



# SH-5542

Semi-Automatic Horizontal Bandsaw

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(CE & Non-CE Models)

## Instruction Manual

*The Pinnacle of Cutting Performance*  
Cosen Mechatronics Co., Ltd.



## FROM THE MANUFACTURER

Thank you for your purchase of COSEN's bandsaw machine and your trust in the COSEN brand.

We are excited to have you as our valued customer and look forward as much as you do to the accelerated productivity, long-lasting endurance and superb cost-effectiveness this machine is about to bring to you.

To ensure you are fully utilizing our machine and being advantaged in every possible way, please do take your time and read through this instruction manual.

Any comment or suggestion in making our service better, please do not hesitate to let us know. Thank you again!

### NOTE:

- Read this instruction manual carefully to familiarize yourself with the installation, operation and maintenance of your COSEN bandsaw machine.
- Operate the machine following the procedures described in the manual to prevent personal injuries or machine damage.
- Keep this manual handy and refer to it whenever you are uncertain of how to perform any of the procedures.
- For technical support or parts purchase, please contact your nearest COSEN representative or our service center:

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### Instruction Manual:

### SH-5542

Semi-Automatic Horizontal Bandsaw  
(CE & Non-CE models)  
Ver.4 2016/8/16

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Printed in Taiwan

# Safety rules

- Make sure your work area is cleared of uninvited people and obstacles every time before you start operating the machine.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- Never step or stand on the roller table. Your foot may slip or trip on the rollers and you will fall.
- 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

## SAFETY INSTRUCTIONS

## SAFEGUARD DEVICES

## EMERGENCY STOP

## SAFETY LABELS

## HEARING PROTECTION

## CE COMPLIANCE

## RISK ASSESSMENT

Safety is a combination of a well-designed machine, operator's knowledge about the machine and alertness at all times. COSEN's 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. Cosen 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)



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. Up to your company's internal rules, this power switch can be locked with a padlock or a luggage lock to protect the operator and 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**

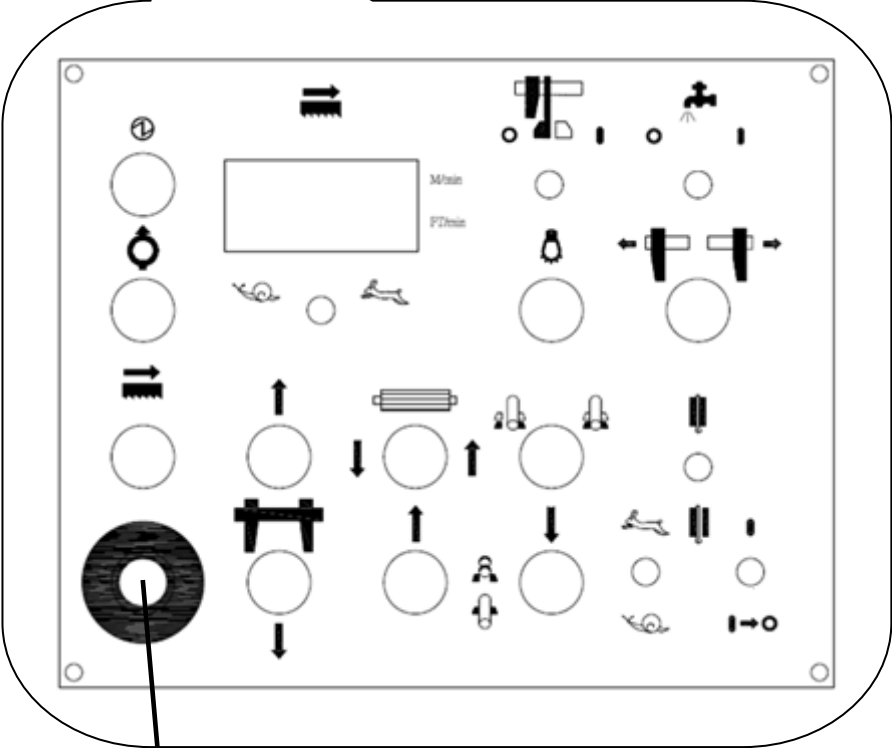
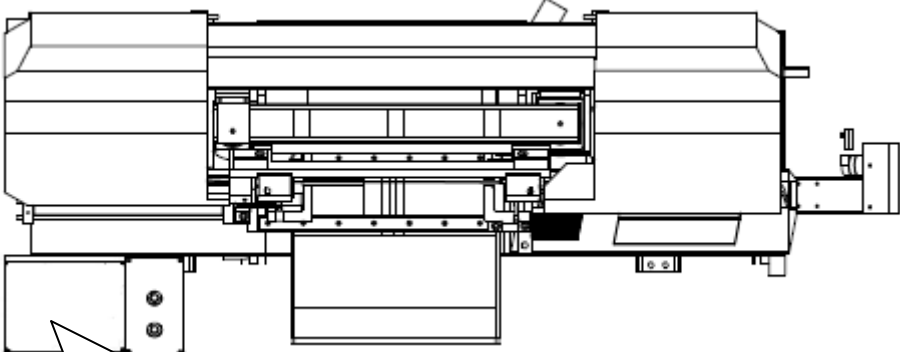
Designed to be easily accessible, the emergency stop button is located on the left bottom corner on the control panel and is made in red color and rubber material. For CE models, supplementary emergency stop button may be available at other area(s) of the machine depending on machine type. Please refer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



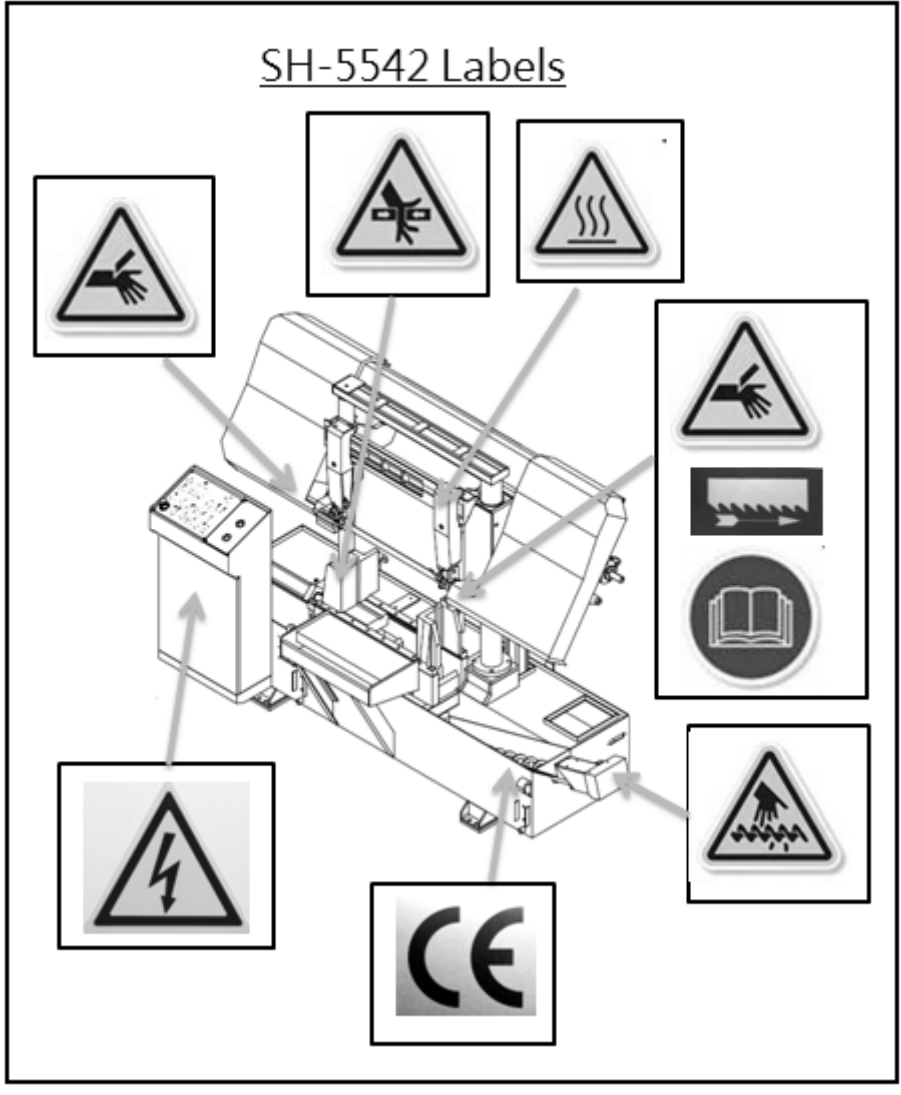
**Emergency Stop**

## SAFETY LABELS

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

Label	Meaning	Label	Meaning
	Impact Hazard  WEAR SAFETY SHOES. Do not approach dropping area during operation.		Read Operator's Manual  This manual has important safety information. Read through it carefully before operating this machine to prevent personal injury or machine damage.
	Keep Unauthorized Personnel Away		Do not step.  Do not stand on the machine or on the accessories!
	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 / KEEP HAND OFF while the blade is running. Turn power off before opening cover. Failure to follow the warning can result in severe injury.
	Hazardous Voltage  TURN POWER OFF before servicing. Failure to following the warning can result in severe injury.		Burn Hazard/Hot Surface
	Hand Crush/Force from Above		Crush hazard by vise
	Loose Hand Hazard  KEEP HAND OFF. Do not touch chip conveyor. Failure to follow the warning can result in severe injury.		Pinch Point/Hand Entanglement

**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

Cosen's 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).



# *GENERAL INFORMATION*

## **SPECIFICATION**

## **MACHINE PARTS IDENTIFICATION**

## **FLOOR PLAN**

This band saw machine is designed by Cosen's 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 component 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

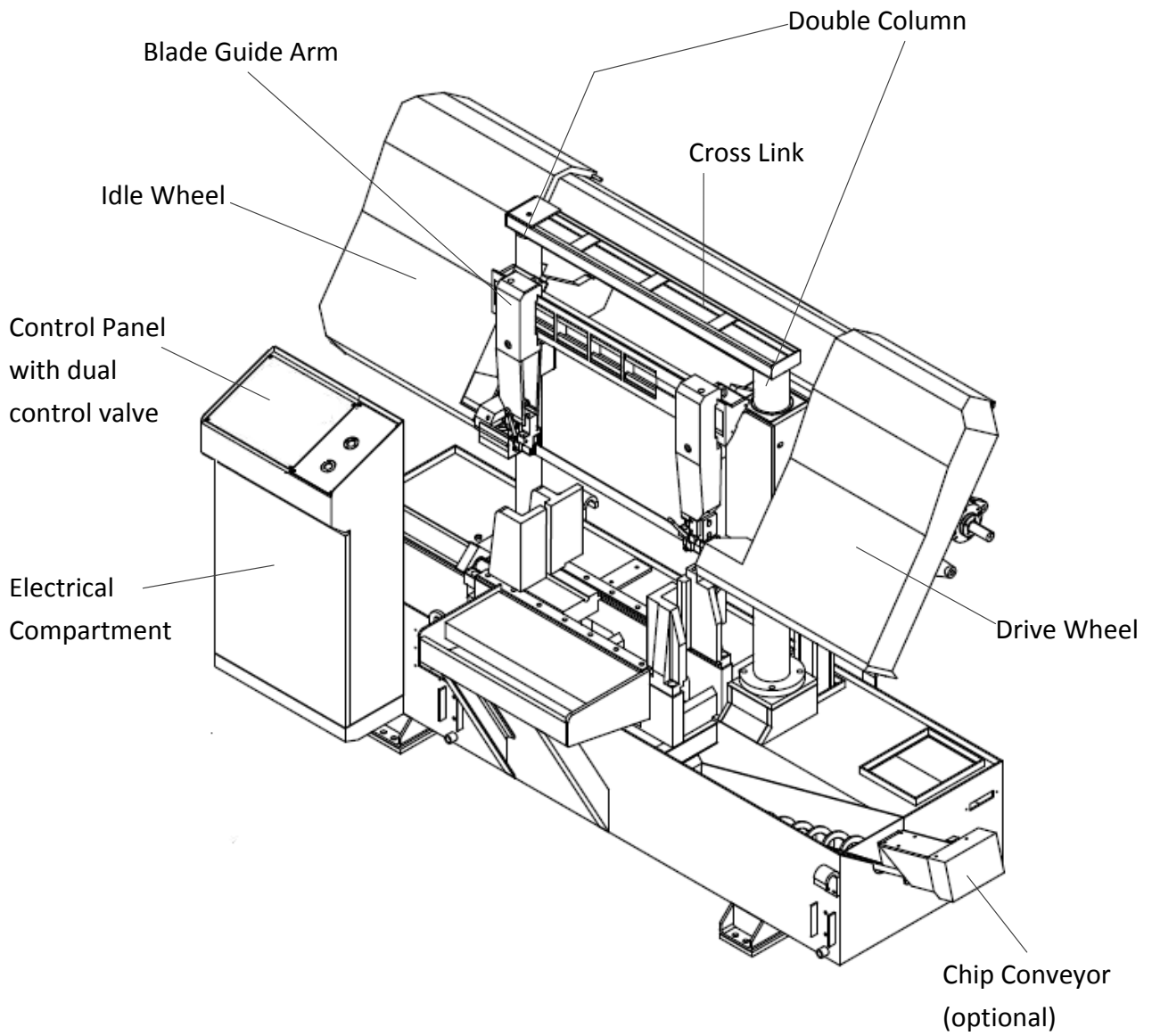
- The intended life-span of the machine is counted based on regular daily operation. It is calculated with the life expectancy of 10 years under normal operating condition and exact attention to the maintenance schedule.

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

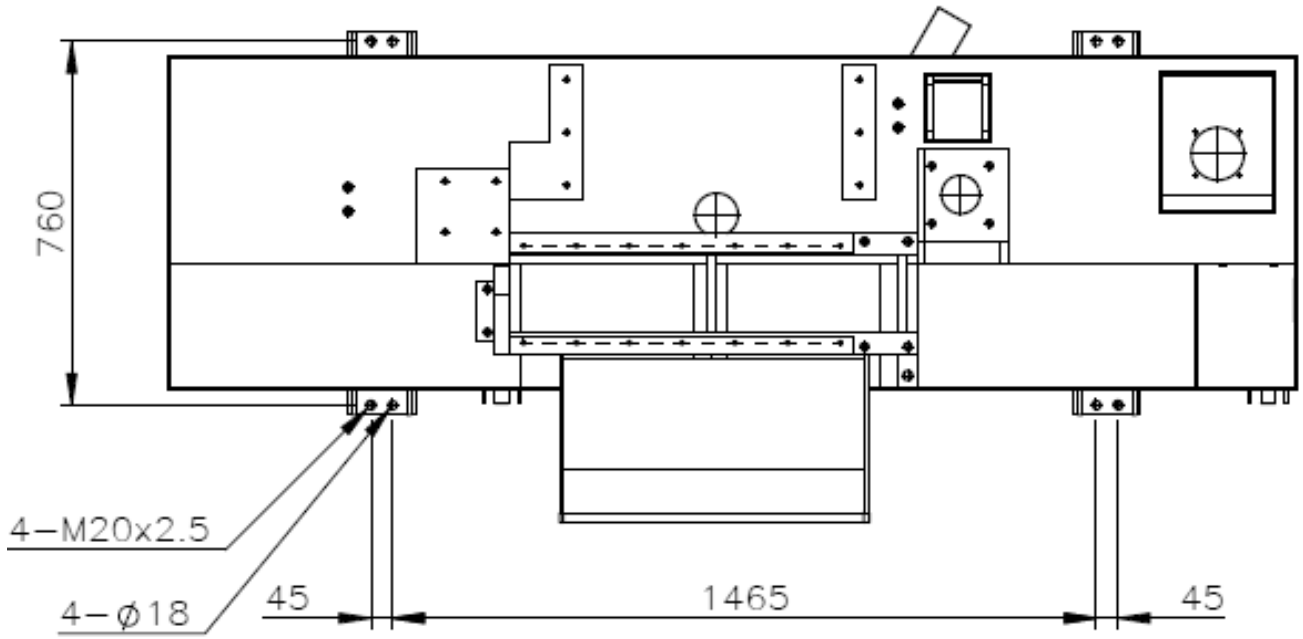
## SPECIFICATION

Model	<b>SH-5542</b> Semi-Automatic Horizontal Bandsaw	
Capacity	Round	420 mm (16.5")
	Square	420 mm (16.5")
	Rectangular (H x W)	420 x 550 mm (16.5" x 21.6")
	Bundle Cutting	W: 290 ~ 500 mm (11.4" ~ 19.6") H: 0 ~ 427 mm (0 ~ 16.8")
Saw Blade	Speed	20~100 m/min (66~328 fpm)
	Size (L x W x T)	5,300 x 41 x 1.3 mm (208.7" x 1.6" x 0.05")
	Tension	Hydraulic with automatic blade breakage detection
	Guide	Interchangeable tungsten carbide
	Cleaning	Steel wire brush with flexible drive shaft driven by main motor
Motor Output	Saw Blade	7.5 HP (5.5 kW)
	Hydraulic	2 HP (1.5 kW)
	Coolant Pump	1/8 HP (0.1 kW)
Tank Capacity	Hydraulic	40L (10 gal)
	Coolant	85 L (21.25 gal)
Vise	Control Method	Hydraulic with full stroke cylinder
	Min. Clamping Capacity	38mm (1.5")
Workbed Height	700 mm (27.5")	
Weight	Net	1,900 kg (4,188 lb)
	Gross	2,100 kg (4,629 lb)
Floor Space (L x W x H)	2,787 x 1,110 x 1,845 mm (109.7" x 43.7" x 72.6")	
Operating Environment	Temperature	5~40°C (41~104°F)
	Humidity	30%~95% (without condensation)

