

# 플레이트 개선 가공기 사용설명서

EDGE MILLER MACHINE OPERATING MANUAL

MODEL No. : ID-7106, 7107 공용



**ILDEUNG Tech**  
Pipe Beveling M/C



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Thank you for purchasing the machine. The machine is carefully made to work best. Note that its specifications could change for the improvement of its quality.



## General Description

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### 1 General Description



#### ◆ General Features

Dimension  
Features

#### ◆ Measurement

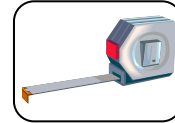
#### ◆ The Names of External Parts



# 1 General Description

## ◆ General Features

### The Dimension



ID7106 플레이트 개선 가공기



Format	Unit	Size
Volume	mm	(L) <b>1575</b> X (W) <b>1630</b> X (H) <b>1368</b> mm
Weight	Kg	1650kg
Power Supply	V/Hz	A.C <b>220V/ 1hase, 60Hz/ (order)</b>
Power Consumption	Kw	<b>6.25 kw</b>
Operation		Operated by motors
Motor	Hp	5 Hp single-phase induction motor (3.75kw)
Manufacture Materials		<b>Steel pipe, Special steel pipe, SUS hose, AL hose etc.</b>
Used Byte		SPKN1504 EDSR-SVPC3500 소재강도에 따라 팁을 교체함.(시중 공구매장에 있습니다.)
Angle of preparation		15~45°(automatic control)
Maximum angle		Infinite
Minimum angle	mm	More than 70mm(order if less than 70mm)
Maximum length of board		Infinite
Minimum length of board	mm	More than 250mm(order if less than 250mm))
Maximum thickness	mm	40mm
Minimum thickness	mm	3mm

ID7106 플레이트 개선 가공기



Format	Unit	Size
Volume	mm	(L) <b>1810</b> X (W) <b>2270</b> X (H) <b>1716</b> mm
Weight	Kg	5200kg
Power Supply	V/Hz	A.C <b>220V/ 1hase, 60Hz/ (order)</b>
Power Consumption	Kw	<b>18 kw</b>
Operation		Operated by motors
Motor	Hp	5 Hp single-phase induction motor (3.75kw)
Manufacture Materials		<b>Steel pipe, Special steel pipe, SUS hose, AL hose etc.</b>
Used Byte		SPKN1504 EDSR-SVPC3500 소재강도에 따라 팁을 교체함.(시중 공구매장에 있습니다.)
Angle of preparation		15~45°(automatic control)
Maximum angle		Infinite
Minimum angle	mm	More than 100mm
Maximum length of board		infinite
Minimum length of board	mm	More than 300mm
Maximum thickness	mm	60mm (order if more than 60mm)
Minimum thickness	mm	3mm



## Features

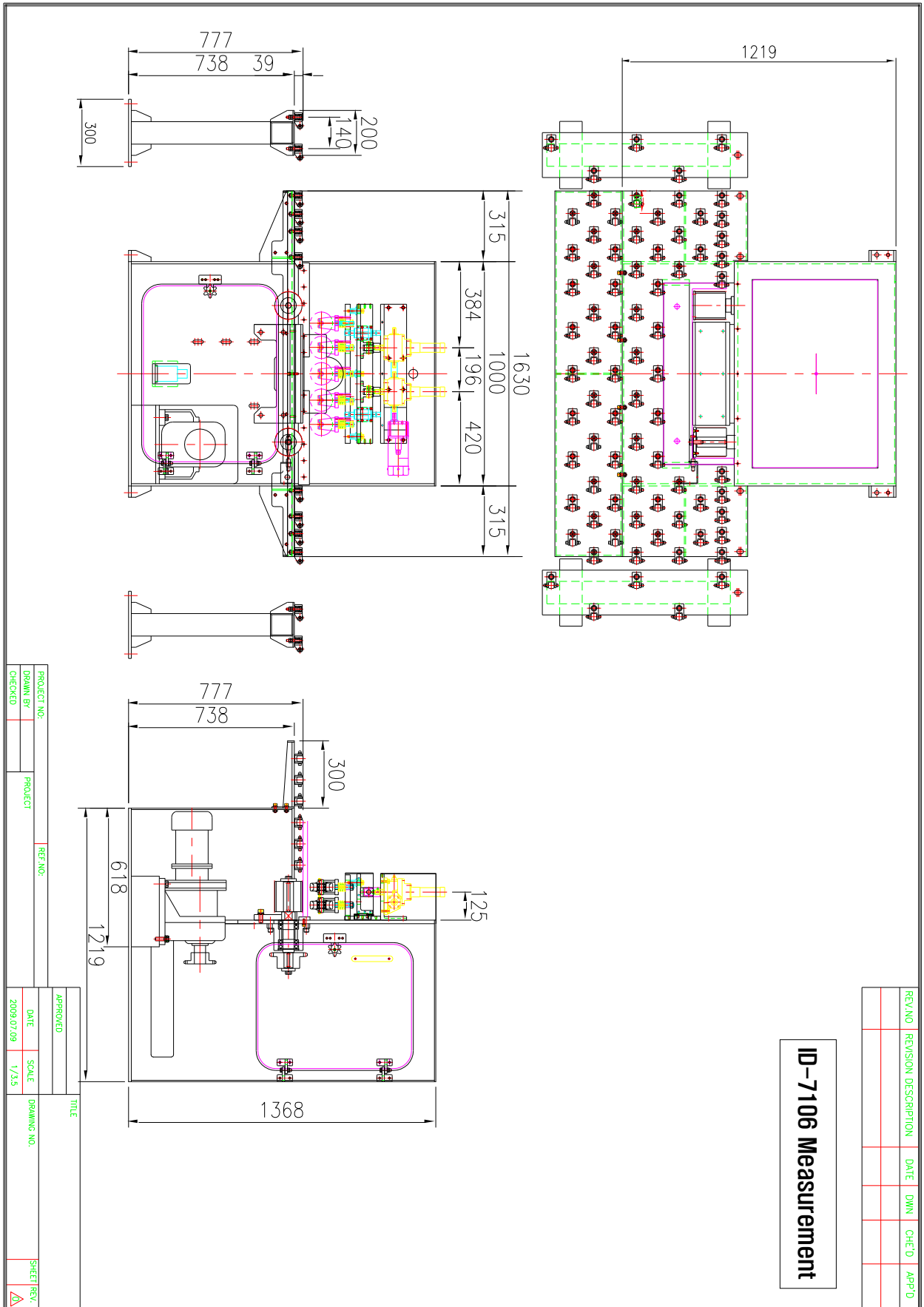
1. The elimination of grinder process will decrease the amount of dust.
2. The elimination of grinder process will lower the degree of noise.
3. The elimination of grinder process will keep the work area clean.
4. The elimination of grinder process will complete the working process 3 times faster than previous one with grinder process. ☞ One machine does the same amount of work with 30 grinder workers.
5. The total hours to finish the work could be shortened by 200%.
6. The competitiveness is reinforced by 200% compared to other companies.
7. The elimination of grinder process will reduce the cost of labor.  
☞ The cost of labor equivalent to 25 grinder workers' wage can be saved by operating one machine.
8. Failures in welding that the grinder process could cause are expected to decrease by 70~80%.
9. After welding, you can see the worth of this machine. ☞ The level of illumination in welding gets higher.
10. The elimination of grinder process will reduce the rate of accident occurrence.
11. The machine causes no transformation in metal constituents.
12. The machine causes no transformation caused by heat.

