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# FA-111DR

## Operation Manual

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# 1 Introduction

## Machine Features:

1. Suitable for cutting various materials, from mild steel to stainless and copper.
2. Cutting length accuracy of  $\pm 0.1\text{mm}$ .
3. Cutting capacity up to OD 110mm.
4. Standard with speed inverter for speeds of 30~120 RPM.
5. Rigid and reliable clamping vise provides secure material holding and higher accuracy.
6. Error display on control panel for easy troubleshooting.
7. Digital readout and parts counter for automation and short setup.
8. Fully automatic hydraulic system. (Cutting + Feeding + Clamping)
9. Optional feeding lengths up to  $1000\text{mm} \times 3$  strokes. (Standard 10mm~600mm)
10. Vertical sliding saw head ensures stable and precise cutting.
11. Backlash eliminating device prolongs the life of saw blade.
12. Counter balance system for maximum stability through the entire cut.
13. Patented floating feeding carriage for superior cutting length accuracy and smooth material handling.
14. Circulating cooling system results in smooth cutting surfaces and longer blade life.
15. Electronic saw blade protection system and cover for safety.
16. Built-in chips tray for convenient cleaning and maintenance.

## 2 Safety Precautions

### 2-1 Introduction

1. Machine operators must read the manual thoroughly, and fully understand the functions of the machine and its safety requirements before usage.
2. No one other than qualified operators should operate the machine.
3. This machine design has complied with safety requirements of your company. In case of any concern, check on the detail of each requirement as needed.
4. The operator should check to ensure that the machine is connected to proper power source before usage.
5. Depress emergency stop button and shut off power source if any unusual situation occurs during usage.
6. Un-plug power source while installing, dismantling, maintaining, or adjusting the machine
7. During the process of adjusting or testing the machine, if the electric power needs to be on, the operator should pay extra attention to the action of automatic mode to ensure people safety.
8. Keep the machine and its surrounding clean and bright to ensure operation safety.
9. Maintain the machine periodically to ensure normal functions of each part of the machine.
10. Do not operate the machine beyond its specifications.
11. Do not remove or alter any safety protection part of the machine, such as saw blade protection cover, operator safety cover, emergency power switch etc.
12. The operator must wear eye protective goggle while operating the machine.

### 2-2 Personal Protective Equipment

1. Operators and maintenance personnel carrying out various operations on the machine must used personal protection equipment, e.g. goggles, boots and gloves to eliminate the possible risks related to the various activities being carried out.
2. The clothing of machine operators and maintenance personnel must comply with the essential safety requirements specified in community Directives 89/656/EEC, 89/686/EEC and laws in force in the country where the machine is installed.
3. Do not wear accessories or jewellery, including bracelets, watches, rings or necklaces, when carrying out maintenance operations in which operation in unprotected area is required to avoid mechanical risks, such as dragging, entrapment or other.

4. Wear safety boots and protective gloves during all working phases and when changing the tools, filling the tubes, handling cut parts, setting the machine and carrying out maintenance operations.

## 2-3 Danger Zones-Workplace-Free Space Around The System

Figure 2-1 shows the machine layout indicating the danger zones, the operator's workplace and the necessary free space around the system to ensure regular activities related to the machine.

A free space of at least one meter around the entire perimeter of the machine is required to ensure safe operation.

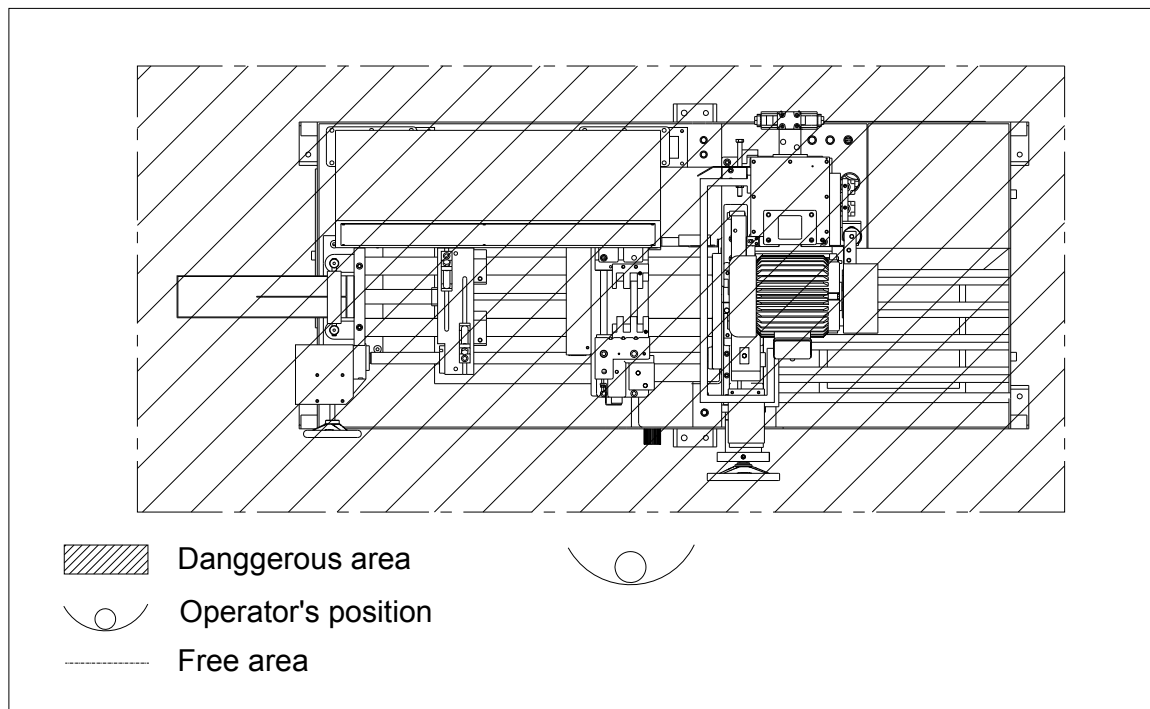


Figure 2-1 Danger zones-Workplace-Free space around the machine

## 2-4 Safety Installation Standard

1. Never approach the machine action area while the machine is under operation (machine power on).
  - Set up the action area before processing the machine installation.
  - Set up the action area is absolutely required to ensure the safety and proper maintenance.
2. It should stop the machine running to ensure the operator safety while operator



approaching under the machine operating condition. Always remember to setup safety device according to the action area decided in item (1) before start to operate this machine.

3. Do not install safety devices inoperable machine.
4. Electric shock, fire, and malfunction could happen due to machine operation around environments of high temperature, multi temperature, irritating and corrosive gases, vibration, and shocking.
5. Never put wire leavings, cutting dust, workpiece and other foreign matter inside the machine that may cause fire, malfunction and machine fault.
6. Machine electric power consumption: Always set up the input power capacity more 20% higher than the rated power consumption value. Marginal or insufficient input power supply capacity may cause fire or machine fault.

## **2-5 Safety Devices**

### **2-5-1 Emergency stop buttons**

1. Red emergency stop mushroom buttons are arranged on the machine.
2. Press one of the mushroom buttons to stop the machine in an emergency. The buttons operate a safety circuit and block all movements.
3. Carry out the following procedure every 200 hours to test correct operation of the emergency stop circuit:
  - a. Start the machine.
  - b. Press an emergency stop button.
  - c. Reset the emergency stop button.