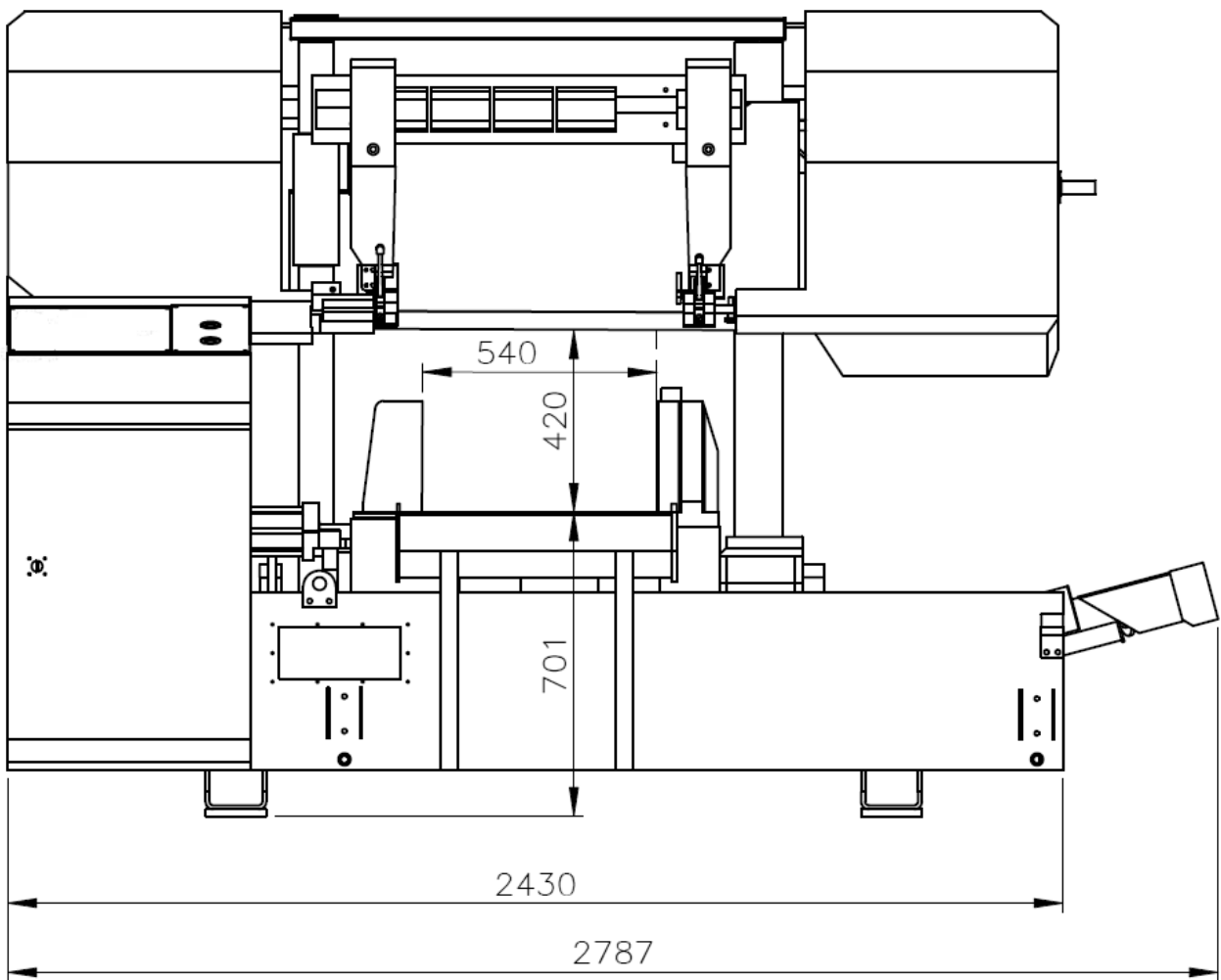
# MACHINE PARTS IDENTIFICATION



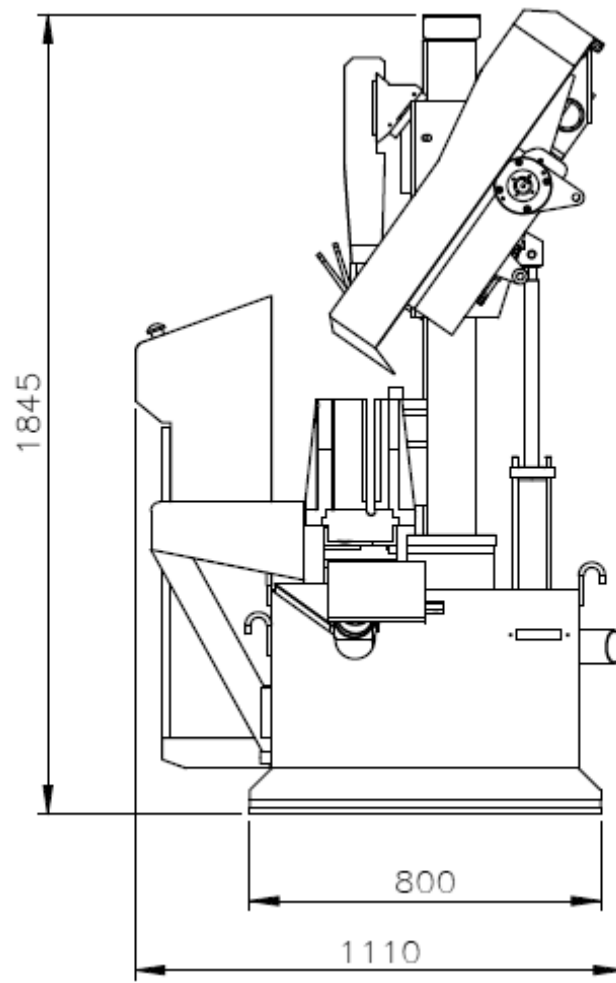
# FLOOR PLAN



Machine top view



Machine front view



**Machine side view**



# *MOVING & INSTALLATION*

## LOCATION & ENVIRONMENT

## UNPACKING & INSPECTING

## LIFTING

## REMOVING SHIPPING BRACKET

## CLEANING

## INSTALLING

## RELOCATING

## 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%~95%“(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.
- Your machine comes in with a set of tools for you to maintain the machine. The accessories furnished are as follows:

1.	Tool box	1 pc
2.	Grease gun	1 pc
3.	Screwdriver (+, -)	2 pcs
4.	Open-ended spanner	3 pcs
5.	Hexagon wrench	1 set
6.	Chip spade (only for manual models)	1 pc
7.	Operation manual	1 pc



Should you find any missing accessories, please contact your local agent immediately.



## 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 *Specification*).

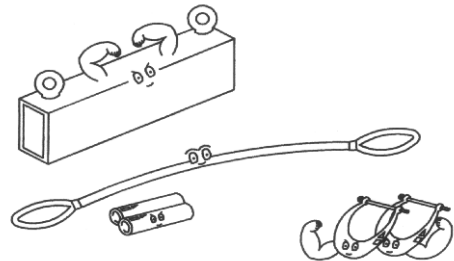
- Machine lifting is likely to damage the machine if not performed properly.



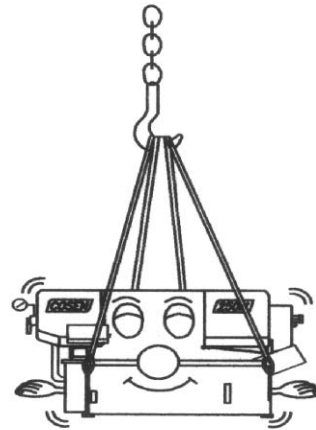
You must have a qualified crane operator to perform the job.



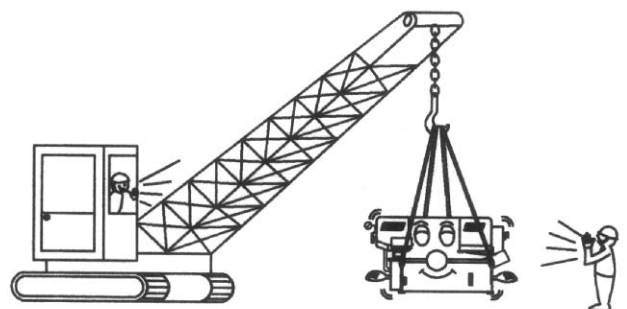
- You must use tools and equipment with the proper tensile strength and use proper method when moving your machine.



- Apply the wire rope sling to the lifting hooks on the four ends of the machine. Refer to *Illustration: Lifting Points* for exact locations.
- 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.



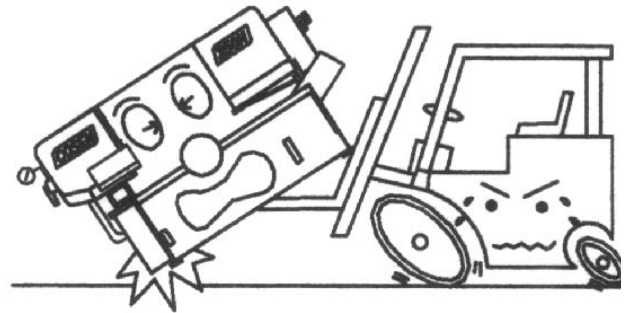
You must have a qualified forklift operator to perform the job.



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



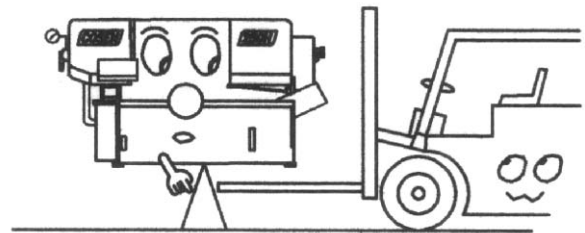
Make sure the forks are able to reach in at least 2/3 of the machine depth.



- You must keep the machine balanced at all times.



Make sure the forks are centered before use.

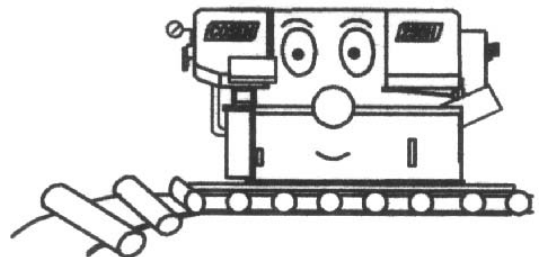


(Illustration only. Please follow user guide of your forklift.)

## 3. Use rolling cylinders

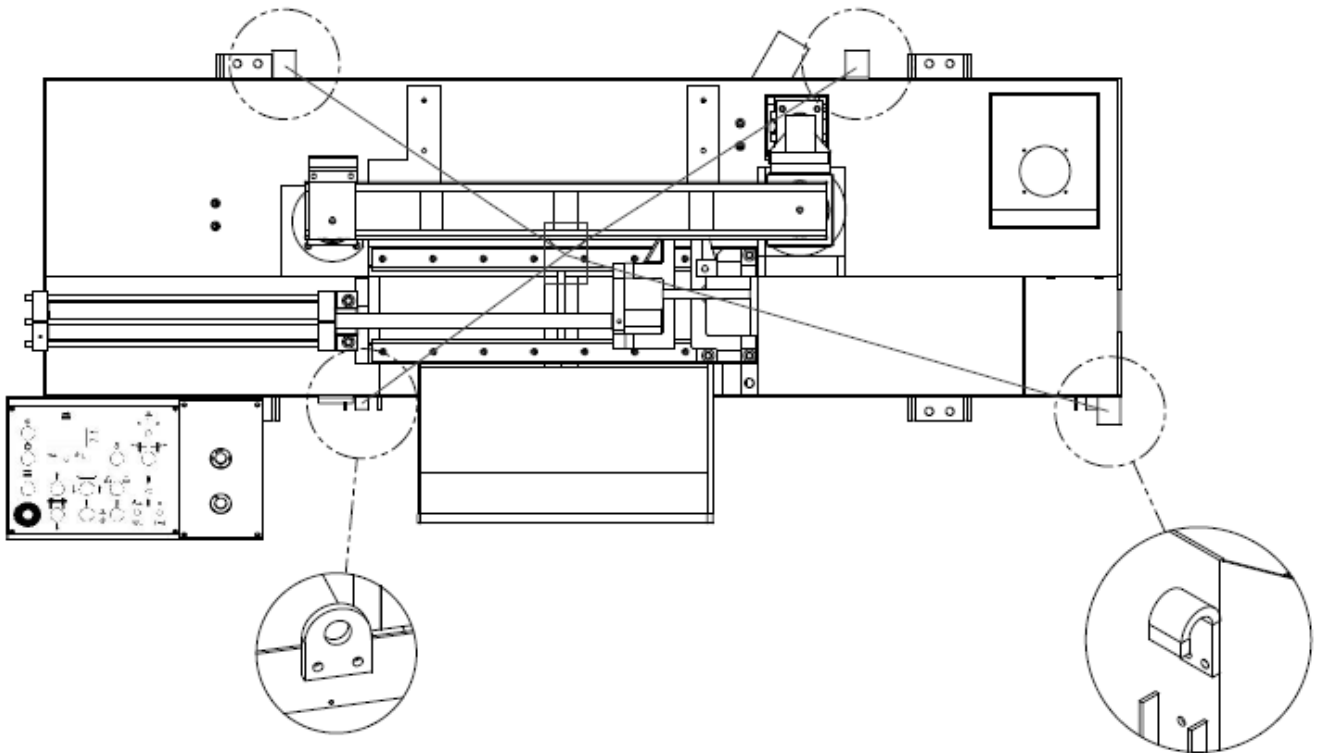
You can use rolling cylinders to move your machine in a small machine shop environment.

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



## ***Illustration: Lifting Points***

Before lifting, please remove splash shields first.

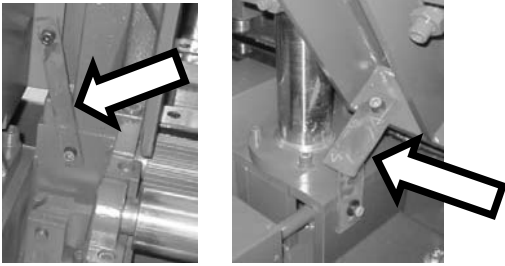


Minimum weight capacity for each wire rope: **2 ton**

Total number of wire ropes required: **4**

## 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

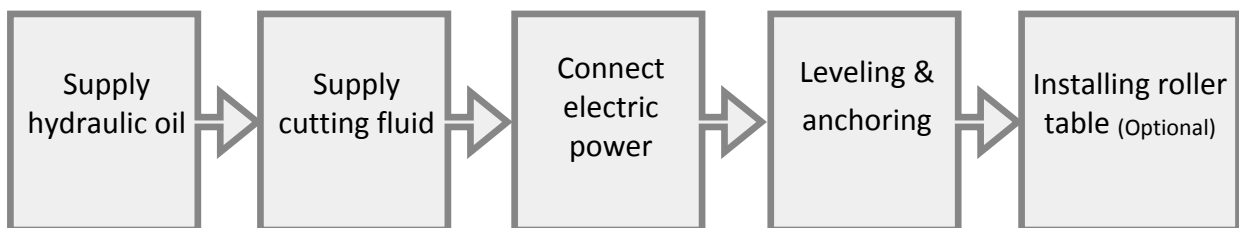
After the machine has been placed at the designated position, remove the rust-preventive grease with wiping cloth dampened with cleaning oil or kerosene. Apply machine oil to machine surfaces that are prone to rust.



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

Cosen's bandsaw machine is relatively easy to install. Follow these six easy steps to install your machine.



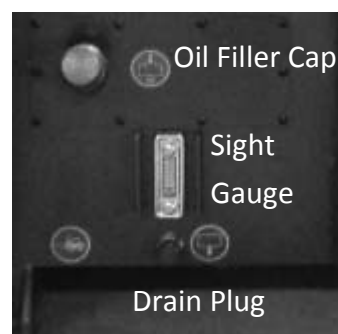
### Supplying hydraulic oil

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.



## 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 COSEN 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.

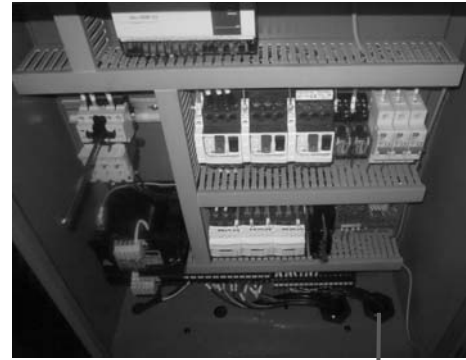


Source frequency: 99% - 101 % of nominal frequency.



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. (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.



CE model

Power Supply Inlet



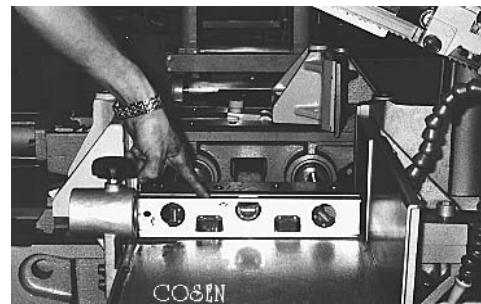
Non-CE model

Power Supply Inlet

### 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.

## **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.

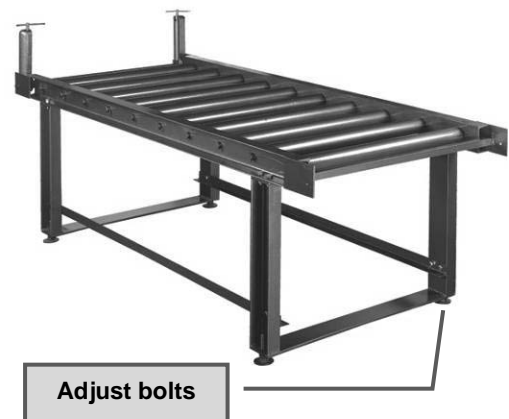
Shock absorption steel plates are provided and can be placed under each leveling bolt to prevent their sinking into the concrete floor.

## **Installing roller table (optional)**

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.

Level the roller table and the stand with the machine by adjusting the leveling bolts.



