SHARP

SW-130HT

Instruction Manual

Version 1 20180516

Safety rules

- Make sure your work area is cleared of uninvited people and obstacles every time before you start operating the machine.

- Never step or stand on the roller table. Your foot may slip or trip on the rollers and you will fall.

- Never wear gloves or loose clothing when operating the machine. It may lead to serious injury if they are caught in the running machine. Wrap or cover long hair.

- Never touch the running saw blade with gloves or not. It is dangerous if your hands, clothing or gloves are caught by the running blade.

- Make sure any use of fire is prohibited in the shop and install a fire extinguisher or other fire control device near the machine when cutting titanium, magnesium, or any other material that produces flammable chips. Never leave the machine unattended when cutting flammable materials.

- Use a water-soluble cutting fluid on this machine. Oil-based cutting fluids may emit smoke or catch fire, depending on how they are used.

- Never cut carbon or any other material that may produce and disperse explosive dust. It is possible that sparks from motors and other machine parts will ignite and explode the air-borne dust.

Safety rules

- Never adjust the wire brush or remove chips while the saw blade is still running. It is extremely dangerous if hands or clothing are caught by the running blade.

- Stop the saw blade before you clean the machine. It is dangerous if hands or clothing are caught by the running blade.

- Never start the saw blade unless the workpiece has been clamped firmly. If the workpiece is not securely clamped, it will be forced out of the vise during cutting.

- Take preventive measures when cutting thin or short pieces from the work to keep them from falling. It is dangerous if the cut pieces fall.

- Use roller tables at the front and rear sides of the machine when cutting long work. It is dangerous if the work piece falls off the machine.

- Turn off the shop circuit breaker switch before performing maintenance on the machine. Post a sign indicating the machine is under maintenance.

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SAFETY INFORMATION

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Safety is a combination of a well-designed machine, operator's knowledge about the machine and alertness at all times. Our band machine has incorporated many safety measures during the design process and used protective devices to prevent personal injuries and potential risks. Warning labels also serve as a reminder to the operator.

Throughout this manual, you will also see various safety-related symbols indicating important information that you should take note of prior to use of the machine or part of its functions. These important safety instructions do not cover all possible situations that might occur. It is your responsibility to take caution and follow procedures stated in this manual when installing, maintaining and operating your machine. We will not be liable for damages resulting from improper use.

SAFETY INSTRUCTIONS

What the icons and signs in this user manual mean:

	This icon marks **DANGER**; hazards or unsafe practices that may result in **severe personal injury or death.**
	This icon marks **WARNING**; hazards or unsafe practices that may result in **personal injury or damage to the machine.**
	This icon marks **CAUTION**; information that should be read before use to prevent **damage to the machine.**
	Supplementary information to the procedures described in this manual.
	Call your local agent or our service center for help.

This manual has important safety information. Read through it carefully before operating this machine to prevent personal injury or machine damage. Learn the operation, limitation and the specific potential hazards peculiar to this band saw.

Do not operate this machine unless it is completely assembled.

Make sure the power switch is off before plugging in power cord.

Disconnect the power cord before making adjustment, maintenance or blade changes.

Keep all guards and shields in place before installing or starting up the machine.

Wear proper apparel during operation and when servicing the machine.

Keep unauthorized personnel away.

Do not reach over or stand on any part of the machine.

Never hold the material by hand for cutting. Always use the vise and make sure the material is clamped securely before cutting.

It is dangerous to operate the machine when the floor is slippery. Keep the floor clean and dry. Check for ice, moisture, or grease before entering.

Do not use the machine to cut explosive material or high pressure vessels as it will generate great amount of heat during the sawing process and may ignite an explosion.

Keep the work environment safe. Do not use band saw in a damp or wet location.

Never operate while under the influence of drugs, alcohol or medication.

All users must read it before performing any activity on the machine, such as replacing the saw band or doing regular maintenance.

Some personal protective equipment is required for the safe use of the machine, e.g. protection goggles.

Keep blade protection cover and wheel covers in place and in working order.

Use recommended accessories. Improper accessories may be hazardous.

Keep your work area well illuminated at minimum 500 lumen.

Keep your work area clean. Cluttered and slippery floors invite accidents.

Remove adjusting keys, wrenches or any loose parts or items from the machine before turning on power.

Check for damaged parts. Before continuing using the machine, the damaged part should be checked and replaced.

Moving parts should be kept in proper alignment and connection with the machine. Check for breakage, mounting and any other conditions that may affect its operation. Any damaged part or guard should be properly repaired or replaced.

When a workpiece is too long or heavy, make sure it is supported with a roller table (recommended).

Always remember to switch off the machine when the work is completed.

Use a sharp saw blade and keep the machine in its best and safest performance by following a periodical maintenance schedule.

Do not force the band saw beyond its intended use. It is safer to operate with the cutting rate for which it was designed.

SAFEGUARD DEVICES

The safeguard devices incorporated in this machine include the following two main parts:

1. Protection covers & guards
2. Safety-related switches

Protection Covers & Guards

1. Idle wheel housing cover
2. Drive wheel housing cover
3. Gear reducer cover
4. Wire brush belt cover
5. Blade guard cover (left & right)
6. Chip conveyor cover (CE model only)

 The protection devices should always be mounted on the machine whenever the machine is running.

 Do not remove any of these safeguard devices under any circumstances except when servicing the machine. Even skilled service technicians should still take cautions when performing repairs or service on the machine with any of these protectors removed. It is the responsibility of the user to make sure all these elements are not lost and damaged.

 Take note of the following main moving parts on the machine prior to and during machine operation:

- Saw bow assembly
- Drive and idle wheels
- Blade guide arm
- Saw blade guide rollers
- Quick approach device
- Wire brush
- Chip conveyor (optional)
- Workpiece clamping vises
- Shuttle vises and workbed rollers
- Top clamps (optional)
- Gear reducer

Safety Related Switches

To protect the operator, the following safety related switches on the machine are actuated when the machine is in operation.

Wheel motion detector	This is a proximity sensor used to detect the motion of the drive wheel. Once the saw blade is broken or as soon as it starts slipping, the sensor will detect and stop the drive wheel and the machine.
Power switch	Located on the cover of electrical cabinet, the power switch controls the main power of the machine.
Emergency stop button	Located on the control panel, the button when pressed will stop the machine completely.
Vise clamp switch	This switch assures firm clamping of the workpiece. If the workpiece is not clamped properly, the saw blade is not allowed to run.
Wheel cover interlock switches (CE model only)	Located on the two wheel housings, these switches are used to assure that the machine will stop whenever the wheel covers are open. This device is to protect users from being cut by the running saw blades.

Among all these safety switches, some of them are used to protect the users and some of them are used to prevent damage to saw blades, the workpiece and the machine itself, etc. We have taken every precaution to prevent injury or damage and to provide safe and economical operation of the machine.

EMERGENCY STOP

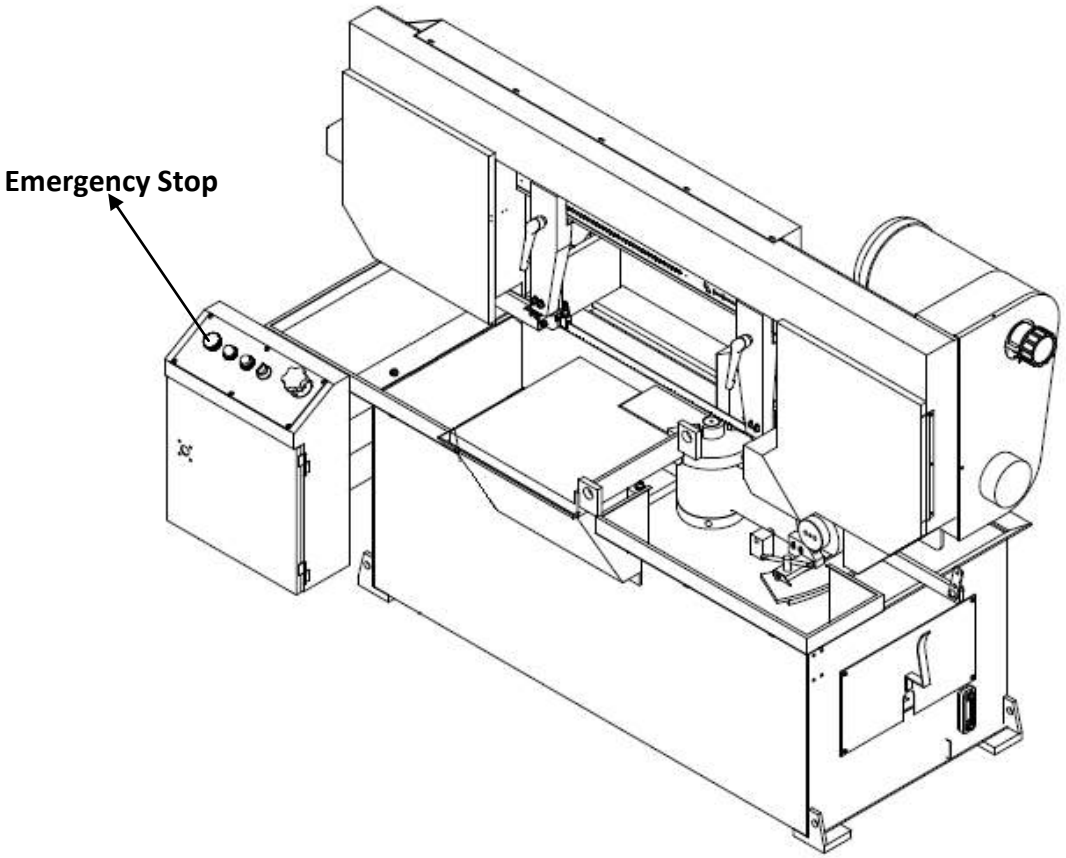
Designed to be easily accessible, the emergency stop button is located on the left bottom corner on the control panel and is made in red color and rubber material. For CE models, supplementary emergency stop button may be available at other area(s) of the machine depending on machine type. Please refer to *Illustration: Emergency Stop.*

When you press the button, the machine will immediately come to a full stop to avoid injury or damage when an accident occurs. The button will be locked when you press it. To unlock it, pull it upward.

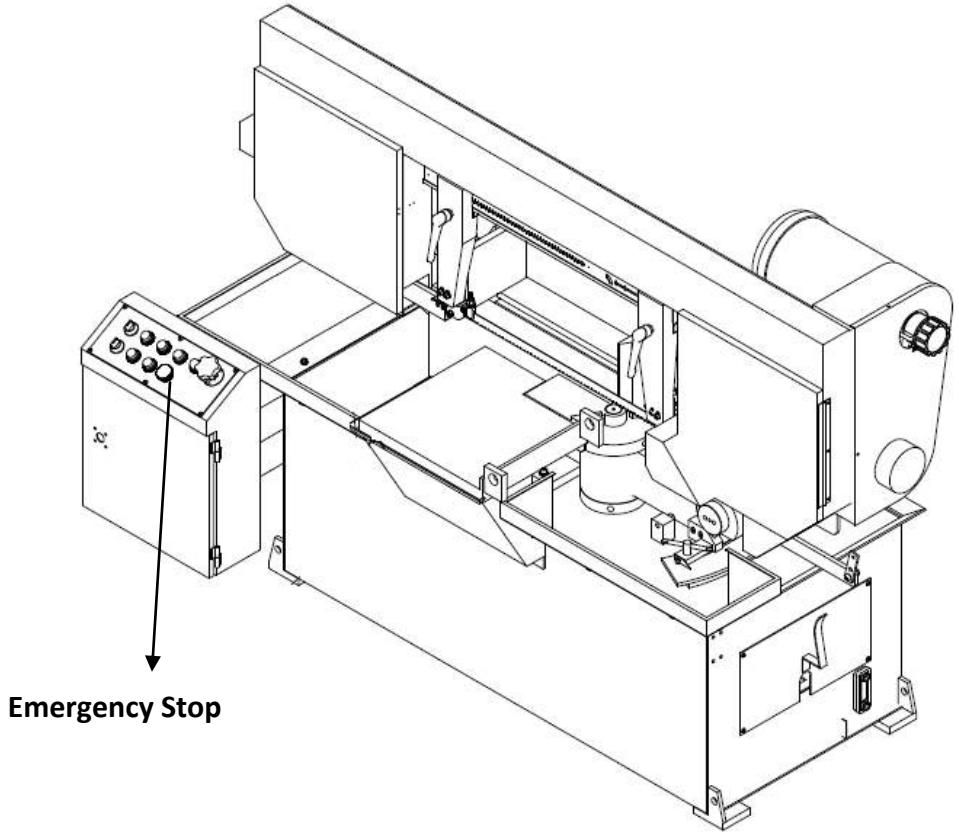
You should press it immediately without any hesitation when observing:

- An emergency situation that would cause any injury or damage
- An abnormal situation or problem such as fire, smoke, abnormal noise and etc.

Illustration: Emergency Stop



SW-130HTM



SW-130HTSA

SAFETY LABELS

Please read through and understand the safety labels before operating the machine. Refer to *Illustration: Safety Labels.*

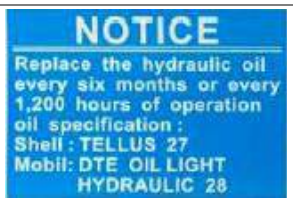
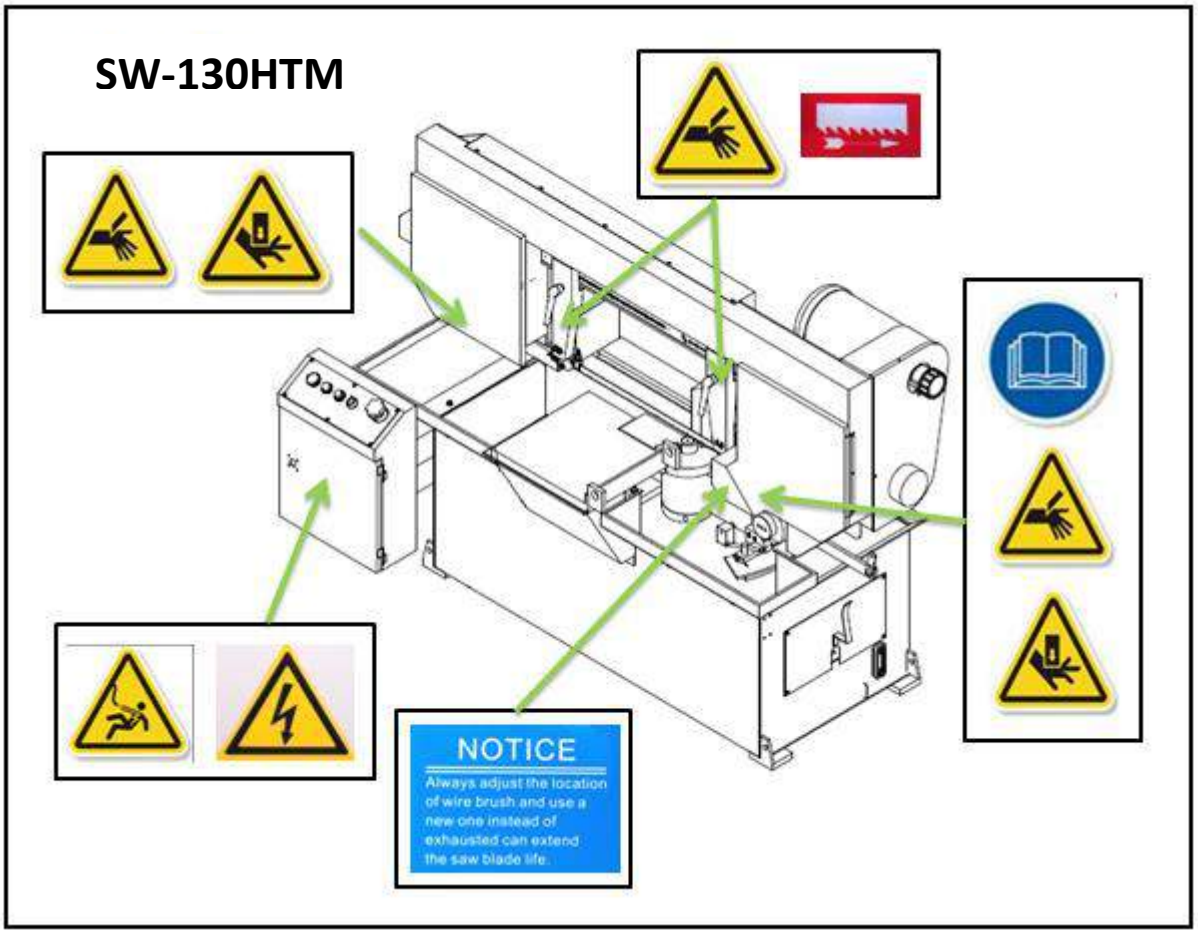
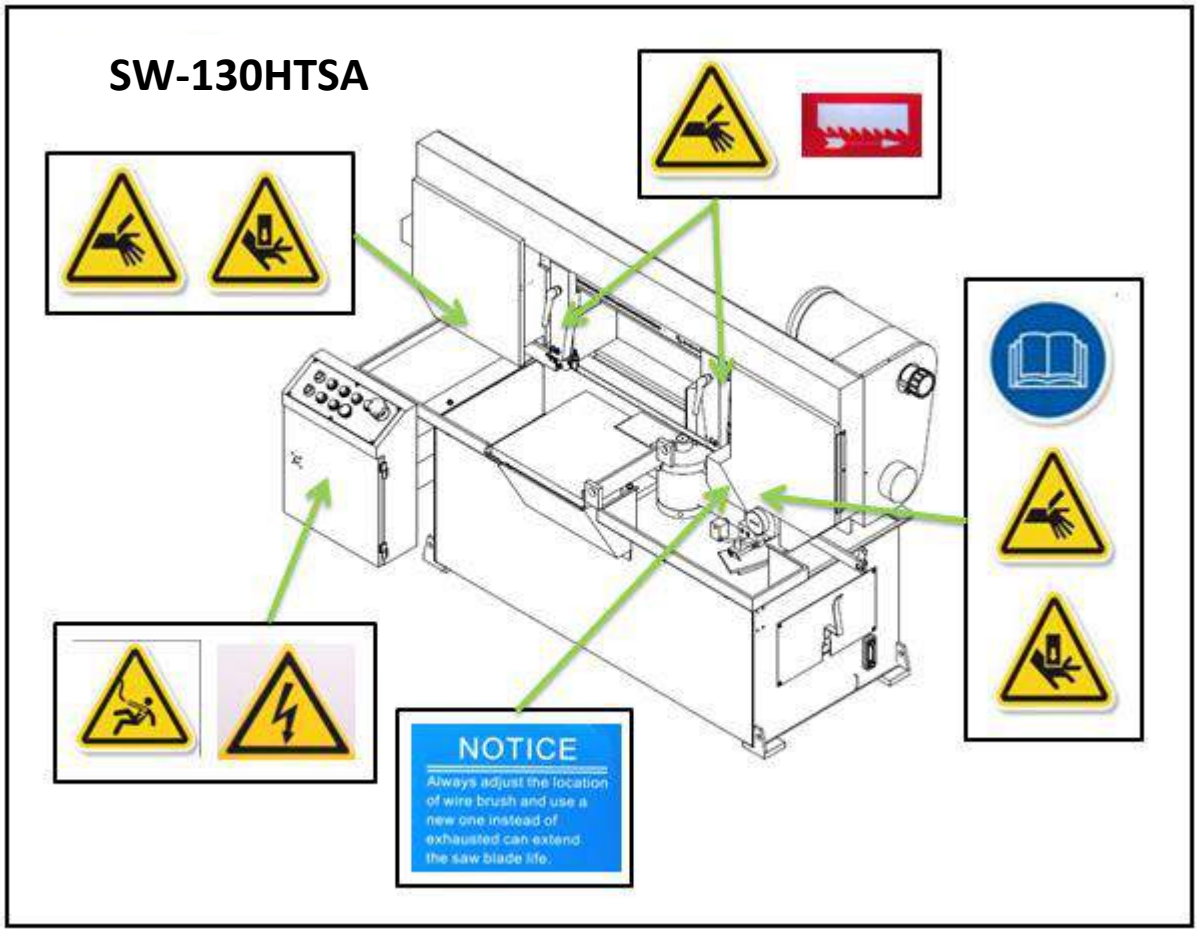
Label	Meaning	Label	Meaning
	Hazardous Voltage TURN POWER OFF before servicing. Failure to following the warning can result in severe injury.		DANGER: Running Blade Blade runs through this area. Keep your hands away from a running blade to avoid severe injury. The arrow indicates direction of the blade.
	Cutting Hazard KEEP COVER CLOSED while the blade is running. Turn power off before opening cover. Failure to follow the warning can result in severe injury.		Cutting Hazard KEEP HAND OFF while the blade is running. Turn power off before opening cover. Failure to follow the warning can result in severe injury.
	Please add antifreeze coolant when the ambient temperature is below 0℃ (32℉).		Loose Hand Hazard KEEP HAND OFF. Do not touch chip conveyor. Failure to follow the warning can result in severe injury.
	Impact Hazard WEAR SAFET SHOES. Do not approach dropping area during operation.		Replace the hydraulic oil every six months or every 1,200 hours of operation. Oil specification: Shell TELLUS 27 or Mobil DTE OIL LIGHT / HYDRAULIC 28
	Cutting Hazard KEEP COVER CLOSED while the blade is running. Turn power off before opening cover. Failure to follow the warning can result in severe injury.		Cutting Hazard KEEP HAND OFF while the blade is running. Turn power off before opening cover. Failure to follow the warning can result in severe injury.

Illustration: Safety Labels





HEARING PROTECTION

 Always use ear protection!

When your machine is running, noise generated by the machine may come from the following:

- Saw blade during cutting or material feed mechanism
- Wire brush unit
- Chip conveyor unit
- Speed reducer
- Hydraulic motor/pump
- Belt transmissions variable speed motors
- Blade motor
- Coolant pump
- Drive wheel
- Parts not assembled tightly causing mechanical vibration

Our products pass noise testing less than 78 dBA. Noise level vary according to working conditions and we recommend ear plugs or other hearing protection at all time. If your machine produces an undesirable noise while it is running, you should:

1. Make sure all maintenance tasks have been performed following the prescribed maintenance schedule (Refer to Section 8).
2. If maintenance does not seem to solve the problem, follow the troubleshooting procedures under Section 9.

CE COMPLIANCE

Our CE model is designed to satisfy regulations of the Council Directive on the approximation of the laws of the Member States relating to machinery (2006/42/EC) - Annex I Essential health and safety requirements relating to the design and construction of machinery.

RISK ASSESSMENT

Risk assessment generally takes account of intended use and foreseeable misuse, including process control and maintenance requirements. We made every effort to avoid any personal injury or equipment damage during the machine design stage. However, the operator (or other people) still needs to take precautions when handling any part of the machine that is unfamiliar and anywhere on the machine that has potential hazards (e.g. the electrical control box).

Section 2

GENERAL INFORMATION

SPECIFICATION

MACHINE PARTS IDENTIFICATION

FLOOR PLAN

This band saw machine is designed by our R&D engineers to provide you the following features and advantages:

Safety

- This machine is designed to fully protect the operator from its moving parts during cutting operation.
- The machine and each compoment has passed strict testing (Council Directive on the approximation of the laws of the Member States relating to Machinery).
- The machine will shut off automatically when the saw blade is broken, protecting both the operator and the machine.

Convenience & High-Performance

- The machine is designed in the way that the operation and adjustment can be easily performed.
- The machine will stop automatically when out of stock.
- Dual valve system is designed to achieve optimal cutting performance with the simple setting of feed rate and perspective cutting pressure for different material.

Durability

- The intended life-span of the machine is counted based on regular daily operation. It is calculated with the life expectancy of 10 years under normal operating condition and exact attention to the maintenance schedule.