Repeat this procedure for all emergency stop buttons. You will not be able to restart the machine if the emergency circuit fails.

### **2-5-2 Limit Switch(Standard no function)**

Moveable guards are fitted on the machine to prevent access to dangerous areas. Each guard is equipped with a safety limit switch.

Movements in the area which can be accessed when the guards are released and/or open cannot be started.

Carry out the following procedure every six months hours to test correct operation of the guard circuit:

1. Start the machine.
2. Open the guard.



3. Close the guard.
4. Start the cycle.
5. Stop the cycle.

You will not be able to start the cycle if the guard circuit is broken. Inspect to identify the failure.

### 2-5-3 Power switch

To disconnect main electric power when it is placed at ON position. For maintenance, you should turn it to OFF position then could open this electric box door.



Emergency  
stop button

Figure 2-2 Standard type





Figure 2-3 Security fence type

## 2-6 Operating 、Running

Please reading the manual in advance and operating this machine according to the manual instruction.

★ **We will not be responsible for any operating accident due to the customer unauthorized remodeling or adding any additional device.**

1. Operation, always arrange single operator to operate this machine. It is very dangerous to have multiple operators operating this machine in the same time. Please absolutely avoid doing it.
2. Never let hands or body near and inside the machine running partitions. It is very dangerous and please absolutely avoids doing it.
3. Always turn off electrical motor and confirm the machine stop before replacing die. It is very dangerous to do this without turning them off. Please absolutely avoid doing it.
4. Always confirm that there is no tools, fixtures, or any other unnecessary things inside the action area before operating this machine, otherwise machine failure or human injury may happen. Attention required, please.

## 2-7 Maintenance 、 Inspection

1. Never disassemble and remodel any component of this machine, otherwise it may result in fire, machine failure and malfunctions.
2. Never do directly welding on this machine; otherwise it may result in machine failure and malfunctions.
3. Always cutoff the power supply and wait for 5 minutes before loading/unloading and replacing any components, otherwise it may result in electrical shock or machine failure.
4. Always cutoff the power supply before performing daily inspection, otherwise it may result in electrical shock in the power on condition.
5. In order to avoid non duty person turning on the machine power during the machine maintenance and inspection periods, please paste a warning sign of “No Power On” or “Power On Forbidden” beside the machine primary power at the machine power control panel, otherwise it may result in electrical shock or human injury.
6. Never load or unload any wire, baseboard, and connectors while machine is power on, otherwise it may result in electrical shock, machine failure and malfunctions.
7. Please confirm that every bolts installation, applying tools collection and cover doors of control panel and machine are all well arranged after maintenance and inspection work finished, otherwise it may result in electrical shock, fire, human injury or machine malfunctions.

## 2-8 Warning Plates and Warnings

The form and contents of warnings are described in the following.

| No | DRAWING                                                                             | EXPLANATION                                                                                                                                                                                                                                                                                                                                                                                       |
|----|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. |    | <ul style="list-style-type: none"> <li>● Always wear earplug when operating machine.</li> </ul>                                                                                                                                                                                                                                                                                                   |
| 2. |    | <ul style="list-style-type: none"> <li>● Always wear goggle when operating machine.</li> </ul>                                                                                                                                                                                                                                                                                                    |
| 3. |   | <ul style="list-style-type: none"> <li>● This symbol indicates operators should aware of saw blade edge to prevent cutting injuries happening. When changing saw blade, make sure main power is turn off.</li> </ul>                                                                                                                                                                              |
| 4. |  | <ul style="list-style-type: none"> <li>● This symbol indicates there are high voltage electric facilities with potentially danger and may cause risk to the life and health of individuals. Do not remove this cover without disconnecting main power supply. Not observing these notes may result in injuries.</li> <li>● Only opened by qualified electrician. Avoid electric shock.</li> </ul> |



### **3 Machine Specifications**

Please consult appendices 9-2.



## **4 Installation**

Please read the instruction carefully before installation.

If having any question please contact your dealer for prompt service.

### **4-1 Unpacking and Inspection**

1. Check if there is any damage on the wooden case or the plastic bag that used to pack the machine. Should any damage be found on the machine, please claim for the damage against the delivery or insurance company.
2. Check the machine and accessories against the packing list. Should any shortage, please contact your dealer.

### **4-2 Handling, Lifting, Transporting and Unloading Procedure**

#### **4-2-1 Preliminary operations**

Follow the preliminary lifting activities listed below before handling the machine:

1. Suitably lock all parts.
2. Remove all tools from the unit, where relevant.
3. Arrange the units so that they are balanced.
4. Fasten the keys of the power enclosure, the machine control panel with suitable adhesive tape.

#### **4-2-2 Lifting the machine**

The main component lifting points are show in figures 4-1.

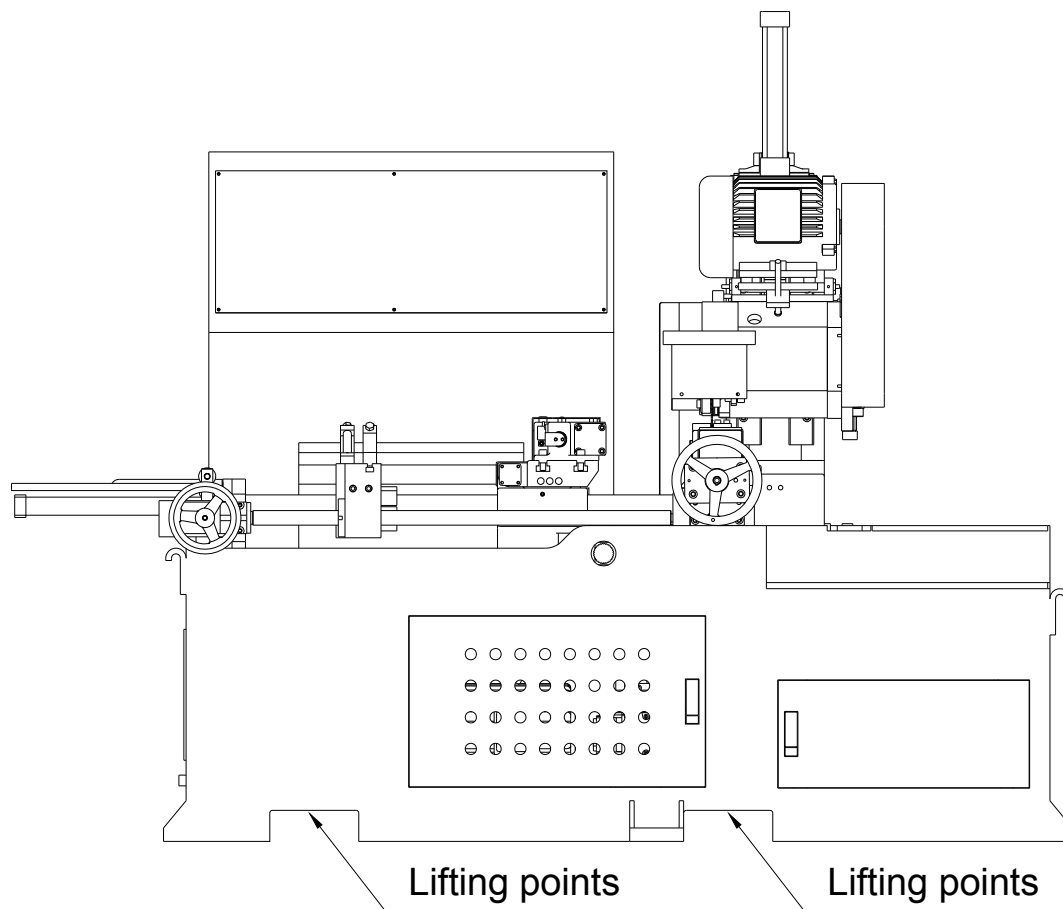


Figure 4-1 Lifting the machine

Use a forklift to lift the machine. The operator must be qualified and capable of carrying out the task.