## **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.





# *OPERATING INSTRUCTIONS*

**SAFETY PRECAUTIONS**

**BEFORE OPERATING**

**CONTROL PANEL**

**STANDARD ACCESSORIES**

**OPTIONAL ACCESSORIES**

**UNROLLING & INSTALLING THE BLADE**

**ADJUSTING WIRE BRUSH**

**ADJUSTING SAW ARM**

**ADJUSTING BLADE SPEED**

**ADJUSTING COOLANT FLOW**

**BREAKING-IN THE BLADE**

**TEST-RUNNING THE MACHINE**

**CUTTING OPERATION**

**TERMINATING A CUTTING OPERATION**

## **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
<ul style="list-style-type: none"><li>• Have a high cooling effect</li><li>• Not flammable</li><li>• Economical</li><li>• Does not require cleaning of the cut products</li></ul>	<ul style="list-style-type: none"><li>• Remove machine paint</li><li>• Lose its rust protection effect if deteriorated</li><li>• Tend to create foam</li><li>• Subject to decay</li><li>• Decline in performance, depending on the quality of the water used for dilution</li></ul>



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.

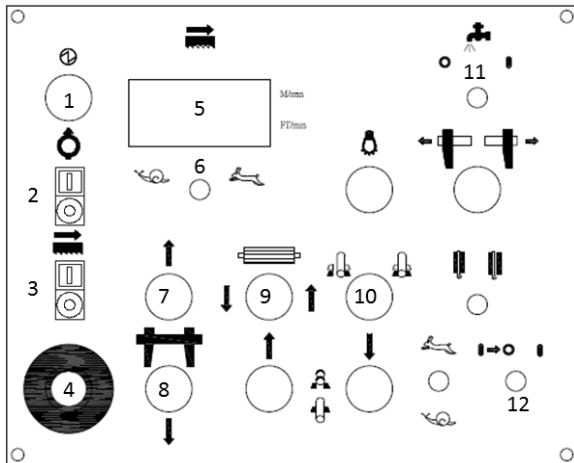


Before starting a cutting job, make sure there is sufficient amount of coolant in the tank.

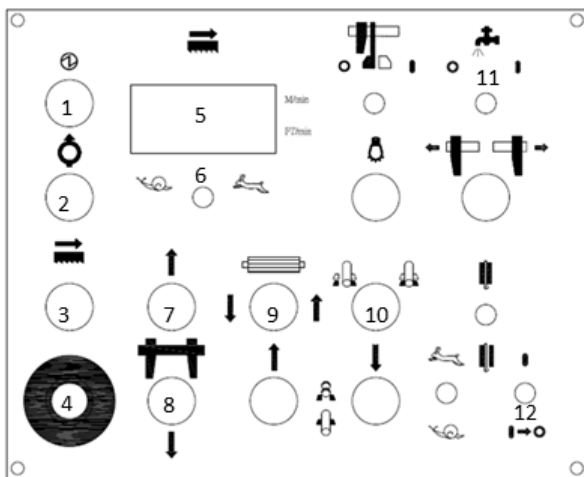
Check the fluid level through the sight gauge. Please refer to machine specifications in this manual (Section 2) for tank capacity.

## CONTROL PANEL

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.



CE model



Non-CE model

No	Name
1	Power indicator lamp
2	Hydraulic start/stop buttons with built-in lamp (CE model) Hydraulic start button with built-in lamp (non-CE model)
3	Saw blade start/stop buttons with built-in lamp (CE model) Saw blade start button with built-in lamp (non-CE model)
4	Emergency stop button
5	Blade speed indicator
6	Blade speed control knob
7	Saw bow up button
8	Saw bow down button
9	Lift rollers up/down switch
10	Vise open/clamp switch
11	Coolant on/off switch
12	Last cut function on/off switch

## Control Buttons

### 1. Power indicator lamp

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

## 2. Hydraulic start/stop buttons with built-in lamp (CE model)

### Hydraulic start button with built-in lamp (non-CE model)

#### CE model

When the green button is pressed, the built-in-lamp will come on and the hydraulic motor starts to operate. When the red button is pressed, the hydraulic motor turns off immediately.

#### Non-CE model

When this button is pressed, the built-in-lamp will come on and the hydraulic motor starts to operate. Press *emergency stop* button to stop the hydraulic motor.



When the hydraulic motor is ON, the chip conveyor will run at the same time, please keep your hands away from the chip conveyor.



The hydraulic system will not start when the saw bow is at the lower limit position.

## 3. Saw blade start/stop buttons with built-in lamp (CE model)

### Saw blade start button with built-in lamp (non-CE model)

#### CE model

When the green button is pressed, the built-in-lamp will come on and the blade motor starts to operate. When the red button is pressed, the blade motor stops.

#### Non-CE model

When this button is pressed, the built-in-lamp will come on and the blade motor starts to operate. Press *saw bow up* button to stop the blade motor.



The *visc open/clamp switch* must be turned to the right to “clamp” position and held for 2 seconds before the blade can start running.

## 4. 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.

## 5. Blade speed indicator

Blade speed is shown here in predetermined unit (M/min or fpm).



All parameter settings have been done by our factory before shipment. Please do not make any random change to the parameter as it may affect the accuracy of the blade speed reading. Please consult your agent shall there be any need to reset machine parameters.

## 6. Blade speed control knob

Blade speed is controlled by the inverter. Turning the knob clockwise increases the blade speed.

## 7. Saw bow up button

When this button is pressed, the saw bow rises. Pressing and holding the button for approximately 2 seconds will make the saw bow automatically rise until the saw bow touches the upper limit switch.



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

## 8. Saw bow down button

When this button is pressed, the saw bow descends until the operator lets go of the button or until the saw bow touches the lower limit switch.

## 9. Lift rollers up/down switch

The hydraulic lift rollers can be used to lift up the material, for the operator to adjust the material with greater ease. Turn the switch to the right and the lift rollers will rise up; turn the switch to the left and the lift rollers will descend.



The lift rollers can be operated only when the vise is unclamped AND the blade is not running.



If clamping the vise or starting the blade while the lift rollers are still at upper position, the lift rollers will automatically descend slowly as a safety design to help ensure the squareness of the cut.

## 10. Vise open/clamp switch

Turn the switch to the right to clamp the vise. Turn and hold the switch for 2 seconds and let it go; the vise will automatically close until it is fully clamped. Turn the switch to the left to unclamp the vise.



For the blade to start running, this switch must be turned to the right and held for 2 seconds as to ensure the vise is fully clamped.

## 11. Coolant on/off button

Flip the switch to the left to turn on the coolant pump; to the right to turn it off.



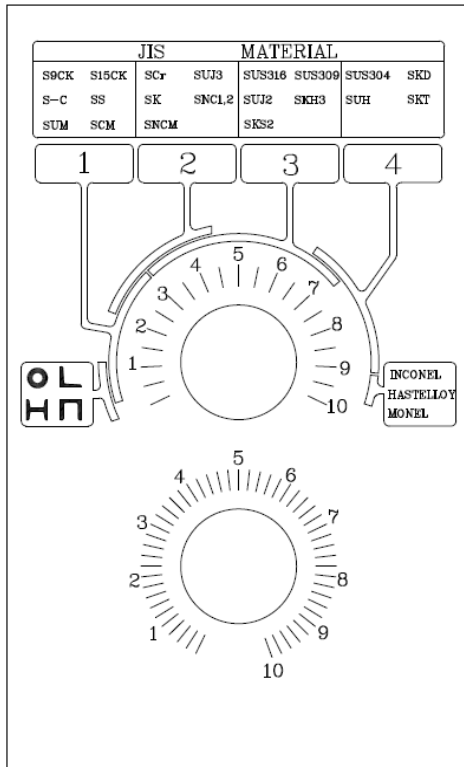
A started blade will also start the coolant automatically.

## 12. Last cut function on/off switch

Turn the switch to the left to select the last cut mode and the blade will automatically stop and the hydraulic system will shut down (in 10 seconds) after the current cut is finished.

## Blade Descend Pressure and Speed

The part of control panel is where cutting pressure and saw blade descend speed can be adjusted.



Cutting pressure and speed control panel

### 1. Cutting pressure control knob

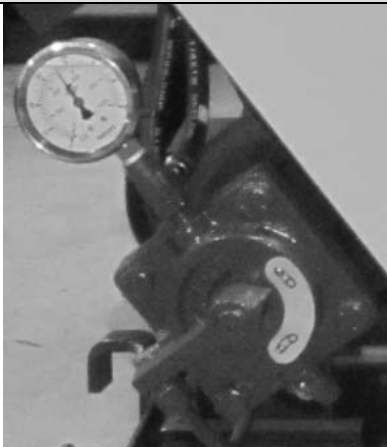
- This pressure control knob is used to adjust the cutting pressure of the blade.
- Turning the knob clockwise increases the cutting pressure.
- To obtain a good cutting result, choose the right cutting pressure by turning the knob until it points to your material on the color chart.




### 2. Blade descend speed control knob

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

## STANDARD ACCESSORIES

### Blade tension device

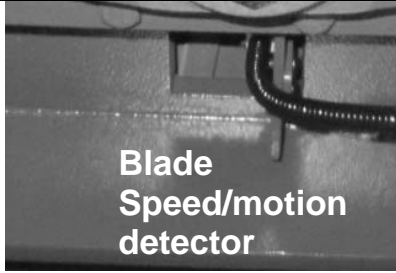


- This blade tension device equipped with hydraulic cylinder provides appropriate tension to the saw blade.
- To tighten the saw blade, turn the selector to .
- Upon saw blade breakage, the safety device will activate and automatically stop all machine operation.
- The limit switch of the safety device can be reset by turning the blade tension selector to .
- To change the blade, turn the handle to  to release saw blade tension.



Never adjust blade tension while the blade is running.

## Blade speed/motion detector

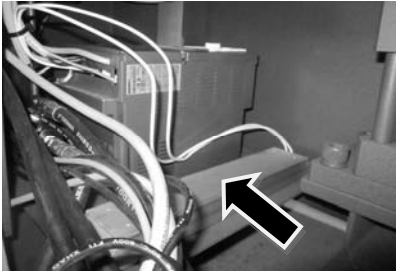


- Besides detecting the blade speed, the speed/motion detector also functions as a safety device.
- The speed/motion detector protects operators and the machine by preventing blade overloads and consequent damages if a saw blade breaks or skids.
- Once blade breakage or slippage is detected, the drive wheel will stop in 10 seconds.

## Inverter



Non-CE model



CE model

- The inverter of non-CE model is installed in the control box. The inverter of CE model is installed in the machine base.
- The inverter is used to control and stabilize the saw blade speed during cutting.
- To adjust blade speed, use the *blade speed control knob* on the control panel.



### Note:

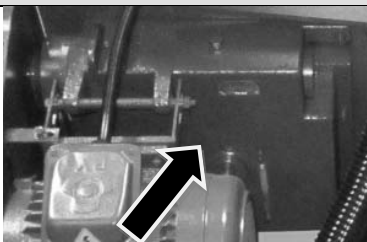
1. Make sure the terminal points are connected.
2. Make sure the ambient temperature is within acceptable range and keep the surroundings well ventilated.
3. Keep the inverter away from dust.
4. For repair or maintenance, please contact your local agent.

## Split vises



The split vises are a clever design to make sure your workpiece is tightly clamped by the two vises from both sides of the blade, maximizing stability and cutting precision.

## 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.



## Vise pressure regulator



Pressure  
adjusting  
valve

- This adjustment valve is used to control vise pressure.
- Adjust vise pressure based on the material of your workpiece.
- When cutting pipes or soft materials, reduce vise pressure to prevent exerted pressure from damaging the workpiece shape or exterior.



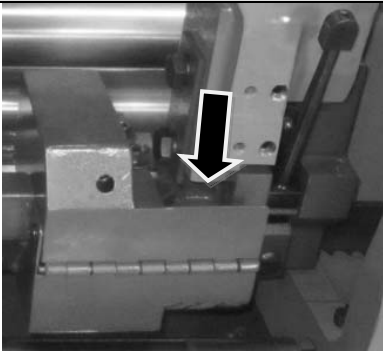
Do not adjust vise pressure at any time during cutting.



Vise pressure should never be lower than 8 kg/cm<sup>2</sup>.

## OPTIONAL ACCESSORIES

### Vibration damper



The vibration damper can be assembled to the left saw arm. This optional accessory is extremely useful in reducing the high-frequency noise produced when cutting large-sized material.

### Chip conveyor



Chip conveyor is a spiral device to bring chips out during cutting.



As a regular maintenance, remove the chip conveyor and clean all chip deposits inside.

### Hydraulic top clamp



The top clamp device is installed on the cross beam. Before executing bundle cutting, open the flow control valve so the top clamp can move in sync with the vise.



Note the allowable clamping width and height. (Refer to Specifications of section 2 – General Information.)

## 2M Roller Table



- The optional 2M roller table supports the work material and ensures the material is fed in smoothly.
- Refer to Section 9 for further information on adjusting the roller table.

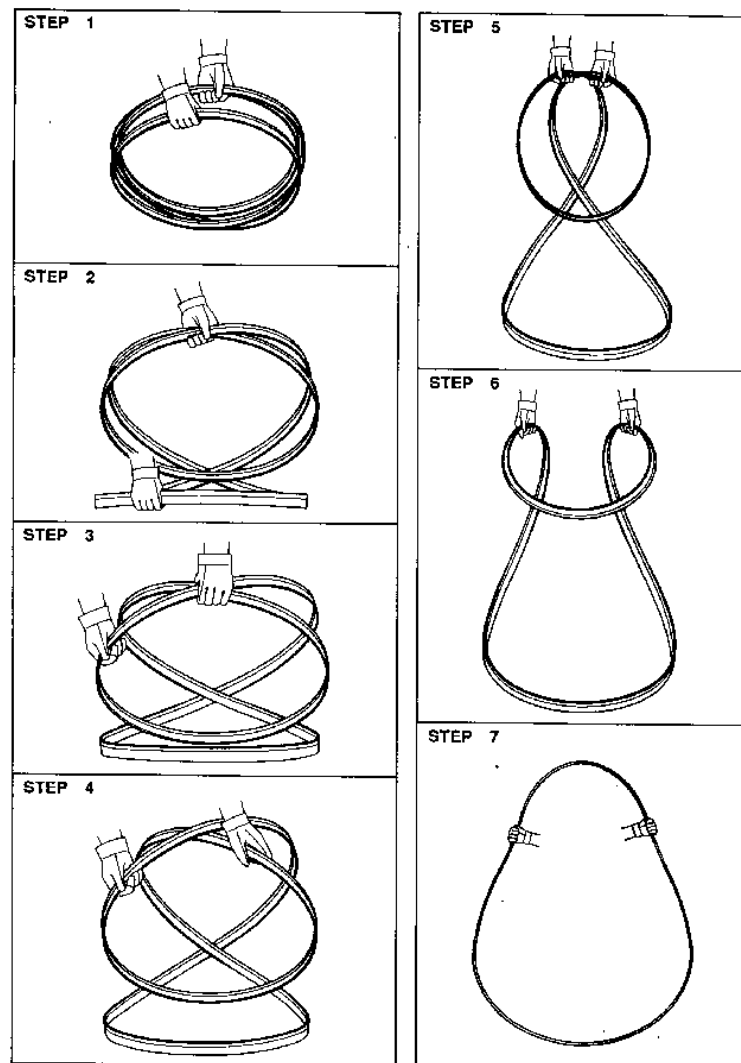
## UNROLLING & INSTALLING THE BLADE



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

### Unrolling the blade

Please follow the procedures illustrated below.





Unroll and roll the blade

## 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 by switching to *ON* and turn on the hydraulic system.

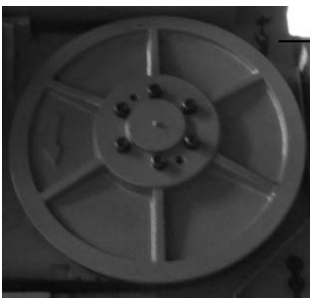
Step 3 - Press the *saw bow up* button and elevate the saw bow to an appropriate height.

Step 4 - Turn the tension controller handle from “” to “” position to release tension. The idle wheel will then move slightly toward the direction of the drive wheel.



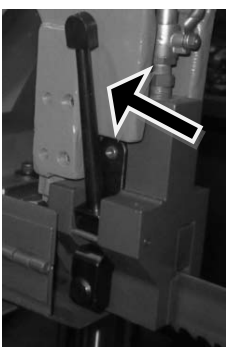
Step 5 - Open the idle and drive wheel covers.

Step 6 - Press the *Blade Clip* device to hold onto the blade. This device makes blade changing easy and feasible even with only one operator available.

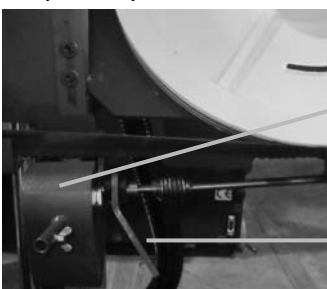


Easy Blade Replacement Device

Step 7 - Loosen the left and right carbide inserts by unlocking the “lock bars” shown below.



Step 8 - Open the wire brush cover. Loosen the lock lever and lower the wire brush.



Wire Brush Case

Lock Lever

Step 9 - Remove the old blade. If necessary, clean the carbide inserts before installing a new saw blade.

Step 10 - Place the new blade around the idle wheel and the drive wheel.


Step 11 - 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 12 - Place the blade to the drive wheel and press the back of the blade against the flange of the drive wheel. Use the *Blade Clip* device to tightly hold the blade from falling out of the drive wheel.



When saw blade begins to rotate, the blade holder will automatically release the blade and fall back to its original position.

Step 13 - Make sure the back of the blade is also pressed against the flange of the idle wheel.

Step 14 - Turn the tension controller handle to [  ] position to obtain blade tension.

Step 15 - Make sure the sides of the blade are in close contact with the carbide inserts and then tighten the left and right carbide inserts by locking the “lock bars.”

Step 16 - Gently close the idle and drive wheel covers.

Step 17 - 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 18 - Adjust wire brush to a proper position. Refer to *Adjusting Wire Brush* in this section.

## ADJUSTING WIRE BRUSH

Follow these steps to adjust wire brush to appropriate position:

Step 1 - Loosen the lock lever and the wire brush cover.

