



SH-7550S

Semi-Automatic Heavy-Duty 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:

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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.

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SAFETY INFORMATION

SAFETY INSTRUCTIONS

SAFEGUARD DEVICES

EMERGENCY STOP

SAFETY LABELS

HEARING PROTECTION

CE COMPLIANCE

RISK ASSESSMENT

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

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

SAFETY INSTRUCTIONS

What the icons and signs in this user manual mean:



This icon marks **DANGER**; hazards or unsafe practices that may result in **severe personal injury or death**.



This icon marks **WARNING**; hazards or unsafe practices that may result in **personal injury or damage to the machine**.



This icon marks **CAUTION**; information that should be read before use to prevent **damage to the machine**.



Supplementary information to the procedures described in this manual.



Call your local agent or our service center for help.



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



Do not operate this machine unless it is completely assembled.



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



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



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



Wear proper apparel during operation and when servicing the machine.



Keep unauthorized personnel away.



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



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



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



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



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



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



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



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



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



Use recommended accessories. Improper accessories may be hazardous.



Keep your work area well illuminated at minimum 500 lumen.



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



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



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



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



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



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



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



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

SAFEGUARD DEVICES

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

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

Protection Covers & Guards

1. Idle wheel housing cover
2. Drive wheel housing cover
3. Gear reducer cover
4. Wire brush belt cover
5. Blade guard cover (left & right)



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



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



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

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

Safety Related Switches

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

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

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

EMERGENCY STOP

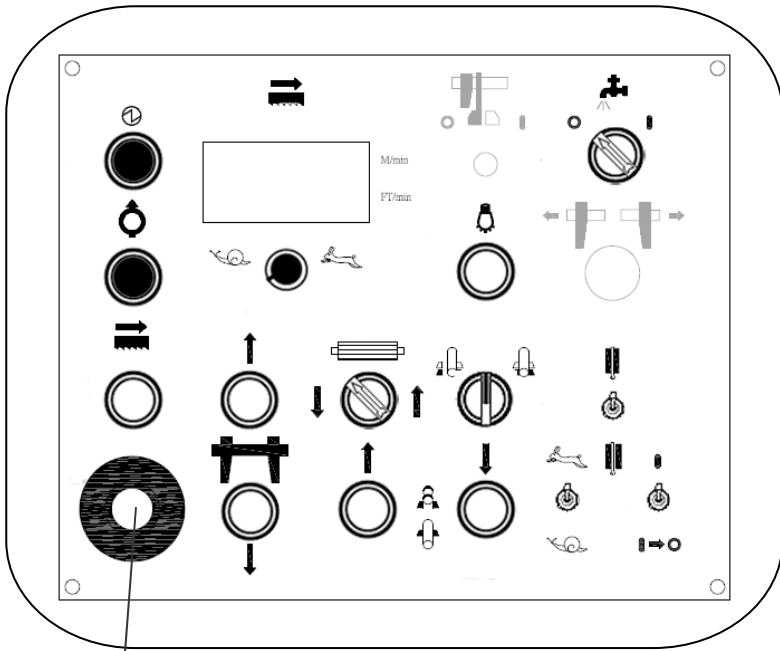
Designed to be easily accessible, the emergency stop button is located on the left bottom corner on the control panel and is made in red color and rubber material. For CE models, supplementary emergency stop button may be available at other area(s) of the machine depending on machine type. Please refer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

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

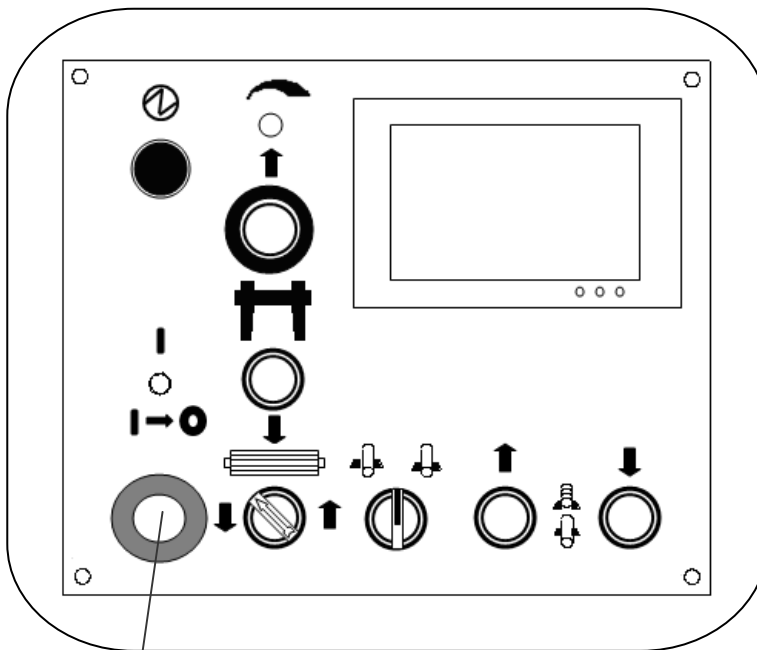
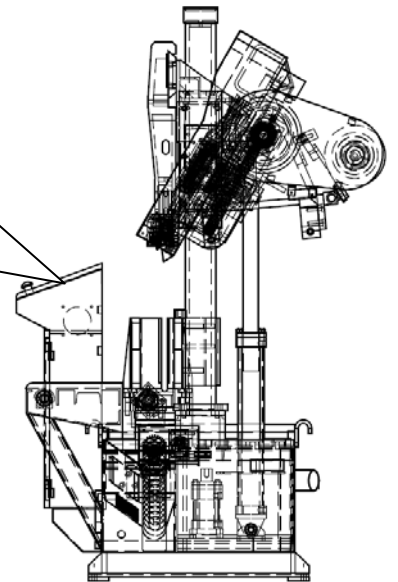
You should press it immediately without any hesitation when observing:

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

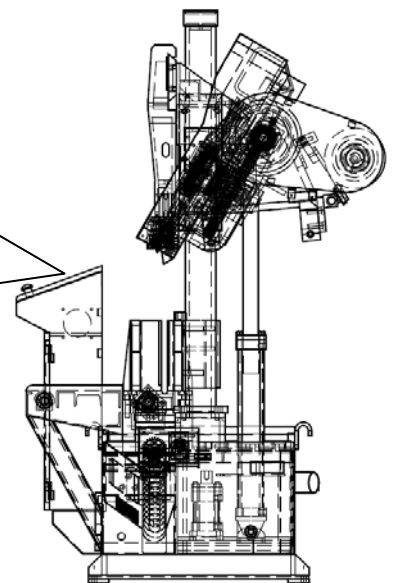
Illustration: Emergency Stop



Emergency Stop Button
of Control Panel without
HMI



Emergency Stop Button
of Control Panel with
HMI





SAFETY LABELS

Safety-related labels mounted on the machine are categorized into the following four categories. Please read through and understand them before operating the machine. Refer to *Illustration: Safety Labels*.



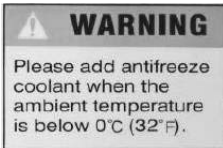

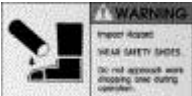
DANGER Labels

A red and white DANGER labels marks s hazards or unsafe practices that will result in severe personal injury or death.

Label	Meaning	Label	Meaning
	<p>Hazardous Voltage</p> <p>TURN POWER OFF before servicing. Failure to following the warning can result in severe injury.</p>		<p>DANGER: Running Blade</p> <p>Blade runs through this area. Keep your hands away from a running blade to avoid severe injury. The arrow indicates direction of the blade.</p>



WARNING Labels

An orange and black WARNING label marks hazards or unsafe practices that can result in severe personal injury or damage to the machine.

Label	Meaning	Label	Meaning
	<p>Cutting Hazard</p> <p>KEEP COVER CLOSED while the blade is running. Turn power off before opening cover. Failure to follow the warning can result in severe injury.</p>		<p>Cutting Hazard</p> <p>KEEP HAND OFF while the blade is running. Turn power off before opening cover. Failure to follow the warning can result in severe injury.</p>
	<p>Please add antifreeze coolant when the ambient temperature is below 0°C (32°F).</p>		<p>Loose Hand Hazard</p> <p>KEEP HAND OFF. Do not touch chip conveyor. Failure to follow the warning can result in severe injury.</p>
	<p>Impact Hazard</p> <p>WEAR SAFETY SHOES. Do not approach dropping area during operation.</p>		

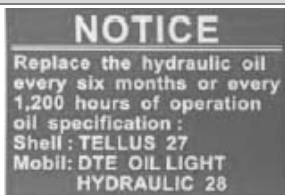
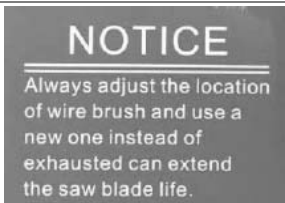
CAUTION Labels

Yellow and black CAUTION labels mark hazards or unsafe practices that can result in considerable personal injury.

Label	Meaning
	Keep hands out of the machine while the blade is running.
	Power to machine must be turned off when changing blades or adjusting wire brush.

NOTICE Labels

Blue and white NOTICE labels mean unsafe practices that could result in damage to products or property.

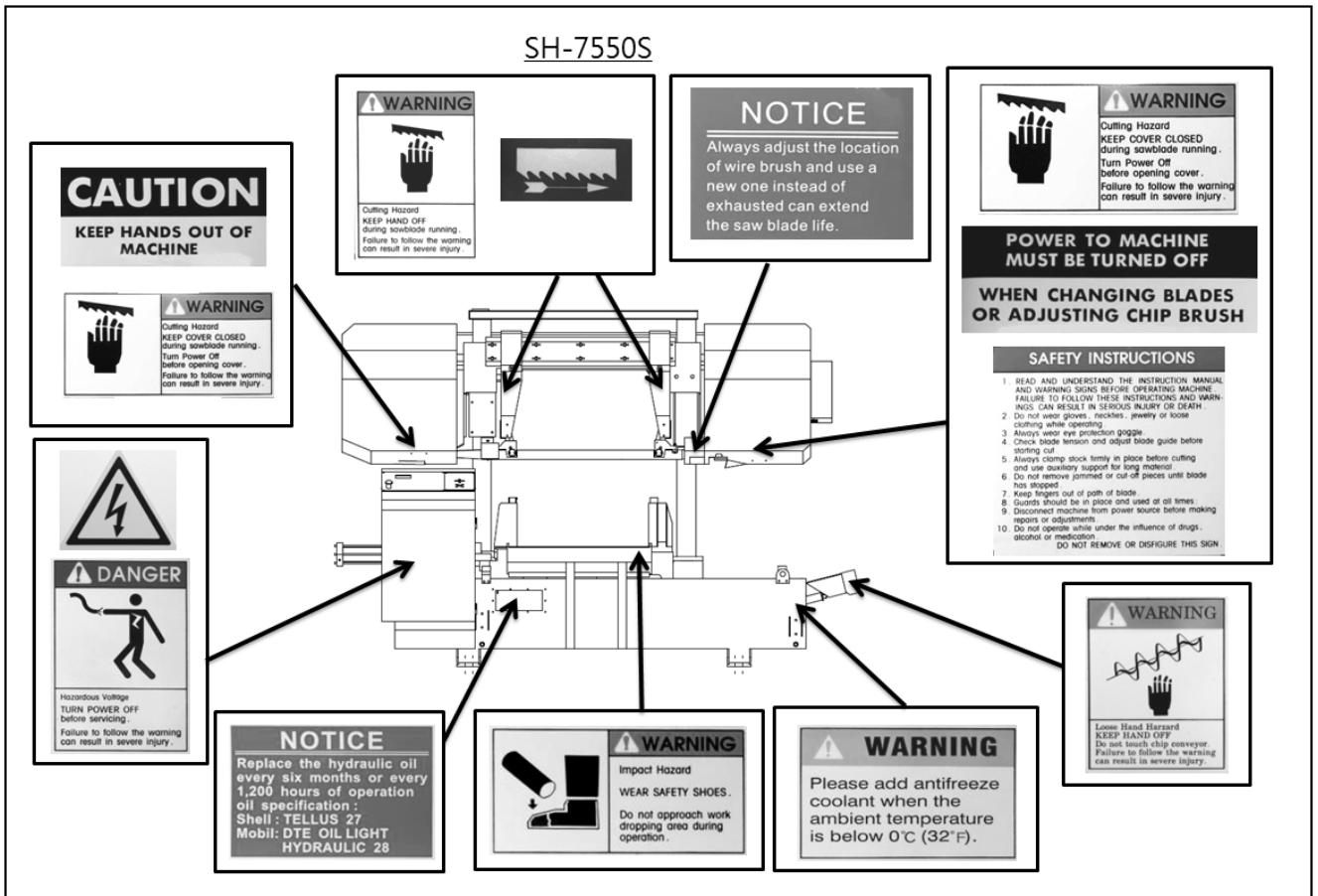
Label	Meaning
	Replace the hydraulic oil every six months or every 1,200 hours of operation. Oil specification: Shell TELLUS 27 or Mobil DTE OIL LIGHT / HYDRAULIC 28
	To extend blade life, always adjust the location of wire brush so that it is properly touching the blade. Also replace a worn wire brush with a new one.

SAFETY INSTRUCTION Labels

Green and white SAFETY INSTRUCTIONS are important reminders that should be read before operating the machine.

Label	Meaning
<p>SAFETY INSTRUCTIONS</p> <p>1. READ AND UNDERSTAND THE INSTRUCTION MANUAL AND WARNING SIGNS BEFORE OPERATING MACHINE. FAILURE TO FOLLOW THESE INSTRUCTIONS AND WARNINGS CAN RESULT IN SERIOUS INJURY OR DEATH.</p> <p>2. Do not wear gloves, neckties, jewelry or loose clothing while operating.</p> <p>3. Always wear eye protection goggle.</p> <p>4. Check blade tension and adjust blade guide before starting cut.</p> <p>5. Always clamp stock firmly in place before cutting and use auxiliary support for long material.</p> <p>6. Do not remove jammed or cut-off pieces until blade has stopped.</p> <p>7. Keep fingers out of path of blade.</p> <p>8. Guards should be in place and used at all times.</p> <p>9. Disconnect machine from power source before making repairs or adjustments.</p> <p>10. Do not operate while under the influence of drugs, alcohol or medication.</p> <p>DO NOT REMOVE OR DISFIGURE THIS SIGN</p>	<ol style="list-style-type: none"> 1. Read and understand the instruction manual and warning signs before operating machine. Failure to follow these instructions and warnings can result in serious injury or death. 2. Do not wear gloves, neckties, jewelry or loose clothing while operating the machine. 3. Always wear eye protection goggles. 4. Check blade tension and adjust blade guide before starting to cut. 5. Always clamp stock firmly in place before cutting. 6. Do not remove jammed or cut-off pieces until blade has stopped. 7. Keep fingers out of path of blade. 8. Blade guards should be in place and used at all times. 9. Disconnect machine from power source before marking repairs or adjustments. 10. Do not operate while under the influence of drugs, alcohol or medication.

Illustration: Safety Labels



HEARING PROTECTION



Always use ear protection!

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

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

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

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

CE COMPLIANCE

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

RISK ASSESSMENT

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

GENERAL INFORMATION

SPECIFICATION

MACHINE PARTS IDENTIFICATION

FLOOR PLAN

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

Safety

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

Convenience & High-Performance

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

Durability

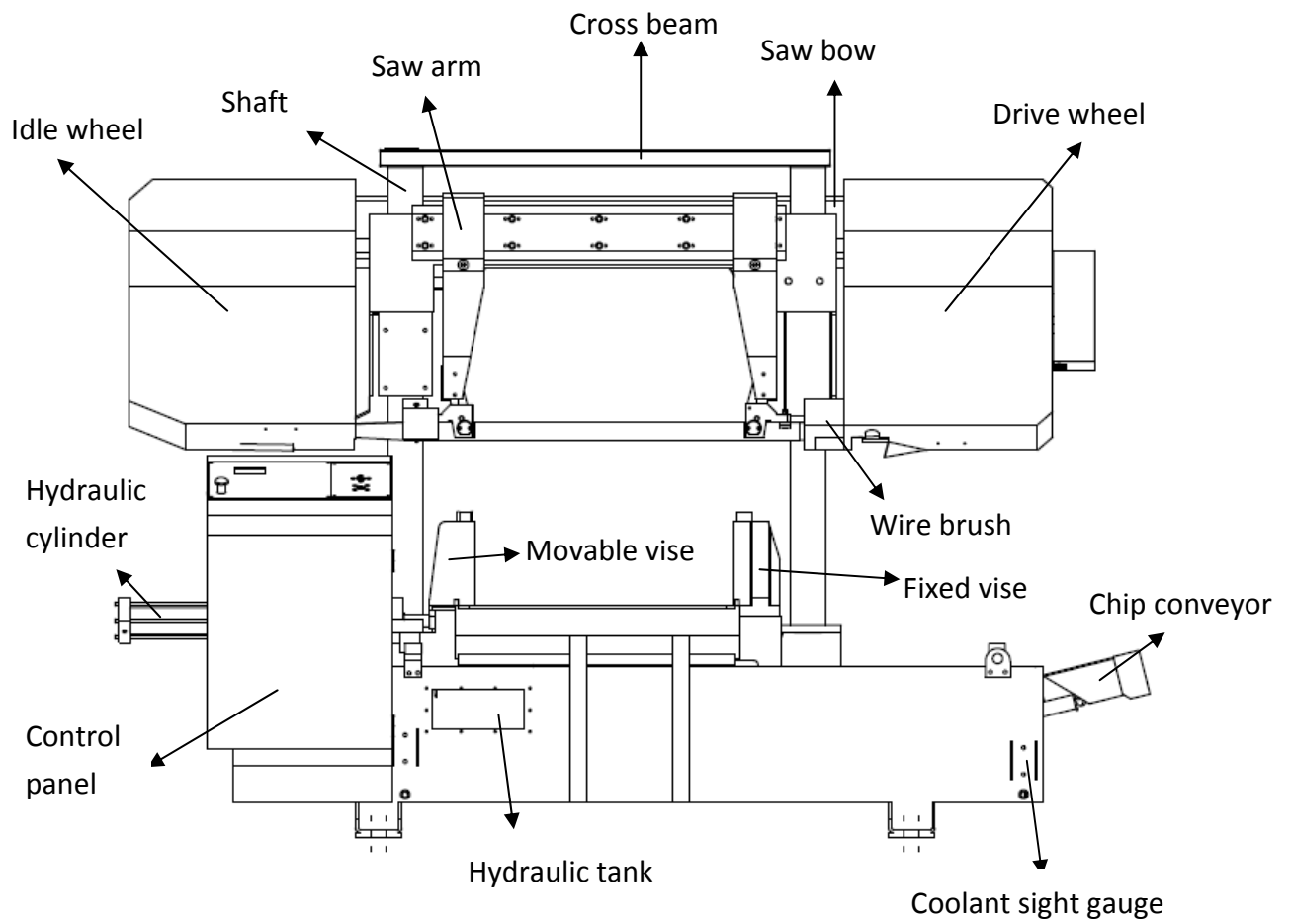
- The intended life-span of the machine is counted based on regular daily operation. It is calculated with the life expectancy of 10 years under normal operating condition and exact attention to the maintenance schedule.

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

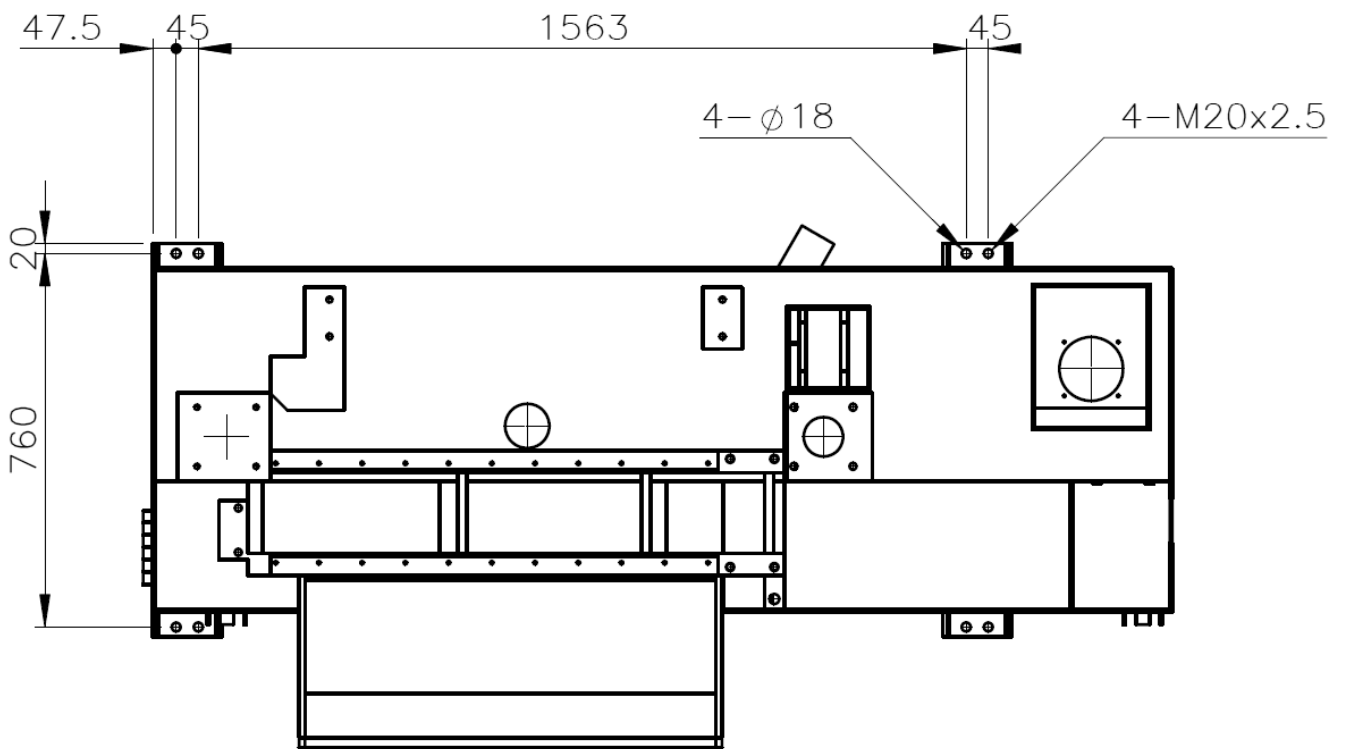
SPECIFICATION

Model		SH-7550S Semi-Automatic Heavy-duty Bandsaw
Capacity	Round	500 mm (19.7")
	Square	500 mm (19.7")
	Rectangular (H x W)	500 x 750 mm (19.7" x 29.5")
	Bundle Cutting	W: 250~470 mm (9.8"~18.5") H: 150~235 mm (5.9"~9.25")
	Vise Min. Clamping Width	43 mm (1.7")
Saw Blade	Speed	16 ~ 84 m/min (52~275 fpm)
	Size	6,040 x 54 x 1.6 mm (238" x 2" x 0.063")
	Tension	Hydraulic with automatic blade breakage detection
	Guide	Interchangeable tungsten carbide
	Cleaning	Steel wire brush with flexible drive shaft driven by main motor
Motor Output	Saw Blade	7.5 HP (5.6 kW) or 10HP
	Hydraulic	2 HP (1.5 kW)
	Coolant Pump	1/4 HP (0.18 kW)
Tank Capacity	Hydraulic	40 L (10 gal)
	Coolant	85 L (21.25 gal)
Workbed Height		701 mm (27.5")
Weight	Net	2,080 kg (5,016 lb)
	Gross	2,600 kg (5,720 lb)
Floor Space (L x W x H)		3,122 x 1,097 x 2,085mm (122.9" x 43.2" x 82.1")

