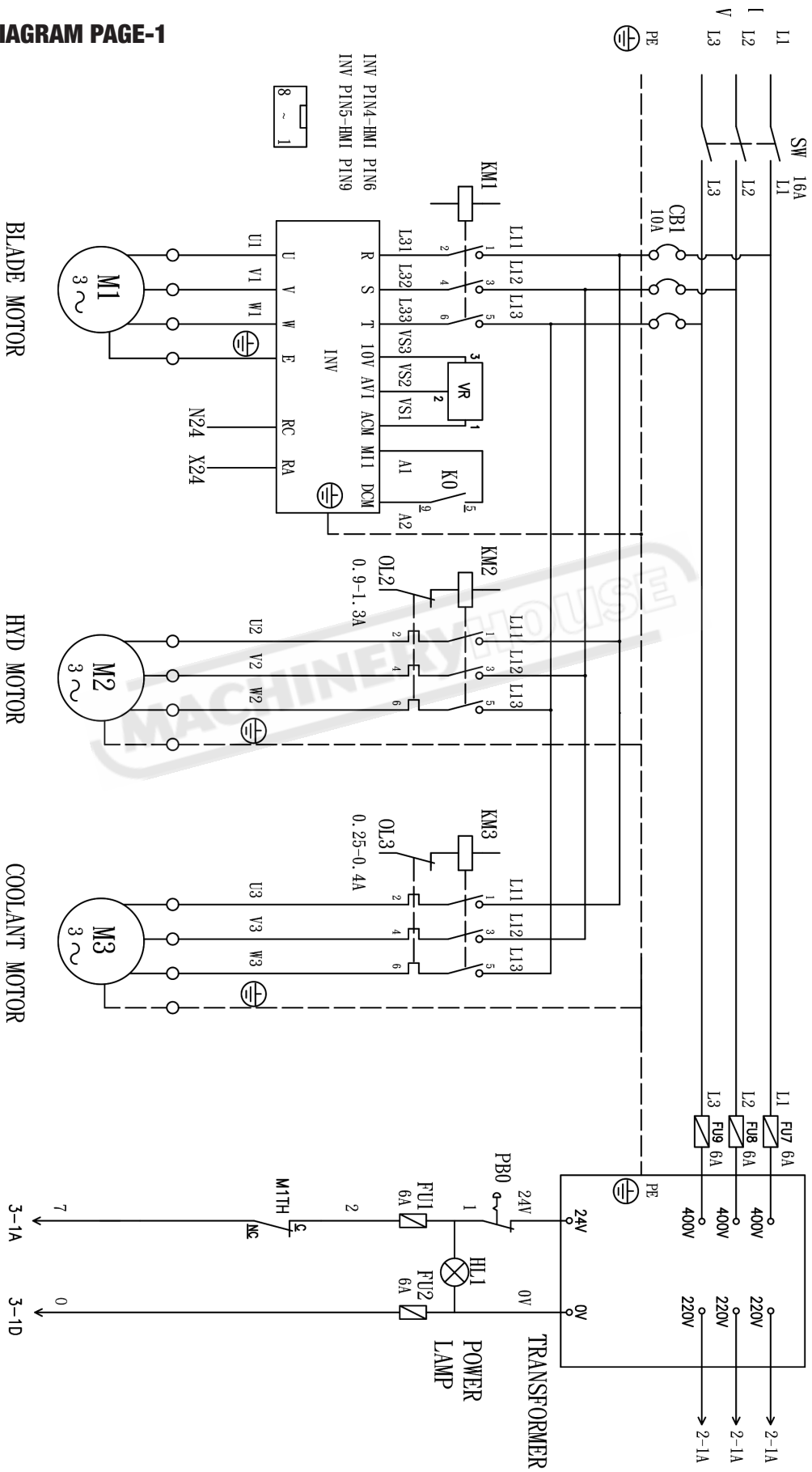




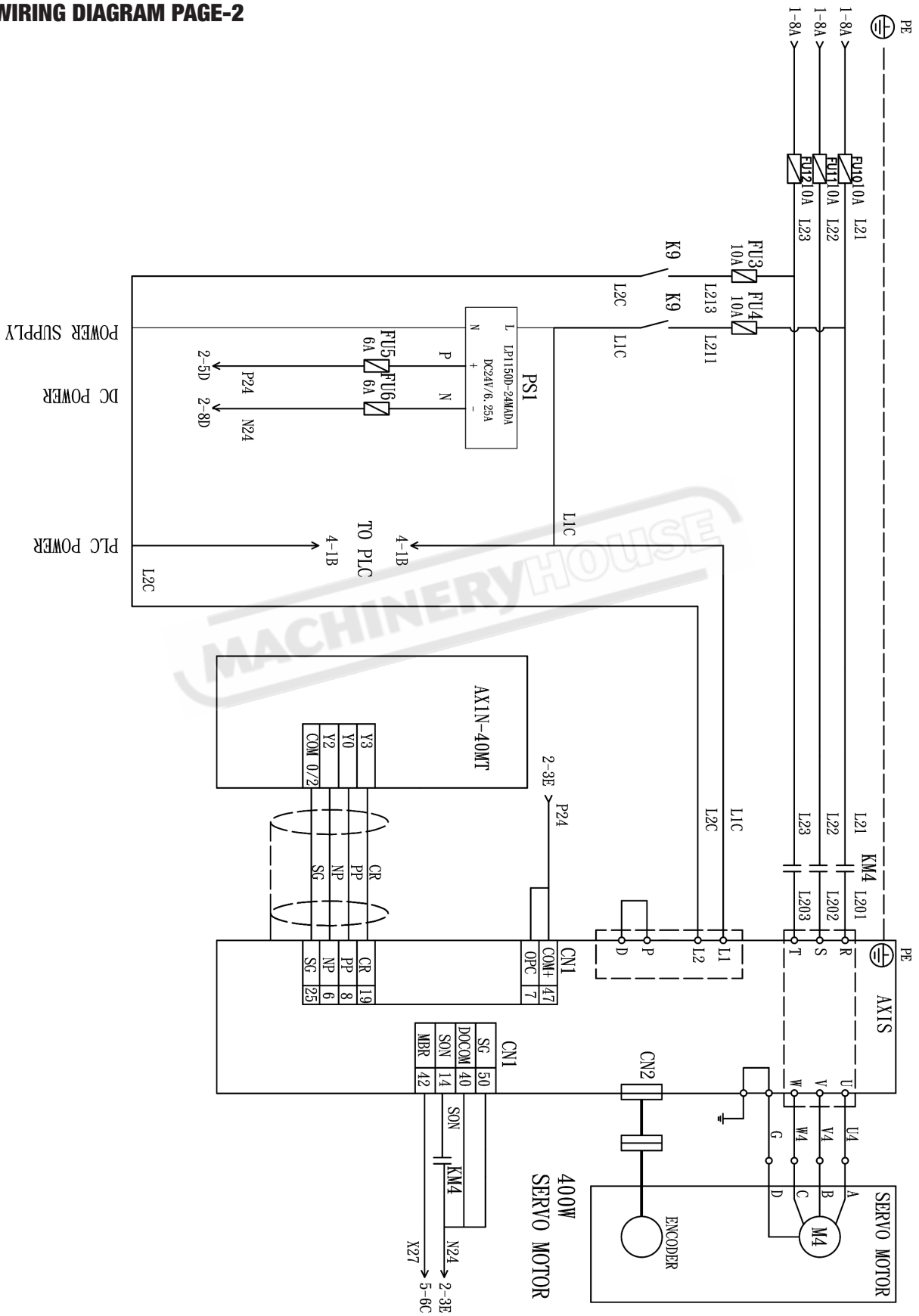
**ELECTRICAL BOX ASSEMBLY DRAWING-1**



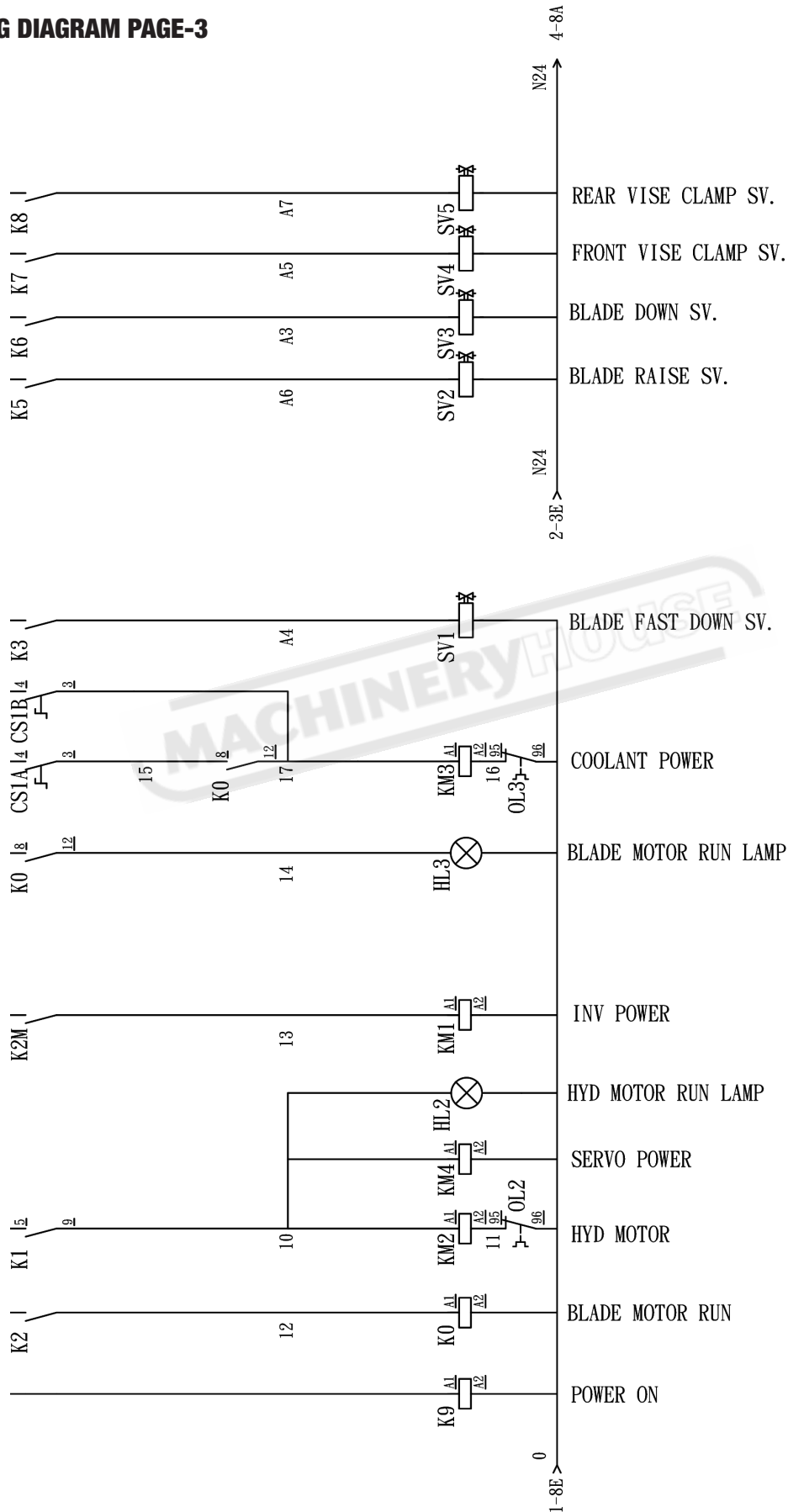
**WIRING DIAGRAM PAGE-1**



**WIRING DIAGRAM PAGE-2**



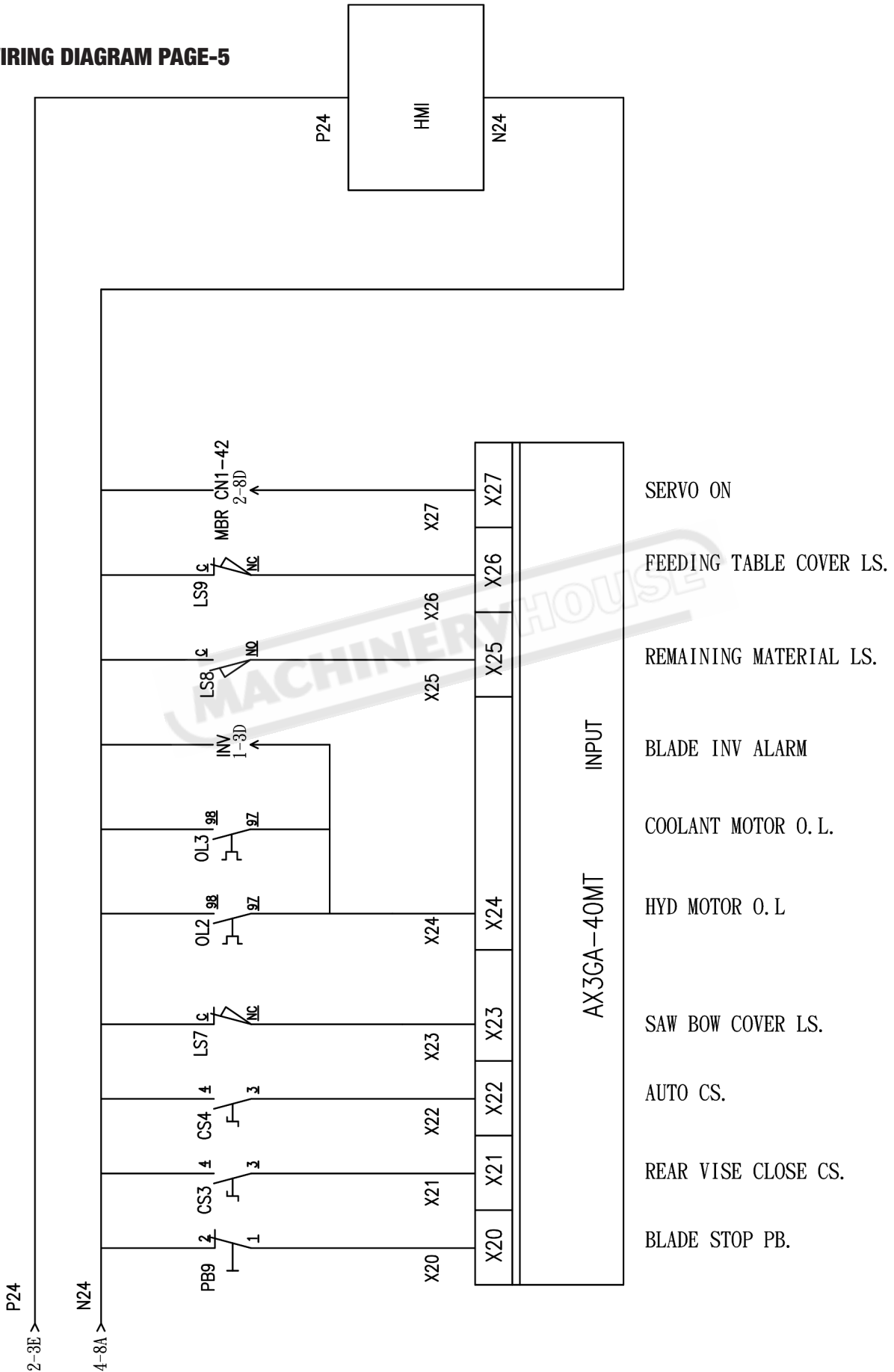
**WIRING DIAGRAM PAGE-3**





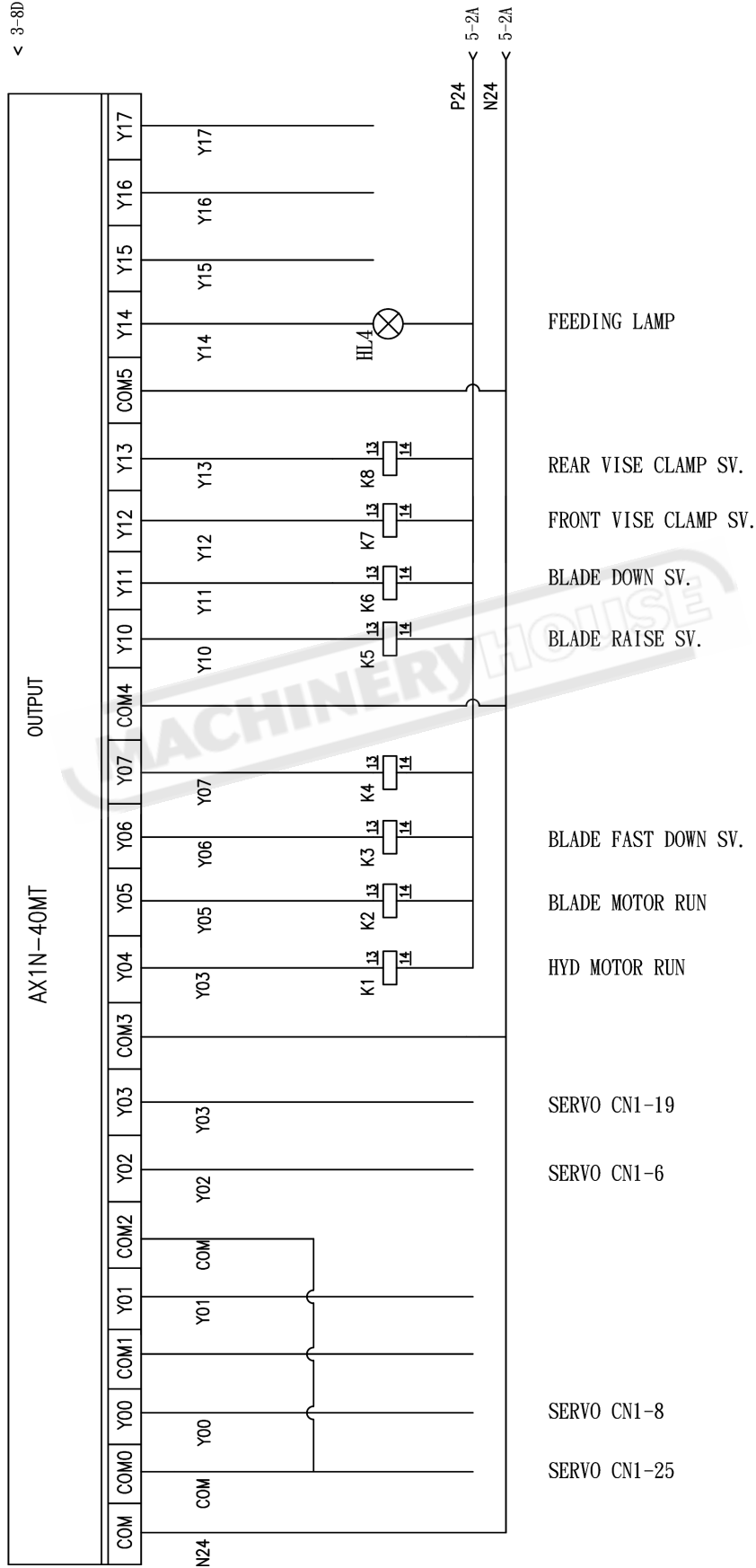


**WIRING DIAGRAM PAGE-5**



**WIRING DIAGRAM PAGE-6**

< 3-8D