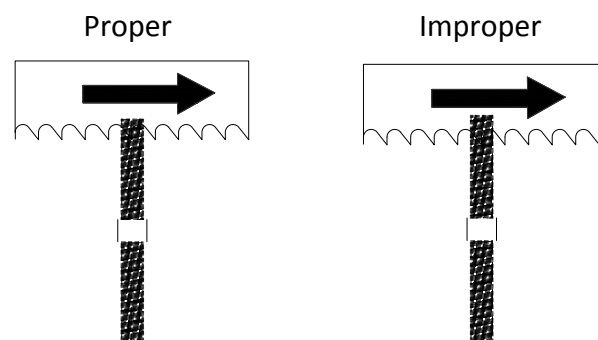
Step 2 - Adjust the screw to make brush move up / down until it makes proper contact with the saw blade (see below illustration).

Step 3 - Reinstall the wire brush cover and tighten the lock lever.



Screws

Lock Lever



## ADJUSTING SAW ARM

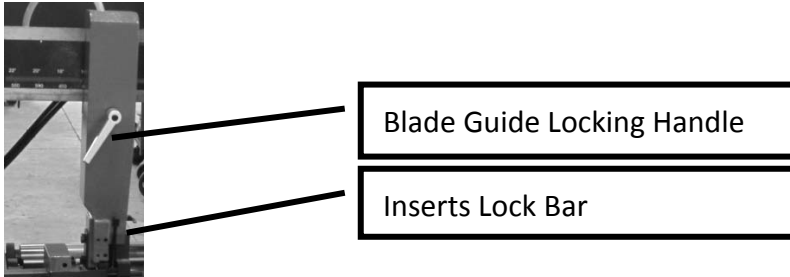
Adjust the blade guide (guide arm) position based on the size of your workpiece:

Step 1 – Loosen the inserts by unlocking the lock bar.

Step 2 – Loosen the blade guide locking handle. Then adjust the guide arm to a position suitable for your workpiece size.

Step 3 – After adjustment is made, tighten the blade guide locking handle.

Step 4 – Clamp the inserts back by locking the lock bar.

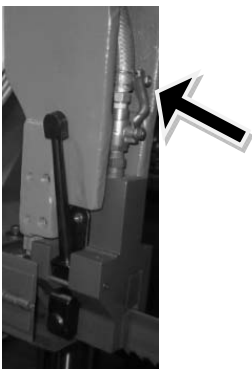


## ADJUSTING COOLANT FLOW

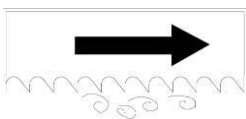
Step 1 – Press the *saw blade start* button to start the saw blade drive motor.

Step 2 – Press the *saw bow down* button to lower the saw bow.

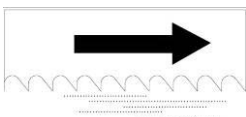
Step 3 – Use the flow control valve (shown below) to adjust the amount of fluid flowing to the cutting area.



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.

## **ADJUSTING BLADE SPEED**

Step 1 – Set the flow control to “0” position.

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

Step 3 – Turn the *blade speed control knob* to adjust the blade speed. The blade speed should be adjusted based on the size and the material of the workpiece.

## **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 - Start the break-in operation.

Step 4 - After the break-in operation is completed, set all parameters back to normal settings.

## **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 (optional).

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 – After the saw bow ascends, extend the quick approach device.

Step 6 – Remove the rust-prevention grease with cleaning oil or kerosene.

Step 7 – Start the coolant pump.

Step 8 – Test these functions under manual mode:

- vise clamping/unclamping
- saw bow ascending/descending

## 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.
- **Workbed:** Check if there is any object on the feeding bed that may cause interference.
- **Blade:** Check the blade teeth and make sure there is no worn out teeth along the blade.
- **Light:** Check the work lamp or laser light (optional) and make sure there is sufficient lighting.
- **Roller:** Check all the rollers on the front and rear workbed can roll smoothly.
- **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 – Turn the *cutting pressure control* knob to adjust blade cutting pressure according to the material.

Step 6 – Adjust *blade descend speed control* knob to obtain a suitable blade descend speed for your material.

Step 7 – Start running the blade.



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

Step 8 – While the blade descends, adjust the blade speed if necessary. You can do so by turning the *blade speed control* knob, clockwise to speed up and counterclockwise to slow down. The blade speed is displayed in the blade speed indicator.

Step 9 – Select the proper cutting condition according to different material.

Step 10 – After the entire cutting job is completed, elevate the saw bow to the top and open the vises to remove the workpiece.

Step 11 – Clean the workbed by removing chips and cutting fluids.

Step 12 – Lower the saw bow to a proper position then turn off the power.



## TERMINATING A CUTTING OPERATION

- To terminate a cutting operation, press either the *saw bow up* button or the *emergency stop* button.
- The saw blade will stop running when the *saw bow up* button is pressed.
- Both the saw blade and hydraulic pump motors will stop running when the *emergency stop* button is pressed.





# *ELECTRICAL SYSTEM*

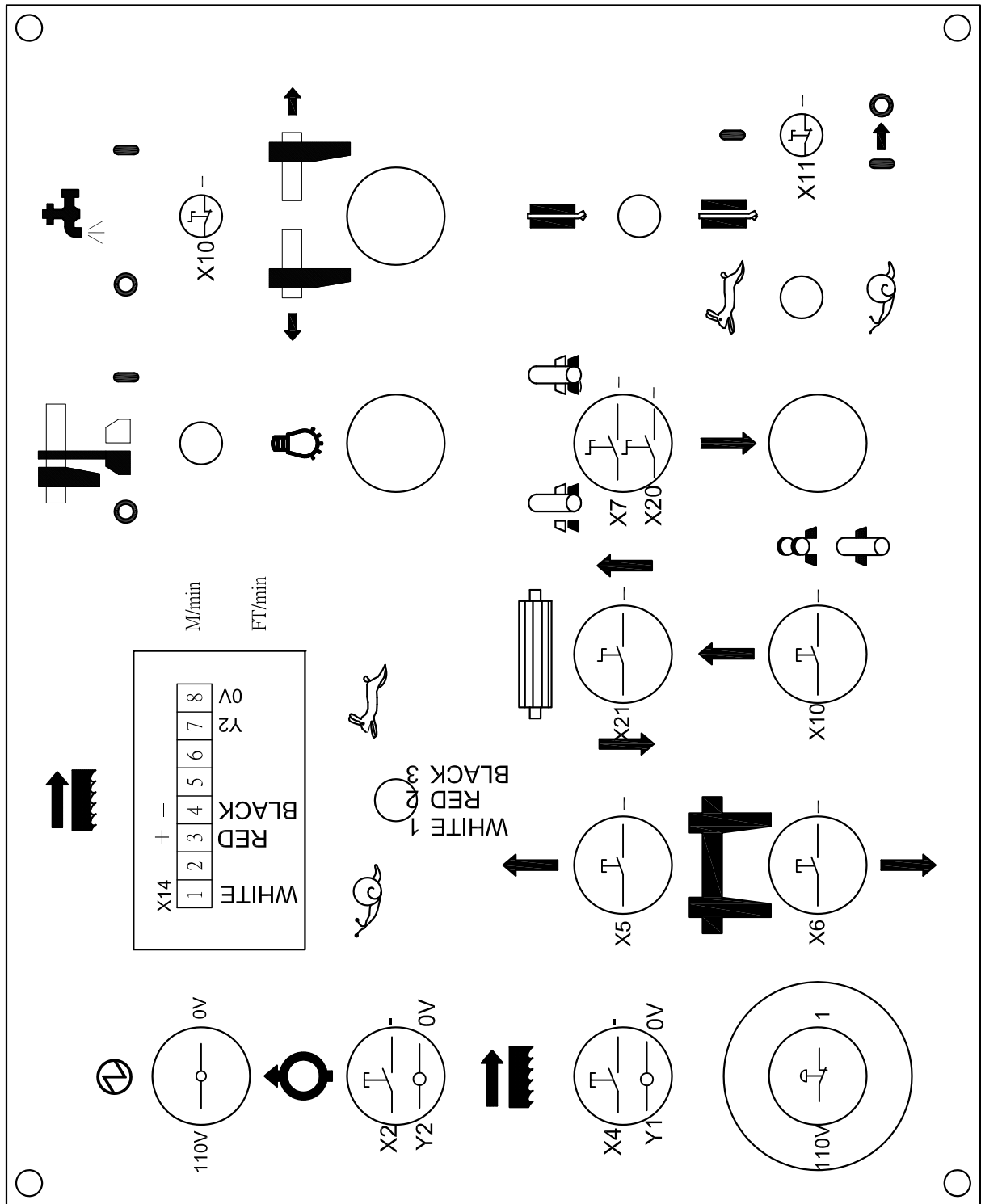
## **ELECTRICAL CIRCUIT DIAGRAMS**

The following are electrical circuit diagrams of the non-CE model:

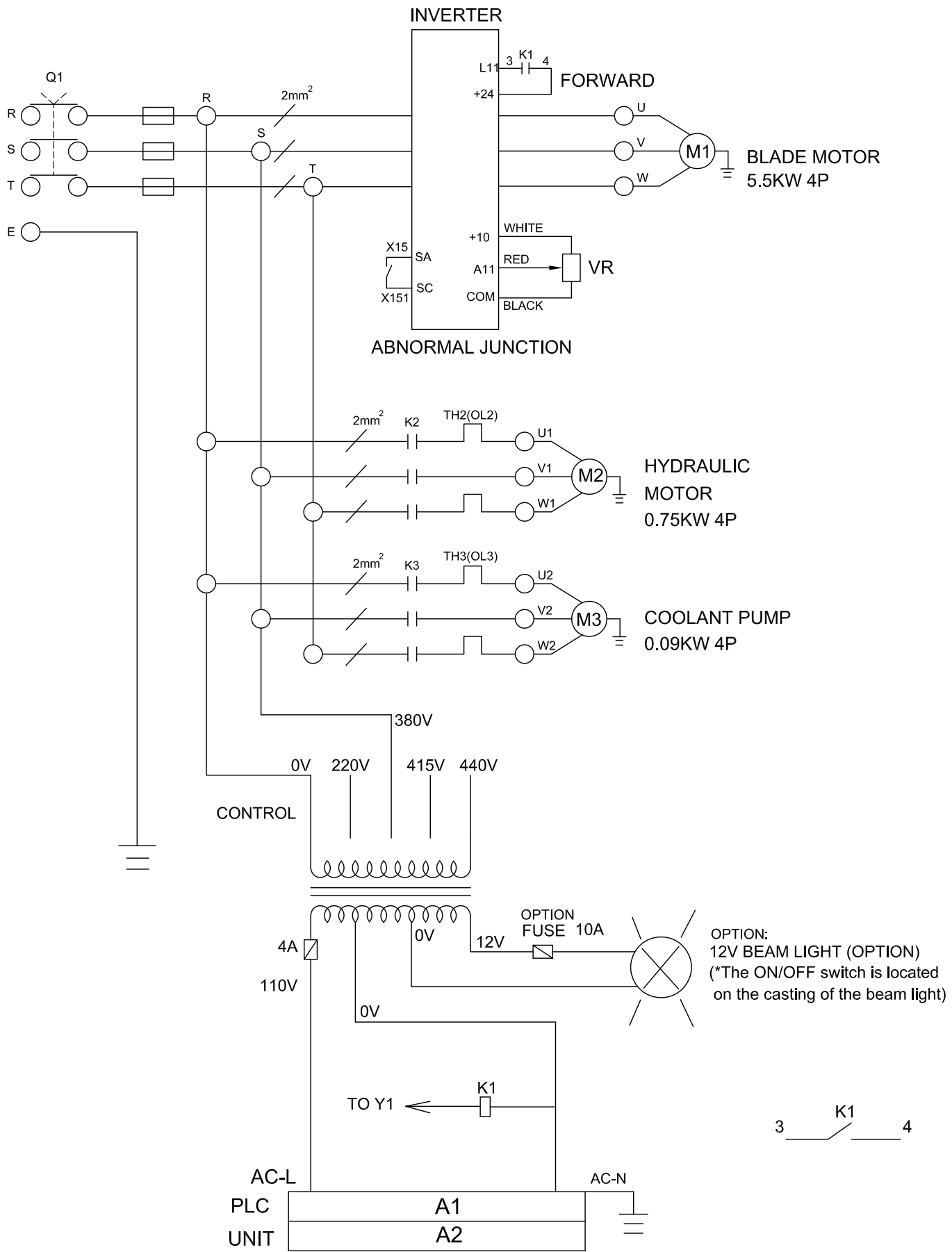
- 5-2 Control Panel Layout
- 5-3 Circuit Board Layout
- 5-4 Power Supply Layout
- 5-5 PLC Input/Output Layout

The following are electrical circuit diagrams of the CE model:

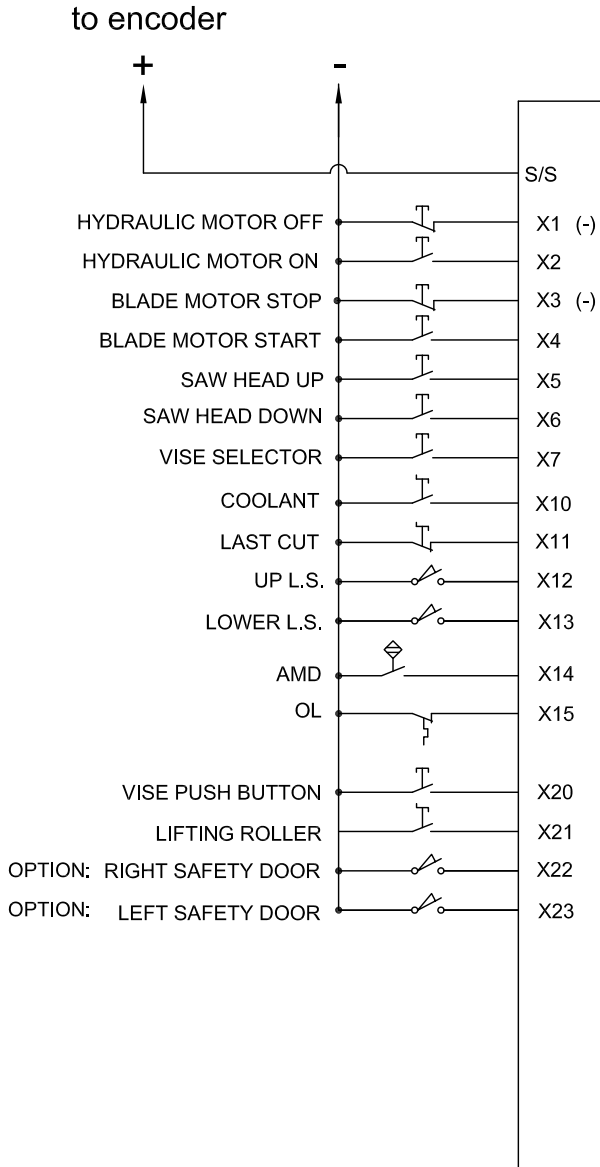
- 5-6 Control Panel Layout
- 5-7 Circuit Board Layout
- 5-8 Power Supply Layout
- 5-9 PLC Input/Output Layout