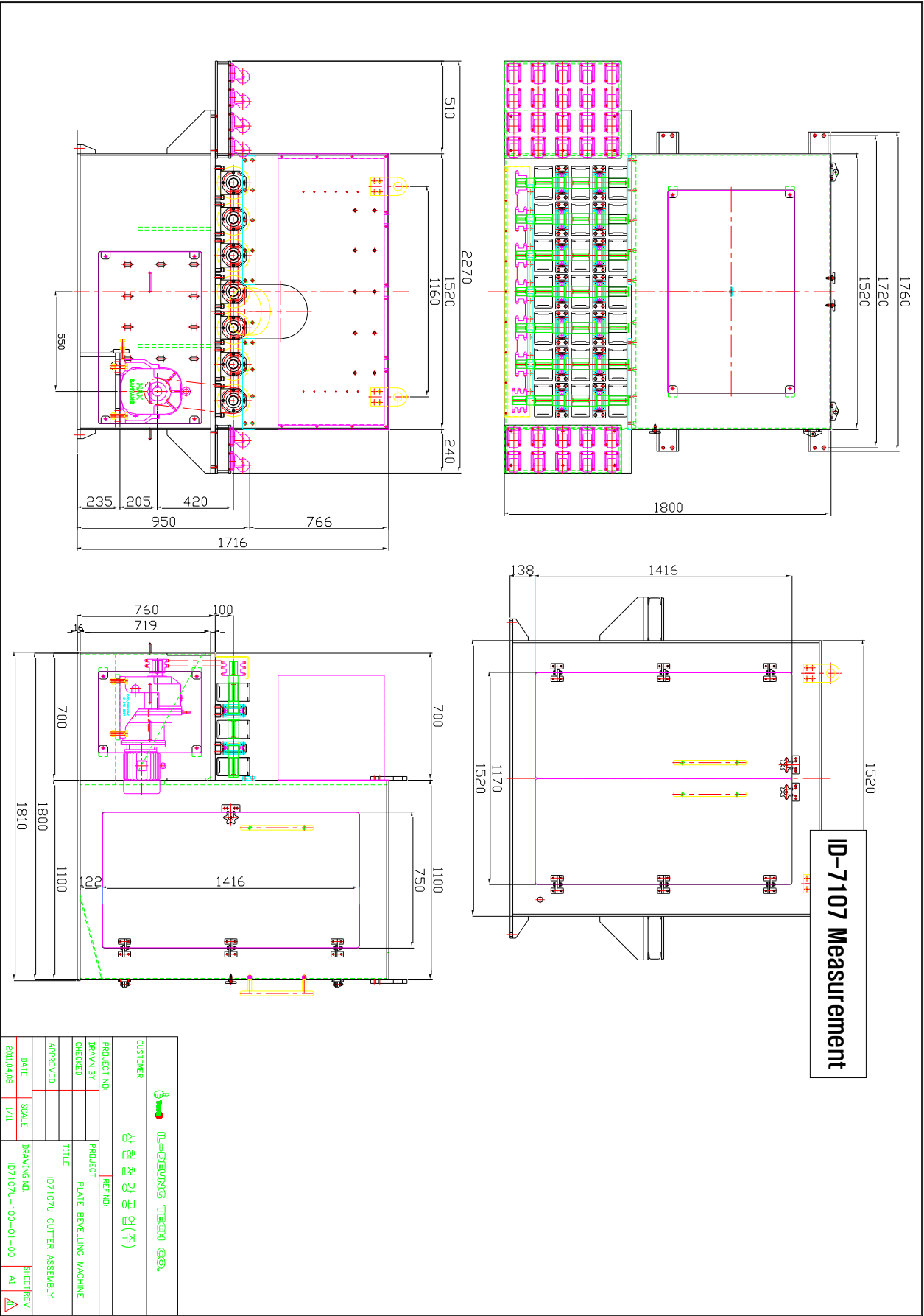
## ✘Revolutionary technology

1. The machine is the world's first invention. ☞ Invention patent, Utility model, International patent
2. It is for getting rid of the wavelength and static electricity caused from the parental material.
3. It will lengthen the expected life span of the tools by 10 times because it makes no spark caused by static electricity.
4. It does not use cutting, which distinguishes itself from other machine tools.



◆ Measurement





 IL-DEUNG TECH CO.	
CUSTOMER 삼원철강(주)	
PROJECT NO.	REF. NO.
DRAWN BY	PROJECT
CHECKED	PLATE BEVELLING MACHINE
APPROVED	TITLE
	ID7107U CUTTER ASSEMBLY
DATE	SCALE
2011.04.08	1/11
	DRAWING NO.
	ID7107U-100-01-00
	SHEET/REV.
	A1





### ◆ The Names of the External Parts

**The right&front side**

Screw jack

A

Pressing roller

1

2

3

4

5

6

7

8

9

10

11

Press

B

Panel board

It's in the panel board

17

16

14

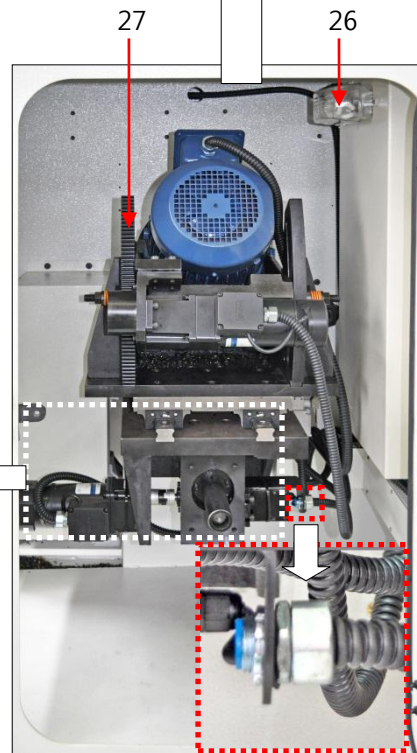
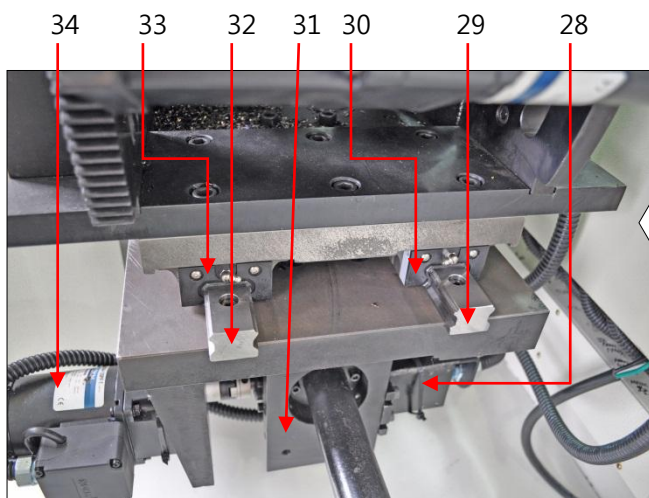
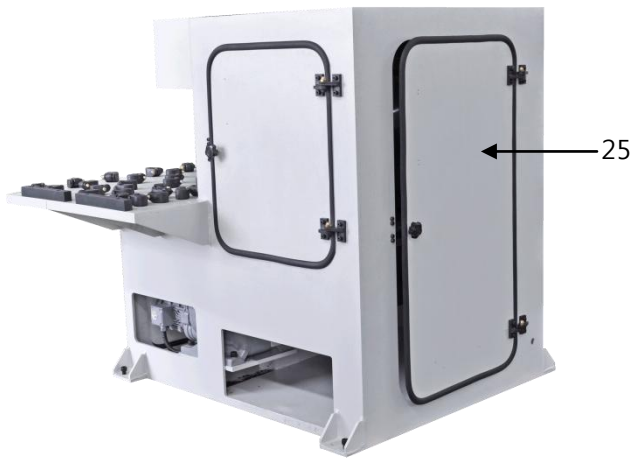
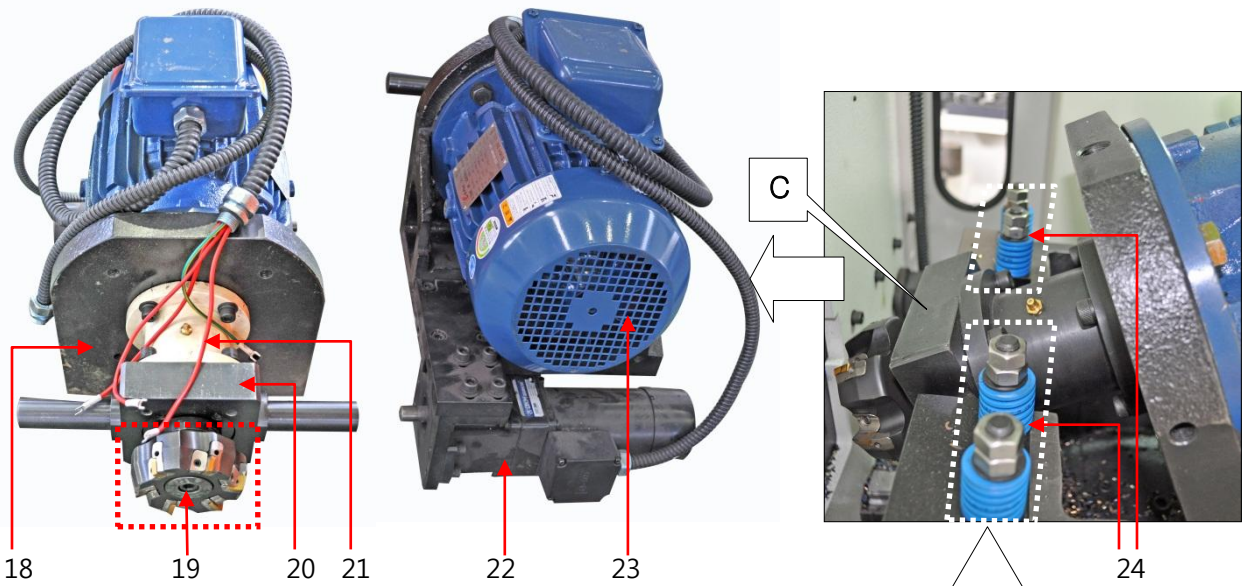
13