**WIRING DIAGRAM PARTS**

Reference	Model No.	Description
K1M	TECO CU-11-AC24V	ith-25A U690V 400V5.5KW CE
K2M	TECO CU-11-AC24V	ith-25A U690V 400V5.5KW CE
X24(F12)	TECO RHU-10K 1.3A	SETTING RANGE1.3A CE
K3M	TECO CU-11-AC24V	ith-25A U690V 400V5.5KW CE
X24-1(F13)	TECO RHU-10K 0.4A	SETTING RANGE 0.4A CE
K4M	TECO CU-11-AC24V	ith-25A U690V 400V5.5KW CE
KM1	MY4NJ-14A	50/60Hz 5A240VAC 30VDC CE
KM2(KO)	MY4NJ-14A	50/60Hz 5A240VAC 30VDC CE
AXIS	Shihlin SDA-040A2	AC230V3PH 50/60Hz 1.9A CE
SERVO MOTOR(M5)	Shihlin SMA-L040R30ACK	AC230V3PH 50/60Hz CE
INV	DELTD VFD007EL43A	3PH 380-480V 50/60Hz3.2A CE
PSI	REIGNPOWER LP1150D-24MADA	100/240VAC 3.0AMAX 50/60Hz CE
TC1	LCE BSK-010 2.1KVA	400V/230V 5A /24V 4A CE
X02	Micro Switch Zippy	20.5A 125/250 V
X03	C.T CT-CLS-101	10(4) A125V-6(2)A250V IP64 CE
X04	Sesors XCMD2502L3	UI(V)AC400 In(A)6 IP66 CE
X05	Sesors XCMD2502L3	UI(V)AC400 In(A)6 IP66 CE
X06	Sesors XCMD2502L3	UI(V)AC400 In(A)6 IP66 CE
X07	OMRON D2VW-5LIB-1M	5A 125 250V AC CE
X10	MOUJE M22DP-SF11E30GR	10A 300VAC 1A 250VDC CE
X16	MOUJE M22DP-SF11E30GR	10A 300VAC 1A 250VDC CE
HL2	MOUJE M22DP-SF11E30GR	12-30V 5-14mA 50-60Hz CE
X11	MOUJE M22DP-SF11E30GR	10A 300VAC 1A 250VDC CE
X20	MOUJE M22DP-SF11E30GR	10A 300VAC 1A 250VDC CE