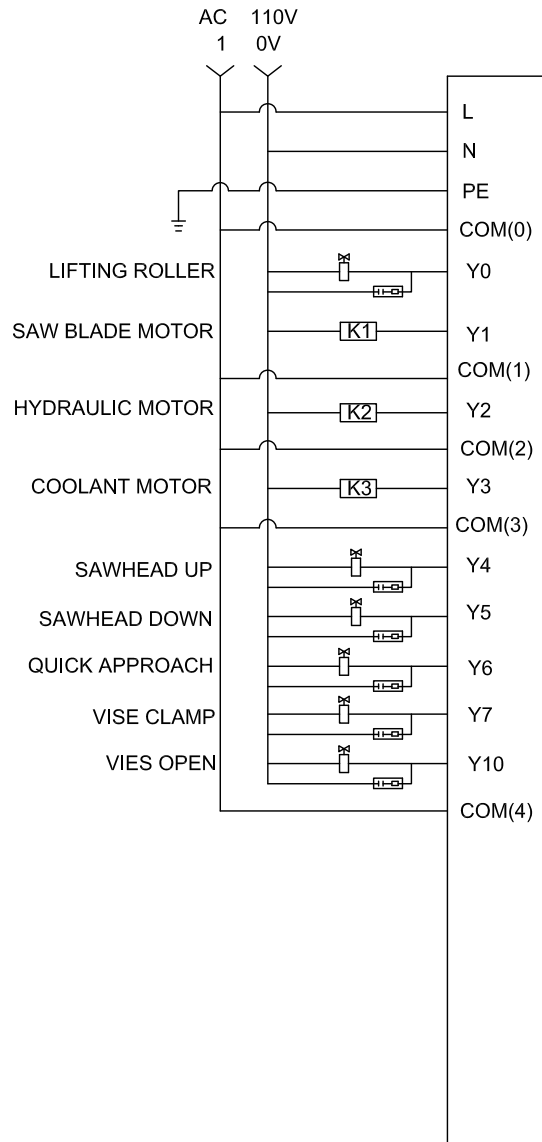


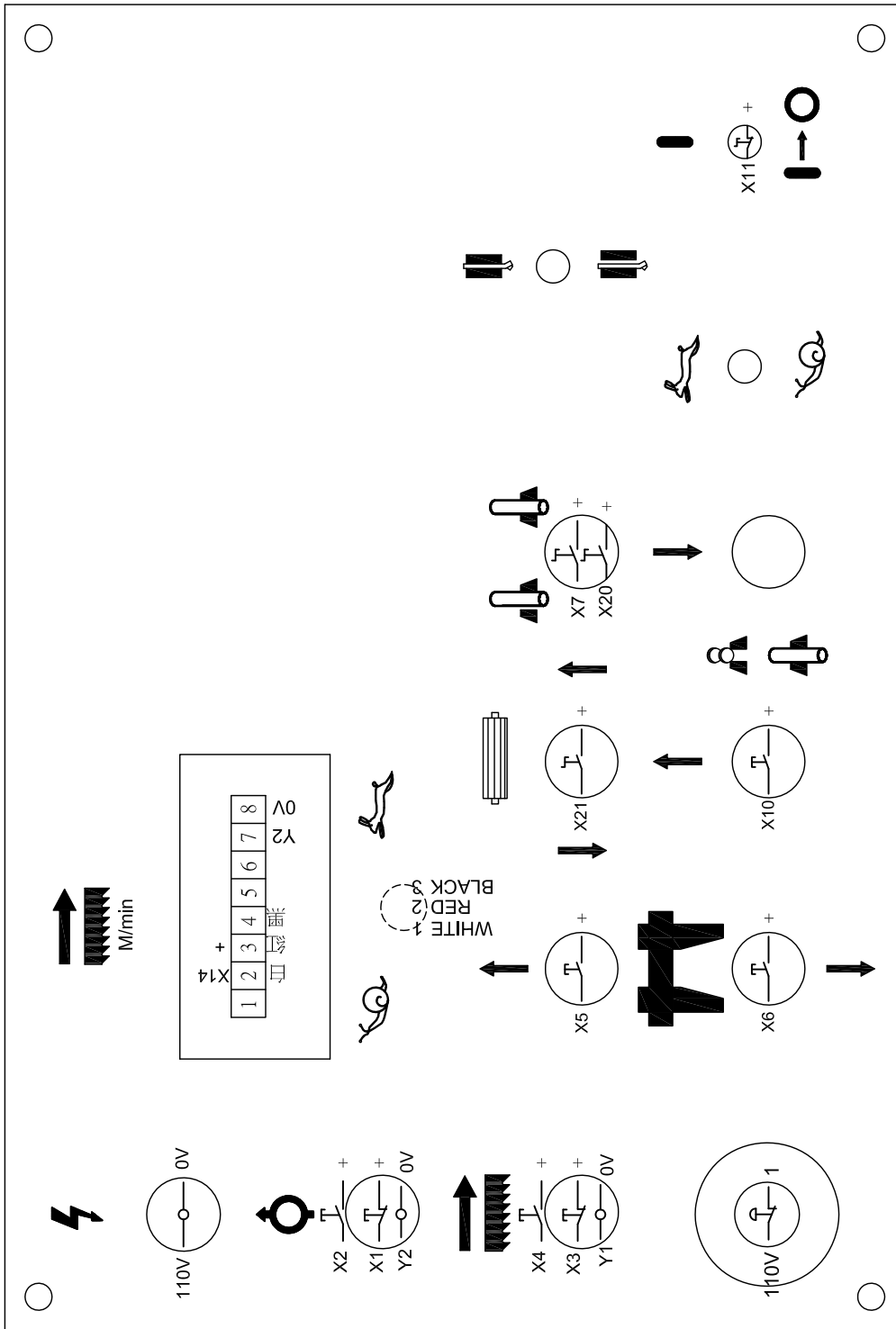


## PLC INPUT MODULE

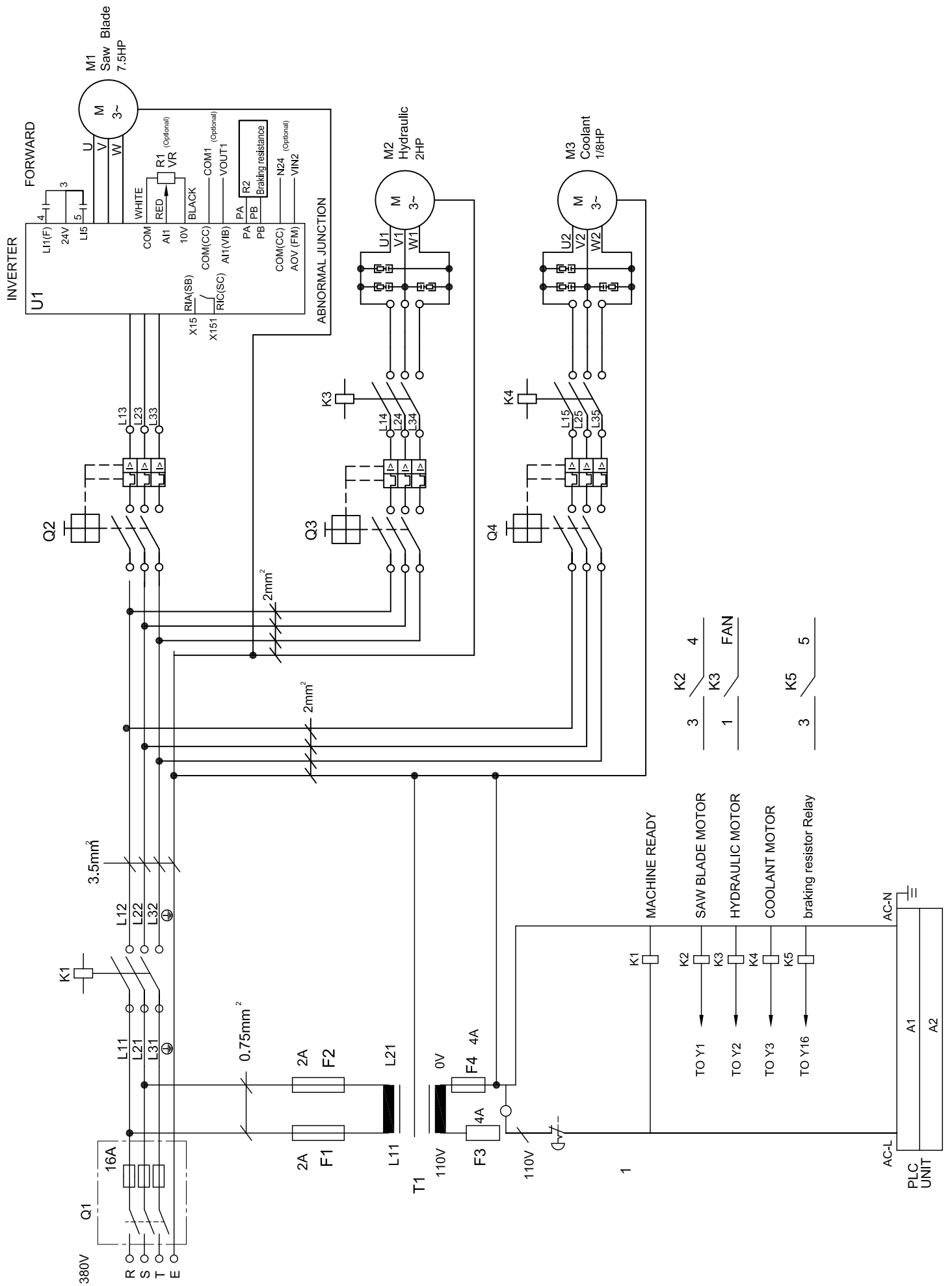


## PLC OUTPUT MODULE



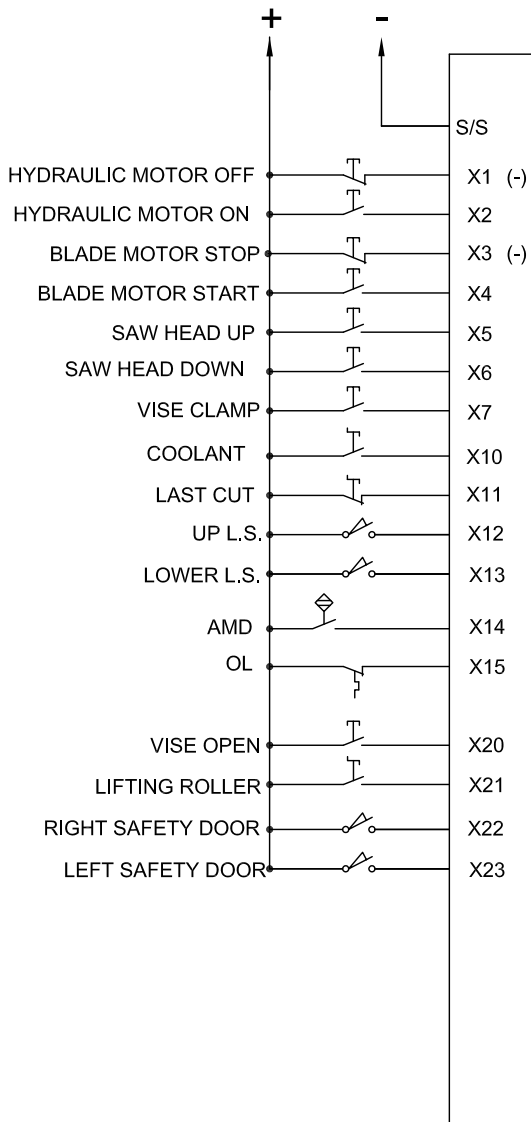




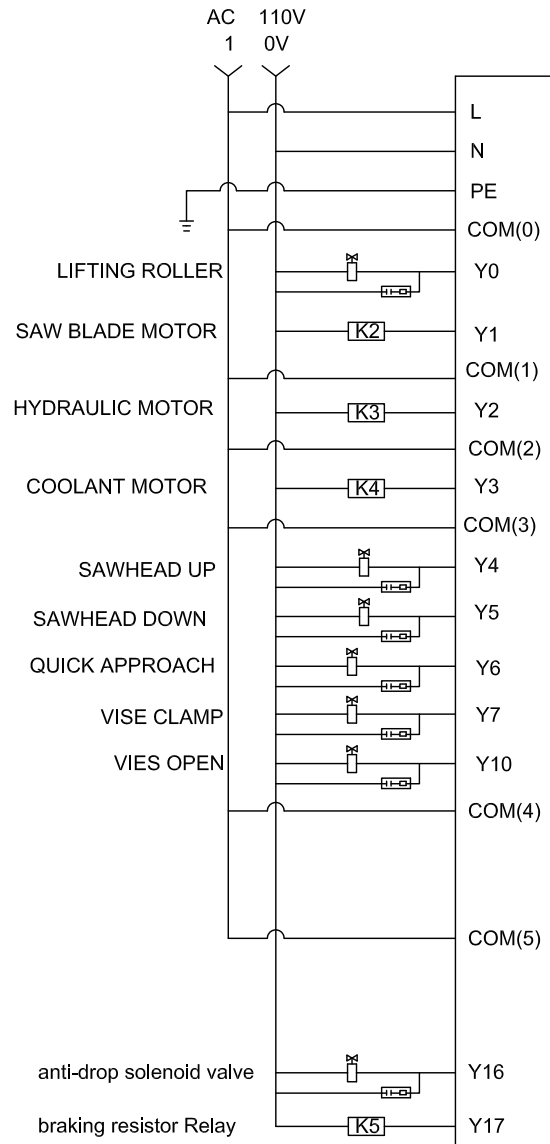




## PLC INPUT MODULE A1



## PLC OUTPUT MODULE A2

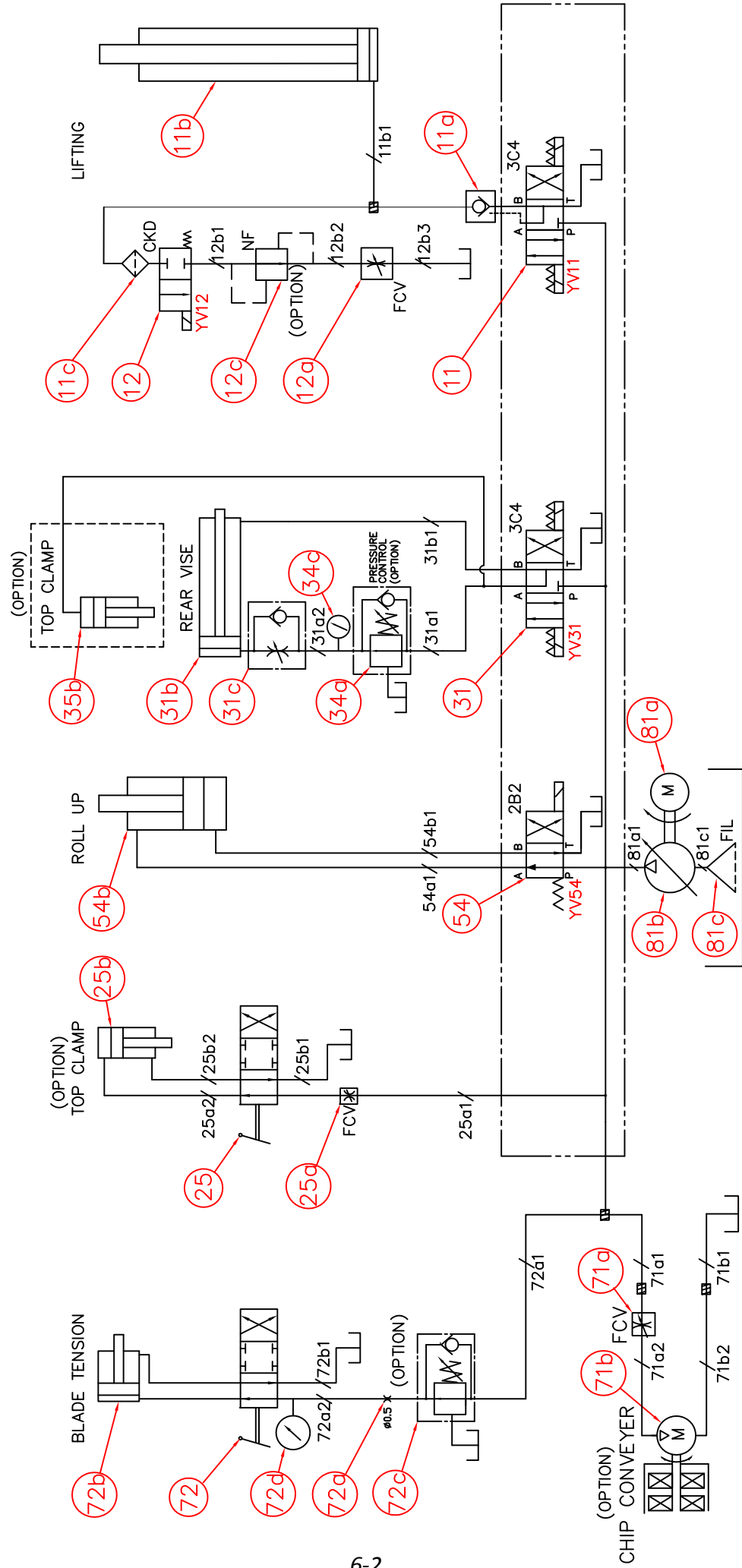




# *HYDRAULIC SYSTEM*

**HYDRAULIC CIRCUIT DIAGRAM**

SH-5542 HYDRAULIC CIRCUIT



# *BANDSAW CUTTING: A PRACTICAL GUIDE*

## **INTRODUCTION**

### **SAW BLADE SELECTION**

### **SOME SAWING PRACTICES**

### **CUTTING CONDITIONS SETTING**

## **INTRODUCTION**

Our bandsaw machines are designed to be installed with high quality using high speed saw blades for maximizing productivity. To be able to use this kind of high performance bandsaw blade, the machine has to be of rugged design, has high quality saw blade guides, has sufficient motor horse power for high saw band speeds, and has to be able to apply necessary tension to the saw bands. Your machine has all these features to provide a better service for you.

The saw blade is guided through the cutting area by roller guides to keep it straight as it comes off the driving wheels. The precision carbide inserted guides then hold the blade securely and accurately throughout the sawing process. The tension of the saw blade is adjusted through the tensioning device on the strong saw bow. The cutting feed and down feed pressure of the blade is regulated automatically by hydraulic regulation.

## **SAW BLADE SELECTION**

The factors affecting cutting performance are:

- Type of material
- Material size and shape
- Guide spacing
- Blade selection
- Blade speed and feed
- Tooth form and spacing
- Blade tension
- Blade vibration
- Coolant



Fig. 7.1 Description of Band

- Depending on the hardness of the material the cutting rate will increase or decrease. For example, it takes more time to cut stainless steel than to cut cast iron.
- 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:

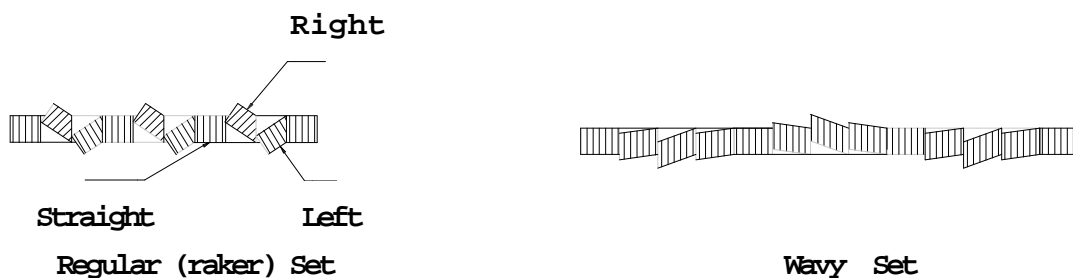


Fig. 7.2 The Saw Set

### Material size and shape

The optimum material width for a band saw blade is 1 inch wide by 0.35 inch thick and is about 5 inches long. Below this width tooth loading may become excessive and the cutting rate must be reduced. Above this width blade control begins to be lost, as discussed below. Since the blade "sees" only that material it is cutting, the shape of the stock being cut will also affect cutting speeds, particularly if the piece is excessively wide or if it varies in the dimensions being cut.

### Guide spacing

The rigidity of the blade is a function of guide spacing, with rigidity being reduced to the third power as the distance between the guides increases. For example, with guides spaced 2 inches apart, blade deflection might be approximately 0.2. Under the same conditions, but with the guides spaced at 4 inches apart, blade deflection would be approximately 0.8.

This is a much simplified version of the formula, because it does not consider band tension or guide design. It is important to recognize, for example that rollers are considered as a pivotal contact. Whereas carbide faces could be considered as anchored supports. A more complete deviation, including band tension and guide design, is included in Roark's handbook, "Formula for stress and strain".

### Blade selection

There are different types of blades available. Please contact a bandsaw blade manufacturer for advice.

### Blade speed and feed

Blade speed is generally limited by vibration and the ability to keep the blade sufficiently cool to avoid dulling the teeth. A blade which is running fast and taking a very light cut will dull quickly because the tips of the teeth will overheat from the rubbing action. If, however, we force the blade teeth deeper into the material, the blade will be less sensitive to heat, because the teeth are cutting more and rubbing less.