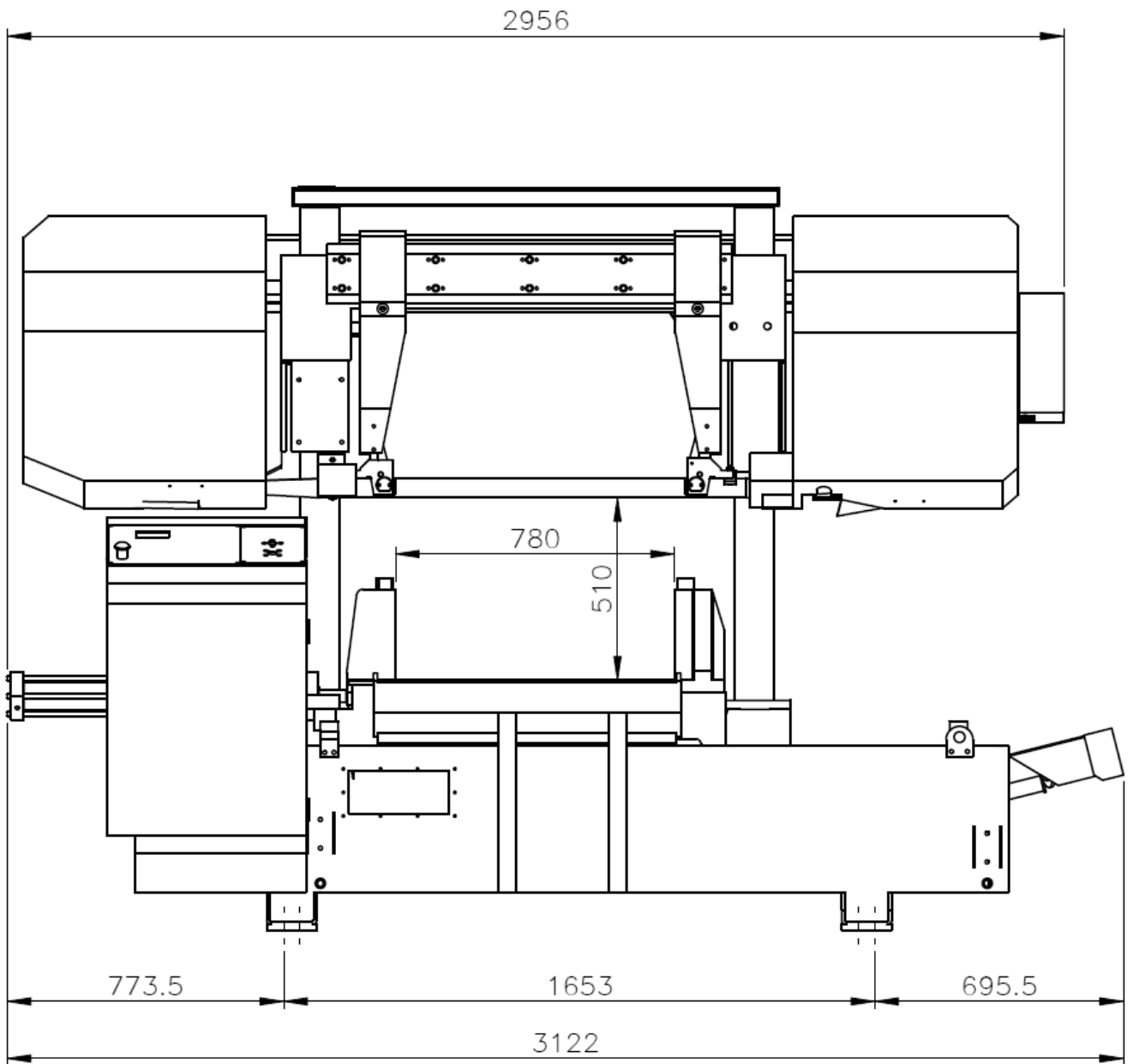
MACHINE PARTS IDENTIFICATION



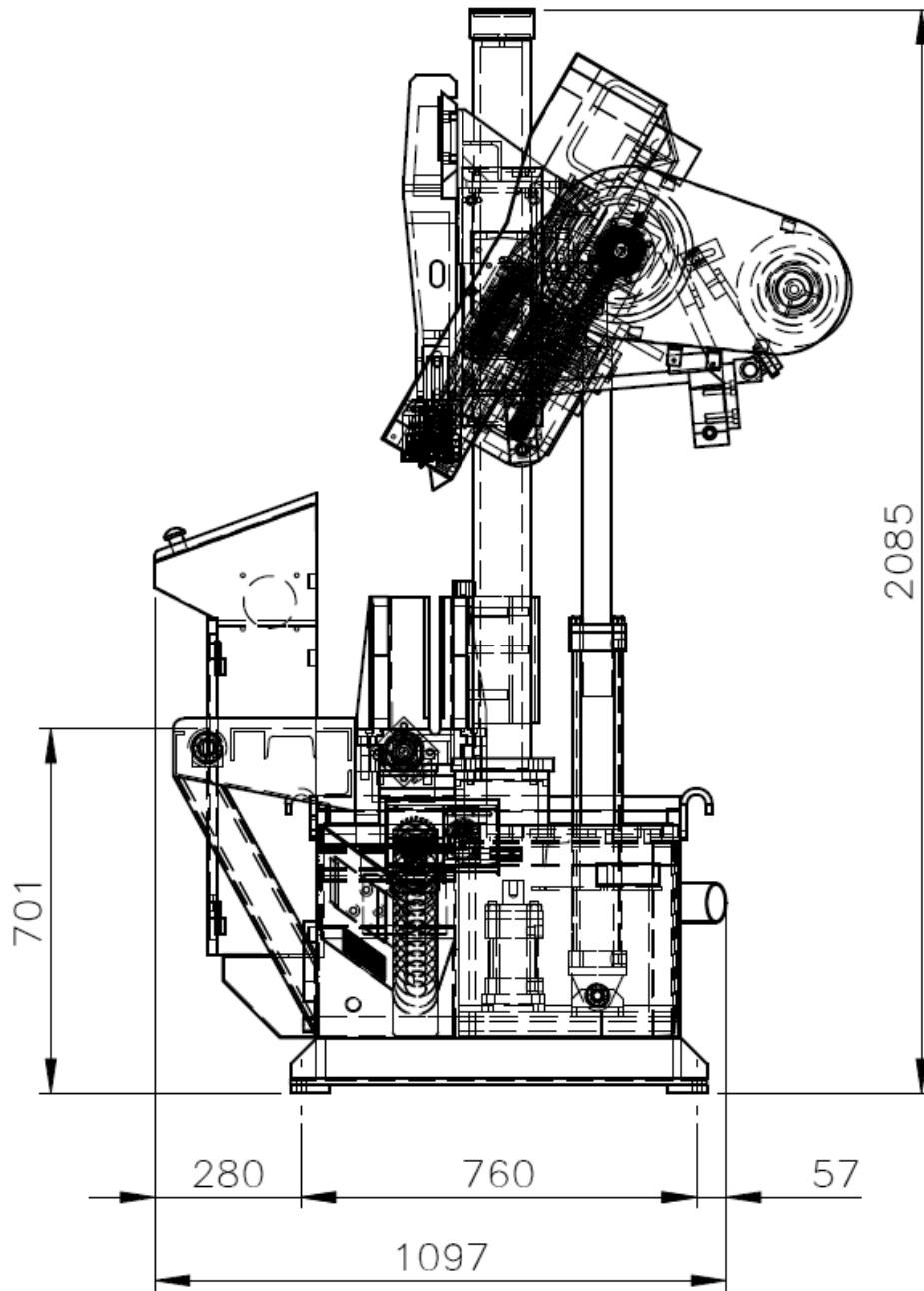
FLOOR PLAN



Machine top view



Machine front view



Machine side view

MOVING & INSTALLATION

LOCATION & ENVIRONMENT

UNPACKING & INSPECTING

LIFTING

REMOVING SHIPPING BRACKET

CLEANING

INSTALLING

RELOCATING

LOCATION & ENVIRONMENT

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

Space:

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

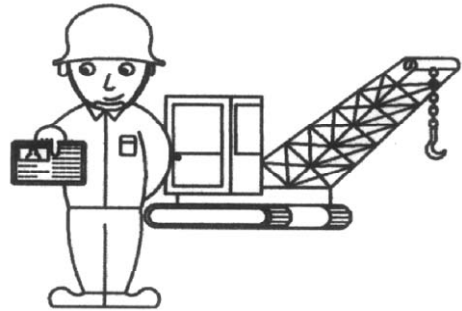
1. Use a crane

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*).

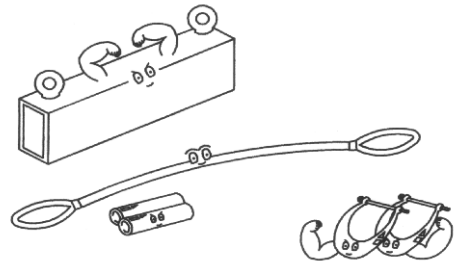
- Machine lifting is likely to damage the machine if not performed properly.



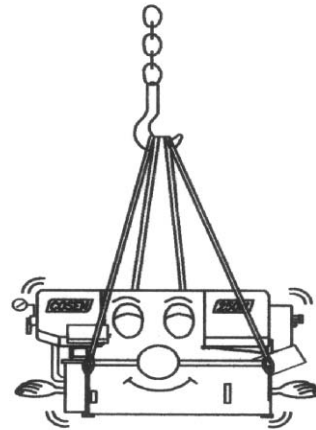
You must have a qualified crane operator to perform the job.



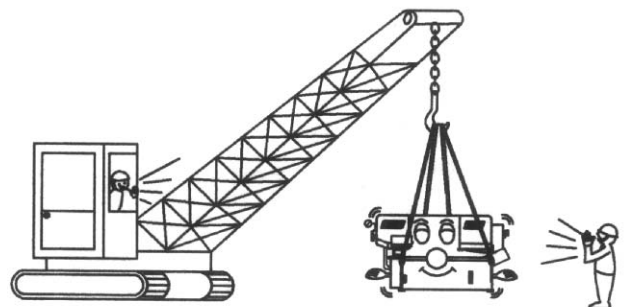
- You must use tools and equipment with the proper tensile strength and use proper method when moving your machine.



- 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.



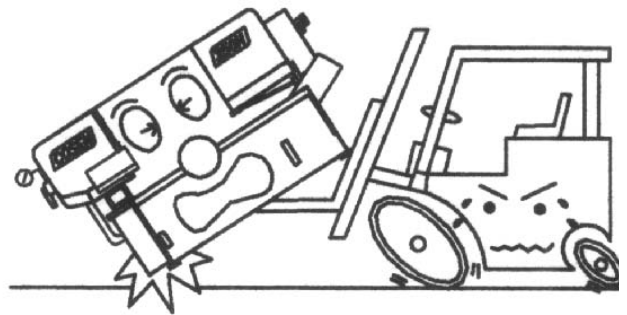
You must have a qualified forklift operator to perform the job.



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



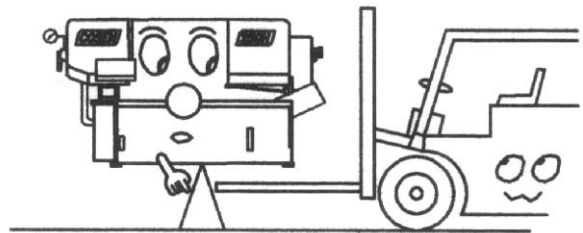
Make sure the forks are able to reach in at least 2/3 of the machine depth.



- You must keep the machine balanced at all times.



Make sure the forks are centered before use.



(Illustration only.)

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.

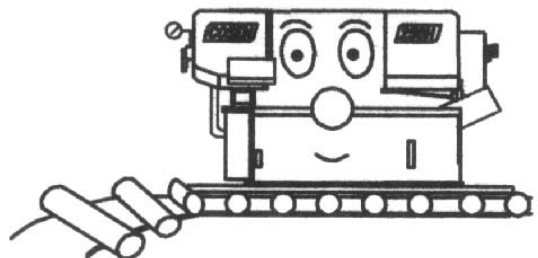
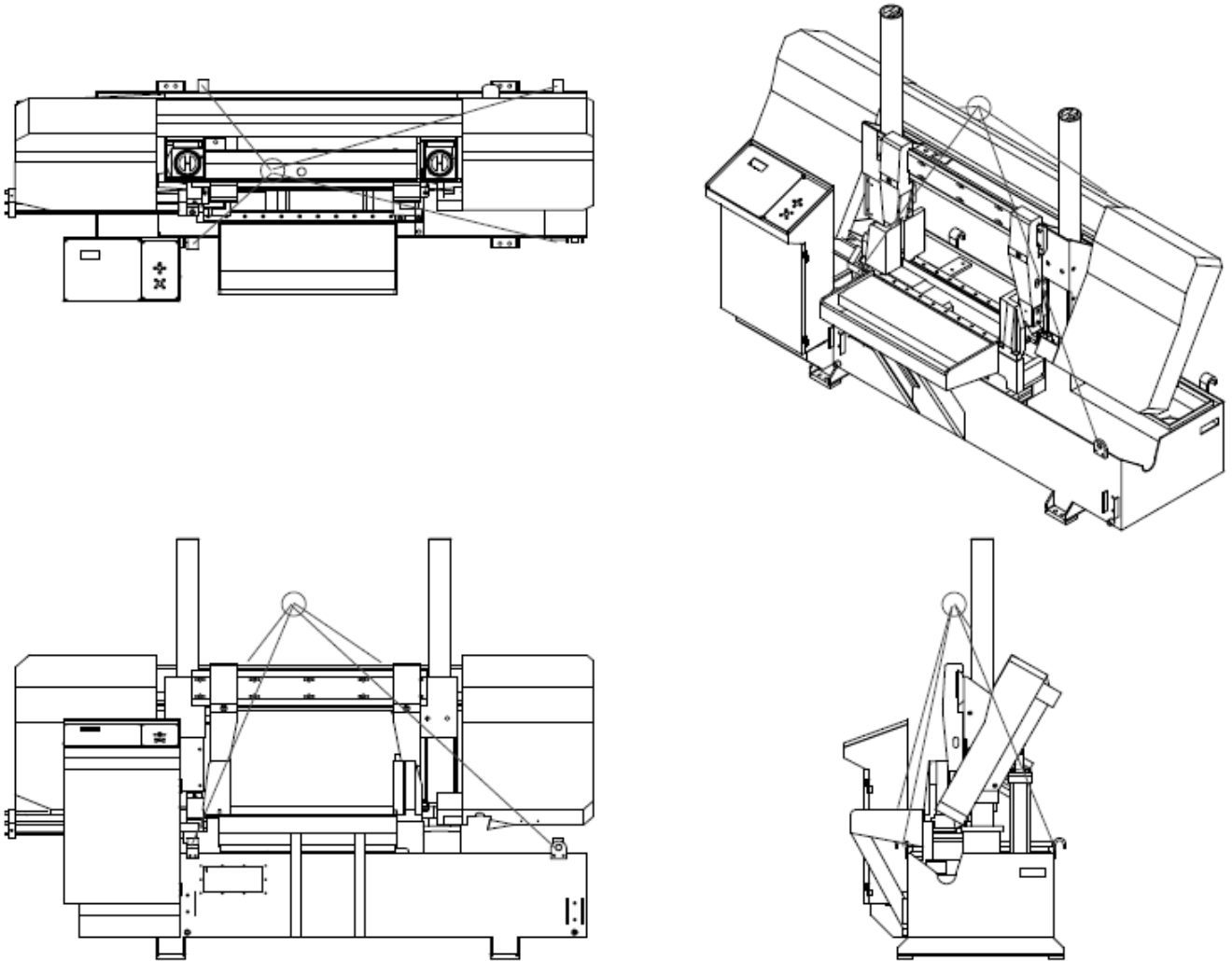


Illustration: Lifting Points

Please remove the cross beam before lifting the machine.

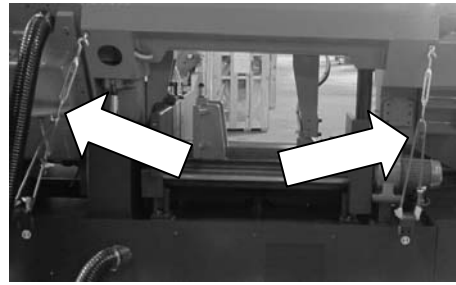


Minimum weight capacity for each wire rope: **3 ton**

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

REMOVING SHIPPING BRACKET

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



CLEANING

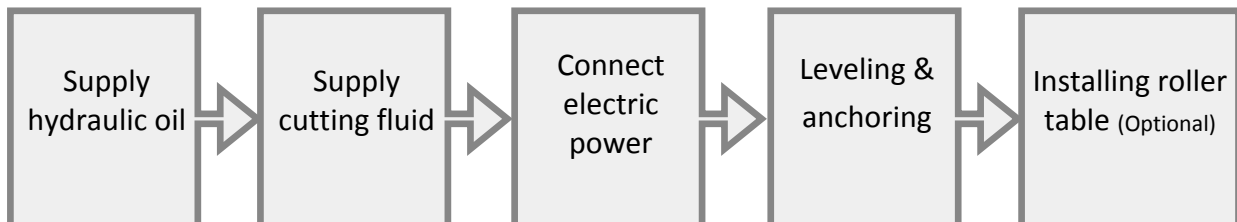
After the machine has been placed at the designated position, remove the rust-preventive grease with wiping cloth dampened with cleaning oil or kerosene. Apply machine oil to machine surfaces that are prone to rust.



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

INSTALLING

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



Supplying hydraulic oil

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

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



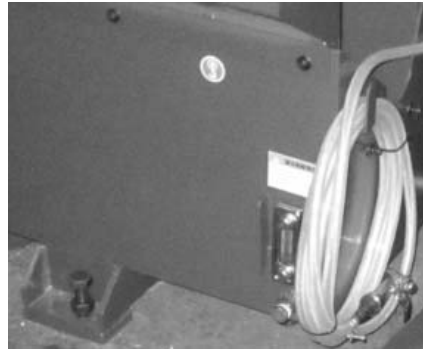
Refer to specification chart under Section 2 for tank capacity.



Supplying coolant

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

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



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



Refer to specification chart under Section 2 *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.



Leveling

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

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



Make sure all leveling bolts evenly support the machine weight.

Anchoring the machine

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

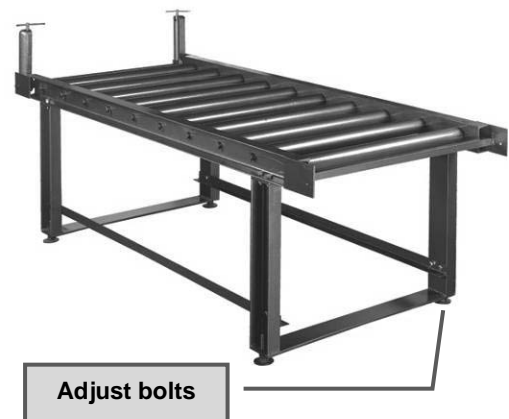
Shock absorption steel plates are provided and can be placed under each leveling bolt to prevent their sinking into the concrete floor.

Installing roller table (optional)

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

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

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



Installing fire control device

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

RELOCATING

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

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

OPERATING INSTRUCTION

SAFETY PRECAUTIONS

BEFORE OPERATING

CONTROL PANEL

STANDARD ACCESSORIES

OPTIONAL ACCESSORIES

UNROLLING & INSTALLING THE BLADE

ADJUSTING WIRE BRUSH

ADJUSTING SAW ARM

ADJUSTING COOLANT FLOW

ADJUSTING BLADE SPEED

BREAKING-IN THE BLADE

TEST-RUNNING THE MACHINE

CUTTING OPERATION

USING TOP CLAMP FOR BUNDLE CUTTING

TERMINATING A CUTTING OPERATION

SAFETY PRECAUTIONS

For your safety, please read and understand the instruction manual before you operate the machine.

The operator should always follow these safety guidelines:

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

BEFORE OPERATING

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

Wet cutting

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

Cutting unknown materials

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



Never take your eyes off the machine while in operation.

Cutting fluid

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

Pro	Con
<ul style="list-style-type: none">• Have a high cooling effect• Not flammable• Economical• Does not require cleaning of the cut products	<ul style="list-style-type: none">• 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.

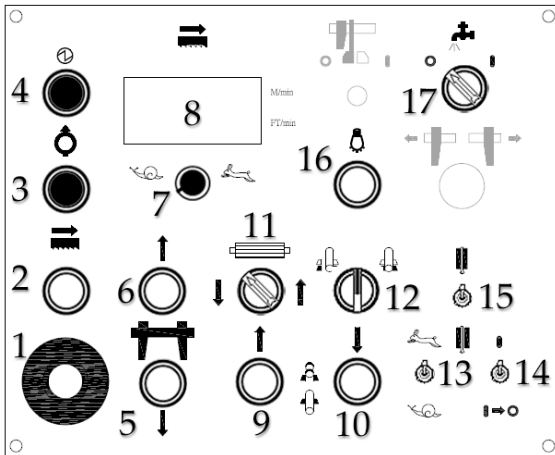


Before starting a cutting job, make sure there is sufficient amount of coolant in the tank.

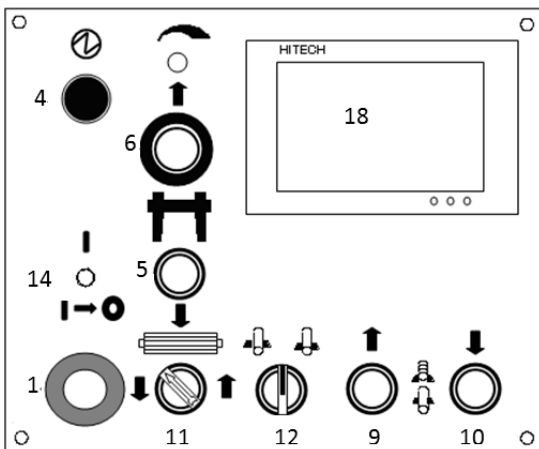
Check the fluid level through the sight gauge. Please refer to machine specifications in this manual (Section 2) for tank capacity.

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, the projecting light system and the optional human-machine-interface (HMI). The control panel comes in two different formats: (A) regular type without the optional HMI system (B) advanced type with the optional HMI system. The operator must fully understand the function of each switch and button before operating the machine.



(A) Regular type without the optional HMI



(B) Advanced type with the optional HMI

No.	Name
1	Emergency stop button
2	Saw blade start button (with built-in lamp)
3	Hydraulic on button (with built-in lamp)
4	Power indicator lamp
5	Saw bow down button
6	Saw bow up button
7	Blade speed control knob
8	Blade speed indicator
9	Lift roller feed backward button (optional)
10	Lift roller feed forward button (optional)
11	Lift roller up/down switch
12	Vise open/clamp knob
13	Lift roller feed speed selector (optional)
14	Last cut function on/off selector
15	Carbide inserts clamp/unclamp selector
16	Projection light on button
17	Coolant on/off switch
18	HMI touch screen

Control Buttons

1. Emergency stop button

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



Also serves as the “hydraulic off button.”

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

When this button is pressed, the built-in-lamp comes on and the blade motor starts to operate.



The vise clamp/unclamp knob must be turned and held to clamp position for 3 seconds before the blade can start running.

3. Hydraulic on button (with built-in lamp)

When this button is pressed, the built-in-lamp comes on and the hydraulic motor starts to operate.



Press the *emergency stop button* to stop the hydraulic system.

4. Power indicator lamp

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

5. Saw bow down button

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



Before lowering the saw bow, the guide arm must be positioned outside the vise in order to avoid hitting the vise and causing damages.

6. Saw bow up button

When this button is pressed for less than 2 seconds, the saw bow rises until the operator lets go of the button. When this button is pressed for more than 2 seconds, the saw bow will automatically rise to the upper limit position.



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. Blade speed control knob

This knob connects with the inverter and the inverter is used to control the rotation speed of the blade motor. The *blade speed indicator* will show the speed variation while turning this knob. Turn the knob clockwise to increase speed; turn counterclockwise to decrease.

8. Blade speed indicator

The blade speed is shown here in predetermined unit (M/min or fpm) and the blade speed can be adjusted by *blade speed control knob*.



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

9. Lift roller feed backward button (optional)

When the lift roller is at its upper position, press this button to feed the material backward at the speed selected by the *feed speed selector*.



This function is available only when the optional *hydraulic lifting take-in roller with power feeding table* is equipped.

10. Lift roller feed forward button (optional)

When the lift roller is at its upper position, press this button to feed the material forward at the speed selected by the *feed speed selector*.



This function is available only when the optional *hydraulic lifting take-in roller with power feeding table* is equipped.

11. Lift roller up/down switch

The lift roller is designed to help users save efforts feeding and adjusting material. When switched to the right, lift roller ascends to lift the material up. When switched to the left, lift roller descends to lower the material.



When the vise starts to clamp the material while the lift roller is still at its upper position, the lift roller will automatically descend slowly as a safety design to help ensure the squareness of the cut.



The lift roller can be operated only when the vise is unclamped (turned to the open position).