**NOTE: SOME INDIVIDUAL PARTS MAY ONLY BE AVAILABLE AS AN ASSEMBLY**

## WIRING DIAGRAM PARTS

Reference	Model No.	Description
HL3	MOUJE M22DP-SF11E30GR	12-30V 5-14mA 50-60Hz CE
PB0	AB-800FPMT44+ALP+X01	AC-15 DC-13 A600 CE
X12	MOUJE M22DP-SF11EWB	10A 300VAC 1A 250VDC CE
X13	MOUJE M22DP-SF11EWB	10A 300VAC 1A 250VDC CE
HL4	MOUJE M22DP-SF11EWB	12-30V 5-14mA 50-60Hz CE
X14	AB-800FPSB32+ALP+X012	AC-15 DC-13 A600 CE
X15	AB-800FPSB32+ALP+X012	AC-15 DC-13 A600 CE
X17	AB-800FPSM22+ALP+X01	AC-15 DC-13 A600 CE
X21	AB-800FPSM22+ALP+X01	AC-15 DC-13 A600 CE
X22	AB-800FPSM22+ALP+X01	AC-15 DC-13 A600 CE
PB1	KEDU QKS8	AC-15 8-14A 250V-400V CE
PB2	KEDU QKS8	AC-15 8-14A 250V-400V CE
X23	KEDU QKS8	AC-15 8-14A 250V-400V CE
X25	Sesors XCMD2502L3	Ui(V)AC400 In(A)6 IP66 CE
K3	SB256	24V AC 22VA Class H CE
K6	pu yuan	DFB-02-3C4-DC24-35C CE
K5-	pu yuan	DFB-02-3C4-DC24-35C CE
K7-(SV4/A5)	pu yuan	DFB-02-2B3-BC24-35C CE
K8-(SV5/A7)	pu yuan	DFB-02-2B3-BC24-35C CE
M2	pu yuan	M1/2H4-500-1A-SP-400V 50Hz CE
HLO	KEYON KE-220DS	
NBF	Shihlin Electric BHA 33 C10	Ui(V)AC690 In(A)10
	KEMA KEUR A105/6(1615)	16A 600V AC 3PH CE
AXIN-40NT	Shihlin AX 1N-40MT	AC85-264V 50/60Hz 32WMAX CE
	MT8071iE	350mA 24VDC CE
K1-K8	bore G2R-OR08-SP 24VDC	16A AC250V/DC30V 50/60Hz