### Tooth form and spacing

The selection of a tooth form generally is determined by the material to be cut. There are three general factors to consider: tooth form, style or shape of the teeth; tooth spacing, the number of teeth to the inch; and tooth set, which provides clearance for the body of the blade. Three styles of tooth are shown in Fig. 7.3 below:

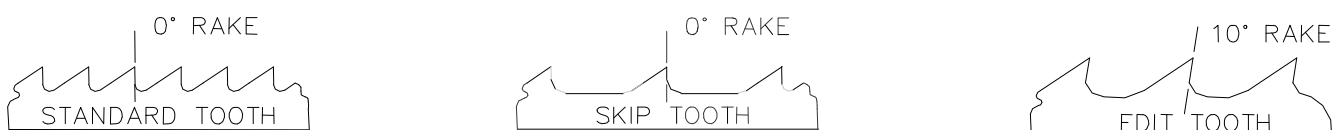


Fig. 7.3 Three Styles of Tooth

## SOME SAWING PRACTICES

### Saw Pitch Selection

Sawing “Rules of Thumb”:

1. The thinner the stock, the finer the saw pitch.
2. The thicker the stock, the coarser the saw pitch.
3. The more difficult the stock, the finer the saw pitch.
4. The softer the material , the coarser the saw pitch.

Always have at least three teeth in contact with the material being cut.

### Material Size and Saw Pitch

Anytime during the cutting operation, at least three teeth must be in contact with the material being cut. Figure 7.4 shows some sawing practices:

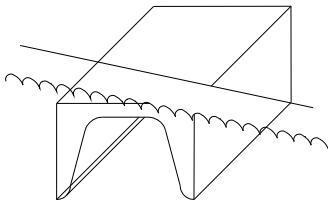
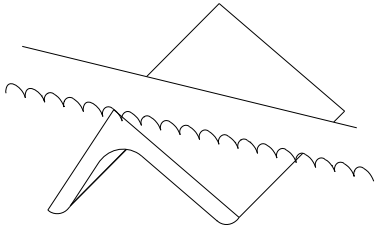
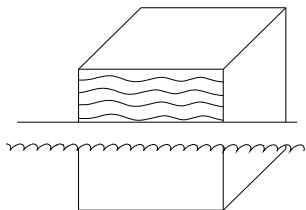
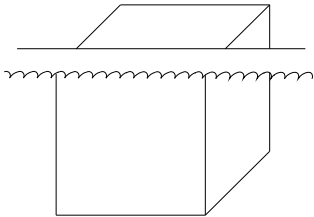
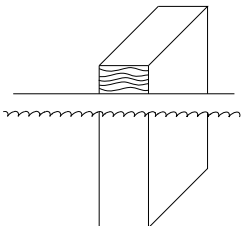
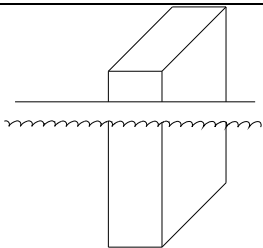

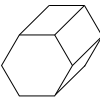

<b>SAWING PRACTICES</b>	
<b>CORRECT</b>	<b>INCORRECT</b>
	
several teeth contact work	teeth strike sharp edge
	
Coarse teeth clear chips freely	Teeth too fine for large solids
	
Three or more teeth on cutting wall	Coarse teeth rip on thin wall

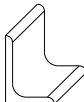

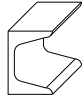
Fig. 7.4 Some sawing practices



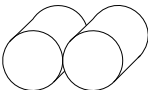
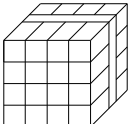
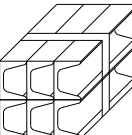
**Solid Stock:**

STYLE	up to 25 mm (1")	25-100mm (1-4")	100-250mm (4-10")
	8-10 TPI (Teeth per inch)	6-8 TPI	3-4 TPI
			
			

**Structurals:**

STYLE	up to 10 mm (3/8")	10-20mm (3/8-3/4")	above 20mm (3/4")
	10-8 TPI	8-10 TPI	6-8 TPI
			
			

**Solid Bundle:**

STYLE	up to 20 mm (3/4")	20-80mm (3/4-3 1/4")	above 80mm (3 1/4")
	8 - 10 TPI	2 - 8 TPI	4 - 6 TPI
			
			



# *MAINTENANCE & SERVICE*

## **INTRODUCTION**

## **BASIC MAINTENANCE**

## **MAINTENANCE SCHEDULE**

## **STORAGE CONDITIONS**

## **TERMINATING THE USE OF MACHINE**

## **OIL RECOMMENDATION FOR MAINTENANCE**

## **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.



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

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 when work has been completed.



Be sure the saw blade is fully stop.

### Every week

Clean and lubricate the following:

1. feed cylinder surfaces
2. vise slideway.

Recommended lubricant:

- Ordinary lubricant

### Every 2 weeks

Please apply grease to the following:

1. Idle wheel
2. Drive wheel

Recommended Grease:

- Shell Alvania EP Grease 2
- Mobil Mobilplex 48

### Every month

1. Clean the filter of the oil tank.
2. Please apply grease to the blade tension device.

#### Recommended Grease:

- Shell Alvania EP Grease 2
- Mobil Mobilplex 48

### Every 600 hours / every 1200 hours

After 600 hours of initial operation, drain away the oil and clean the internals of the machine, then refill new oil. Do so hereafter every 1200 hours of operation.

#### Recommended gear oil:

- Shell Omala oil R220
- Mobil gear 630

#### Recommended hydraulic oil:

- Shell Tellus 32
- Mobil DTE Oil Light Hydraulic 24

### Every six months

Clean or change hydraulic circuits and inner filter if there is an oil tank.

## STORAGE CONDITIONS

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

1. Turn off the power.
2. Ambient temperature: 5°C ~ 40°C
3. Relative humidity: 30%~95% (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 leak out the oil from machine body. Please storage the oil in a safe place. Ask an environment specialist how to handle the oil to avoid soil pollution. The oil in machine:

- Hydraulic oil
- Cutting fluid
- Drive shaft grease 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 Mobilphex 48
Gear reducer	After 600 hours of initial operation, drain away the oil and clean the internals of the machine, then refill new oil. Do so hereafter every 1200 hours of operation.	Regularly	Shell Omala oil R220 Mobil gear 630
Hydraulic system (if there is an oil tank)	After 600 hours of initial operation, drain away the oil and clean the internals of the machine, then refill new oil. Do so hereafter every 1200 hours of operation.	Regularly	Shell Tellus 32, Mobil DTE Oil Light Hydraulic 24
Bearing	Inserts	Oil with lubricant, but not excess.	Daily
	Band wheel	Oil with lubricant, but not excess.	Weekly
	Piston	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.**

# **TROUBLESHOOTING**

## **INTRODUCTION**

## **PRECAUTIONS**

## **GENERAL TROUBLES & SOLUTIONS**

## **MINOR TROUBLES & SOLUTIONS**

## **MOTOR TROUBLES & SOLUTIONS**

## **BLADE TROUBLES & SOLUTIONS**

## **SAWING PROBLEMS & SOLUTIONS**

## **RE-ADJUSTING THE ROLLER TABLE**

## **INTRODUCTION**

All the machines manufactured by COSEN pass a 72 hours continuously running test before shipping out and COSEN is 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.

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

It is hoped that you will give COSEN 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.
Blade line Run-out or Run-in	Wheels out of line	Adjust wheels
	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 twisting	Blade tension improper	Loosen or tighten tension on blade.
	Blade not in line with guide bearings	Check bearings for wear and alignment.
	Excessive blade pressure	Decrease pressure and blade tension
Premature tooth wear	Blade binding in cut	Decrease feed pressure
	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

					Sawing Problems and Solutions	
✓	✓	✓	✓	✓	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
	✓	✓	✓		Saw blade teeth worn	Replace

## 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.**

# PARTS

## SPARE PARTS RECOMMENDATIONS

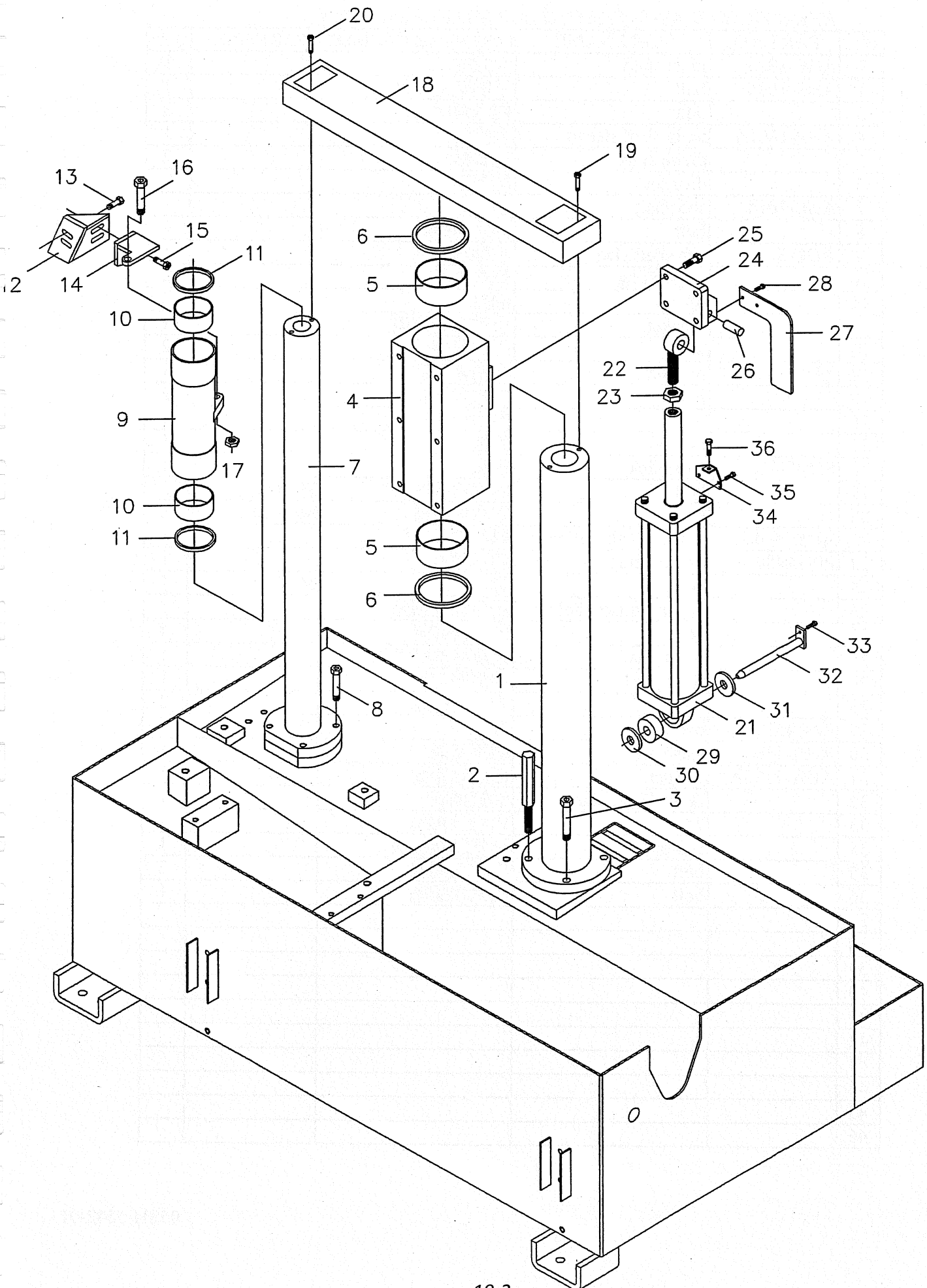
### PART LIST

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

<b>Part Name</b>	<b>Part Name</b>
Saw blade	Filter
Wire brush	Steel plates
Carbide inserts	Pump
Bearings	Belt
Chain	Duster seal
Asbestos	Idle wheel
Washer	Drive wheel

AHK-1004.WRK

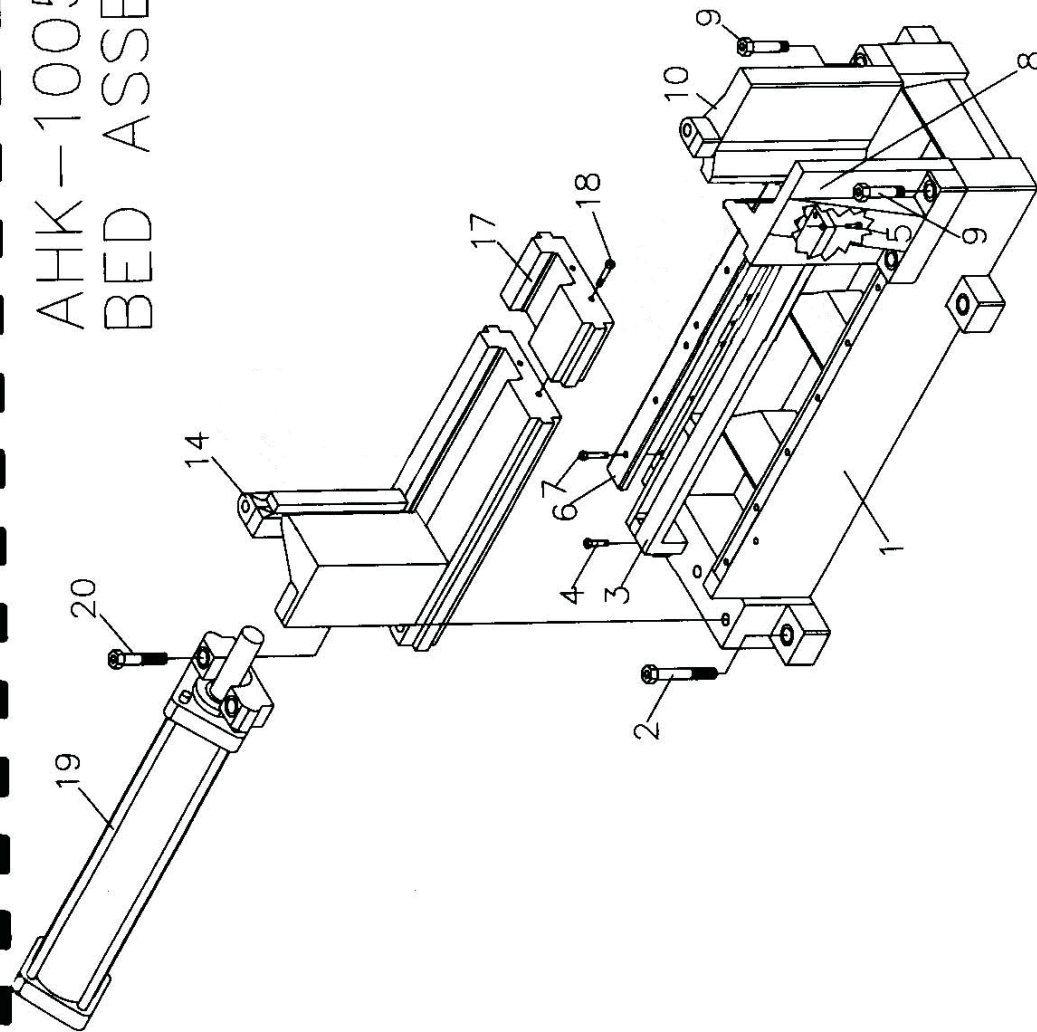
# MAIN SHAFT & SUB SHAFT ASSEMBLY



AHK-1004.WRK MAIN SHAFT & SUB SHAFT ASSEMBLY

NO.	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	QTY
1	AHE-1013	main shaft	大立柱		1
2	AHE-1094	bolt	下限定位支桿		1
3		bolt	內六角螺絲		3
4	AHP-1801A	main shaft sleeve	大軸套		1
5		du bushing	乾式軸承		2
6		dust seal	防塵套		2
7	AHE-1014	sub shaft	小立柱		1
8		bolt	內六角螺絲		4
9	AGC-3010	sub shaft sleeve	小軸套		1
10		du bushing	乾式軸承		2
11		oil seal	油封		2
12		bracket	小軸套定位座		1
13		bolt	內六角螺絲		2
14	AHE-3023	bracket	小軸套支撐板		1
15		bolt	內六角螺絲		2
16		bolt	內六角螺絲		1
17		nut	螺帽		1
18	S5542-1131	cross link	橫樑		1
19		bolt	內六角螺絲	M8*6L	2
20		bolt	內六角螺絲	M8*6L	2
21	AHK-1700E	housing yoke cylinder	舉昇油壓缸組		1
22	PP-14480	link bearing	連桿軸承		1
23		nut	螺帽	M18	1
24		upper cylinder holder	鋸弓油缸頂座		1
25		bolt	內六角螺絲		4
26		hinge shaft	上鋸弓油缸插銷		1
27		fixed plate	中限固定板		1
28		bolt	內六角螺絲		2
29	PP-14510	bearing	軸承	2303	1
30	AHA-1105	washer	橡膠墊圈		1
31	AHA-1105A	washer	活動軸墊圈		1
32		down hinge shaft	油缸插銷		1
33		bolt	內六角螺絲		1
34		L.S plate	下限開關擋板		1
35		bolt	內六角螺絲		2
36		bolt	內六角螺絲		1
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AHK-1005.WRK  
BED ASSEMBLY

