COSEN SAWS

SH-3026L

Semi-Automatic Horizontal Bandsaw

(Non-CE Model)

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-3026L**
Semi-Automatic Horizontal Bandsaw
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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.

Table of Contents

Table of Contents

Table of Contents

Section 1

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

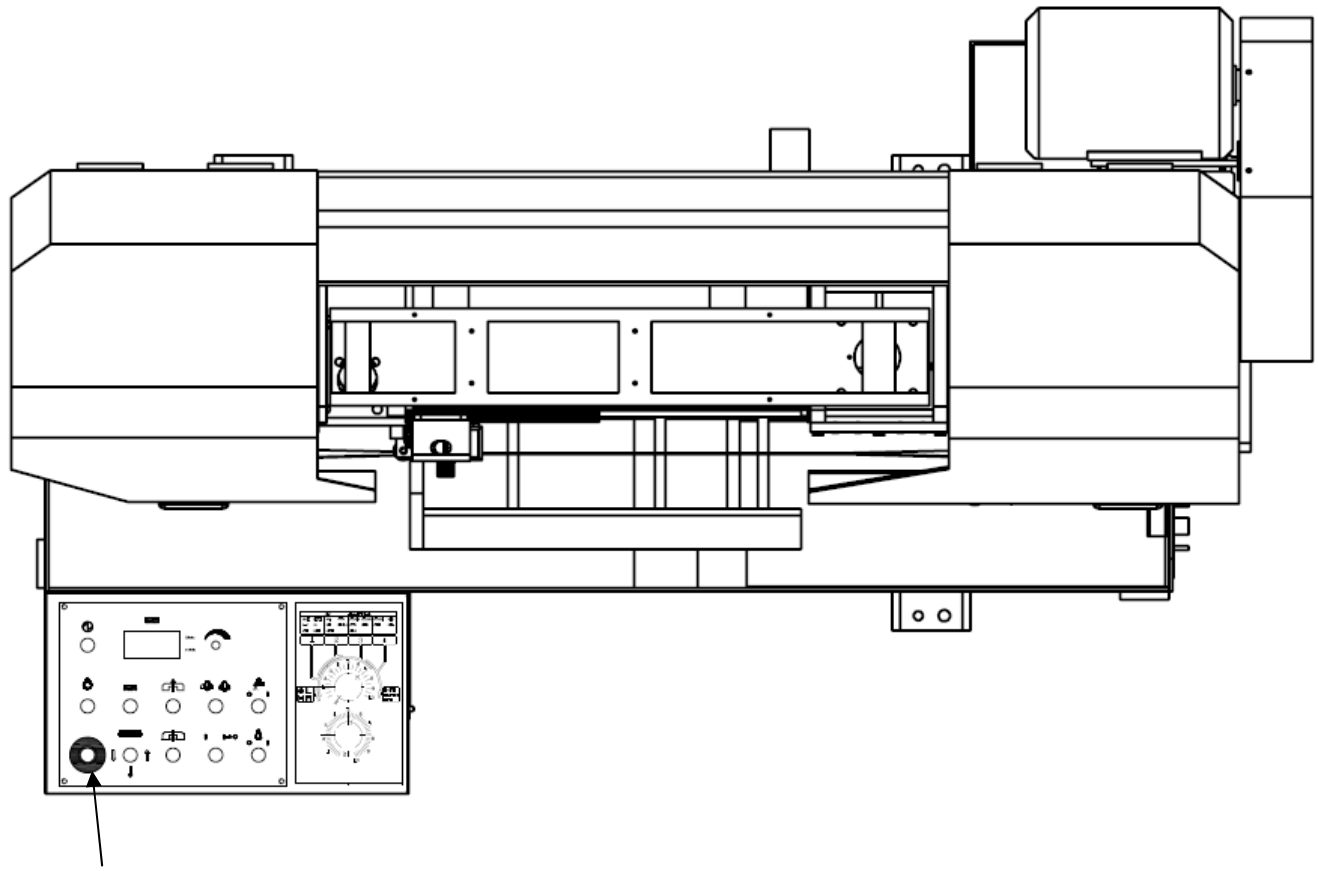
Designed to be easily accessible, the emergency stop button is located on the left bottom corner on the control panel and is made in red color and rubber material. For CE models, supplementary emergency stop button may be available at other area(s) of the machine depending on machine type. Please refer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



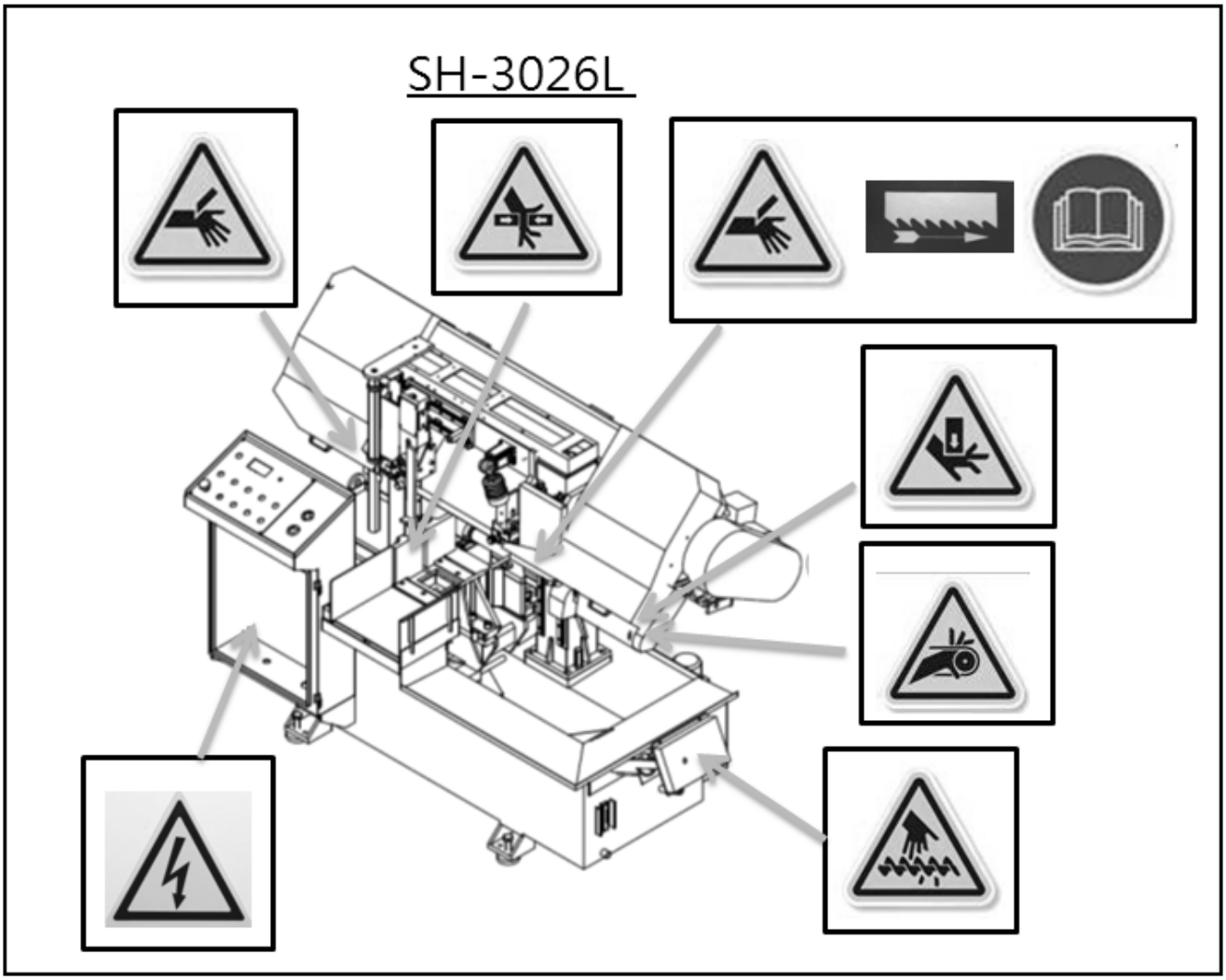
Emergency Stop Button

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).

Section 2

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 compoment has passed strict testing (Council Directive on the approximation of the laws of the Member States relating to Machinery).
- The machine will shut off automatically when the saw blade is broken, protecting both the operator and the machine.

Convenience & High-Performance

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

Durability

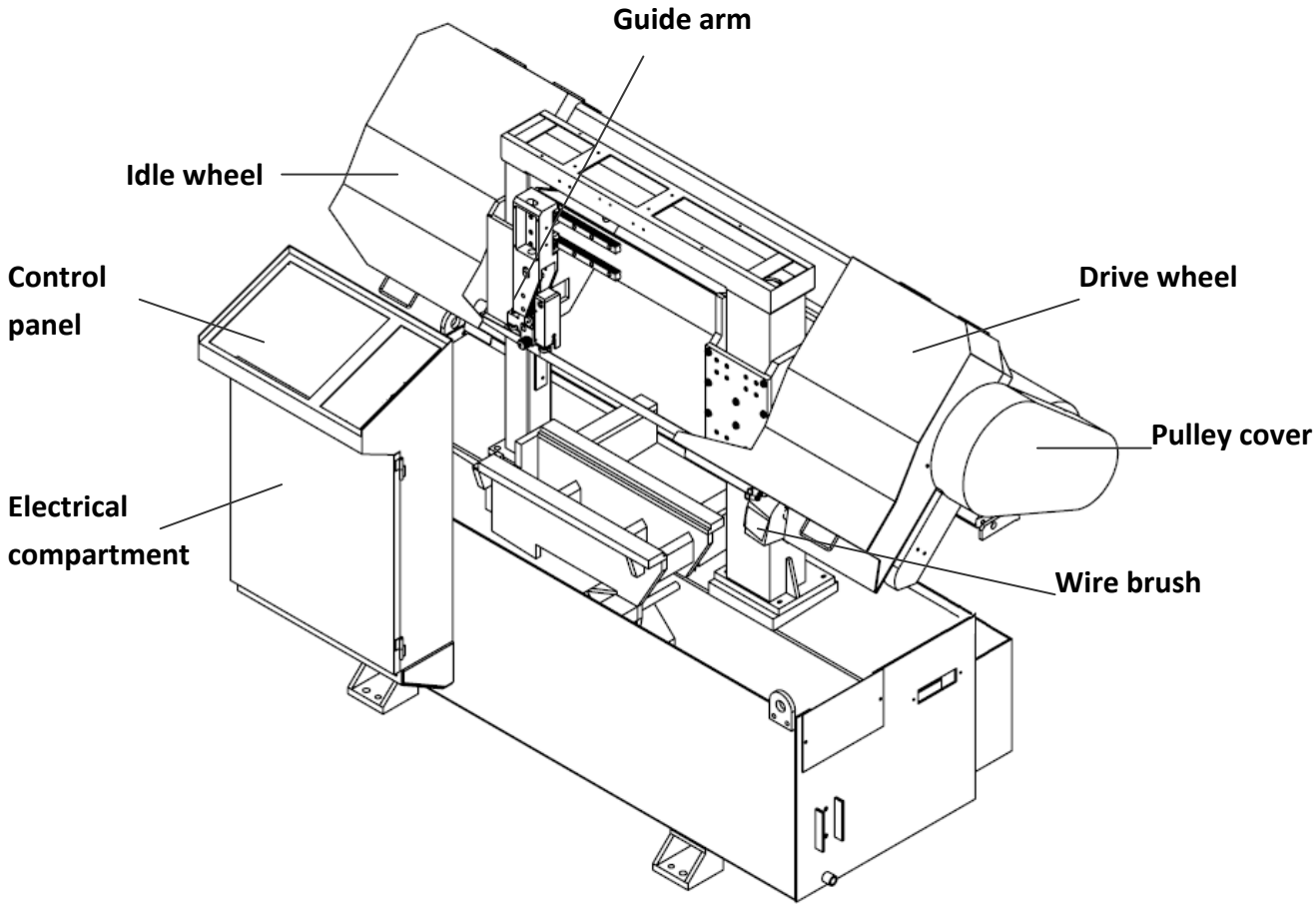
- The intended life-span of the machine is counted based on regular daily operation. It is calculated with the life expectancy of 10 years under normal operating condition and exact attention to the maintenance schedule.

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

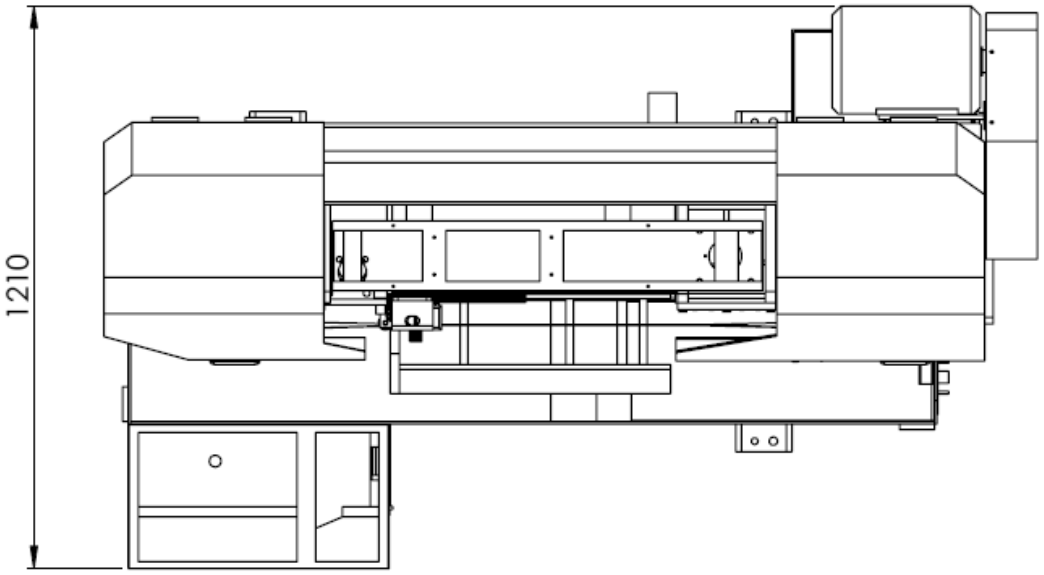
SPECIFICATION

Model		SH-3026L Semi-Automatic Horizontal Bandsaw
Capacity	Round	260 mm (10.2 in)
	Square	260 mm (10.2 in)
	Rectangular (H x W)	260 x 300 mm (10.2 x 11.8 in)
	Bundle Cutting	W: 190 ~ 300 mm (7.5 ~ 11.8 in) H: 70 ~ 140 mm (2.8 ~ 5.5 in)
Saw Blade	Speed	15~80 m/min (49~262 fpm)
	Size	4,100 x 34 x 1.1 mm (161 x 1.3 x 0.04 in)
	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	5 HP (3.75 kW)
	Hydraulic	1 HP (0.75 kW)
	Coolant Pump	1/8 HP (0.1 kW)
Tank Capacity	Hydraulic	25 L (6.6 gal)
	Coolant	40 L (10.57 gal)
Workbed Height		790 mm (31.1 in)
Net Weight		1,130 kg (2,500 lb)
Floor Space (W x D x H)		2,000 x 1,210 x 1,565 mm (78 x 47 x 61 in)
Operating Environment	Temperature	5~40˚C (41~104˚F)
	Humidity	30%~95% (without condensation)

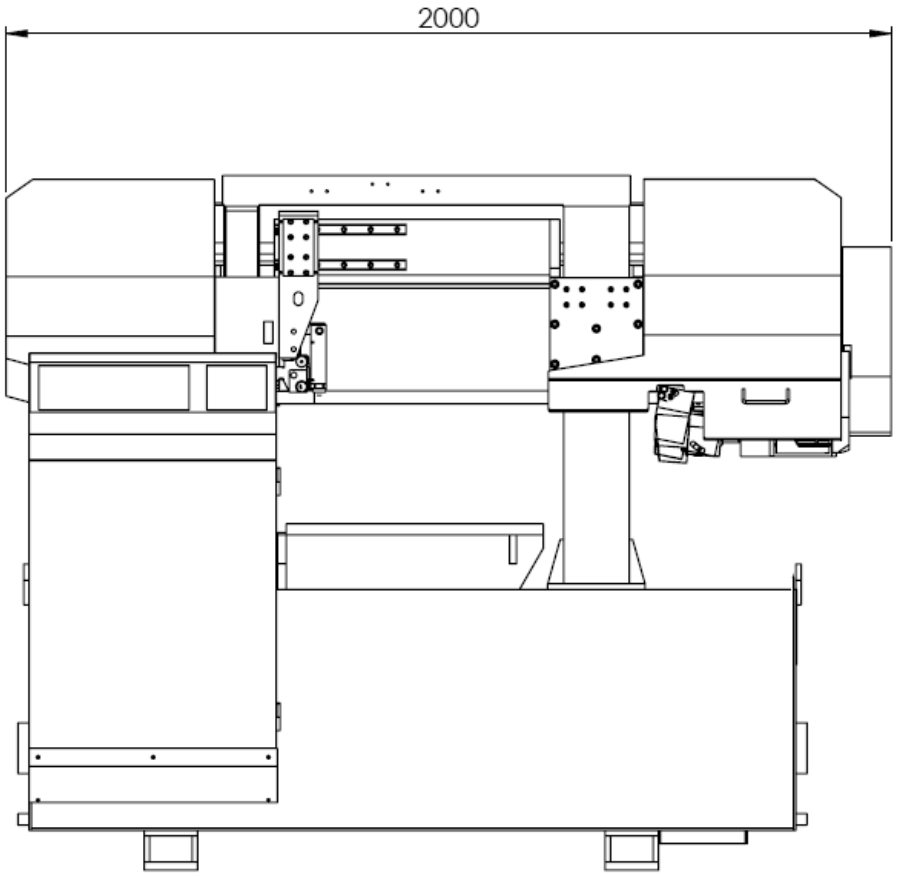
MACHINE PARTS IDENTIFICATION



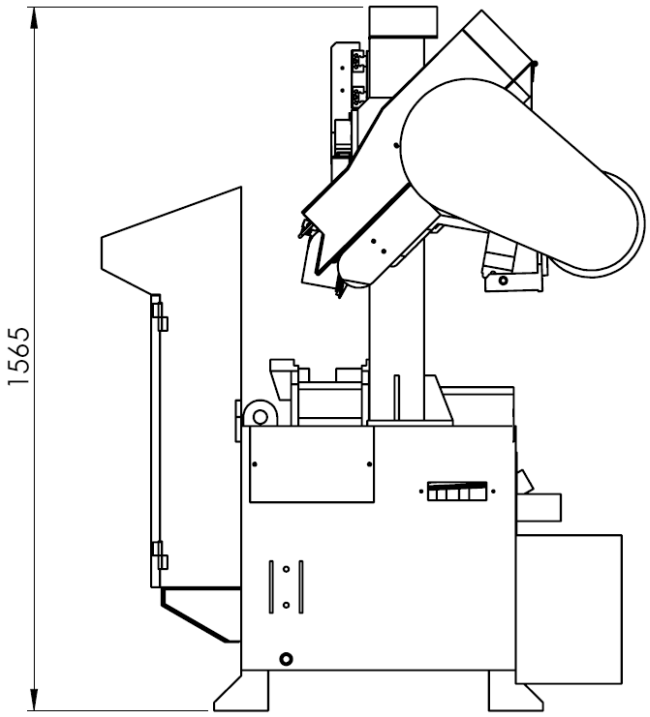
FLOOR PLAN



Machine top view



Machine front view



Machine front view

MOVING & INSTALLATION

LOCATION & ENVIRONMENT

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

Space:

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

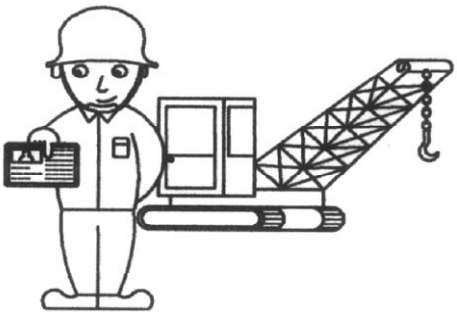
When moving the machine, we strongly suggest you choose any one of the methods described below to move your machine.

1. Use a crane

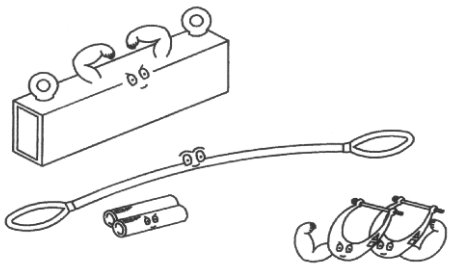
Move the machine to its location by using a crane and a wire rope sling that can fully withstand the weight of the machine (refer to machine specification under Section 2 *General Information*).

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

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



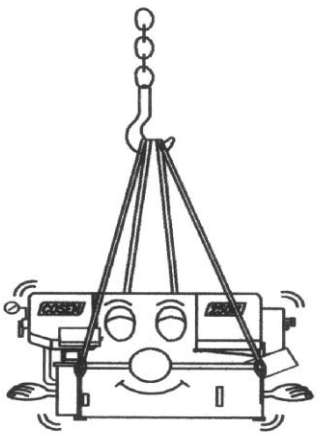
- You must use tools and equipment with the proper tensile strength and use proper method when moving your machine.



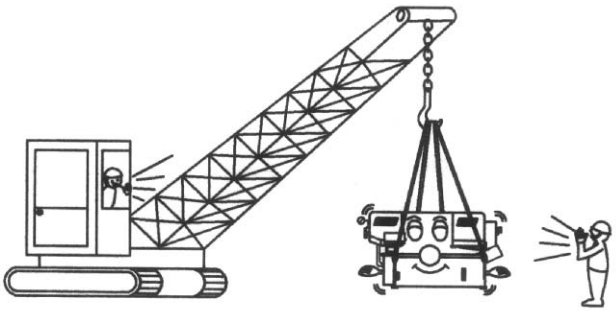
- Apply the wire rope sling to the lifting hooks on the four ends of the machine. Refer to *Illustration: Lifting Points* for exact locations.

- 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

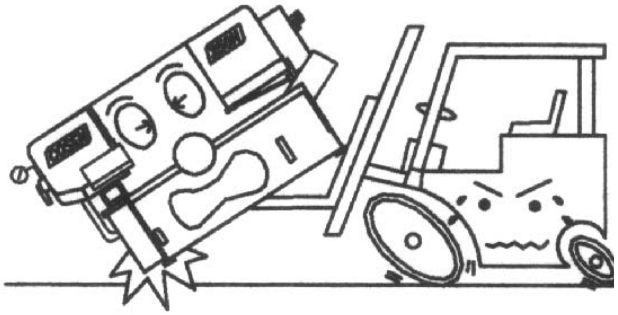
Most users choose this method to move their machine because it is easy to set up. Make sure that the lifting rod can fully withstand the weight of the machine. (Refer to *Section 2 – General Information for Specifications)*

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

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

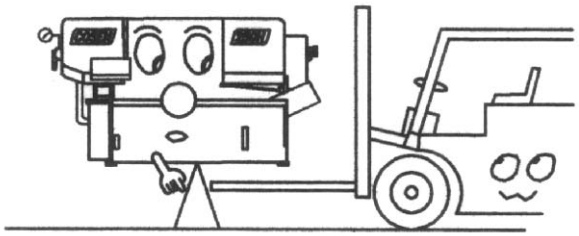
- You must apply proper forklift technique to avoid damage to the machine.

  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.

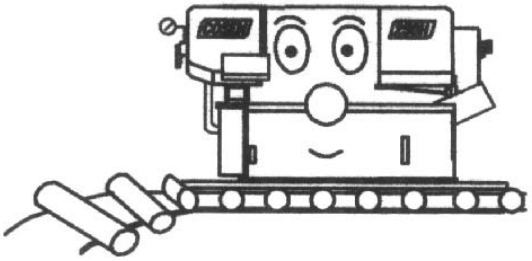
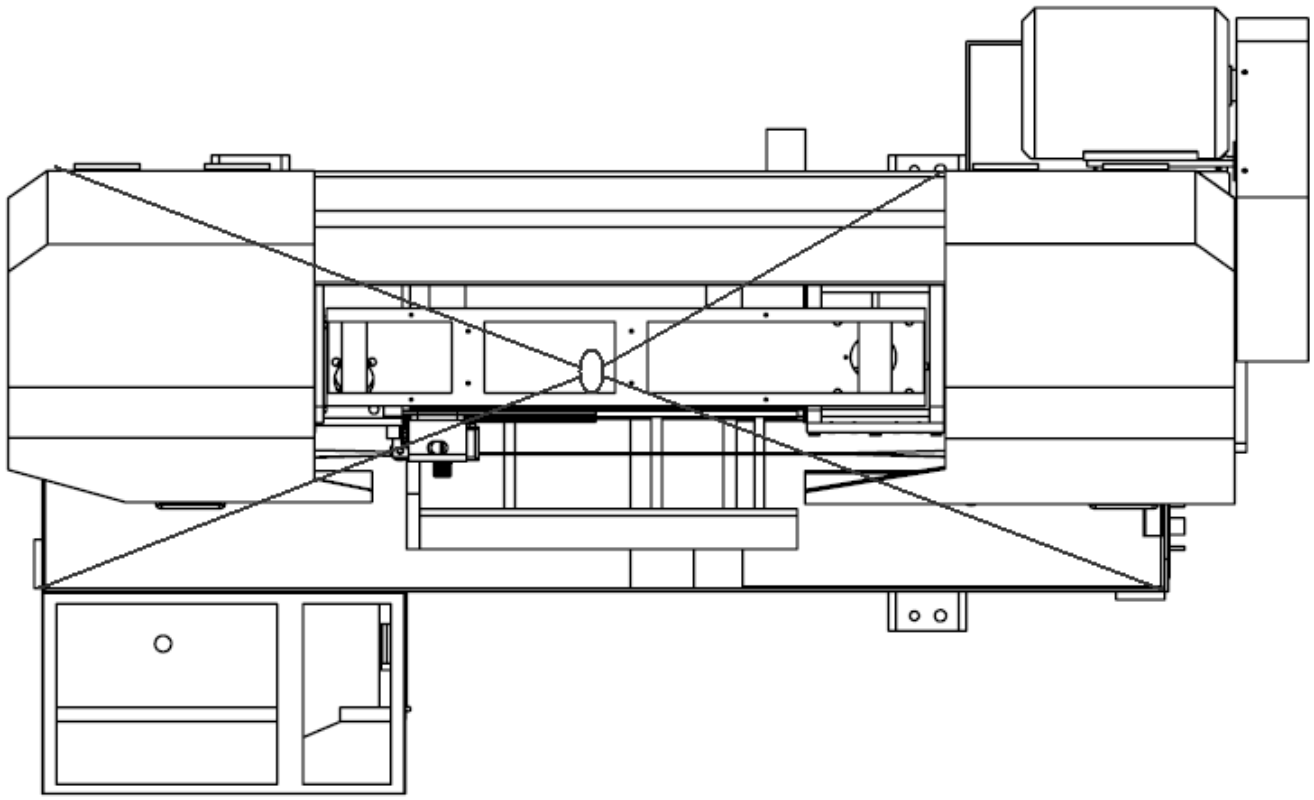


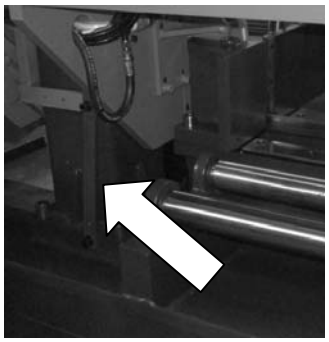
Illustration: Lifting Points



Minimum weight capacity for each wire rope: **1.5 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.



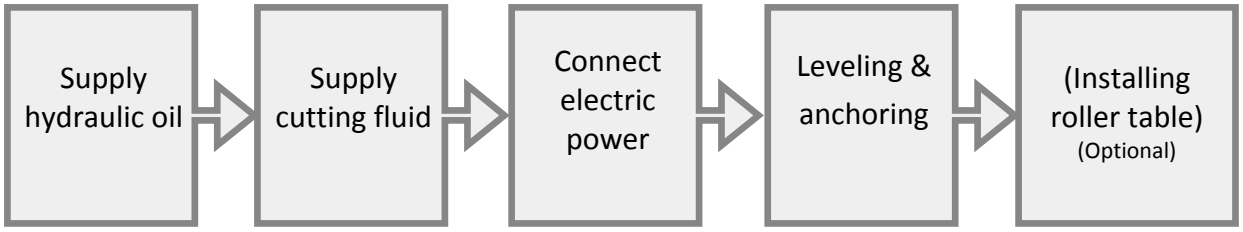
CLEANING

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.

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

Supplying coolant

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

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

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

Refer to specification chart under Section 2 *General Information* 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.

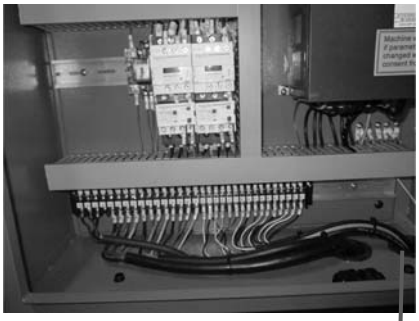
Ground the machine with an independent grounding conductor.

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.



Power Supply Inlet

<u>Leveling</u>

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.

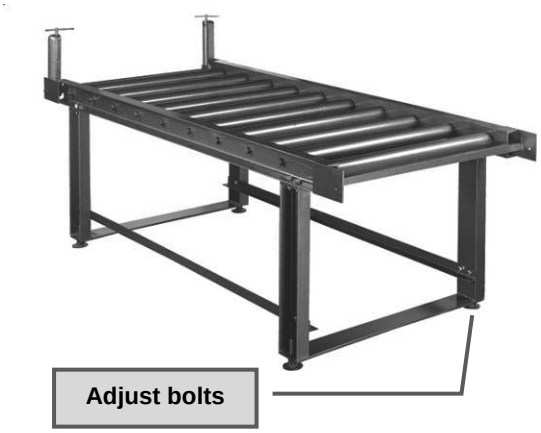
Shock absorption steel plates are provided and can be placed under each leveling bolt to prevent their sinking into the concrete floor.

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.

Section 4

OPERATING INSTRUCTION

SAFETY PRECAUTIONS

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

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

BEFORE OPERATING

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

Wet cutting

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

Cutting unknown materials

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

 Never take your eyes off the machine while in operation.

Cutting fluid

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

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

 Never use water as your coolant.

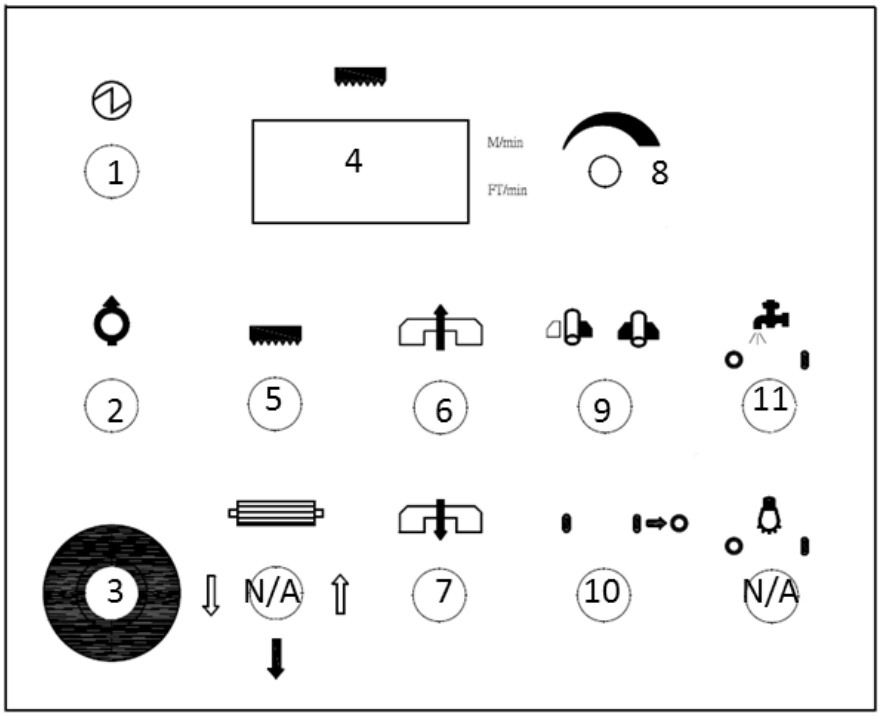
 Always add coolant into water for better mix result.

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

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

CONTROL PANEL

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 human-machine–interface (HMI). The operator must fully understand the function of each switch and button before operating the machine.



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

Control Buttons

1. Power indicator lamp

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

2. Hydraulic start button (with built-in lamp)

Press this button to start the hydraulic motor. (The button lights up when pressed.)

 To stop the hydraulic motor, press *emergency stop button*.

3. 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.

4. Blade speed indicator

Blade speed is shown here.

 Please do not adjust parameters. If there is any question regarding the indicator, please contact the local agent.

5. Saw blade start button (with built-in lamp)

Press this button to start the blade drive motor. (The button lights up when pressed.)

 If the vise is not clamped, saw blade cannot start.

 When saw blade is running, the coolant pump will start automatically.

6. Saw bow up button

When this button is pressed for more than 3 seconds, the saw bow rises automatically until the saw bow touches the upper limit switch. When this button is pressed for less than 3 seconds, the saw bow rises until the operator lets go of the button.

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

7. Saw bow down button

When this button is pressed, the saw bow descends.

8. Blade speed control knob

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

9. Vise clamp/open switch

When the switch is turned to the left, the vise opens. When the switch is turned to the right for more than 3 seconds, the vise clamps automatically until the vise is fully closed. When the switch is turned to the right for less than 3 seconds, the vise clamps until the operator lets go the switch.

10. Last cut switch

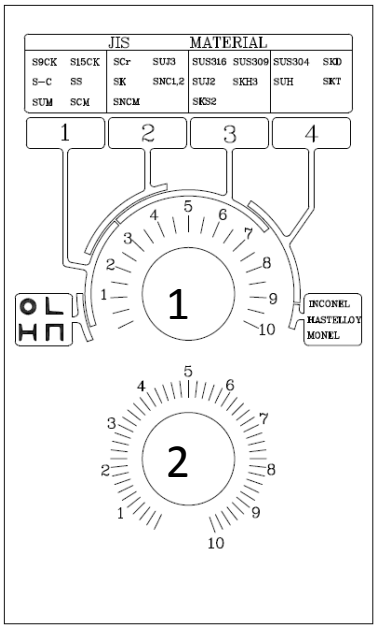
Turn the switch to the left, saw bow will stay at lower limit switch position and hydraulic motor stay on after cutting finishes. Turn the switch to the right, saw bow will rise to the upper limit switch position and hydraulic motor will automatically shut off.