Lift the machine a few centimeters and check that the load is balanced.

Lift the machine after making sure that it is perfectly balanced.

The maximum component weight is of the parts of the machine for transport is shown in 9-2. Table of the Machine data. Make sure the forklift's capacity is enough to lift the machine.

The presence of at least two workers is recommended when loading and unloading the machine: one person will operate the forklift and the other will check the lifting making sure that the machine does not collide with other objects. Workers will keep a safety distance greater than 2 meters around the machine when it is lifted for higher than 50mm.

Pay the utmost care when carrying out these operations.

## 4-3 Installation

The machine installation area must be sufficiently wide to house the machine and provide space to move around it for carrying out the various intervention related to machine operation.

Follow the procedure to install the machine:

1. Level the machine by means of the adjustment screws.(Figure 4-2)
2. Connect the delivery and return tubes of the hydraulic unit to the machine.  
Check that the unit connection plate corresponds to the machine system connection plate.
3. Pour in oil to reach level of 100 liters.
4. Check that all hydraulic connections to the various distributors are correctly made.

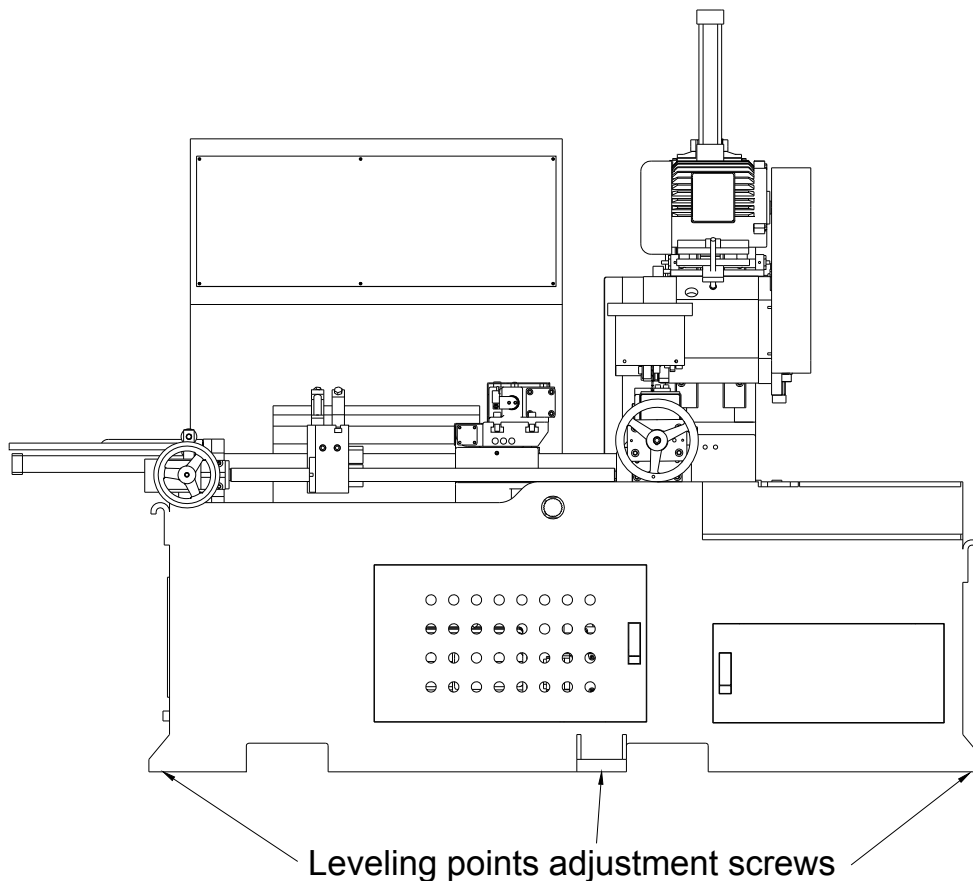


Figure 4-2 Leveling points



#### 4-4 Filling Hydraulic Oil

1. Prepare one of following or equivalent hydraulic oil.
  - VISCONTY ISO VG46
  - MITSUBISHI DIAMOND HYD46
  - SHELL TERAS OIL C46
  - SHOWA SHOSEKI JH46
  - CHINA PETROLEUM AW46
2. Check the oil level gauge. The oil level shall be in the middle height of the gauge.

#### 4-5 Filling Coolant

1. Pour the diluted sawing oil coolant onto the table of the machine. The solution will flow into the coolant tank.
2. The dilute ratio (water: oil) is 5:1 for hard or high alloy steel and 10:1 for mild steel.

#### 4-6 Connecting Electric Power

**Note: Only the qualified electrician is allowed to perform this work.**

**Do not install saw blade on the main shaft before checking the rotational direction of the main shaft.**

1. Assure the main power switch is at "OFF" position and the saw blade motor speed select switch is at "OFF" position before connecting the machine to electric power source.
2. The voltage, amperage and protection capacity of the power source shall meet the requirement of the machine and the local regulation.
3. Connect the main power supply cable the check the correctness of the connection by following steps:
  - a. Turn on the main power switch on the back of the control panel.
  - b. Turn on the saw blade motor switch on the control panel.
  - c. Check the spindle rotating direction. The spindle rotating direction should be same as the mark on the saw blade safety cover.
  - d. If the direction is not correct, turn off power; exchange two of the three power leads. Check again.

To install this machine safely and effectively, one needs to read the manual thoroughly. Contact the dealer of SOCO Machinery right away whenever questions/problems occurs.