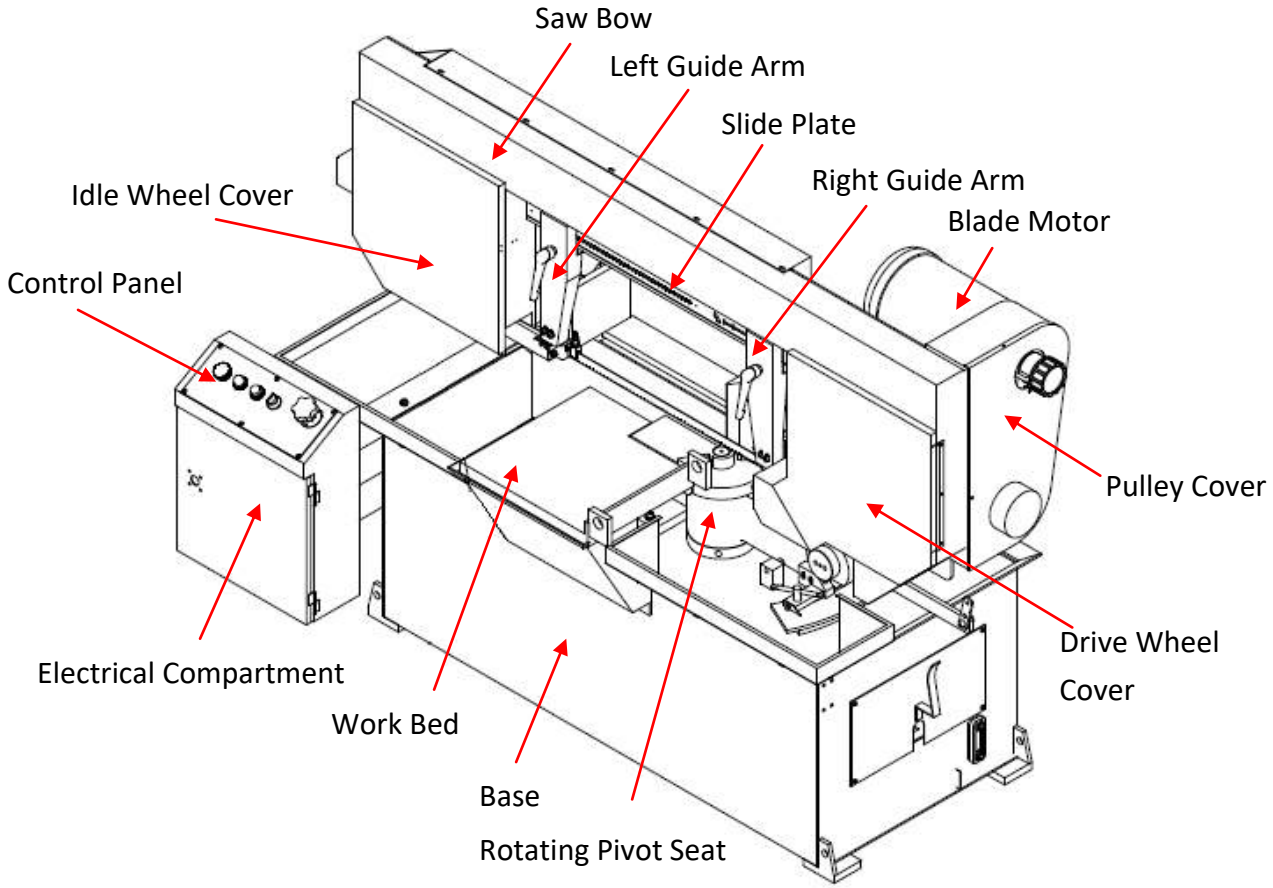
  8 hours × 5 days × 52 weeks × 10 years ＝ 20,800 hours

SPECIFICATION

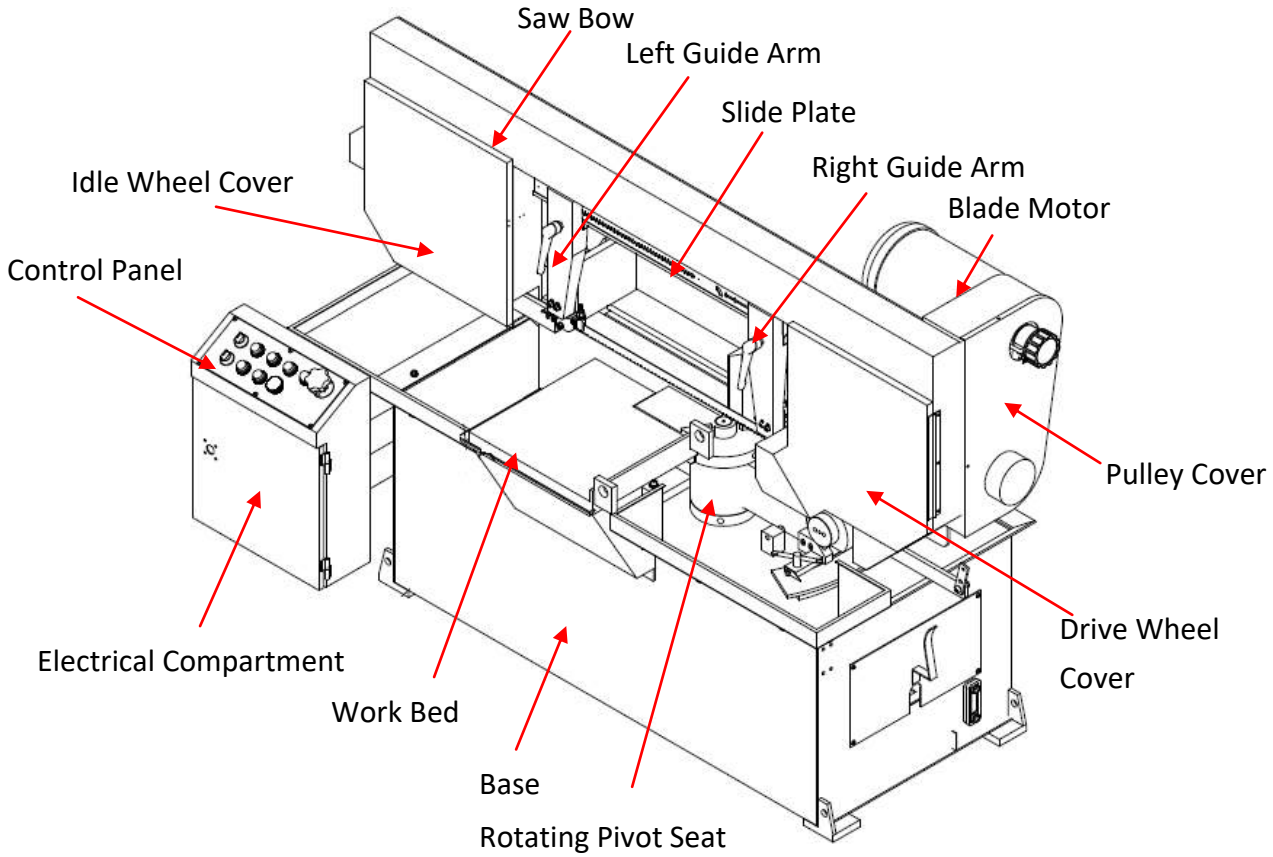
Model		SW-130HTM/SW-130HTSA		
Capacity	Angle	0°	45°	60°
	Round	13” (330 mm)	11.8” (300 mm)	8.6” (220 mm)
	Square	11.0” (280 mm)	9.4” (240 mm)	8.6” (220 mm)
	Rectangular (W x H)	17.3” x 11.0” (440 x 280 mm) OR 19.6” x 5.5” (500 x 140 mm)	11.8” x 9.4” (300 x 240 mm)	8.6” x 9.4” (220 x 240 mm)
Saw Blade	Speed	98~328 fpm (30~100 m/min)		
	Size (L x W x T)	163” x 1.06” x 0.035” (4,140 x 27 x 0.9mm)		
	Tension	Manual		
	Guide	Interchangeable tungsten carbide		
	Cleaning	Steel wire brush		
Motor Output	Saw Blade	3 HP (2.2 kW)		
	Hydraulic (MS1318SA only)	1/2 HP (0.37 kW)		
	Coolant Pump	1/8 HP (0.09 kW)		
Tank Capacity	Hydraulic (MS1318SA only)	2.1 gal (8 L)		
	Coolant	7.9 gal (30 L)		
Workbed Height		32.3” (820 mm)		
Weight	Net	SW-130HTM: 1,320 lb (600 kg) SW-130HTSA: 1,408 lb (640 kg)		
	Gross	SW-130HTM: 1,760 lb (800 kg) SW-130HTSA: 1,848 lb (840 kg)		
Floor Space (L x W x H)		86.2” x 42.1” x 55.5” (2,190 x 1,070 x 1,410 mm)		

MACHINE PARTS IDENTIFICATION

SW-130HTM

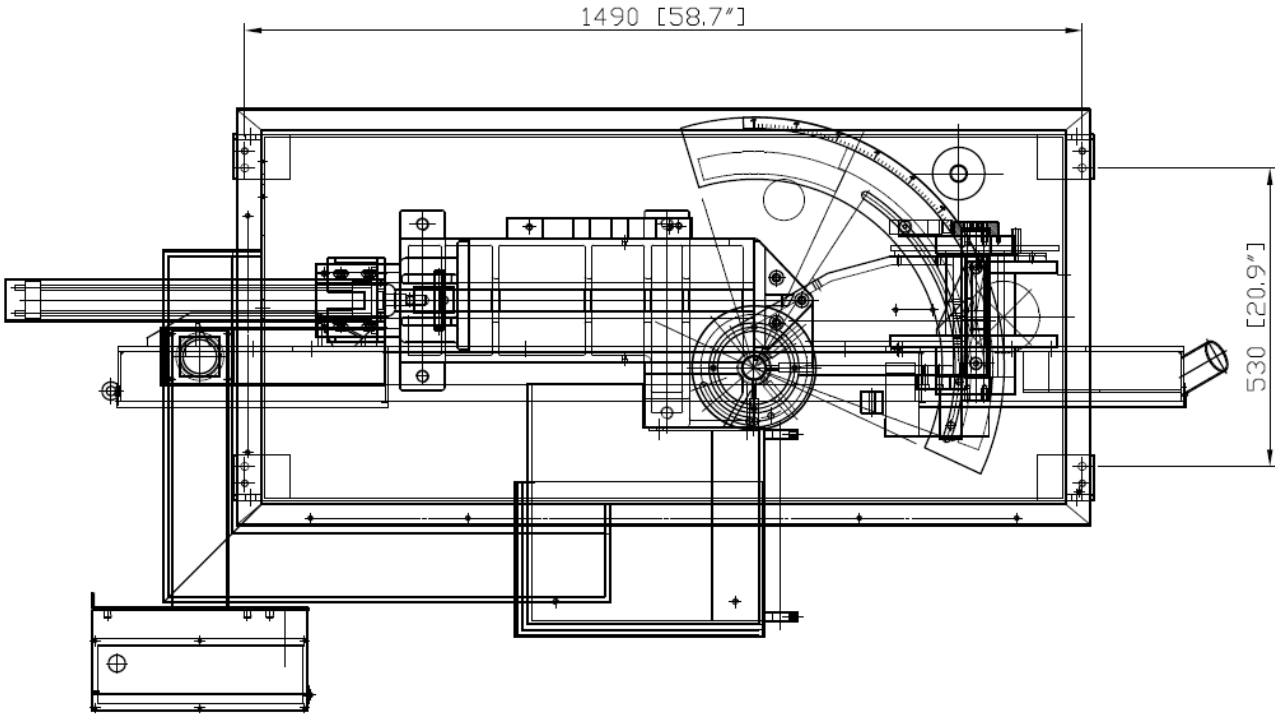


SW-130HTSA

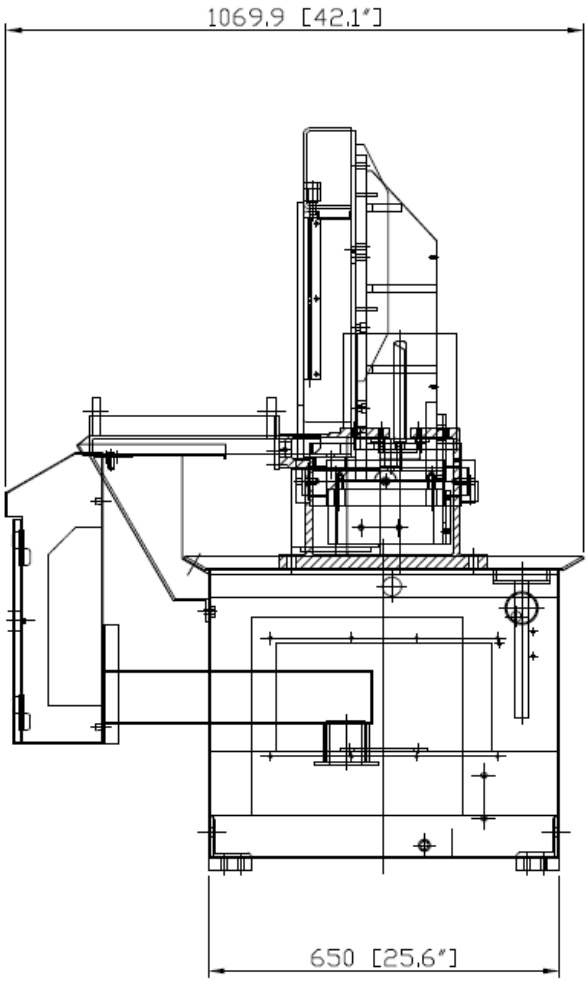


FLOOR PLAN

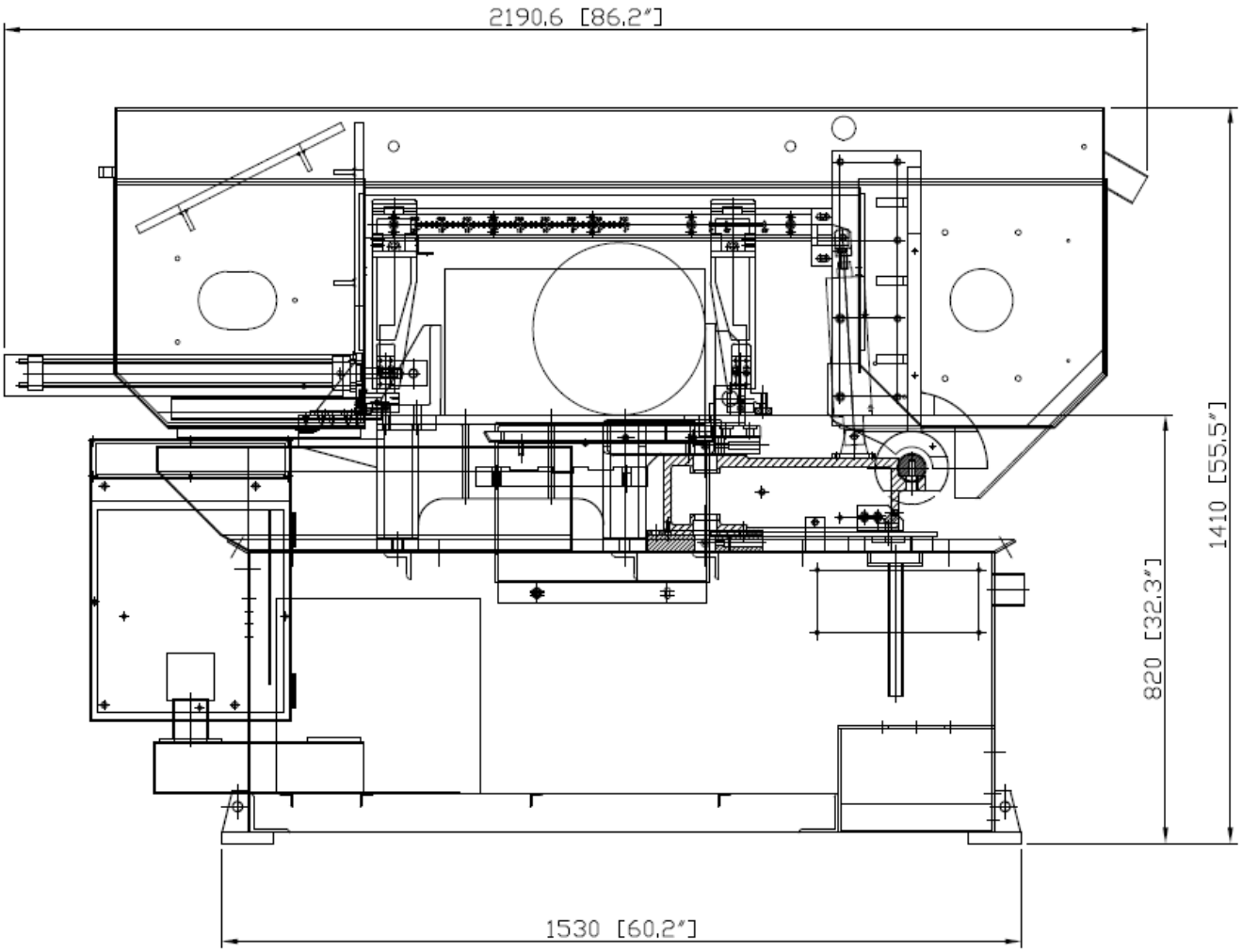
SW-130HTM/ SW-130HTSA



Machine top view



Machine side view



Machine front view

Section 3

MOVING & INSTALLATION

LOCATION & ENVIRONMENT

For your safety, please read all information regarding installation before proceeding. Install your machine in a place satisfying all of the following conditions:

Space:

- Leave enough free space around the machine for loading work and unloading cut-off pieces as well as for maintenance and inspection. Refer to *Section 2 Specification* for machine dimensions and floor space.

Environment:

- Well lighted (500 lumen at minimum).
- Floor kept dry at all times in order to prevent operators from slipping.
- Away from direct exposure to the sunlight
- Room temperature between 5˚C to 40˚C.
- Humidity level kept at 30%~85% (without condensation) to avoid dew on electric installation and machine.
- Away from vibration of other machines
- Away from powders or dusts emitted from other machines
- Avoid uneven ground. Choose a solid level concrete floor which can sustain weight of both machine and material.
- Limit the operation area of the machine to staff only.

UNPACKING & INSPECTING

- Unpack your machine carefully to avoid damage to machine parts or surfaces.
- Upon arrival of your new band saw, please confirm that your machine is the correct model and it comes in the same specification you ordered by checking the model plate on the machine base.
- It is also imperative that a thorough inspection be undertaken to check for any damage that could have occurred during shipping. Pay special attention to machine surface, equipments furnished and the electrical and hydraulic systems for damaged cords, hoses and fluid leaks.
- In the event of damage caused during shipping, please contact your dealer and consult about filing a damage claim with the carrier.

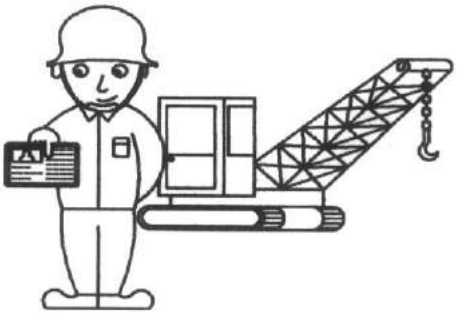
LIFTING

When moving the machine, we strongly suggest you choose any one of the methods described below to move your machine.

1. Use a crane

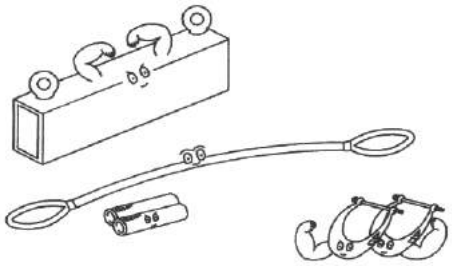
Move the machine to its location by using a crane and a wire rope sling that can fully withstand the weight of the machine (refer to machine specification under Section 2 *Specifications*).

- Machine lifting is likely to damage the machine if not performed properly.

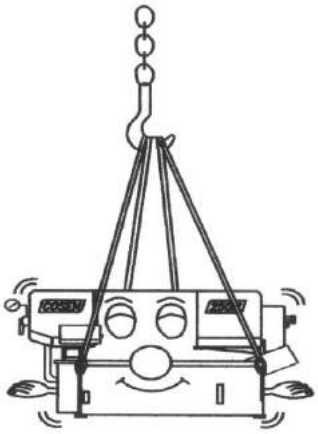


***Warning*:** You must have a qualified crane operator to perform the job.

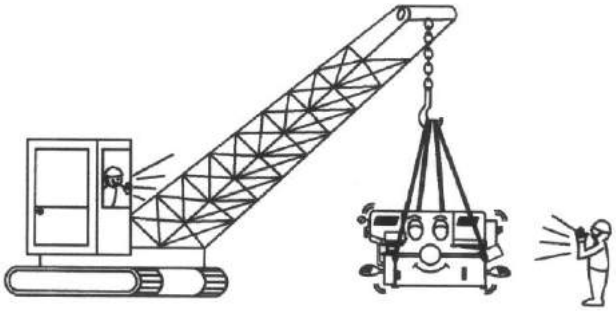
- You must use tools and equipment with the proper tensile strength and use proper method when moving your machine.



- Apply the wire rope sling to the lifting hooks on the four ends of the machine.
- Slowly lift the machine. Be sure to protect the machine from impact or shock during this procedure. Also watch out your own fingers and feet to avoid injuries.
- Keep the machine well balanced during lifting process and make sure the wire rope does not interfere with the saw frame.



- When you work together with more than two people, it is best to keep constant verbal communication with each other.



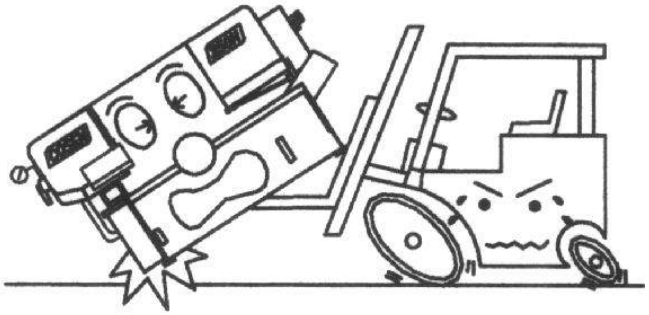
2. Use a forklift

Most users choose this method to move their machine because it is easy to set up. Make sure that the lifting rod can fully withstand the weight of the machine. (Refer to *Section 2 General Information for Specifications)*

- Machine lifting is likely to damage the machine if not performed properly.

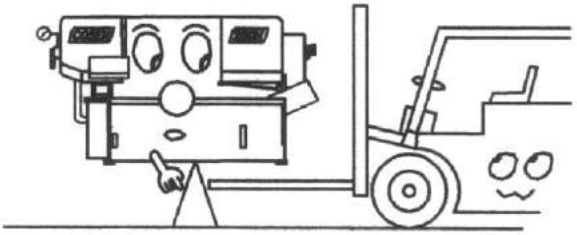
You must have a qualified forklift operator to perform the job.

- You must apply proper forklift technique to avoid damage to the machine.



Make sure the forks are able to reach in at least 2/3 of the machine depth.

- You must keep the machine balanced at all times.



Make sure the forks are centered before use.

Refer to *Illustration: Lifting Points* for exact locations.

3. Use rolling cylinders

You can use rolling cylinders to move your machine in a small machine shop environment.

- You must use rolling cylinders made in material of proper compressive strength.

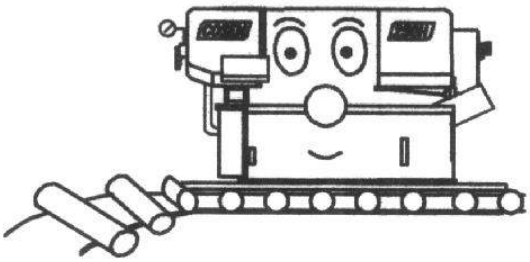
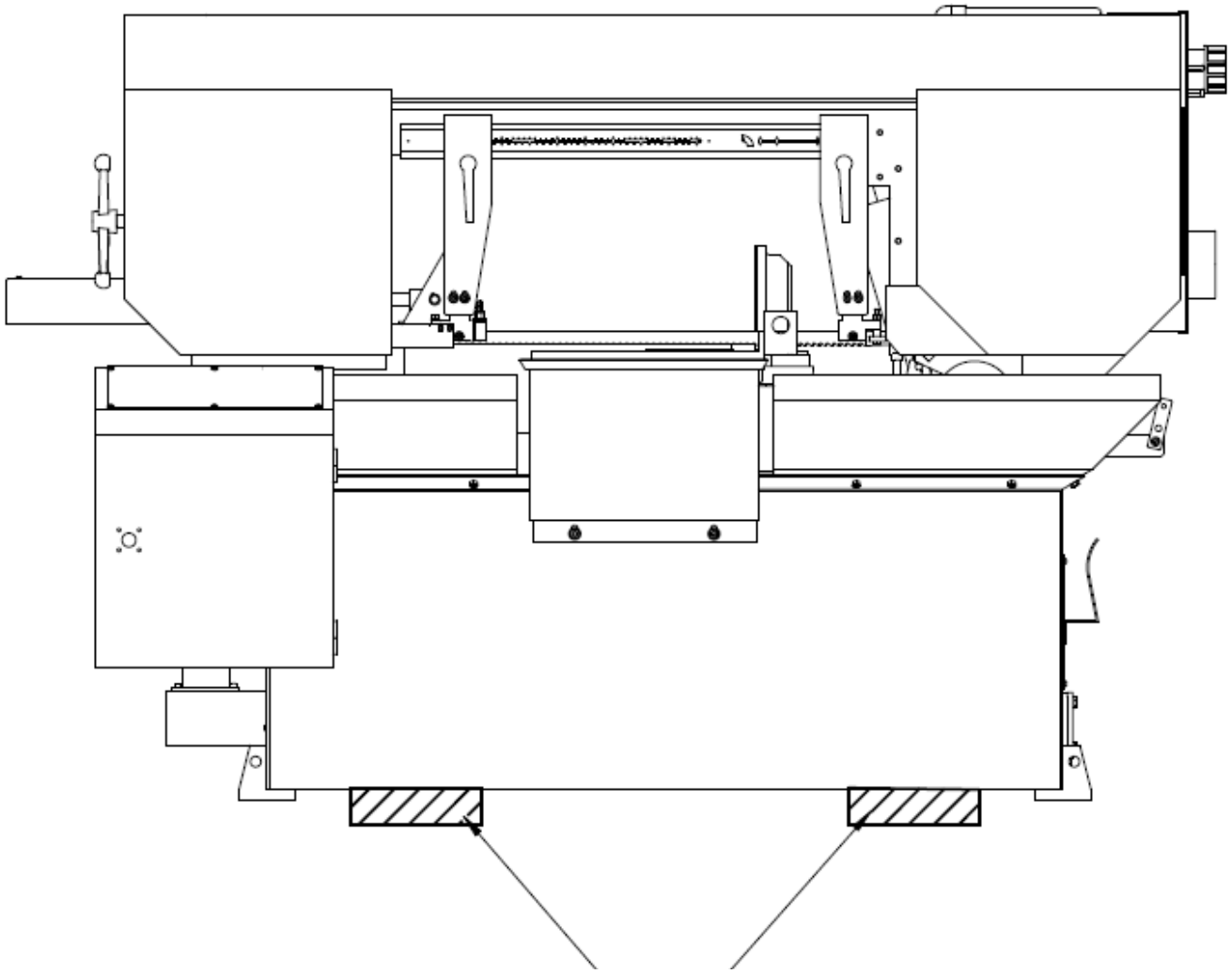


Illustration: Lifting Points

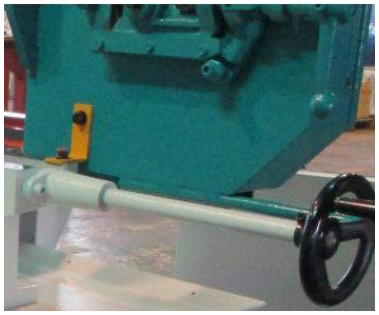
SW-130HTM/SW-130HTSA



Forklift

REMOVING SHIPPING BRACKET

- After the machine has been properly positioned, remove the shipping bracket that is used to lock the saw frame and the saw bed.
- Retain this bracket so that it can be used again in the event that your machine must be relocated.