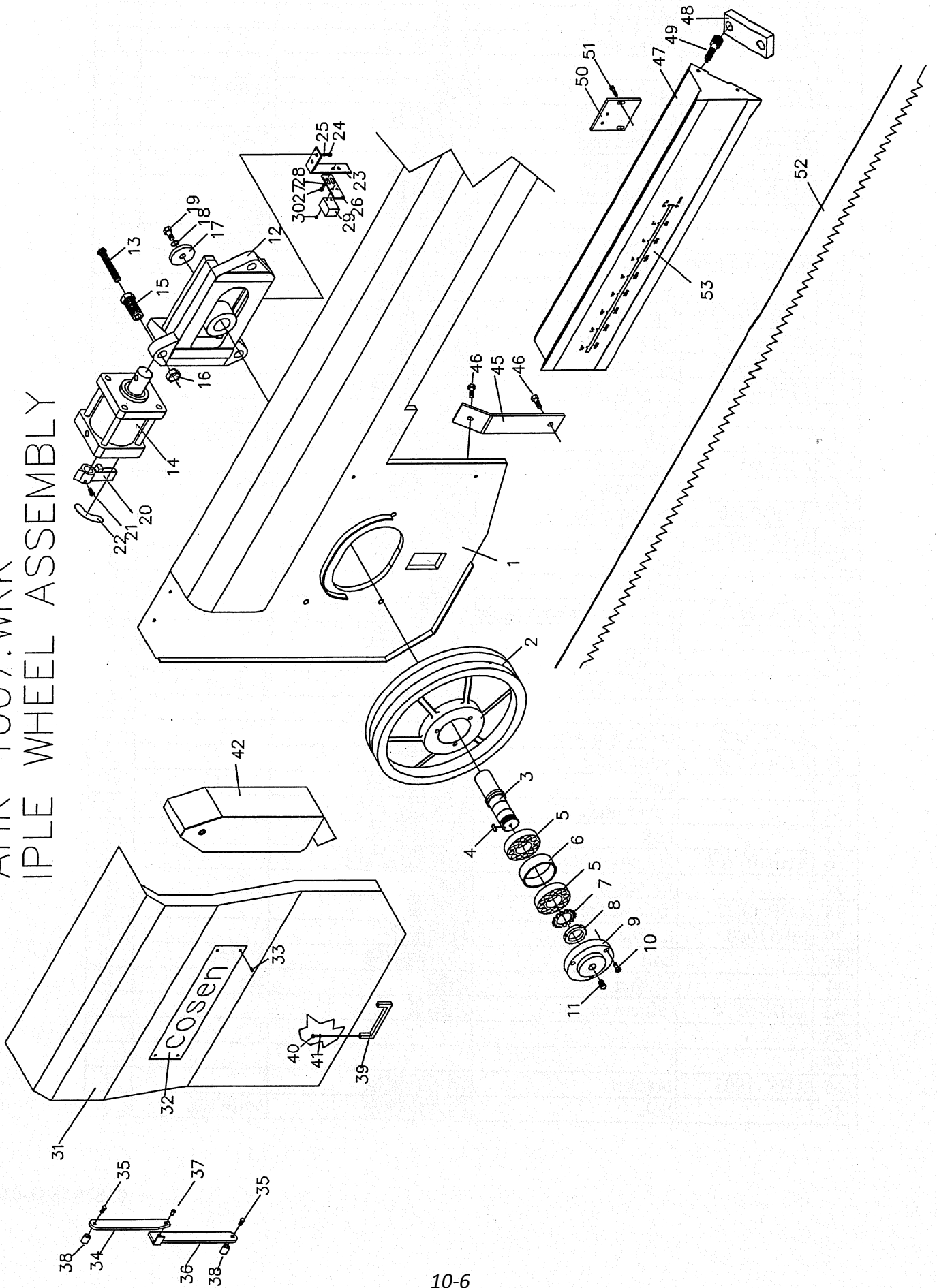




### AHK-1005.WRK BED ASSEMBLY

NO	PART NO.	PARTNAME	PARTNAMEIN CHINESE	RART SPEC.	QTY
1		vise bed	床身		1
2	AHB-0202	taper pin	銷螺絲		4
3		blade gange sheet	鋸帶線鋼板		1
4		bolt	內六角螺絲		1
5		bolt	內六角螺絲		2
6	S5542-2003	slide plate	鋼板		2
7		bolt	內六角螺絲		12
8	SGG-1003W	front fixed vise jaw	前固定虎鉗(二)		1
9		bolt	內六角螺絲		4
10	SGG-1004W	front fixed vise jaw	前固定虎鉗(一)		1
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13					
14	SGG-1005W	front movable vise jaw	前活動虎鉗		1
15					
16					
17	SGG-10090	auxiliary plate	虎鉗輔助板		1
18		bolt	內六角螺絲		2
19	S5542-23000	vise cylinder	虎鉗油缸組		1
20	PBA-16-35	bolt	內六角螺絲		2
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# AHK-1007.WRK IPLE WHEEL ASSEMBLY



AHK-1007.WRK IDLE WHEEL ASSEMBLY

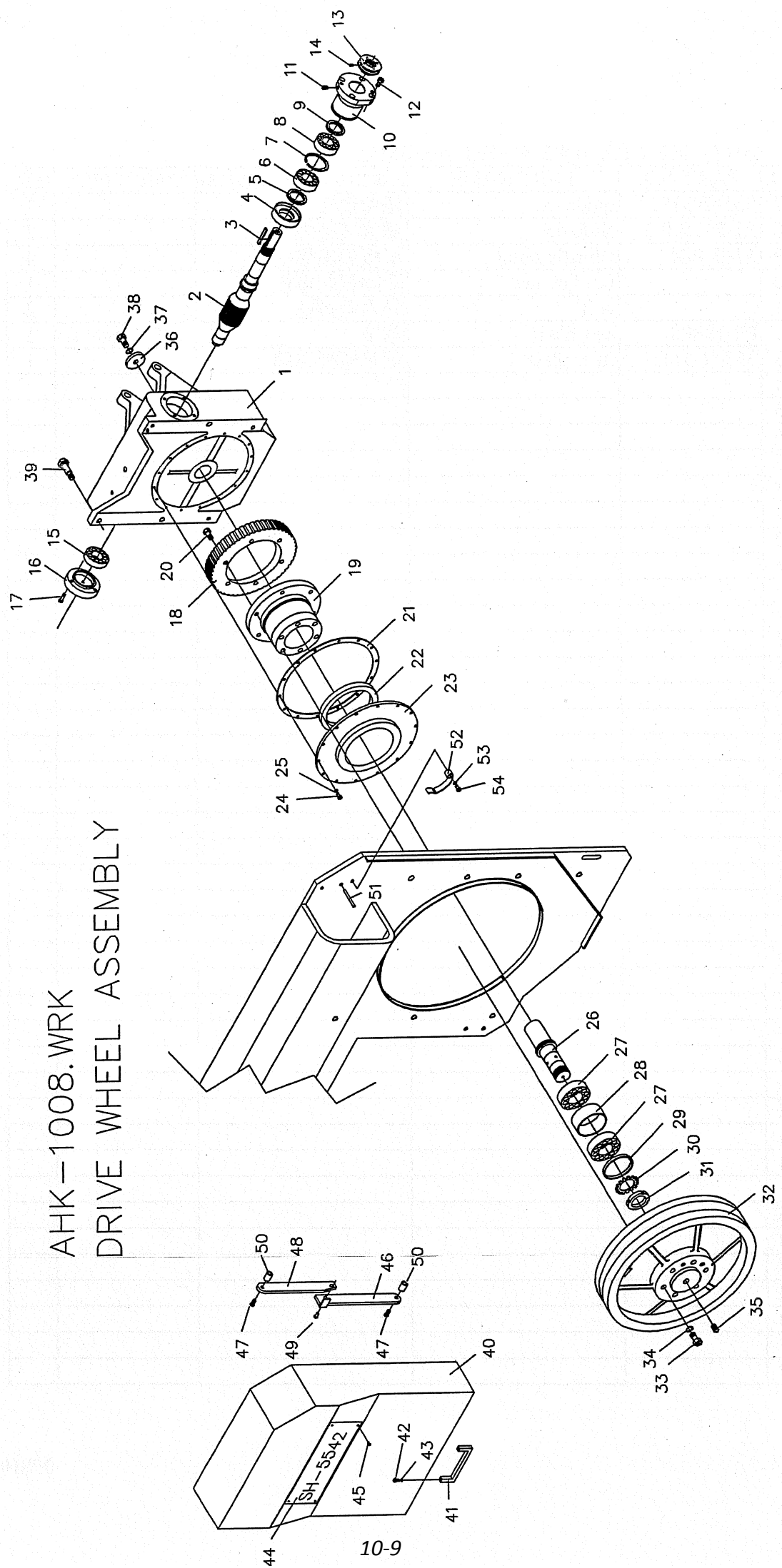
NO.	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	Q'TY
1	S5542-3001	housing yoke	鋸弓		1
2	AGB-70328C	idle wheel	上輪		1
3	AGB-70329	wheel shaft	上輪軸		1
4		key	方鍵		1
5	PP-14694	bearing	軸承	32209V	2
6		bearing collar	軸承墊圈		1
7	PP-14959	toothed ring	止動環	AW09	1
8	PP-14909	toothed nut	固定螺母	AN09	1
9	AGB-70331	bearing cap	上輪軸蓋		1
10		bolt	內六角螺絲	M8*25L	3
11		grease nipple	油嘴	PT 1/16	1
12	AGB-703500B	tension ass'y	張力滑座滑板組		1
13		bolt	內六角螺絲	M12*70L	3
14	AGB-707210	tension cylinder	張力油壓缸組		1
15	AHA-0610	adjusting bolt	調整螺絲		3
16	AHA-0611	adjusting nut	調整螺母		3
17	AHB-0613	lock washer	上輪鎖緊墊圈		1
18		washer	墊圈	M16	1
19		bolt	內六角螺絲	M16*50L	1
20	AHB-0653	valve lever	切換把手		1
21		set screw	止付螺絲	M6*6L	2
22	AHB-0660	legend plate	銘牌		1
23	AHA-0670A	bracket	感應器底板座		1
24		bolt	內六角螺絲		2
25		washer	墊圈		2
26	AHA-0672	proximity switch mounting plate	感應器底板		1
27		bolt	內六角螺絲		2
28		washer	墊圈		2
29		limit switch	限動開關	ZCK-M	1
30		bolt	內六角螺絲		2
31	AHE-3002	housing cover	左箱蓋		1
32	AHA-0666	name plate	公司銘牌		1
33		bolt	內六角螺絲	M5*3L	4
34		cover bracket	箱蓋定位板(二)		1
35		bolt	內六角螺絲		2
36	AHB-0726B	left cover bracket	左箱蓋定位板		1
37		fix screw	鉚釘	φ 6	1
38	AHB-0822	lock washer	固定圈		2
39	PP-52080	handle	輪箱把手		1
40		bolt	內六角螺絲	M5*8L	2
41		washer	墊圈	M5	2
42	AHN-1504	left cover	左護蓋		1
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45	AHK-1903	bracket	鋸弓固定板		1
46		bolt	內六角螺絲	M10*12L	2

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AHK-1007.WRK IDLE WHEEL ASSEMBLY

NO.	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	Q'TY
47	S5542-3101	guide bar	鋸臂滑板		1
48	AHP-1509-2	slide tip	鋸臂滑板固定塊		2
49	AHB-0842	adjusting bolt	滑板調整螺絲		4
50		L.S bracket	限動開關擋板		1
51		bolt	內六角螺絲	M6*15L	2
52	PP-18308	saw blade	鋸帶	HS 5300*41*1.3	1
53	S5542-3111	ruler plate	鋸臂滑板銘牌		1
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# AHK-1008.WRK DRIVE WHEEL ASSEMBLY



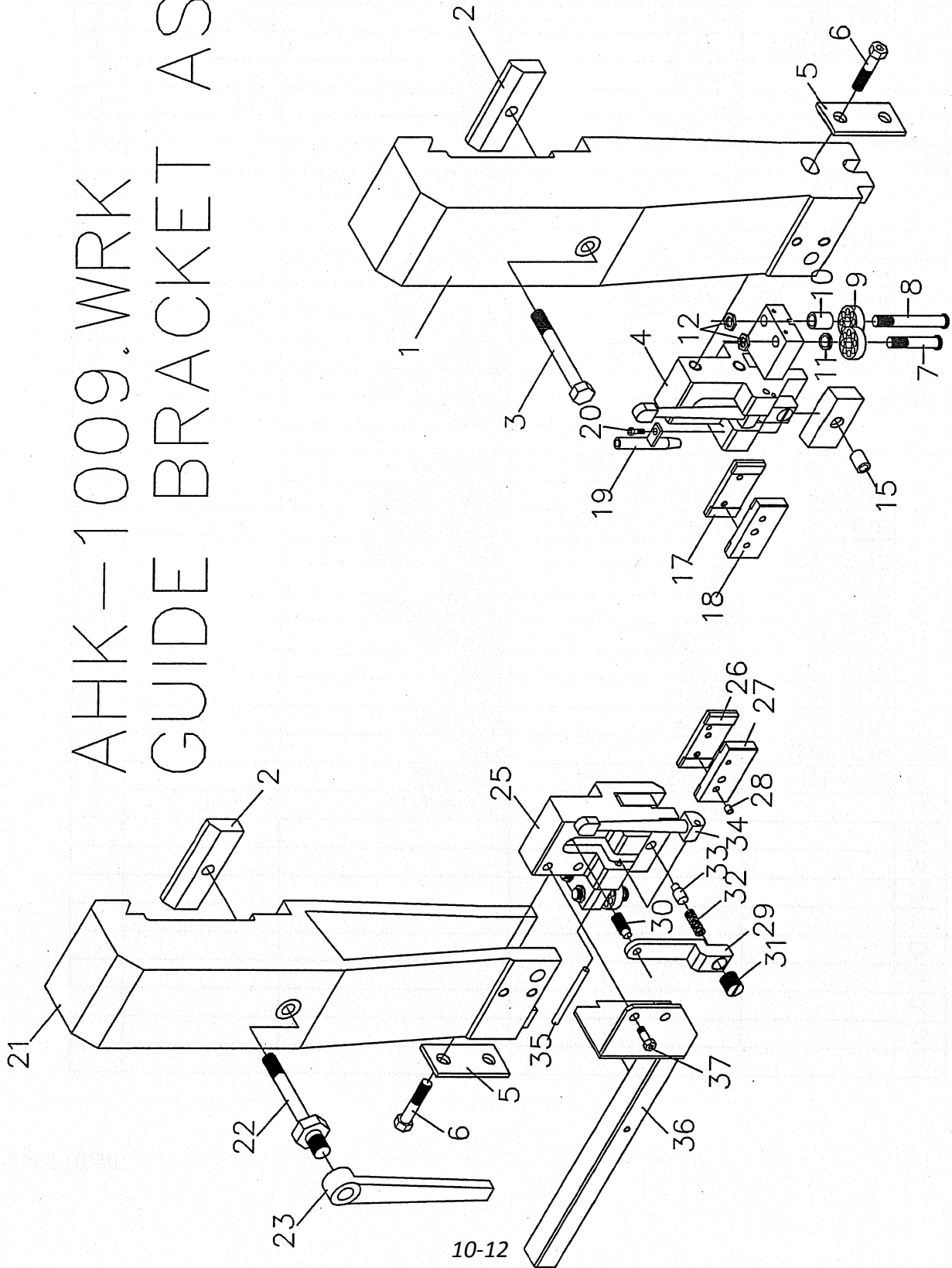
## AHK-1008.WRK DRIVE WHEEL ASSEMBLY

NO.	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	QTY
1	SGA-2054	hinge bracket	減速機本體		1
2	AGB-70311	worm	蝸桿		1
3		key	方鍵	5*10*50L	1
4	SGA-2060	bearing support	油封座		1
5	PP-51105	oil seal	油封	50*69*9	1
6	PP-14654	taoer roller bearing	軸承	30308	1
7	PP-58116	snap ring	扣環	R80	1
8	PP-14693	taoer roller bearing	滾錐軸承	32208	1
9	PP-51101	oil seal	油封	48*65*9	1
10	AGB-70338	bracket	軸承座		1
11		grease nipple	油嘴	1/4-28UNF	1
12		bolt	內六角螺絲	M8*30L	4
13	SGA-2061	wire brush pulley	鋼刷普利		1
14		set screw	止付螺絲	M5*8L	1
15	PP-14131	bearing	軸承	6206Z	1
16	SGA-2058	worm cap	蝸桿蓋		1
17		bolt	內六角螺絲	M6*25L	3
18	AGB-70310	worm wheel	蝸輪		1
19	AGB-70312	housing	蝸輪固定座		1
20		bolt	內六角螺絲	M10*35L	6
21	AGB-70395	washer	迫緊墊圈		1
22	PP-51125	oil seal	油封	170*200*16	1
23	SGA-2067	fixed ring	油封固定盤		1
24		bolt	內六角螺絲	M6*20L	12
25		washer	華司	M6	12
26	AGB-70309	wheel shaft	下輪軸		1
27	PP-14619	taoer roller bearing	軸承	30211	2
28	AGB-70313	bistance collar	下輪軸承墊圈		1
29	AGB-70314	bistance collar	下輪軸承墊圈(二)		1
30	PP-14961	toothed washer	止動環	AW11	1
31	PP-14911	toothed nut	固定螺母	AN11	1
32	AGB-70315C	drive wheel	下輪		1
33		bolt	內六角螺絲	M12*50L	6
34		wahser	墊圈	M12*50L	1
35		grease nipple	油嘴	PT 1/16	1
36	SGA-2063	lock collar	下輪軸鎖緊墊圈		1
37		washer	華司	M16	1
38		bolt	內六角螺絲	M16*45L	1
39		bolt	內六角螺絲	M12*40L	1
40	AHE-3003	housing cover	右箱蓋		1
41	PP-52080	handle	輪箱把手		1
42		bolt	內六角螺絲	M5*8L	2
43		washer	墊圈	M5	2
44	S5542-3097	modle plate	機型銘牌		1
45		bolt	內六角螺絲	M5*3L	4
46	AHB-0726A	right cover bracket	右箱蓋定位板		1

AHK-1008.WRK DRIVE WHEEL ASSEMBLY

NO.	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	QTY
47		bolt	內六角螺絲		2
48		cover bracket	箱蓋定位板(二)		1
49		fix screw	鉚釘	φ 6	1
50	AHB-0822	lock washer	固定圈		2
51		spring pin	彈簧銷	φ 5*60L	1
52	AHA-0414	plate	鋸片安裝輔助板		1
53		washer	墊圈	M6	1
54		bolt	內六角螺絲	M6*60L	1
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# AHK-1009.WRK GUIDE BRACKET ASSEMBLY