11. Coolant pump on/off switch

Turn the switch to the left to turn off the coolant. Turn the switch to the right to turn on the coolant.

Blade Descend Pressure and Speed

The part of control panel is where cutting pressure and saw bow 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

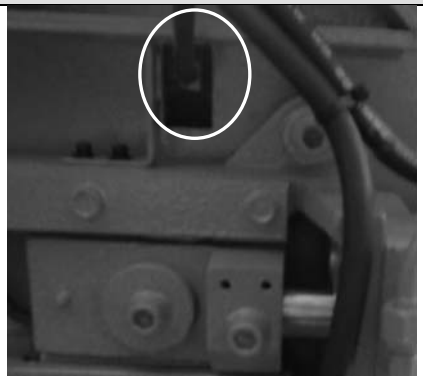
STANDARD ACCESSORIES

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.

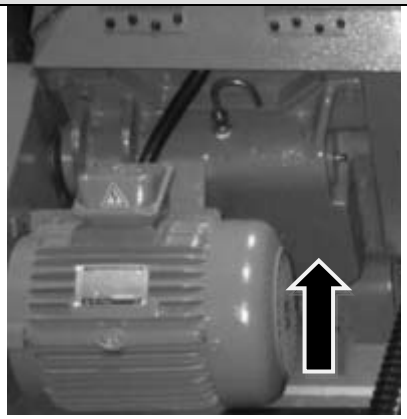
Inverter

- This inverter is installed inside the electrical compartment. It 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.

Gear reducer



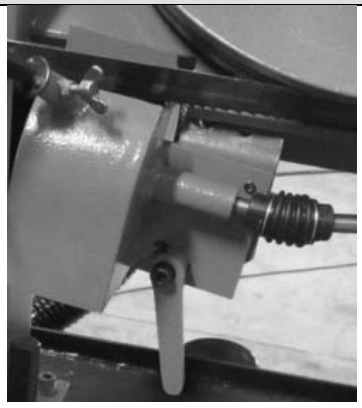
The specially designed gear reducer can work toward your preset blade speed and torque.

Please refer to Section 8 for information on maintenance.

Coolant pump

When the hydraulic system is turned on, the coolant pump can be operated individually from the control panel. Coolant can be used to wash off chips as well as providing cooling during cutting.

Wire brush assembly



The wire brush is driven by the hydraulic motor. Wire brush can remove the chips to prolong the blade life.

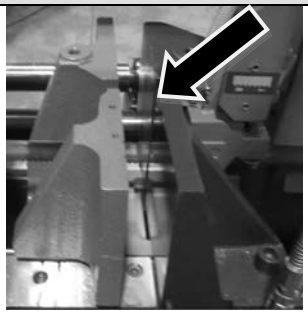
Keep your hands away from the wire brush and transmission shaft.

Turn off the power before cleaning the wire brush.

Work lamp

The work lamp is installed on top of the saw bow to provide the light to align blade and material.

Split vise



The spilt 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.

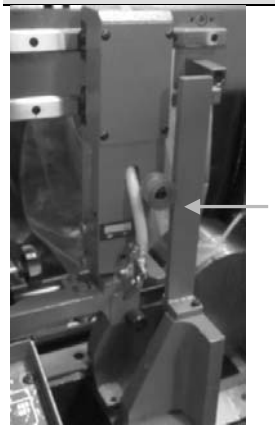
Linear guide

Linear guide help saw bow ascend and descend smoothly.

Upper and lower limit switch

Adjust upper and lower knob screws to set the upper and lower limit switch position.

Guide arm



Clamp the material with the vise and start cutting. The guide arm will move toward the movable vise until the stopper of guide arm contacts the bar of vise. This is to make sure the guide arm stop at the most suitable position for the material.

OPTIONAL ACCESSORIES

Chip conveyor

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

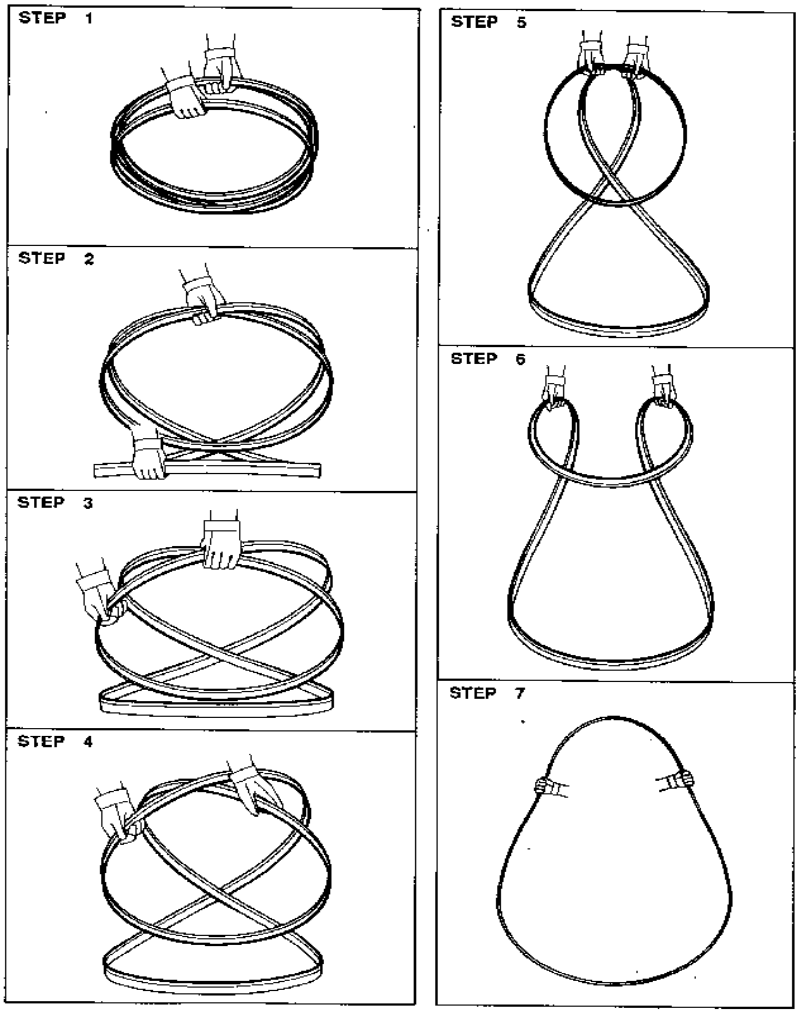
As a regular maintenance, remove the chip conveyor and clean all chip deposits inside.

UNROLLING & INSTALLING THE BLADE

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

Unrolling the blade

Please follow the procedures illustrated below.



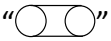
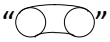
Unroll and roll the blade

Installing a new blade

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

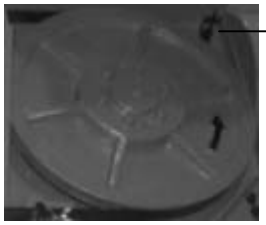
Step 2 - Turn on the machine power by switching to *ON and turn on the hydraulic motor*.

Step 3 - Press the *saw bow up* button and elevate the saw bow until it reaches to its highest point.

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.

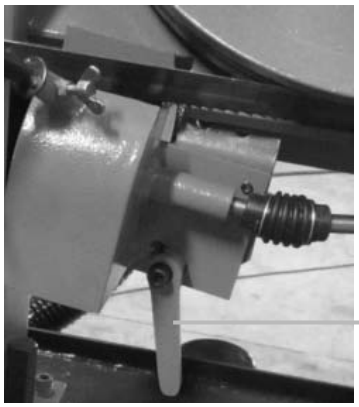
Step 6 - Press the *Blade Clip* device to hold onto the blade. This device makes blade changing easy and feasible even with only one operator available.



Easy Blade Replacement Device

Step 7 - Loosen the left and right carbide inserts by loosening the "lock nut" shown below.

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



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 tightening the “lock nut.”

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.

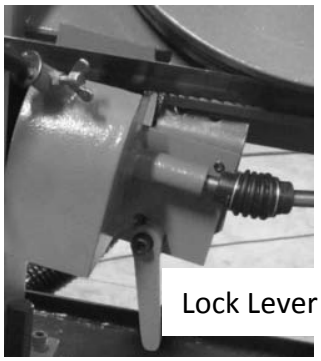
ADJUSTING WIRE BRUSH

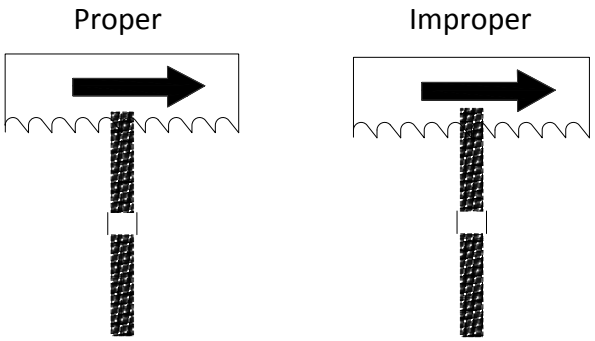
Follow these steps to adjust wire brush to appropriate position:

Step 1 - Open the drive wheel cover and loosen the lock lever.

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

Step 3 - Tighten the lock lever and close the drive wheel cover.

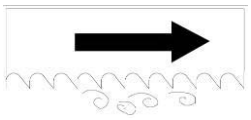




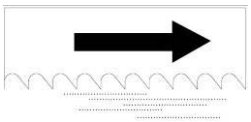
ADJUSTING COOLANT FLOW

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 - 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 – Turn on the relay switch in the control box.

Step 3 – Elevate the saw bow. (If your coolant pump is in reverse and the machine cannot run, please change the electrical phase.)

Step 4 – Remove the rust-prevention grease with cleaning oil or kerosene.

Step 5 – Start the coolant pump.

Step 6 – 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 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.
- The machine will stop automatically when an error occurs.

Section 5

ELECTRICAL SYSTEM

ELECTRICAL CIRCUIT DIAGRAMS

The following diagrams are:

Control panel layout

Circuit board layout

Power supply layout

PLC input/output layout

高聖精密機電股份有限公司 COSEN MECHATRONICS CO., LTD.	圖名	面板配置圖	圖號	EL-SH3026L-000S0-A	繪圖	鍾泓龍	日期	1030224	版本
					審核		日期		S0

TB-1

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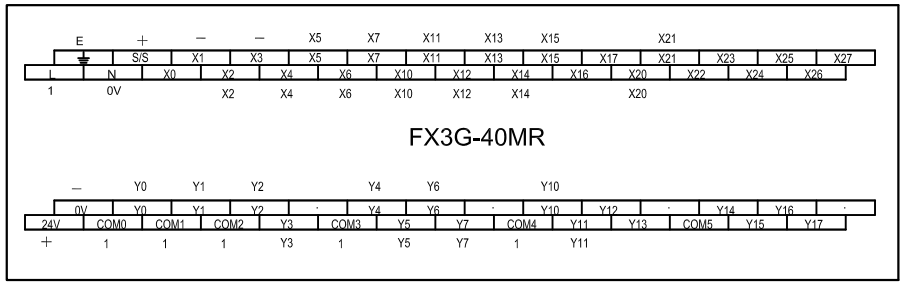

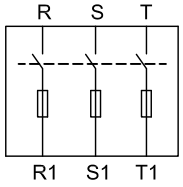

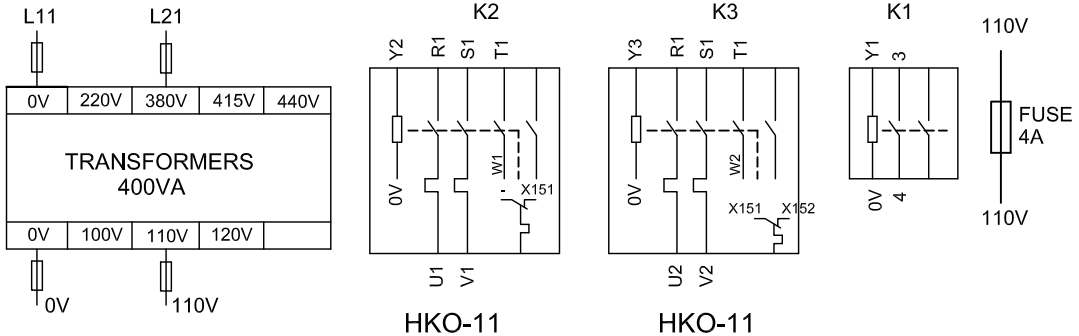

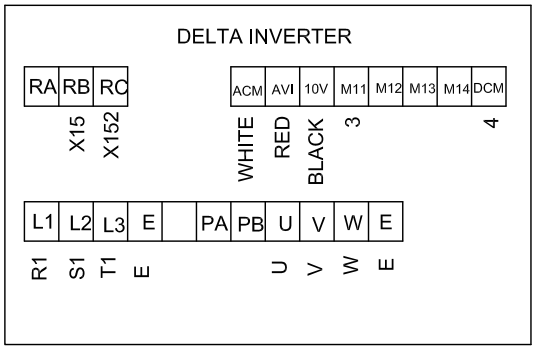

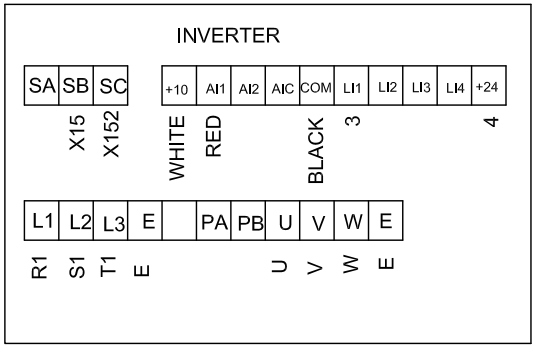

TB-2

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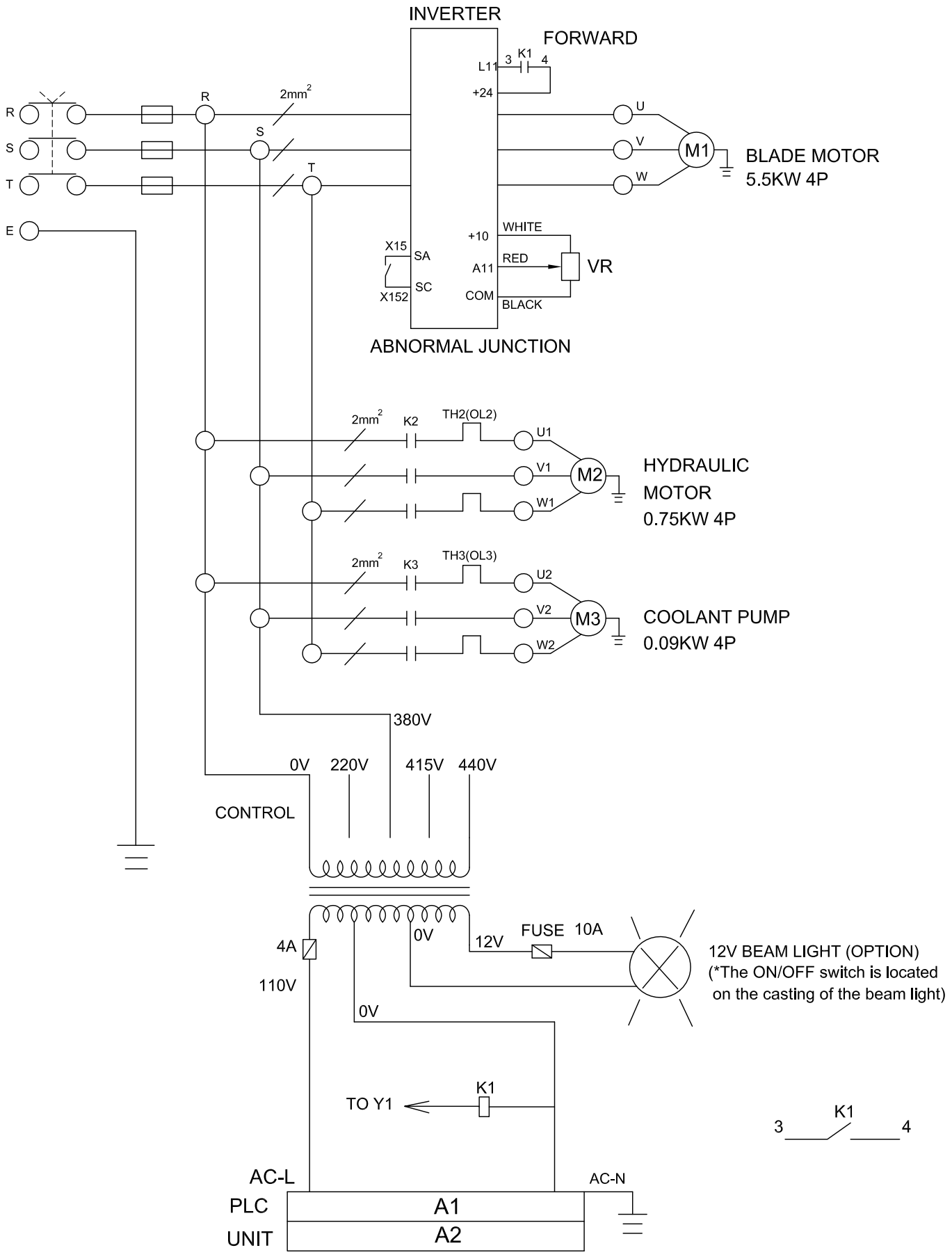