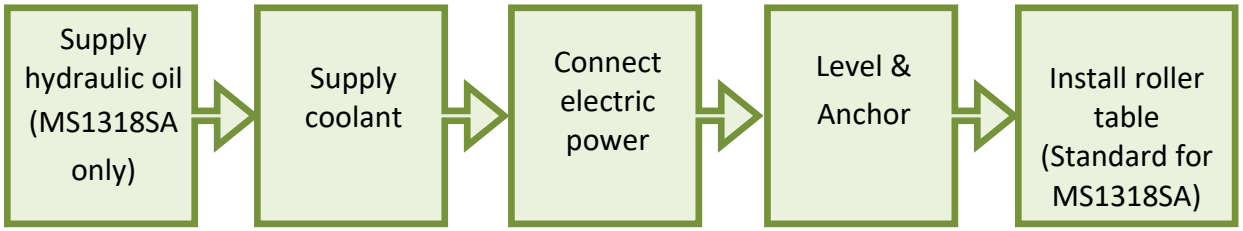
CLEANING

After the machine has been placed at the designated position, remove the rust-preventive grease with wiping cloth dampened with cleaning oil or kerosene. Apply machine oil to machine surfaces that are prone to rust.

Do not remove the rust-preventive grease with a metal scraper and do not wipe the painted surfaces with solvent as doing so would damage surface paint.

INSTALLING

Our bandsaw machine is relatively easy to install. Follow these six easy steps to install your machine.



Supplying hydraulic oil (SW-130HTSA only)

Open the filler cap and fill the hydraulic oil tank to above 2/3 or full level.

Check the sight gauge to make sure the oil level in the tank.

Refer to specification chart under Section 2 for tank capacity.

Oil tank should be full already if it is a new machine that operates for the first time.

Supplying coolant

Fill the coolant tank to the middle level of the sight gauge by pouring the coolant from above the chip conveyor.

Use the sight gauge to check the coolant level remaining in the tank.

Always check the coolant supply before starting the machine. If the coolant pump is started without enough coolant supply in the tank, the pump and its drive motor may be damaged.

Refer to specification chart under Section 2 *Specification* for tank capacity.

Consult your coolant supplier for bandsaw use regarding coolant type and mix ratio.

Connecting electric power

Have a qualified electrician make the electrical connections.

If the power supply voltage is different from the transformer and motor connection voltage shown on the label attached to the electrical compartment of the machine, contact us or your agent immediately.

Connect to power supply independently and directly. Avoid using the same power supply with electric spark machines such as electric welder. Unstable electric tension may affect your machine's electric installation from working properly.

Ground the machine with an independent grounding conductor.

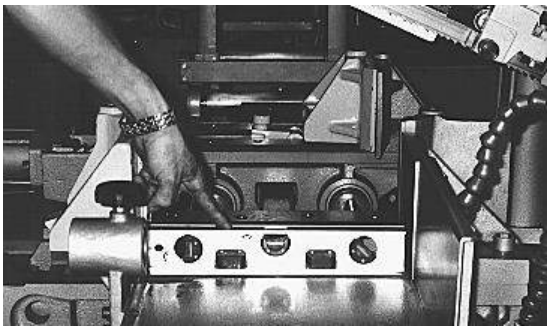
Supply voltage: 90% - 110 % of nominal supply voltage.

Source frequency: 99% - 101 % of nominal frequency.

Refer to the specification chart under Section 2 for total electric power consumption of the motors and make sure your shop circuit breaker is capable of this consumption amount. Also use a power supply cable of proper size to suit the power supply voltage.

1. Turn off the shop circuit breaker.
2. Make sure the machine circuit breaker switch on the electrical compartment door is turned to OFF.
3. Remove the screw securing the electrical compartment and then open the door.
4. Pull the power supply cable and grounding conductor through the power supply inlet into the electrical compartment. (illustration shown right)
5. Connect the power supply cable to the circuit breaker (N.F.B.) to the R, S and T terminals, and connect the ground cable to the E terminal.
6. Close the compartment door and fasten the screw back.
7. Turn on the shop circuit breaker and then turn the machine circuit breaker switch to ON. The *Power Indicator* on the control panel will come on.
8. Pull to unlock the *Emergency Stop* button and press the *hydraulic ON* button to start the hydraulic motor.
9. Make sure the sawing area is clear of any objects. Start the blade and check the blade rotation. If the electrical connections are made correctly, the blade should run in a counterclockwise direction. If not, shut the hydraulics off, turn off the machine as well as the shop circuit breaker. Then swap the power the power cable conductors connected to R and T terminals.
10. Repeat step 6 to 9 to ensure the electrical connections are in the right order.

Leveling



Place spirit level on the vise slide plates and the work feed table.

Level the machine in both directions i.e. along and across the machine. Adjust the level of the machine by turning the leveling bolts.

Make sure all leveling bolts evenly support the machine weight.

In some cases, leveling the machine with a slight slope toward the front of the machine is recommended as it would prevent coolant from running down cutting material especially tubes or bundles. To do so, make the rear end of the machine approximately 10 mm higher than the level of the front end.

Anchoring the machine

Normally there is no need to anchor the machine. If the machine is likely to vibrate, fix the machine to the floor with anchor bolts.

Shock absorption steel plates are provided and can be placed under each leveling bolt to prevent their sinking into the concrete floor.

Installing roller table (standard for SW-130HTSA)

The roller table is used to support long material at the rear and/or the front of the machine.

If you have ordered the optional roller table for cutting long material, position it before or behind the machine.

Installing Fire Control Device

Install a fire extinguisher or any other fire control device in the shop in case a fire breaks out.

RELOCATING

We recommend you follow these procedures when relocating or shipping your machine to other place:

1. Descend the saw frame to its lowest position then turn off the power.
2. Fix the saw frame using the shipping bracket that originally came with the machine.
3. If you are shipping the machine, pack the machine carefully with industrial plastic wraps to protect it from dust.
4. Use a crane or forklift to raise it. If a crane is used to lift the machine, ensure that the lifting cable is properly attached to the machine.
5. Do not forget to include the equipments originally furnished including the shock absorption steel plates and the instruction manual.

Section 4

OPERATING INSTRUCTION

SAFETY PRECAUTIONS

For your safety, please read and understand the instruction manual before you operate the machine. The operator should always follow these safety guidelines:

- The machine should only be used for its designated purpose.
- Do not wear gloves, neckties, jewelry or loose clothing/hair while operating the machine.
- For eye protection, always wear protective safety glasses.
- Check the blade tension and adjust blade guides before starting the machine.
- Use auxiliary clamping or supporting devices to fix material in place before cutting long workpieces. Always make sure the material is clamped firmly in place before starting to cut.
- Do not remove jammed or cut-off pieces until the blade has come to a full stop.
- Keep fingers away from the path of the blade.
- Protection devices should be in place at all times. For your own safety, never remove these devices.
- Disconnect machine from the power source before making repairs or adjustments.
- Wear protection gloves only when changing the blade.
- Do not operate the machine while under the influence of drugs, alcohol or medication.
- Do not take your eyes off the machine while in operation.
- Do place warning signs to mark out machine work zone and restrict entry to be staff-only.

BEFORE OPERATING

Choosing an appropriate saw blade and using the right cutting method is essential to your cutting efficiency and safety. Select a suitable saw blade and cutting method based on your work material and job requirements e.g. cutting accuracy, cutting speed, economic concern, and safety control.

Wet cutting

If you choose dry cutting or low-speed cutting, the chips may accumulate in machine parts and may cause operation failure or insulation malfunction. We suggest you choose wet cutting to avoid machine damage.

Cutting unknown materials

Before cutting an unknown material, consult the material supplier, burn a small amount of chips from the material in a safe place, or follow any other procedure to check if the material is flammable.

 Never take your eyes off the machine while in operation.

Cutting fluid

For cooling and lubrication purpose, we recommend you use water-soluble cutting fluids. The following table lists out its pros and cons for your reference.

Pro	Con
• Have a high cooling effect • Not flammable • Economical • Does not require cleaning of the cut products	• Remove machine paint • Lose its rust protection effect if deteriorated • Tend to create foam • Subject to decay • Decline in performance, depending on the quality of the water used for dilution

 Never use water as your coolant.

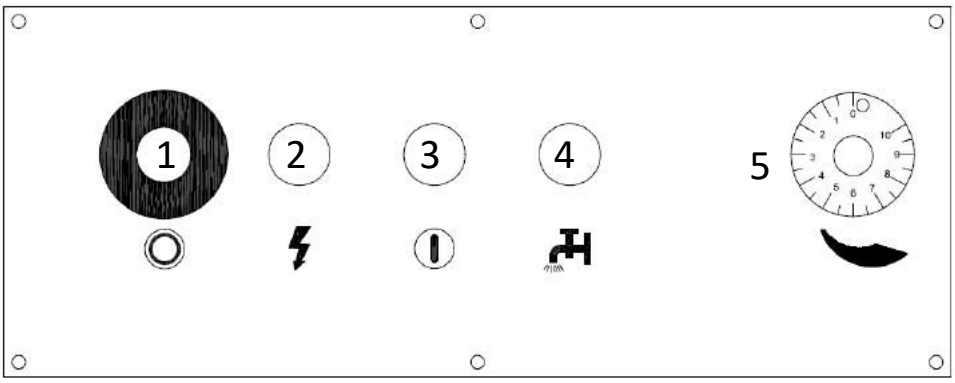
 Always add coolant into water for better mix result.

 Consult your coolant supplier for bandsaw use regarding coolant type and mix ratio.

 Before starting a cutting job, make sure there is sufficient amount of coolant in the tank. Check the fluid level through the sight gauge. Please refer to machine specifications in this manual (Section 2) for tank capacity.

CONTROL PANEL (SW-130HTM)

The control panel is located on the top of the electrical box. It includes the following function: power system, hydraulic system, cooling system and the light system. The operator must fully understand the function of each switch and button before operating the machine.



No.	Name	No.	Name
1	Emergency stop button	4	Coolant pump selector
2	Power indicator lamp	5	Blade descend speed control knob
3	Saw blade start button		

Control Buttons

1. Emergency stop button

Press this button to stop the machine in an emergency. When the button is pressed, it brings the machine to a full stop. The button locks when pressed. In order to unlock it, please turn the button clockwise.

Also serves as *saw blade stop button*.

2. Power indicator lamp

When the lamp is on, it indicates the power to the machine is turned on.

3. Saw blade start button

When the button is pressed, the saw blade starts to cut.

Press *emergency stop button* to stop the blade.

4. Coolant pump selector

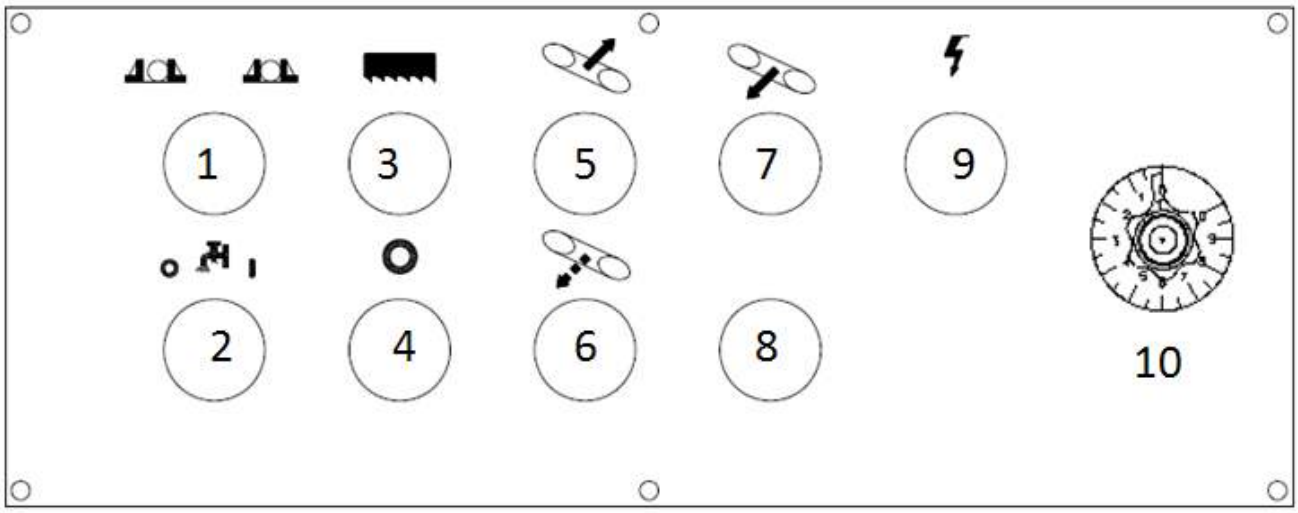
When this switch is turned to left, coolant pump starts and the coolant will be injected whether blade is running or not. When this switch is turned to right, coolant will be injected when blade is running

and coolant will stop when the blade stops.

5. Blade descend speed control knob

- Turning the knob counterclockwise increases the blade descend speed.
- Blade descend speed is a determining factor to a good cutting time and quality cutoff surface.
- Also commonly known as the flow control valve

CONTROL PANEL (SW-130HTSA)



No.	Name	No.	Name
1	Vise clamp/open switch	6	Saw bow down button
2	Coolant pump ON/OFF switch	7	Saw bow quick approach button
3	Saw blade start button	8	Emergency stop button
4	Saw blade stop button	9	Power indicator lamp
5	Saw bow up button	10	Blade descend speed control knob

Control Buttons

1. Vise open/clamp switch

When the switch is turned to the left, the vises open. When the switch is turned to the right, the vises close until the operator lets go of the switch or until the full stroke vises are clamped together.

Make sure the material is securely clamped by the vise before cutting.

After the blade motor is running, the function of this switch is disabled for the safety concern.

2. Coolant pump on/off switch

When this switch is turned to “1” position, coolant pump starts and the coolant will be injected whether blade is running or not. When this switch is turned to “0” position, coolant will be injected when blade is running and coolant will stop when the blade stops. When this switch is turned to middle, coolant pump will remain stop.

3. Saw blade start button

Press this button to start the blade motor.

 Make sure the material is securely clamped by the vise before cutting.

4. Saw blade stop button

Press this button to stop the blade motor.

 After the cutting job is done, the saw blade will stop and the saw bow will automatically go up to the top limit switch position.

5. Saw bow up button

When this button is pressed, the saw bow rises until the operator lets go of the button.

 While pressing the *saw bow up* button can stop the running blade, please still make use of the *emergency stop* button in an emergency.

6. Saw bow down button

When this button is pressed for once, saw bow will automatically go down at the preset speed adjusted by *blade descend speed control knob*.

 Before descending the saw bow, please move the guide arm to a safe position to prevent it from hitting the vise.

 Press *saw bow up button* to stop saw bow descending.

7. Saw bow quick apporach button

When this button is pressed, the saw bow descends and approaches to the material at quick speed until the operator lets go of button.

 Before descending the saw bow, please move the guide arm to a safe position to prevent it from hitting the vise.

8. Emergency stop button

Press this button to stop the machine in an emergency. When the button is pressed, it brings the machine to a full stop. The button locks when pressed. In order to unlock it, please turn the button clockwise.

9. Power indicator lamp

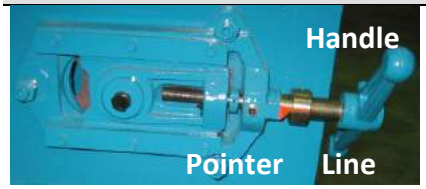
When the lamp is on, it indicates the power to the machine is turned on.

10. Blade descend speed control knob

- This knob is used to adjust the descend speed of the saw blade.
- Turning the knob counterclockwise increases the blade descend speed.
- Blade descend speed is a determining factor to a good cutting time and quality cutoff surface.
- Also commonly known as the flow control valve

STANDARD ACCESSORIES

Blade tension device



- This blade tension device provides appropriate tension to the saw blade.
- Turn the handle clockwise or counterclockwise to tighten or loosen the blade tension.
- Please check the blade tension with the tensiometer.
- The line should line up with the pointer after adjusting tension.

Never adjust blade tension while the blade is running.

Wire brush

The wire brush removes the metal chips on the saw blade teeth to so that blade life can be extended.

Keep hands away from the brush while the wire brush is running

Turn off the hydraulic motor or the main power switch before performing maintenance or cleaning on the wire brush drive system.

Gear reducer

The specially designed gear reducer can work toward your preset blade speed and torque.

Please refer to section 8 for information on maintenance.

Saw bow swivel lock handle

This lock handle is used to lock the saw bow when it is settled at the designated angle before miter cutting.

Manual vise (SW-130HTM)

Pawl

Handwheel

Steps to clamp manual vise:
Step 1 - Lift the pawl and move the movable vise close to the material.
Step 2 - Put down the pawl.
Step 3 - Turn the handwheel to clamp the vise tightly.

Hydraulic movable vise (SW-130HTSA)

Use the vise clamp/open switch to control the hydraulic vise.

0.5M Roller Table (standard for SW-130HTSA)

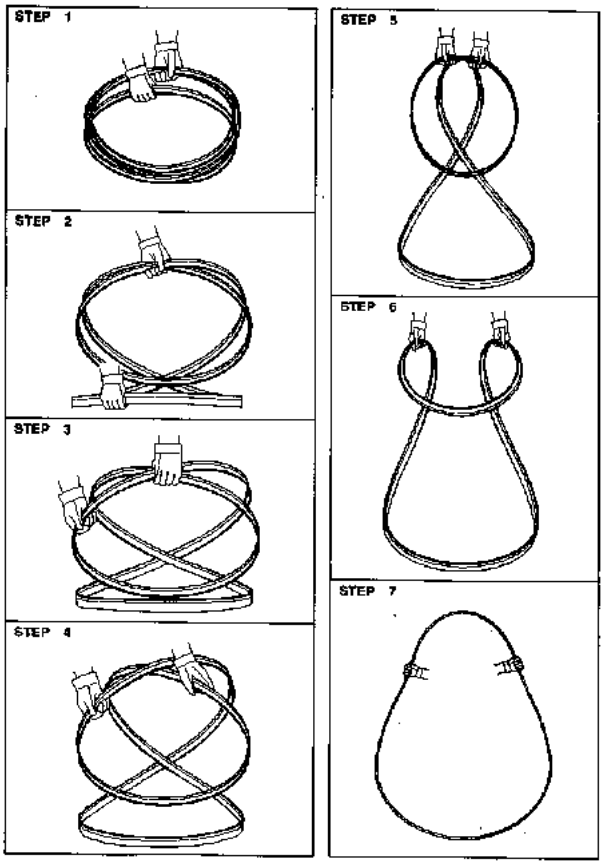
This 0.5M roller table supports the work material and ensures the material is fed in smoothly.

UNROLLING & INSTALLING THE BLADE

Always wear leather gloves and protection glasses when handling a blade.

Unrolling the blade

Please follow the procedures illustrated below.



Installing a new blade

Step 1 - Select the most suitable saw blade for your workpiece considering the size, shape and material.

Step 2 - Turn on the machine power.

Step 3 - Press the *saw bow up* button and elevate the saw bow to the highest position.

Step 4 - Release blade tension by turning the blade tension handle counterclockwise. The idle wheel will then move slightly toward the direction of the drive wheel.

Step 5 - Open the idle and drive wheel covers.

Step 6 - Loosen the adjustment bolt and move the wire brush away from the blade.

Step 7 – Remove the old blade. If necessary, clean the carbide inserts before installing a new saw blade.

Step 8 - Place the new blade around the idle wheel and the drive wheel.

Step 9 - Insert the blade into the left and right tungsten carbide inserts. The back and the sides of the blade need to be touching the inserts as well as the adjacent rollers.

Step 10 - Place the blade to the drive wheel and press the back of the blade against the flange of the drive wheel.

Step 11 - Make sure the back of the blade is also pressed against the flange of the idle wheel.

Step 12 - Apply tension by turning the blade tension handle clockwise. Make sure you have proper blade tension. Proper tension exists when the blade does not slip on the drive wheel when cutting.

Step 13 - Make sure the sides of the blade are in close contact with the carbide inserts.

Step 14 - Gently close the idle and drive wheel covers.

Step 15 - Press the *saw blade start* button to start the blade. Allow the blade to run for a few rotations then press the *saw bow up* button to elevate the saw bow. Open the wheel covers and make sure the blade has not fallen off the drive and idle wheels. If the blade has shifted, follow the same procedure to reinstall the blade again.

Step 16 - Adjust wire brush to a proper position. Refer to *Adjusting wire brush* in this section.

ADJUSTING BLADE SPEED

Step 1 – Set the blade speed control knob to “0” position.

Step 2 – Press the *saw blade start* button to start the blade.

Step 3 – Refer to blade speed reference chart and turn the *blade speed control knob* to adjust the blade speed. Turn clockwise to decrease the speed and counterclockwise to increase the speed.

Blade Speed Control Knob

Blade Speed Reference Chart

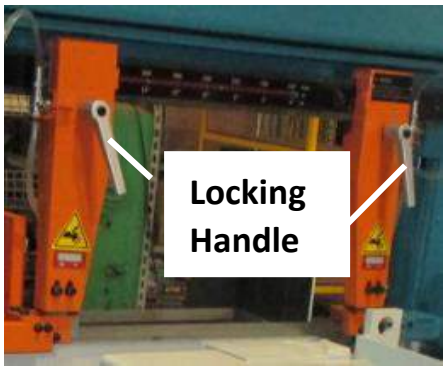
ADJUSTING SAW ARM

Adjust the blade guide (guide arm) position based on the size of your workpiece:

While adjusting the guide arm, be careful not to hit the vise.

Step 1 – Loosen the blade guide locking handle. Then adjust the guide arm to a position suitable for your workpiece size. Move the right blade guide according to the label for miter cutting.

Step 2 – After adjustment is made, tighten the blade guide locking handle.



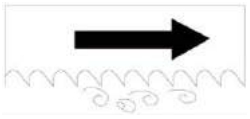
ADJUSTING COOLANT FLOW

Step 1 – Press the *saw blade start* button to start the saw blade drive motor.

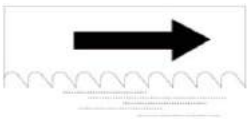
Step 2 – Use the flow control valve (shown below) to adjust the amount of fluid flowing to the cutting area.

Flow Control Valve

Adjust the flow amount if you observe the following changes to the chips generated from cutting.



If the chips are sharp and curved, increase the coolant flow amount.



If the chips are granulated, decrease the coolant flow amount.

INSTALLING MATERIAL STOP BRACKET

This device is easy to cut the same length repeatedly and saves adjusting time.

Step 1 - Install the depth bar and tighten the set screw. The depth bar is taken off from the machine base during transit for safety reason.