12

15



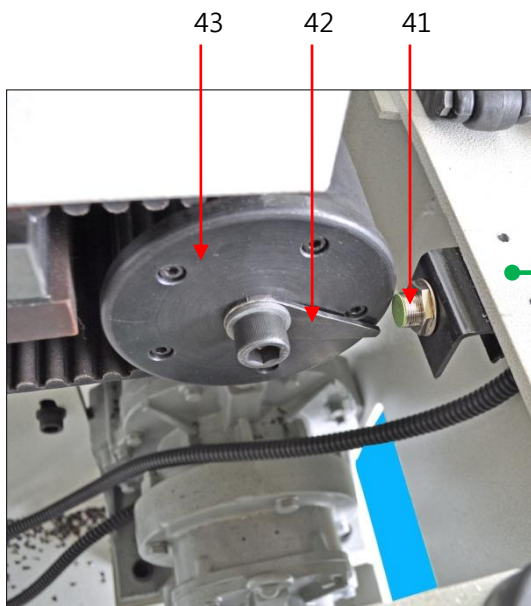
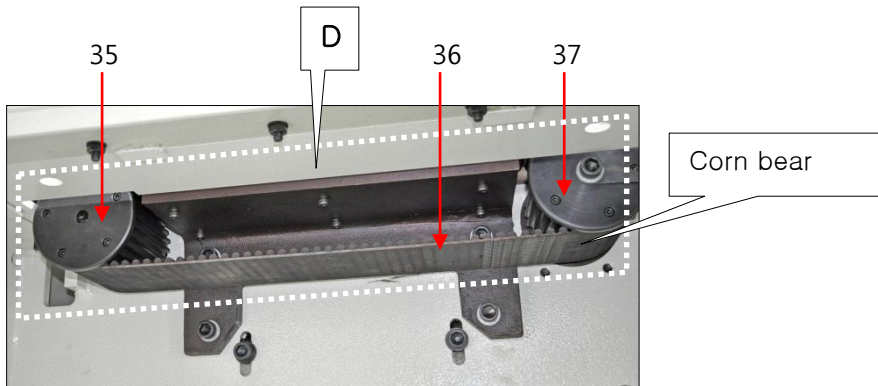
The right & back side





The right side

1





No.	Name	Function
1	Motor	It operates screw jacks that operates press rollers
2	Press roller	It puts pressure on the item
3	Press roller bracket	It fixes press rollers and helps it to move
4	Pace cutter	It cuts the item
5	Compressing spring	It maintains the pressure of press rollers
6	Controlling roller	The main controlling device that operates the machine
7	Working state showing screen	It shows if the space cutter is cutting an exact amount
8	Press cover	Press cover for its safety
9	Press cover auxiliary cover	Press cover auxiliary cover
10	Working board	Where the metal item for working is placed
11	Front bottom door	It is for observing the devices located on the front bottom side
12	Guide roller	It guides the right direction for the item to go
13	Guide roller	It guides the right direction for the item to go
14	Safety guide	It prevents the item from slipping away
15	Working roller	It helps the item to move with no problem
16	Pressing roller gauge	It controls the height of the pressing roller
17	Grounding	It is to prevent the fire due to a short circuit
18	Motor bracket	It fixes the motor and helps its move
19	Pace cutter fixing screw	It fixes the pace cutter to the main motor
20	Cutter bracket	It is for a smooth controlling of the cutting angle
21	Spindle	It supports the cutter bracket and the motor bracket for its smooth operation
22	Geared motor	To control the angle
23	Main motor	It operates the pace cutter
24	Pressing spring	It is for the pace cutter tension
25	Backside door	It is for observing and maintaining the devices on the back
26	Bulb light	It is for the light working environment
27	Flat gear	Main motor angle controlling gear
28	Encoder bracket	It fixes the encoder
29	LM guide	Main motor sliding rail
30	LM bearing	Main motor sliding supporting rail
31	Screw jack	It helps to move backward



32	LM guide	Main motor sliding rail
33	LM bearing	Main motor sliding supporting rail
34	Geared motor	It operates the screw jack
35	Timing Pulley	It conveys the power when moving the item

No.	Name	Function
36	Timing belt	Transporting the item
37	Timing pulley	It conveys the power when moving the item
38	The right side door	It is for observing and maintaining the devices on the right side
39	Fixing screw	To fix the machine to the ground
40	Motor	It operates the timing belt
41	Sensor	It checks the state of the operation
42	Sensor check pin	It indicates the process of the operation
43	Timing Pulley	It conveys the power when moving the item

No.	Name	Function
A	Upper statics prevention	It prevents the static electricity on the upper side
B	Bottom statics prevention	It prevents the static electricity on the bottom side
C	Material statics prevention	It prevents the static electricity caused from the materials
D	Motor statics prevention	It prevents the static electricity caused from the motor



## Safety and Installation

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2

### Safety

- ◆ **Cautions, warning, dangers**
- ◆ Warning Labels
- ◆ **Safety Regulations, Working environment**
- ◆ **Safety Markings**
  - 1, Checklist before use
  - 2, Cautions before use
  - 3, Essential Safety Rules



3

### Installation

- ◆ **Installation**
  - Cautions Regarding the Installing Space
  - Cautions during Installing
- ◆ **Machine setting**
  1. Control panel Names
  2. Control panel Setting
    - Press roller setting
    - Base Sliding setting
    - Stuff Remove setting
    - Spindle Motor setting
    - Etc.



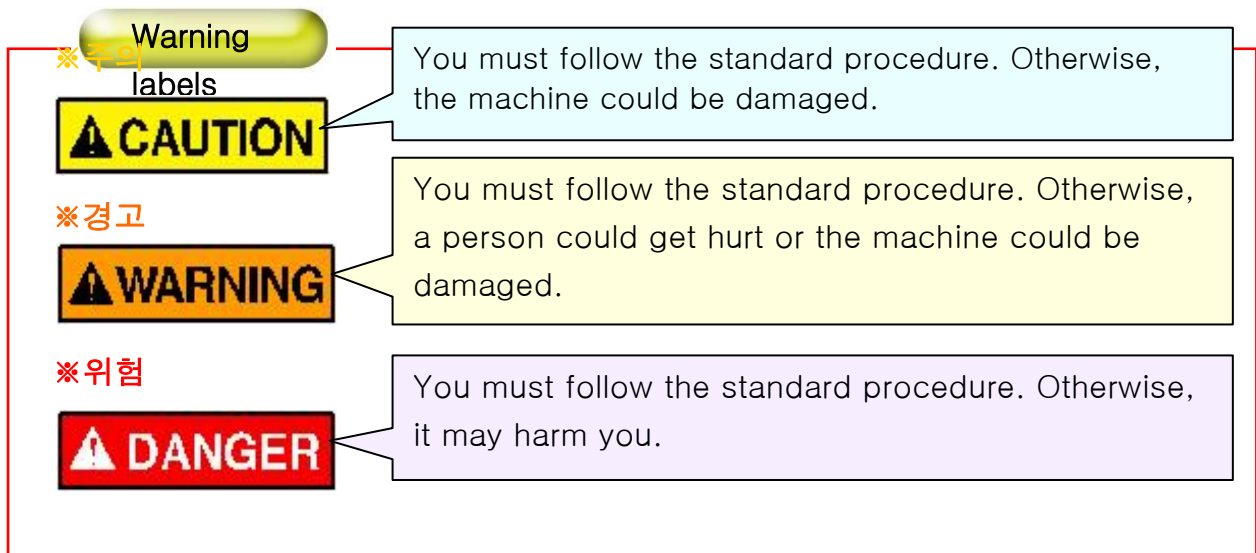
## 2

## Safety

### ◆ Cautions, Warnings, Dangers

※ Marking **warning labels** is to prevent accidents beforehand.

▶ Warning labels must be observed. Below are the classified warning labels.



### ◆ Basic Safety Rules

▶ Do not dissect the machine for the unspecified purpose. It is your responsibility if accidents occur due to unspecified disassembly.

▶ You must follow the operating manual when installing, operating, processing, and repairing.

☞ Place the manual nearby the machine in case you may need it again.

▶ Transportation and installation must be done by an expert for his/her safety.

▶ When moving the machine transported by hoists or forklifts to the ground, place air hoses, wires away from the machine and be careful of your feet not to get jammed.

▶ Do not transform or change fixed parts of the machine. Otherwise, it may cause accidents.

▶ When an error occurs while using the machine, notify the manager in charge of the error, and wait for it to be solved.

▶ Wear safety equipments and work clothes that fit best for the working environment.

☞ You must wear earplugs.



- ▶ Follow the safety procedure and wear safety equipments at all times when inspecting the machine.
  
- ▶ The user must learn every safety rules before operating the machine. The managers must give its users an safety education in order to prevent accidents.
  
- ▶ The manager in charge should check periodically if the user observes the safety rules.
  
- ▶ The manager in charge must check the safety regulations according to a checklist.
  
- ▶ When changing the equipments, use the standard equipments specified on the operating manual and the part list.
  - ☞ Especially, it is better to use lubricants and electric equipments our company recommends.
  