12. Vise open/clamp knob

Turn the knob to the left to open the vise. Turn the knob to the right to clamp the vise. Turn and hold the knob for 3 seconds and let it go; the vise will automatically close until it is fully clamped.



For the blade to start running, the vise open/clamp knob must be turned and held to the right for 3 seconds as to ensure the vises are fully clamped.

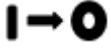
13. Lift roller feed speed selector


This selector switch is used to switch between fast and slow feeding modes.

The quick material feeding mode (symbolized by a rabbit) helps the user to quickly send the work piece into the sawing area. When switched to the slow material feeding mode (symbolized by a snail), the material feeding speed will dramatically reduce to help you position the work piece precisely.


14. Last cut function on/off selector

This selector switch is used to turn ON or OFF the last cut function.


When this mode () is selected, the blade will automatically stop as it completes the current job and triggers the lower limit switch, and the hydraulic system will shut down (in 10 seconds). This is useful when the user intends the current cut to be the last.

When this mode is selected (), the blade will automatically stop as it completes the current job and triggers the lower limit switch, but the hydraulic system will remain ON. This is used when the user intends to perform more cuts following the current one in hand.

15. Carbide inserts clamp/unclamp selector

Switching to this mode () to clamp both the right and left carbide inserts. Switching to this mode



() to open the right and left carbide inserts.



The carbide inserts are programmed to automatically clamp when the saw blade starts in order to protect the blade and the user.

16. Projection light on button

Press this button to turn on the projection light.



The light automatically shuts off within 1 minute as to prolong bulb life.

17. Coolant on/off switch

Turn this switch to the right to "I" position, the coolant pump will start. Turn this switch to the left to "0" position, the coolant pump will stop.



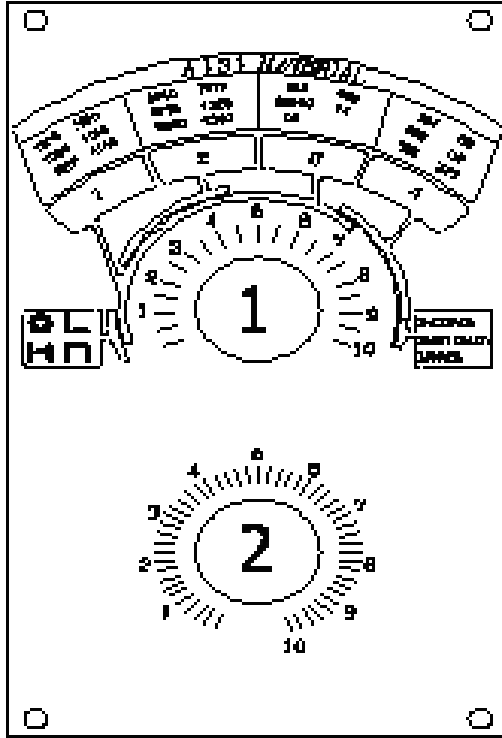
A started blade will also start the coolant automatically.

18. HMI touch screen

Refer to the following section for detailed explanation.

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

Human-machine-interface (HMI) touch screen

This HMI touch screen displays operation messages so that the operator is able to understand the system condition. It also provides different operating modes and selections for the operator to work with. During a cutting job, the operator can still enter the system and make changes to the cutting operation as needed.



Do not wipe or clean the screen with volatile solvents.



Do not overexert pressure on the screen. The touch screen is very sensitive; all buttons on the screen just need a slight touch to operate.



All range parameters in HITECH 5.7" are configured under the "manual" mode.



Please pay attention to the following environment conditions necessary for HITECH 5.7" HMI

touch screen to properly operate:

Item	Range
Ambient temperature	5°C ~ 50°C
Temperature for safe operation	-10°C ~ 60°C
Ambient humidity	30%~85% RH (No condensation)
Connection	RS422 MMI port
Environment	No condensation and rust

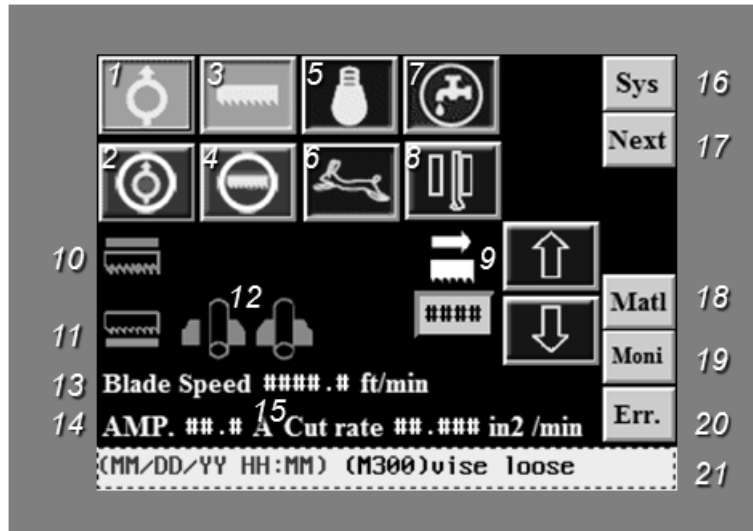


Startup Screen












After the power is turned on, Cosen's logo will appear as the startup screen, followed by the main operation menu..








Main control menu







The main control menu includes some operating button that were used on the control panel of the earlier machines. Some convenient functions are added to the page for the operator to better understand the features of the machine. Setting the parameters shown on the screen requires a gentle touch of the finger. You can also look up the parameters or make changes while in the middle of a cut.



Refer to the table below for descriptions of each function.

No.	Item	Function	Description
1		Hydraulic start	<p>When the power is turned on, press this button to start the hydraulic motor.</p> <p>A solid yellow icon indicates the hydraulic system has been turned on. </p>
2		Hydraulic stop	<p>Press this button to turn off the hydraulic motor immediately.</p> <p> When the blade is running, the <i>hydraulic stop button</i> is temporarily disabled. You need to press the <i>saw blade stop</i> or the <i>emergency stop</i> button to stop the blade first.</p>
3		Saw blade start	<p>When the work piece is clamped properly, press this button to start cutting. A solid yellow blade icon indicates the blade has been started. </p> <p> The vise open/clamp knob must be turned and held to clamp position for 3 seconds before the blade can start running.</p>
4		Saw blade stop	Press this button to stop the blade.
5		Projection light ON/OFF	<p>Press this button to turn on the projection light.</p> <p>The light bulb showing a solid yellow icon indicates the worklight has been turned on. </p> <p> The light automatically shuts off within 1 minute as to</p>

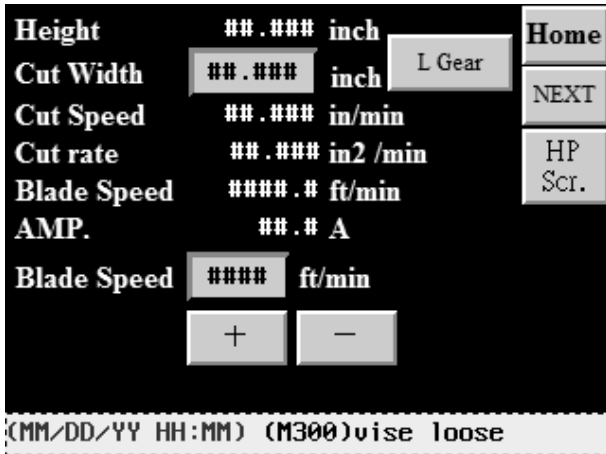
No.	Item	Function	Description
			prolong bulb life.
6	 	Lift roller feed speed (optional)	<p>Press this button to switch between fast and slow feeding modes.</p> <p>The quick material feeding mode (symbolized by a rabbit) helps the user to quickly send the work piece into the sawing area. When switched to the slow material feeding mode (symbolized by a snail), the material feeding speed will dramatically reduce to help you position the work piece precisely.</p> <p> This function is available only when the optional hydraulic lifting take-in roller with power feeding table is equipped.</p>
7		Coolant ON/OFF	<p>Press this button to turn on the coolant pump.</p> <p>A solid yellow faucet icon indicates the coolant pump has been turned on. </p> <p>Press again to turn off the coolant pump.</p> <p> A started blade will also start the coolant automatically.</p>
8		Carbide inserts clamp/unclamp	<p>Press this button to clamp carbide inserts. </p> <p>Press again to unclamp.</p> <p> The carbide inserts are programmed to automatically clamp when the saw blade starts in order to protect the blade and the user.</p>
9		Blade speed setting	<p>Press this key to directly input your desired blade speed value according to the material being cut. Press and hold this button  to increase the blade speed. Press and hold this button  to decrease the blade speed</p> <p> The operator must make sure the pulley is at high or low gear. Speed range = 16~84 M/min (52~275 fpm).</p>
10		Saw blade up indicator	<p>Indicates that the saw blade is rising.</p> <p>When activated, the saw blade icon will turn solid white. </p>
11		Saw blade down indicator	<p>Indicates that a cut is completed and the saw blade is at its lowest position.</p>

No.	Item	Function	Description
			When the blade completes each cut and triggers the lower limit switch, the saw blade icon will turn solid white. 
12		Vise status indicator	Indicates if the vise have clamped and secured the workpiece. When the vise have secured the workpiece, the clamping vise icon on the right will turn solid green.
13	Blade Speed	Blade speed display	Displays current blade speed.
14	AMP.	Blade motor amp draw (optional)	The current in Amps drawn by the blade motor displayed on this page if the optional accessory, Motor Amp Draw, is purchased.
15	Cut rate	Cutt rate display (optional)	Displays the current cut rate.  Cut rate value is available only if the material width is entered.
16	Sys	System parameter setting	Press this button to set up system parameters. Password is required.  All parameters have been set up by the manufacturer. In order to prevent random change from being made to these parameters and affect cutting precision and machine life, this function is protected with a set of password.
17	Next	Cutting parameter setting	Press this button to display cutting-related information e.g. blade height, blade speed, cutting rate and etc. Blade deviation detector (optional) can be also configured in this setup page. Refer to Cutting Display & Setup in the following page.
18	Mtrl	Material cutting reference	This 2-page reference chart lists out the required blade speed and cutting rate for each different material.
19	Moni	PLC monitor	Shows current PLC signals.
20	Err.	Error report	Lists a historical report of the errors and the time of occurrence as well as provides troubleshooting support. 6 pages in total.
21	 (yellow highlight)	Error display	Displays error messages in the order of occurrences; press the message for three seconds to clear the messages.  The message must be cleared for the machine to continue to operate normally.

NEXT

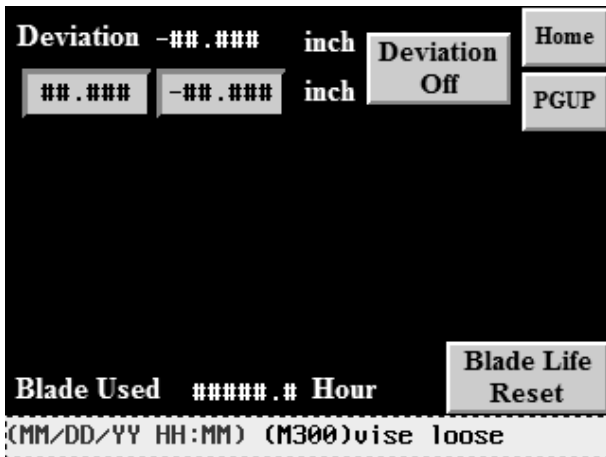
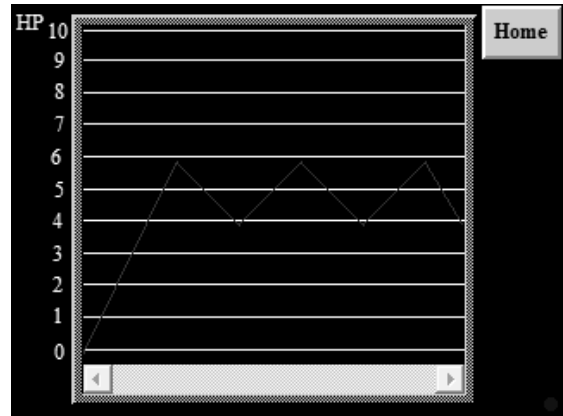
Cutting status display & setup

When cutting is in operation, press **NEXT** to enter cutting status display and setup page.



Page 1 – cutting status display 1

- This page shows the following information (from top to bottom):
 - Height - Saw bow height
 - **Cut width** - Press this button to set material width. With material width, the system can automatically calculate the cut rate.
 - **L Gear** - Press this key to switch between low (L) and high(H) gears for the drive belt. The operator must make sure the pulley is at high or low gear.
 - ✓ Maximum blade speed:
On L Gear: 65 M/min (213 fpm)
On H Gear: 84 M/min (275 fpm)
 - ✓ Not shown if the machine comes without this option.
 - Cut speed - blade downfeed speed
 - Cut rate
 - Blade speed display
 - Current in ampere (optional)
 - Press **####** to directly input your desired blade speed value according to the material being cut. Press and hold **+** to increase the blade speed. Press and hold **-** to decrease the blade speed
 - ✓ The operator must make sure the pulley is at high or low gear. Speed range = 16~84 M/min (52~275 fpm).
 - Error messages (highlighted in yellow; can be cleared by pressing down for 1~2 seconds)
- Press **Home** to return to the main control menu.
- Press **NEXT** to go to the next setup page.
- Press **HP Scr.** to go to the HP (horsepower) monitor screen for optional V_Drive, which is an optional accessory for enhancing cutting efficiency and reducing cutting vibrations.



Page 2 – cutting program setup

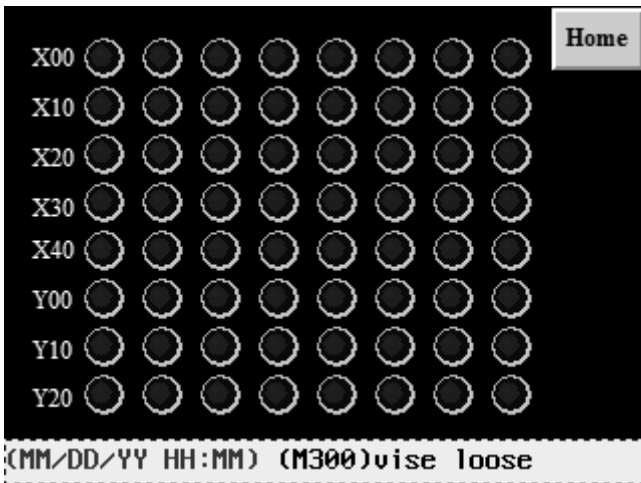
In this page you can set the following value (from top to bottom):

- **Deviation** - Set deviation +/- tolerance value. If value detected is out of this range for more than 15 seconds, error message will appear and cutting will automatically stop.
- **Deviation On/Off** - Turn on or turn off the deviation detector if installed.
- **Blade Used** - Current blade life in hours
- **Blade Life Reset** - Reset the blade life to zero
- Error message (highlighted in yellow; can be cleared by pressing down for 1~2 seconds)
- Press **Home** to return to the main control menu.
- Press **PGUP** to go back to the previous setup page.

Mtr1 *Material cutting reference*

Material	Blade Speed (FPM)	Bi-Metal Sq.In. Per (Min)
Inconel	90	3
Inconel X	80	1
Hastelloy A	100	2
Hastelloy B,C	90	1.5
Hastelloy X	70	1
Titanium Alloy		
Metals with titanium as major alloying element	90	1
Miscellaneous		
Aluminum Bronze-Soft	340	15

- This 2-page reference chart lists out the required blade speed and cutting rate for each different material.

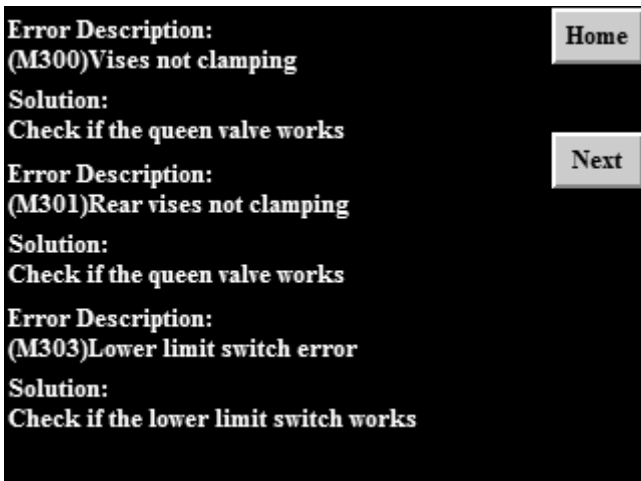


- Shows all signals of the PLC system.
- Press **Home** to return to the main control menu.



Page 1 – error report

- Lists a historical report of the errors and the time of occurrence.
- Press **Home** to return to the main control menu.
- Press **Next** to go to the troubleshooting support page.



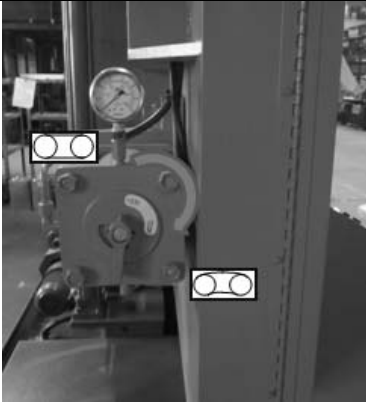
Page 2 – troubleshooting




- Provides suggestions on troubleshooting. 6 pages in total.
- Also refer to below table for error codes, descriptions and solutions.
- Press **Home** to return to the main control menu.
- Press **Next** to go to the next page.

Error Code	Error Description	Solution
M300	Front vises not clamping	Check if the queen valve works
M301	Rear vises not clamping	Check if the queen valve works
M303	Lower limit switch error	Check if the lower limit switch works
M304	Hydraulic motor not starting	Check if the hydraulic motor works
M306	Broken blade detected	1. Check if the speed switch works 2. Check if the blade is broken
M308	Left safety door abnormal	1. Check if the left safety door is shut properly 2. Check if the left safety door limit switch works
M309	Right safety door abnormal	1. Check if the right safety door is hut properly 2. Check if the right safety door limit switch works
M312	Quick approach bar abnormal	Check if the quick approach limit switch works
M313	OL1 abnormal	Check if the blade motor overload relay has tripped
M314	OL2 abnormal	Check if the hydraulic motor overload relay has tripped
M315	OL3 abnormal	Check if the coolant pump motor overload relay has tripped
M316	Saw bow upper limit abnormal	Check the upper limit switch works
M352	Front vise clamping error	1. Place new material 2. Check if the vise queen valve works 3. Check if the “no material parameter” is too low
M357	Saw bow descending error	1. Check if the descend solenoid valve is stuck 2. Check the quick approach bar works 3. Check if the quick approach bar limit switch works
M358	Saw bow ascending error	1. Check if the ascend solenoid valve is stuck 2. Check the quick approach bar works 3. Check the quick approach bar limit switch works
M361	No material	1. Place new material 2. Check if the vise queen valve works 3. Check if the “no material parameter” is too low
M363	PLC battery voltage too low	Replace PLC battery

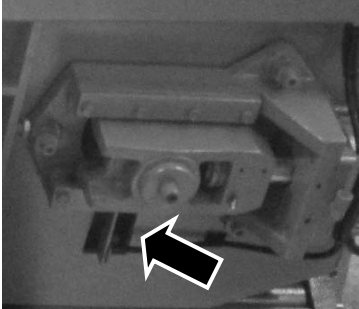
STANDARD ACCESSORIES

Blade tension device



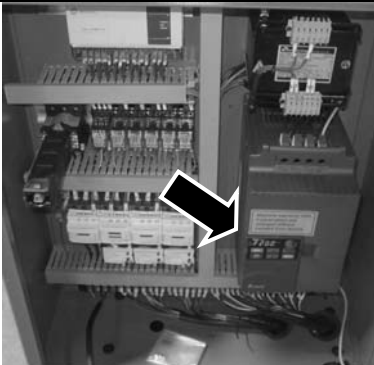
- This blade tension device equipped with hydraulic cylinder provides appropriate tension to the saw blade.
- To tighten the saw blade, turn the selector to .
- Upon saw blade breakage, the safety device will activate and automatically stop all machine operation.
- The limit switch of the safety device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

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



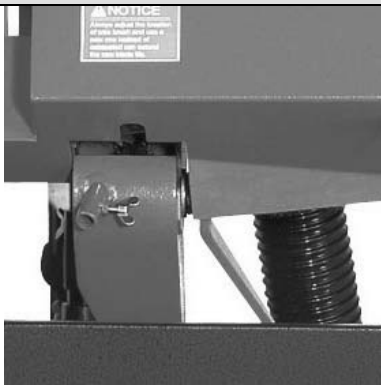
This inverter is installed in the control box. It is used to control and stabilize the saw blade speed during cutting. To adjust blade speed, use the speed control turn-knob on the control panel.



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.

Power driven wire brush



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

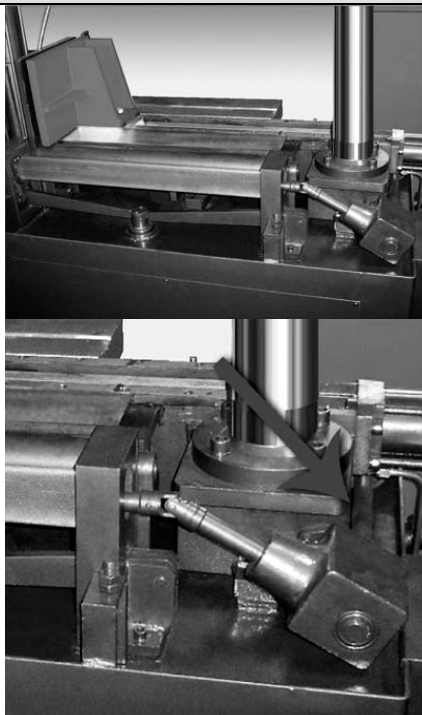


Keep hands away from the transmission shaft and the brush while the wire brush is running



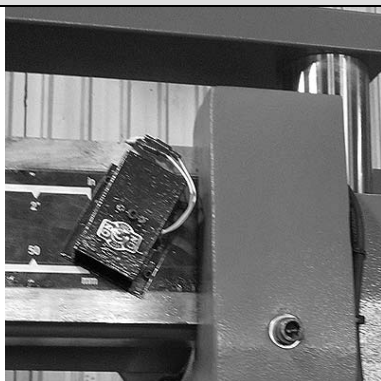
Turn off the hydraulic motor or the main power switch before performing maintenance or cleaning on the wire brush drive system.

Hydraulic lifting with manual ratcheting take-in roller



- **Hydraulic lifting:** The lift roller is hydraulically actuated and can be controlled directly from the control panel to help you bring the material into the sawing area. Press the lift roller up/down button to bring the lift roller fully to the upper position or lower position.
- **Ratcheting take-in roller:** The ratcheting take-in roller can be used when fine adjustment is needed on cut-off point alignment. The take-in roller is connected to a ratchet mechanism. A ratchet wrench and a hexagonal socket are required to perform this job.

Projection light



Activate the switch to project a beam of light on the work piece. The operator can use the light as reference to adjust the cutting dimension of the work piece. The light automatically shuts off within 1 minute as to prolong bulb life.

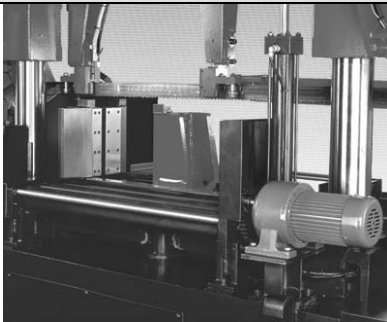
Vibration damper



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

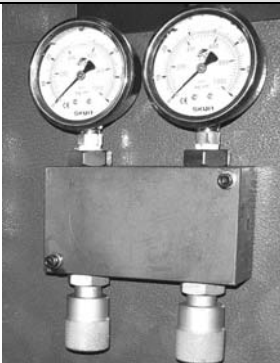
OPTIONAL ACCESSORIES

Hydraulic lifting take-in roller with powered feeding table



- While lifting your work material with a crane onto the machine workbed, turn the hydraulic lifting roller up/down selector switch to the right to lift up the rollers.
- While the lifting rollers are in the upper position, press the *shuttle bed forward/backward* buttons to send the material to the desired position with aid of the two-speed mode to select from.

Vise pressure regulator



These regulators control the clamping pressure for the vises and the top clamps. When cutting pipes or softer materials, the clamping pressure of the vises and top clamps need to be adjusted to avoid damages to the material surfaces. Adjust the clamping pressure according to the material you cut.