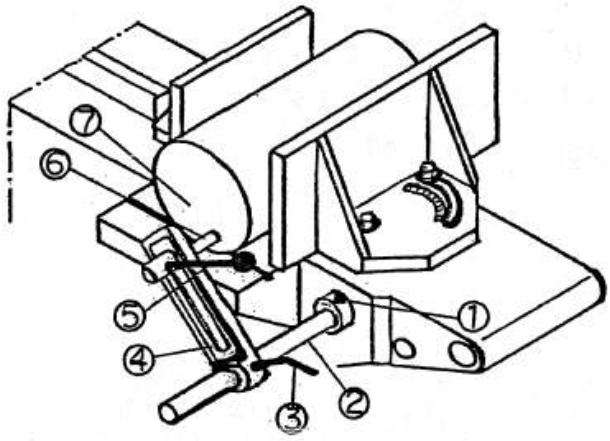
Step 2 - Lift the saw bow and clamp material securely with vise.

Step 3 - Lower the saw bow to allow about 1 mm clearance between saw blade teeth edge and the top of the material. Then measure your desired cutoff length.

Step 4 - Loosen the fastening bolt.

Step 5 - Slide and position the stopper so that the end of stopper faces the direction of the front end of the material. Then tighten the stopper handle to fix the stopper in the bracket.

Step 6 - Move the stopper bracket toward the workpiece so the stopper end just touches the front of the material, then tighten the fastening bolt.



① Set screw
② Depth bar
③ Fastening bolt
④ Stopper bracket
⑤ Stopper handle
⑥ Stopper
⑦ Front end of material

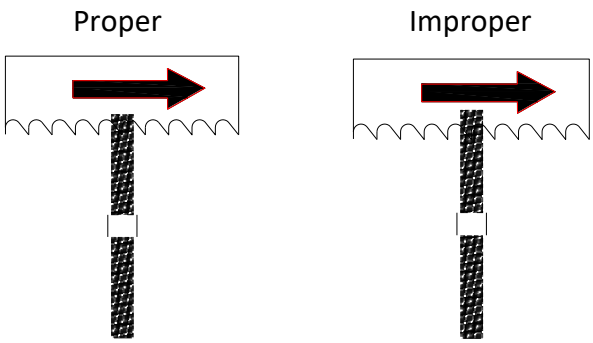
ADJUSTING WIRE BRUSH

Follow these steps to adjust wire brush to appropriate position:

Step 1 – Open the drive wheel cover. Loosen the adjustment bolt.

Step 2 – Adjust brush to make it move up / down until it makes proper contact with the saw blade (see below illustration).

Step 3 – Tighten the adjustment bolt. Close the drive wheel cover.



TEST-RUNNING THE MACHINE

Test-running this machine can ensure good machine performance in the future. We suggest you run the following tests on the machine before first use:

Testing machine performance:

Turn on the power and run a basic performance test after you finish installing the machine. Follow these steps to test machine performance:

Step 1 – Disassemble shipping brackets and bolts.

Step 2 – Install roller table (standard for SW-130HTSA).

Step 3 – Turn on the relay switch in the control box.

Step 4 – Elevate the saw bow. (If your coolant pump is in reverse and the machine cannot run, please change the electrical phase.)

Step 5 – Remove the rust-prevention grease with cleaning oil or kerosene.

Step 6 – Start the coolant pump.

Step 7 – Test these functions:

- vise clamping/unclamping
- saw bow ascending/descending

BREAKING-IN THE BLADE

When a new saw blade is used, be sure to first break in the blade before using it for actual, extended operation. Failure to break in the blade will result in less than optimum efficiency. To perform this break-in operation, the following instructions should be followed:

Step 1 - Reduce the blade speed to one-half of its normal setting.

Step 2 - Lengthen the cutting time to 2-3 times of what is normally required.

Step 3 - After the break-in operation is completed, set all parameters back to normal settings.

CUTTING OPERATION

Step 1 – Check before you cut

- **Power:** Check the voltage and frequency of your power source.
- **Coolant:** Check if you have sufficient coolant in the tank.
- **Hydraulic:** Check if you have sufficient (at least two-thirds or higher) hydraulic oil.
- **Blade:** Check the blade teeth and make sure there is no worn out teeth along the blade.
- **Saw bow:** Check the saw bow to see if it can be elevated and lowered smoothly.

Step 2 – Place your workpiece onto the workbed manually or by using a lifting tool e.g. a crane.

Before loading, make sure the vises are opened to at least wider than the width of the workpiece.

Step 3 – Position your workpiece.

Step 4 – Clamp the workpiece.

Step 5 – Adjust *blade descend speed control* knob to obtain a suitable blade descend speed for your material.

Step 6 – Start running the blade.

Before you start cutting, check again that there is no other object in the cutting area.

Step 7 – While the blade descends, adjust the blade speed if necessary. Please refer to *Adjusting Blade Speed*.

Step 8 – Select the proper cutting condition according to different material.

Step 9 – After the entire cutting job is completed, SW-130HTM will stay at lower limit position and SW-130HTSA will go up to the upper limit position. Open the vises to remove the workpiece.

Step 10 – Clean the workbed by removing chips and cutting fluids.

Step 11 – Lower the saw bow to a proper position then turn off the power.

TERMINATING A CUTTING OPERATION 

- For SW-130HTM, the saw blade will stop running when the *emergency stop bu*tton is pressed.
- For SW-130HTSA, the saw blade will stop running when the *saw bow up bu*tton or the saw blade stop button is pressed.
- For SW-130HTSA, both the saw blade and hydraulic pump motors will stop running when the *emergency stop* button is pressed.

Section 5

ELECTRICAL SYSTEM

ELECTRICAL CIRCUIT DIAGRAMS

The following are electrical circuit diagrams of SW-130HTM:
Fig 5-1 Control Panel Layout
Fig 5-2 AC 110V Circuitry
Fig 5-3 Power Supply Layout

The following are electrical circuit diagrams of SW-130HTSA:
Fig 5-4 Control Panel Layout
Fig 5-5 AC 110V Circuitry
Fig 5-6 Power Supply Layout