## 5 Machine Outline

### a. Standard type

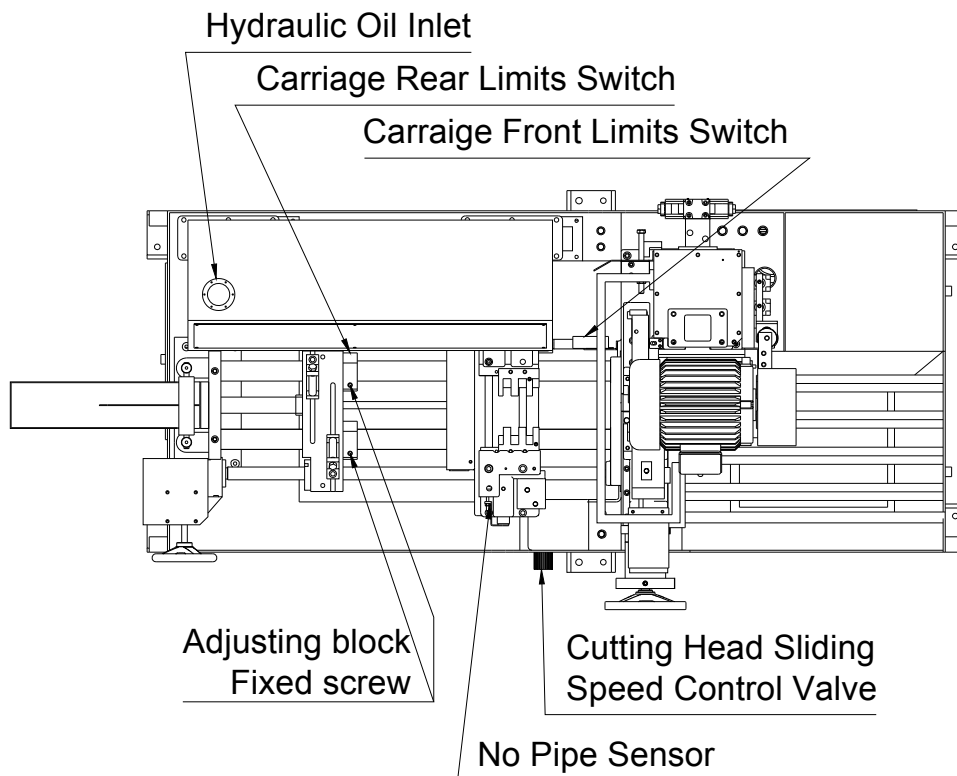


### b. Security fence type

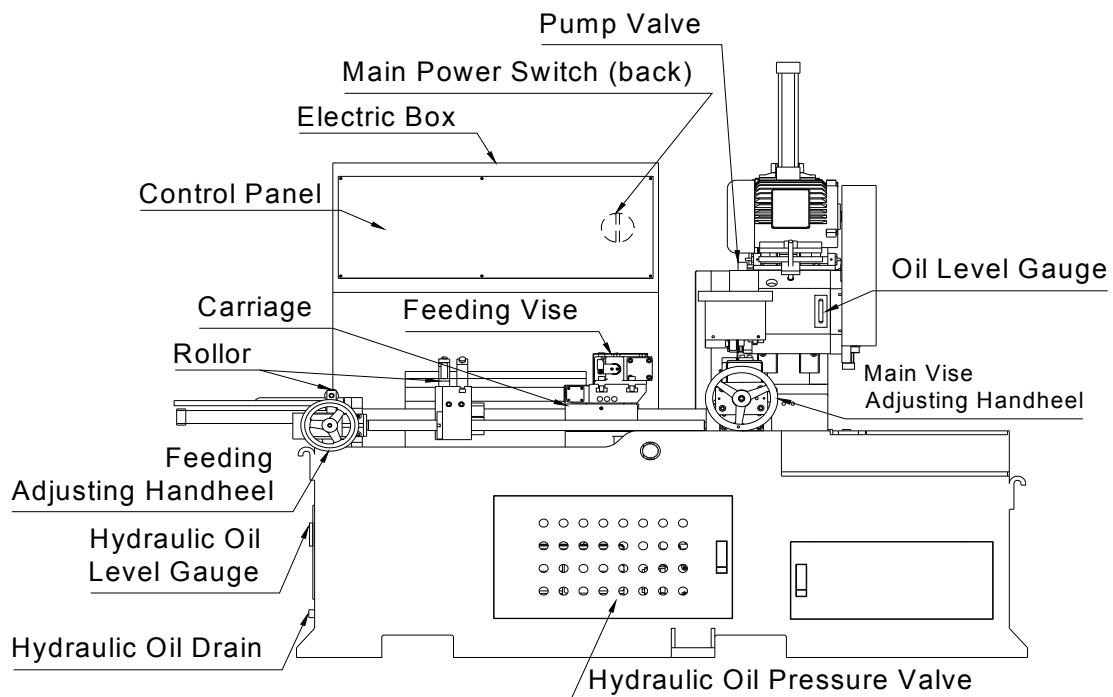


## 5-1 Machine Outline and Major Components

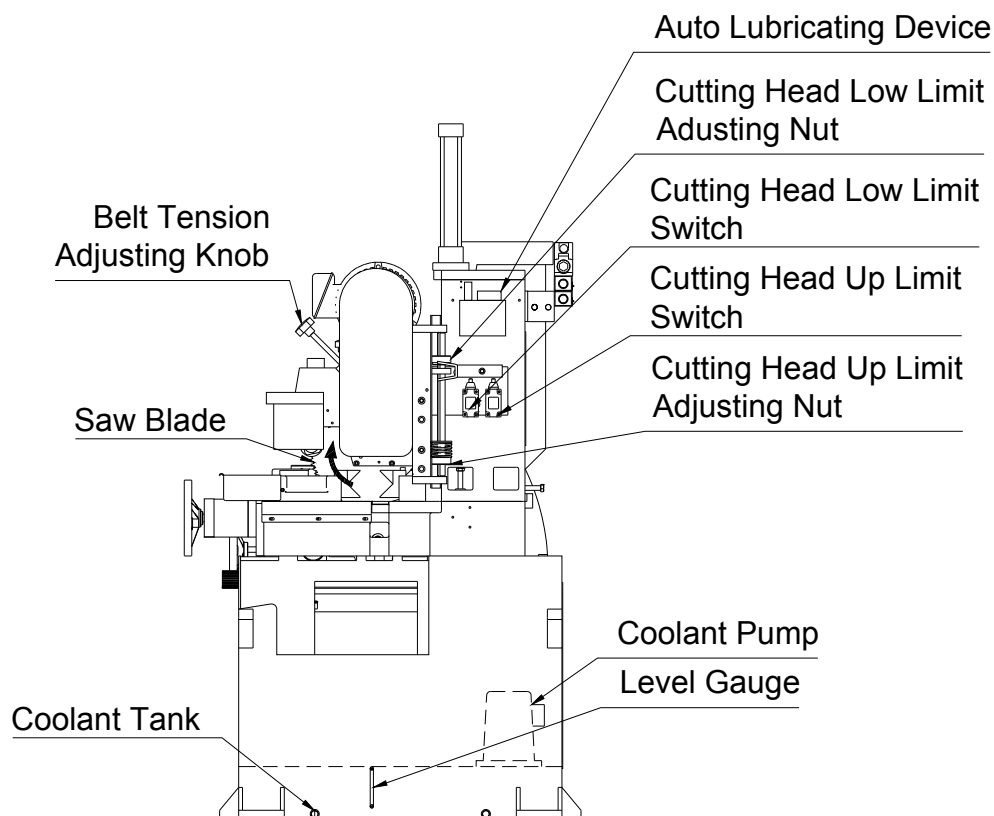
### 5-1-1 Section view



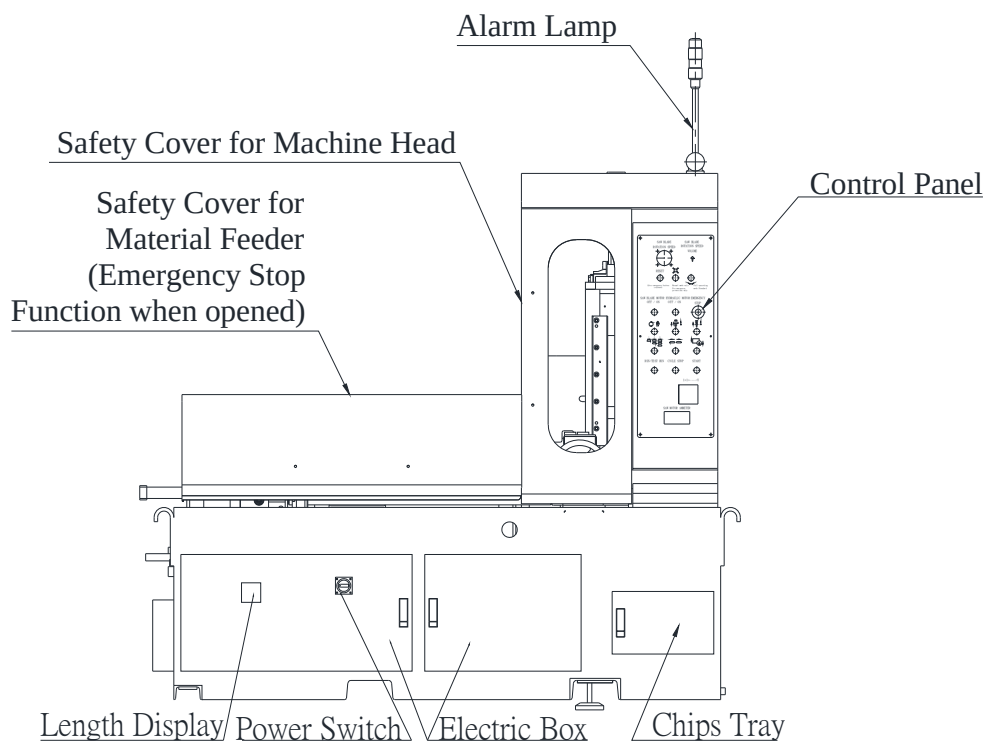
### 5-1-2 Front view



### 5-1-3 Side view



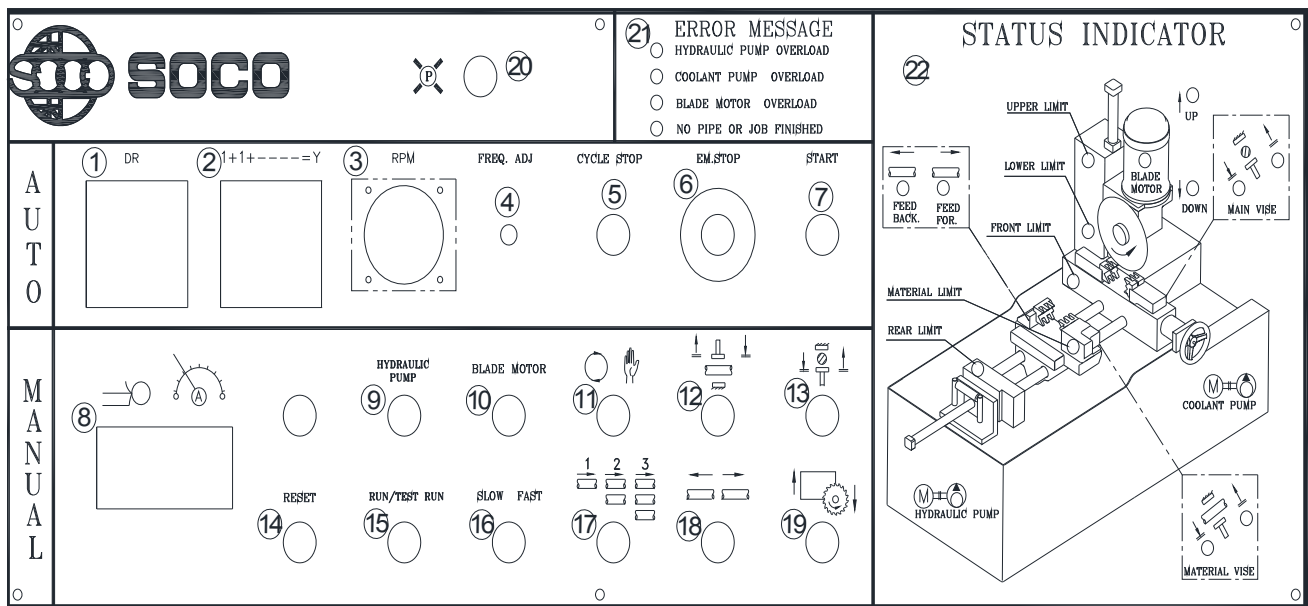
### 5-1-4 Front view(with cover)



## 5-2 Control Panel

### 5-2-1 Standard type

#### 1. Panel



|    |                                                                          |
|----|--------------------------------------------------------------------------|
| 1  | Digital Type Carriage Stopper Position Indicator(Feeding Length Display) |
| 2  | Cutting Quantity Counter                                                 |
| 3  | Saw Blade Rotation Speed                                                 |
| 4  | Saw Blade Speed Adjusting                                                |
| 5  | Cycle Stop                                                               |
| 6  | Emergency Stop Switch                                                    |
| 7  | Start                                                                    |