Do not adjust clamping pressure during operation.



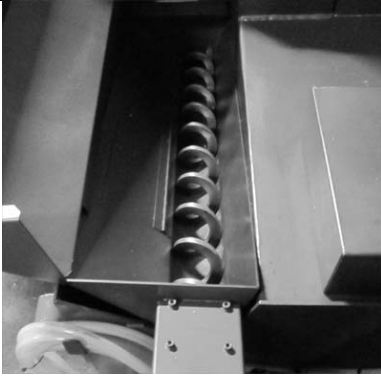
The clamping pressure shall not be less than 8 kg/cm².

2M roller table



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

Chip conveyor



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



Keep hands away from the chip conveyor assembly. Chip conveyor begins to operate as soon as the hydraulic motor is turned on.



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



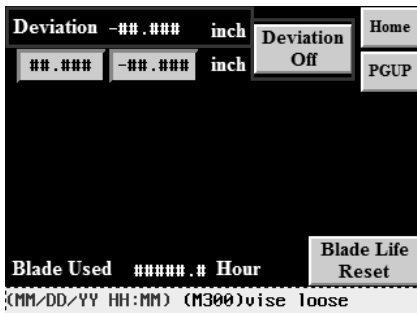
For your safety, be sure to turn off the hydraulic motor or the power during maintenance or cleaning,

Blade Deviation Detector & Calibration Procedure



This device detects blade deviation. If the blade deviates beyond the preset range, the machine will stop automatically. When this device is installed, the cutting width will be reduced. The blade deviation detected value and preset values are displayed on the HMI screen.

Before cutting, please make sure if the deviation value is within ± 0.03 mm (0.0012"). If not, please calibrate the deviation detector before proceeding to cutting.

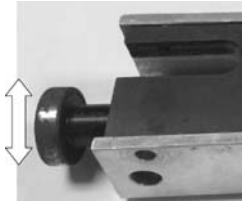
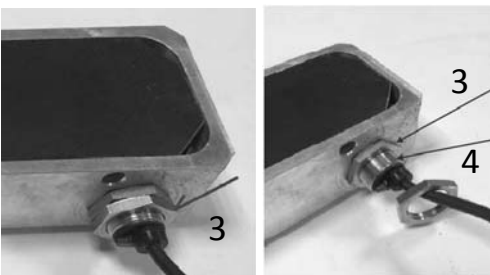


How to Check & Adjust

1. Start the hydraulic motor. Turn on the deviation function. Start the saw blade and let it run for 1~2 minutes..
2. Stop the saw blade. Observe the deviation value while the saw blade is completely still.
3. If the deviation value is out of ± 0.03 mm, loosen outer nut first then the inner nut.
4. Adjust the proximity switch until the deviation value is within ± 0.03 mm.
5. Tighten inner nut back then the outer nut.



If the deviation value is not changing while adjusting the proximity switch, try pulling below roller. If deviation value is still not changing, it means the proximity switch is broken.



Hydraulic top clamp device



- The device is a guillotine type top clamp installed on top of the vises.
- Used for cutting bundles, the top clamp will hold the material tightly so as to avoid material sliding during cutting.
- Use the adjustment valve to adjust its speed during clamping/unclamping.

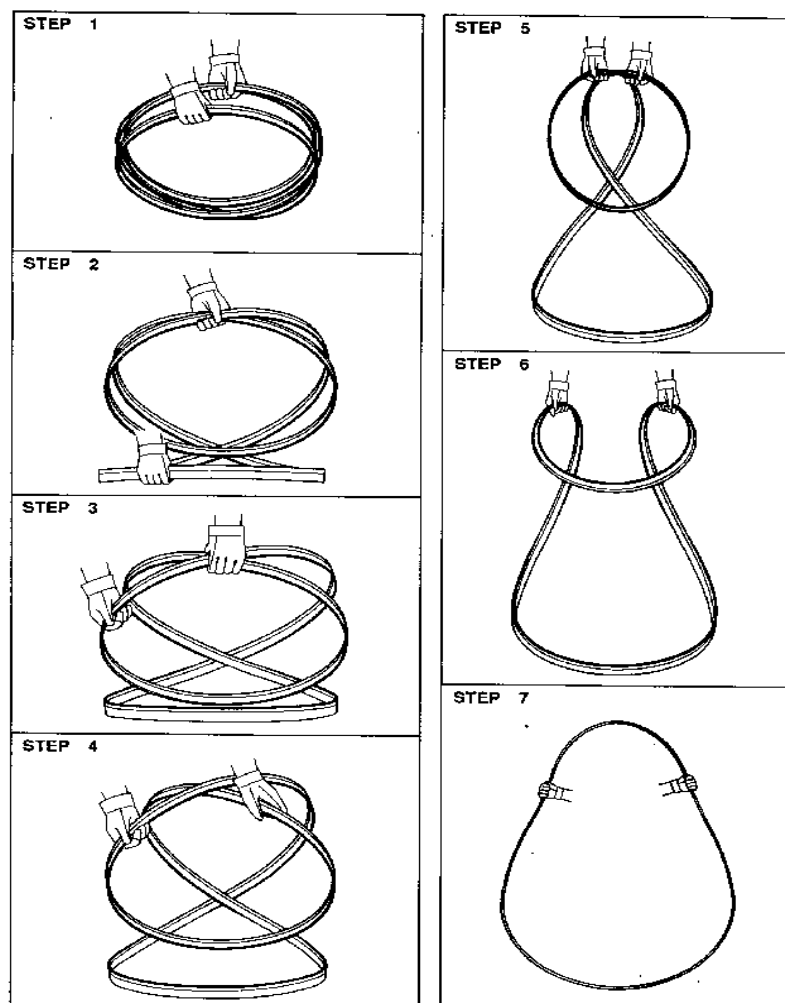
UNROLLING & INSTALLING THE BLADE



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

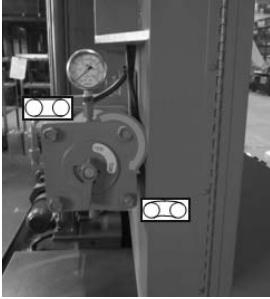
Installing a new blade

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 power.

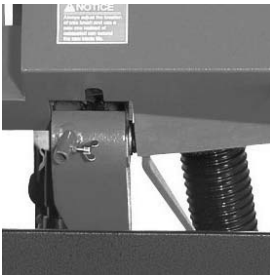
Step 3 - Press the *saw bow up* button and elevate the saw bow until the right insert holder is clear of the front fixed vise.

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 cover.

Step 6 - Loosen the wire brush assembly lock lever and move the wire brush away from the blade.



Step 7 - Unclamp the left and right carbide inserts. Pull down the saw blade from the carbide inserts, wire brush assembly and from the two wheels.

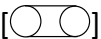
Step 8 - If necessary, clean the carbide inserts before installing a new saw blade.

Step 9 - Place the new blade around the idle wheel and the drive wheel

Step 10 - 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 11 - Place the blade to the drive wheel and press the back of the blade against the flange of the drive wheel.

Step 12 - Make sure the back of the blade is also pressed against the flange of the idle wheel.

Step 13 - Turn the tension controller handle to  position to obtain blade tension.

Step 14 - Make sure the sides of the blade are in close contact with the carbide inserts and then tighten the left and right carbide inserts.

Step 15 - Gently close the idle and drive wheel covers.

Step 16 - 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 17 - Adjust wire brush to a proper position. Refer to *Adjusting wire brush* in this section.

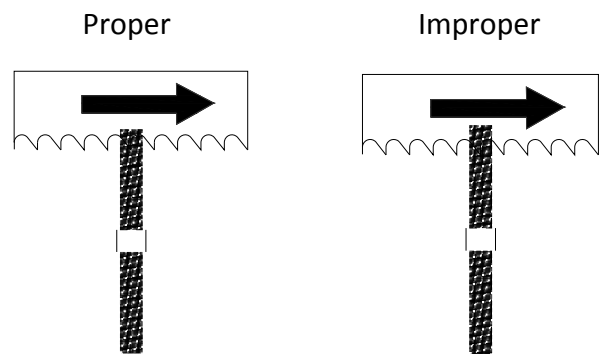
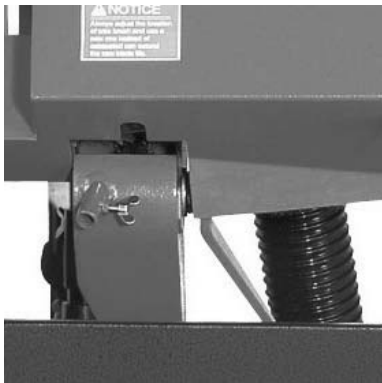
ADJUSTING WIRE BRUSH

Follow these steps to adjust wire brush to appropriate position:

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

Step 2 - Make brush move 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 SAW ARM

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

Step 1 – Loosen the inserts by switching the carbide insert selector to unclamp position.

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

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

Step 4 – Clamp the inserts back by switching the carbide insert selector to clamp position.



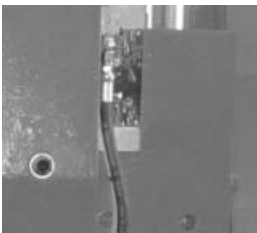
Blade Guide Lock Handle

Hydraulic cylinder

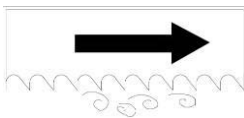
ADJUSTING COOLANT FLOW

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

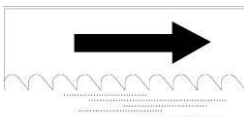
Step 2 – Use the flow control valve (shown below) to adjust the amount of fluid flowing to the cutting area.



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.



Before pressing the blade drive button, insert the cleaning hose nozzle into the wire brush case to clean the brush.

ADJUSTING BLADE SPEED

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

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

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

BREAKING-IN THE BLADE

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

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

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

Step 3 - Start break-in operation.

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

TEST-RUNNING THE MACHINE

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

Testing machine performance:

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

Step 1 – Disassemble shipping brackets and bolts.

Step 2 – Install roller table (optional).

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

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

Step 5 – After the saw bow ascends, extend the quick approach device.

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

Step 7 – Start the coolant pump.

Step 8 – Test these functions under manual mode:

- vise clamping/unclamping
- saw bow ascending/descending
- feeding forward and backward.

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 - Elevate the hydraulic lifting take-in roller.

Step 3 - 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 wide enough and the blade is raised high enough to allow enough clearance for the workpiece. When loading, take extra care not to have the workpiece bump into the blade.

Step 4 - Feed material forward manually with the ratchet mechanism or by using the optional shuttle bed feed forward button until the material reaches the desired position.

Step 5 - Press the *saw blade down button* to lower the blade until it is slightly above the workpiece. Then turn on the projection light.

Step 6 - Finely position the material with the ratchet mechanism or by pressing the optional *rear vise feed forward* button (and the *feed backward* button if necessary) until the cutoff point on the workpiece aligns with the blade line.

Step 7 – Clamp the material with the vise.



The vises must be clamped for the blade to be able to start.

Step 8 – Turn the *cutting pressure control* knob to adjust blade cutting pressure according to the material.

Step 9 – Adjust *blade descend speed control* knob to obtain a suitable blade descend speed for your material.

Step 10 - Start running the blade by pressing the *saw blade start* button. The blade will start descending.



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

Step 11 – 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 HMI touch screen.

Step 12 – Select the proper cutting condition according to different material.

Step 13 – After the entire cutting job is completed, elevate the saw bow to the top and open the vises to remove the workpiece.

Step 14 – Clean the workbed by removing chips and cutting fluids.

Step 15 – Lower the saw bow to a proper position then turn off the power.

USING TOP CLAMP FOR BUNDLE CUTTING

Step 1 – Connect the top clamp hoses to the pressure joints on the vise hydraulic cylinders.



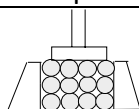
Step 2 – Position the workpiece for bundle cutting.



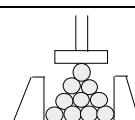
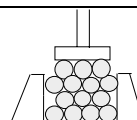
Note the allowable clamping width and height. (Refer to *Section 2 – General Information, Specifications*)

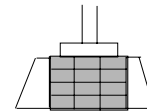
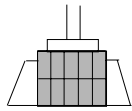
Proper and improper stacking of workpieces

Proper



Improper





Step 3 – Open the adjustment valve to adjust the top clamp speed during clamping/unclamping.

Step 4 – For subsequent cutting procedures, refer to the instructions under manual operation and automatic operation.



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.

ELECTRICAL SYSTEM

ELECTRICAL CIRCUIT DIAGRAMS

The following are electrical circuit diagrams of the system without HMI:

5-2 Control panel layout

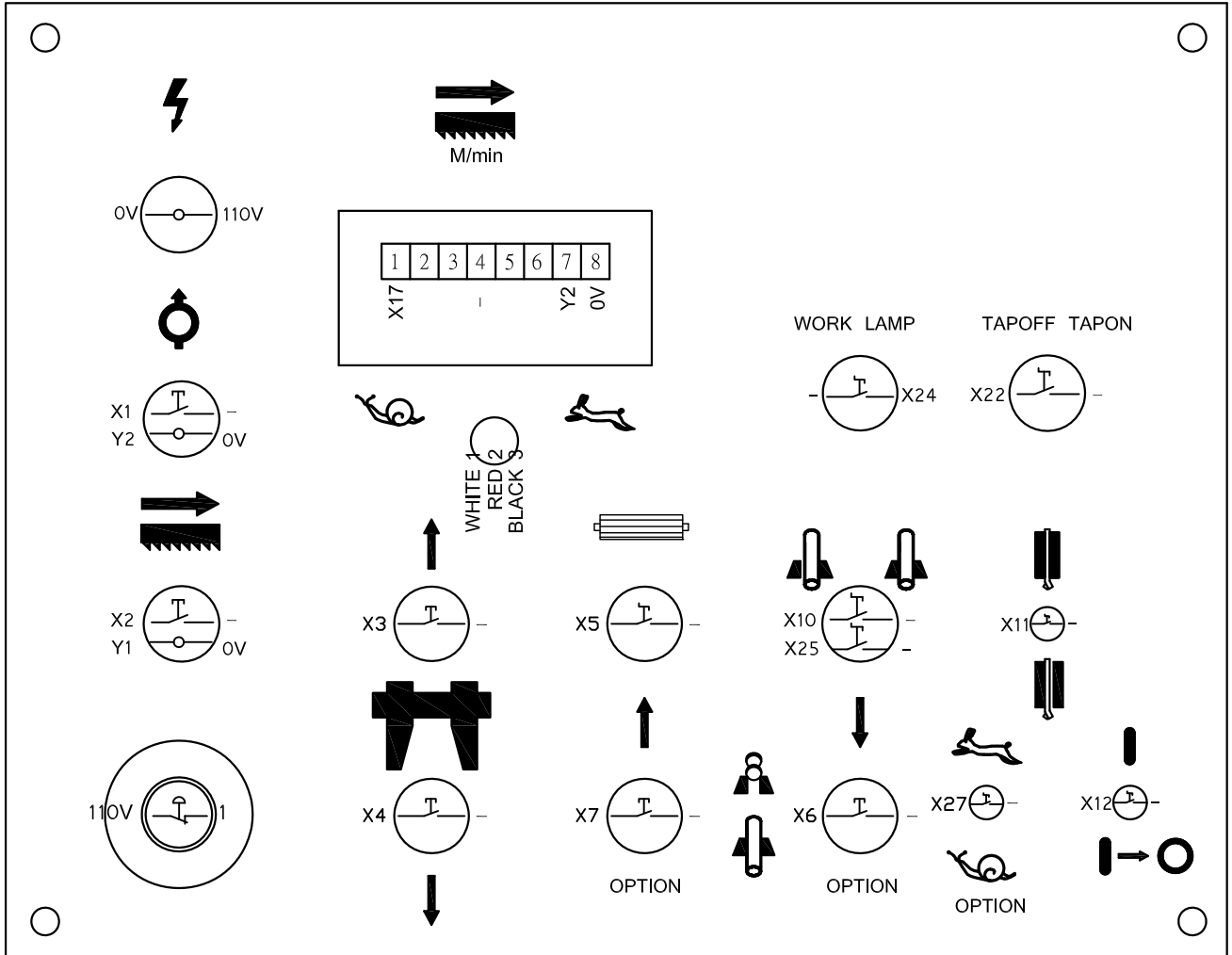
5-3 Circuit board layout

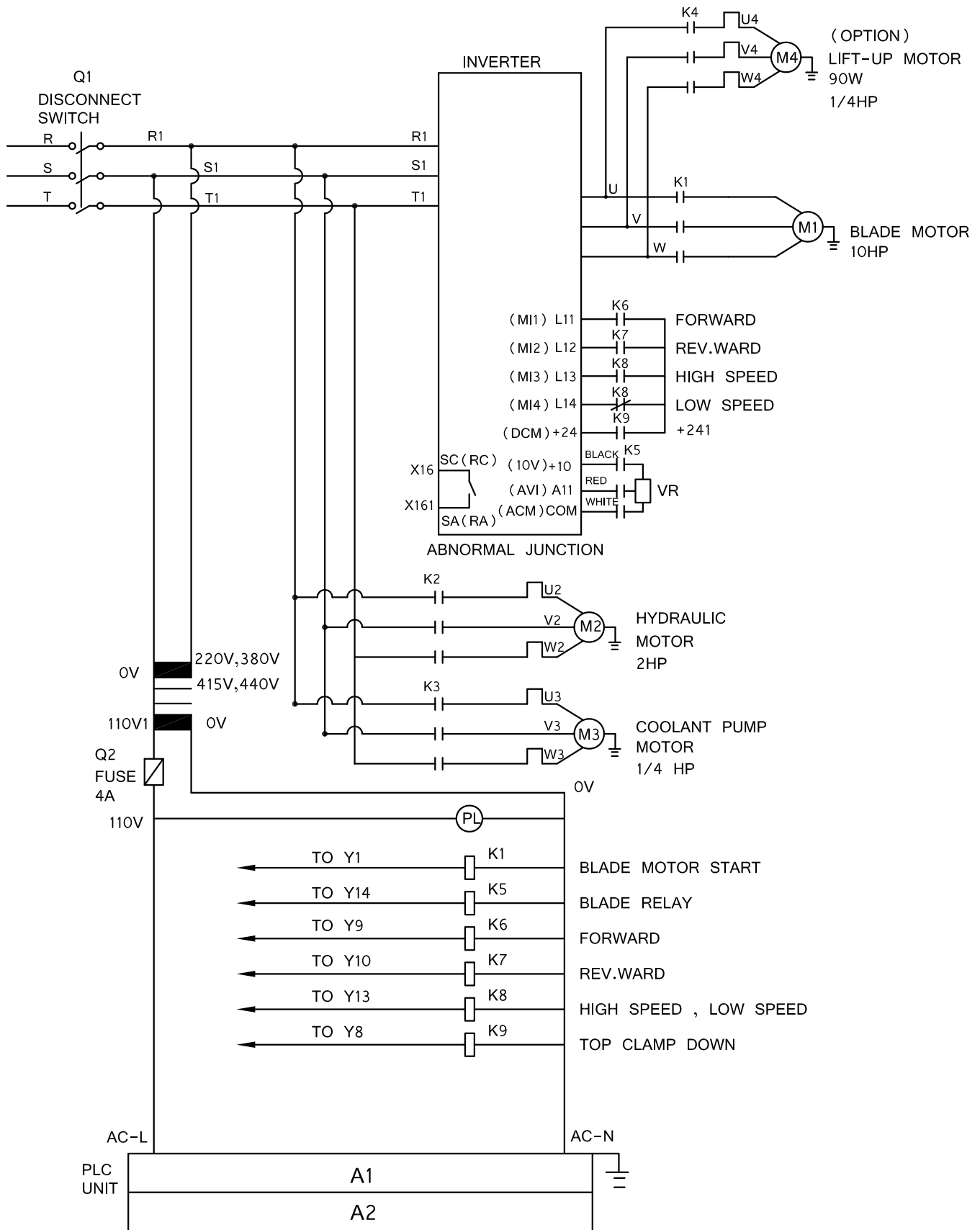
5-4 Power supply layout

5-5 PLC I/O layout

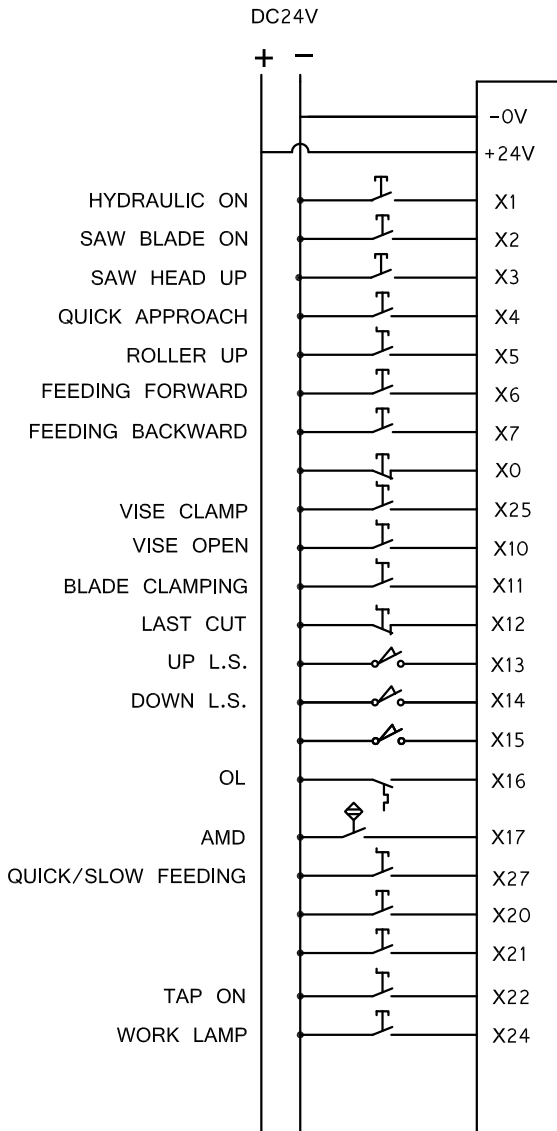
The following are electrical circuit diagrams of the system with HMI:

5-6~5-9

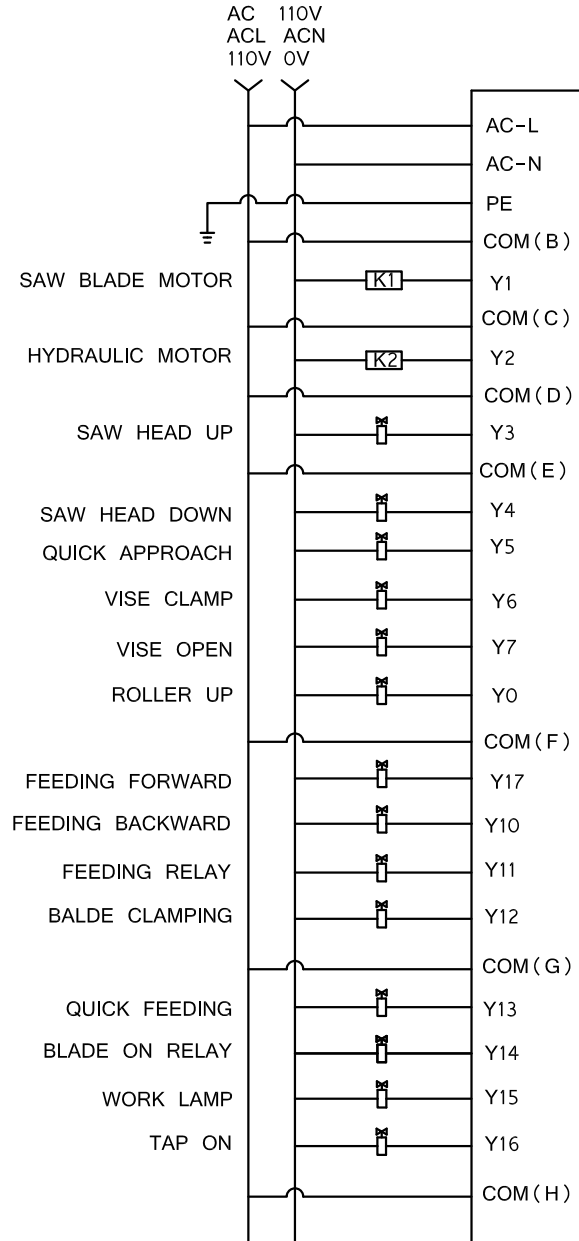


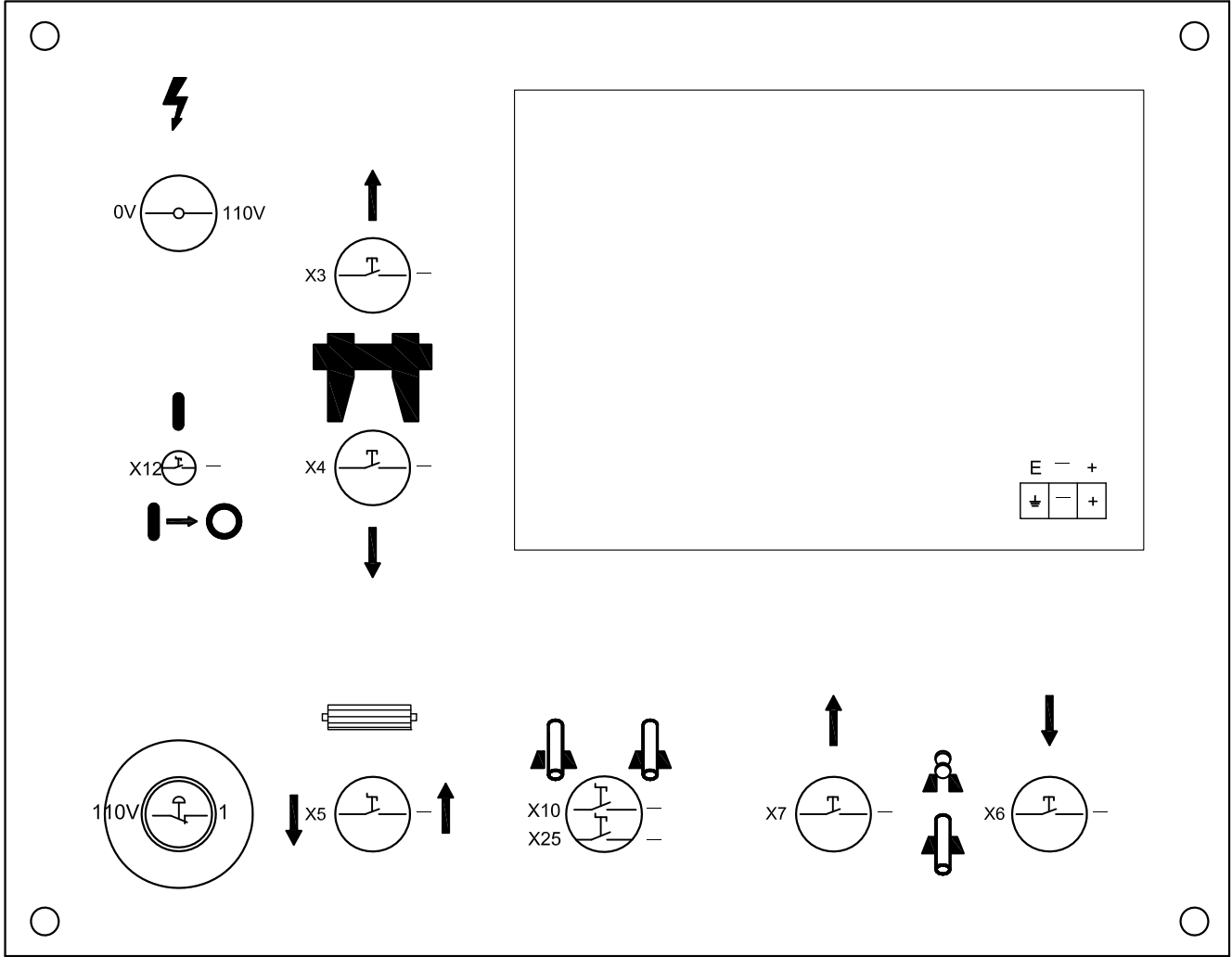


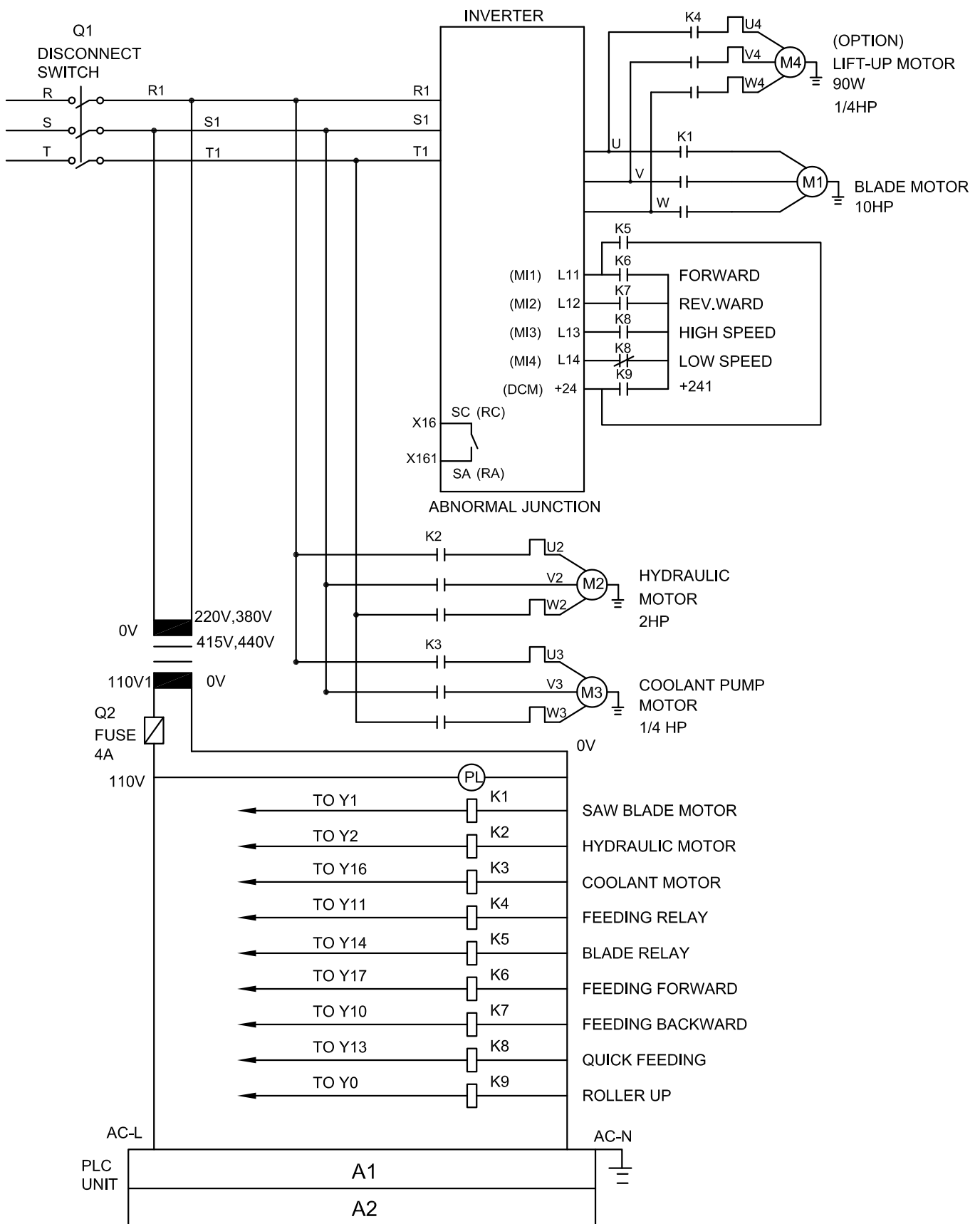
PLC INPUT MODULE A1



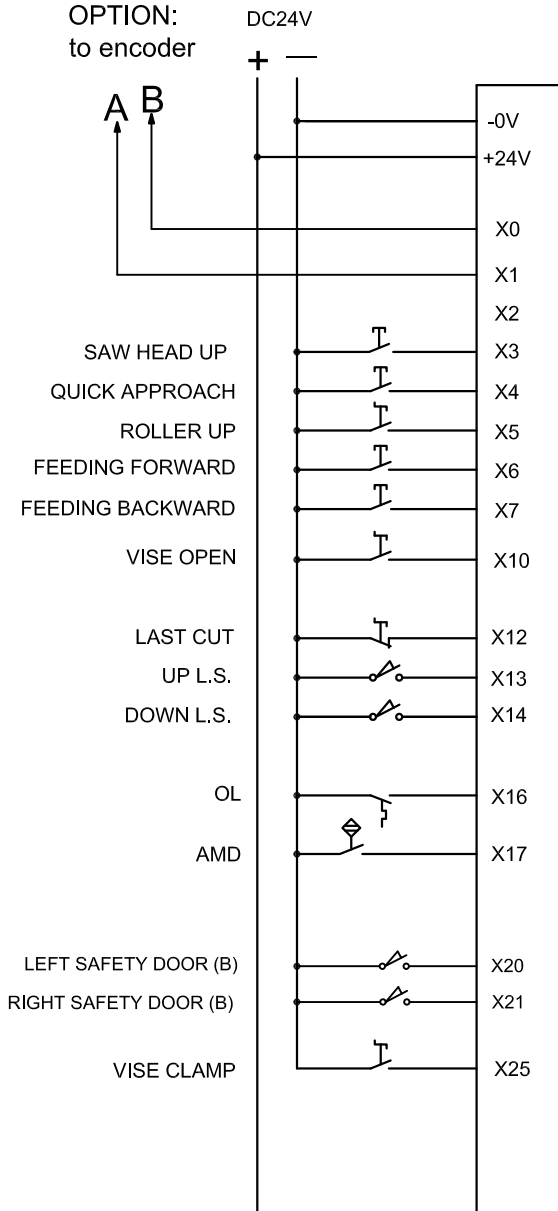
PLC OUTPUT MODULE A2



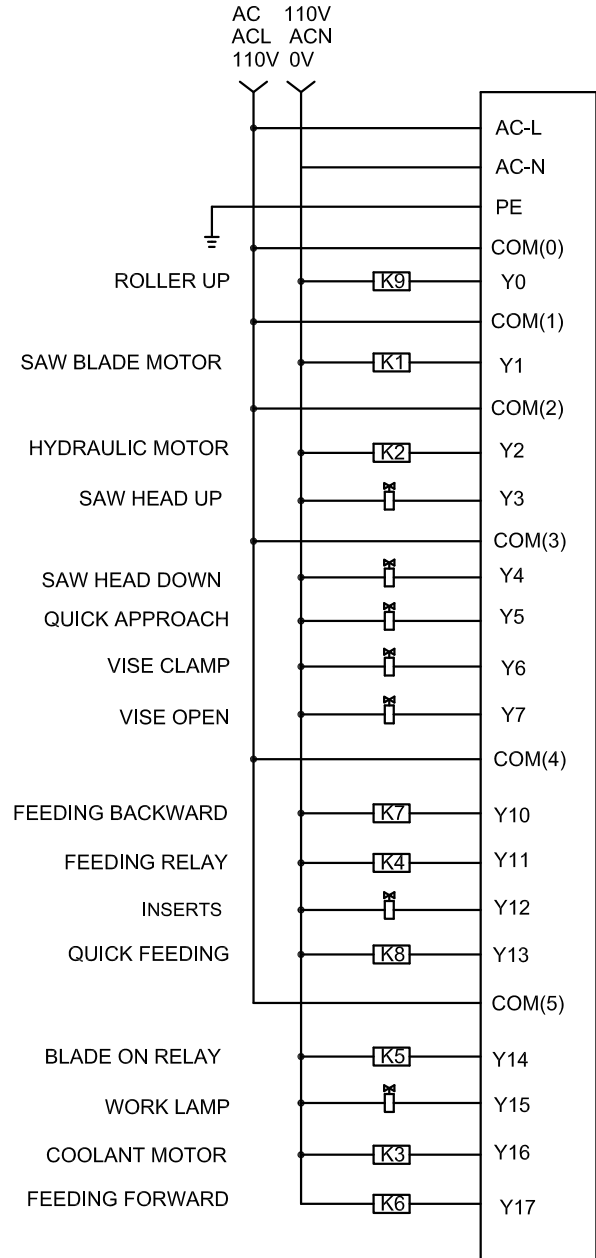




PLC INPUT MODULE A1



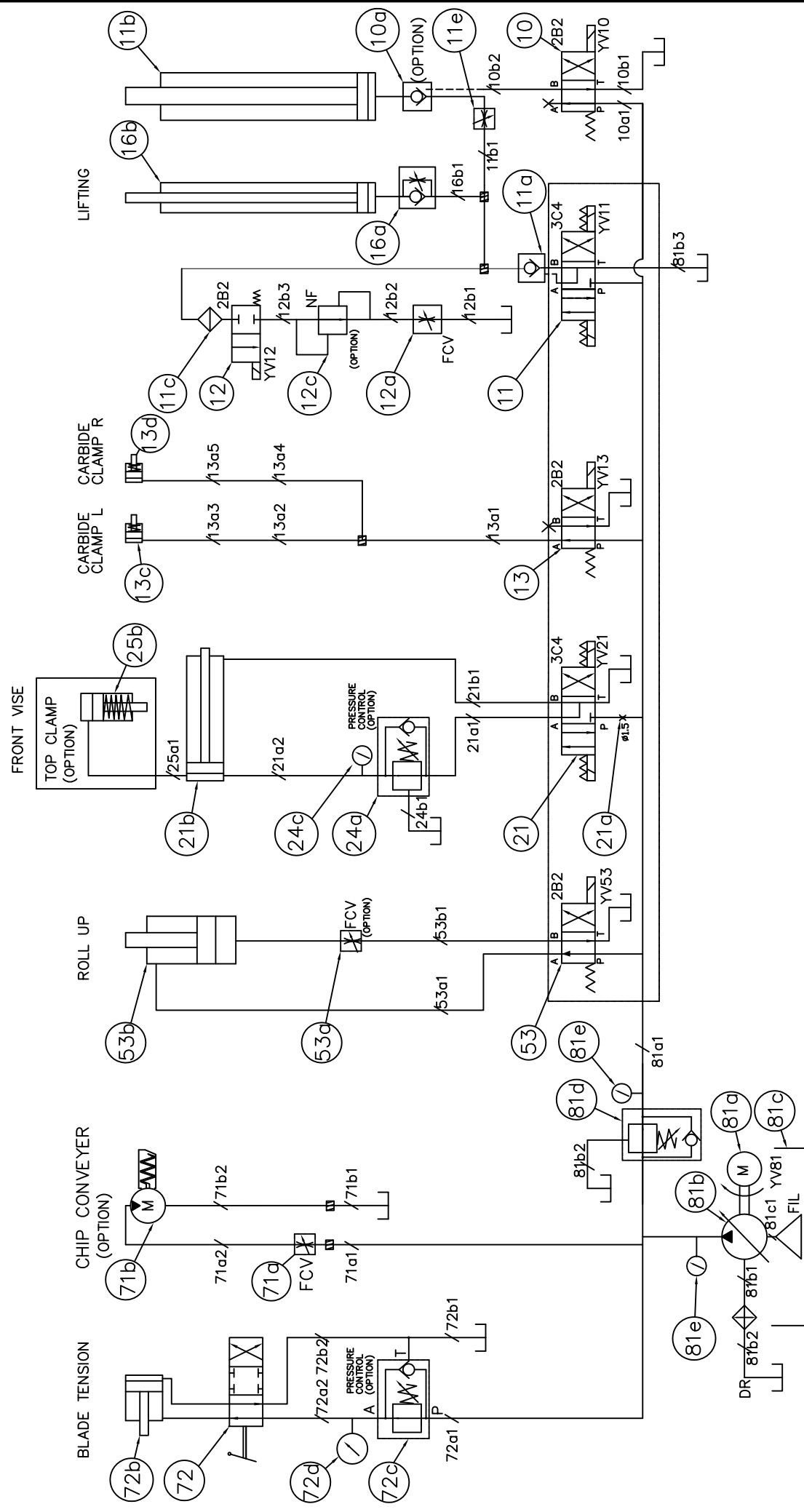
PLC OUTPUT MODULE A2



HYDRAULIC SYSTEM

HYDRAULIC CIRCUIT DIAGRAM

SH-7550S HYDRAULIC CIRCUIT



	COSEN MECHATRONICS CO.,LTD.		20150323	SHELBY
	SH-7550S HYDRAULIC CIRCUIT			
	DRAWING NO.SH-7550S HYDRA.DWG		VERSION 1-0	DATE
TITLE	SH-7550S HYDRAULIC CIRCUIT	APPROVED		
DRAW		CHECK		

BANDSAW CUTTING: A PRACTICAL GUIDE

INTRODUCTION

SAW BLADE SELECTION

SOME SAWING PRACTICES

CUTTING CONDITIONS SETTING

INTRODUCTION

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

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

SAW BLADE SELECTION

The factors affecting cutting performance are:

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



Fig. 7.1 Description of Band

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

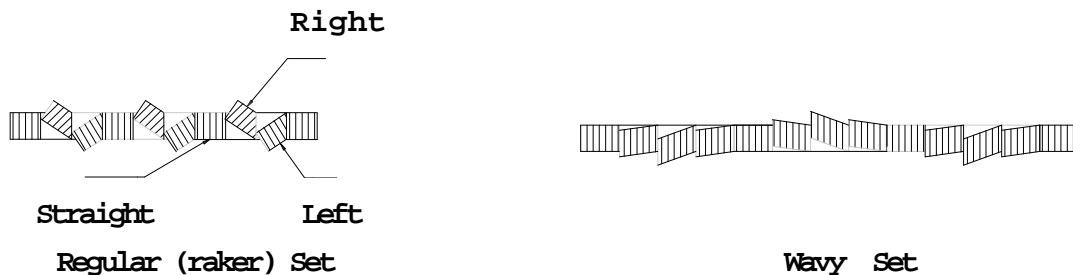


Fig. 7.2 The Saw Set

Material size and shape

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

Guide spacing

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

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

Blade selection

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

Blade speed and feed

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

Tooth form and spacing

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

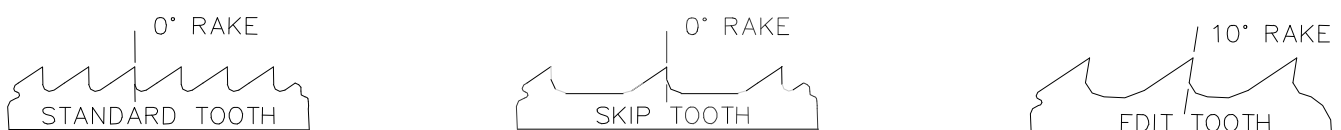


Fig. 7.3 Three Styles of Tooth

SOME SAWING PRACTICES

Saw Pitch Selection

Sawing “Rules of Thumb”:

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

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

Material Size and Saw Pitch

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

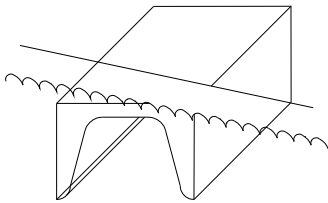
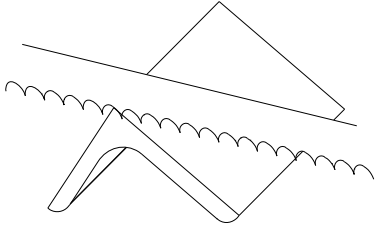
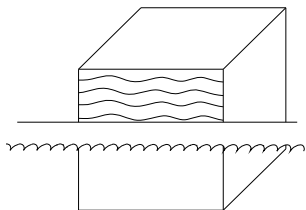
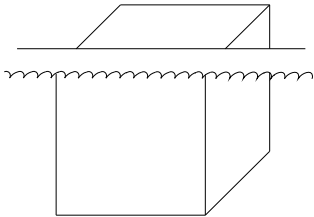
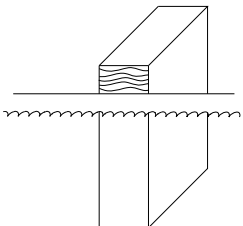
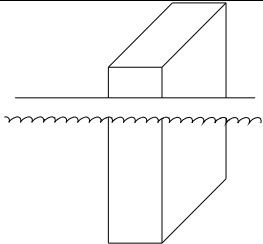

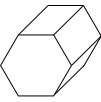


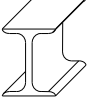

SAWING PRACTICES	
CORRECT	INCORRECT
	
several teeth contact work	teeth strike sharp edge
	
Coarse teeth clear chips freely	Teeth too fine for large solids
	
Three or more teeth on cutting wall	Coarse teeth rip on thin wall

Fig. 7.4 Some sawing practices

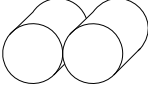
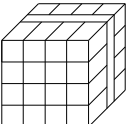
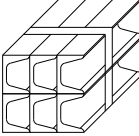
Solid Stock:

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
			
			

MAINTENANCE & SERVICE

INTRODUCTION

BASIC MAINTENANCE

MAINTENANCE SCHEDULE

BEFORE BEGINNING A DAY'S WORK

AFTER ENDING A DAY'S WORK

EVERY MONTH

EVERY THREE MONTHS

EVERY SIX MONTHS

STORAGE CONDITIONS

TERMINATING THE USE OF MACHINE

OIL RECOMMENDATION FOR MAINTENANCE

INTRODUCTION

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

BASIC MAINTENANCE

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

MAINTENANCE SCHEDULE

We suggest you do the maintenance on schedule. 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°C ~ 40°C
- (3) Relative humidity: 30%~95% (without condensation)
- (4) Atmosphere: use a plastic canvas to cover machine to avoid excessive dust, acid fume, corrosive gases and salt.
- (5) Avoid exposing to direct sunlight or heat rays which can change the environmental temperature.
- (6) Avoid exposing to abnormal vibration.
- (7) Must be connected to earth.

TERMINATING THE USE OF THE MACHINE

Waste disposal:

When your machine can not work anymore, you should leak out the oil from machine body. Please storage the oil in 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
	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.**

TROUBLESHOOTING

INTRODUCTION

PRECAUTIONS

GENERAL TROUBLES & SOLUTIONS

MINOR TROUBLES & SOLUTIONS

MOTOR TROUBLES & SOLUTIONS

BLADE TROUBLES & SOLUTIONS

SAWING PROBLEMS & SOLUTIONS

RE-ADJUSTING THE ROLLER TABLE

INTRODUCTION

All the machines manufactured by COSEN pass a 72 hours continuously running test before shipping out and COSEN is responsible for the after sales service problems during the warranty period if the machines are used normally. However, there still exist the some unpredictable problems which may disable the machine from operating.