**NOTE: SOME INDIVIDUAL PARTS MAY ONLY BE AVAILABLE AS AN ASSEMBLY**

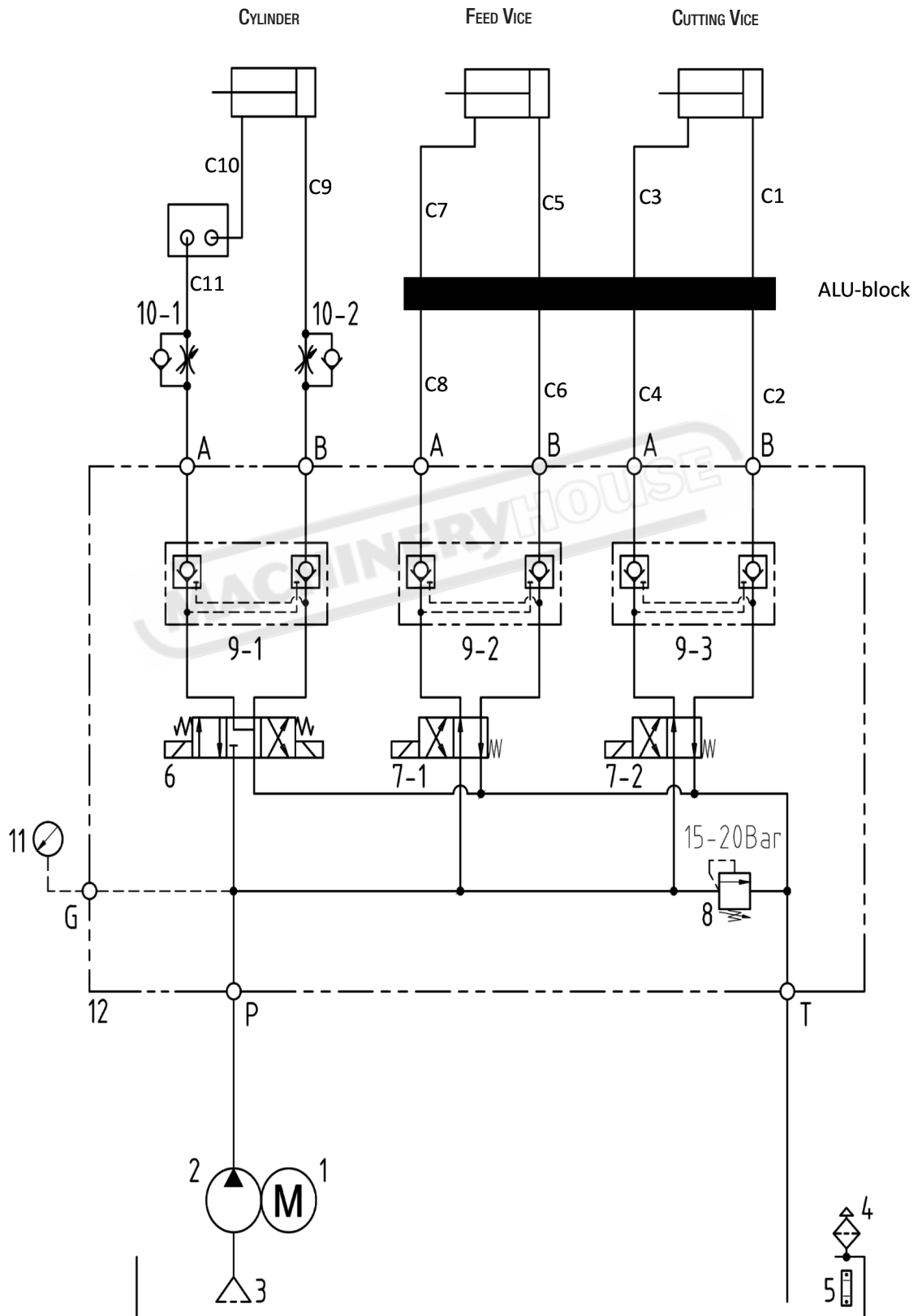


**HYDRAULIC SYSTEM PARTS LIST**

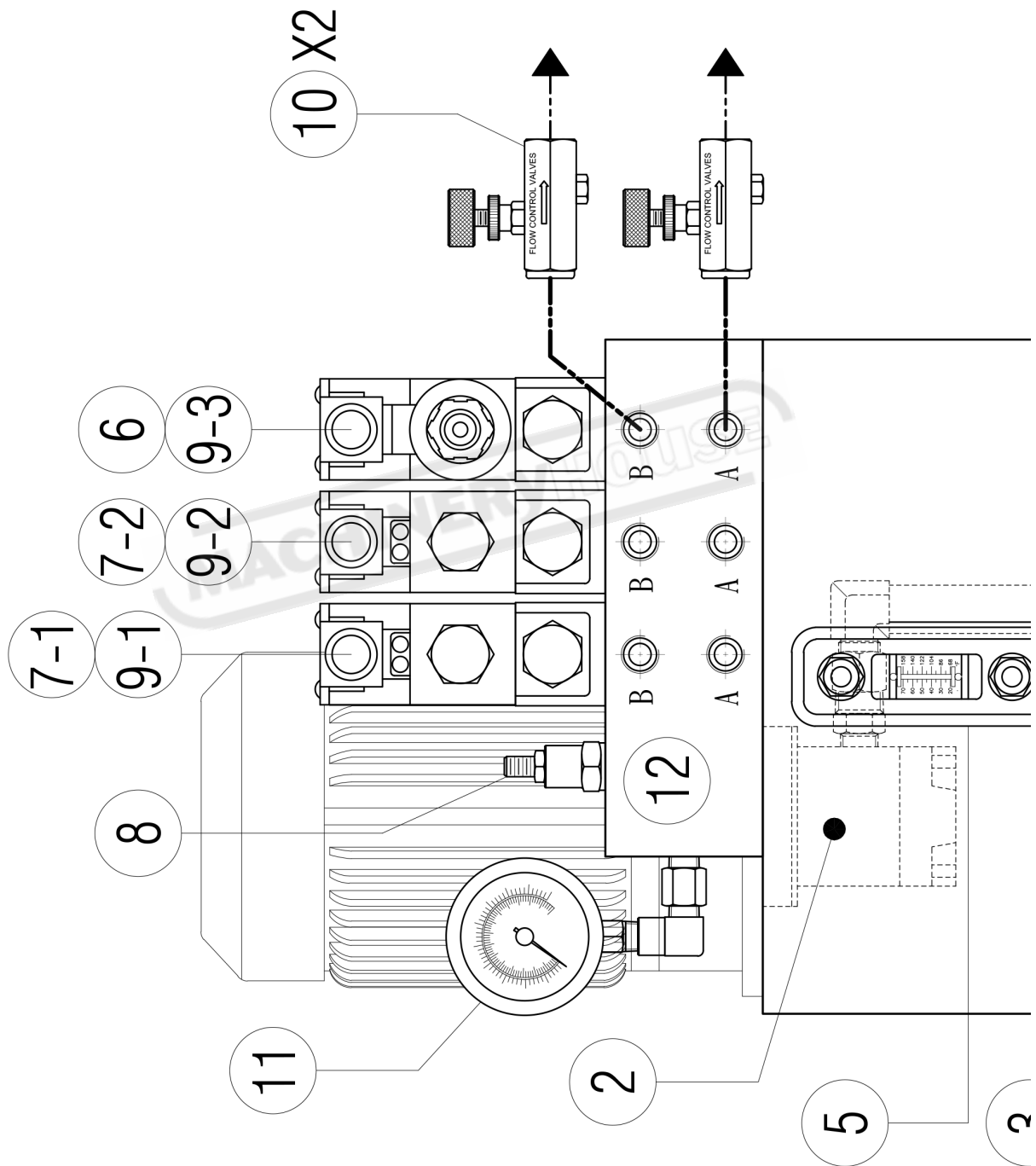
<b>EB-330FAS HYDRAULIC SYSTEM</b>				
<b>No.</b>	<b>PART</b>	<b>ITEMS</b>	<b>QTY.</b>	<b>NOTE.</b>
1	motor	M1/2H4-500-1A-SP(200/400)	1	400V
2	pump	HGP-1A-F5R-Ø12	1	HYDROMAX
3	oil strainer	SFF-04-J	1	JUNWELL
4	oil in	FB-06S-J	1	JUNWELL
5	fluid level gage	LS-3RL-J	1	JUNWELL
6	magematic valve	DFB-02-3C4-DC24-35C	1	DOFLUID
7	magematic valve	DFB-02-2B3-DC24-36C	2	DOFLUID
8	pressure adjust valve	CMR-082-L20N	1	DROTROL
9	Check valve	MPC-02-W	3	TACHENG
10	Throttle	TLC-02	2	JUNWELL
11	pressure gauge	SA2-50K-CN1	1	CNI
12	hydraulic manifold block	MMS-023B-CDP/C28	1	PLI
13	system assemble	TKY1/2H-16A-S	1	PLI