高聖精密機電股份有限公司 COSEN MECHATRONICS CO., LTD.	圖名	動力配置圖	圖號	EL-SH3026L-000S0-A	繪圖	鍾泓龍	日期	1030224	版本
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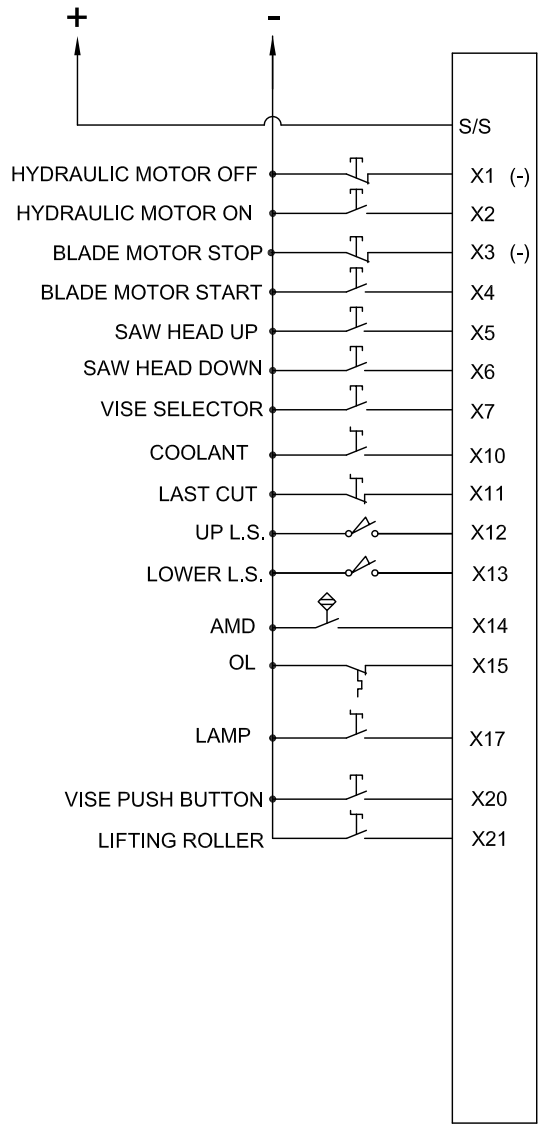
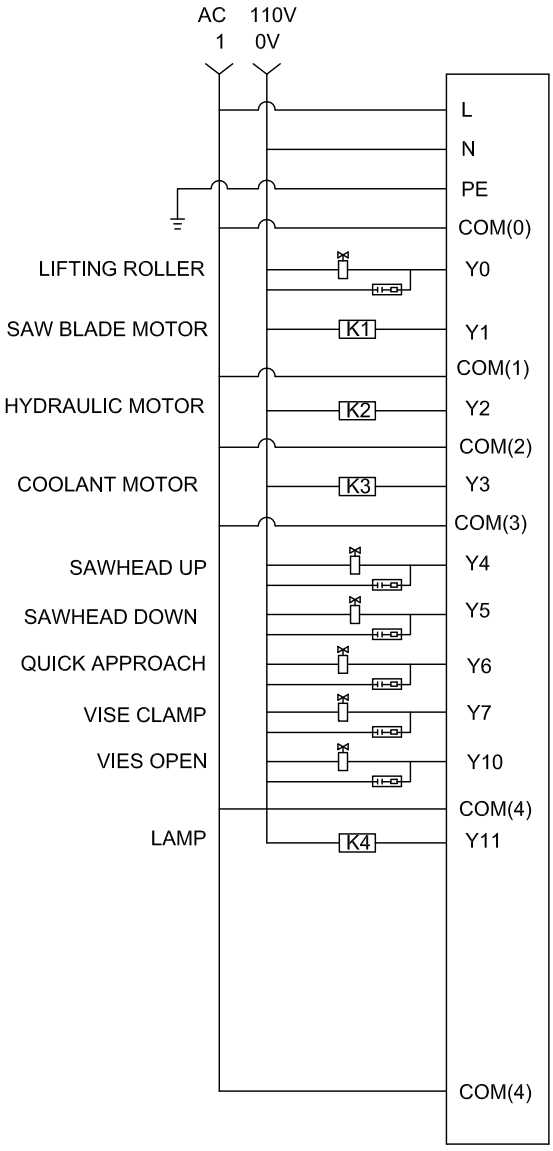
PLC INPUT MODULE A1



PLC OUTPUT MODULE A2

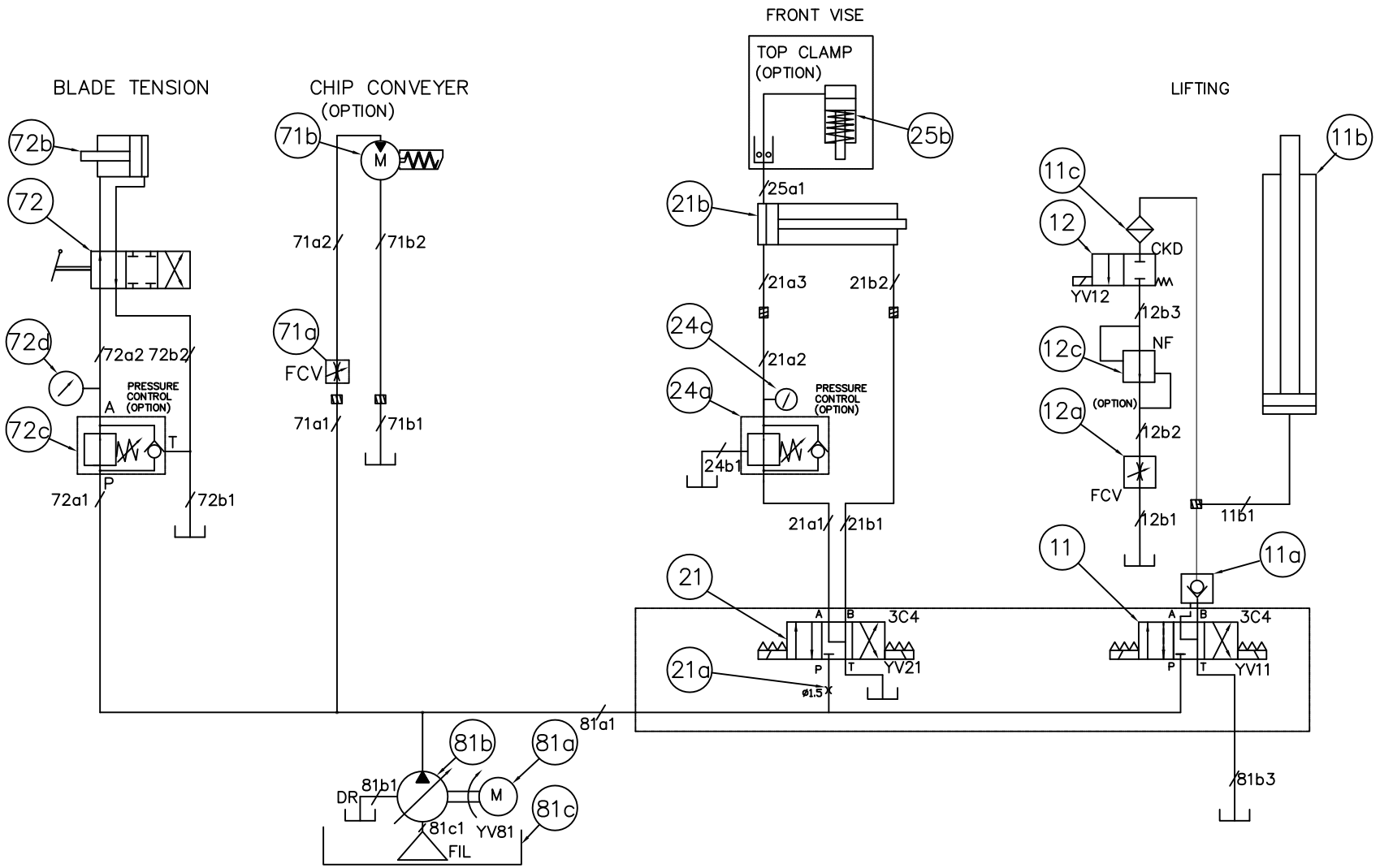


高聖精密機電股份有限公司 COSEN MECHATRONICS CO., LTD.	圖名	PLC I/O配置圖	圖號	EL-SH3026L-000S0-A	繪圖	鍾泓龍	日期	1030224	版本
					審核		日期		S0

HYDRAULIC SYSTEM

HYDRAULIC CIRCUIT DIAGRAM

SH-3026L HYDRAULIC CIRCUIT



COSEN MECHATRONICS CO.,LTD.		DRAW	20150408	SHELBY
		CHECK		
TITLE	SH-3026L HYDRAULIC CIRCUIT	APPROVED		
DRAWING NO.SH-3026L HYDRA.DWG	VERSION 1-0		DATE	NAME

BANDSAW CUTTING: A PRACTICAL GUIDE

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:

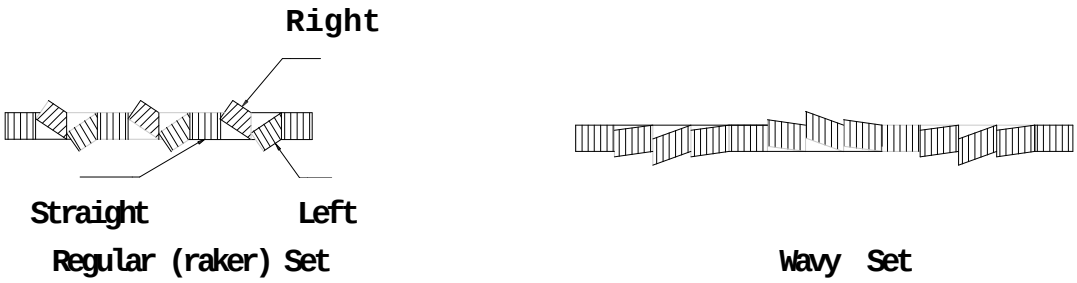


Fig. 7.2 The Saw Set

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:

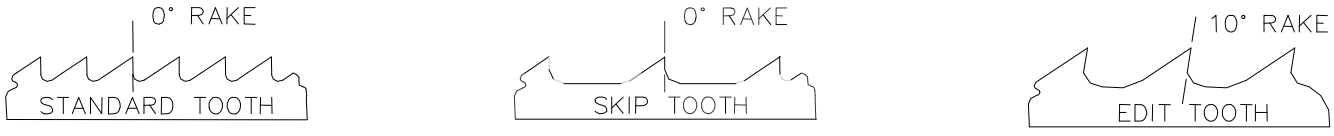


Fig. 7.3 Three Styles of Tooth

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:

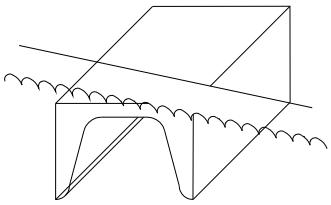
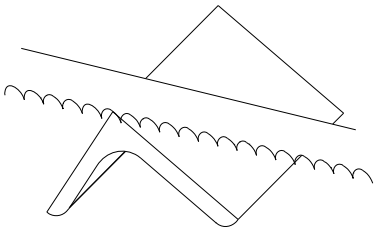
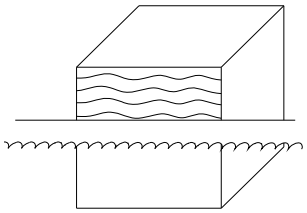
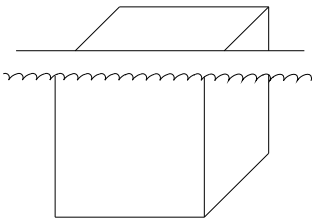
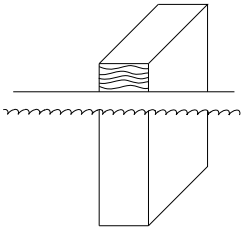
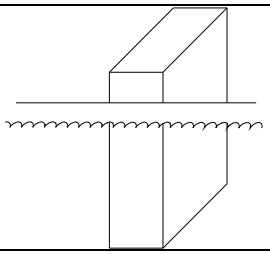
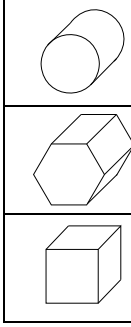
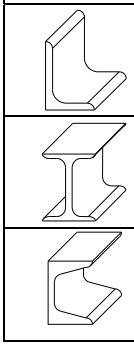
SAWING PRACTICES	
CORRECT	**INCORRECT**
	
several teeth contact work	teeth strike sharp edge
	
Coarse teeth clear chips freely	Teeth too fine for large solids
	
Three or more teeth on cutting wall	Coarse teeth rip on thin wall

Fig. 7.4 Some sawing practices

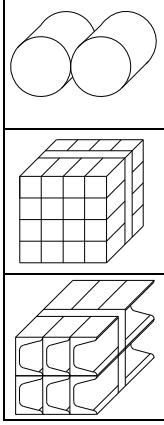
Solid Stock:

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

Section 8

MAINTENANCE & SERVICE

INTRODUCTION

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

BASIC MAINTENANCE

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

MAINTENANCE SCHEDULE

We suggest you do the maintenance on schedule. The recommended schedule includes three periods, 1.Daily maintenance. 2.Monthly maintenance. 3. Six months maintenance.

Before beginning a day's work

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

After ending a day's work

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

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

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

Every month

Please apply grease to the following points:
1. Idle wheel
2. Drive wheel
3. Blade tension device

Recommended Grease:

- Shell Alvania EP Grease 2
- Mobil Mobilplex 48

Every three months

Replace the transmission oil after operating for three months (or 600 hours).
Recommended Grease:

- Shell Alvania EP Grease 2
- Mobil Mobilplex 48 (600W Cylinder oil)

Every six months

1.Clean the filter of the cutting fluid.

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

Check the sight gauge to ascertain the transmission level.

Recommended TRANSMISSION OIL

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

3.Replace the hydraulic oil.

Recommended HYDRAULIC OIL

- Shell Tellus 27
- Mobil DTE OIL light Hydraulic28

STORAGE CONDITIONS

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

(1) Turn off the power.

(2) Ambient temperature: 5℃ ~ 40℃

(3) Relative humidity: 30%~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 safe place with bottom. Ask a environment specialist to handle the oil. It can avoid soil pollution. The oil list in machine:

- Hydraulic oil
- Cutting fluid
- Drive wheel gear oil

OIL RECOMMENDATION FOR MAINTENANCE

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

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

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

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

Section 9

TROUBLESHOOTING

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

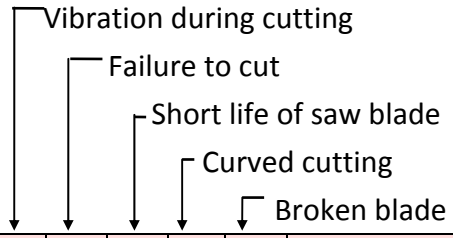
DISCONNECT POWER CORD TO MOTOR BEFORE ATTEMPTING ANY REPAIR OR INSPECTION.