| 8  | Blade Motor Current Meter and Max Saw Current Setting                    |
| 9  | Hydraulic Pump Start                                                     |
| 10 | Blade Motor Start                                                        |
| 11 | Manual / Auto Switch                                                     |
| 12 | Manual Feeding Vise Open or Clamp Switch                                 |
| 13 | Manual Main Vise Open or Clamp Switch                                    |
| 14 | Reset                                                                    |
| 15 | Run / Test Run Selection Switch                                          |
| 16 | Slow / Fast                                                              |
| 17 | Multiple Feeding Strokes Selection Switch                                |
| 18 | Manual Feeding Forward or Return Switch                                  |

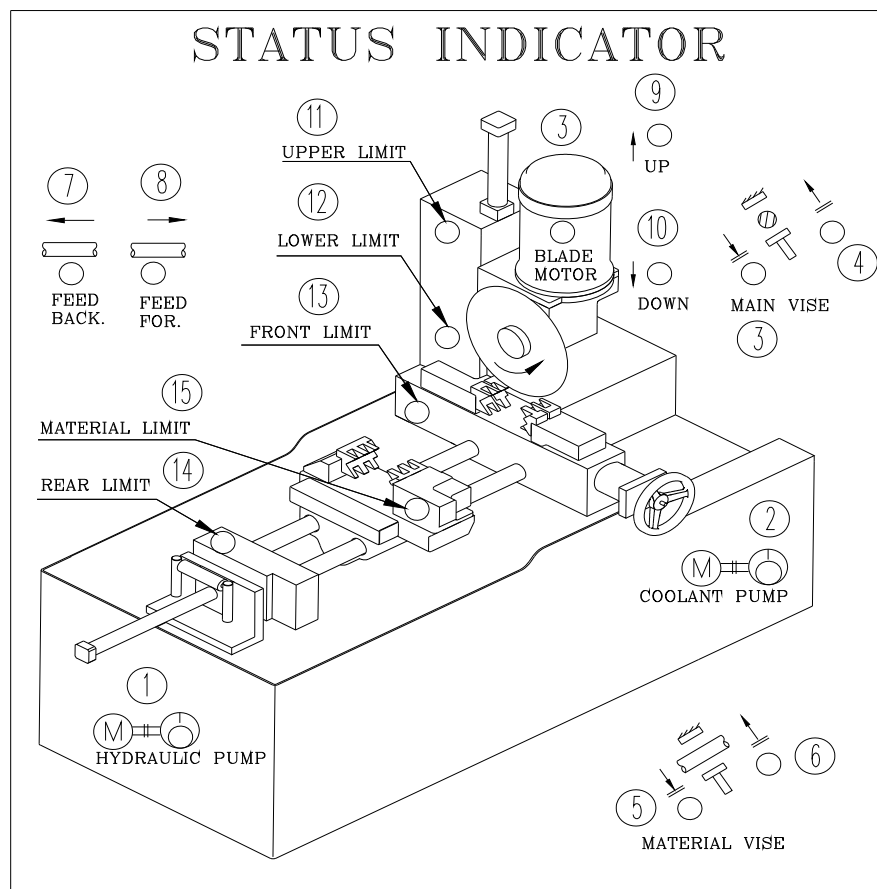
|    |                                          |
|----|------------------------------------------|
| 19 | Cutting Head Up or Down Selection Switch |
| 20 | Power Light                              |
| 21 | Error Message Light                      |
| 22 | Status Indicator Light                   |