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

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

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

PRECAUTIONS

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

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



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

GENERAL TROUBLES AND SOLUTIONS



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

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

MINOR TROUBLES & SOLUTIONS

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

MOTOR TROUBLES & SOLUTIONS

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

BLADE TROUBLES AND SOLUTIONS



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

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

SAWING PROBLEMS AND SOLUTIONS

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

Sawing Problems and Solutions

					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
	✓	✓	✓							Saw blade teeth worn	Replace

RE-ADJUSTING THE ROLLER TABLE

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

TOOL, measuring

Measurement, Horizontal balance

Procedure

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



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

PARTS

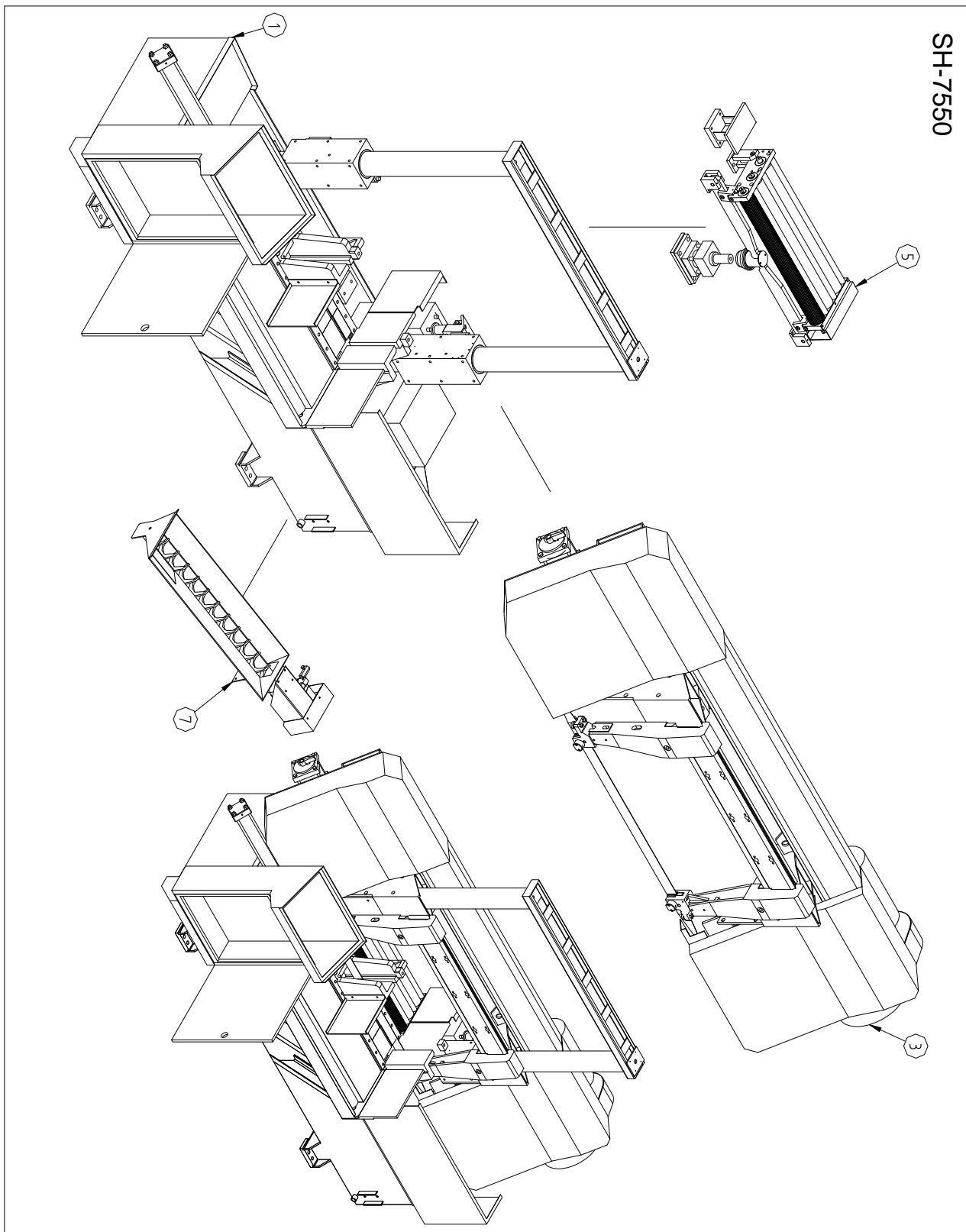
SPARE PARTS RECOMMENDATIONS

PART LIST

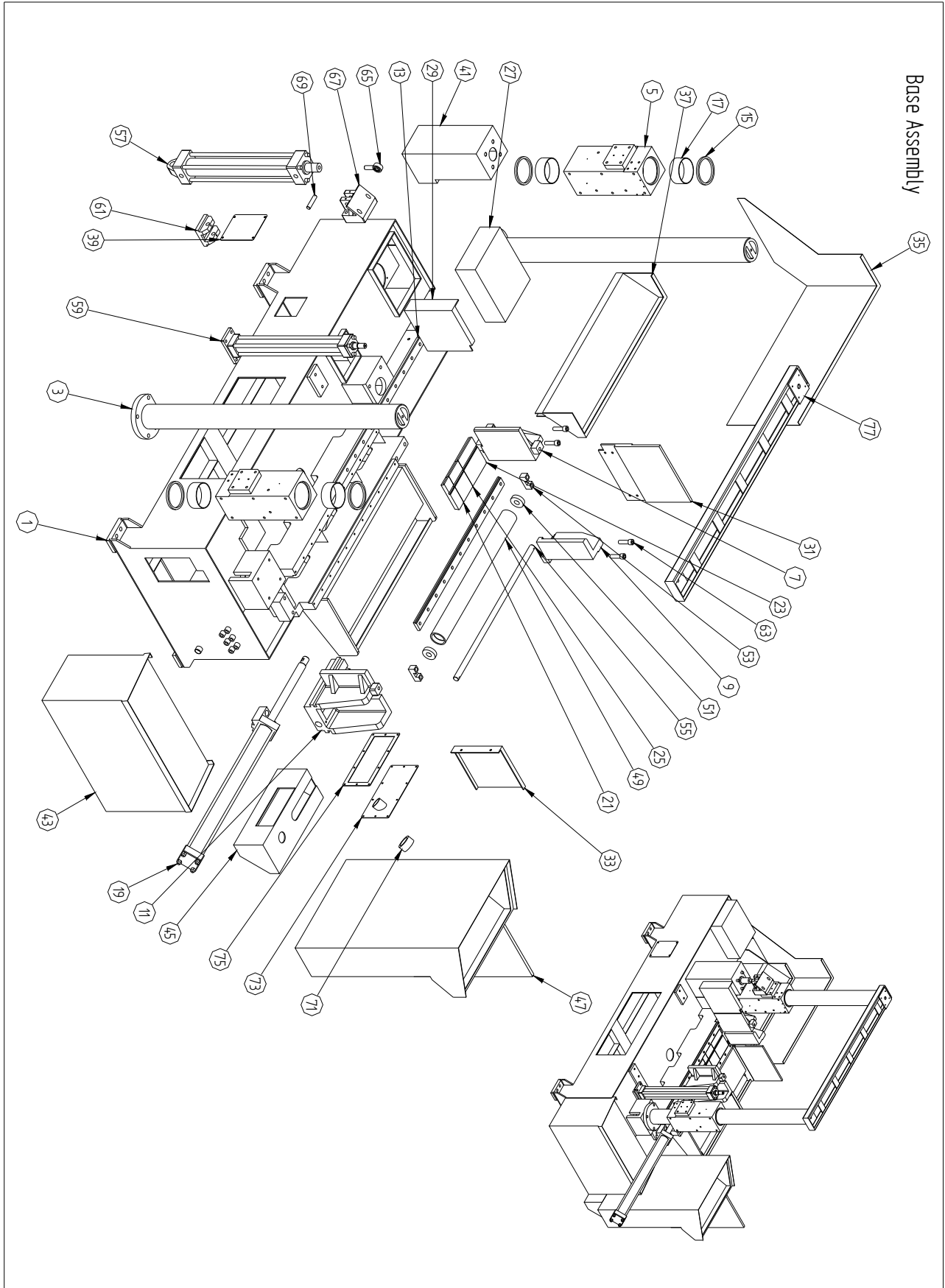
SPARE PARTS RECOMMENDATIONS

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



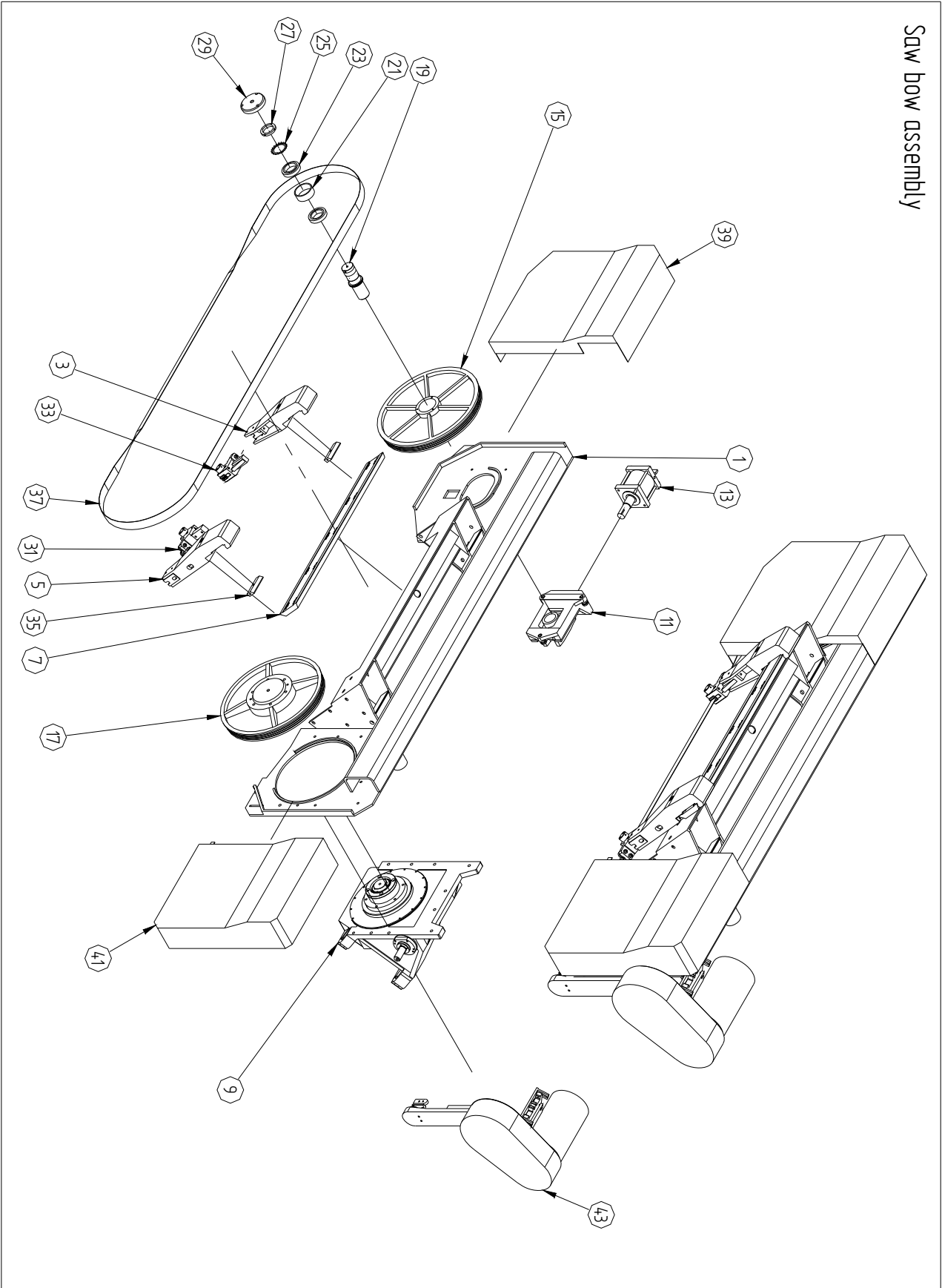
ITEM	PART NO.	PART NAME	PART NAME	QTY	UNIT
1		底座組	Base Assembly	1	PCS
3		鋸弓組	Saw bow assembly	1	PCS
5	S7550-20400	上浮組	Lifting roller device assembly	1	PCS
7	AGF-C001	除屑機組	Chip conveyor assembly	1	PCS



Base Assembly

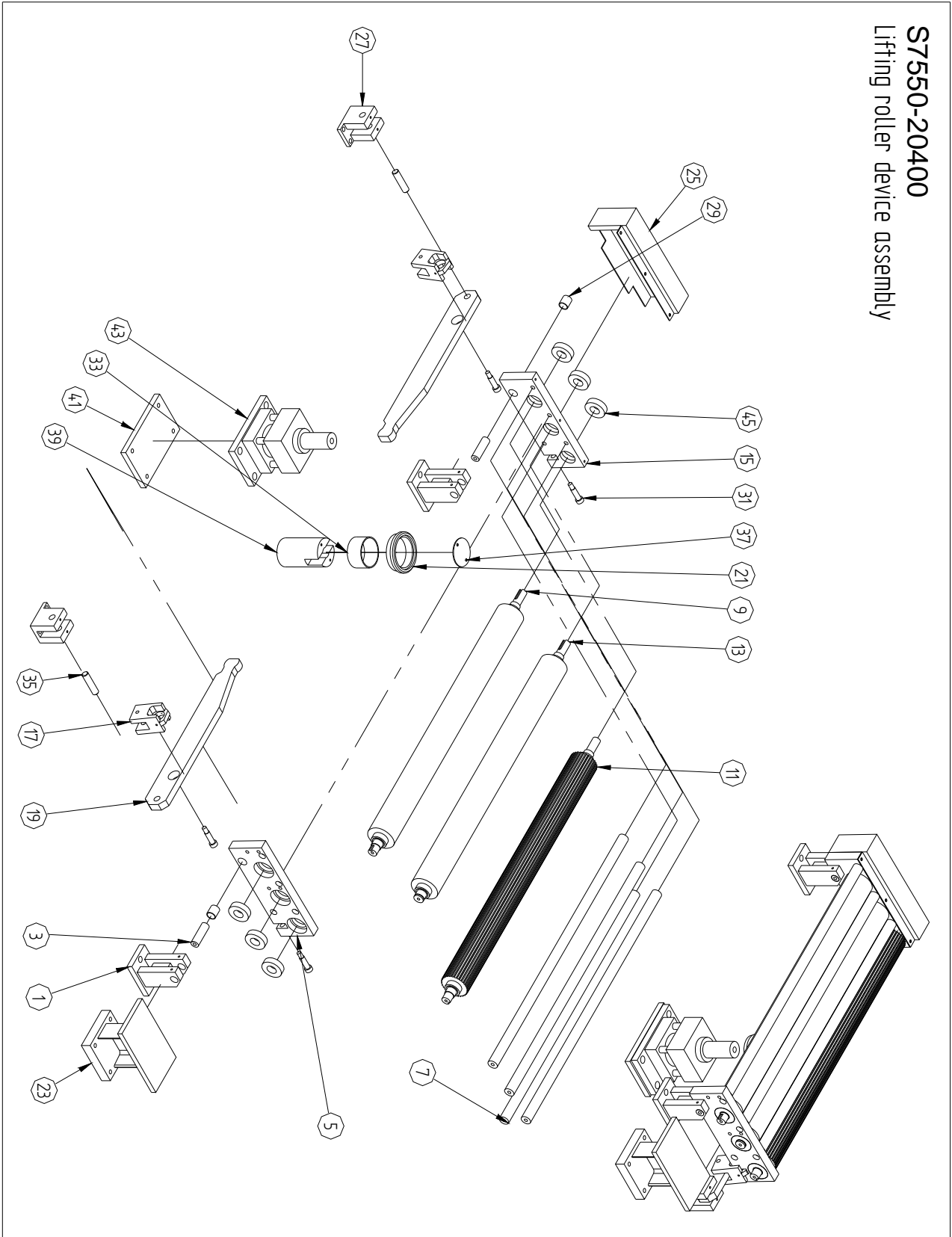
ITEM	PART NO.	PART NAME	PART NAME	QTY	UNIT
1	SGG-1001W	底座	Base	1	PCS
3	SGG-1010	大主軸	Main shaft	2	PCS
5	AHP-1801A	大軸套	Main shaft sleeve	2	PCS
7	SGG-1003W	前固定虎鉗(短)	Front fixed vise (short)	1	PCS
9	SGG-1004W	前固定虎鉗(長)	Front fixed vise (long)	1	PCS
11	SGG-1005W	前活動虎鉗	Front movable vise	1	PCS
13	SGG-1011W	床面鋼板	Bed plate	2	PCS
15	PP-51140	防塵套	Dust seal	4	PCS
17	PP-13310	乾式軸承 11050	DU bushing 11050	4	PCS
19	SGG-10120W	虎鉗油壓缸	Vise hydraulic cylinder	1	PCS
21	SGG-1009	虎鉗輔助板	Vise supporting plate	1	PCS
23	SGG-1009A	虎鉗輔助板(二)	Vise supporting plate #2	1	PCS
25	SGG-1009B	虎鉗輔助板(三)	Vise supporting plate #3	1	PCS
27	SGG-1034	水泵護蓋	Pump cover	1	PCS
29	SGG-1038	托架側板	Side fence (rear)	1	PCS
31	S7050-1209	托架固定側板	Side fence (right)	1	PCS
33	SGG-1038A	托架側板	Side fence (left)	1	PCS
35	AHN-1922-CE	擋水板附件	Splash shield	1	PCS
37	AHN-1916A	水槽護蓋	Coolant cover	1	PCS
39	AHN-1914	護蓋	Cover	1	PCS
41	SGG-1055	大油缸護蓋	Main cylinder cover	1	PCS
43	SGG-1040	油泵護蓋	Pump cover	1	PCS
45	AHN-1908	座板 (電器箱)	Control box base plate	1	PCS
47	AGB-70801	控制箱	Control box	1	PCS
49	OPR-5001D	滾輪	Roller	1	PCS
51	PP-14280	軸承 6305 ZZ	Bearing 6305ZZ	2	PCS
53	SGG-1059A	滾輪座	Roller rack	2	PCS
55	SGK-1052	底座滾輪軸	Roller shaft	1	PCS
57	PP-43443	油壓缸	Cylinder	1	PCS
59	PP-43444	油壓缸	Cylinder	1	PCS
61	AGG-1044	鋸弓油缸下座	Sawbow cylinder seat	1	PCS
63	AGB-70202	銷螺絲	Pin screw	4	PCS
65	PP-14480	連桿軸承 POS18	Connecting rod bearing pos18	1	PCS
67	AGB-70303B	鋸弓油缸上耳	Sawbow cylinder ear	1	PCS
69	AGB-70304B	下插梢	Pin	1	PCS
71	PP-90857	油箱蓋螺帽	Hydraulics tank cover nut	1	PCS
73	AHA-0102	油箱蓋	Hydraulics tank cover	1	PCS
75	AHA-0108	油箱蓋防漏石棉	Hydraulics tank asbestos seal	1	PCS
77	AGF-3006WY1	橫樑	Cross beam	1	PCS

Saw bow assembly



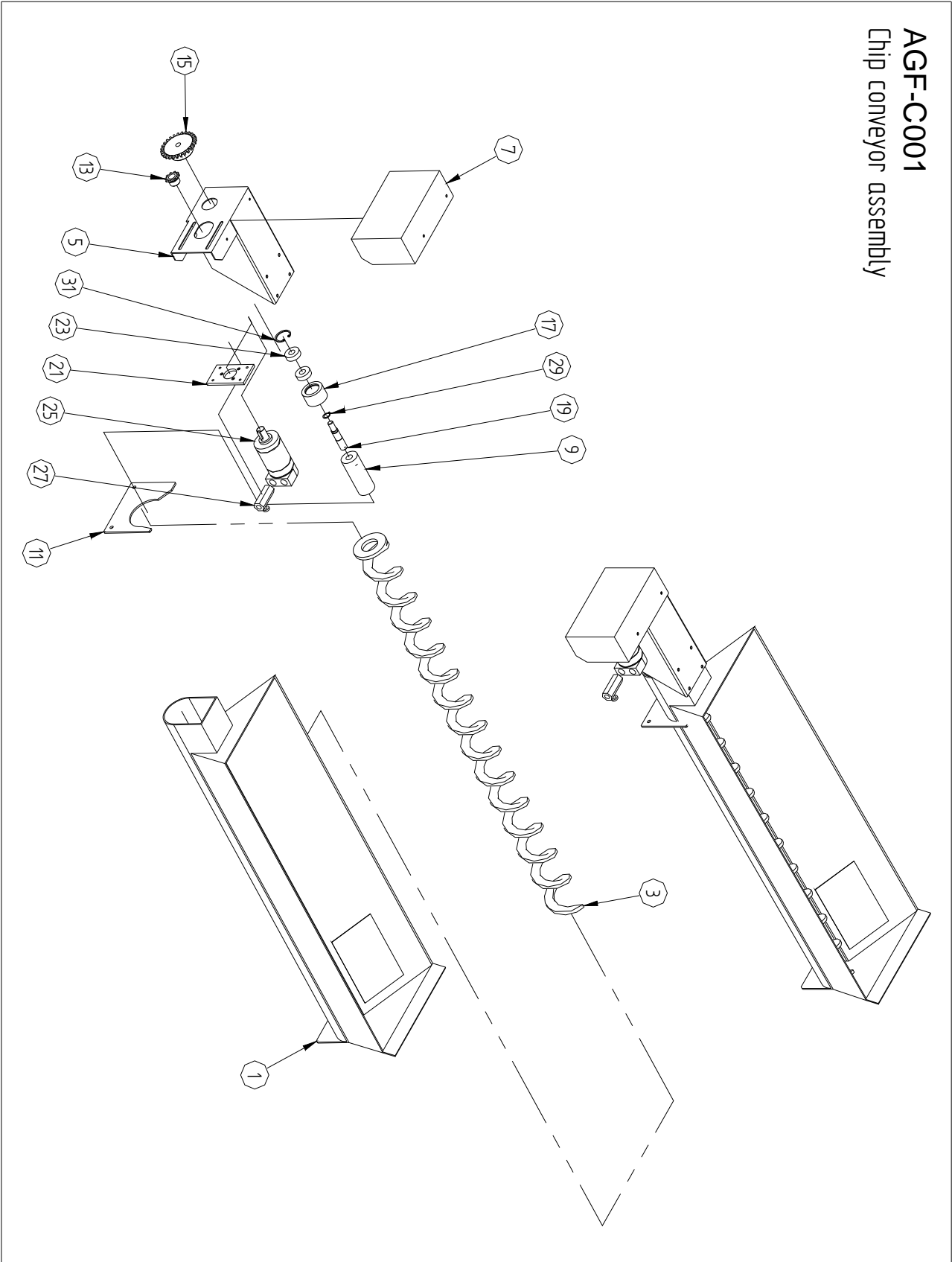
ITEM	PART NO.	PART NAME	PART NAME	QTY	UNIT
1	AGF-3001W	鋸弓	Saw bow	1	PCS
3	AGF-3004	左鋸臂	Left guide arm	1	PCS
5	AGF-3005	右鋸臂	Right guide arm	1	PCS
7	SGB-71093	鋸臂滑板	Guide arm sliding plate	1	PCS
9	AHG-04050	減速機整組	Gear reducer assembly	1	PCS
11	AGB-703500C	張力滑座滑板組	Tensioner sliding plate assembly	1	PCS
13	AGB-707200-1	張力油壓缸組	Tensioner cylinder assembly	1	PCS
15	AGI-3121	上輪	Idle wheel	1	PCS
17	AGI-3126	下輪	Drive wheel	1	PCS
19	NGG-3141	上輪軸	Idle wheel shaft	1	PCS
21	SDM-1019	上輪軸承墊圈	Washer	1	PCS
23	PP-14705	軸承 33013	Bearing 33013	2	PCS
25	PP-14963	止動環	Stop ring	1	PCS
27	PP-14913	有槽螺母 AN13	Slotted nut AN13	1	PCS
29	SDM-1037B	上輪軸承蓋	Bearing cover	1	PCS
31	SDM-10280	右導輪座組	Right guide roller assembly	1	PCS
33	SDM-10290	左導輪座組	Left guide roller assembly	1	PCS
35	AGB-70403	鋸臂固定塊	Guide arm fixed block	2	PCS
37	PP-18334	鋸帶	Blade	1	PCS
39	AGF-3002	上輪箱蓋	Idle wheel cover	1	PCS
41	AHB-0701-CE	下輪箱蓋	Drive wheel cover	1	PCS
43		馬達組	Blade motor assembly	1	PCS