- ▶ Be sure to check if power is down when inspecting or changing the equipments.
  
- ▶ The standard tools must be used when inspecting or changing the equipments.
  - ☞ The standard tools are provided.
  
- ▶ Do not work in a dim environment. This may cause accidents.
  - ☞ To prevent accidents, the working area needs the lights of more than 150 Lux.
  
- ▶ Clear the floor so that it can has a flat ground along with the environment to have more space for working.
  
- ▶ This machine could cause some noise and vibration, so vibration proof rubber must be installed before the machine is installed.





# ◆ Warnings Labels

Warning Labels

Inside the door of the panel board

**DANGER**  
Hazardous voltage.  
Lockout/tagout before servicing.

**DANGER**  
Hazardous voltage.  
Lockout/tagout before servicing.

**WARNING**  
Moving parts can crush and cut.  
Do not operate with guard removed.  
Lockout/tagout before servicing.

⚠ 위험

	1. 전기쇼크에 의한 상해의 위험이 있으므로 수리나 점검을 위해 Control Box를 열 때에는 전원을 내릴것.
	2. 부주의한 전기판넬의 취급시 상해의 위험이 있음.
	3. 전문가이외의 사람은 절대로 수리나 점검 하지말것.
	4. 절대 이 장치를 수정하지 말것.

⚠ WARNING

**WARNING**  
Moving Parts can crush and cut.  
Keep guards in place.  
LOCKOUT power before servicing.

변압기 (전) 교체시작 및 유지사항

- 저전압인 변압기에 따라 100V 또는 200V로 교체합니다.
- ① 전압 변경 시 100V 또는 200V
- ② 전압 변경 시 200V 또는 100V/PC 9030
- (전) 교체시 "조작"태양에 해당사항 있음. 해당사항 다음을 꼭 지켜야 합니다.
- 수동으로 전압 변경시 안전장치 (제1) 및 제2)를 꼭 확인하여 안전장치 (제1) 및 제2)를 꼭 지켜야 합니다.
- 교체시작을 할 시 안전 장치를 꼭 확인하여 안전장치 (제1) 및 제2)를 꼭 지켜야 합니다.
- 전압변경 및 유지사항을 꼭 지켜주세요. (안전장치를 꼭 지켜주세요)

① 1회 가동량 기준표

150°	200°	250°	300°
200A	250A	300A	350A
200A	250A	300A	350A
200A	250A	300A	350A
200A	250A	300A	350A

(단, 전압변경 시 주의사항)



번호	표시	안전마크	설명
①	<b>Danger</b>		<p>Touching may cause electric shock or fire. Cut the power supply off and lock out.</p> <p>☞ <b>Otherwise, it may cause the loss of fortune and human lives.</b></p>
②	<b>Danger</b>		<p>Do not touch any electric devices in the panel board or other equipments. ☞ <b>Otherwise, it may cause the loss of lives.</b></p>
③	<b>Warning</b>		<p>Avoid contact any moving parts such as sprockets and chains while the machine is operating. ☞ <b>Otherwise, it may cause accidents such as broken limbs and cutting on body parts.</b></p>
④	<b>Warning</b>		<p>It is highly prohibited to contact moving parts such as rollers and belts while the machine is operating. ☞ <b>Unless observed, it may cause accidents.</b></p>



## ◆ Checklist before use

### 1, Checklist before use

- 1) Check if the working space is clean enough.
- 2) Check if there is any foreign substance in the timing belt.
- 3) Check the power consent
- 4) Check if the controlling devices are working right.
- 5) Check if the sensor is working right.
- 6) Use the appropriate outlet, and make sure the wire is neither ripped nor bended.  
Unfold the bended wire and change the ripped wire with new one.☞ [Contact the maintenance office when changing the wire.](#)
- 7) Check if the power light on the control panel is working right.
- 8) Check if every cover is closed.
- 9) Check if any belt is damaged or its tension is loose.

### \* Other Checklist







- 1) Do not put your hand into the pace cutter, silicon roller, chain, pulley, and any other moving parts while the machine is operating.
- 2) When controlling, disassembling, and reconstructing parts, follow the standard procedure. Stop operating the machine or make sure the power is out when doing one of them.
- 4) Remove the dust and clean the machine every time after finish. When you do not operate the machine for a long time, detach the pace cutter from the body and keep it separately. Lastly, cover the machine in order to prevent any damages to the machine.
- 5) Beginning engineers are advised to avoid operating the machine.
- 6) Make sure that every part stays horizontal and then operate the machine.
- 7) Always keep it clean and check the state of the machine.



## 2, Cautions before use

※ Read the operating manual in advance. Place it anywhere that is easy to find.



-  1) Do not disassemble or reassemble the machine unless specified.
-  2) Do not put your hand into the pace cutter or roller while the machine is operating.
-  3) Press the stop button or turn the machine off while replacing or inspecting equipments.
-  4) Make every part stay horizontal.
-  5) Remove any dirt from the timing belt and the pace cutter after use.
-  6) Be sure to check all the safety rules above before operating the machine.

## 3, Essential Safety Rules

※ The legal responsibility of the warranty of this machine requires below.

- 1) When controlling, disassembling, and reassembling, notice the initial structure, and then follow the procedure. All must be done while the power is out.
- 2) Remove any dirt after use every day. When you do not use it for a long time, keep it clean and cover it in order to prevent any damages to the machine.
- 3) Do not let anyone operate the machine other than expert engineers.
- 4) Make sure that the parts stay horizontal and then operate it.
- 5) Check the state of the machine all the time, and keep it clean.
- 6) The machine and the equipments of it must be used for the clear purpose stated in the final contract.
- 7) The engineers well-educated about the machine should operate the machine.
- 8) The safety controllers must be maintained well to work all the time.



- 9) The rules and the basic regulations about the energy supply (electricity, air, pressure) must be observed.
- 10) Any unusual state, inappropriate controlling, or defects appears, you must contact the provider through fax or phone call and let us know about the matter.
- 11) Any change that could damage the operation, the security of the machine should not be carried on without the provider's consent.
- 12) We are not responsible for your inappropriate use or use that is out of the specified purpose.
- 13) The safety controllers must be checked thoroughly every time.
- 14) The buyer of the machine must comply with the regulations about maintenance/repair the provider specified. If necessary, we may require the evidence that suggests each procedure is fully complied. Thus, record it every time if possible.
- 15) Check the power switch ☞ Turn on the power when the power labeled on the 'Power switch box' is the same as the one used in the office.
- 16) Check if the motor of each part spins as the arrow points.
- 17) Expendables (Bite tips) must be inspected ahead and replaced as it often cause breakdowns if not replaced at a proper time. ☞ If lighting occurs while cutting, tip must be replaced.
- 18) Do not work on the item that is out of the standard size. It may cause breakdowns to the machine.
- 19) If working on the item of too big size is inevitable, have a supporting engineer along with the main one.
- 20) Make sure the tension of timing belts are tight enough.



## 3 Operation

### ◆ Installation

#### The cautions regarding the space




##### Caution

- ① Keep where the machine is installed clean.
- ② The machine should be installed considering the working route.
- ③ Make sure the wire is not jammed when placing the machine down from the transporter.
- ④ Read the operation manual before installing the machine, and follow the instruction.



##### Caution

- ① When installing, use the tool that suits the size of screws and the nuts.
- ② When installing, do not put too much force.
- ③ When installing, follow the instruction.
- ④ When installing, grounding is essential  Picture below



Inside the panel board ( The back of the controlling board)

- ⑤ Make the space clean before installing the machine.
- ⑥ If not complied, it may cause the loss of fortune and lives.

#### ※ Note How to set the supporting table

- 1) Make it lie horizontal with the equipments.
- 2) If not horizontal, there is trouble in transporting.
- 3) Impact might cause twists. Examine at any time.
- 4) Too much compression will stand the parts.