## 2. Error message lights

### ERROR MESSAGE

- ① HYDRAULIC PUMP OVERLOAD
- ② COOLANT PUMP OVERLOAD
- ③ BLADE MOTOR OVERLOAD
- ④ NO PIPE OR JOB FINISHED

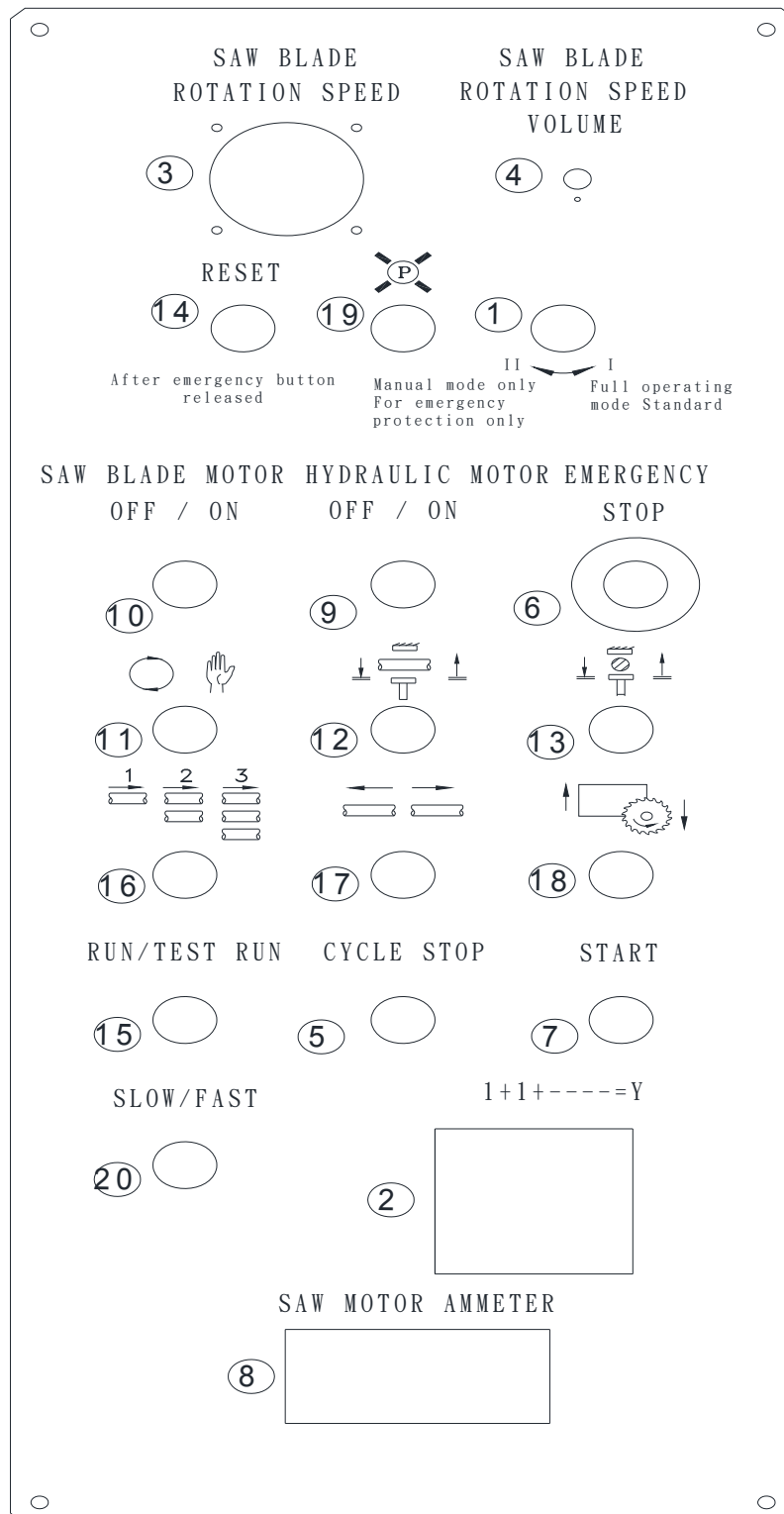
## 3. Status indicator lights



|    |                                      |
|----|--------------------------------------|
| 1  | Hydraulic Pump                       |
| 2  | Coolant Pump                         |
| 3  | Main Vise Open                       |
| 4  | Main Vise Clamp                      |
| 5  | Feeding Vise Open                    |
| 6  | Feeding Vise Clamp                   |
| 7  | Feeding Vise Forward                 |
| 8  | Feeding Vise Back                    |
| 9  | Cutting Head (Saw Blade) Up          |
| 10 | Cutting Head (Saw Blade) Down        |
| 11 | Cutting Head (Saw Blade) Upper Limit |
| 12 | Cutting Head (Saw Blade) Lower Limit |
| 13 | Feeding Carriage Rear Limit          |
| 14 | Feeding Carriage Front Limit         |
| 15 | Material Limit (No Pipe)             |

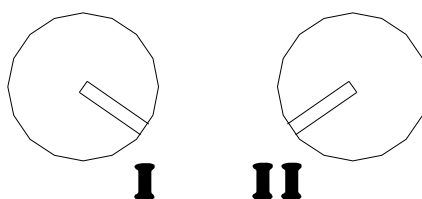
## 5-2-2 Security fence type

### 1. Panel



|    |                                                       |
|----|-------------------------------------------------------|
| 1  | Safety key                                            |
| 2  | Cutting Quantity Counter                              |
| 3  | Saw Blade Rotation Speed                              |
| 4  | Saw Blade Speed Adjusting                             |
| 5  | Cycle Stop                                            |
| 6  | Emergency Stop Switch                                 |
| 7  | Start                                                 |
| 8  | Blade Motor Current Meter and Max Saw Current Setting |
| 9  | Hydraulic Pump Start                                  |
| 10 | Blade Motor Start                                     |
| 11 | Manual / Auto Switch                                  |
| 12 | Manual Feeding Vise Open or Clamp Switch              |
| 13 | Manual Main Vise Open or Clamp Switch                 |
| 14 | Reset                                                 |
| 15 | Run / Test Run Selection Switch                       |
| 16 | Multiple Feeding Strokes Selection Switch             |
| 17 | Manual Feeding Forward or Return Switch               |
| 18 | Cutting Head Up or Down Selection Switch              |
| 19 | Power Light                                           |
| 20 | Slow / Fast                                           |

## 2. Safety Key



This is a Two-position key switch. Please refer to the diagram below.