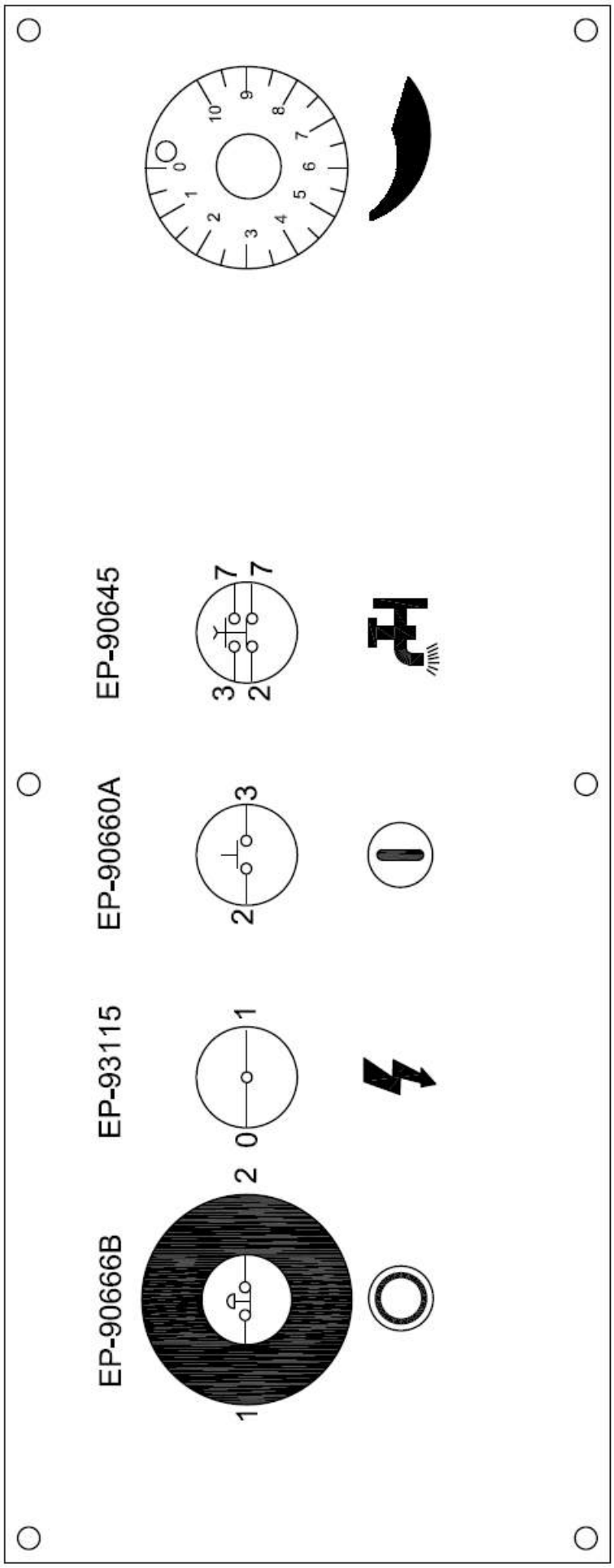


Fig 5-1 Control Panel Layout

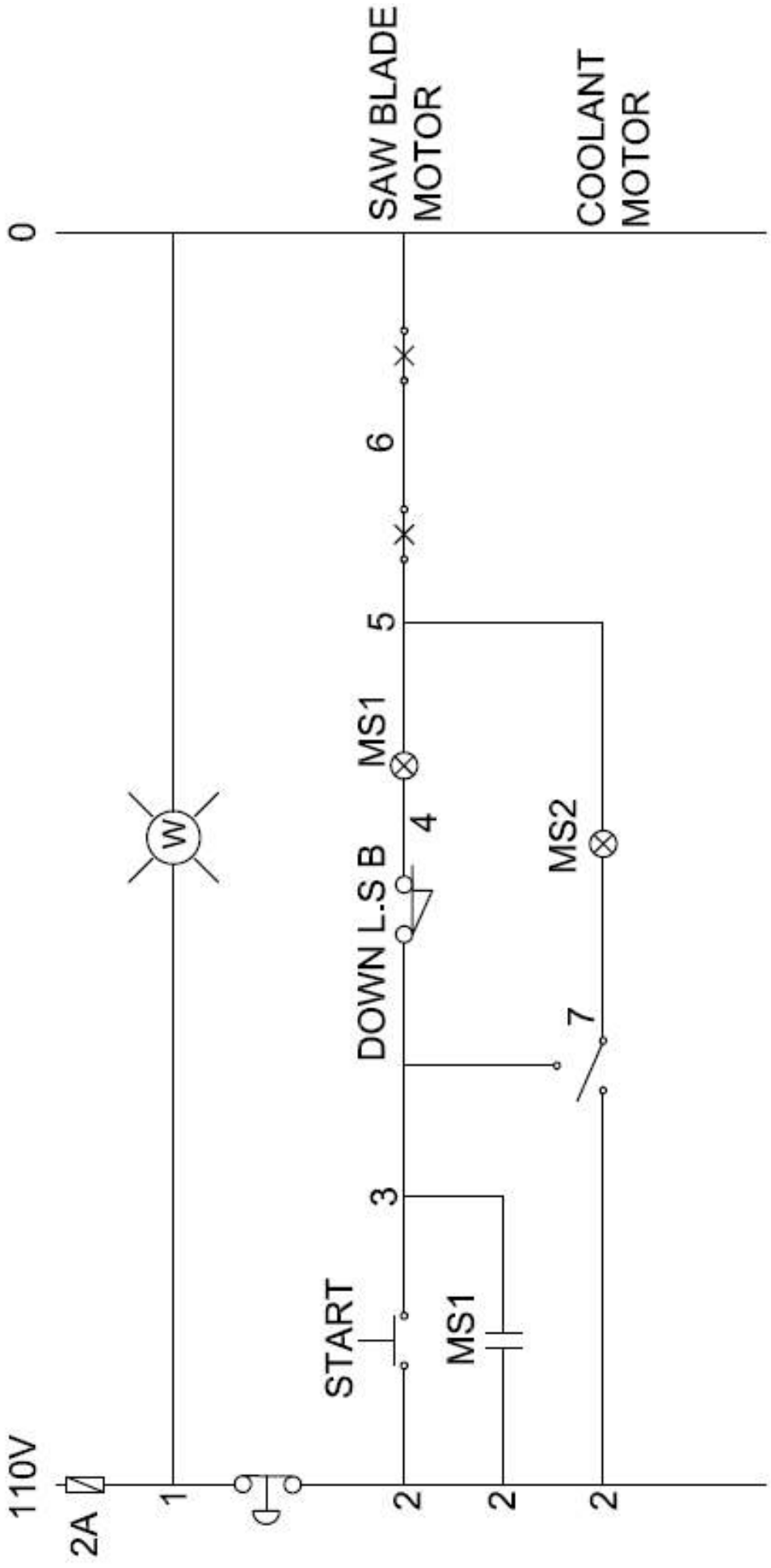


Fig 5-2 AC 110V Circuitry

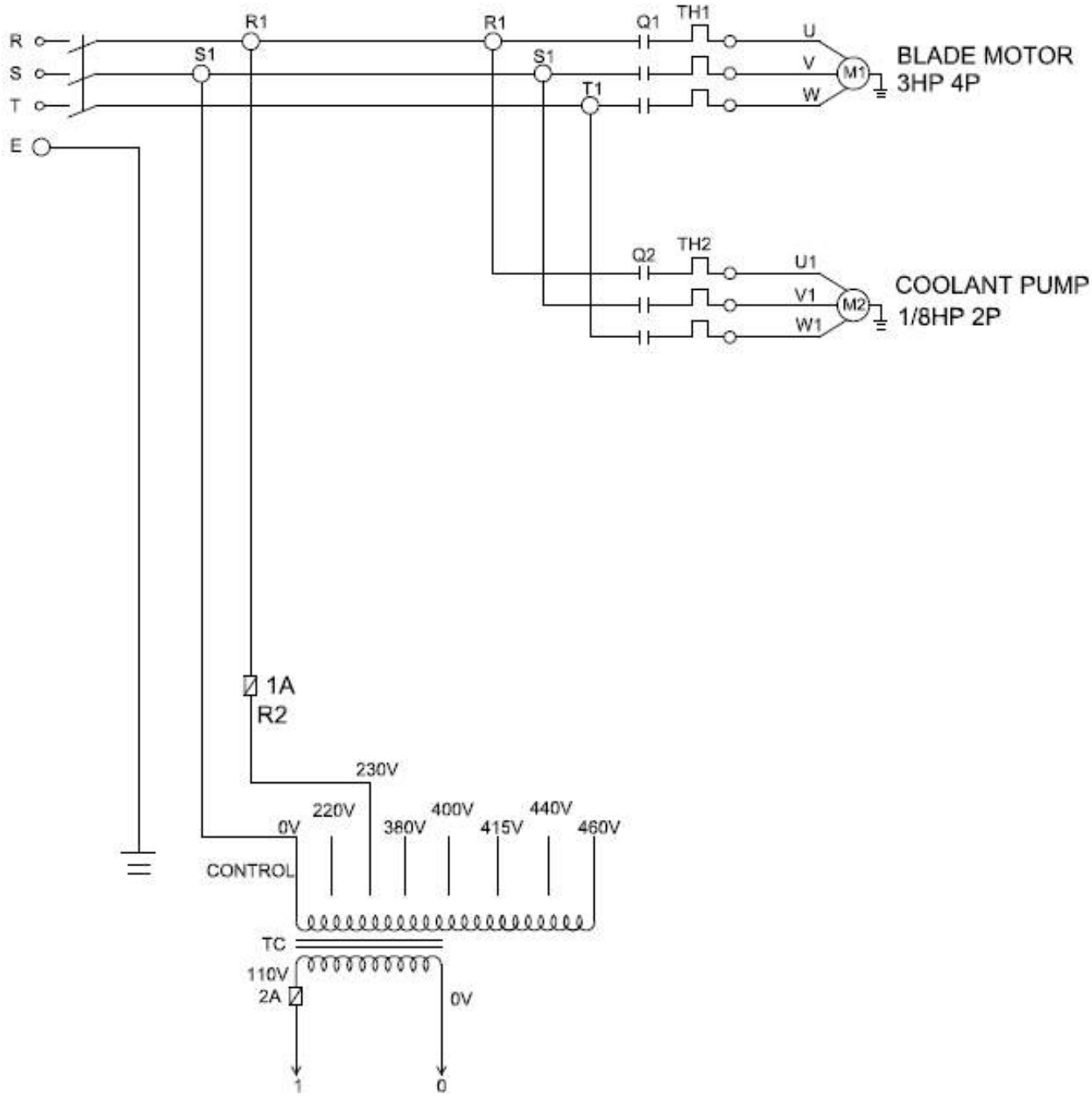


Fig 5-3 Power Supply Layout

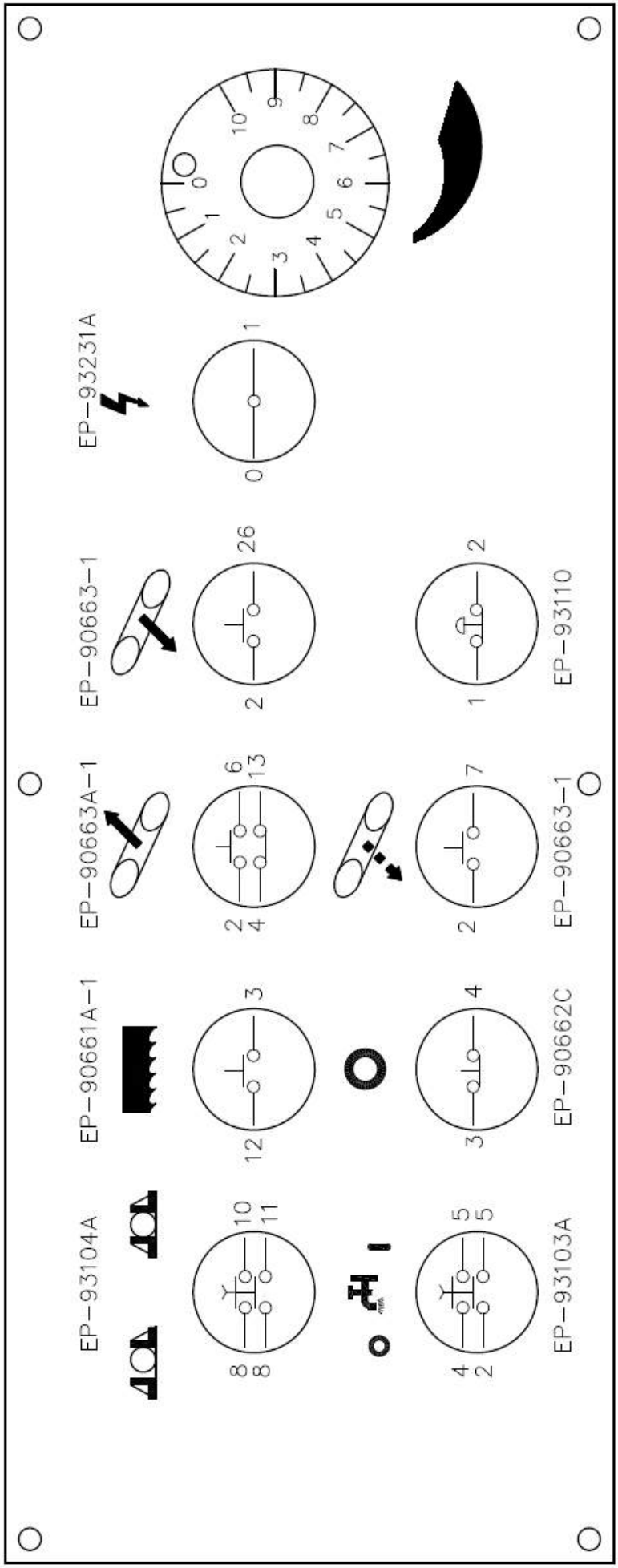


Fig 5-4 Control Panel Layout

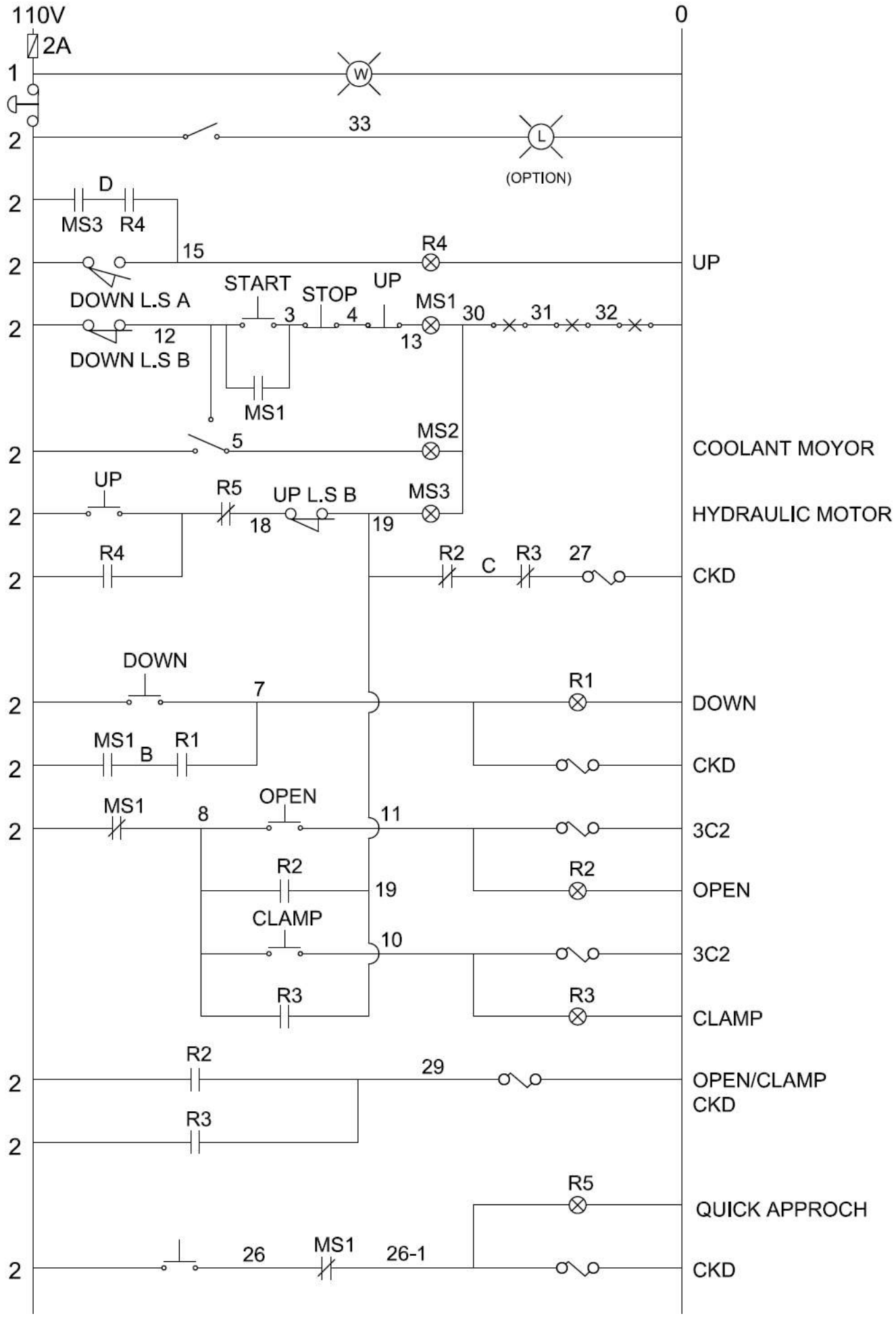


Fig 5-5 AC 110V Circuitry

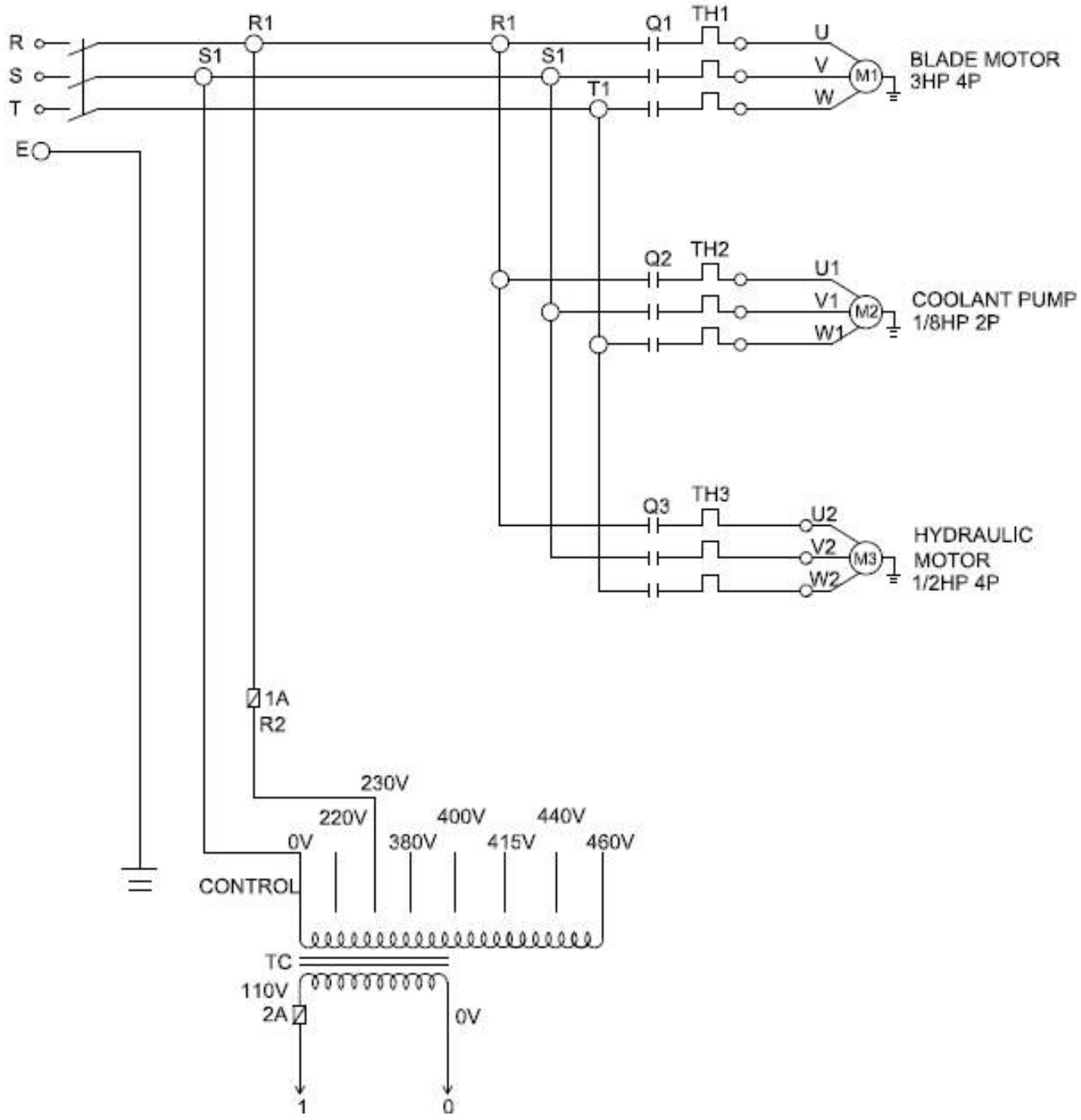
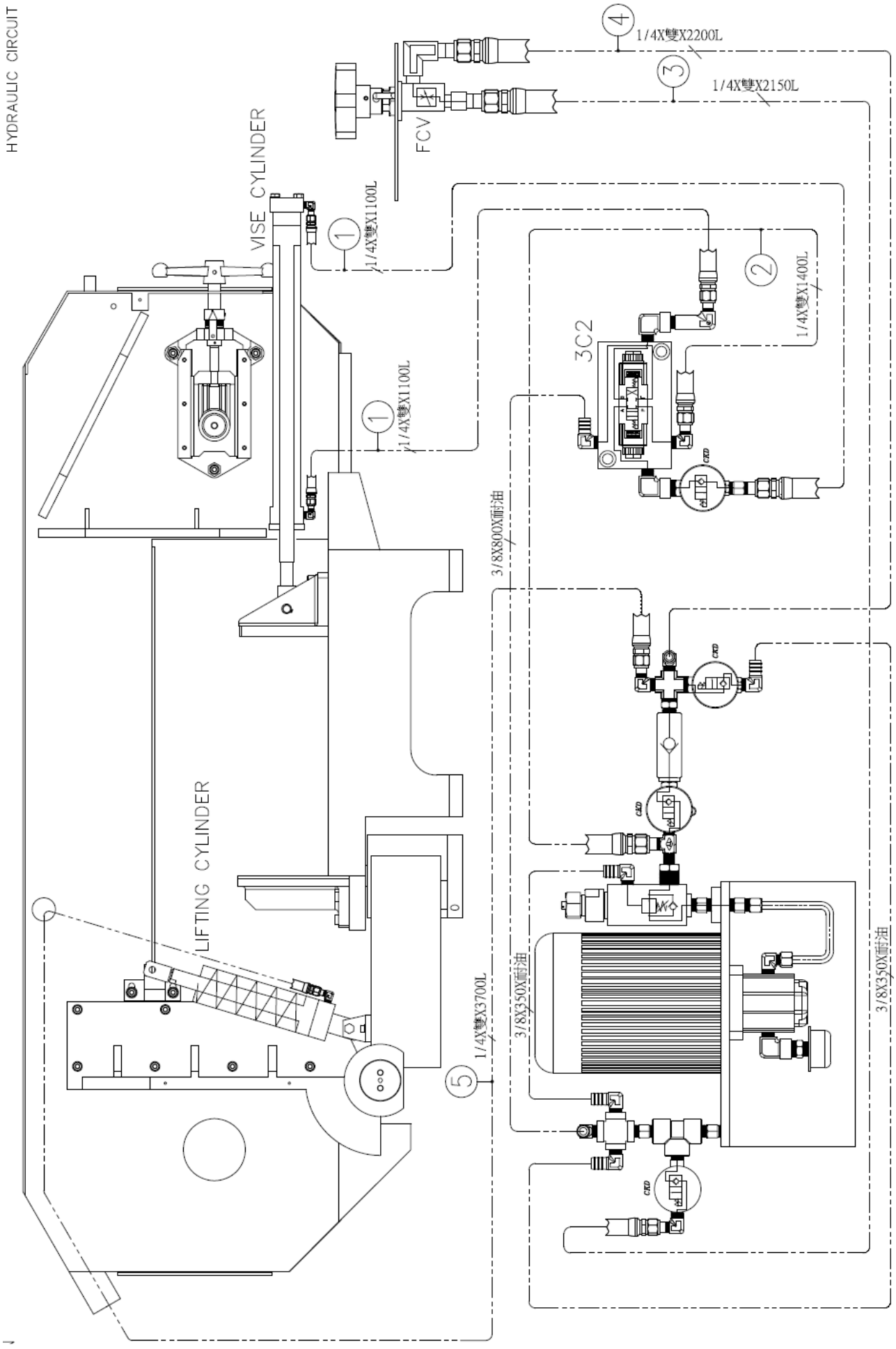


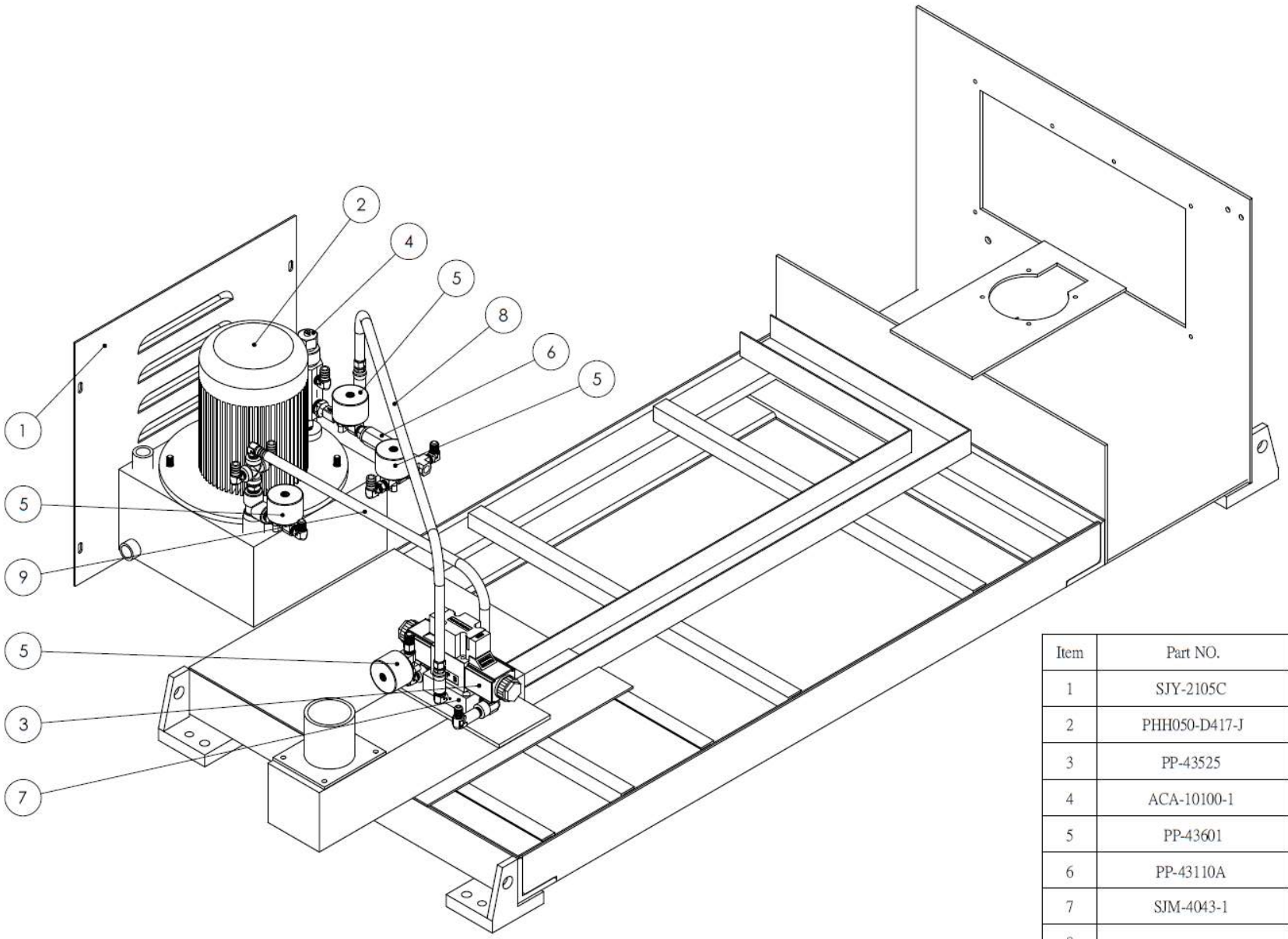
Fig 5-6 Power Supply Layout

HYDRAULIC SYSTEM

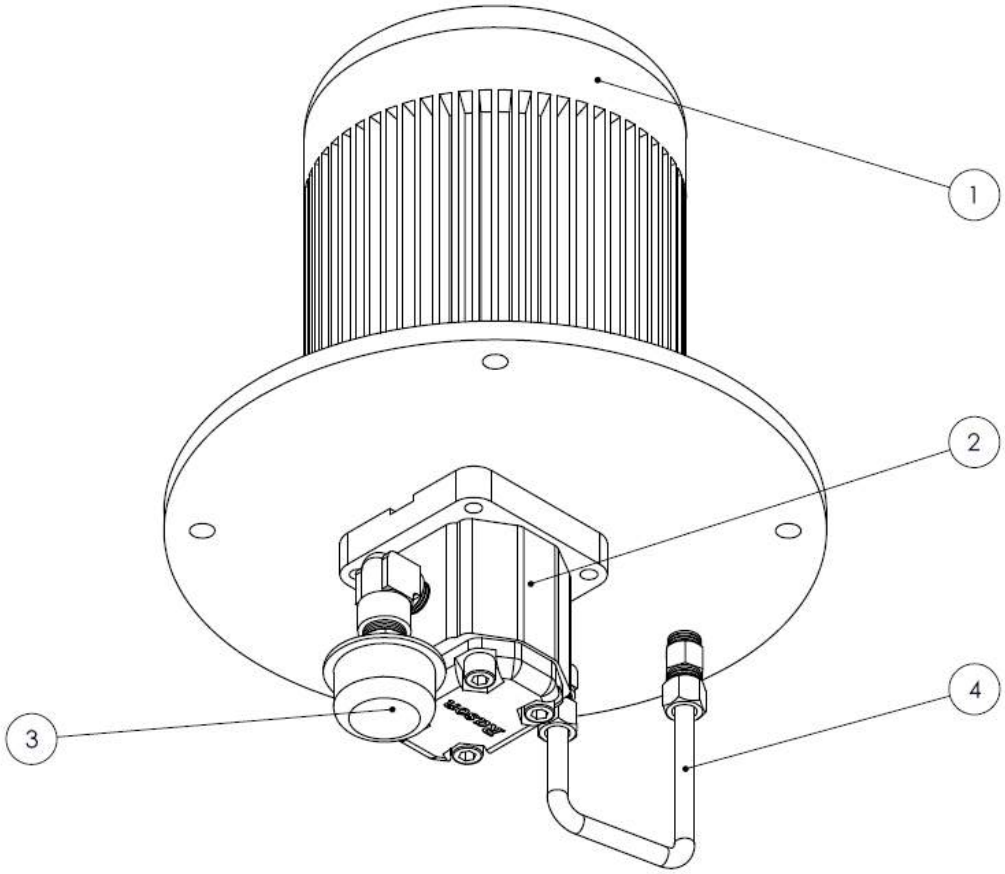
HYDRAULIC DIAGRAMS


HYDRAULIC CIRCUIT
VISE CYLINDER
LIFTING CYLINDER
FCV
3C2
1/4X雙X2200L
1/4X雙X2150L
1/4X雙X1400L
1/4X雙X1100L
1/4X雙X1100L
1/4X雙X3700L
3/8X800X耐油
3/8X350X耐油
3/8X350X耐油

序號 Item	子件品號 Part No.	品名規格 Specifcation	品名 Part Name
1	PHD-02D-1100*T	油壓管1/4x雙XL1100 Hydraulic pipe1/4 xDouble xL1100	Hydraulic pipe 油壓管
2	PHD-02D-1400*T	油壓管1/4x雙XL1400 Hydraulic pipe1/4 xDauble xL1400	Hydraulic pipe 油壓管
3	PHD-02D-2150*T	油壓管1/4x雙XL2150 Hydraulic pipe1/4 xDouble xL2150	Hydraulic pipe 油壓管
4	PHD-02D-2200*T	油壓管1/4x雙XL2200 Hydraulic pipe1/4 xDoublexL2200	Hydraulic pipe 油壓管
5	PHD-02D-3700*T	油壓管1/4x雙XL3700 Hydraulic pipe1/4 xDouble xL3700	Hydraulic pipe 油壓管



Item	Part NO.	Part Name	Q'ty
1	SJY-2105C	油壓箱 Hydraulic oil tank	1
2	PHH050-D417-J	油壓馬達 Hydraulic motor	1
3	PP-43525	電磁閥(3C2) Solenoid valve	1
4	ACA-10100-1	洩壓閥 Relief valve	1
5	PP-43601	電磁閥(CKD) Solenoid valve	4
6	PP-43110A	止回閥 Check valve	1
7	SJM-4043-1	油路板 Manifold plate	1
8		系統入油管 System feed pipe	1
9		系統回油管 System return pipe	1

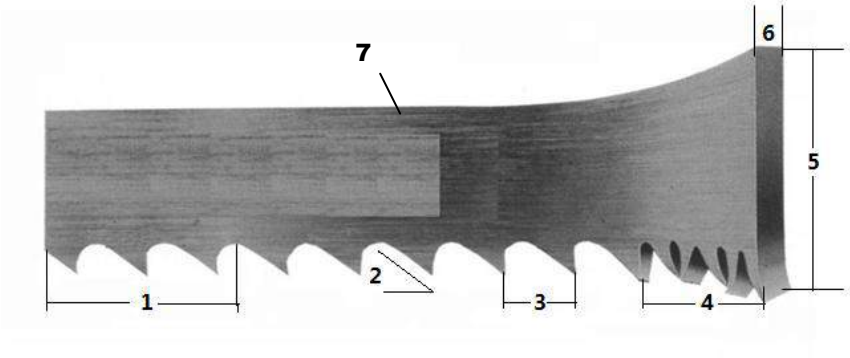


litem	Part NO.	Part Name	Q'ty
1	PHH050-D417-J	油壓馬達 Hydraulic motor	1
2	PP-32202	油壓幫浦 Hydraulic pump	1
3	PP-43331	濾油網 Filter	1
4		銅管 Copper tube	1

Section 7

BANDSAW CUTTING: A PRACTICAL GUIDE

INTRODUCTION



1. TPI: The number of teeth per inch as measured from gullet to gullet.

2. Tooth Rake Angle: The angle of the tooth face measured with respect to a line perpendicular to the cutting direction of the saw.

3.Tooth Pitch: Tooth pitch refers to the number of teeth per inch (tpi). 1 inch equates to 25.4 mm.

A distinction is made between constant tooth pitches with a uniform tooth distance, 2 tpi for example, and variable tooth pitches with different tooth distances within one toothing interval.

Variable tooth pitches, for instance 2-3 tpi, can be characterized by two measures: 2 tpi stands for the maximum tooth distance and 3 tpi stands for the minimum tooth distance in the toothing interval.

Constant **Variable**

4. Set: The bending of teeth to right or left to allow clearance of the back of the blade through the cut.

5. Width: The nominal dimension of a saw blade as measured from the tip of the tooth to the back of the band.

6. Thickness: The dimension from side to side on the blade.

7. Gullet: The curved area at the base of the tooth. The tooth tip to the bottom of the gullet is the gullet depth.

SAW BLADE SELECTION

1. Band length

The dimensions of the band will depend on the band saw machine that has been installed.

Please refer to Section 2 – General Information

2. Band width

Band width: the wider the band saw blade, the more stability it will have.

3. Cutting edge material

The machinability of the material to be cut determines what cutting material you should choose.

4. Tooth pitch

The main factor here is the contact length of the blade in the workpiece.

If it is 4P, 25.4 ÷ 4 P = 6.35 mm, that is, one tooth is 6.35 mm.

If it is 3P, 25.4 ÷ 3 P = 8.46 mm If the number is small, it means that the tooth is large.

What is written as 3/4 is that it is a variable pitch of large (3) / small (4).

The saw blade must contact the cutting material at least two pitches. In the case of a thickness of 15 mm, 4P = OK, 3P = NG.

- The surface conditions will also affect the cutting rate. If there are places on the surface on the material which are hard, a slower blade speed will be required or blade damage may result.
- It will be slower to cut tubing than to cut solids, because the blade must enter the material twice, and because coolant will not follow the blade as well.
- Tough or abrasive materials are much harder to cut than their machinability rating would indicate.
- Tooth spacing is determined by the hardness of the material and its thickness in cross section.
- Tooth set prevents the blade from binding in the cut. It may be either a "regular set" (also called a "raker set") or a "wavy set".
- The regular or raker set is most common and consists of a pattern of one tooth to the left, one tooth to the right, and one which is straight, or unset. This type of set is generally used where the material to be cut is uniform in size and for contour cutting.
- Wavy set has groups of teeth set alternately to right and left, forming a wave-like pattern. This reduces the stress on each individual tooth, making it suitable for cutting thin material or a variety of materials where blade changing is impractical. Wavy set is often used where tooth breakage is a problem. This is shown in Fig. 7.2 as follows:

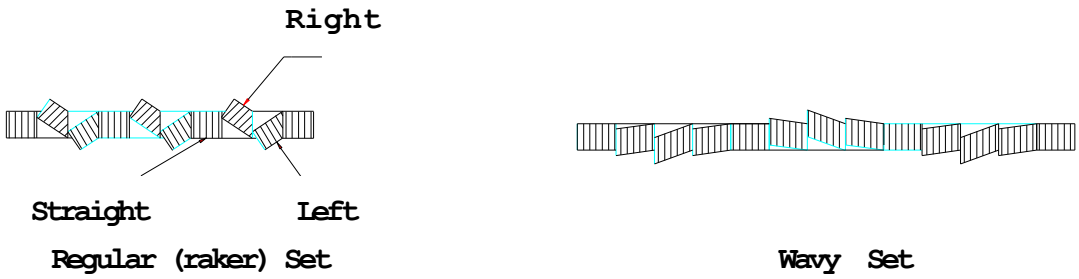
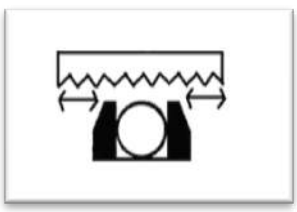


Fig. 7.2 The Saw Set

VISE LOADING

The position in which material is placed in the vise can have a significant impact on the cost per cut.

Often, loading smaller bundles can mean greater sawing efficiency.



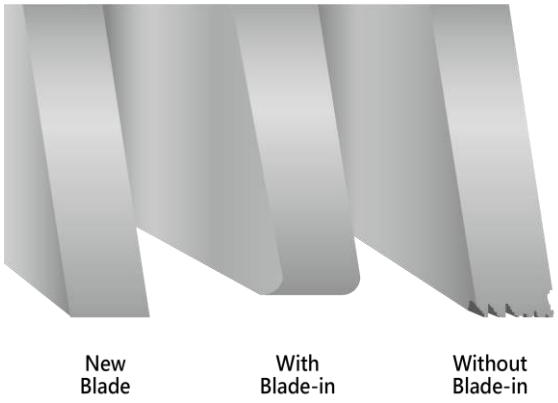
When it comes to cutting odd-shaped material, such as angles, I-beams, channel, and tubing, the main point is to arrange the materials in such a way that the blade cuts through as uniform a width as possible throughout the entire distance of cut.

The following diagrams suggest some costeffective ways of loading and fixturing. Be sure, regardless of the arrangement selected, that the work can be firmly secured to avoid damage to the machine or injury to the operator.

BladeBreak -In

Completing a proper break-in on a new band saw blade will dramatically increase its life.

1. Select the proper band speed for the material to be cut.



2. Reduce the feed force/rate to achieve a cutting rate 20% to 50% of normal (soft materials require a larger feed rate reduction than harder materials).

3.Begin the first cut at the reduced rate. Make sure the teeth are forming a chip. Small adjustments to the band speed may be made in the event of excessive noise/vibration. During the first cut, **increase feed rate/force** slightly once the blade fully enters the workpiece.With each following cut, **gradually increase feed rate/force** until normal cutting rate is reached.

Section 8

MAINTENANCE & SERVICE

INTRODUCTION

For the best performance and longer life of the band saw machine, a maintenance schedule is necessary. Some of the daily maintenance usually takes just a little time but will give remarkable results for the efficient and proper operation of cutting.

BASIC MAINTENANCE

It is always easy and takes just a little effort to do the basic maintenance. But it always turns out to be a very essential process to assure the long life and efficient operation of the machine. Most of the basic maintenance requires the operator to perform it regularly.

MAINTENANCE SCHEDULE

We suggest you do the maintenance on schedule.

Before beginning a day's work

1. Please check the hydraulic oil level. If oil level volume is below 1/2, please add oil as necessary.(Filling up to 2/3 level is better for system operation.)
2. Please check the cutting fluid level, adding fluid as necessary. If the fluid appears contaminated or deteriorated, drain and replace it.
3. Please check the saw blade to ensure that it is properly positioned on both the drive and idle wheels.
4. Please make sure that the saw blade is properly clamped by the left and right inserts.
5. Please check the wire brush for proper contact with the saw blade. Replace the wire brush if it is worn out.

After ending a day's work

Please remove saw chips and clean the machine with discharging the cutting fluid when work has been completed.

 Do not discharge cutting fluid while the saw blade is operating because it will cause severe injury on operator's hand.

 Be sure the saw blade is fully stop, it will be performed after working inspection.

Every 2 weeks

Please apply grease to the following points:

1. Idle wheel
2. Drive wheel
3. Blade tension device

Recommended Grease:

- Shell Alvania EP Grease 2
- Mobil Mobilplex 48

First 600hrs for new machine,then every 1200hrs for routine change

Replace the transmission oil after operating for first 600hrs for new machine,then every 1200hrs

Recommended gear oil

- Shell Omala oil HD220
- Mobil gear 630

Recommended hydraulic oil

- ShellTellus 32
- Mobil DTE Oil Light Hydraulic 24

Every six months

1.Clean the filter of the cutting fluid.

2.Replace the transmission oil for every half of a year(or 1200 hours).

Check the sight gauge to ascertain the transmission level.

Recommended TRANSMISSION OIL

- Omala oil HD220
- Mobil comp 632 600W Cylinder oil

3.Replace the hydraulic oil.

Recommended HYDRAULIC OIL

- ShellTellus 32
- Mobil DTE Oil Light Hydraulic 24

STORAGE CONDITIONS

Generally, this machine will be stored on the following conditions in future:

(1) Turn off the power.

(2) Ambient temperature: 5℃ ~ 40℃

(3) Relative humidity: 30%~85% (without condensation)

(4) Atmosphere: use a plastic canvas to cover machine to avoid excessive dust, acid fume, corrosive gases and salt.

(5) Avoid exposing to direct sunlight or heat rays which can change the environmental temperature.

(6) Avoid exposing to abnormal vibration.

(7) Must be connected to earth.