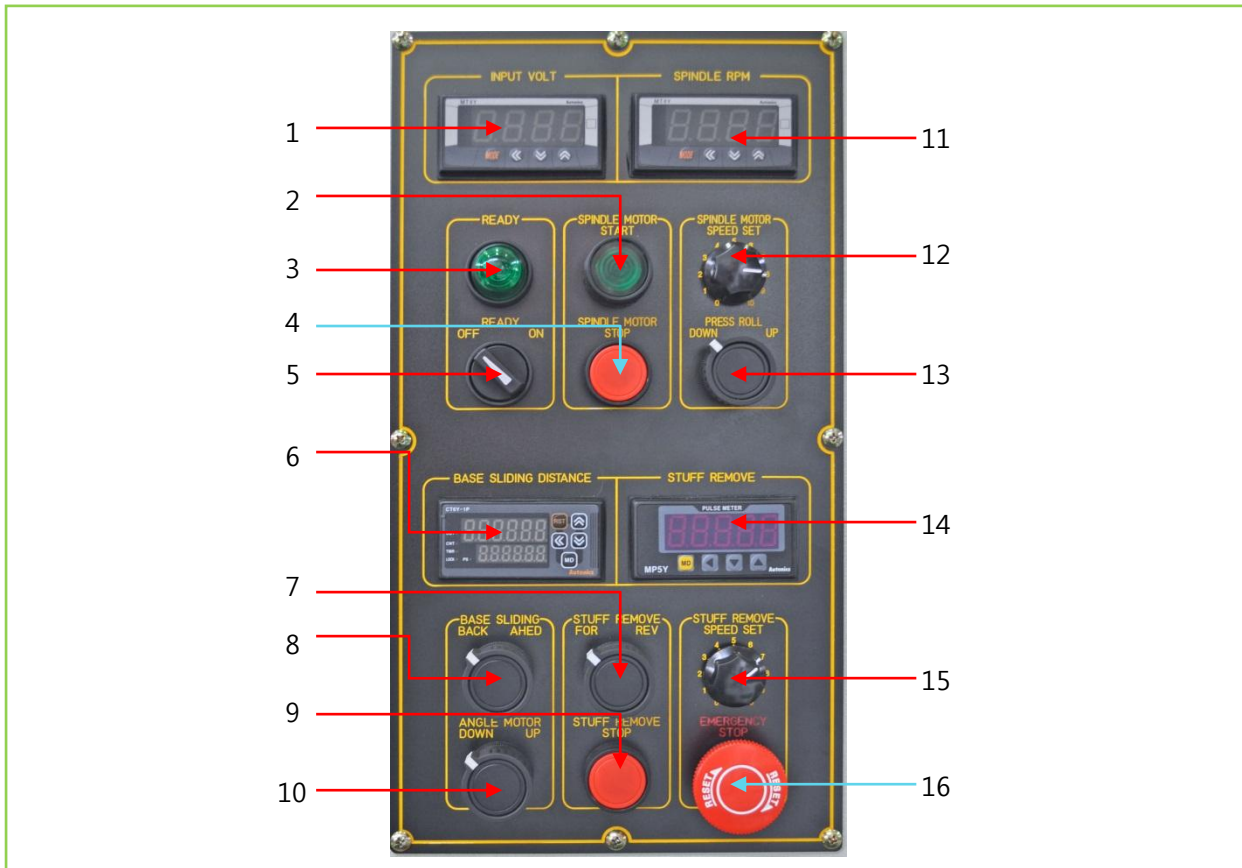


## ◆ Machine setting

### ⚠ Caution

- ① Check if the power switch is plugged in.
- ② Make the working space clean before setting.
- ③ Follow the manual. 📖 Other ways could cause breakdowns.
- ④ Only authorized engineer can work on the machine setting.

### 1, Control panel Parts



No.	Name	Function
1	Input Volt meter	The device that sets the amount of electricity flowing into the machine.
2	Spindle Motor Start button	It turns the spindle motor on.
3	Ready Lamp	It shows if the machine is ready to operate
4	Spindle Motor Stop button	It stops the spindle motor's operation
5	Ready selector switch	Ready ON/OFF switch
6	Base Sliding Distance meter	It sets the operating distance of the base sliding
7	Stuff Remove button	It selects the direction (clockwise/counterclockwise) of the stuff remove.
8	Base Sliding button	It moves the base sliding forward/backward.



<b>9</b>	Stuff Remove Stop button	It stops the operation of the stuff remove
<b>10</b>	Angle Motor button	It controls the up and down of the angle motor
<b>11</b>	Spindle RPM meter	It sets the spindle RPM (the spinning speed)
<b>12</b>	Spindle Motor Speed Set Volume switch	It helps setting by controlling the speed of the spindle motor
<b>13</b>	Press Roll button	It controls the up and down of the press roll according to the thickness of the item.
<b>14</b>	Stuff Remove meter	It sets the operation of the stuff remove
<b>15</b>	Speed Set Volume Switch	It controls the level of the spindle motor speed.
<b>16</b>	Emergency Button	It instantly stops the machine when emergency occurs.





## 2, Control panel Setting

**※Note**

Showing the set points

Showing the set points

A set point up

A set point down

Initializing the setting

A set point down

Selecting the set points

Showing the set points

Showing the set points

Selecting the set points

A set point up

### Press roller setting

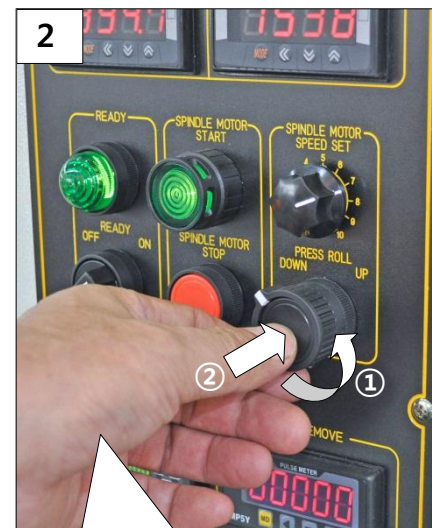
#### Note



Before setting the control panel, turn on the power switch on the upper right side in the panel board (the back of the control panel).



- ① Turn the button clockwise and set to 'up'
- ② Lift the press roller by pushing the button.
- ③ Place the item on the work board.



- ① Place the item on the press roller.
- ② Turn the button counterclockwise and set to 'down'
- ③ Put down the press roller and stick it to the item by pressing the button.

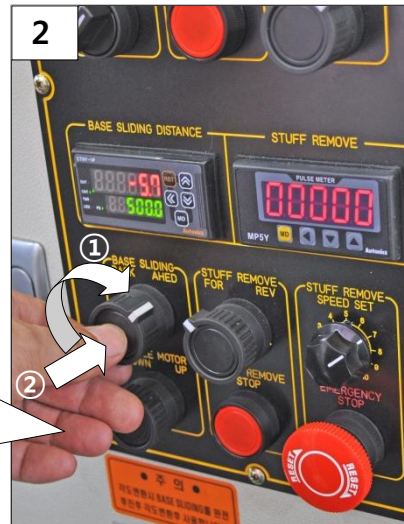


### BASE SLIDING 셋팅

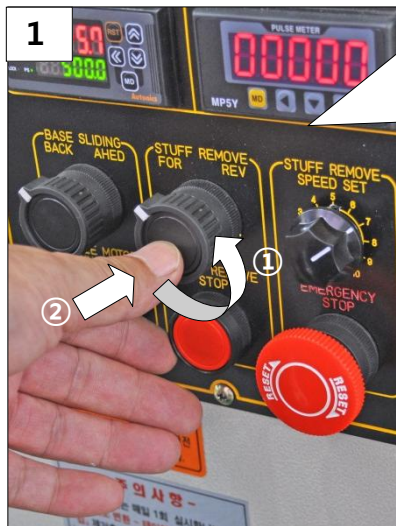


- 1 Turn the button counterclockwise and set to 'down'
- 2 Move the base sliding backward by pressing the button.

- 1 Turn the button clockwise and set to the AHED
- 2 Move the base sliding forward by pressing the button.



### The spin direction of STUFF REMOVE control



- 1 Turn the button counterclockwise and set to 'FOR'(for clockwise spin)
- 2 For the clockwise spin of the stuff remove (moving the item), press the button.

- 1 Turn the button clockwise and set to REW(for counterclockwise spin)
- 2 For the counterclockwise spin of the stuff remove(moving the item), press the button.



### ANGLE MOTOR UP/DOWN setting



- 1 Turn the button clockwise and set to 'Up'
- 2 Life the angle motor by pressing the button.

- 3 Turn the button counterclockwise and set to 'Down'
- 4 Life the angle motor by pressing the button.





### STUFF REMOVE setting



By turning the volume switch clockwise/counterclockwise, control the speed of the stuff remove (moving the item).



Stop the operation by pressing the stuff remove(moving the item).

### SPINDLE MOTOR setting



Control the speed by turning the spindle motor speed set volume switch.



Stop the operation of the spindle motor by pressing the spindle motor start button.

**Note** Press the spindle motor stop button to stop the spindle motor.

### Other settings



After finishing the control panel setting, for operating the machine, turn **ON** the ready select switch.



As emergency or errors occur, press the emergency button.



## Operation Manual

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### 4

## Operation

### ◆ Working procedure

1. The Parts to be controlled before the operation
  - Controlling the height of the main motor
2. Operation
  - Corner process
    - Controlling the height of the press roller
    - Timing Belt crack
    - Caution the Working Roller breakdown
    - Controlling the angle of cutting

### 5

## Emergency

- The cutting side is irregular.
- The front is cut widely and the back narrowly.
- The front is cut narrowly and the back widely.
- The operation makes too much noise.