- Position I ,standard and full operating mode.
- Position II, For manual mode and emergency protection only. If any abnormal conditions occurred, and the emergency button has been pressed, accord to the following sequence to remove the problems:  
Release the emergency button → press the reset button → switch to position I → manual mode → switch to position II → remove the problem



## 6 Operation Mode

### 6-1 Adjustment of the Main Clamping Vise

#### 6-1-1 Adjustment of the rear main vise

1. Turn the main power switch OFF.  
(No saw blade is installed at this moment)  
(Cutting head shall be at upper position)  
(Clamping vise shall be at open position)
2. Unlock the rear main vise fixing screws.
3. Adjust the rear vise position so that the saw blade may cut the work piece at a light cutting load.
4. Lock the rear main vise fixing screws.

#### 6-1-2 Adjustment of the front main vise

1. Turn the main power switch ON.  
(Cutting head shall be at upper position)  
(Clamping vise shall be at open position)
2. Turn the hand wheel of main clamping vise counter-clockwise to open the vise.
3. Put a work piece into the clamping area of vises.
4. Turn the hand wheel of main clamping vise clockwise to close the vise just to touch the work piece.
5. Turn the hand wheel of main clamping vise 1/2 (half) turn counter-clockwise.
6. Turn the auto or manual selection switch to manual position.
7. Turn the manual main clamping vise open or close selection switch to close position.
8. Check the work piece is firmly held by the main clamping vise.

#### NOTE:

1. If the work piece is deformed by the clamping action of the main vise, turn the hand wheel 1/4 turn counter-clockwise at a time and check it again.
2. If the work piece is not tightly enough, turn the hand wheel 1/4 turn clockwise at a time and check it again.
3. Don't set switch at auto position, and don't press auto start button. Avoid the cutting head going down.

## **6-2 Adjustment of the Feeding Clamping Vise**

### **6-2-1 Adjustment of the rear feeding vise**

1. Refer to Section 6-1, take a work piece to be clamped by the main vise.
2. Unlock the rear feeding vise fixing screws.
3. Adjust the rear feeding vise just against the work piece.
4. Lock the rear feeding vise fixing screws.

### **6-2-2 Adjustment of the front feeding vise**

1. Refer to Section 6-1, take a work piece to be clamped by the main vise.
2. Unlock the front feeding vise fixing screws.
3. Manual Feeding Vise Clamp.
4. Make Feeding Vise work piece.
5. Manual Feeding Vise open.
6. Hold Floating base and push front feeding vise about 1~2 mm.
7. Lock the front feeding vise fixing screws.
8. Manual Feeding Vise Clamp.
9. Check the work piece is firmly held by the feeding vise.

#### **NOTE:**

1. If the work piece is not tightly enough, adjust pressure of feeding vise and check it again.
2. If the work piece is deformed by the clamping action of the feeding vise, to reduce push distance at a time and check it again.

### **6-2-3 Adjustment of no pipe sensor**

1. Turn the run or test run selection switch to run position.
2. Put a work piece into the feeding vise.
3. Manual feeding vise clamp, light of no pipe sensor should turn off. If light of no pipe sensor is turn on, adjust the screw for sensing material until the light turn off.
4. Then turn the screw one more then fix.
5. Manual feeding vise open, take out work piece.
6. Manual feeding vise clamp, check light of no pipe sensor should turn on.

### 6-3 Installation of the Saw Blade

1. Turn the adjusting nut of uppermost limit to the highest position.
2. Turn ON main power switch.
3. Turn Cutting Head Up switch. (Cutting head goes up to the highest position)
4. Turn OFF main power switch.
5. Open saw blade safety covers.
6. Remove the clamping flange from the saw arbor.
7. Clean the clamping surfaces of flange and arbor free from any dirt or chips.
8. Clean the clamping area of the saw blade.
9. Mount saw blade on the arbor. Align the pinholes of saw blade and arbor. Put the clamping flange on the saw blade, and tighten the center bolt.  
**Note: The rotation of saw blade shall be counter-clockwise while looking at the mounting surface. There is a directional mark labeled on the protection cover.**
10. When lock the center bolt, keep the front part of saw blade downward to eliminate the gap between pin and pinhole.
11. Adjust the chip remover to the location that it is able to knock down chips.
12. Close the saw blade safety covers.

### 6-4 Adjustment of the Cutting Head (Saw Blade) Sliding Stroke

1. Turn the cutting head sliding speed control valve knob clockwise to closed position.
2. Turn the saw blade motor switch to OFF position.
3. Turn the main power switch to ON position.
4. Turn the auto or manual selecting switch to auto position.
5. Press the semi-auto start button.
6. Open the cutting head sliding speed control valve a little to let the saw head slide downward slowly.
7. Entirely close the cutting head sliding speed control valve as the saw blade reach the expected low position (work piece can just be cut off).
8. Adjust the low limit adjustment nut to such a position that it can actuate the low limit switch, which can stop the downward movement of cutting head.
9. Adjust the up limit adjustment nut to such a position that the bottom tip of saw blade is higher than the top of work piece about 20~25 mm, and the up limit switch can be actuated at that position.

**NOTE: Please repeat the above steps when replace saw blade or change different size of material.**



## 6-5 Adjust Saw Blade RPM

### 6-5-1 Adjust pulley high/low

1. Ensure machine is entirely off.
2. Select High/Low speed as per specification suggestion.
3. RPM higher than 64, please select High Speed Pulley.
4. RPM lower than 64, please select low speed pulley.
5. Anticlockwise turn the adjusting screw for belt tension, and release the belt.
6. Adjust belt to the position of High/Low Speed.
7. Clockwise turn the screw and tightened the belt.

### 6-5-2 Adjust RPM

1. Select the RPM as per specification suggestion.
2. Under MANUAL MODE, turn on saw blade motor.
3. Adjust RPM.

#### Attention!

For security, machine should be totally turned off, while adjusting pulley.

## 6-6 Adjustment of the Cutting Head (Saw Blade) Sliding Speed

Turn the cutting head sliding speed control valve knob clockwise or counter-clockwise.

If the cutting head sliding speed is too fast, the teeth of saw blade may be broken.

If the cutting head sliding speed is too slow, the teeth of saw blade may be worn out quickly.

For example, the cutting time to cut off a 25 mm diameter mild steel rod is about 5~8 sec.

The cutting head sliding speed may be varied depending on the teeth condition.

## 6-7 Adjustment of the Feeding Length

1. Unlock the carriage stopper fixing screws.
2. Rotate the carriage moving hand wheel.
3. When the displayed cutting length is exactly what we want, stop rotate the hand wheel.
4. Lock the carriage stopper fixing screws.
5. Switch to auto mode, and make some trial cuts to verify the length of work pieces. If error is found, repeat above steps to correct it.