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.
	Wheels out of line	Adjust wheels
Blade line Run-out or Run-in	Guides out of line	For a straight and true cut, realign guides, check bearings for wear.
	Excessive pressure	Conservative pressure assures long blade life and clean straight cuts.
	Support of blade insufficient	Move saw guides as close to work as possible.
	Material not properly secured in vise	Clamp material in vise, level and securely.
	Blade tension improper	Loosen or tighten tension on blade.
Blade twisting	Blade not in line with guide bearings	Check bearings for wear and alignment.
	Excessive blade pressure	Decrease pressure and blade tension
	Blade binding in cut	Decrease feed pressure
Premature tooth wear	Dry cutting	Use lubricant on all materials, except cast iron
	Blade too coarse	Use finer tooth blade
	Not enough feed	Increase feed so that blade does not ride in cut
	Excessive speed	Decrease speed

SAWING PROBLEMS AND SOLUTIONS

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

Sawing Problems and Solutions



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

RE-ADJUSTING THE ROLLER TABLE

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

TOOL, measuring

Measurement, Horizontal balance

Procedure

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

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

Section 10

PARTS

SPARE PARTS RECOMMENDATIONS

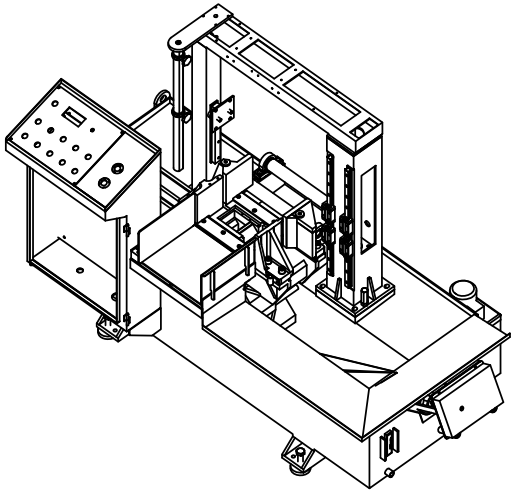
PART LIST

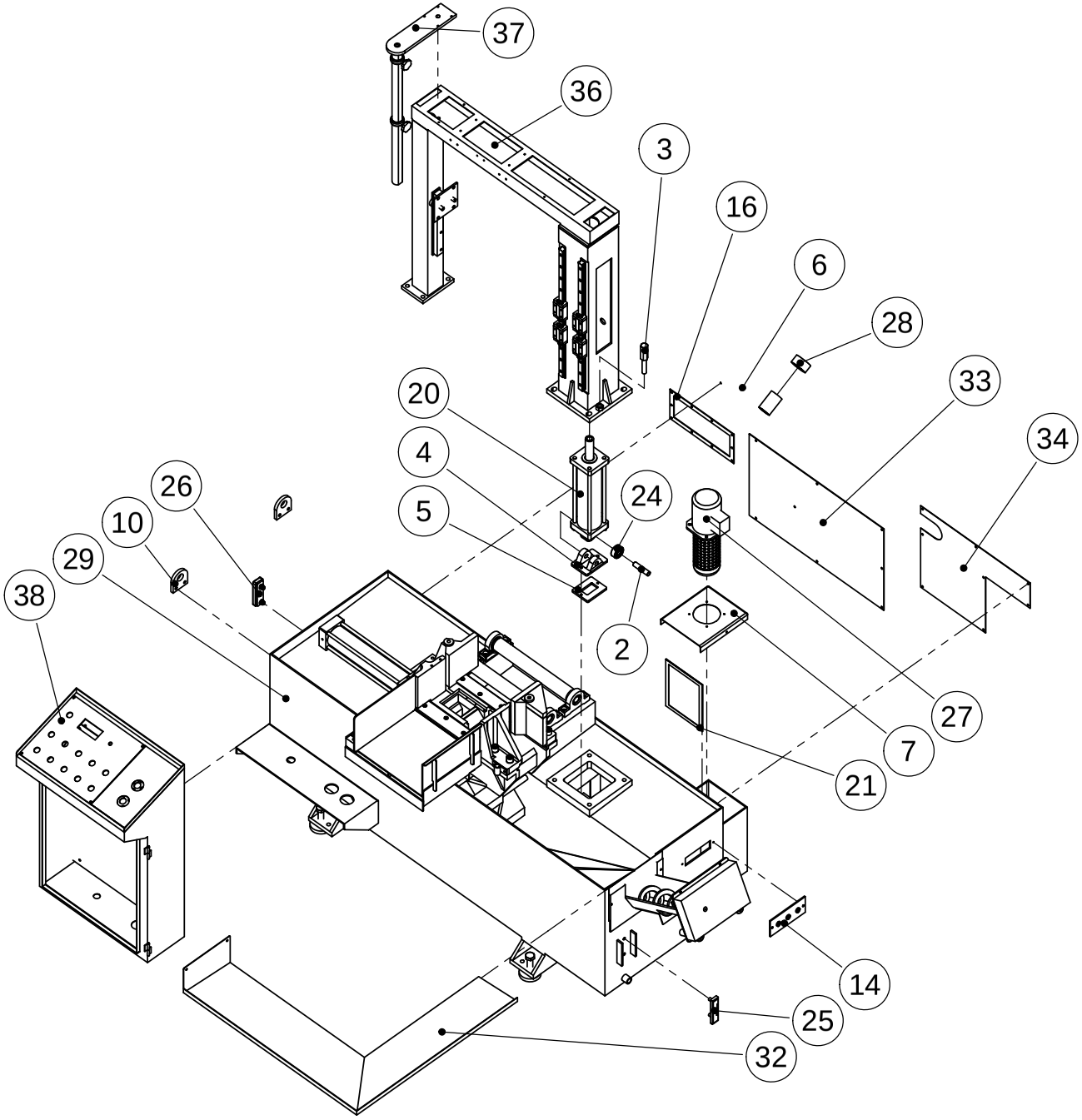
SPARE PARTS RECOMMENDATIONS

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

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

S3026-10000 底座組
BASE ASSEMBLY





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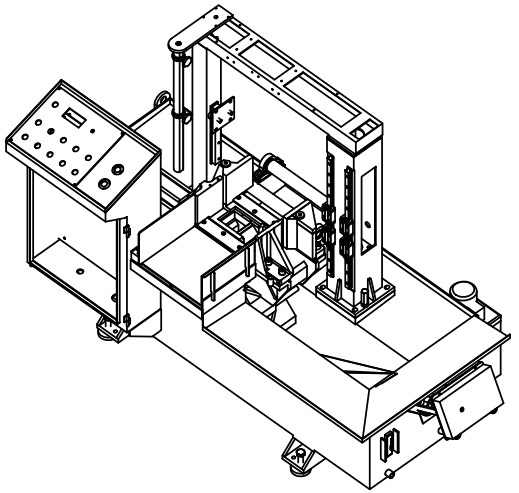
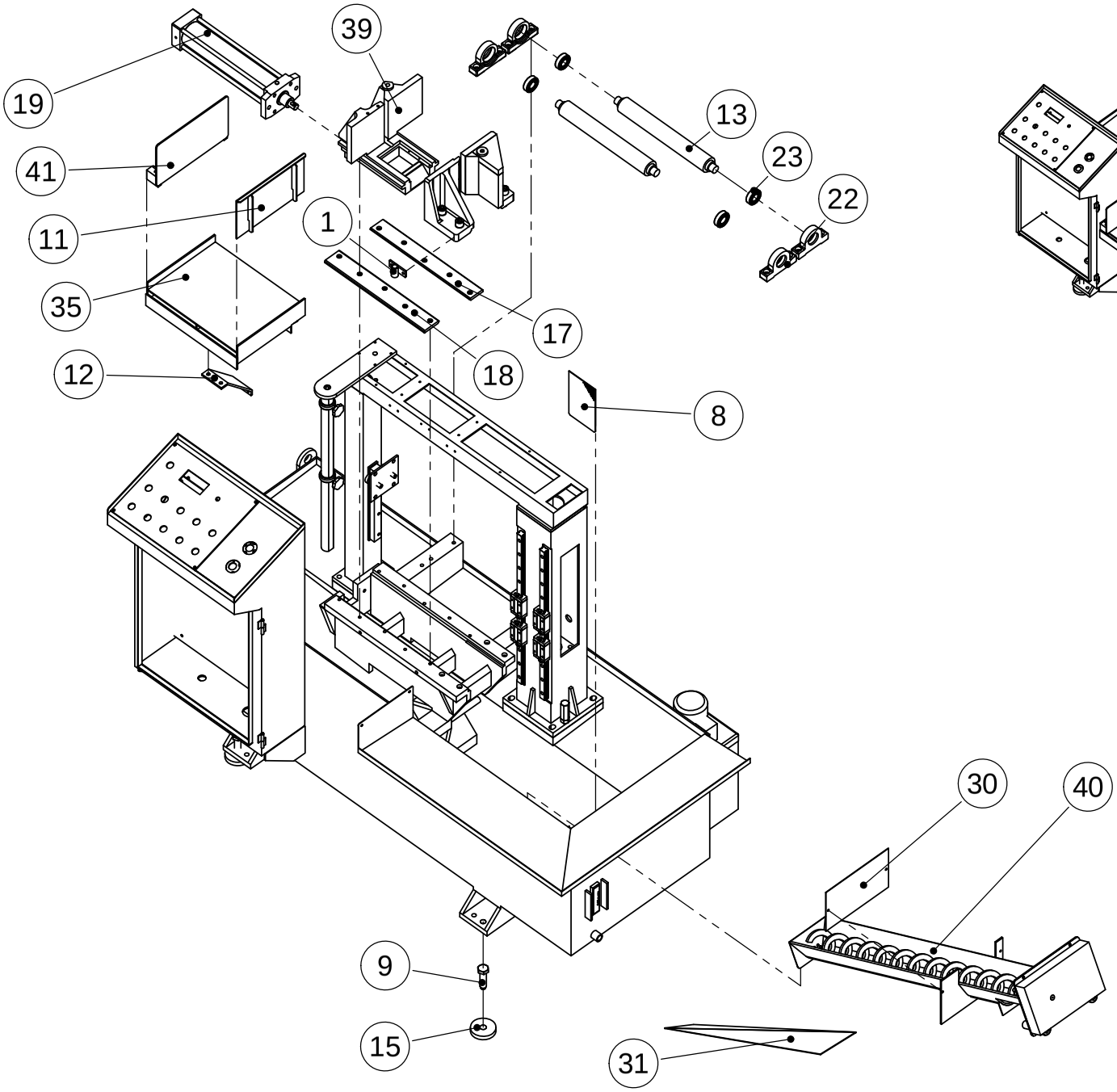
S3026-10000 底座組
BASE ASSEMBLY





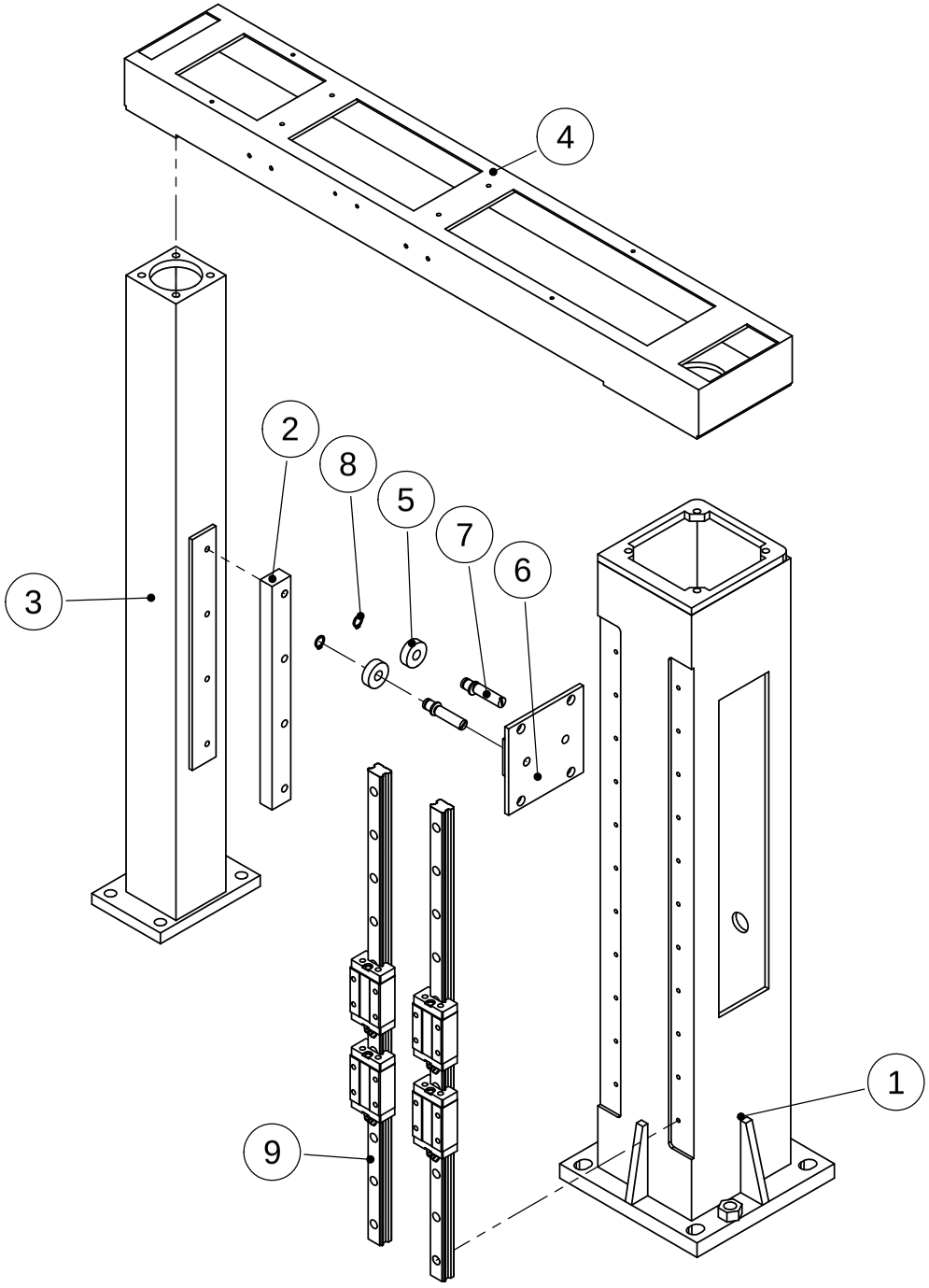
2015/12/9

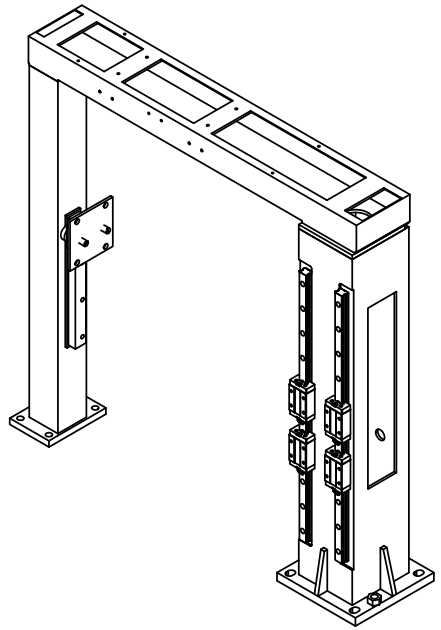
S3026-10000 底座組						
ITEM	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	QTY	NOTE
1	AGB-70220	Water pipe fixed brack	冷卻水管固定板		1	
2	AGB-70304B	Pin	下插梢		1	
3	AGC-1030	Lower limit positioning rod	下限定位支桿		1	
4	AGC-1031	Cylinder fixed seat	油壓缸固定座		1	
5	AGC-1032	Fixed seat	油缸固定座板		1	
6	AHA-0102	Oil tank cover	油箱蓋		1	
7	AHA-0136	Coolant pump fixed seat cover	冷卻幫浦固定座蓋		1	
8	AHA-0139	Filter	水相通管濾網(小)		1	
9	AHC-0153	Base stand adjusting bolt	底座調整螺桿		4	
10	AHC-0161	Lifting ear	吊耳		2	
11	AHC-1424	Right bracket	托架右板		1	
12	AHC-1437	Supporter	托架支持板		1	
13	AHC-1625	Roller	滾輪		2	
14	AHG-0138A	Fitting seat	水管接頭座		1	
15	AHR-1055	Table stand pad	底座墊塊		4	
16	C250H-1006	Oil tank gasket	油箱蓋防漏橡膠		1	
17	C260L-2003	Bed steel plate (1)	床面鋼板(一)		1	
18	C260L-2005	Bed steel plate (2)	床面鋼板(二)		1	

S3026-10000 底座組						
ITEM	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	QTY	NOTE
19	C260L-23000-1	Vise hydrauly cylinder	虎鉗油缸組		1	
20	C260L-32500-1	Lift cylinder	鋸弓油壓缸		1	
21	C320G-1009	Water tank filter	水箱濾網		1	
22	C325H-1253	Roller fixed shaft	滾輪固定座		4	
23	PP-14275	Bearing	軸承	6205ZZ	4	
24	PP-14510	Bearing	軸承	2303	1	
25	PP-21030	Oil sight gauge	油面計		1	
26	PP-21030A	Water Gauge	水面計	3"	1	
27	PP-32081-CE	Pump	浸水幫浦(過濾式)(CE)	1/8HP	1	
28	PP-90857	Hydraulics tank cover nut	油箱蓋螺帽		1	
29	S3026-1001	Base	底座		1	
30	S3026-1028	Cover	除屑口遮板		1	
31	S3026-1041	Chip collector	集屑板		1	
32	S3026-1043	Base catchment plate	底座集水板		1	
33	S3026-1059	Right rear cover	右後蓋		1	
34	S3026-1061	Left rear cover	左後蓋		1	
35	S3026-1201	Bracket	托架		1	
36	S3026-11000	Column assembly	立柱組		1	

S3026-10000 底座組						
ITEM	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	QTY	NOTE
37	S3026-11400	Height control assembly	高度控制組		1	
38	S3026-13000	Control box assembly	控制箱組		1	
39	S3026-22000	Vise assembly	虎鉗組		1	
40	S3026-40000	Chip conveyor assembly	除屑機組		1	
41	S4030-1211	Bracket movable side fence	托架活動側板		1	