# 4 Operation

## ◆ Working Procedure

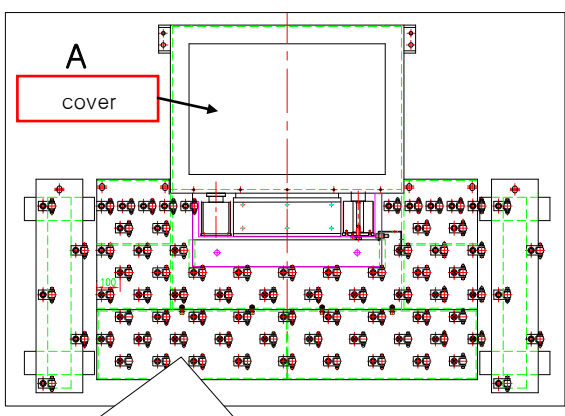
- ⚠ Caution**
- ① Check the power switch is plugged before starting process.
  - ② Make the working space clean before working.
  - ③ Follow the manual. ⚠ Otherwise, it may cause failure or breakdowns.
  - ④ Only authorized engineer operate the machine.
  - ⑤ Wear safety equipments. (safety clothes, safety hat, safety shoes, earplugs etc.)
  - ⑥ The working space must has light more than 150 Lux.
  - ⑦ Do not chat with others and restrict visitor access.

- ⚠ Caution**
- Do not work on the oversized item. ⚠ It may be the primary cause of breakdowns.

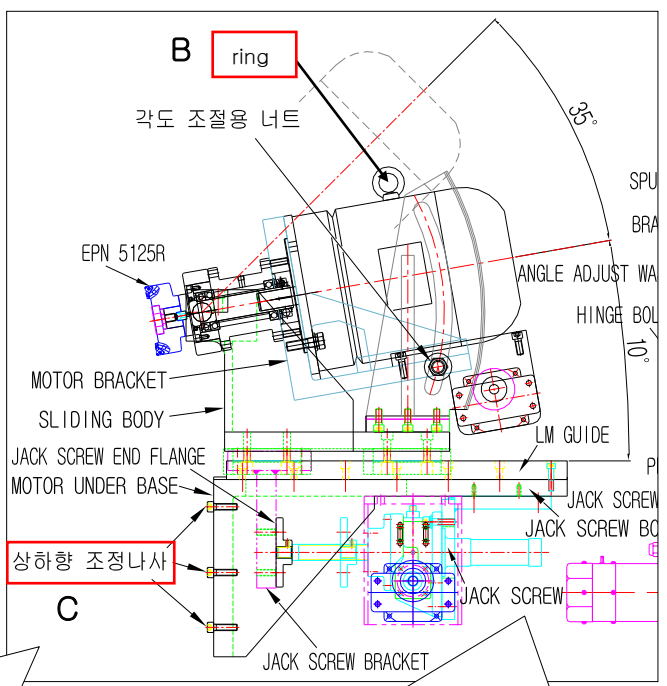
### 1. The Parts to be controlled before the operation

#### Controlling the height of the main motor

Move the pace cut main motor base to the upper side if the process item is thicker than 25T, and the angle is between 40 and 45.



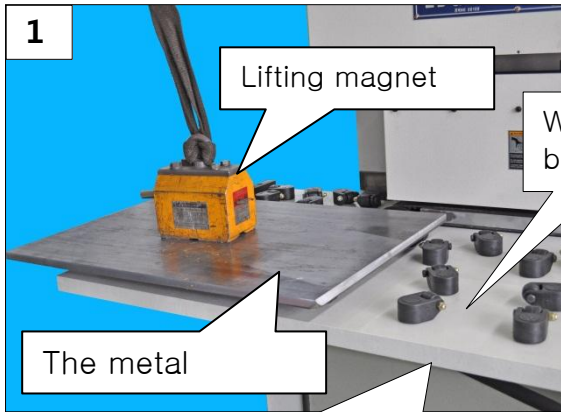
- ① Open the upper cover (A)
- ② Connect the main motor ring(B) with a hoist ring by ropes.
- ③ Loosen the up/down controlling screw(C) in the motor under base by 1~2 spins
- ④ Control the height by the hoist up/down controlling button and fix it.



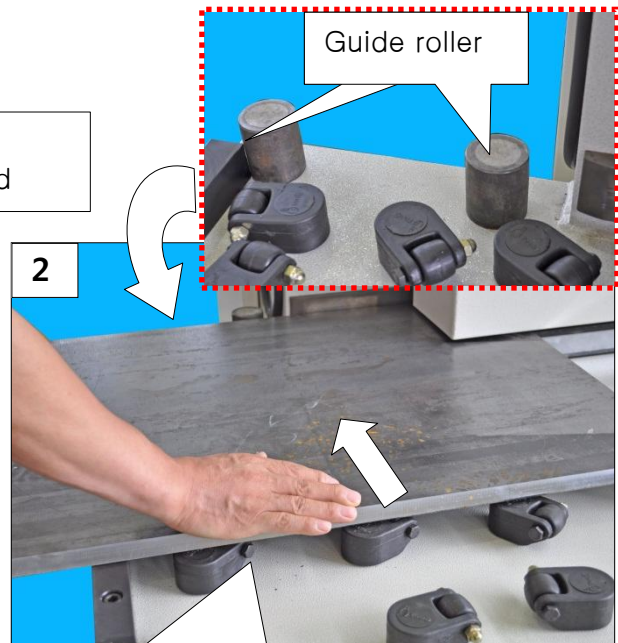
Move upward if the item is thick. Move downward if the item is thin.



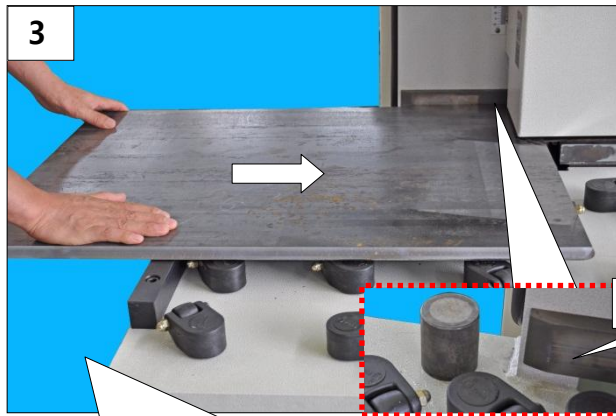
## 2. Working



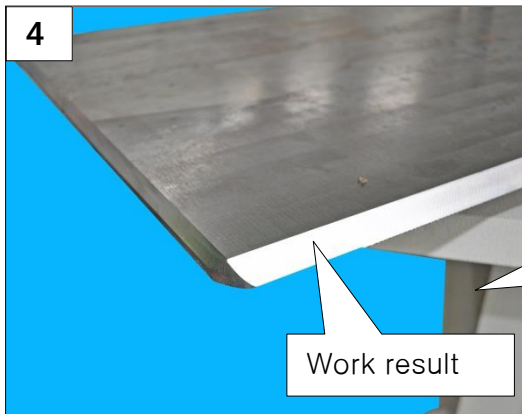
Place the item on the work board by lifting magnet.



Push the item so that it adheres to the guide roller.



Push the item into the direction the arrow points. It should be adhered to the guide roller and the guide board.

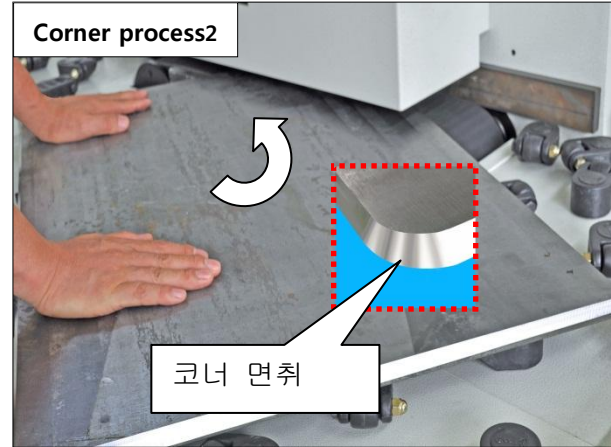
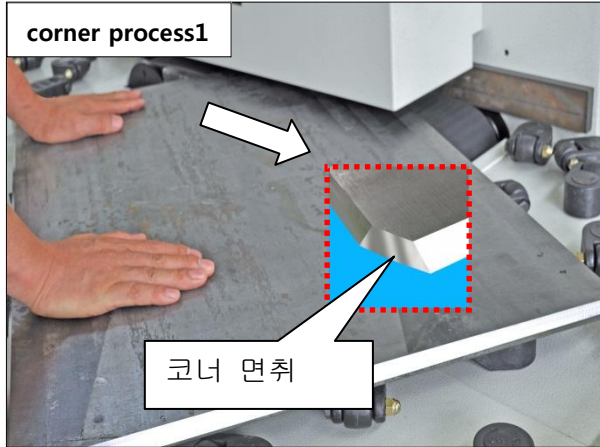


It is successful if the item is cut smoothly.