TERMINATING THE USE OF THE MACHINE

Waste disposal:

When your machine can not work anymore, you should drain the oil from machine body. Please store the oil in safe place with bottom tray. Ask a environment specialist to handle the oil. It can avoid soil pollution. The oil list in machine:

- Hydraulic oil
- Cutting fluid
- Drive wheel gear oil

OIL RECOMMENDATION FOR MAINTENANCE

Item		Method	Revolution	Suggest oil
Dovetail guide		Keep grease covered. Antirust.	Daily	Shell R2
Roller bearing		Sweep clean and oil with lubricant.	Daily	SEA #10
Bed roller / surface		Sweep clean and oil with lubricant.	Daily	SEA #10
Nipples of bearing		Use grease gun, but not excess.	Monthly	Shell R2
Blade tension device		Use grease gun, but not excess.	Monthly	Shell Alvania EP Grease 2, Mobil Mobilplex 48
Reducer		Inspect once a week. Change oil of 600 hours of using. Change it every year.	Regularly	Omala oil HD220 Mobil Gear 630
Hydraulic system		Inspect half a year. Change oil every year.	Regularly	Shell Tellus 32 Mobil DTE oil Light Hydraulic 24
Bearing	Inserts	Oil with lubricant, but not excess.	Daily	Shell R2
	Band wheel	Oil with lubricant, but not excess.	Weekly	
	Cylinder	Oil with lubricant, but not excess.	6 Monthly	
	Wire brush	Oil with lubricant, but not excess.	6 Monthly	

1. Turn off the stop circuit breaker switch before servicing the machine.

2. Then post a sign to inform people that the machine is under maintenance.

3. Drain all of the cutting fluid and oil off and carefully treat them to avoid pollution.

4. The machine must be either LOCKED OUT OR TAGGED OUT while under maintenance.

Section 9

TROUBLESHOOTING

INTRODUCTION

All the machines manufactured by us pass a 48 hours continuously running test before shipping out and we are responsible for the after sales service problems during the warranty period if the machines are used normally. However, there still exist the some unpredictable problems which may disable the machine from operating.

Generally speaking, the system troubles in this machine model can be classified into three types, namely GENERAL TROUBLES, MOTOR TROUBLES and BLADE TROUBLES. Although you may have other troubles which can not be recognized in advance, such as malfunctions due to the limited life-span of mechanical, electric or hydraulic parts of the machine.

We have accumulated enough experiences and technical data to handle all of the regular system troubles. Meanwhile, our engineering department had been continuously improving the machines to prevent all possible troubles.

It is hoped that you will give us your maintenance experience and ideas so that both sides can achieve the best performance.

PRECAUTIONS

When an abnormality occurs in the machine during operation, you can do it yourself safely. If you have to stop machine motion immediately for parts exchanging, you should do so according to the following procedures:

- Press HYDRAULIC MOTOR OFF button or EMERGENCY STOP button.
- Open the electrical enclosure door.
- Turn off breaker.

BEFORE ANY ADJUSTMENT OR MAINTENANCE OF THE MACHINE, PLEASE MAKE SURE TO TURN OFF THE MACHINE AND DISCONNECT THE POWER SUPPLY.

GENERAL TROUBLES AND SOLUTIONS

DISCONNECT POWER CORD TO MOTOR BEFORE ATTEMPTING ANY REPAIR OR INSPECTION.

TROUBLE	PROBABLE CAUSE	SUGGESTED REMEDY
Motor stalls	Excessive belt tension	Adjust belt tension so that belt does not slip on drive pulley while cutting (1/2“ Min. deflection of belt under moderate pressure.)
	Excessive head pressure	Reduce head pressure. Refer to Operating Instructions “Adjusting Feed”.
	Excessive blade speed	Refer to Operating Instructions “Speed Selection”.
	Improper blade selection	Refer to Operating Instructions “Blade Selection”.
Cannot make square cut	Dull blade	Replace blade.
	Guide rollers not adjusted properly	Refer to Adjustments.
	Rear vise jaw not adjusted properly	Set fixed vise jaw 90° to blade.
	Excessive head pressure	Reduce head pressure. Refer to operating instructions “Adjusting Feed.”
Increased cutting time	Dull blade	Replace blade
	Insufficient head pressure	Increase head pressure. Refer to Operating Instructions “Adjusting Feed.”
	Reduce blade speed	Refer to Operating Instructions “Speed Selection.”
Will not cut	Motor running in wrong direction	Reverse rotation of motor. (Motor rotation C.C.W. pulley end.)
	Blade teeth pointing in wrong direction	Remove blade, turn blade inside out. Re-install blade. (Teeth must point in direction of travel.)
	Hardened material	Use special alloy blades. (Consult your industrial distributor for recommendation on type of blade required.)

MINOR TROUBLES & SOLUTIONS

TROUBLE	PROBABLE CAUSE	SUGGESTED REMEDY
Saw blade motor does not run even though blade drive button is pressed.	Overload relay activated	Reset
	Saw blade is not at forward limit position.	Press SAW FRAME FORWARD button

MOTOR TROUBLES & SOLUTIONS

TROUBLE	PROBABLE CAUSE	SUGGESTED REMEDY
Motor will not start	Magnetic switch open, or protector open.	Reset protector by pushing red button (inside electric box.)
	Low voltage	Check power line for proper voltage.
	Open circuit in motor or loose connections.	Inspect all lead terminations on motor for loose or open connections.
Motor will not start, fuse or circuit breakers “blow”.	Short circuit in line, cord or plug.	Inspect line, cord and plug for damaged insulation and shorted wire.
	Short circuit in motor or loose connections	Inspect all lead terminations on motor for loose or shorted terminals or worn insulation on wires.
	Incorrect fuses or circuit breakers in power line.	Install correct fuses or circuit breakers.
Motor fail to develop full power. (Power output of motor decreases rapidly with decrease in voltage at motor terminals.)	Power line overloaded with lights, appliances and other motors.	Reduce the load on the power line.
	Undersize wires or circuit too long.	Increase wire sizes, or reduce length of wiring
	General overloading of power company‘s facilities.	Request a voltage check from the power company
Motor overheat	Motor overloaded.	Reduce load on motor
	Air circulation through the motor restricted.	Clean out motor to provide normal air circulation through motor.
Motor stalls (Resulting in blown fuses or tripped circuit breakers)	Short circuit in motor or loose connections.	Inspect terminals in motor for loose or shorted terminals or worn insulation on lead wires.
	Low voltage	Correct the low line voltage conditions.
	Incorrect fuses or circuit breakers in power line.	Install correct fuses circuit breakers.
	Motor overloaded	Reduce motor load.
Frequent opening of fuses or circuit breakers.	Motor overloaded	Reduce motor load
	Incorrect fuses or circuit breakers.	Install correct fuses or circuit breakers.

BLADE TROUBLES AND SOLUTIONS

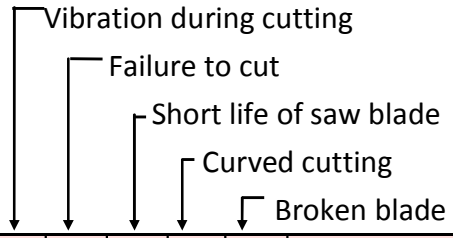
DISCONNECT POWER CORD TO MOTOR BEFORE ATTEMPTING ANY REPAIR OR INSPECTION.

TROUBLE	PROBABLE CAUSE	SUGGESTED REMEDY
Teeth strippage	Too few teeth per inch	Use finer tooth blade
	Loading of gullets	Use coarse tooth blade or cutting lubricant.
	Excessive feed	Decrease feed
	Work not secured in vise	Clamp material securely
Blade breakage	Teeth too coarse	Use a finer tooth blade
	Misalignment of guides	Adjust saw guides
	Dry cutting	Use cutting lubricant
	Excessive speed	Lower speed. See Operating Instructions “Speed selection.”
	Excessive speed	Reduce feed pressure. Refer to Operating Instructions “Adjusting Feed.”
	Excessive tension	Tension blade to prevent slippage on drive wheel while cutting.
	Wheels out of line	Adjust wheels
Blade line Run-out or Run-in	Guides out of line	For a straight and true cut, realign guides, check bearings for wear.
	Excessive pressure	Conservative pressure assures long blade life and clean straight cuts.
	Support of blade insufficient	Move saw guides as close to work as possible.
	Material not properly secured in vise	Clamp material in vise, level and securely.
	Blade tension improper	Loosen or tighten tension on blade.
Blade twisting	Blade not in line with guide bearings	Check bearings for wear and alignment.
	Excessive blade pressure	Decrease pressure and blade tension
	Blade binding in cut	Decrease feed pressure
Premature tooth wear	Dry cutting	Use lubricant on all materials, except cast iron
	Blade too coarse	Use finer tooth blade
	Not enough feed	Increase feed so that blade does not ride in cut
	Excessive speed	Decrease speed

SAWING PROBLEMS AND SOLUTIONS

Other than this manual, the manufacturer also provides some related technical documents listed as follows:

Sawing Problems and Solutions



Vibration during cutting	Failure to cut	Short life of saw blade	Curved cutting	Broken blade		
✓	✓	✓	✓	✓	**Use of blade with incorrect pitch**	**Use blade with correct pitch suited to workpiece width**
✓	✓	✓	✓	✓	**Failure to break-in saw blade**	**Perform break-in operation**
✓	✓	✓			**Excessive saw blade speed**	**Reduce speed**
			✓	✓	**Insufficient saw blade speed**	**Increase speed**
✓		✓	✓	✓	**Excessive saw head descending speed**	**Reduce speed**
✓		✓	✓		**Insufficient saw head descending speed**	**Increase speed**
		✓	✓		**Insufficient saw blade tension**	**Increase tension**
✓		✓	✓	✓	**Wire brush improperly positioned**	**Relocate**
✓		✓	✓		**Blade improperly clamped by insert**	**Check and correct**
✓	✓	✓	✓	✓	**Improperly clamped workpiece**	**Check and correct**
	✓	✓	✓		**Excessively hard material surface**	**Soften material surface**
		✓	✓	✓	**Excessive cutting rate**	**Reduce cutting rate**
	✓	✓			**Non-annealed workpiece**	**Replace with suitable workpiece**
✓		✓	✓	✓	**Insufficient or lean cutting fluid**	**Add fluid or replace**
✓		✓	✓	✓	**Vibration near machine**	**Relocate machine**
		✓	✓		**Non-water soluble cutting fluid used**	**Replace**
✓		✓	✓		**Air in cylinder**	**Bleed air**
✓		✓		✓	**Broken back-up roller**	**Replace**
✓	✓	✓	✓	✓	**Use of non-specified saw blade**	**Replace**
✓	✓	✓	✓	✓	**Fluctuation of line voltage**	**Stabilize**
✓		✓	✓		**Adjustable blade guide too far from workpiece**	**Bring blade guide close to workpiece**
✓		✓	✓	✓	**Loose blade guide**	**Tighten**
		✓		✓	**Blue or purple saw chips**	**Reduce cutting rate**
✓		✓		✓	**Accumulation of chips at inserts**	**Clean**
	✓				**Reverse positioning of blade on machine**	**Reinstall**
✓		✓	✓		**Workpieces are not bundled properly**	**Re-bundle**
✓		✓		✓	**Back edge of blade touching wheel flange**	**Adjust wheel to obtain clearance**
✓	✓	✓			**Workpiece of insufficient diameter**	**Use other machine, suited for diameter of workpiece Replace**
	✓	✓	✓		**Saw blade teeth worn**	**Replace**

SOLUTIONS TO SAWING PROBLEMS

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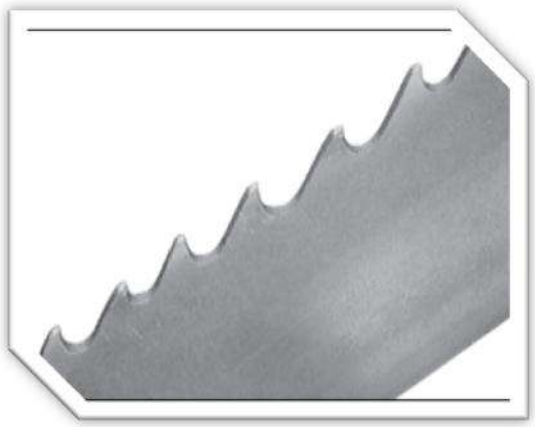
#1. Heavy Even Wear On Tips and Corners Of Teeth



Probable Cause :

A. Improper break-in procedure.

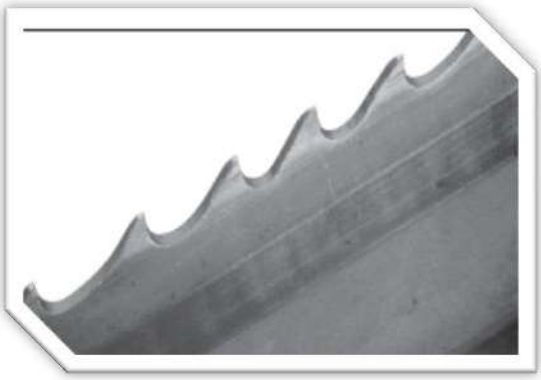
B. Excessive band speed for the type of material being cut. This generates a high tooth tip temperature resulting in accelerated tooth wear.

C. Low feed rate causes teeth to rub instead of penetrate. This is most common on work hardened materials such as stainless and toolsteels.

D. Hard materials being cut such as "Flame Cut Edge" or abrasive materials such as " Fiber Reinforced Composites".

E. Insufficient sawing fluid due to inadequate supply, improper ratio, and/or improper application

#2. Wear On Both Sides Of Teeth



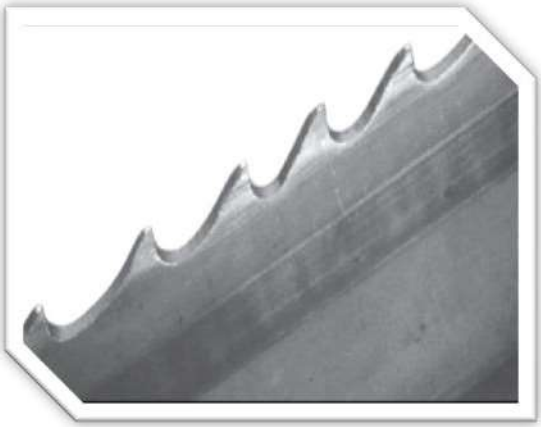
Probable Cause :

A. Broken, worn or missing back-up guides allowing teeth to contact side guides.

B. Improper side guides for band width.

C. Backing the band out of an incomplete cut.

#3. Wear On One Side Of Teeth



Probable Cause :

A. Worn wheel flange, allowing side of teeth to contact wheel surface or improper tracking on flangeless wheel.

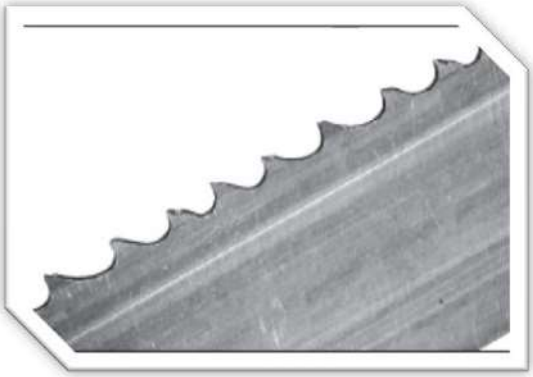
B. Loose or improperly positioned side guides.

C. Blade not perpendicular to cut.

D. Blade rubbing against cut surface on return stroke of machine head.

E. The teeth rubbing against a part of machine such as chip brush assembly, guards, etc.

#4. Chipped Or Broken Teeth



Probable Cause :

A. Improper break-in procedure.

B. Improper blade selection for application.

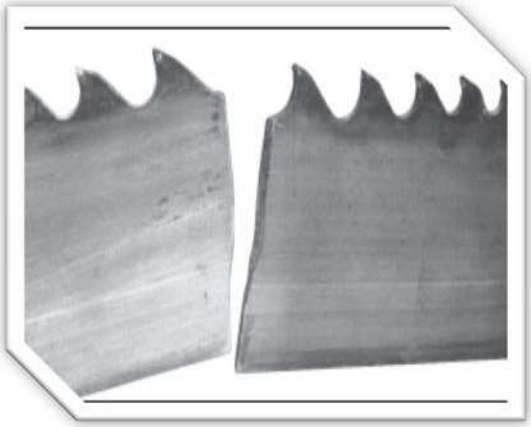
C. Handling damage due to improper opening of folded band.

D. Improper positioning or clamping of material.

E. Excessive feeding rate or feed pressure.

F. Hitting hard spots or hard scale in material

#5. Body Breakage Or Cracks From Back Edge



Probable Cause :

A. Excessive back-up guide "preload" will cause back edge to work harden which results in cracking.

B. Excessive feed rate.

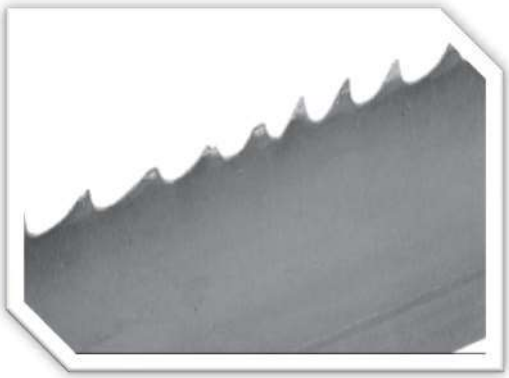
C. Improper band tracking – back edge rubbing heavy on wheel flange.

D. Worn or defective back-up guides.

E. Improper band tension.

F. Notches in back edge from handling damage

#6. Tooth Strippage



Probable Cause :

A. Improper or lack of break-in procedure.

B. Worn, missing or improperly positioned chip brush.

C. Excessive feeding rate or feed pressure.

D. Movement or vibration of material being cut.

E. Improper tooth pitch for cross sectional size of material being cut.

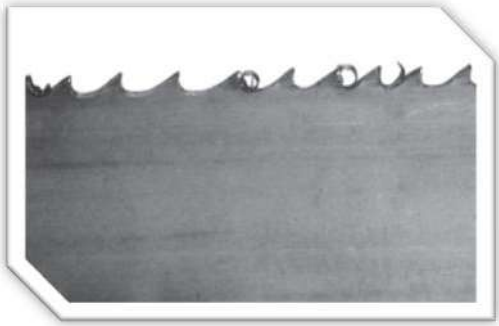
F. Improper positioning of material being cut.

G. Insufficient sawing fluid due to inadequate supply,improper ratio and/or improper application.

H. Hard spots in material being cut.

I. Band speed too slow for grade of material being cut.

#7. Chips Welded To Tooth Tips



Probable Cause :

A. Insufficient sawing fluid due to inadequate supply, improper ratio and/or improper application.

B. Worn, missing or improperly positioned chip brush.

C. Improper band speed.

D. Improper feeding rate.

#8. Gullets Loading Up With Material

Probable Cause :

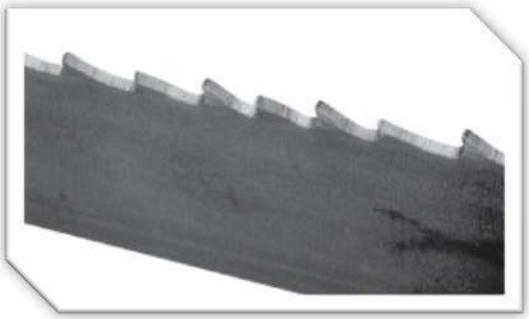
A. Too fine of a tooth pitch – insufficient gullet capacity.

B. Excessive feeding rate producing too large of a chip.

C. Worn, missing or improperly positioned chip brush.

D. Insufficient sawing fluid due to inadequate supply, improper ratio and/or improper application.

#9. Discolored Tips Of Teeth Due To Excessive Frictional Heat



Probable Cause :

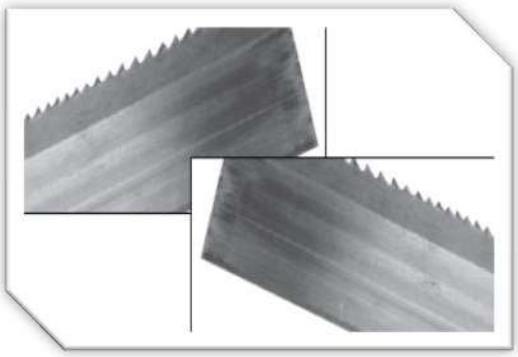
A. Insufficient sawing fluid due to inadequate supply, improper ratio and/or improper application.

B. Excessive band speed.

C. Improper feeding rate.

D. Band installed backwards.

10. Heavy Wear On Both Sides Of Band



Probable Cause :

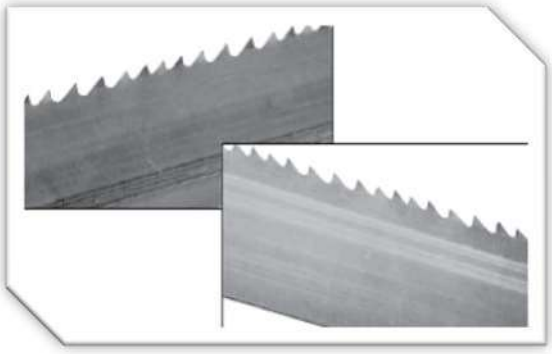
A. Chipped or broken side guides.

B. Side guide adjustment may be too tight.

C. Insufficient flow of sawing fluid through the side guides.

D. Insufficient sawing fluid due to inadequate supply, improper ratio and/or improper application.

#11. Uneven Wear Or Scoring On The Sides Of Band



Probable Cause :

A. Loose side guides.

B. Chipped, worn or defective side guides.

C. Band is rubbing on part of the machine.

D. Guide arms spread to maximum capacity.

E. Accumulation of chips in side guides.

#12. Heavy Wear And/Or Swagging On Back Edge

Probable Cause :

A. Excessive feed rate.

B. Excessive back-up guide "preload".

C. Improper band tracking – back edge rubbing heavy on wheel flange.

D. Worn or defective back-up guides.

#13. Butt Weld Breakage

Probable Cause :

A. Any of the factors that cause body breaks can also cause butt weld breaks.

(See Observations #5, #15 and #16)

#14. Heavy Wear In Only The Smallest Gullets

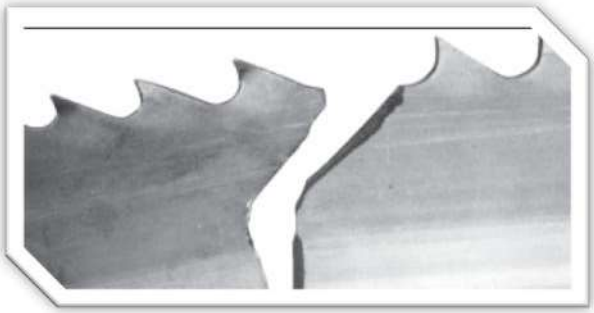
Probable Cause :

A. Excessive feeding rate.

B. Too slow of band speed.

C. Using too fine of a tooth pitch for the size of material being cut.

#15. Body Breaking – Fracture Traveling In An Angular Direction



Probable Cause :

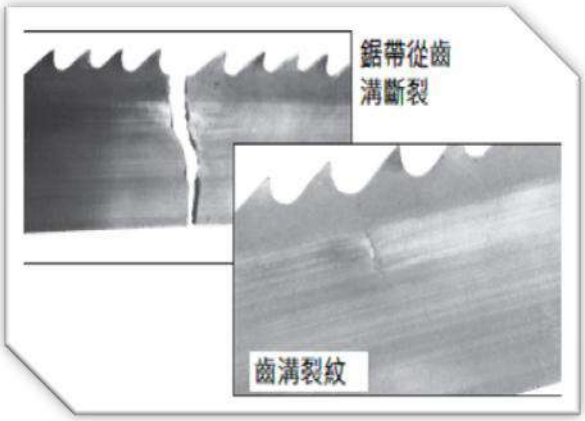
A. An excessive twist type of stress existed.

B. Guide arms spread to capacity causing excessive twist from band wheel to guides.

C. Guide arms spread too wide while cutting small cross sections.

D. Excessive back-up guide "preload".

#16. Body Breakage Or Cracks From Gullets



Probable Cause :

A. Excessive back-up guide "preload".

B. Improper band tension.

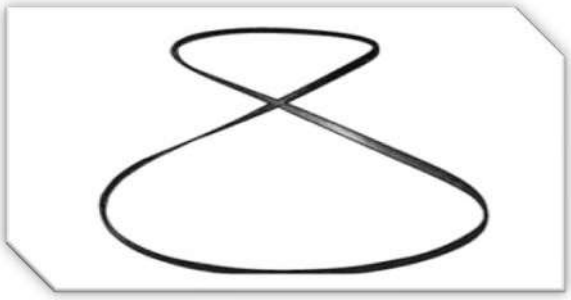
C. Guide arms spread to maximum capacity.