S3026-11000 立柱組
COLUMN ASSEMBLY



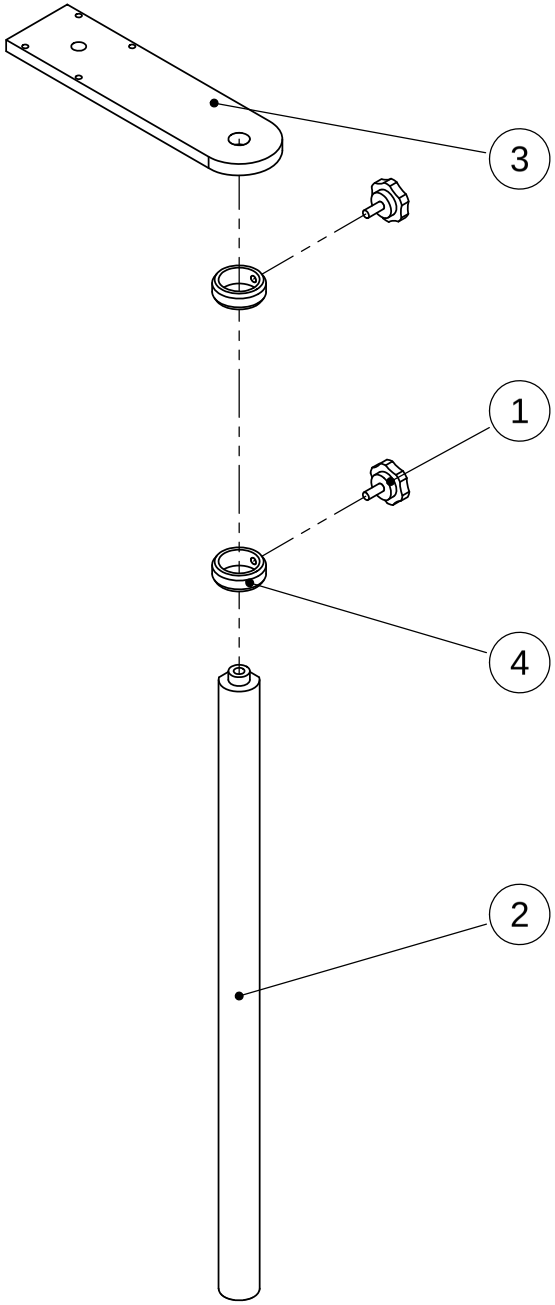


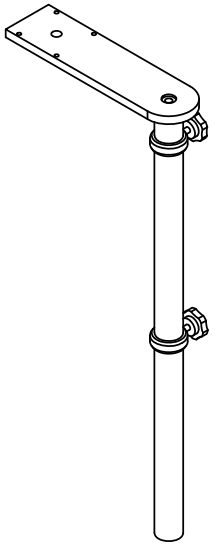
2015/12/4

S3026-11000 立柱組
COLUMN ASSEMBLY

S3026-11000 立柱組						
ITEM	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	QTY	NOTE
1	C260L-1101B	Main shaft	大主軸		1	
2	C260L-1124A	Sub shaft limit bar	小軸線動桿		1	
3	S3026-1121	Sub column	小立柱		1	
4	C260L-1131A	Cross beam	橫樑		1	
5	PP-14271	Bearing	軸承	6201ZZ	2	
6	C260L-1125A	Limit switch seat	小軸限動座		1	
7	C260L-1128A	Breaing pin	小軸軸承銷		2	
8	PP-52085	Snap ring	扣環	S12	2	
9	PP-92020B	Linear guide and sliding block	滑軌滑塊	MSB25S2SSFC-R650-25/25N	2	

S3026-11400 高度控制組
HEIGHT CONTROL ASSEMBLY

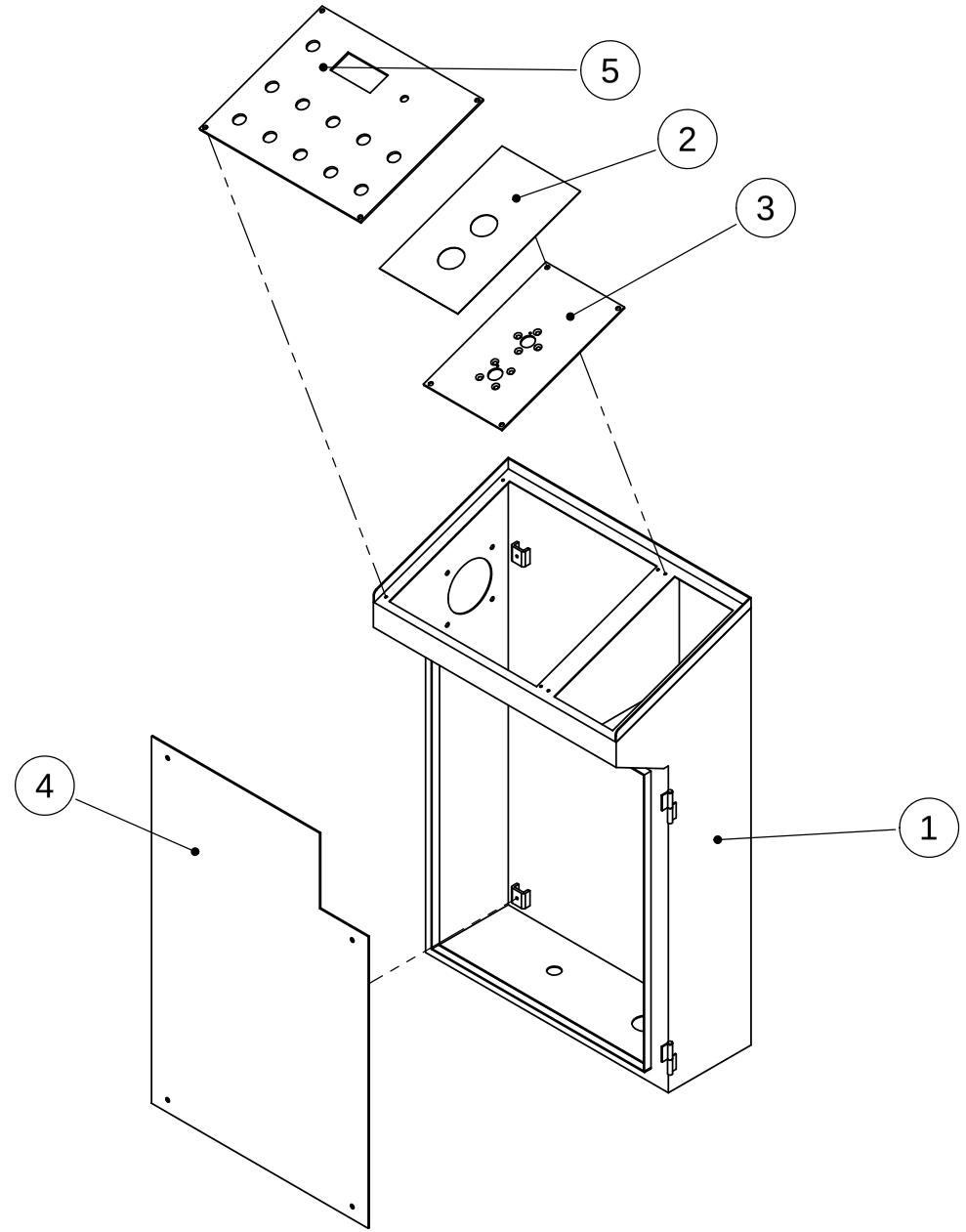


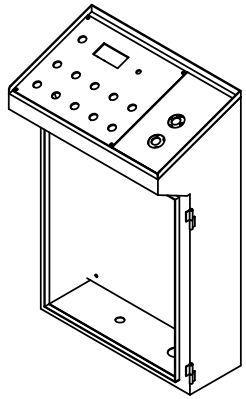


2015/12/8

S3026-11400 高度控制組						
ITEM	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	QTY	NOTE
1	PP-53010	Screw	梅花螺絲	M8 x 25L	2	
2	SGG-1035	Upper limit rod	上限滑桿		1	
3	SGG-1036	Upper limit rod seat	上限滑桿座		1	
4	SGG-1037	Upper limit sliding block	上線滑塊		2	

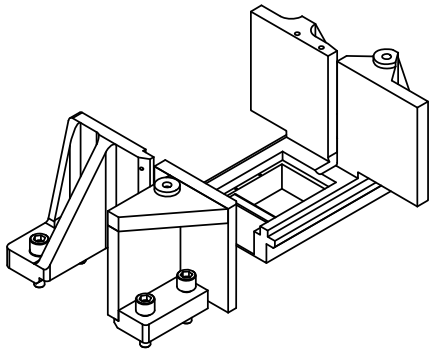
S3026-13000 控制箱組
CONTROL BOX ASSEMBLY

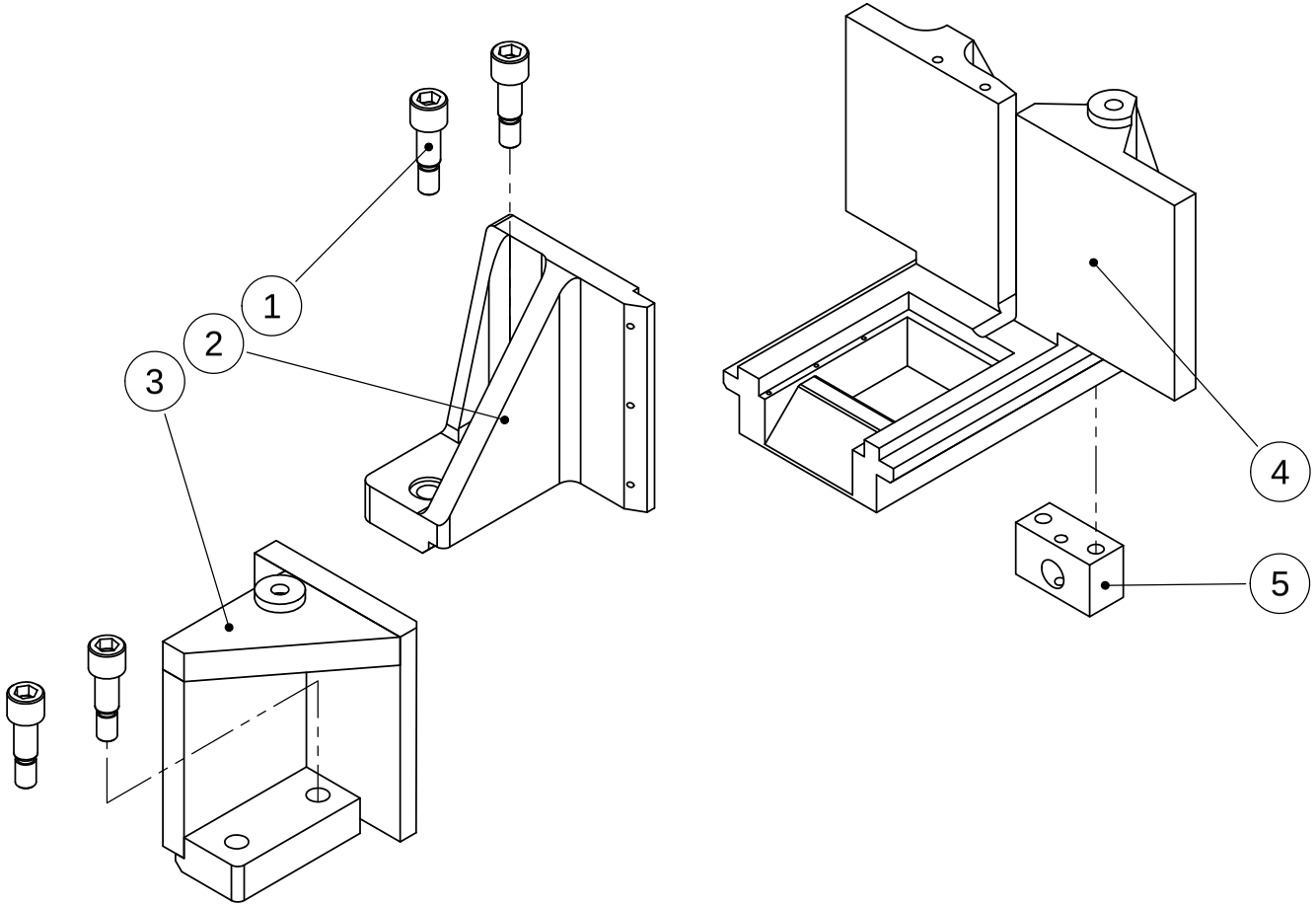




S3026-13000 控制箱組						
ITEM	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	QTY	NOTE
1	AGB-70801-NC	Control box	控制箱		1	
2	AGB-70802B	Flow control valve panel	流量閥面板		1	
3	AGB-70803B	Flow valve base plate	流量閥底板		1	
4	C7656-1302	Circuit board	線路板		1	
5	S3026-1321	Control panel	控制面板		1	

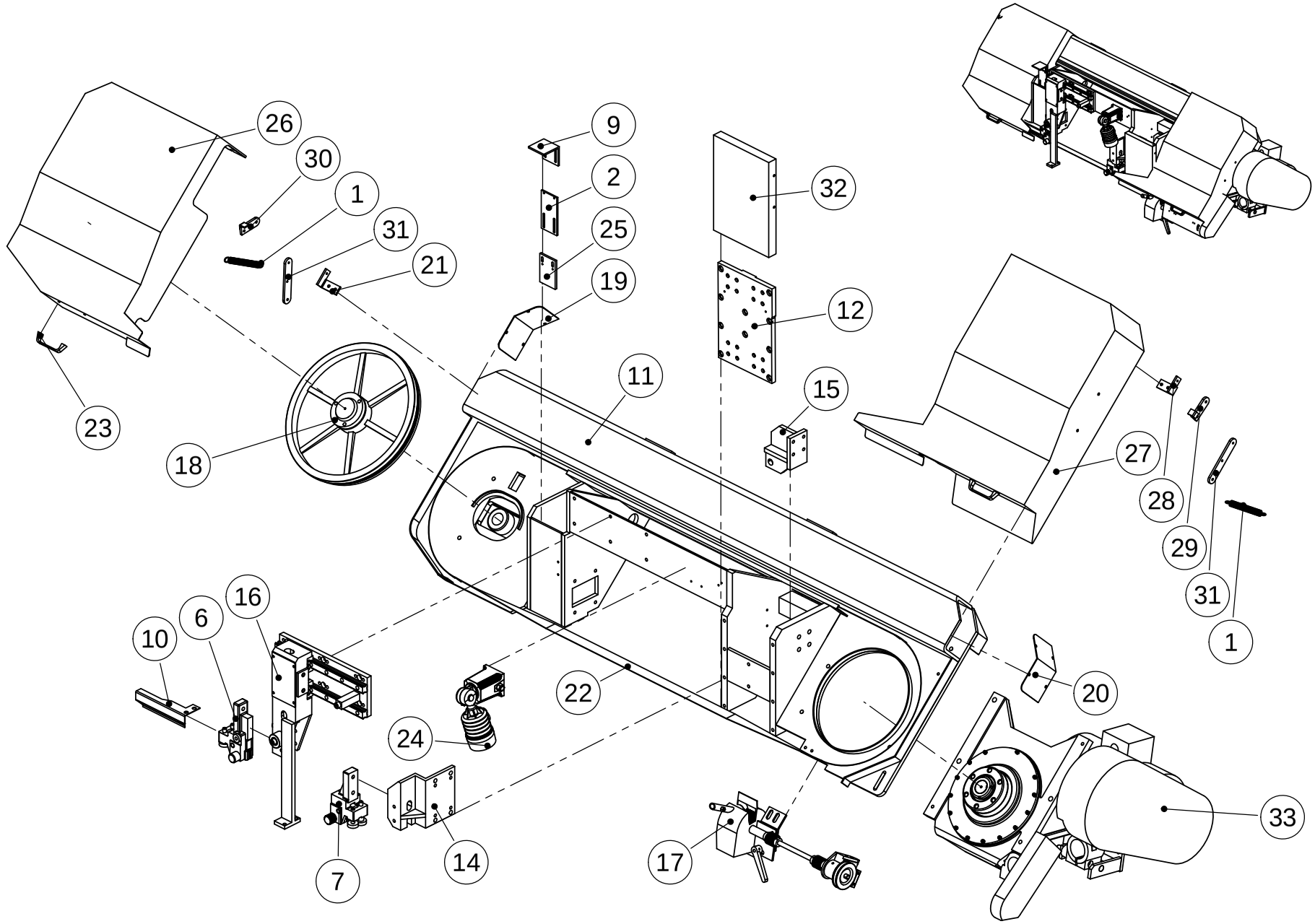
S3026-22000 虎鉗組
VISE ASSEMBLY



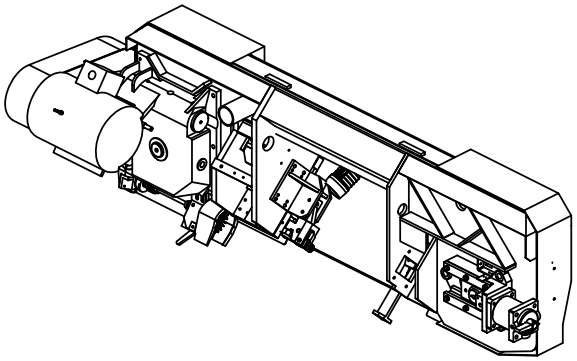


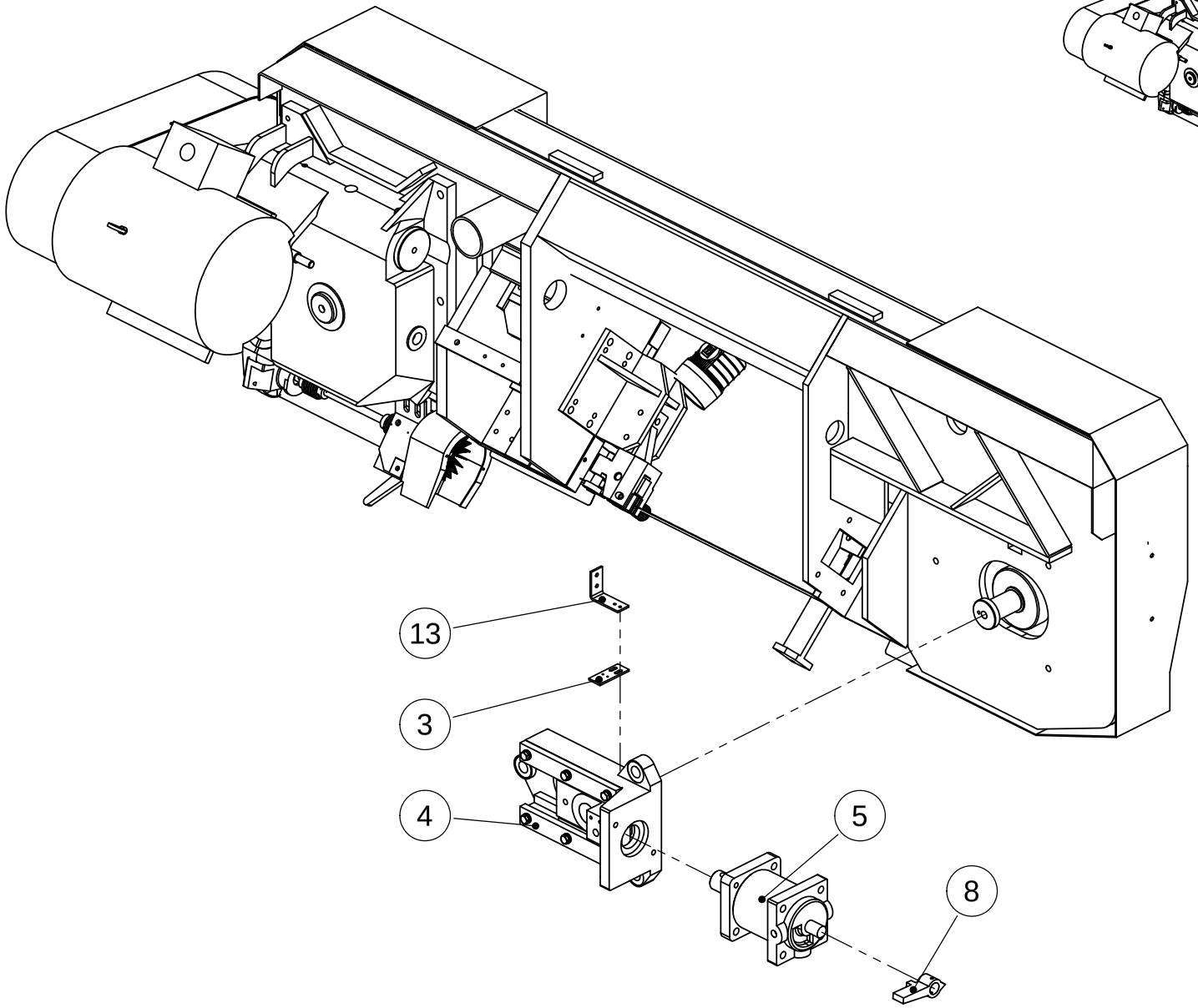
S3026-22000 虎鉗組						
ITEM	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	QTY	NOTE
1	AHA-0122B	Fixed nut	固定螺絲(二)		4	
2	AHC-0230	Front fixed vise	前固定虎鉗		1	
3	S3026-2203	Front fixed vise	前固定虎鉗(後)		1	
4	S3026-2207	Movable vise	活動虎鉗		1	
5	S3026-2315	Vise hydraulic cylinder fixed seat	虎鉗油缸固定座		1	