**NOTE: SOME INDIVIDUAL PARTS MAY ONLY BE AVAILABLE AS AN ASSEMBLY**

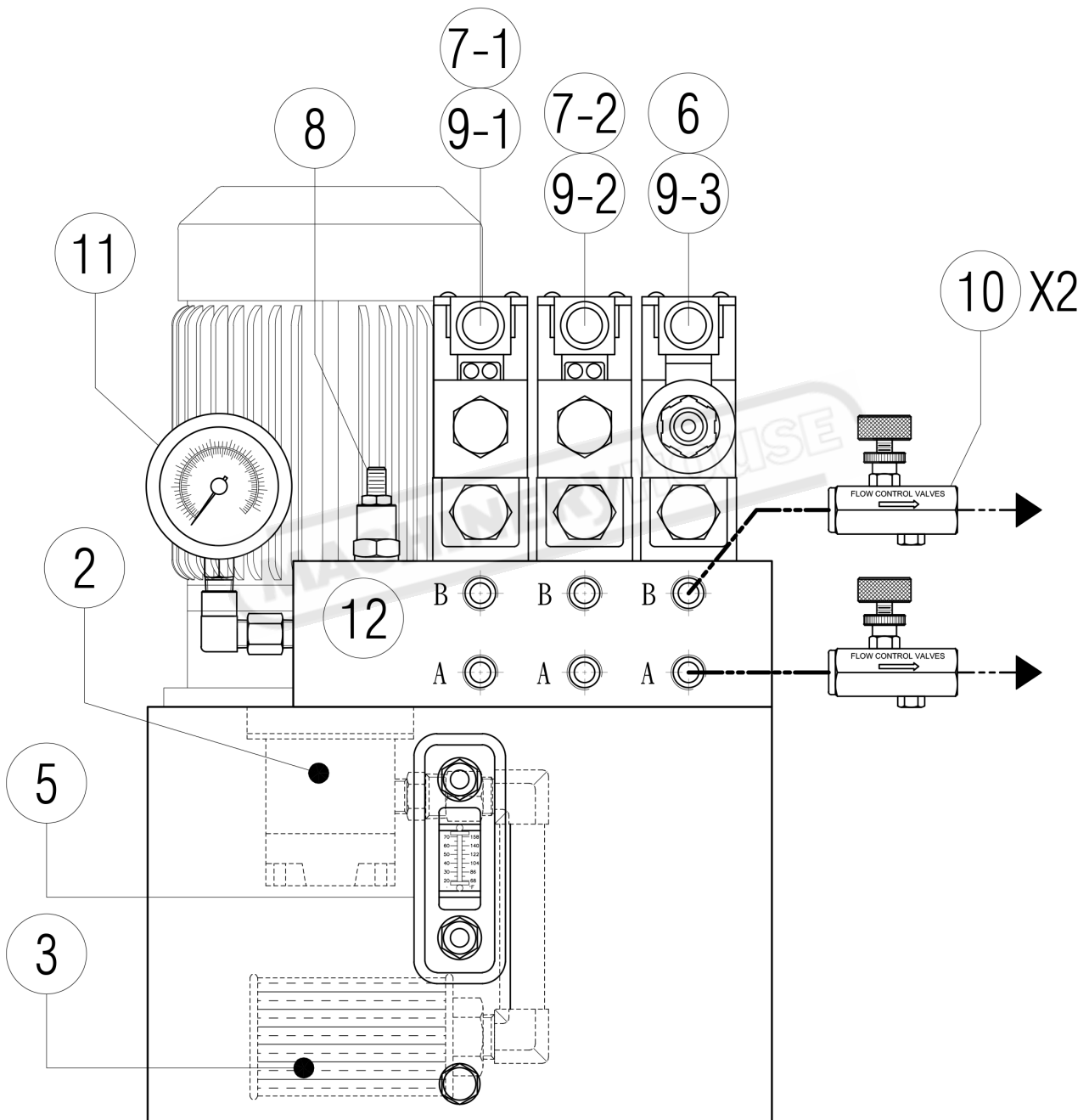
**HYDRAULIC SYSTEM DIAGRAM 1**



**HYDRAULIC SYSTEM DIAGRAM 2**



**HYDRAULIC SYSTEM DIAGRAM 3**



# WARNING

## General Machinery Safety Instructions

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Machinery House  
requires you to read this entire Manual before using this machine.

- 1. Read the entire Manual before starting machinery.** Machinery may cause serious injury if not correctly used.
- 2. Always use correct hearing protection when operating machinery.** Machinery noise may cause permanent hearing damage.
- 3. Machinery must never be used when tired, or under the influence of drugs or alcohol.** When running machinery you must be alert at all times.
- 4. Wear correct Clothing.** At all times remove all loose clothing, necklaces, rings, jewelry, etc. Long hair must be contained in a hair net. Non-slip protective footwear must be worn.
- 5. Always wear correct respirators around fumes or dust when operating machinery.** Machinery fumes & dust can cause serious respiratory illness. Dust extractors must be used where applicable.
- 6. Always wear correct safety glasses.** When machining you must use the correct eye protection to prevent injuring your eyes.
- 7. Keep work clean and make sure you have good lighting.** Cluttered and dark shadows may cause accidents.
- 8. Personnel must be properly trained or well supervised when operating machinery.** Make sure you have clear and safe understanding of the machine you are operating.
- 9. Keep children and visitors away.** Make sure children and visitors are at a safe distance for you work area.
- 10. Keep your workshop childproof.** Use padlocks, Turn off master power switches and remove start switch keys.
- 11. Never leave machine unattended.** Turn power off and wait till machine has come to a complete stop before leaving the machine unattended.
- 12. Make a safe working environment.** Do not use machine in a damp, wet area, or where flammable or noxious fumes may exist.
- 13. Disconnect main power before service machine.** Make sure power switch is in the off position before re-connecting.
- 14. Use correct amperage extension cords.** Undersized extension cords overheat and lose power. Replace extension cords if they become damaged.
- 15. Keep machine well maintained.** Keep blades sharp and clean for best and safest performance. Follow instructions when lubricating and changing accessories.
- 16. Keep machine well guarded.** Make sure guards on machine are in place and are all working correctly.
- 17. Do not overreach.** Keep proper footing and balance at all times.
- 18. Secure workpiece.** Use clamps or a vice to hold the workpiece where practical. Keeping the workpiece secure will free up your hand to operate the machine and will protect hand from injury.
- 19. Check machine over before operating.** Check machine for damaged parts, loose bolts, Keys and wrenches left on machine and any other conditions that may effect the machines operation. Repair and replace damaged parts.
- 20. Use recommended accessories.** Refer to instruction manual or ask correct service officer when using accessories. The use of improper accessories may cause the risk of injury.
- 21. Do not force machinery.** Work at the speed and capacity at which the machine or accessory was designed.
- 22. Use correct lifting practice.** Always use the correct lifting methods when using machinery. Incorrect lifting methods can cause serious injury.
- 23. Lock mobile bases.** Make sure any mobile bases are locked before using machine.
- 24. Allergic reactions.** Certain metal shavings and cutting fluids may cause an allergic reaction in people and animals, especially when cutting as the fumes can be inhaled. Make sure you know what type of metal and cutting fluid you will be exposed to and how to avoid contamination.
- 25. Call for help.** If at any time you experience difficulties, stop the machine and call you nearest branch service department for help.