D. Improper beam bar alignment.

E. Side guide adjustment is too tight.

F. Excessively worn teeth.

#17. Band is Twisted Into A Figure "8" Configuration



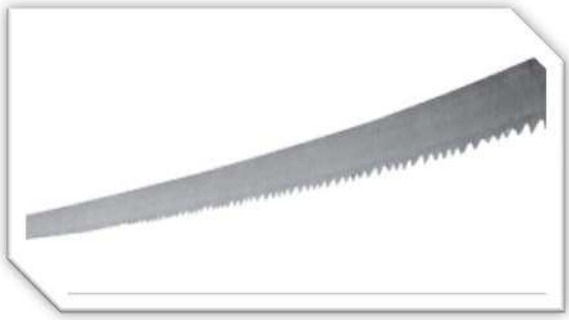
Probable Cause :

A. Excessive band tension.

B. Any of the band conditions which cause the band to be long (#18) or short (#19) on tooth edge.

C. Cutting a tight radius.

#18. Used Band Is "Long" On The Tooth Edge



Probable Cause :

A. Side guides are too tight – rubbing near gullets.

B. Excessive "preload" – band riding heavily against back-up guides.

C. Worn band wheels causing uneven tension.

D. Excessive feeding rate.

E. Guide arms are spread to maximum capacity.

F. Improper band tracking – back edge rubbing heavy on wheel flange.

#19. Used Band Is "Short" On The Tooth Edge

Probable Cause :

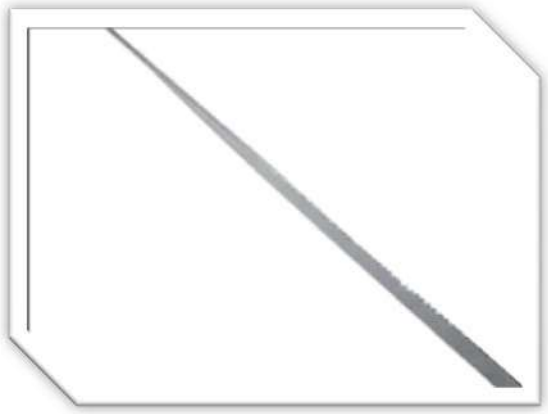
A. Side guides are too tight – rubbing near back edge.

B. Worn band wheels causing uneven tension.

C. Guide arms are spread too far apart.

D. Excessive feeding rate.

#20. Broken Band Shows A Twist In Band Length



Probable Cause :

A. Excessive band tension

B. Any of the band conditions which cause the band to be long (#18) or short (#19) on tooth edge.

C. Cutting a tight radius.

RE-ADJUSTING THE ROLLER TABLE

If the feeding table suffers the huge stroke and the alignment is effected, follow the below procedure to adjust.

TOOL, measuring

Measurement, Horizontal balance

Procedure

1. Screw or loosen the adjusting bolt to attain the horizontal balance (leveling) between the roller table and the machine frame.
2. Ensure that the machine frame is not struck by the loaded material on the feeding table.
3. Check the leveling by the measuring tool.
4. After finished the adjusting, fix the roller table.

If the feeding table and the machine frame are not positioned under the horizontal balance, the loaded material may be going up gradually and affect the cutting effect.

Section 10

PARTS

SPARE PARTS RECOMMENDATIONS

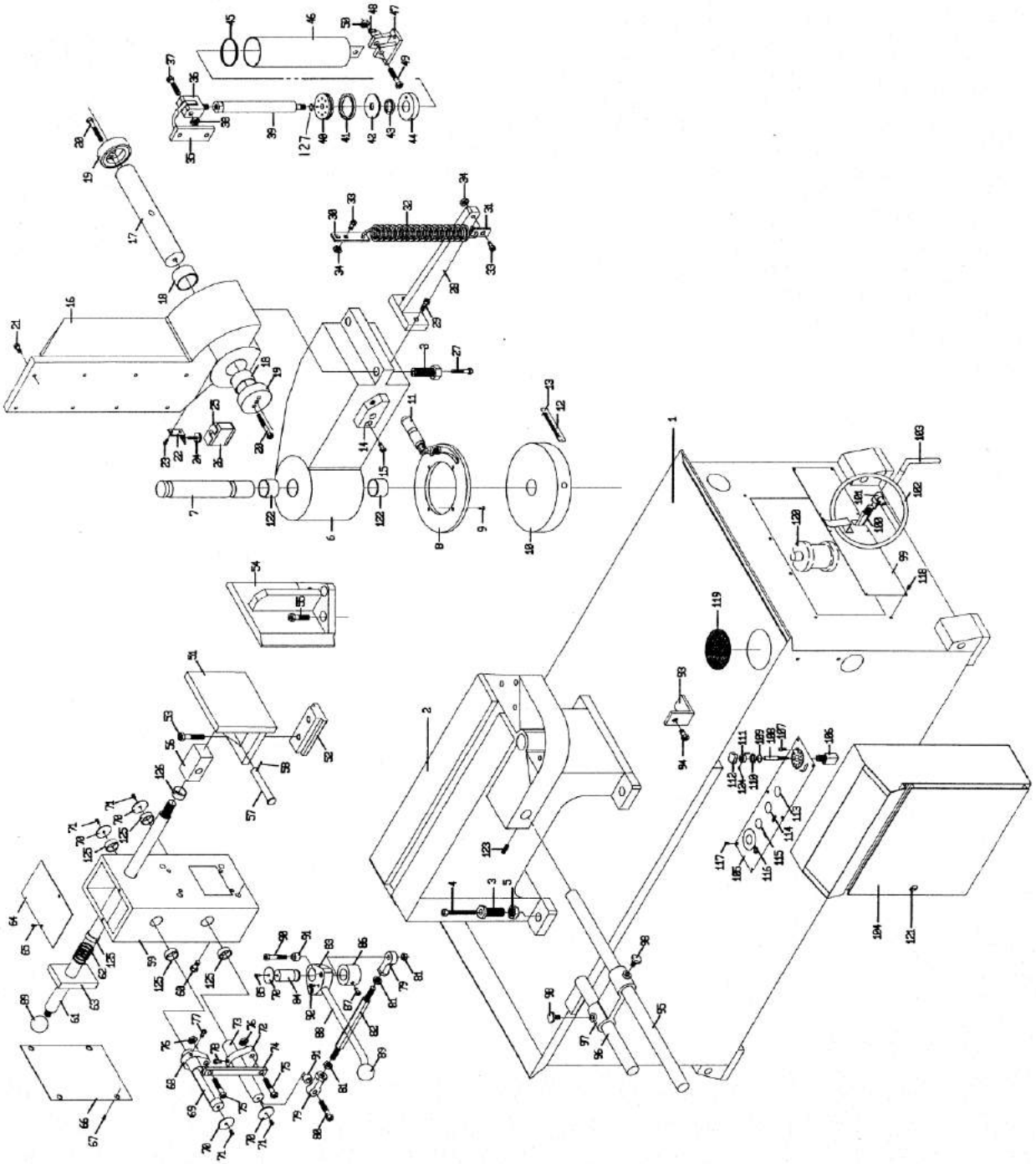
PART LIST

SPARE PARTS RECOMMENDATIONS

The following table lists the common spare parts we suggest you purchase in advance:

Part Name	Part Name
Saw blade	Coolant tank filter
Wire brush	Steel plates
Carbide inserts	Rollers
Bearings	Coolant pump
Hydraulic tank leak-proof asbestos	Belt
Rubber washer	Duster seal
Gear reducer	Oil seal
O-ring	Snap ring
Drive wheel	Idle wheel

PART LIST



MER-1001 BASE ASSEMBLY AND BED

NO.	PART NO.	PART NAME	PART NAMEI N CHINESE	PART SPEC.	Q'TY
1	MER -1001	Base	底座		1
2	MER-2001	Bed	床面		1
3	AHA-0610	Adjusting bolt	調整螺絲	M12*70L	6
4		Screw	內六角螺絲		4
5	AHA-0611	Adjusting nut	調整螺母		4
6	MER-2101	Turning joint base	旋轉關節座		1
7	MER-2103	Turning axis	旋轉軸		1
8	MER-2105	Clamoing ring	旋轉固定板		1
9		Screw	皿頭內六角螺絲	M6*15L	4
10	MER-2104	Turning base	旋轉座		1
11	MER-2003	Angle locking handle bar	角度定位把手組		1
12	MER-2002	Angle scale	角度銘牌		1
13		Screw	毛釘螺絲	M2*3L	2
14	MER-3211	Sawhead stopper	鋸弓停擋		1
15		Screw	內六角螺絲	M10*25L	2
16	MER-2107	Joint base	關節座		1
17	MER-2102	Joint axis	關節軸		1
18	PP-13002	DU-bushing	乾式軸承	5030	2
19	MER-2106	Joint axis cover	關節軸蓋		2
20		Screw	內六角螺絲	M10*30L	4
21		Screw	內六角螺絲	M10*35L	8
22	MER-3215	Lower limit stopper	下限擋板		1
23		Screw	內六角螺絲	M6*10L	2
24	SJY-1144	Screw	擋板螺絲		1
25	MJM-5007	Cover	限動開關防水蓋		1
26	PP-90010	Limit switch	限動開關	D4MC-5000	1
27		Screw	內六角螺絲	M12*55L	2
28	MER-2004	Spring hanging bracket	彈簧掛桿		1
29		Screw	內六角螺絲	M10*35L	2
30	MER-2006-2	Spring hanging plate	回程彈簧勾片		1
31	MER-2006-1	Spring hanging plate	回程彈簧勾片		1
32	MAE-1039C	Spring	拉簧		1
33		Screw	內六角螺絲	M10*30L	2
34		Nut	螺母	M10	2
35	MER-2303	Cylinder bracket	油缸上固座		1
36	MER-2302	Cylinder join bracket	油缸連接座		1
37		Screw	內六角螺絲	M12*50L	1
38		Nut	螺母	M12	1
39	MBR-9163	Piston rod	活塞桿		1
40	MBR-9168	Piston	活塞		1
41	PP-51151	Oil seal	油封	UHS-53	1
42	MBR-9160	Piston rubber	活塞橡膠		1
43	PP-51150	Oil seal	油封	UHS-28	1
44	MBR-9159	Cylinder front cap	油缸前蓋		1
45		Snap ring	扣環	R66	1
46	MBR-9164	Cylinder	缸管		1

NO.	PART NO.	PART NAME	PART NAMEI N CHINESE	PART SPEC.	Q'TY
47	MER-2301	Cylinder bracket	油缸下固座		1
48		Screw	內六角螺絲	M8*15L	2
49		Screw	內六角螺絲	M12*45L	1
50		Nut	螺母	M12*45L	1
51	MBR-9031	Movable vise	活動虎鉗		1
52	MBR-9028	Sliding bracket	虎鉗滑塊		1
53		Screw	內六角螺絲	M14*45L	2
54	MER-2005	Fixed vise jaw	固定虎鉗		1
55		Screw	內六角螺絲	M14*30L	3
56	MBR-9049	Rapid draw lever link plate	虎鉗快速拉桿接塊		1
57	MBR-9027	Pin	帶頭銷 B		1
58		Pin	開口銷	1/8*1 1/4"	1
59	MER-2201	Clamping post weldment	夾緊機構本體		1
60		Screw	螺絲	M5*10L	2
61	MBR-9030A	Sliding vise jaw shaft	虎鉗快速拉桿軸		1
62	MBR-9025	Spring	壓縮彈簧		1
63	MER-2205	Push plate	推緊板		1
64	MER-2209	Cover	夾緊機構上護蓋		1
65		Screw	螺絲	M5*10L	2
66	MER-2210	Cover	夾緊機構側護蓋		1
67		Screw	螺絲	M6*10L	4
68	MBR-9026	Clampimg radial arm	夾緊旋臂		1
69	MER-2207	Clamping shaft	夾緊偏心軸		1
70	MBR-9048	Washer	墊圈		1
71		Screw	內六角螺絲	M6*25L	4
72	MER-2208	Clamping radial arm	下夾緊旋臂		1
73	MER-2206	Clamping shaft	夾緊旋臂軸		1
74	MER-2202	Pull lever	拉桿		1
75		Screw	內六角螺絲	M12*40L	2
76		Nut	螺母	M12	2
77		Screw	內六角螺絲	M8*6L	1
78		Screw	內六角螺絲	M6*6L	1
79	PP-14483	Link lever beating	連桿軸承	PHS-12	2
80		Screw	內六角螺絲	M12*50L	1
81		Nut	螺母	M12	4
82	MER-2204	Push lever	推桿		1
83	MER-2203	Handle bar set	把手座		1
84	MER-2211	Turning axis	把手座旋轉軸		1
85		Screw	內六角螺絲	M6*15L	1
86	MER-2212	Handle bar seat support	把手固定座		1
87		Screw	內六角螺絲	M8*15L	1
88	MBR-9019	Handle lever	把手桿		1
89	PP-52042	Black ball	黑球	16*50mm	2
90		Screw	內六角螺絲	M12*50L	1
91	MER-2213	Collar	夾緊機構墊圈		2
92		Screw	丸頭螺絲	M6*5L	1

NO.	PART NO.	PART NAME	PART NAMEI N CHINESE	PART SPEC.	Q'TY
93	SYM-6019	Bracket	定位板		1
94		Screw	外六角螺絲	M12*15L	1
95	MBR-9039	Depth bar	定寸滑板		1
96	MBR-9037	Stopper	定寸桿		1
97	MBR-9036	Stopper bracket	定寸滑座		1
98	PP-53009	Screw	梅花螺絲	M10*30L	2
99	MER-1002	Cover	泵門板		1
100	ACA-1004	Fitting	泵浦接頭		1
101	PP-43135	Switch button valve	開關閥	A101,3/8*3/8	1
102		Hose	水管	3/8*1000L	1
103	AHA-1313	Coolant nipple	噴嘴		1
104	MER-5001	Control box	控制箱		1
105	MER-5002	Data plate	控制面板		1
106	ACA-2063-1	Flow control valve	流量控制閥本體		1
107	SJY-2108	Pointer rid	指針擋桿		1
108	ACA-2063-2	Adjusting rod	流量調整桿		1
109		Washer	平面華司	φ16	1
110	MAJ-4010	Nut	六角螺母		1
111	MAJ-4007	Pointer & Bracket	指針及座		1
112		Knob	旋鈕		1
113	PP-90645A	Select switch button	選擇開關	φ25-2A	1
114	PP-90660A	Push button (Green)	綠色平頭按鈕	φ25-1A	1
115	PP-90615	Indicating lamp	指示燈	φ25-110V	1
116	PP-90666A	Push button (Red)	大頭按鈕	φ25-1B	1
117		Screw	丸頭螺絲	M5*8L	6
118		Screw	大丸頭螺絲	M6*5L	8
119	M3L-8-09A	Filter plate	漏水網		1
120	PP-32041	Coolant pump	浸水泵浦	1/8HP	1
121	PP-90280	Interlock switch	門式開關		1
122	PP-13230	DU-bushing	乾式軸承	4030	2
123		Set bolt	止付螺絲	M8*25L	1
124		Set bolt	丸頭螺絲	3/16*3/8"	1
125	PP-13160	DU-bushing	乾式軸承	2812	5
126	PP-13165	DU-bushing	乾式軸承	2815	1
127		O-ring	O 型環	P12	1
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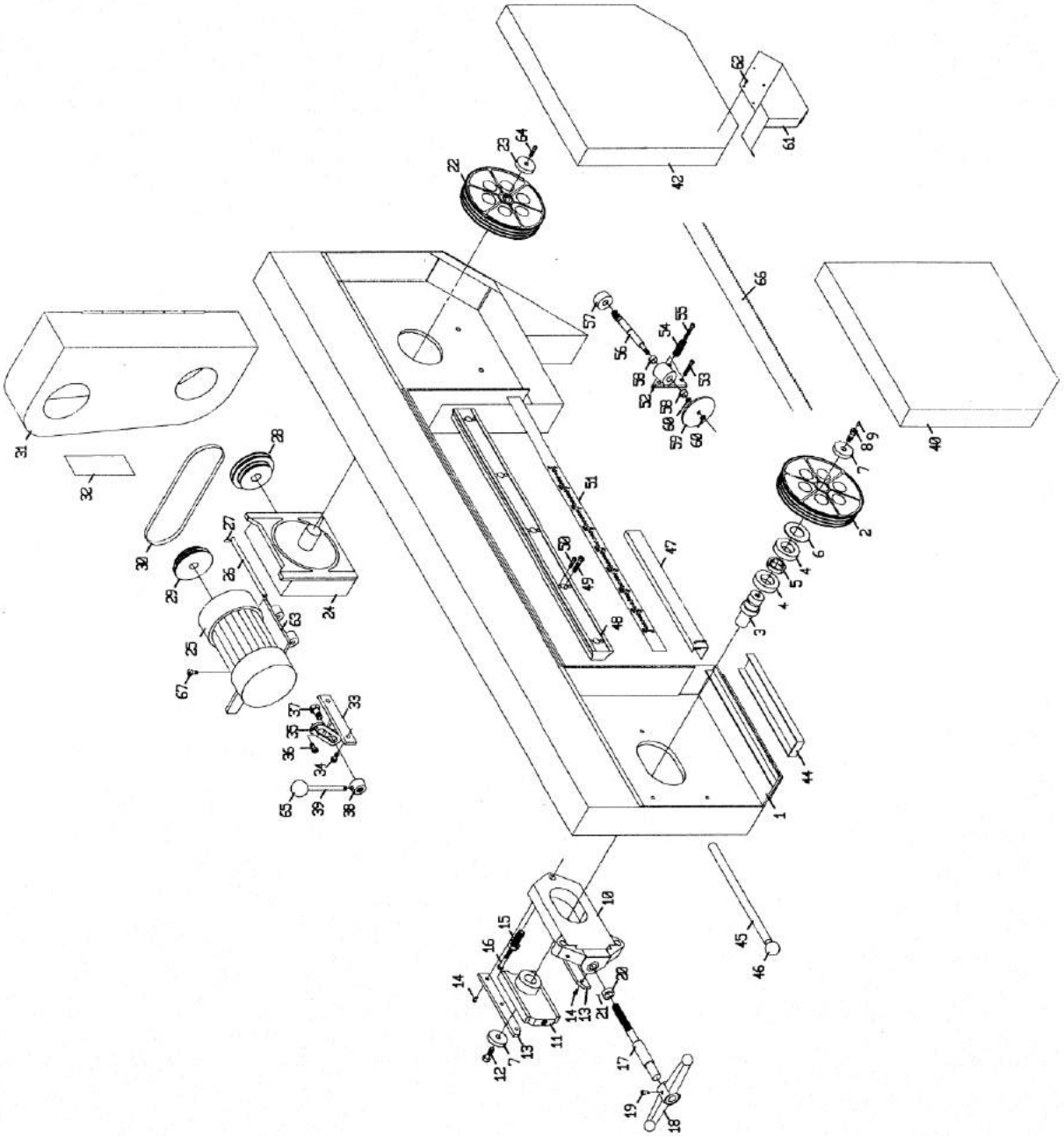

MER-1002 SAW BOW

NO.	PART NO.	PART NAME	PART NAMEI N CHINESE	PART SPEC.	Q'TY
1	MER-3001	Saw bow	鋸弓		1
2	MER-3101	Idle wheel	上輪		1
3	MER-3102	Idle wheel shaft	上輪軸		1
4	PP-14255	Bearing	軸承	6007Z	2
5	MER-3103	Bearing washer	上輪軸承墊圈		1
6		Snap ring	扣環	C62	1
7	MBR-9127	Washer	上輪鎖緊墊圈		2
8	SJY-1150	Screw	油嘴螺絲		1
9		Grease nipple	油嘴	1/4-28UNF*1/16	1
10	MBR-9181	Tension body	張力滑座		1
11	MBR-9182	Slide diece	張力滑板		1
12		Screw	內六角螺絲	M12*25L	1
13	MBR-9184	Clamper	壓板		2
14		Screw	外六角螺絲	M6*15L	6
15	SJY-1104	Adjusting bolt	張力調整螺絲		3
16		Screw	內六角螺絲	M10*70L	3
17	MBR-9128A	Blade tension screw	張力螺桿		1
18	MER-3002	Handle bar	張力把手		1
19		Screw	內六角螺絲	M8*12L	1
20	MBR-9185	Collar	定位圈		1
21		Pin	彈簧銷	φ3*25L	1
22	MER-3105	Drive wheel	下輪		1
23	MER-3107	Washer	下輪鎖緊墊圈		1
24	PP-16045B	Reducer	減速機	#80	1
25	PP-31041	Motor	馬達	2HP	1
26	MER-3011	Set pipe	馬達底板關節軸		1
27		Pin	開口銷	1/8*1 1/4"	2
28	MJA-2011C	Reducer pulley	減速機皮帶輪		1
29	SJY-1119	Motor pulley	馬達皮帶輪		1
30	PP-56131	Belt	皮帶	A43	1
31	MER-3014	Pulley cover	普利護蓋		1
32	MER-3006	Model	線速度表		1
33	MER-3009	Bracket	調整固定塊		1
34		Screw	內六角螺絲	M10*15L	2
35	MJA-2068	Adjusting plate	馬達調整滑板		1
36		Screw	外六角螺絲	M10*20L	1
37		Screw	外六角螺絲	M16*30L	1
38	SJY-1127	Fixed nut	固定螺母		1
39	SJY-1126	Fixed handle lever	馬達調整固定把手		1
40	MER-3104	Cover	上輪箱蓋		1
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42	MER-3106	Cover	下輪箱蓋		1
43					
44	MBR-9104	U Slot	U 型槽		1
45	MER-3013	Handle lever	鋸弓把手桿		1
46	PP-52042	Black ball	黑球	16*50mm	1

MER-1002 SAW BOW

NO.	PART NO.	PART NAME	PART NAMEI N CHINESE	PART SPEC.	Q'TY
47	MBR-9105	Cover	鋸帶護蓋		1
48	MER-3201	Slide plate	鋸臂滑板		1
49		Screw	內六角螺絲	M10*35L	5
50		Screw	止付螺絲	M8*20L	10
51	MER-3206	Ruler plate	鋸臂銘牌		1
52	MBR-9132	Bearing holder	鋼刷軸承座		1
53		Screw	內六角螺絲	M8*80L	2
54	MER-3109	Spring	鋼刷壓縮彈簧		2
55		Screw	內六角螺絲	M8*80L	1
56	MBR-9129	Brush shaft	鋼刷軸		1
57	MBR-9131	Brush drive wheel	鋼刷傳動輪		1
58	PP-14289	Bushing	軸承	6902VV	2
59	PP-58002	Wire brush	鋼刷	90*8mm	1
60		Nut	螺母	M8	2
61	MER-3108	Cover	鋼刷護蓋		1
62		Screw	大丸頭螺絲	M5*8L	4
63	MER-3007	Motor base plate	馬達底板		1
64		Screw	內六角螺絲	M8*35L	1
65	PP-52040	Black ball	塑膠球	3/8"	1
66	PP-18195 -1	Saw blade	鋸帶	HS 4140x27x0.9	1
67		Screw	外六角螺絲	M10*25L	4
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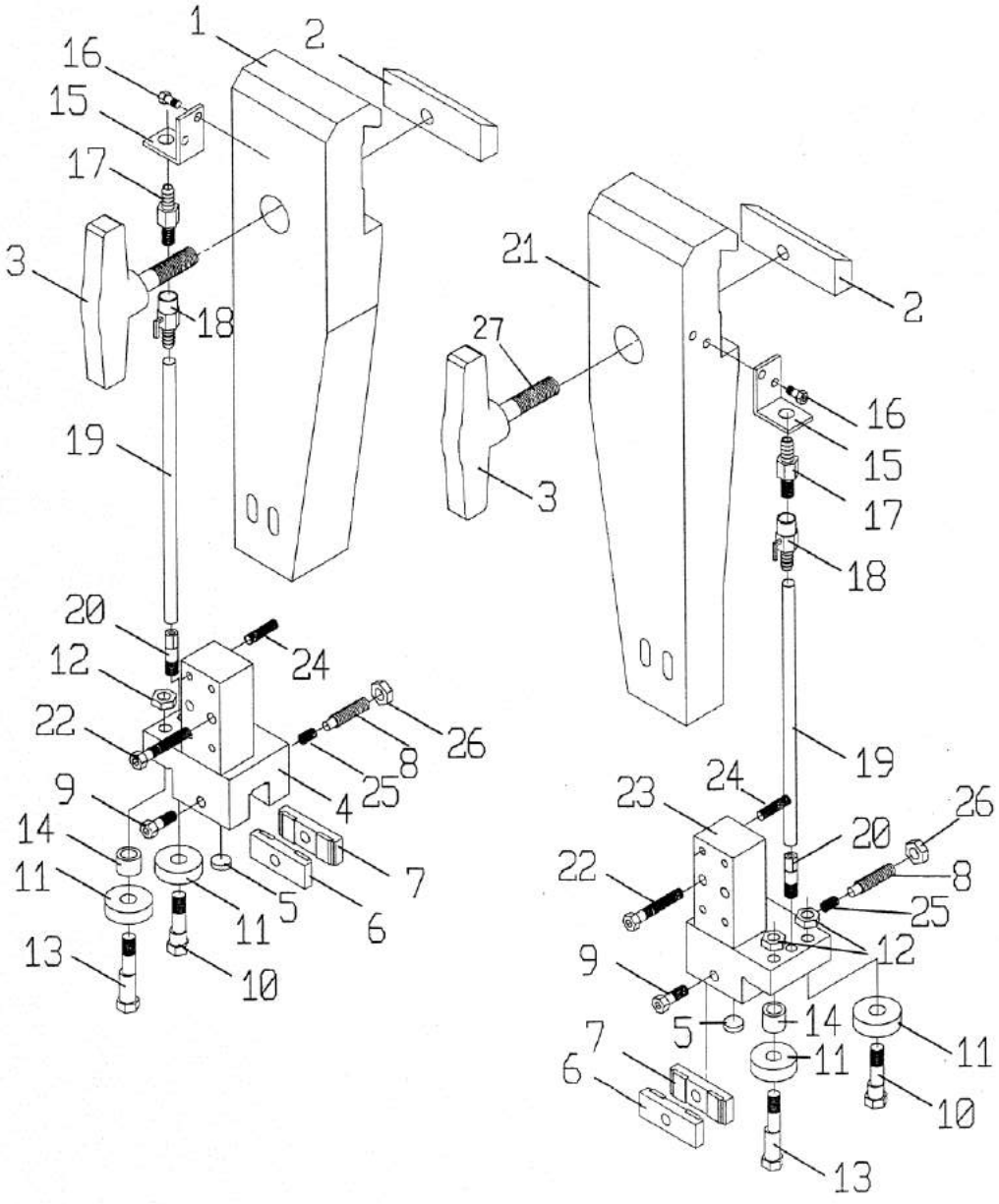
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MER - 1003.WRK