S7550-20400
Lifting roller device assembly

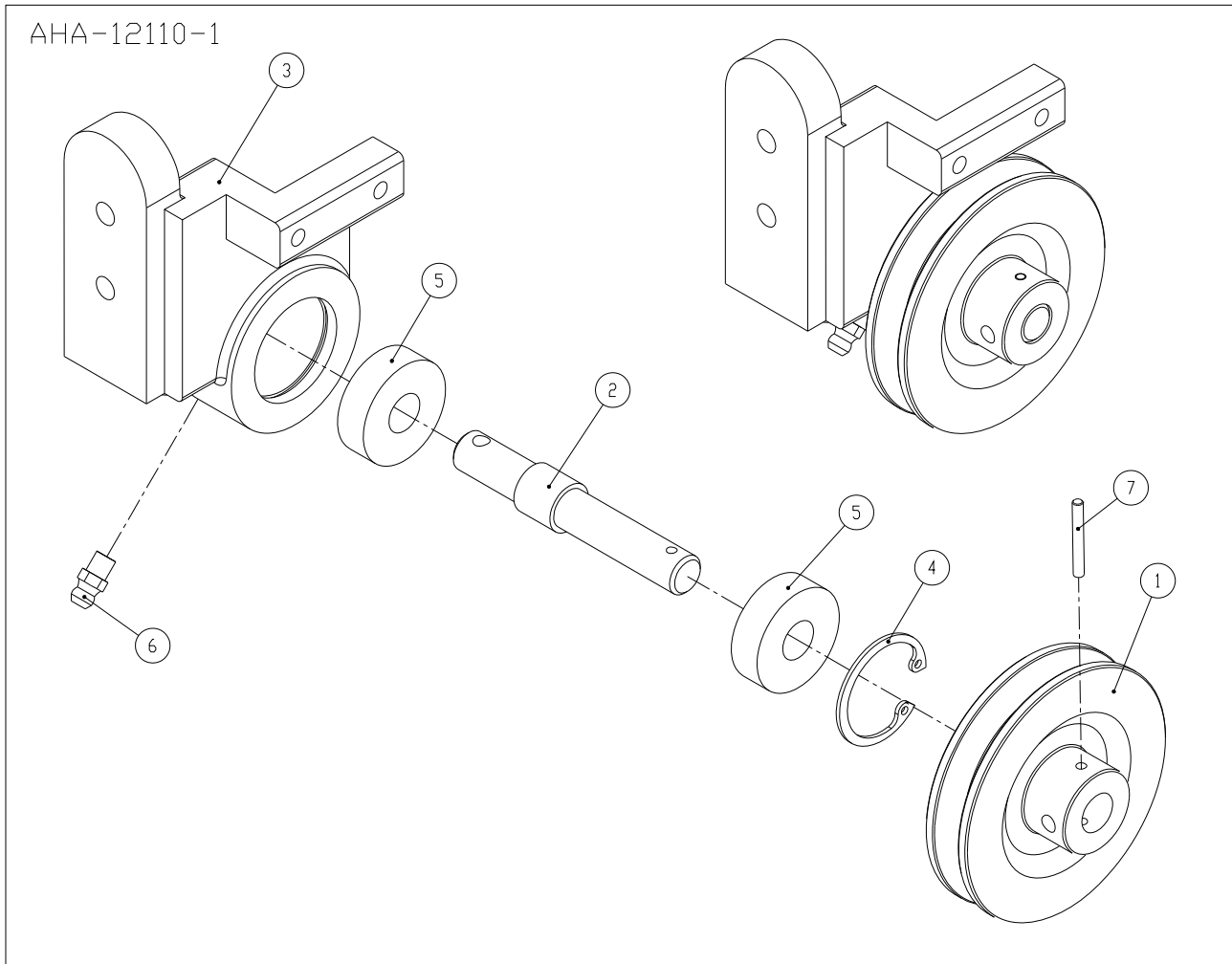


ITEM	PART NO.	PART NAME	PART NAME	QTY	UNIT
1	SGG-1021	上浮轉軸座	Lifting roller shaft seat	1	PCS
3	SGG-1020	上浮轉軸	Lifting roller shaft	1	PCS
5	SGG-1019	上浮側板(一)	Roller side plate #1	1	PCS
7	SGG-1018W	上浮拉桿	Lift rod	1	PCS
9	SGG-1016WA	上浮滾輪	Roller	1	PCS
11	SGG-1016W	上浮滾輪	Roller	1	PCS
13	SGG-1022W	上浮滾輪	Roller	1	PCS
15	SGG-1023	上浮側板(二)	Roller side plate #2	1	PCS
17	SGG-1024	上浮支板	Supporting plate	1	PCS
19	SGG-1026W	上浮施力板	Lifting leverage plate	1	PCS
21	SGG-1028	上浮擋水環	Seal	1	PCS
23	SGG-1030	上浮馬達座	Lifting device motor seat	1	PCS
25	SGG-1031	上浮鏈條護蓋	Lifting device chain cover	1	PCS
27	S5542-2051-1	上浮施力板固定座(2合1)	Lifting leverage plate seat (2 in	1	PCS
29	PP-13108	乾式軸承 MB2025	DU bushing MB2025	1	PCS
31	PP-91308	等高螺絲	Cap screw	1	PCS
33	PP-13265	自潤軸承 LFB-7040	Oiless bearing LFB-7040	1	PCS
35	AHB-0211B	施力板插銷(一)	Leverage plate pin #1	1	PCS
37	SGG-1017	上浮壓板	Piston top plate	1	PCS
39	SGG-1027	上浮活塞頭	Lifting device piston head	1	PCS
41	SGG-1029A	上浮油缸底板	Cylinder base plate	1	PCS
43	PP-43449	油壓缸	Cylinder	1	PCS
45	PP-14275	軸承 6205ZZ	Bearing 6205ZZ	1	PCS

AGF-C001
Chip conveyor assembly

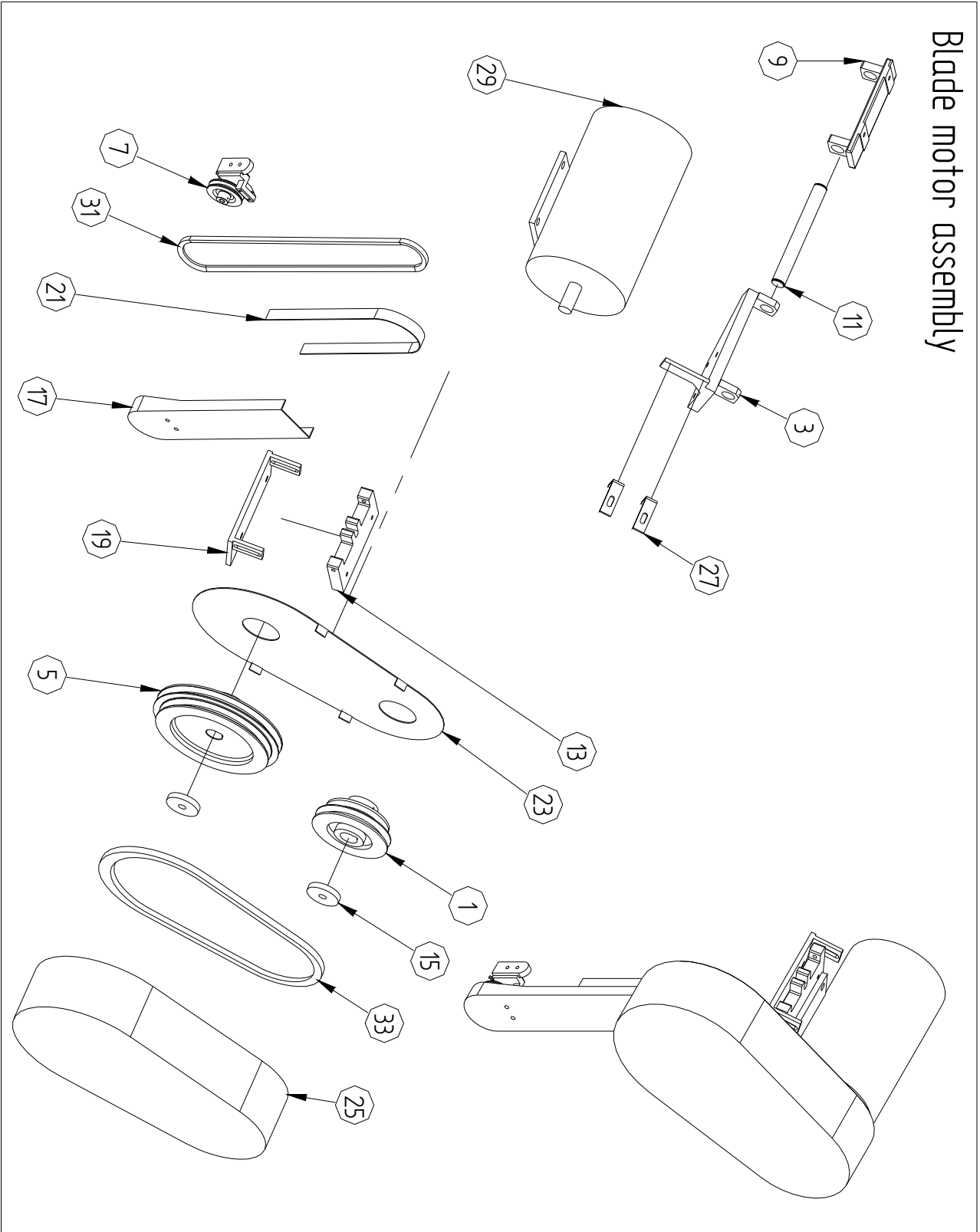


ITEM	PART NO.	PART NAME	PART NAME	QTY	UNIT
1	AGF-1028	除屑機本體	Chip conveyor body	1	PCS
3	AGF-1027	除屑螺旋	Chip spiral	1	PCS
5	AGC-1060	除屑馬達座	Motor seat	1	PCS
7	AGC-1061	除屑馬達蓋	Motor cover	1	PCS
9	AHA-2022B	除屑螺旋軸	Spiral shaft	1	PCS
11	AHA-2043	除屑機固定片	Fixed plate	1	PCS
13	AHB-2019B	傳動鍊輪(小)	Driving chain wheel 2	1	PCS
15	AHB-2019A	傳動鍊輪(大)	Driving chain wheel 1	1	PCS
17	AHB-2020B	軸承座	Bearing seat	1	PCS
19	AHB-2023A	鍊輪軸	Chain wheel shaft	1	PCS
21	AHB-2026	泵連接板	Connecting plate	1	PCS
23	PP-14003	軸承 6202VV	Bearing 6202VV	2	PCS
25	PP-31640-1	油壓馬達	Hydraulic motor	1	PCS
27	PP-43117	流量閥	Flow valve	1	PCS
29	PP-52097	扣環 S15	Ring S15	1	PCS
31	PP-58106	扣環 R35	Ring R35	1	PCS

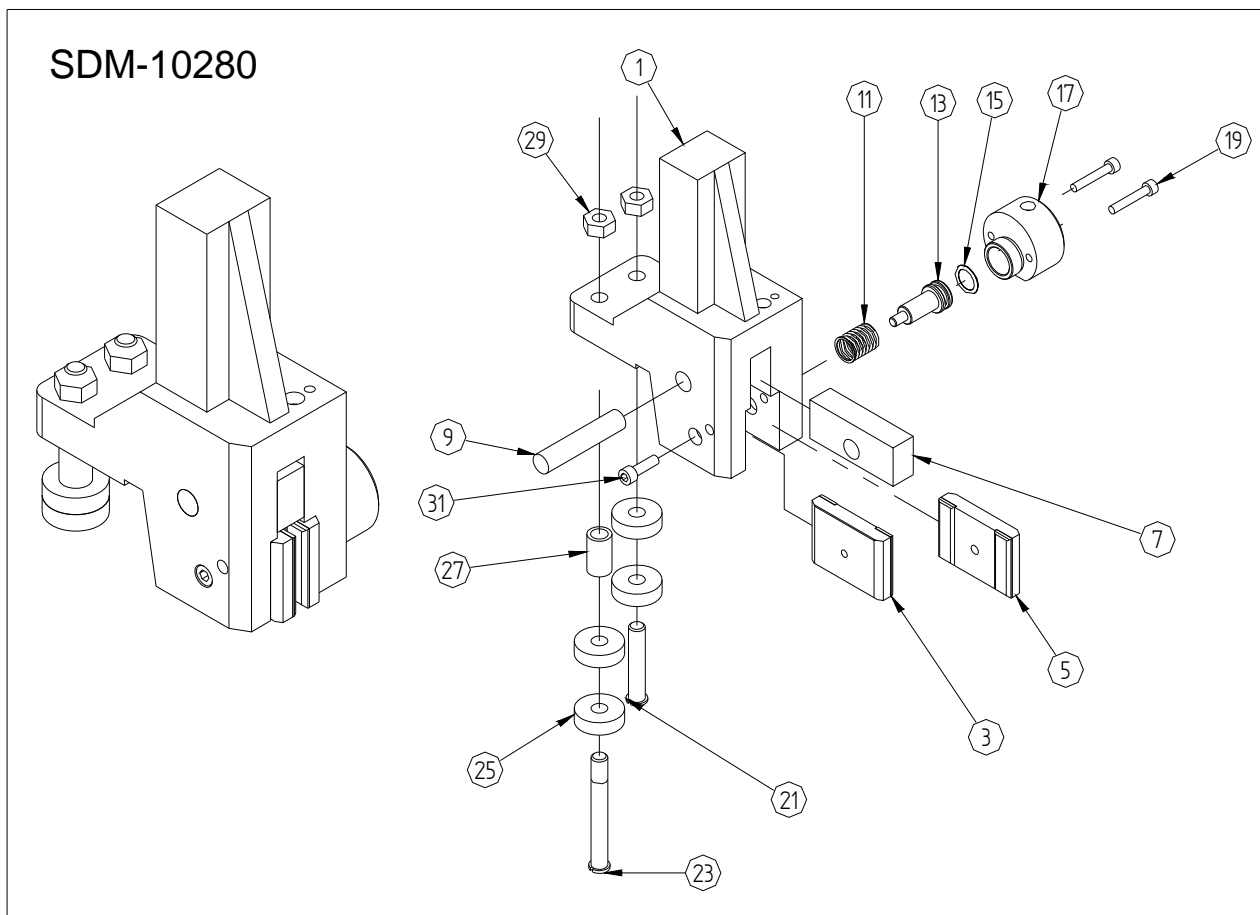


ITEM	PART NO.	PART NAME	PART NAME	QTY	UNIT
1	AHA-1202	鋼刷皮帶輪	Belt wheel	1	PCS
2	AHA-1207	皮帶輪軸(鋼刷)	Belt wheel shaft	1	PCS
3	AHA-1211	軸承座	Bearing seat	1	PCS
4	PP-58109	扣環 R32	Snap ring R32	1	PCS
5	PP-14272	軸承 6201V	Bearing 6201V	1	PCS
6	PUC-020	油嘴 1/4"-28UNF	Oil nipple	1	PCS
7		銷 ϕ 3*25L	Pin	1	PCS

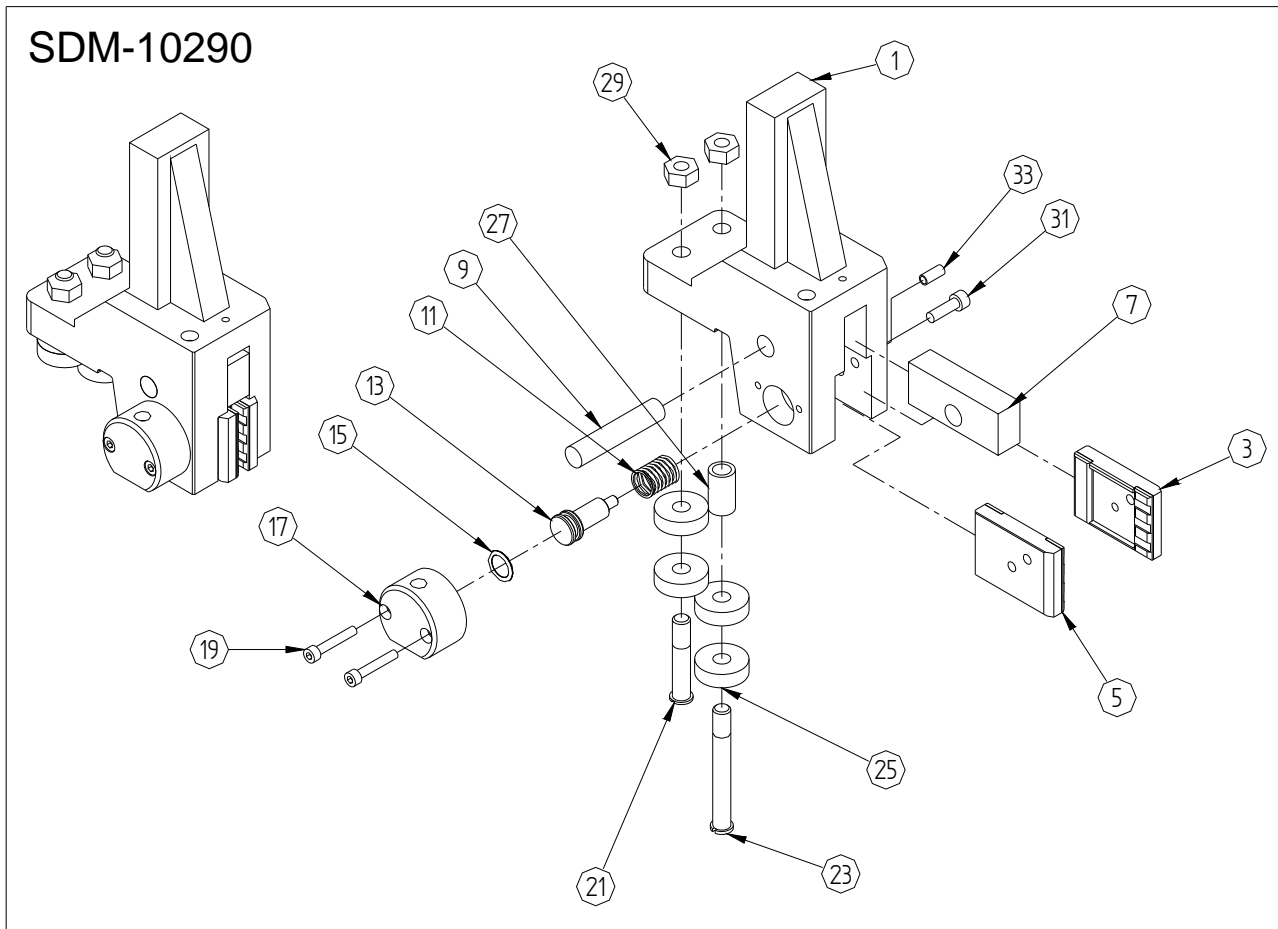
Blade motor assembly



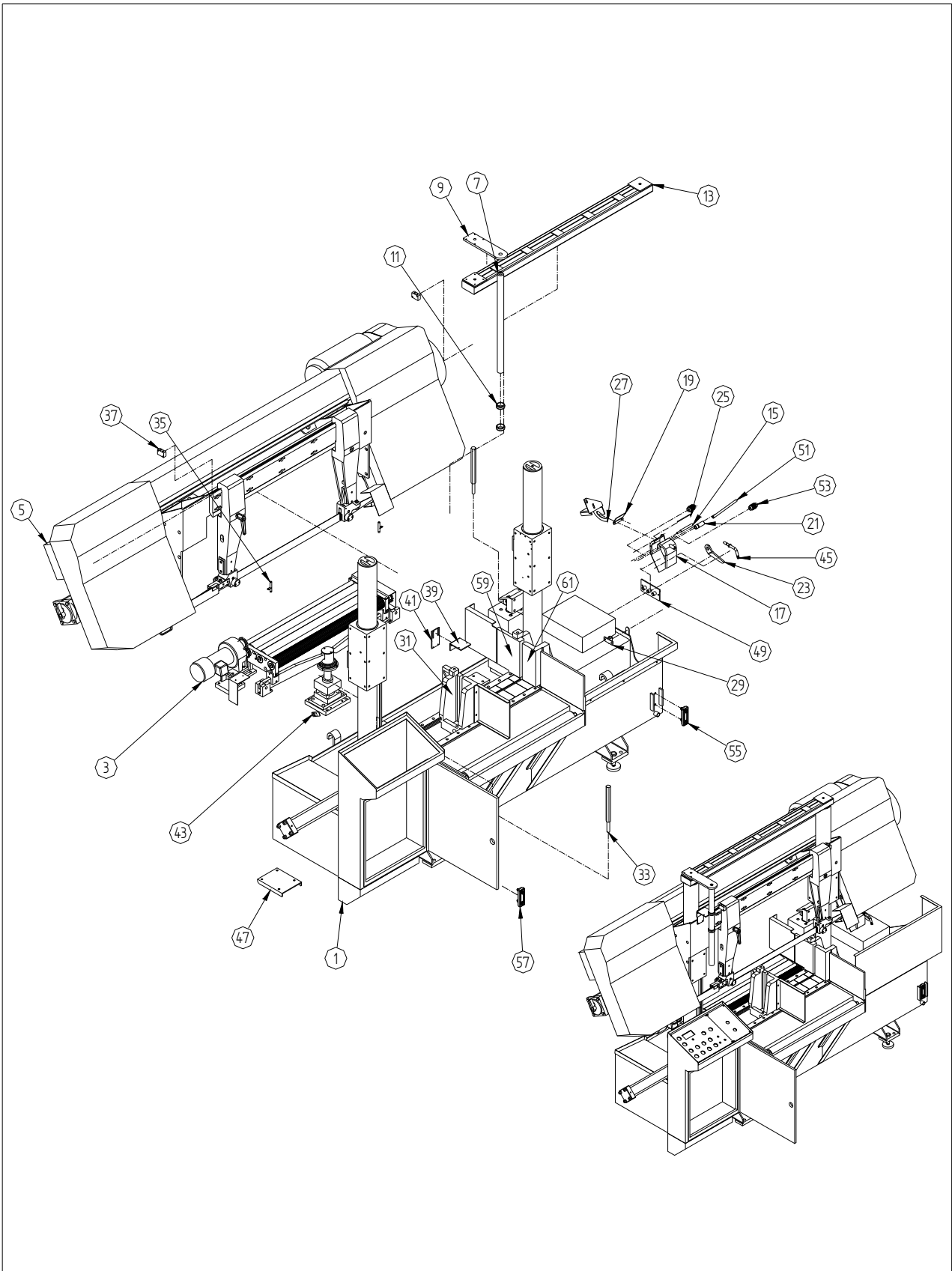
ITEM	PART NO.	PART NAME	PART NAME	QTY	UNIT
1	AGB-70770G	馬達普利	Motor pulley	1	PCS
3	AGG-3026	軸承定位塊	Position block	1	PCS
5	AGG-3031	減速機普利	Gear reducer pulley	1	PCS
7	AHA-12110-1	鋼刷軸承座組	Wire brush bearing seat assembly	1	PCS
9	AHB-0303	馬達活動板	Motor movable plate	1	PCS
11	AHB-0304	馬達活動軸	Motor movable shaft	1	PCS
13	AHB-0305	馬達定位板	Motor position plate	1	PCS
15	AHB-0613	上輪鎖緊墊圈	Motor pulley lock washer	2	PCS
17	AHB-1201	鋼刷普利護蓋	Pulley cover	1	PCS
19	AHG-0306	馬達調整板	Motor adjusting plate	1	PCS
21	AHG-0403	鋼刷普利護蓋(二)	Wire brush pulley cover #2	1	PCS
23	AHK-3634-1	普利護蓋組	Pulley cover	1	PCS
25	AHK-3634-2	普利護蓋組	Pulley cover	1	PCS
27	SJM-4032-S1	普利護蓋固定板	Pulley cover bracket	2	PCS
29	PP-31151	馬達	Motor	1	PCS
31	PP-56285	皮帶 B-42	Belt B-42	1	PCS
33	PP-56295	皮帶 B-52	Belt B-52	1	PCS



ITEM	PART NO.	PART NAME	PART NAME	QTY	UNIT
1	SDM-1028	右導輪座	Right guide wheel seat	1	PCS
3	SDM-1032	右固定鎢鋼片	Right fixed insert	1	PCS
5	SDM-1033	右活動鎢鋼片	Right movable insert	1	PCS
7	AHA-0704A	下壓座(EU79用)	Clamping seat	1	PCS
9	AGB-70410A	下壓軸承座銷	Pin	1	PCS
11	AGB-70416	鎢鋼片(回程)彈簧	Locked piston	1	PCS
13	AGB-70716	鎢鋼片鎖緊活塞	Spring	1	PCS
15	PP-59070	O型環 P-14	O Ring	1	PCS
17	AGB-70715	鎢鋼片油缸	Cylinder	1	PCS
19	PBA-5-30	內六角螺絲	Bolt	2	PCS
21	AHA-0707C	導輪軸(三)	Guide shaft #3	1	PCS
23	SDM-1034	導輪軸(長)	Guide shaft (long)	1	PCS
25	PP-14270	軸承 6200	Bearing 6200	4	PCS
27	SDM-1035	導輪墊圈	Washer	1	PCS
29	POA-10	螺母	Nut	2	PCS
31	PBA-6-20	內六角螺絲	bolt	1	PCS