S3026-30000 鋸弓組
SAW BOW ASSEMBLY



S3026-30000 鋸弓組
SAW BOW ASSEMBLY

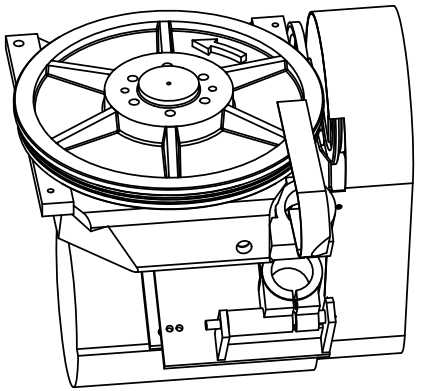


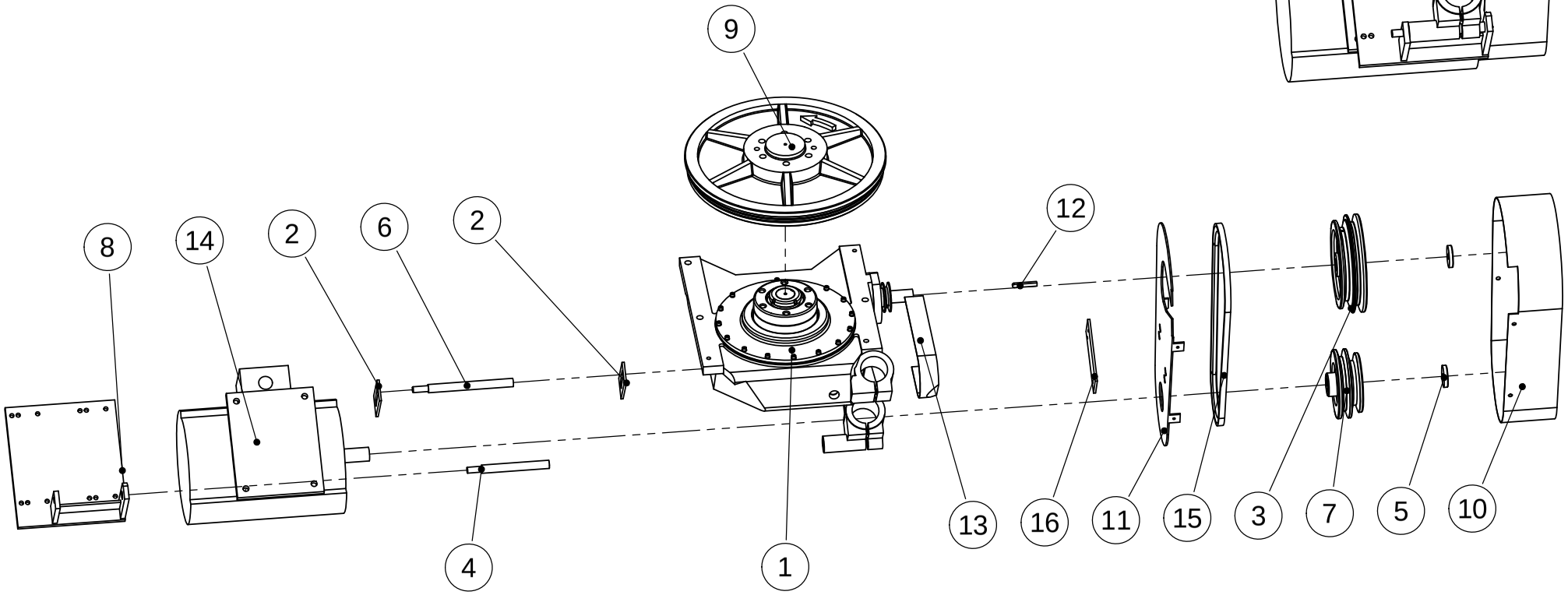


S3026-30000 鋸弓組						
ITEM	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	QTY	NOTE
1	ACA-2010	Spring	曲板彈簧		2	
2	AHA-0140-NC	Upper limit seitch seat	上限開關固定座		1	
3	AHA-0672A	Sensor base plate	感應器底板		1	
4	AHA-06029	Tensioner sliding plate assembly	張力滑座滑板組		1	
5	AHA-06189-1	Tensioner cylinder assembly	張力油壓缸組		1	
6	AHA-07120	Left guide roller assembly	左導輪座組		1	
7	AHA-07480	Right guide roller assembly	右導輪座組		1	
8	AHB-0653	Handle	切換把手		1	
9	AHN-1519A	L.S bracket	輪箱開關座		1	
10	C250H-3013	Idle wheel blade cover	上輪鋸帶護蓋		1	
11	C260L-3001A	Saw bow	鋸弓		1	
12	C260L-3002B	Fixed plate	鋸弓滑塊固定板		1	
13	C260L-3053	Sensor seat	感應器底板座		1	
14	C260L-3105	Fixed guide arm	固定鋸臂		1	
15	C260L-3275	Saw bow cylinder ear	鋸弓油缸上耳		1	
16	C260L-31000	Saw arm assembly	鋸臂組		1	
17	C260L-32200	Wire brush assembly	鋼刷組		1	
18	C300H-30300A	Idle wheel assembly	上輪組		1	

S3026-30000 鋸弓組						
ITEM	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	QTY	NOTE
19	C360L-3016	Saw bow cover (left)	鋸弓左護蓋		1	
20	C360L-3020	Saw bow cover (right)	鋸弓右護蓋		1	
21	C3026-3073	Fixed plate (left)	箱蓋固定板(左)		1	
22	PP-18217	Saw blade	鋸帶	4100x34x1.1x3/4T	1	
23	PP-52080	Handle	輪箱把手	A303	2	
24	PP-91804E	Work light	工作燈	GS-635/110V12V20W	1	
25	S710D-3215	Adjusting fixed seat	調整固定座		1	
26	S3026-3003	Idle wheel cover	上輪箱蓋		1	
27	S3026-3005	Drive wheel cover	下輪箱蓋		1	
28	S3026-3071	Fixed plate (right)	箱蓋固定板(右)		1	
29	S3026-3075	Cover bracket (right)	下箱蓋定位板(右)		1	
30	S3026-3077	Cover bracket (left)	上箱蓋定位板(左)		1	
31	S3026-3079	Cover bracket	箱蓋定位板		2	
32	S3026-3452	Sleeve cover	軸套遮蓋		1	
33	S3026-30400	Drive wheel assembly	主動輪組		1	

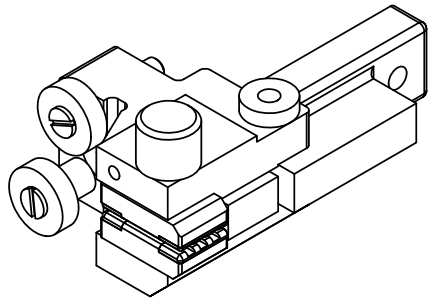
S3026-30400 主動輪組
DRIVE WHEEL ASSEMBLY

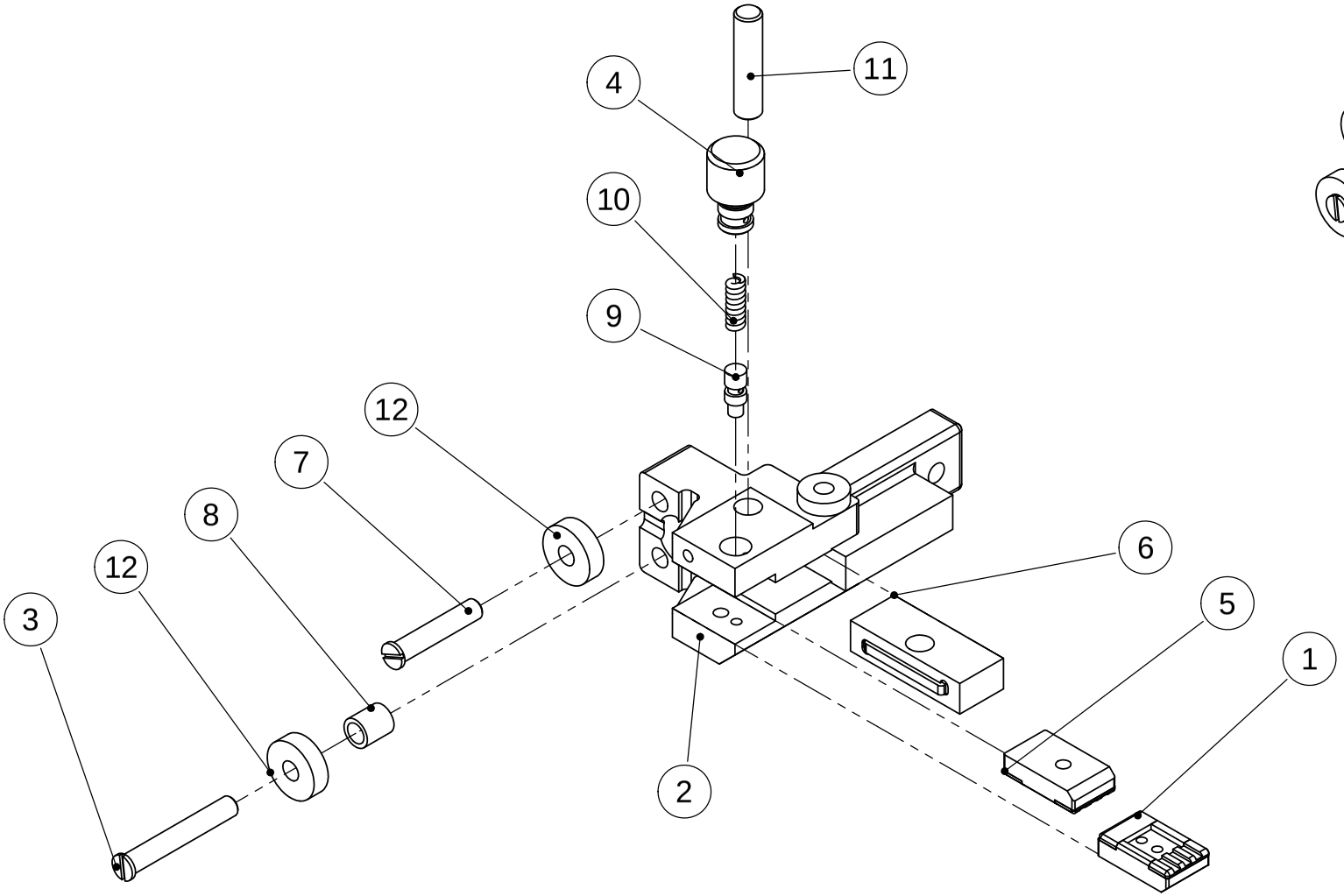




S3026-30400 主動輪組						
ITEM	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	QTY	NOTE
1	AGC-03040	Gear reducer assembly	減速機整組		1	
2	AHA-0510B	Bracket	馬達底板耳		2	
3	AHA-0514G	Transmission pulley	減速機普利		1	
4	AHA-0515	Motor movable shaft	馬達活動軸		1	
5	AHA-0525	Washer	墊圈(減速機,馬達,普利)		2	
6	AHA-0526	Motor position shaft	馬達定位軸		1	
7	AHA-0538G	Motor belt wheel	馬達皮帶輪		1	
8	AHR-2027	Pulley cover	馬達底板		1	
9	C250H-3041	Drive wheel	下輪		1	
10	C250H-3071A	Pulley cover	普利護蓋(變頻用)		1	
11	C250H-3073A	Pulley cover base plate	普利護蓋底板(變頻用)		1	
12	C250H-3354	Gear reducer pulley key	減速機普利方鍵		1	
13	C325H-3237	Pulley cover	鋼刷普利護蓋		1	
14	PBH5-D412-P	Motor	馬達		1	
15	PP-56287	Belt	皮帶	B-44	1	
16	S3026-3077A	Pulley cover bracket	普利護蓋固定板		1	

AHA-07120 左導輪座組
LEFT GUIDE ROLLER ASSEMBLY

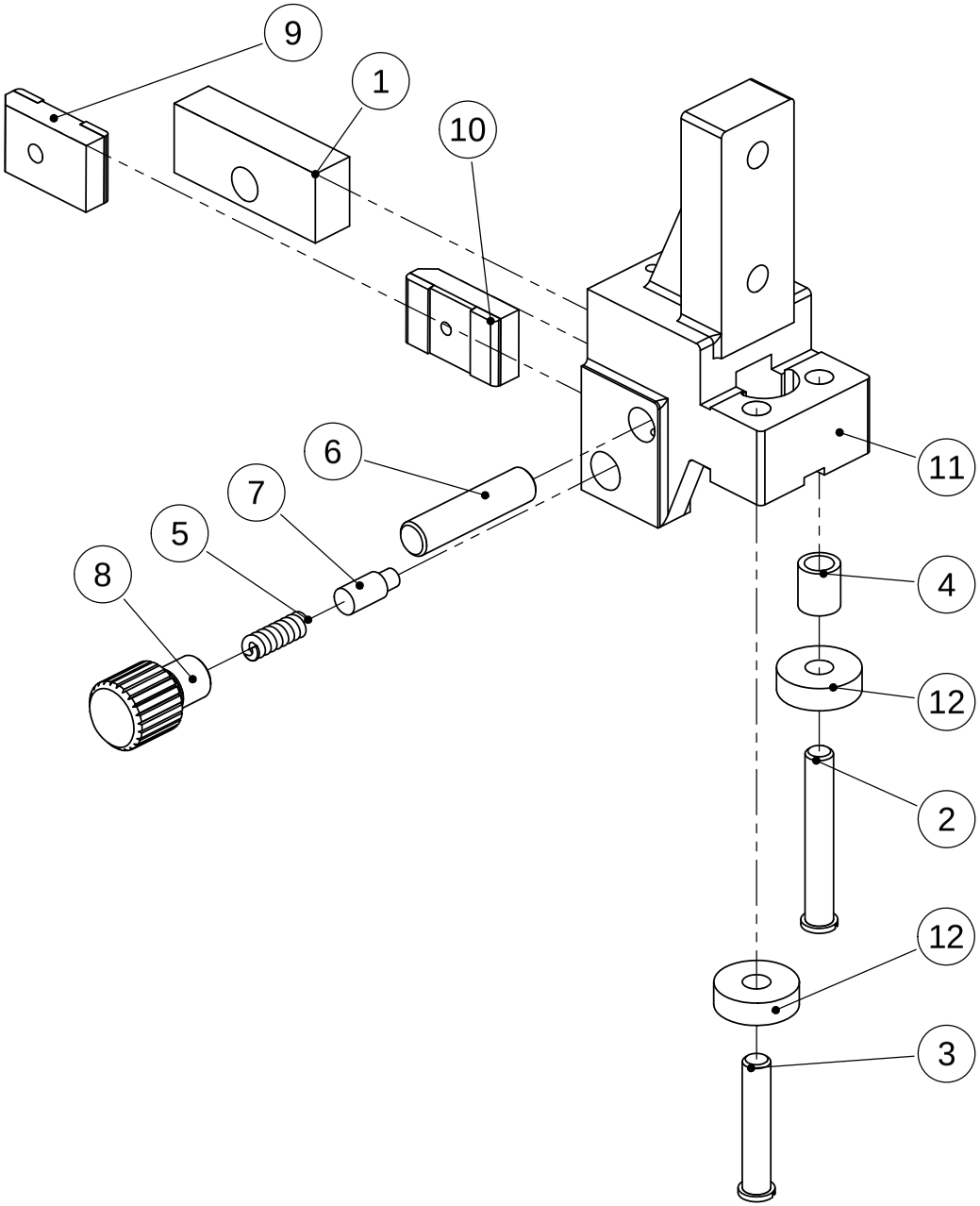


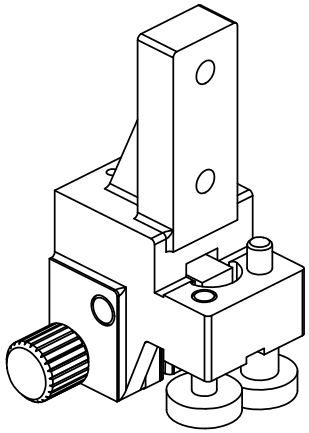


AHA-07120 左導輪座組
LEFT GUIDE ROLLER ASSEMBLY

AHA-07120 左導輪座組						
ITEM	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	QTY	NOTE
1	AHA-0701B	Left Fixed Insert	左固定鎢鋼片		1	
2	AHA-0712B	Left guide roller seat	左導輪座(1 1/4")		1	
3	AHA-0707B	Guide roller shaft	導輪軸		1	
4	AHA-0711	Left adjusting screw	左調整螺絲		1	
5	AHA-0702B	Left movable insert	左活動鎢鋼片		1	
6	AHA-0704A	Clamping seat	下壓座(EU79用)		1	
7	AHA-0707C	Guild wheel shaft	導輪軸(三)		1	
8	AHA-0708B	Washer	墊圈		1	
9	AHA-0709	Left Spring plug	左簧塞		1	
10	AHA-0710	Carbide insert spring	彈簧(鎢鋼片)		1	
11	AHA-0713-1	Fixed shaft	軸承座固定銷		1	
12	PP-14270B	bearing	軸承	6200DDU	2	