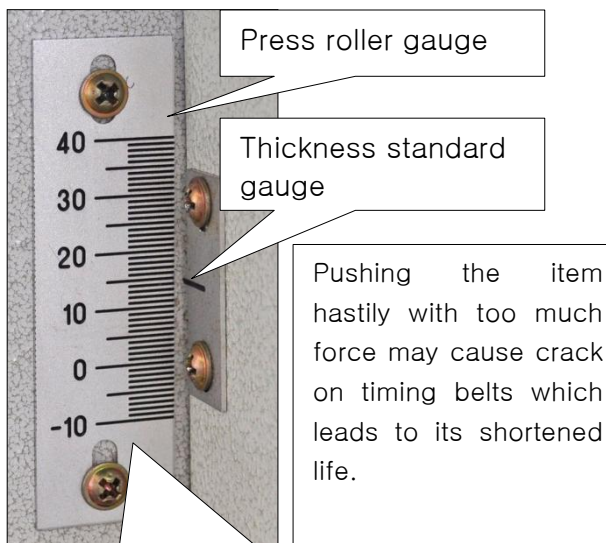


## Note

### Corner process

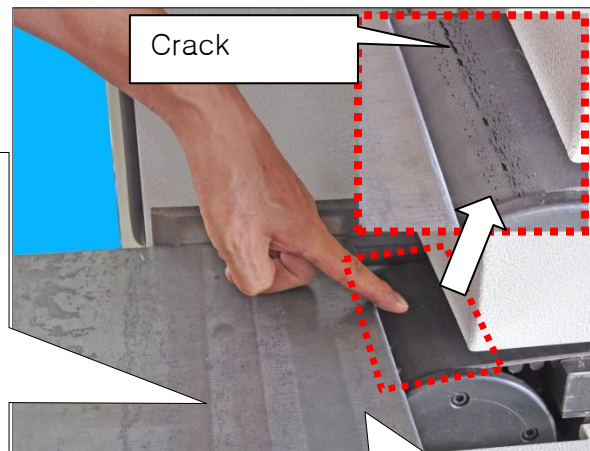


### Controlling the height of the press roller



Depending on the thickness of the item, control the height of the press roller ( $\pm 1$ mm margin) ⇒ EX) For the height of 10T, set the thickness standard gauge to 10mm by pressing the press roll button on the control panel. ☞ 23P Press roller setting

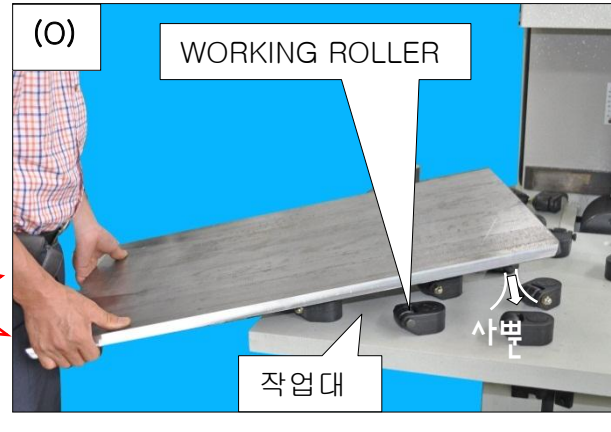
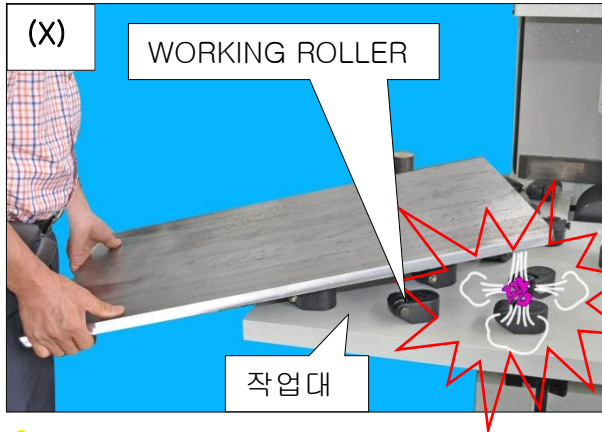
### Timing belt crack



When crack is seen, replace the timing belt. ☞ 23P Timing belt replacement



**'WORKING ROLLER' Break**



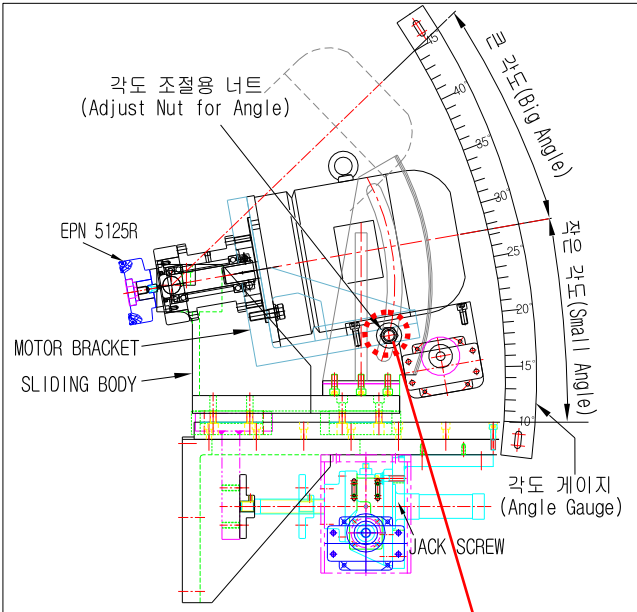
**!** Place the item gently. Otherwise, it may break the working roller down.

**Note**

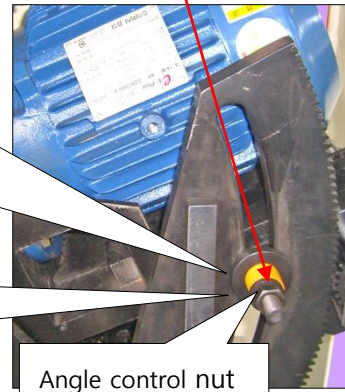
**Cutting angle control**

The cutting angle in the pace cutter must be controlled according to the thickness and the cutting angle of the item. Follow the instructions in the pictures for the cutting angle setting.

② Control the angle with the angle motor button (A) on the control panel. ⇒ Control the angle by turning the button, and for setting, press the button.



① Loosen the angle control nut a bit so that the angle of the main motor could be controlled.



③ Tighten the angle control nut.





### ⚠ Caution

The cutting angle must be set between 15~45°. ⚠ The angle less or more than can break down the speed reduction motor. ⇒ Never turn the power switch on if the angle is out of 15~45°.

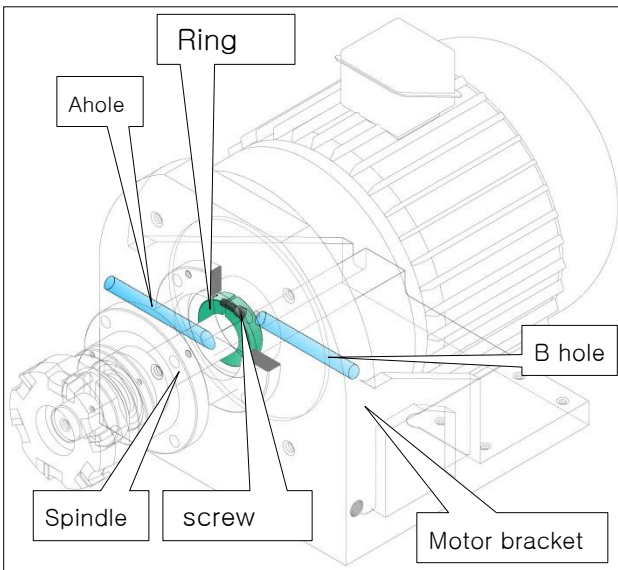
If the angle goes below 10° and the machine does not work properly, ask for the warranty service immediately.. ⚠30p Cutting angle

### Note

✖ Otherwise, it may cause serious breakdown to the machine.

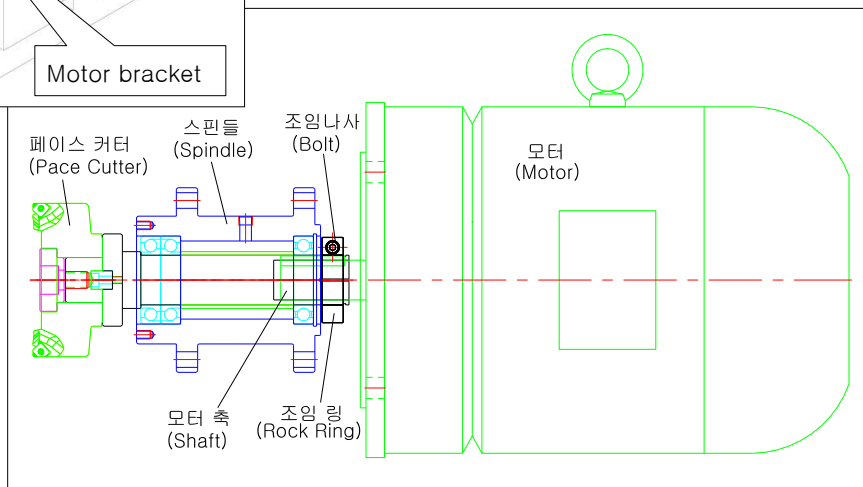
1. Do not put too much amount at one time.
2. Place the item at the standard angle.
3. If the pressure from the press roller is not enough, impact might occur due to the improper process of the pace cutter (tip) on the item.
4. Overloaded tips need to be replaced.