# WARNING

## Metal Cutting Bandsaw Safety Instructions

---

Machinery House  
requires you to read this entire Manual before using this machine.

- 1. Maintenance.** Make sure the bandsaw is turned off and disconnect from the main power supply and make sure all moving parts have come to a complete stop before any inspection, adjustment or maintenance is carried out.
- 2. Bandsaw Condition.** Bandsaw must be maintained for a proper working condition. Never operate a bandsaw that has damaged or worn parts. Scheduled routine maintenance should be performed on a scheduled basis.
- 3. Blade Condition.** Never operate a bandsaw with a dull, cracked or badly worn blade. Before using a bandsaw inspect blades for missing teeth and cracks.
- 4. Replacing Blade.** Make sure teeth are facing the correct direction. Wear gloves to protect hands and wear safety glasses to protect your eyes.
- 5. Hand Hazard.** Keep hands and fingers clear from the line of cut of the blade and offcuts workpieces. Hands can be crushed in vice or from falling machine components and cut by the blade.
- 6. Leaving a bandsaw Unattended.** Always turn the bandsaw off and make sure all moving parts have come to a complete stop before leaving the bandsaw. Do not leave bandsaw running unattended for any reason.
- 7. Avoiding Entanglement.** Blade guard must be used at all times. Remove loose clothing, belts, or jewelry items. Never wear gloves while machine is in operation. Tie up long hair and use the correct hair nets to avoid any entanglement with the bandsaw moving parts.
- 8. Understand the machines controls.** Make sure you understand the use and operation of all controls.
- 9. Power outage.** In the event of a power failure during use of the bandsaw, turn off all switches to avoid possible sudden start up once power is restored.
- 10. Work area hazards.** Keep the area around the bandsaw clean from oil, tools, chips. Pay attention to other persons in the area and know what is going on around the area to ensure unintended accidents.
- 11. Workpiece Handling.** Workpieces must be supported with table, vice, roller conveyor/stands, or other support fixtures. Unsupported workpieces may cause the machine to tip over and fall. Flag long pieces of material to avoid tripping hazards. Never hold a workpiece with your hands during the cut process.
- 12. Hearing protection and hazards.** Always wear hearing protection as noise generated from bandsaw blade and workpiece vibration, material handling, and power transmission can cause permanent hearing loss over time.
- 13. Hot surfaces.** Workpieces, machine surfaces and chips become hot due to friction and can burn you.
- 14. Starting position.** Never turn the bandsaw on when the blade is resting on the workpiece.
- 15. Guards.** Do not operate bandsaw without the blade guard in place or with the doors open. Ensure all guards removed to do maintenance or change blades on the machine are refitted correctly in place before the machine is used again.
- 16. Call for help.** If at any time you experience difficulties, stop the machine and call your nearest branch service department for help.

# PLANT SAFETY PROGRAM

## **NEW MACHINERY HAZARD IDENTIFICATION, ASSESSMENT & CONTROL**

### **Metal Cutting Bandsaw**

Developed in Co-operation Between A.W.I.S.A and Australia Chamber of Manufactures  
 This program is based upon the Safe Work Australia, Code of Practice - Managing Risks of Plant in the Workplace ( WHSA 2011 No10 )



Item No.	Hazard Identification	Hazard Assessment	Risk Control Strategies <small>(Recommended for Purchase / Buyer / User)</small>
A	ENTANGLEMENT	HIGH	Eliminate, avoid loose clothing / Long hair etc.
B	CRUSHING	LOW	Secure & support Long / heavy material
C	CUTTING, STABBING, PUNCTURING	MEDIUM	Blade guards should always be in the closed position before starting machine. Blade guide system should be adjusted to suit material width. Wear gloves when changing blades. Isolate main power switch before changing blade, cleaning or adjusting. If blade breaks do not open door until both wheels have stopped. Check blade tracking before starting.
D	SHEARING	MEDIUM	Make sure all guards are secured shut when machine is on. Isolate power to machine prior to changing belts or maintenance.
F	STRIKING	LOW	Support long heavy jobs and stand clear of offcuts. Stand clear of machine when in operation. Remove all loose objects around moving parts. Wear safety glasses
H	ELECTRICAL	MEDIUM	All electrical enclosures should only be opened with a tool that is not to be kept with the machine. Machine should be installed & checked by a Licensed Electrician.
O	OTHER HAZARDS, NOISE.	LOW	Wear hearing protection as required.
Plant Safety Program to be read in conjunction with manufactures instructions			



[www.machineryhouse.com.au](http://www.machineryhouse.com.au)



[www.machineryhouse.co.nz](http://www.machineryhouse.co.nz)

Authorised and signed by:  
 Safety officer:   
 Manager: 

Revised Date: 12th March 2012

**NOTES**

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#### **ENVIRONMENT PROTECTION**

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain any fluids (if applicable) into approved containers and dispose of the product and fluids according to local regulations.

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