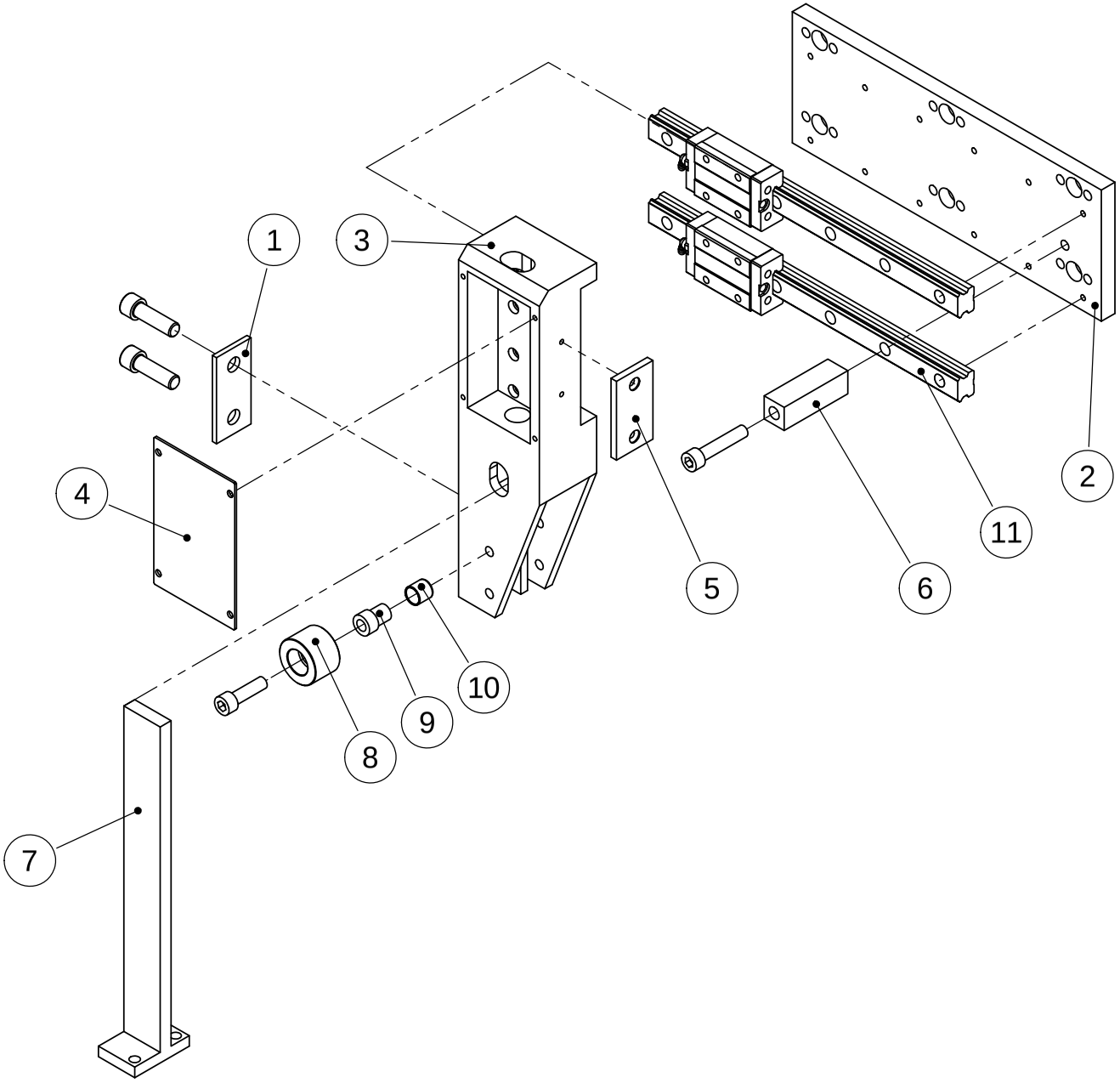
AHA-07480 右導輪座組
RIGHT GUIDE ROLLER ASSEMBLY

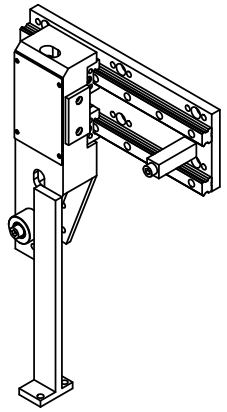




AHA-07480 右導輪座組						
ITEM	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	QTY	NOTE
1	AHA-0704A	Clamping seat	下壓座		1	
2	AHA-0707B	Guide roller shaft	導輪軸		1	
3	AHA-0707C	Guild wheel shaft	導輪軸		1	
4	AHA-0708B	Washer	墊圈		1	
5	AHA-0710	Carbide insert spring	鎢鋼片彈簧		1	
6	AHA-0713-1	Fixed shaft	軸承座固定銷		1	
7	AHA-0741	Right Spring plug	右簧塞		1	
8	AHA-0742	Right adjusting screw	右調整螺絲		1	
9	AHA-0743B	Right Movable Insert	右活動鎢鋼片		1	
10	AHA-0744B	Right Fixed Insert	右固定鎢鋼片		1	
11	AHA-0748B	Right guide roller seat	右導輪座		1	
12	PP-14270B	bearing	軸承	6200DDU	2	

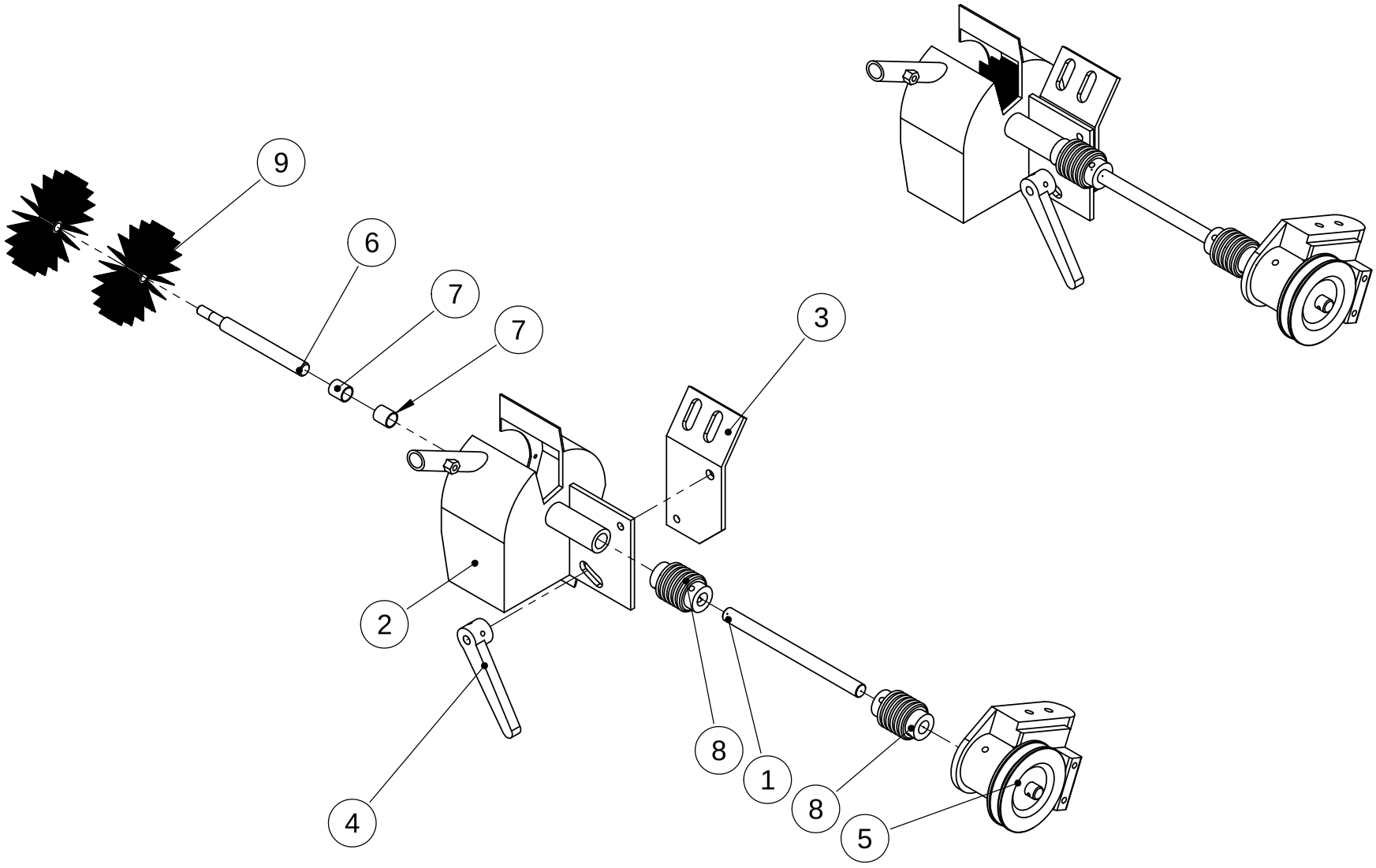
C260L-31000 鋸臂組
SAW ARM ASSEMBLY





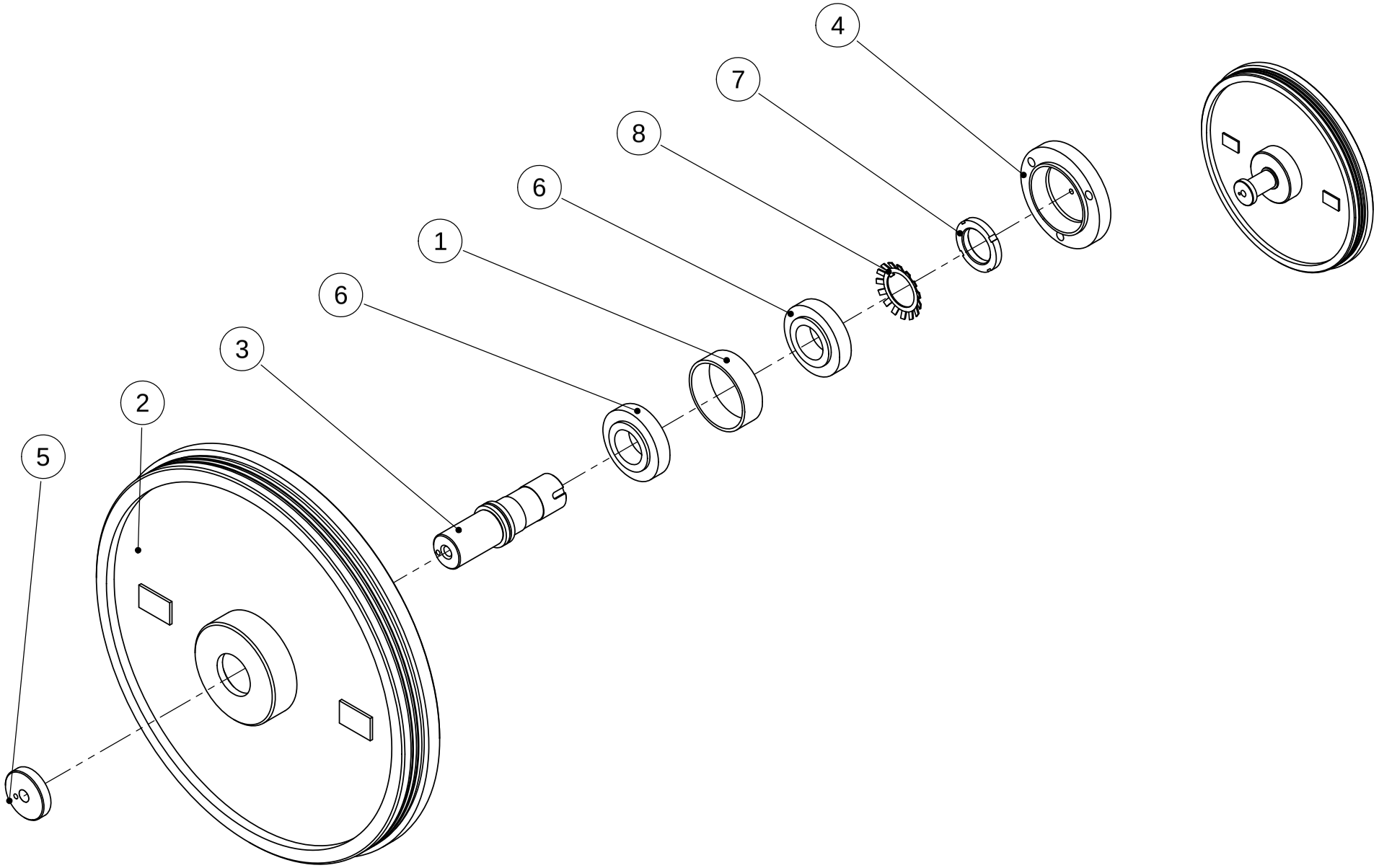
C260L-31000 鋸臂組						
ITEM	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	QTY	NOTE
1	AHA-0719	Spacer	導輪座墊板		1	
2	C260L-3102	Adjusting plate	滑板調整板		1	
3	C260L-3103	Movable guide arm	活動鋸臂		1	
4	C260L-3118	Movable guide arm cover	活動鋸臂護蓋		1	
5	C260L-3128	Saw arm stopper plate	鋸臂檔板		1	
6	C260L-3167	Saw arm front stopper	鋸臂前檔		1	
7	C260L-3175	Guide arm block	鋸臂連動檔板		1	
8	C560-3171	Feedler	鋸臂連動擋輪		1	
9	C560-3173	Feedler ring	連動擋輪套環		1	
10	PP-13045	DU bushing	乾式軸承		1	
11	PP-92024B	Linear guide and sliding block	滑軌滑塊	MSB25S1SSFC-R340-20/20N	2	

C260L-32200 鋼刷組
WIRE BRUSH ASSEMBLY



AGB-33010 防震滾輪機構組						
ITEM	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	QTY	NOTE
1	AGB-3026	Transmission shaft	鋼刷傳動桿		1	
2	AGC-3025	Wire brush cover	鋼刷護蓋		1	
3	AGC-3027	Brush cover fixed plate	鋼刷護蓋固定板		1	
4	AHA-1217	Lock lever	鋼刷調整桿		1	
5	AHA-12110-1	Wire brush bearing seat assembly	鋼刷軸承座組		1	
6	AHB-0519	Wire brush shaft	鋼刷軸		1	
7	PP-13025	DU bushing	乾式軸承	1215	2	
8	PP-15010	Universal Joint	萬向接頭	12M/M	2	
9	PP-58002	Wire brush	鋼刷	90m/m-8m/m*16T*＃0.3	2	

C300H-30300A 上輪組
IDLE WHEEL ASSEMBLY



2015/12/4

C300H-30300A 上輪組						
ITEM	PART NO.	PART NAME	PART NAME IN CHINESE	PART SPEC.	QTY	NOTE
1	AHA-0637	Idle wheel bearing washer	軸承墊圈		1	
2	C250H-3031	Idle wheel	上輪		1	
3	C250H-3033	Idle wheel shaft	上輪軸		1	
4	C250H-3037	Idle wheel shaft cover	上輪軸蓋		1	
5	C250H-3045	Fixed washer	上輪軸固定華司		1	
6	PP-14613	Ball bearing	滾錐軸承	30207	2	
7	PP-14907	Fixed nuts	固定螺母	AN07	1	
8	PP-14957	Stop ring	止動環	AW07	1	

Section 11

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.

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