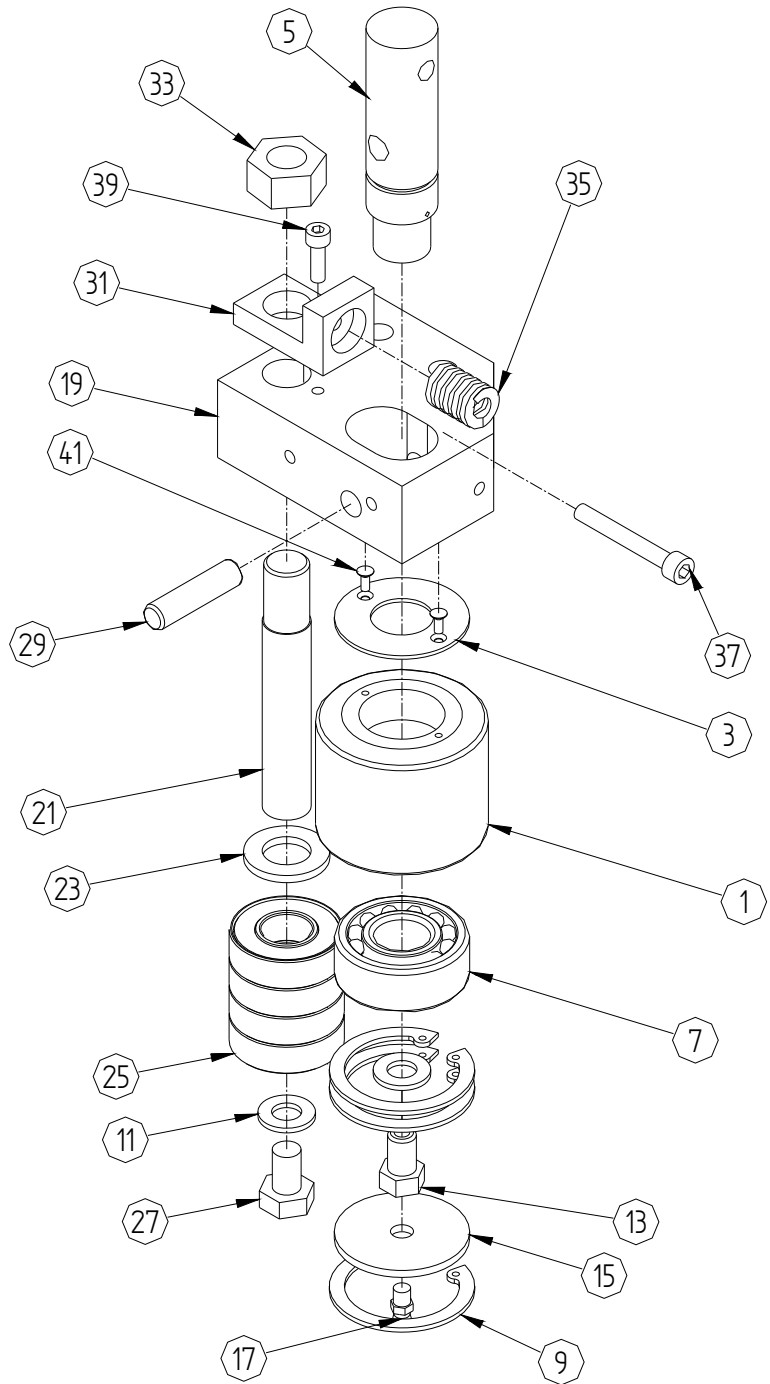
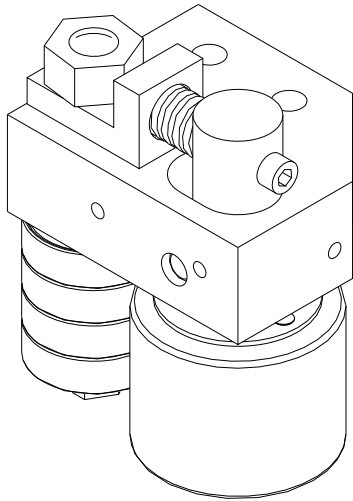


ITEM	PART NO.	PART NAME	PART NAME	QTY	UNIT
1	SDM-1029	左導輪座	Left guide wheel seat	1	PCS
3	SDM-1031A	左固定鎢鋼片	Left fixed insert	1	PCS
5	SDM-1030A	左固定鎢鋼片	Left fixed insert	1	PCS
7	AHA-0704A	下壓座(EU79用)	Clamping seat	1	PCS
9	AGB-70410A-	下壓軸承座銷	Pin	1	PCS
11	AGB-70416	鎢鋼片(回程)彈簧	Locked piston	1	PCS
13	AGB-70716	鎢鋼片鎖緊活塞	Spring	1	PCS
15	PP-59070	O型環 P-14	O Ring	1	PCS
17	AGB-70715	鎢鋼片油缸	Cylinder	1	PCS
19	PBA-5-30	內六角螺絲	Bolt	2	PCS
21	AHA-0707D	導輪軸(三)	Guide shaft #3	1	PCS
23	SDM-1034A	導輪軸(長)	Guide shaft (long)	1	PCS
25	PP-14270B	軸承 6200DDU	Bearing 6200DDU	4	PCS
27	SDM-1035	導輪墊圈	Washer	1	PCS
29	POA-10	螺母	Nut	2	PCS
31	PBA-6-20	內六角螺絲	bolt	1	PCS

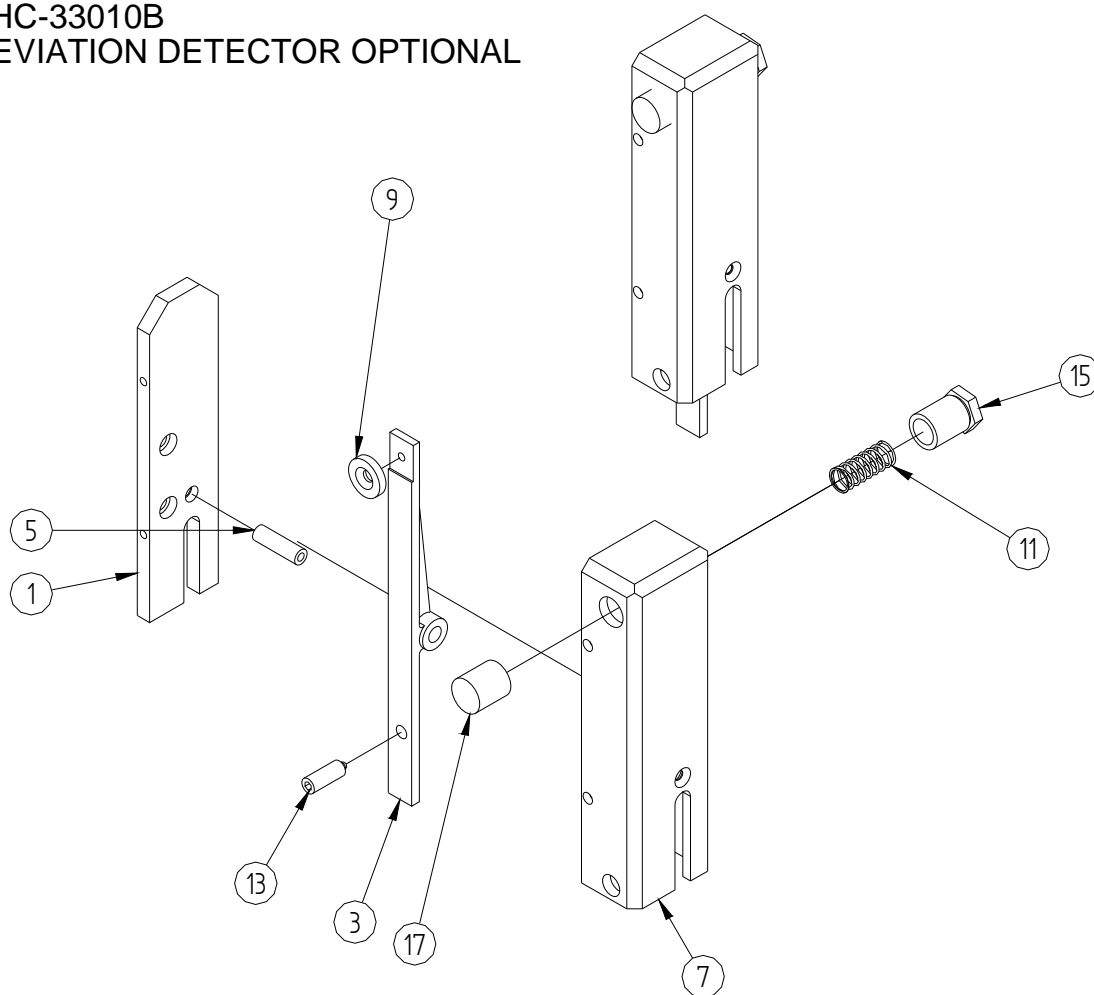


ITEM	PART NO.	PART NAME	PART NAME	QTY	UNIT
1		底座組	Base Assembly	1	PCS
3	S7550-20400	上浮組	Lifting roller device assembly	1	PCS
5		鋸弓組	Saw bow assembly	1	PCS
7	SGG-1035	上限滑桿	Upper limit rod	1	PCS
9	SGG-1036	上限滑桿座	Upper limit rod seat	1	PCS
11	SGG-1037	上限滑塊	Upper limit slide block	2	PCS
13	AGF-3006WY1	橫樑	Cross beam	1	PCS
15	AHB-0519	鋼刷軸	Wire brush shaft	1	PCS
17	AHB-0523B	鋼刷護蓋	Wire brush cover	1	PCS
19	AHB-0523C	鋼刷護蓋附件	Accessory	1	PCS
21	AHB-0524	鋼刷軸套	Sleeve	1	PCS
23	AHB-0528	鋼刷調整桿	Wire brush adjustment rod	1	PCS
25	AHB-0530	鋼刷護蓋活動軸	Movable shaft	1	PCS
27	AHB-0532	鋼刷護蓋活動板	Movable plate	1	PCS
29	AGB-70220	銷螺絲	Water pipe fixed bracket	1	PCS
31	SGG-1005W	前活動虎鉗	Front movable vise	1	PCS
33	AGB-70378	下限定位支桿	Lower limit positioning rod	2	PCS
35	AGB-70425B	冷卻水噴嘴	Spray nozzle	2	PCS
37	AGB-70431	水路板	Coolant/hydraulic connector un	2	PCS
39	AGB-70804	開關固定板	Switch fixed plate	1	PCS
41	AHA-0140-NC	上限開關固定座	Upper limit switch seat	1	PCS
43	AHA-0672	感應器底板	Sensor base plate	1	PCS
45	AHA-1313	噴嘴	Nozzle	1	PCS
47	AHB-0132	油壓馬達固定板	Hydraulic motor seat	1	PCS
49	AHE-1016	水管接頭座	Fitting seat	1	PCS
51	AHG-0516	鋼刷連桿	Connecting rod	1	PCS
53	PP-15010	萬向接頭	Universal joint	2	PCS
55	PP-21030A	水面計	Water gauge	1	PCS
57	PP-21030	油面計	Oil gauge	1	PCS
59	SGG-1003W	前固定虎鉗(短)	Front fixed vise (short)	1	PCS
61	SGG-1004W	前固定虎鉗(長)	Front fixed vise (long)	1	PCS

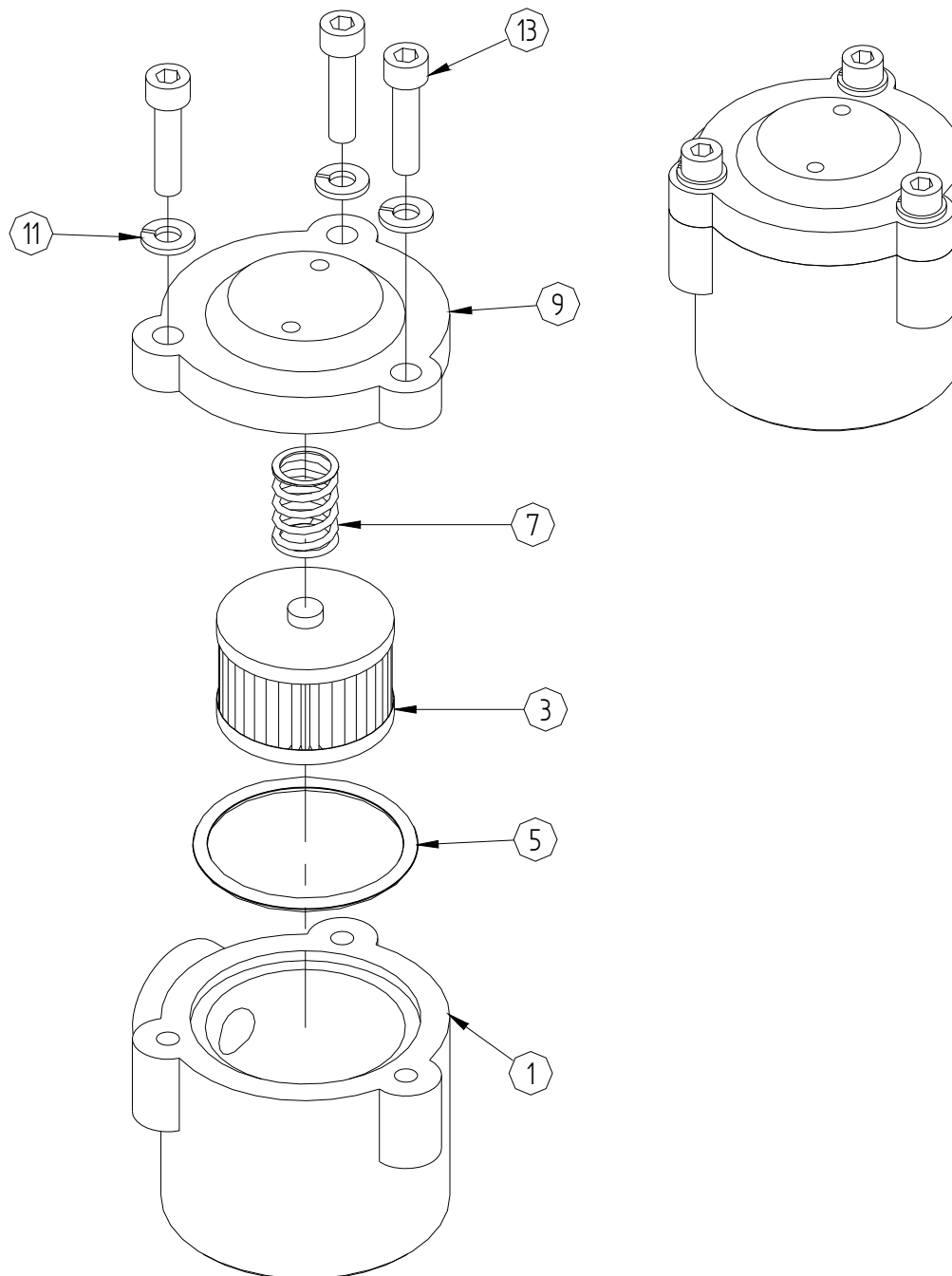
AGB-33010
VIBRATION DAMPER



ITEM	PART NO.	PART NAME	PART NAME	QTY	UNIT
1	AGB-3301	防震導輪	Vibration damper roller	1	PCS
3	AGB-3308	遮水橡皮	Rubber ring	1	PCS
5	AGB-3302	防震導輪軸	Shaft	1	PCS
7	PP-14507	調心軸承 2204	Bearing 2204	1	PCS
9	PP-58111	扣環 R47	Ring R47	3	PCS
11	PPA-10	平面華司	Washer	2	PCS
13	AGB-3309	油咀螺絲	Washer	1	PCS
15	AGB-3307	牛油擋	Grease cover	1	PCS
17	PUC-020	油嘴	Oil nipple	1	PCS
19	AGB-3303R	防震座	Vibration damper seat	1	PCS
21	AGB-3305	固定導輪軸	Shaft	1	PCS
23	PPA-16	平面華司	Washer	1	PCS
25	PP-14267	軸承 62032R	Bearing 62032R	4	PCS
27	PLA-10-16	外六角螺絲	Hexagon bolt	1	PCS
29	PP-91366	直銷	Pin	1	PCS
31	AGB-3306N	防震彈簧座	Spring holder	1	PCS
33	POA-16	螺母	Nut	1	PCS
35	PP-57403	彈簧 TH-1625	Spring TB-1625	1	PCS
37	PBA-6-45	內六角螺絲	Hex socket cap screw	1	PCS
39	PBA-5-16	內六角螺絲	Hex socket cap screw	1	PCS
41	PJA-3-6	平頭螺絲	Flat screw	2	PCS

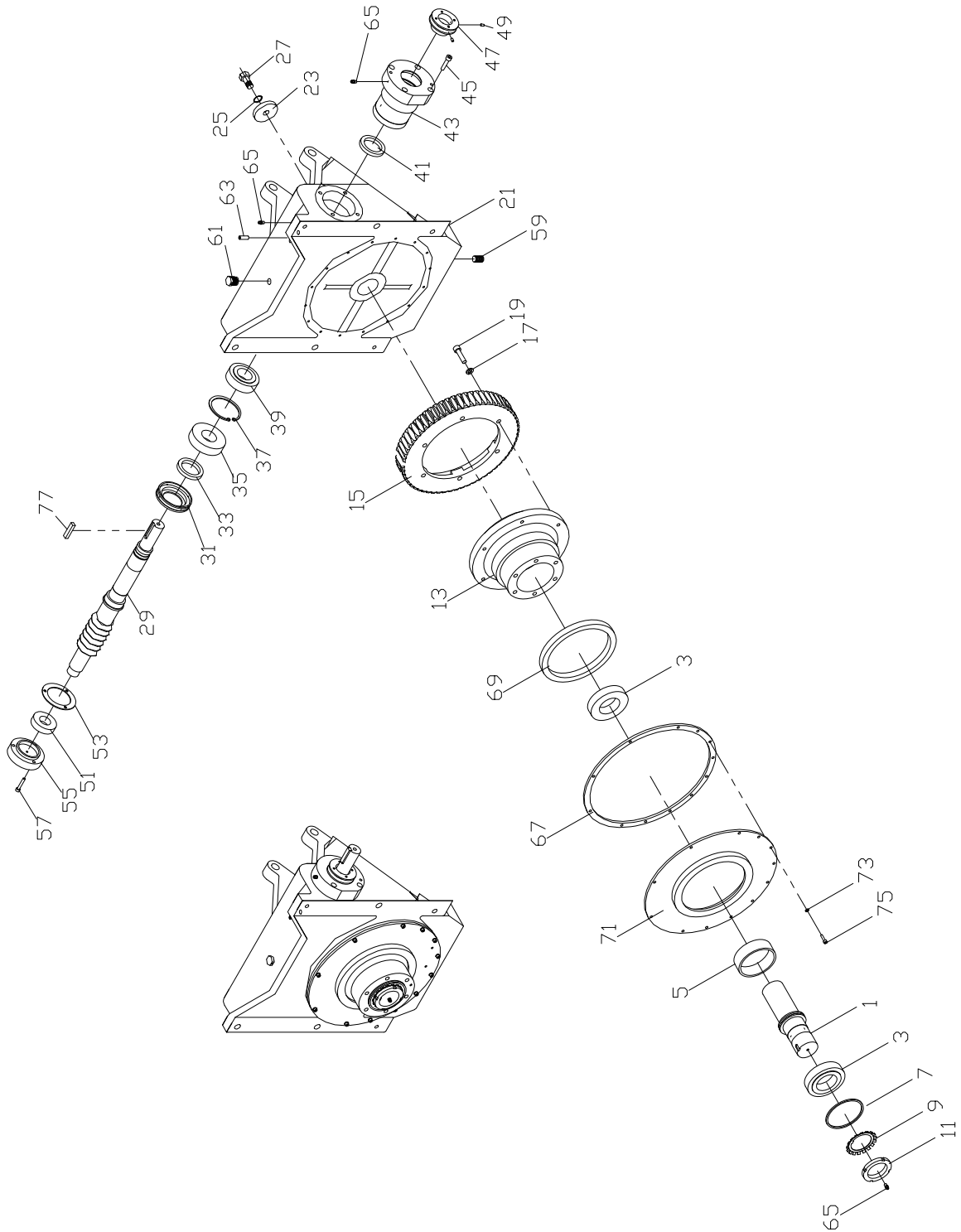
**AHC-33010B
DEVIATION DETECTOR OPTIONAL**


ITEM	PART NO.	PART NAME	PART NAME	QTY	UNIT
1	AHC-3301B	歪斜檢知本體	Deviation detector body	1	PCS
3	AHC-3302B	偵測底板	Detector plate	1	PCS
5	AHC-3304	偵測板轉軸	Detector plate shaft	1	PCS
7	AHC-3305B	歪斜檢知護蓋	Deviation detector cover	1	PCS
9	AHC-3006	偵測板	Detector plate	1	PCS
11	M3L-9-10	微動彈簧	Spring	1	PCS
13	NGG-3303	鎢鋼頂針	Tungsten steel push rod	1	PCS
15	NGG-3309	偵測彈簧座	Detecting spring seat	1	PCS
17	PP-90419	近接開關	Switch	1	PCS

AGB-707270
 HYDRAULIC FILTER ASSEMBLY


ITEM	PART NO.	PART NAME	PART NAME	QTY	UNIT
1	AGB-70727	濾油器本體	Oil filter body	1	PCS
3	AGB-70730	濾油器蕊	Filter	1	PCS
5	PP-59531	O 形環 G-45	O Ring G-45	1	PCS
7	AGB-70729	濾油器彈簧	Filter spring	1	PCS
9	AGB-70728	濾油器蓋	Filter cap	1	PCS
11	PQA-6	彈簧華司(公)	spring washer	3	PCS
13	PBA-6-25	有頭內六角螺絲(公)	bolt	3	PCS

PART C8
GEAR BOX ASSEMBLY
 PART NO : AHG-04050



PART C8
GEAR BOX ASSEMBLY
PART NO : AHG-04050

ITEM	PART NO.	PART NAME	PART NAME (CH)	PART SPEC.	COUNT	UNIT
1	AHB-0408	wheel shaft	下輪軸		1	PCS
3	PP-14619	taper roller bearing	軸承	30211 NSK	2	PCS
5	AHB-0410	distance collar	下輪軸承墊圈(一)		1	PCS
7	AHB-0439	distance collar	墊圈(二)		1	PCS
9	PP-14965	Toothed washer	止動環	AW15	1	PCS
11	PP-14915	toothed nut	固定螺母	AN15	1	PCS
13	AHB-0405	housing	蝸輪固定座		1	PCS
15	AHB-0406	worm gear	蝸輪		1	PCS
17	PQA-12	spring washer	彈簧華司	M12	6	PCS
19	PBA-12-50	bolt	有頭內六角螺絲	M12x50L	6	PCS
21	AGB-0401A	reducer frame	減速機本體		1	PCS
23	AHB-0416	washer	下輪鎖緊墊圈		1	PCS
25	PQA-20	spring washer	彈簧華司	M20	1	PCS
27	PBA-20-80	Bolt	有頭內六角螺絲	M20x80L	1	PCS
29	AHB-0422	worm	蝸桿		1	PCS
31	SGA-2060	bearing support	油封座		1	PCS
33	PP-51105	oil seal	油封	50.67.9	1	PCS
35	PP-14654	taper roller bearing	軸承	30308 SKF	1	PCS
37	PP-58116	snap ring	扣環	R80	1	PCS
39	PP-14693	taper roller bearing	滾錐軸承	32208 SKF	1	PCS
41	PP-51101	oil seal	油封	48.65.9	1	PCS
43	AHB-0432	bearing case	軸承座		1	PCS
45	PBA-8-35	bolt	有頭內六角螺絲	M8x35L	4	PCS
47	SGA-2061	wire brush pulley	鋼刷普利		1	PCS
49	PAA-5-8	set screw	止付螺絲	M5x8L	2	PCS
51	PP-14131	bearing	軸承	6206Z SKF	1	PCS
53	AHB-0441	packing	蝸桿蓋迫緊石棉		1	PCS
55	AHB-0437	worm cap	蝸桿蓋(厚)		1	PCS
57	PBA-6-35	bolt	有頭內六角螺絲	M6x35L	3	PCS
59	PEF-040		內六角塞頭	PT1/2"	1	PCS
61	AHA-0307	plug	透氣塞頭		1	PCS
63	PAA-8-25	set screw	止付螺絲	M8x25L	1	PCS
65	PUC-020	grease nipple	油嘴	1/4"-28UNF	3	PCS
67	AHB-0419	packing	迫緊石棉		1	PCS
69	PP-51135B	oil seal	油封	Ø240x ø 280x19T(NOK)	1	PCS
71	AHB-0418	fixed ring	油封固定盤		1	PCS
73	PQA-6	spring washer	彈簧華司	M6	14	PCS
75	PBA-6-20	bolt	有頭內六角螺絲	M6x20L	14	PCS
77	PS-10-8-45	key	方鍵	10x8x45L	1	PCS

Warranty

Warranty

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

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

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

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

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

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

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

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



Vertical Plate Saws
Horizontal Billet Saws
NC/CNC Band Saws
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