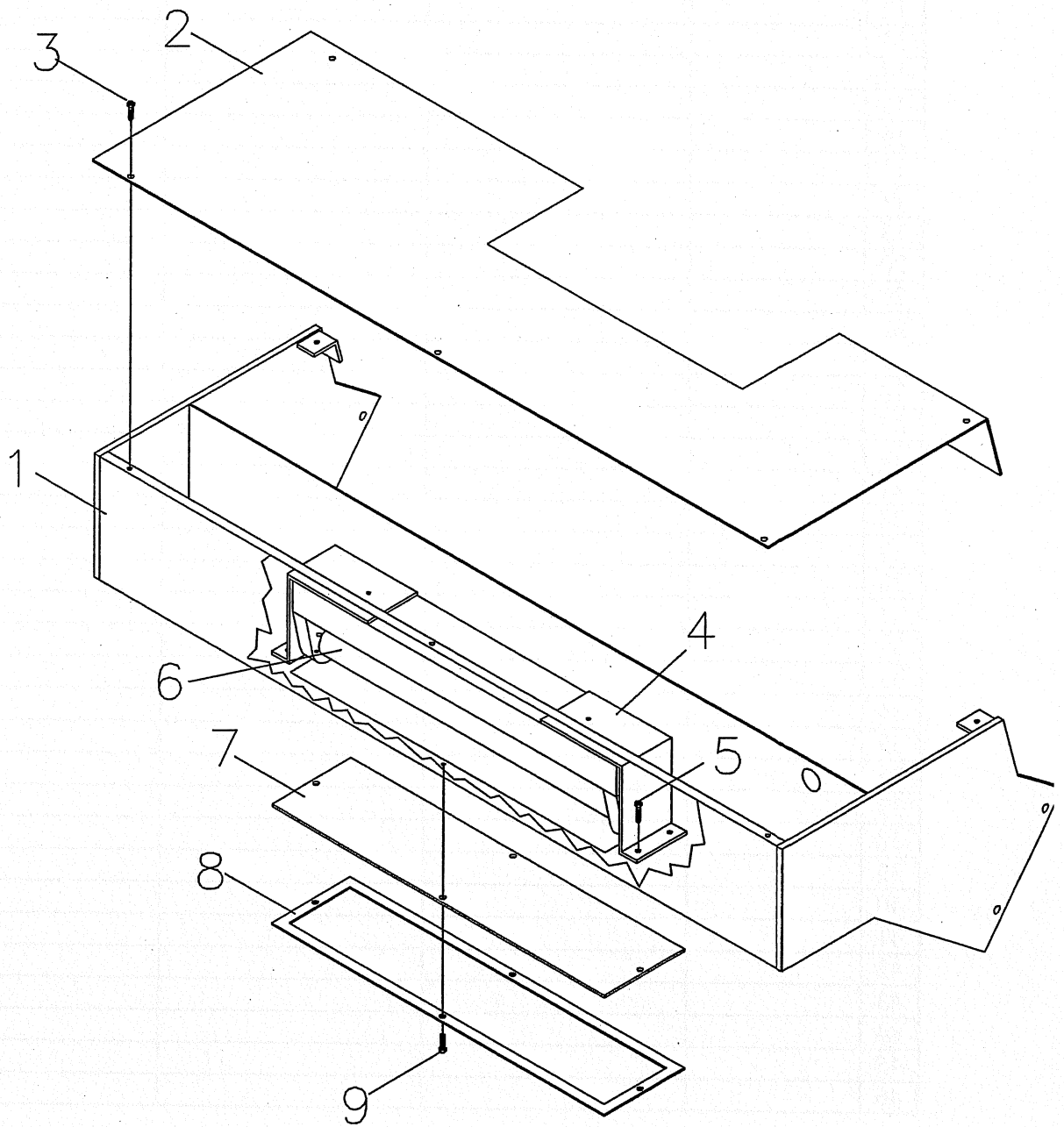




AHK-1009.WRK GUIDE BRACKET ASSEMBLY

NO.	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	QTY
1	AHE-3005	right guide bracket	右鋸臂		1
2	AHN-3842	slide tip	鋸臂固定塊		2
3		bolt	鎖螺絲		1
4	AHK-3843A	right insert holder	右導輪座		1
5	AHA-0719	plain washer	導輪座墊板		2
6		bolt	內六角螺絲	M12*45L	4
7	AHA-0714	roller pin	導輪軸(二)		2
8	AHA-0707A	roller pin	導輪軸(一)		2
9	PP-14105	bearing	軸承	6000ZZ	8
10	AHA-0708A	washer	墊圈		2
11		washer	墊圈	M10	2
12		nut	螺帽	M10	4
13	AHA-0704A	bearing holder	下壓座		2
14					
15	AHB-0822	lock washer	下壓固定塊定位圈		2
16					
17	AHB-0836	right fixed insert	右固定鎢鋼片		1
18	AHB-0837	right movable insert	右活動鎢鋼片		1
19	AGB-70425B	coolant nozzle	冷卻水噴嘴		1
20		bolt	內六角螺絲	M5*6L	1
21	AHE-3004	left guide bracket	左鋸臂		1
22		lock bolt	鋸臂鎖緊螺栓		1
23	PP-52111	guide arm handle	鋸臂把手		1
24					
25	AHK-3803A	left insert holder	左導輪座		1
26	AHB-0814	left fixed insert	左固定鎢鋼片		1
27	AHB-0816	left movable insert	左活動鎢鋼片		1
28	AHB-0818	set pin	鎢鋼片定位銷		1
29	AHN-3848	bracket	定位塊		2
30	AHN-3851	bolt	彈簧定位螺絲		2
31	AHN-3847	set screw	定位螺絲		2
32	AHA-0710	spring	彈簧		2
33	AHN-3845	column	定位柱		2
34	AHN-3850	handle	拖力把手		2
35	AHN-3849	shaft	心軸		2
36	AHN-1501	saw blade cover	鋸片護蓋		1
37		bolt	內六角螺絲	M8*10L	2
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# AHK-1010.WRK LIGHT BOX

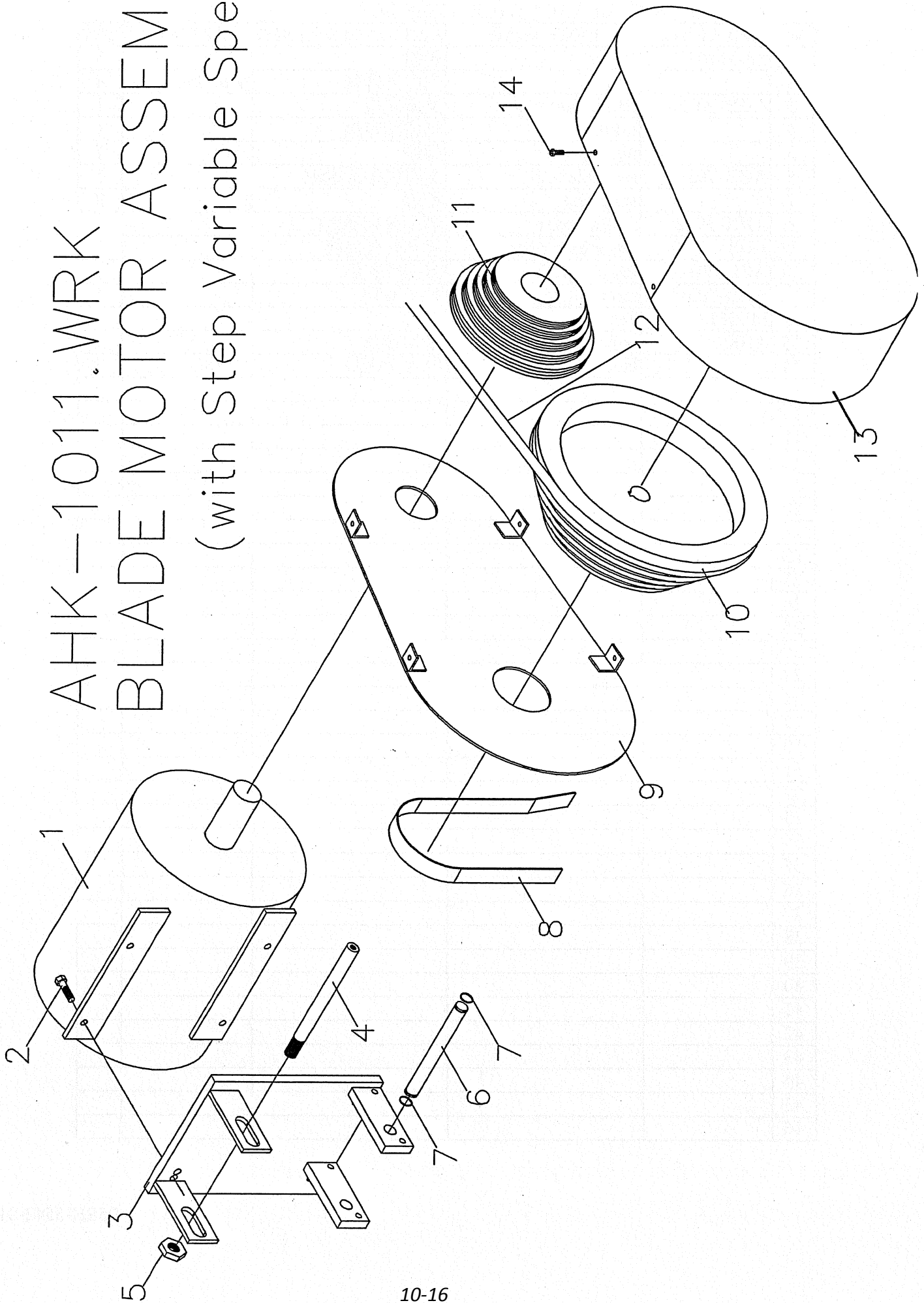


AHK-1010.WRK LIGHT BOX & QUICK APPROACHDEVICE ASSEMBLY

NO.	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	QTY
1	S5542-3113	lamp box	照明箱體		1
2	S5542-3115	lamp cover	照明箱蓋		1
3		bolt	內六角螺絲	M4*6L	5
4	AHB-1102-NC	lamp bracket	照明燈固定座		2
5		bolt	內六角螺絲	M4*6L	4
6	PP-90602C	lamp	防水燈	110V	1
7	AGB-70345-NC	lamp cover	燈罩		1
8	AGB-70346-NC	lamp cover	燈罩護板		1
9		bolt	內六角螺絲	M3*8L	4
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# AHK-1011.WRK BLADE MOTOR ASSEMBLY

(with Step Variable Speed)

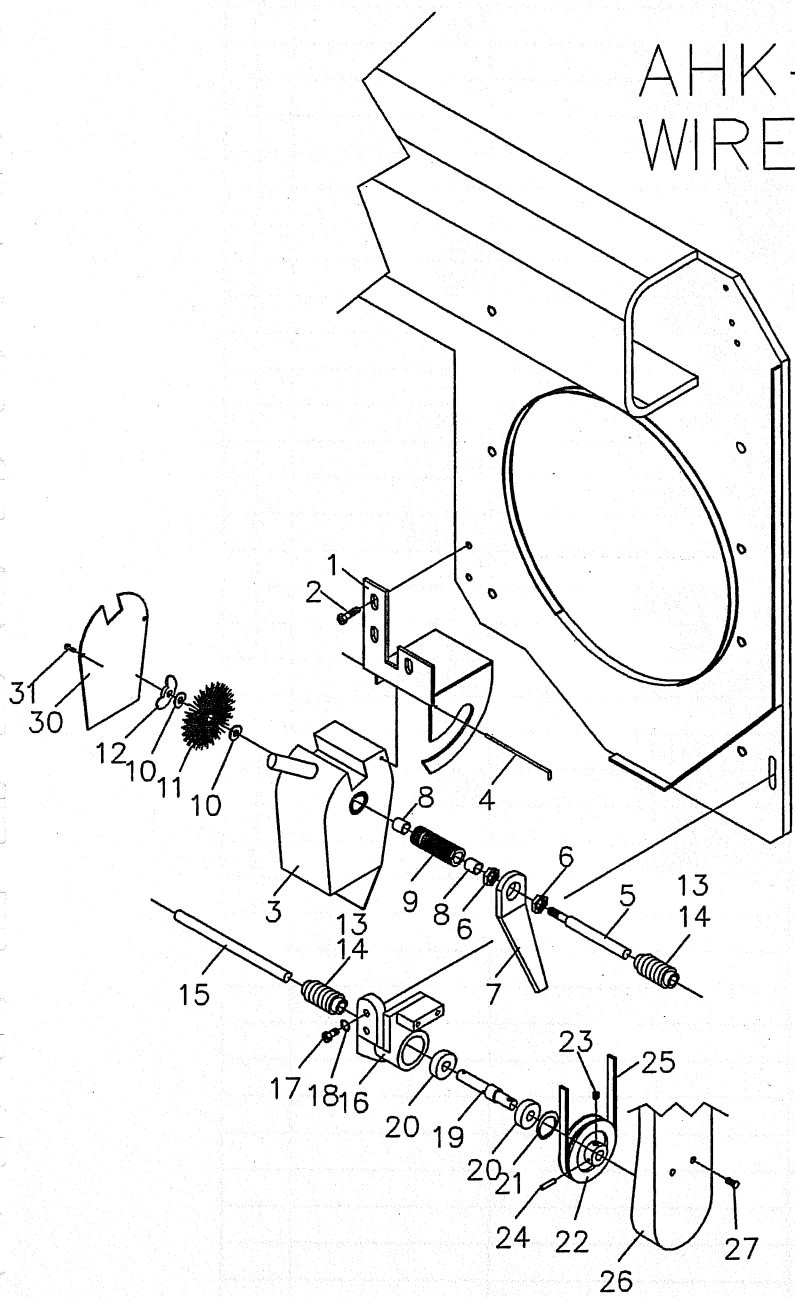


AHK-1011.WRK BLADE MOTOR ASSEMBLY

NO.	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	QTY
1	PP-31151	motor	馬達	7.5HP	1
2		bolt	內六角螺絲	M10*25L	4
3	AGB-70339	motor base plate	馬達底板		1
4		set pipe	馬達固定軸		1
5		nut	螺帽	M12	1
6	AGB-70340	movable bar	馬達底板活動軸		1
7		snap ring	扣環	S17	2
8	AHN-3902	pulley cover	鋼刷普利護蓋(二)		1
9	AHK-3634	cover base plate	普利護蓋底板		1
10	AGB-70346	reducer pulley	減速機普利		1
11	AGB-70345	motor pulley	馬達普利		1
12	PP-56173	belt	皮帶	A51	1
13	AHK-3634	pulley cover	普利護蓋		1
14		bolt	內六角螺絲	M6*6L	4
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# AHK-1012.WRK WIRE BRUSH ASSEMBLY



AHK-1012.WRK WIRE BRUSH ASSEMBLY

NO.	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	Q'TY
1	S5542-3239	brush cover movable pl	鋼刷護蓋活動板		1
2		bolt	內六角螺絲		2
3	AHB-0523B	brush cover	鋼刷護蓋		1
4	AHB-0530	brush cover movable sh	鋼刷護蓋活動軸		1
5	AHN-3904	brush shaft	鋼刷軸		1
6		nut	螺帽	M22	2
7	AHB-0528	brush adjusting rod	鋼刷調整桿		1
8	PP-13025	du bushing	乾式軸承	1215	2
9	AHB-0524	brush support	鋼刷軸套		1
10		washer	墊圈	M8	2
11	PP-58002	brush	鋼刷		1
12		nut	螺帽	M8	1
13	PP-15010	universal joint	萬向接頭	12M/M	2
14	PP-15012	dust seal	萬向接頭防塵		2
15	AHN-3903A	tie shaft	連接軸		1
16	AHA-1211	bearing holder	軸承座		1
17		bolt	內六角螺絲	M8*30L	2
18		washer	墊圈	M8	2
19	AHA-1207	pulley shaft	皮帶輪軸		1
20	PP-14272	bearing	軸承	6201V	2
21	PP-58109	snap ring	扣環	R32	1
22	AHA-1202	brush pulley	鋼刷皮帶輪		1
23		set screw	止付螺絲	M6*8L	1
24		spring pin	彈簧銷	φ 3*26L	1
25	PP-56514	belt	皮帶	M43	1
26	AHN-3902	brush pulley cover	鋼刷普利護蓋		1
27		bolt	內六角螺絲	M6*5L	2
28		brush cover	鋼刷遮板		1
29		bolt	內六角螺絲	M4*4L	2
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# Warranty

## Warranty

New machines are warranted to be free from defects in workmanship and material for a period of one (1) year from the date of shipment by Seller. The warranty period is based on normal usage of two thousand eighty hours (2080) per year and is reduced proportionately for any excess usage. Products, which under normal operating conditions in Buyer's plant are defective in workmanship or material, will be repaired or replaced at the option of Seller.

This warranty does not cover shipping freight charges for either the return of the defective part or for the shipping of the replacement or repaired part.

Seller will have no obligation to repair or replace perishable parts, or materials or parts damaged by misuse, negligence or failure of Buyer to provide appropriate maintenance and service as stated in the operator's manual or industry standard and normally acceptable practices.

This warranty does not apply if the machine has been altered or modified without our prior written consent.

In the case of components or units purchased by Seller including work holding devices, tool holders, motors and controls, the warranty shall not exceed that received by Seller from the supplier of such components or units.

Seller will not assume responsibility for products or components returned to Seller without prior consent or for unauthorized repairs to its products, even though defective.

**Electrical Equipment:** The warranty available for all electrical components to the Buyer will be voided if the voltage supplied to the machine is found to be outside the stated voltage of the machine by +/- 10% and/or grounded at machine.

**Accessories Supplied with Manufacturer's Equipment:** The warranties available to the Buyer are those extended by the accessory manufacturer, if any, to the extent they are in force and effect. The ACCESSORY MANUFACTURER'S WARRANTY, if any, is exclusive and is in lieu of all other warranties whether written, oral or implied.







Vertical Plate Saws  
Horizontal Billet Saws  
NC/CNC Band Saws  
Structural Miter-Cutting Saws  
Automatic Band Saws  
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