MER-1003 BLADE GUIDE ARMS

NO.	PART NO.	PART NAME	PART NAMEI N CHINESE	PART SPEC.	Q'TY
1	MER-3203	Left guide arm	左鋸臂		1
2	MJA-2032	Clamp block	鋸臂固定塊		2
3	ACA-2058A	Guide arm handle	鋸臂把手		2
4	MER-3205	Left insert holder	左鎢鋼片座		1
5	MJS-9008	Insert	下壓鎢鋼片		2
6	MBR-9106	Fixed insert	固定鎢鋼片		2
7	MBR-9107	Movable insert	活動鎢鋼片		2
8	MER-3207	Adjusting bolt	鎢鋼調整螺栓		2
9		Screw	內六角螺絲	M8*12L	2
10	MER-3209	Fixed bolt	軸承固定短螺絲		2
11	PP-14269	Bearing	軸承	6200ZZ	4
12		Nut	螺母	M8	4
13	MER-3208	Fixed bolt	軸承固定長螺絲		2
14	MBR-9190	Lock washer	軸承固定軸墊圈		2
15	MJA-2041	Bracket	水龍頭座板		2
16		Screw	內六角螺絲	M5*12L	4
17	MJA-2043	Coolant nozzle	水管接頭		2
18	PP-43132	Switch button valve	開關閥	1/8"	2
19		Hose	水管	1/4*1500L	2
20	MAB-6014	Fixed coolant nozzle	固定塊水管接頭		2
21	MER-3202	Right guide arm	右鋸臂		1
22		Screw	內六角螺絲	M8*35L	4
23	MER-3204	Right indert holder	右鎢鋼片座		2
24		Screw	止付螺絲	M5*25L	8
25	PP-57300	Spring	蝶型彈簧		2
26		Nut	螺母	M6	2
27	ACA-2058	Bolt	鋸臂把手螺絲		2
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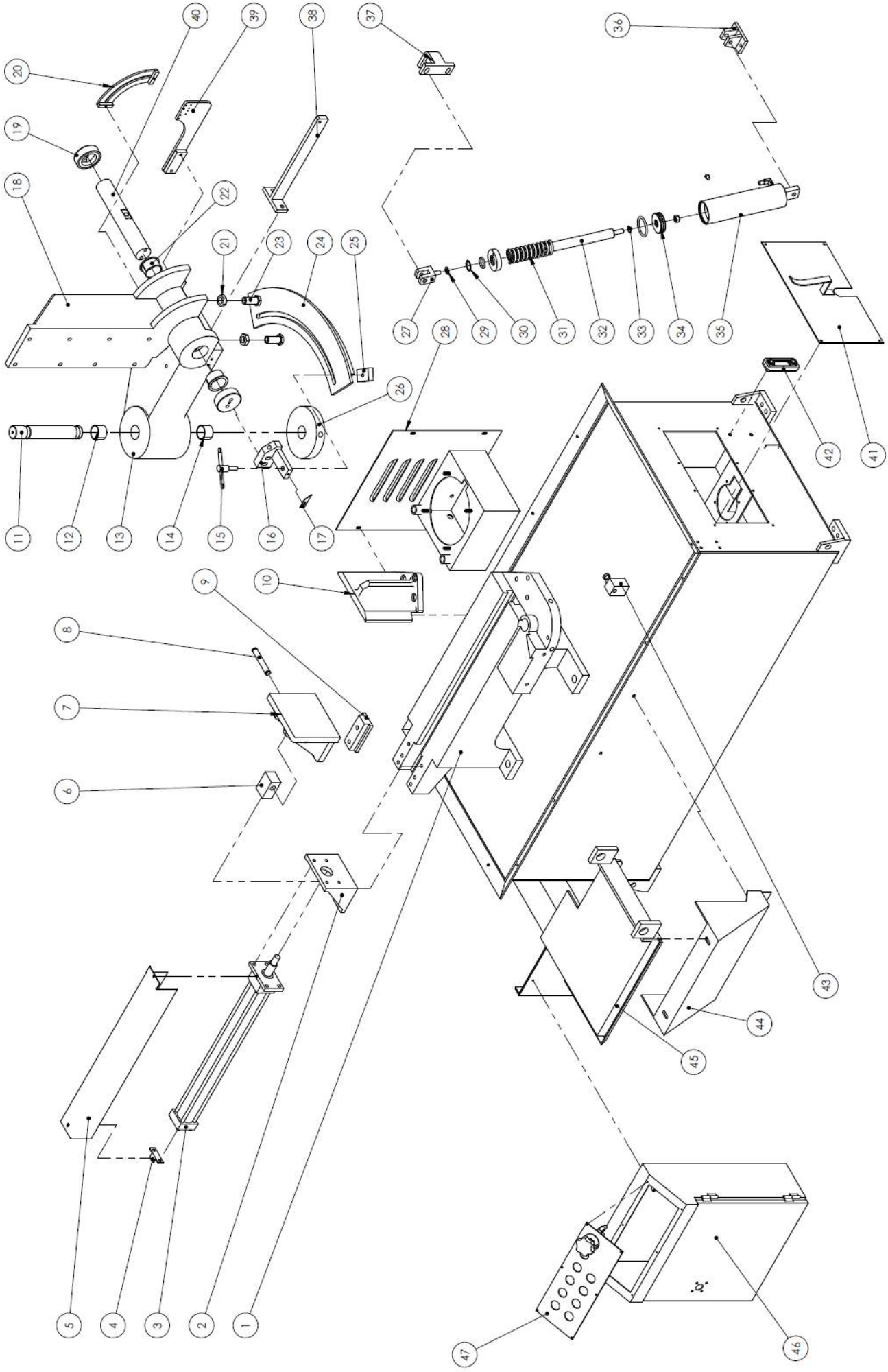
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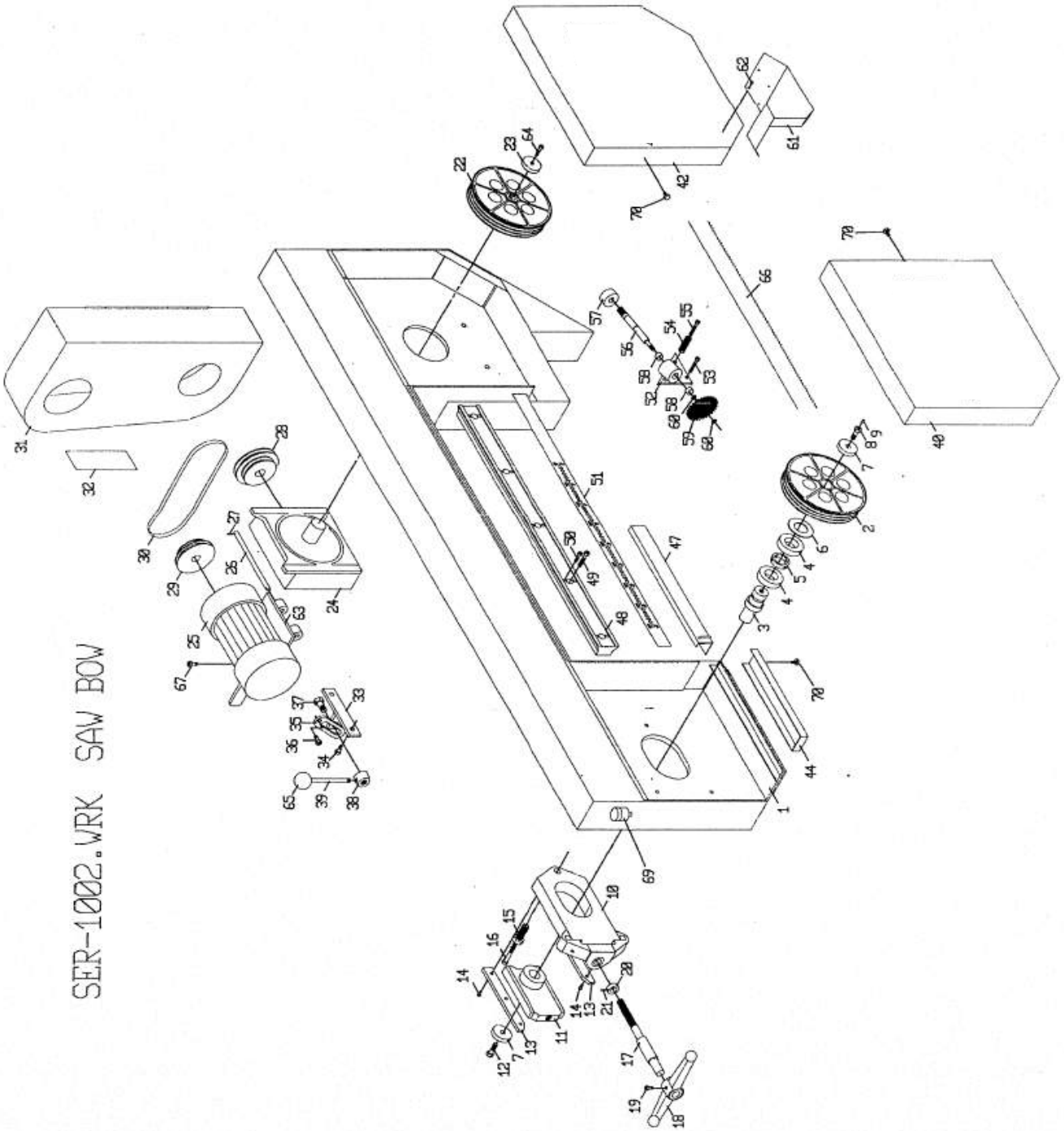
NO.	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC	QTY
1	MER-2001T	Bed	床面		1
2	SER-2001A	Movable vise cylinder fixed seat	油壓缸固定座		1
3	SER-2021	Cylinder cover bracket	油缸蓋固定架		1
4	HFA40L510E50	Hydraulic cylinder	油壓缸		
5	SER-2003C	Vise cylinder cover	虎鉗油壓護蓋		1
6	SER-2002	Connecting block	虎鉗快速拉桿連接塊		1
7	MBR-9031	Movable vise	活動夾板		1
8	S500M-2317	Vise cylinder pin	虎鉗油缸插銷		2
9	MBR-9028	Vise sliding block	夾板滑塊		1
10	S500M-2201	Fixed vise	固定虎鉗		1
11	MER-2103	Rotation shaft	旋轉軸		1
12	PP-13230	DU bushing	乾式軸承 4030		1
13	S500M-1171	Rotary Joint Block	旋轉關節座		1
14	PP-13230	DU bushing	乾式軸承 4030		1
15	S500M-1180	Angle positioning handle	角度定位把手		1
16	S500M-3019	Saw bow positioning plate	鋸弓定位板		1
17	MER-2011B	Angle pointer	角度指針		1
18	MER-2107W	Joint seat	關節座		1
19	MER-2106	Joint shaft cover	關節軸蓋		2
20	SER-3210A	Upper limit sliding seat	上限滑板		1
21	AHA-0611	Adjusting nut	調整螺母		2
22	PP-13002	DU bushing	乾式軸承 BM5030 F65		2
23	AHA-0610	Adjusting bolt	調整螺絲		2
24	MER-1006B	Swivel track	旋轉軌道		1
25	SYM-6014	Fixed nut	固定螺母		1
26	MER-2104	Swivel arm	旋轉座		1
27	MER-2302	Cylinder connecting seat	油缸連接座		1
28	SJY-2105C	Hydraulic oil tank	油壓箱		1
29	PQA-12	Spring washer	彈簧墊圈		
30	PTR-65	Snap ring	C 型扣 R65		1
31	PP-57402	Spring	彈簧		1
32	MBR-9163	Piston rod	活塞桿		1
33	PP-59074A	O-ring	O 型環 NOK P-18		1
34	SBR-9168	Piston	活塞		1
35	MBR-9164	Tube	缸管		1
36	S500M-3271	Cylinder fixed seat	油缸固定座		1
37	MER-2303	Hydraulic cylinder upper fixed seat	油缸上固定座		1

NO.	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC	QTY
38	MER-2004	Spring hanging rod	彈簧掛桿		1
39	S500M-3209	Limit switch seat	限動開關座		1
40	S500M-1155	Joint shaft	關節軸		1
41	MER-1002	Pump plate	泵門板		1
42	PP-21030	Oil sight gauge	水面計		1
43	MER-2007A	Angle position plate	角度定位板		1
44	S500M-1203	Bracket fixed block	托架固定塊		1
45	SER-9033	Tray	托盤		1
46	S500M-1301	Control box	控制箱		1
47	SER-2007	Control panel	控制面板		1


SER-1002.WRK SAW BOW

S ER-1002 SAW BOW

NO.	PART NO.	PART NAME	PART NAMEI N CHINESE	PART SPEC.	Q'TY
2-1	MER-3001	Saw bow	鋸弓		1
2-2	MER-3101	Idle wheel	上輪		1
2-3	MER-3102	Idle wheel shaft	上輪軸		1
2-4	PP-14255	Bearing	軸承	6007Z	2
2-5	MER-3103	Bearing washer	上輪軸承墊圈		1
2-6		Snap ring	扣環	C62	1
2-7	MBR-9127	Washer	上輪鎖緊墊圈		2
2-8	SJY-1150	Screw	油嘴螺絲		1
2-9		Grease nipple	油嘴	1/4-28UNF*1/16	1
2-10	MBR-9181	Tension body	張力滑座		1
2-11	MBR-9182	Slide diece	張力滑板		1
2-12		Screw	內六角螺絲	M12*25L	1
2-13	MBR-9184	Clamper	壓板		2
2-14		Screw	外六角螺絲	M6*15L	6
2-15	SJY-1104	Adjusting bolt	張力調整螺絲		3
2-16		Screw	內六角螺絲	M10*70L	3
2-17	MBR-9128A	Blade tension screw	張力螺桿		1
2-18	MER-3002	Handle bar	張力把手		1
2-19		Screw	內六角螺絲	M8*12L	1
2-20	MBR-9185	Collar	定位圈		1
2-21		Pin	彈簧銷	φ3*25L	1
2-22	MER-3105	Drive wheel	下輪		1
2-23	MER-3107	Washer	下輪鎖緊墊圈		1
2-24	PP-16045B	Reducer	減速機	#80 1/30	1
2-25	PP-31041	Motor	馬達	2HP	1
2-26	MER-3011	Set pipe	馬達底板關節軸		1
2-27		Pin	開口銷	1/8*1 1/4"	2
2-28	MJA-2011C	Reducer pulley(Step)	減速機皮帶輪(有段)		1
	PP-16210-2	Reducer pulley(Stetpless)	減速機皮帶輪(無段)		1
2-29	SJY-1119	Motor pulley(Step)	馬達皮帶輪(有段)		1
	PP-16210-1	Motor pulley(Stepless)	馬達皮帶輪(無段)		1
2-30	PP-56131	Belt(Step)	皮帶(有段)	A43	1
	PP-56030	Belt(Stepless)	皮帶(無段)	1422V-400	1
2-31	MER-3014	Pulley cover(Step)	普利護蓋(有段)		1
	MER-3005	Pulley cover(Stepless)	普利護蓋(無段)		1
2-32	MER-3006	Model	線速度表		1
2-33	MER-3009	Bracket	調整固定塊		1
2-34		Screw	內六角螺絲	M10*15L	2
2-35	MJA-2068	Adjusting plate	馬達調整滑板		1
2-36		Screw	外六角螺絲	M10*20L	1
2-37		Screw	外六角螺絲	M16*30L	1
2-38	SJY-1127	Fixed nut	固定螺母		1
2-39	SJY-1126	Fixed handle lever	馬達調整固定把手		1
2-40	MER-3104	Cover	上輪箱蓋		1
2-41					
2-42	MER-3106	Cover	下輪箱蓋		1

S ER-1002 SAW BOW

NO.	PART NO.	PART NAME	PART NAMEI N CHINESE	PART SPEC.	Q'TY
2-43					
2-44	MBR-9104	U Slot	U 型槽		1
2-45					
2-46					
2-47	MBR-9105	Cover	鋸帶護蓋		1
2-48	MER-3201	Slide plate	鋸臂滑板		1
2-49		Screw	內六角螺絲	M10*35L	5
2-50		Screw	止付螺絲	M8*20L	10
2-51	MER-3206	Ruler plate	鋸臂銘牌		1
2-52	MBR-9132	Bearing holder	鋼刷軸承座		1
2-53		Screw	內六角螺絲	M8*80L	2
2-54	MER-3109	Spring	鋼刷壓縮彈簧		2
2-55		Screw	內六角螺絲	M8*80L	1
2-56	MBR-9129	Brush shaft	鋼刷軸		1
2-57	MBR-9131	Brush drive wheel	鋼刷傳動輪		1
2-58	PP-13049	DU-Bushing	乾式軸承	1510	2
2-59	PP-58002	Wire brush	鋼刷	90*8mm	1
2-60		Nut	螺母	M8	2
2-61	MER-3108	Cover	鋼刷護蓋		1
2-62		Screw	大丸頭螺絲	M5*8L	4
2-63	MER-3007	Motor base plate	馬達底板		1
2-64		Screw	內六角螺絲	M8*35L	1
2-65	PP-52040	Black ball	塑膠球	3/8"	1
2-66	PP-18195-1	Saw blade	鋸帶	HS 4140x27x0.9	1
2-67		Screw	外六角螺絲	M10*25L	4
2-68	MER-3110	Wheel cover shield	輪箱蓋擋板		1
2-69	PP-53021	Screw	梅花螺絲	M6*12L	3
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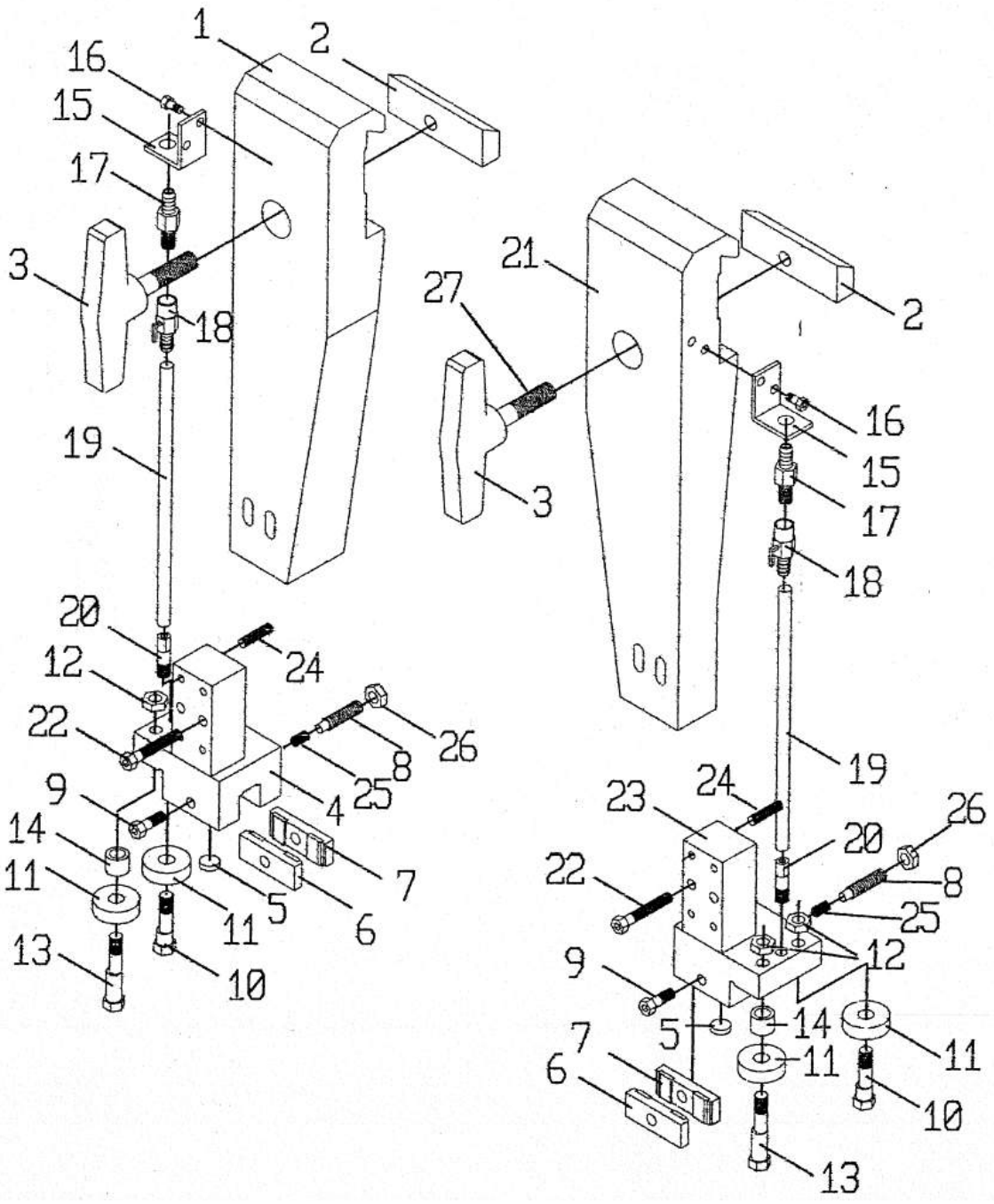
SER-1003.WRK BLADE GUIDE ARMS



S ER-1003 BLADE GUIDE ARMS

NO.	PART NO.	PART NAME	PART NAMEI N CHINESE	PART SPEC.	Q'TY
3-1	MER-3203	Left guide arm	左鋸臂		1
3-2	MJA-2032	Clamp block	鋸臂固定塊		2
3-3	ACA-2058A	Guide arm handle	鋸臂把手		2
3-4	MER-3205	Left insert holder	左鎢鋼片座		1
3-5	MJS-9008	Insert	下壓鎢鋼片		2
3-6	MBR-9106	Fixed insert	固定鎢鋼片		2
3-7	MBR-9107	Movable insert	活動鎢鋼片		2
3-8	MER-3207	Adjusting bolt	鎢鋼調整螺栓		2
3-9		Screw	內六角螺絲	M8*12L	2
3-10	MER-3209	Fixed bolt	軸承固定短螺絲		2
3-11	PP-14269	Bearing	軸承	6200ZZ	4
3-12		Nut	螺母	M8	4
3-13	MER-3208	Fixed bolt	軸承固定長螺絲		2
3-14	MBR-9190	Lock washer	軸承固定軸墊圈		2
3-15	MJA-2041	Bracket	水龍頭座板		2
3-16		Screw	內六角螺絲	M5*12L	4
3-17	MJA-2043	Coolant nozzle	水管接頭		2
3-18	PP-43132	Switch button valve	開關閥	1/8"	2
3-19		Hose	水管	1/4*1500L	2
3-20	MAB-6014	Fixed coolant nozzle	固定塊水管接頭		2
3-21	MER-3202	Right guide arm	右鋸臂		1
3-22		Screw	內六角螺絲	M8*35L	4
3-23	MER-3204	Right indert holder	右鎢鋼片座		2
3-24		Screw	止付螺絲	M5*25L	8
3-25	PP-57300	Spring	蝶型彈簧		2
3-26		Nut	螺母	M6	2
3-27	ACA-2058	Bolt	鋸臂把手螺絲		2
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SHARP