**Note:** Feeding length  $\cong$  Work piece length + Saw blade thickness + 0.2 mm.

## **6-8 Attention During Operation**

1. Hydraulic Motor and Saw Blade Motor are functional only under manual mode.
2. Cycle Stop Button works after machine head moving downwards.
3. For any abnormal condition and press the emergency stop. For restart operation, must release error condition first.

Release Error condition: Release Emergency stop button ➔ Press Reset ➔ Finish.

## 7 Maintenance

### 1. Remove Chip

Remove all chips around the cutting head after finishing daily work.

### 2. Fill Lube Oil

Fill lube oil (SAE 50) into the auto-lubricator when the oil level is low.

### 3. Add Grease

Add grease for main vise, feeding vise and carriage every two months.

### 4. Replace Gear Box Oil

After 30 hours operation of the new machine, replace the cutting head gear box oil (HD68).

Then, replace the cutting head gear box oil (HD68) every 6 months.

### 5. Replace Hydraulic Oil

Replace the hydraulic oil every year.

- CHINA PETROLEUM RECIRCULATING OIL AW46
- VISCONTY ISO VG46
- MITSUBISHI DIAMOND HYD46
- SHELL TERAS OIL C46
- SHOWA SHOSEKI JH46

## 8 Troubleshooting

### 1. No function of machine

| Possible Cause                                       | Action                                                             |
|------------------------------------------------------|--------------------------------------------------------------------|
| Outside power is not good.                           | Check outside power.                                               |
| Main power switch is off.                            | Set main power switch at ON position.                              |
| Emergency stop switch is in pressed position.        | Turn emergency stop switch clockwise to release its stop position. |
| Pre-set cutting quantity has reached.                | Re-enter cutting quantity.                                         |
| Pre-set maximum saw blade motor current has reached. | Replace a new saw blade. Re-set a suitable maximum current.        |

### 2. Noise in saw blade motor but spindle no rotation

| Possible Cause                       | Action                                 |
|--------------------------------------|----------------------------------------|
| One phase of power is lost.          | Check power connection.<br>Check fuse. |
| Motor relay function is not correct. | Replace motor relay.                   |

### 3. No coolant spray out

| Possible Cause                           | Action                                         |
|------------------------------------------|------------------------------------------------|
| Low coolant level.                       | Fill coolant to sight glass level.             |
| Check valve is blocked.                  | Remove obstacle or replace a new valve.        |
| Coolant pump is out of function.         | Replace a new pump.                            |
| Coolant pump rotates in wrong direction. | Exchange two phases of connecting power leads. |

### 4. Machine vibrating and noising

| Possible Cause                          | Action                                                           |
|-----------------------------------------|------------------------------------------------------------------|
| Machine is not installed on flat floor. | Re-install machine on flat floor.<br>Recommend use anchor bolts. |
| Work piece is not clamped firmly.       | Rotate vise hand wheel 1/4 turn clockwise.                       |
| Clamping vise is loosened.              | Tight up vise fixing screws.                                     |
| Saw blade is dull.                      | Replace a new blade.                                             |
| Selection of saw blade is not correct.  | Replace a correct saw blade.                                     |



5. Cutting head trembling when sliding

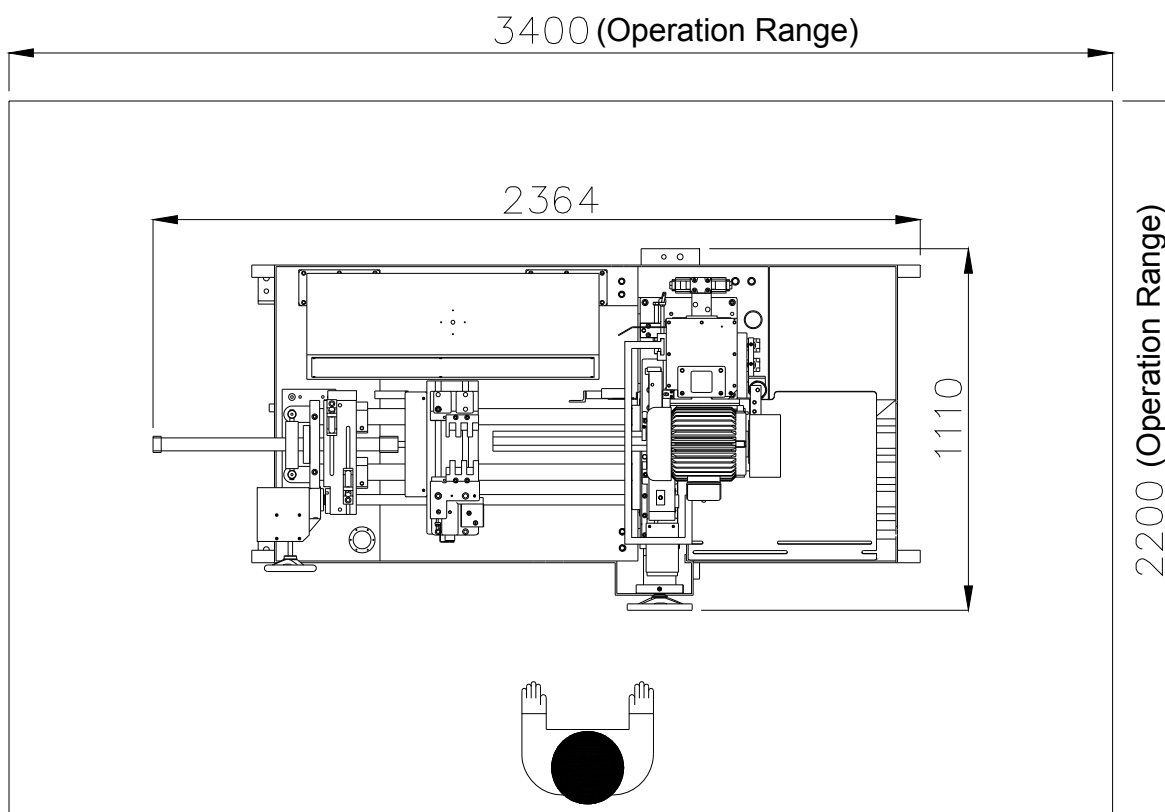
| Possible Cause                                                              | Action                                                                                         |
|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Auto lubricator lacks oil.                                                  | Re-fill lube oil.                                                                              |
| The fitness between sliding guide and sliding key is not properly adjusted. | Re-adjust the sliding key carefully.                                                           |
| Cylinder is worn.                                                           | Replace a new cylinder.                                                                        |
| Hydraulic oil contains air bubbles.                                         | Adjust the Saw head Traveling Stroke to the full stroke and let air bubbles separate from oil. |

**Note: Should any problem fail to be solved, Please don't operate the machine to avoid risk of danger. Please contact SOCO or SOCO's agent. Our personnel would be glade to provide any service.**



## 9 Appendix

### 9-1 Machine Operates Range Pictures





## 9-2 Machine Specifications

### 9-3 Hydraulic Circuit Diagram and Air Circuit Diagram

## 9-4 Electrical Circuit Diagram



## 9-5 Parts Lists and Drawings