⚠Result : The pace cutter does not spin while the main motor is working properly.



### 🔧Solution

- ① Put the wrench into the hole A or hole B on the each side of the main motor bracket. If the wrench fits in the hole, then turn the wrench clockwise and tighten it. ⚠ Due to the moving motor, the tightening screw could have moved a bit to the hole A or B.
- ② If the tightening screw is tightened enough, but still slip happens, ask for the warranty service.

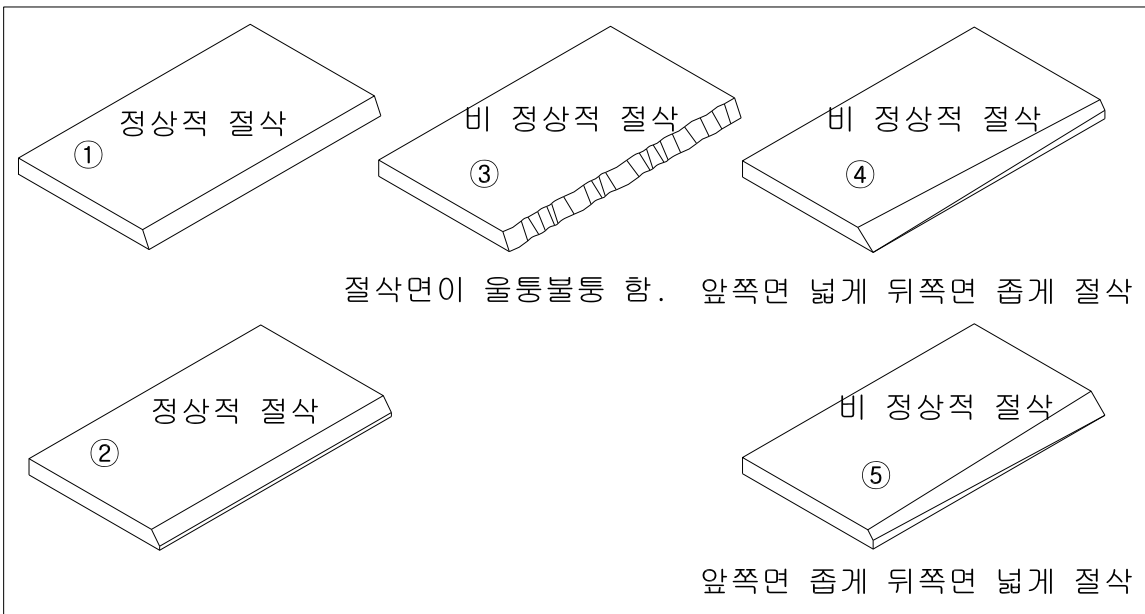




# 5 Emergency

- ⚠ Caution**
- ① Immediately set the switch to 'off' when emergency occurs.
  - ② Do not touch anything before the manager in charge arrives.
  - ③ If urgent, follow the instructions to solve the trouble.

## Note

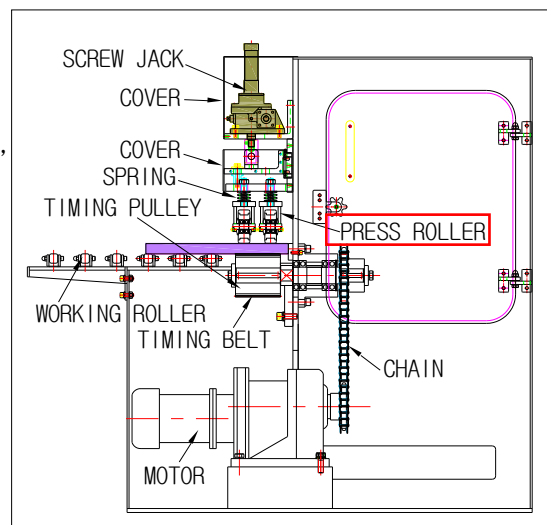


### The cutting side is irregular.

◆ The cutting side is irregular.  
 👁 Picture ③ above

When the pressure of the press roller is enough, the cutting side becomes irregular.  
 (👁 Press roller picture)

1. Why?
- A) Press roller does not put enough pressure.
  - B) The tension of the compressed spring in press roller is bad..
  - C) Screw jack operating motor breakdown





D) The wornness of urethane rollers (EA 10) of the press roller are irregular.

2. Set the **emergency button** (it is on the control panel) to 'off' to stop the machine.

3. Solution

**A) Press roller does not put proper pressure.**

Control the height of the press roller by operating the screw jack

☞ Lower the height of the press roller by 1~2mm

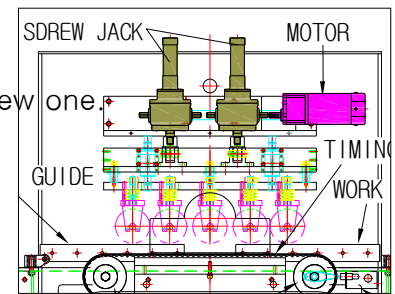
**B) Press roller's tension is bad.**

Replace the compressing spring with bad tension with a new one.

**C) Screw jack(It operates the press roller)**

operating motor breakdown

Replace the broken down motor with a new one.

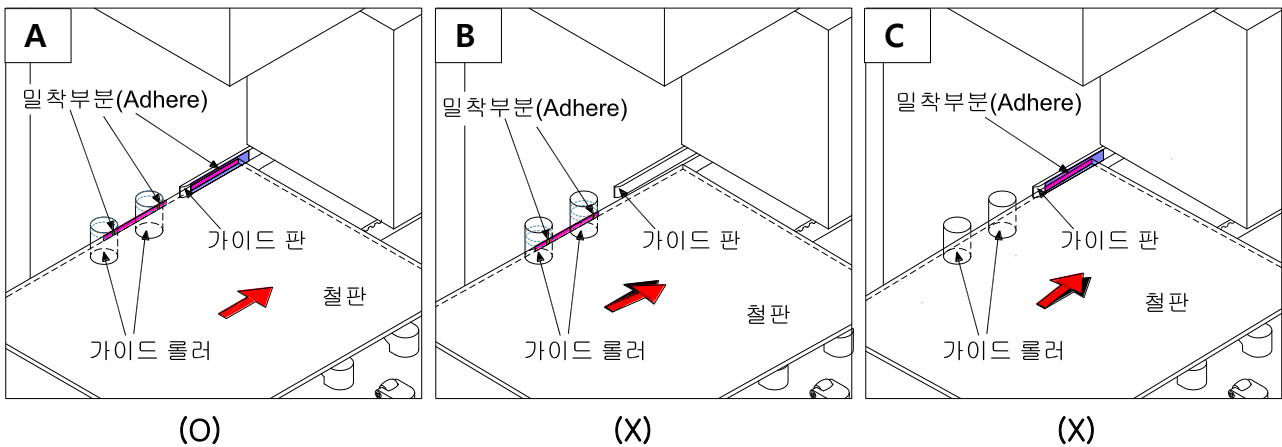


**D) The wornness of urethane rollers (EA 10) of the press roller are irregular.**

Replace the worn-down urethane roller with a new one.

The front is cut widely and the back narrowly

Note



◆ The item is cut like the picture ④ on page. 30.

1. Why?

When the item is adhered to the guide roller only (Picture B) but not to the guide board,

it could be cut like the picture ⑤ on page. 30.



2. Set the **emergency button** (it is on the control panel) to 'off' to stop the machine.

3. Solution

Adhere the item to the guide roller and guide board. Then, push the item (metal) into it.

**The front is cut narrowly and the back widely**

◆ The item is cut like the picture ⑤ on page. 30.

1. Why?

When the item is adhered to the guide roller only (Picture B) but not to the guide board, it could be cut like the picture ⑤ on page. 30.

2. Set the **emergency button** (it is on the control panel) to 'off' to stop the machine.

3. Solution

Adhere the item to the guide roller and guide board. Then, push the item (metal) into it.

**The operation makes too much noise.**

1. Why?

Operating machine makes too much noise. 🖱️ Lubricant might not be applied enough on the moving parts such as chains, LM bearing, and motor.

2. Set the **emergency button** (it is on the control panel) to 'off' to stop the machine.

3. Solution

Inject lubricant into every part





## Maintenance

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### 6 Maintenance

- ◆ Daily Inspection and Maintenance
- ◆ Regular Inspection and Maintenance

1. Weekly Inspection
2. Monthly Inspection
3. Annual Inspection

### 7 Replacing Equipments

- ◆ Replacing Tips
- ◆ Replacing Timing Belts
- ◆ Replacing Pace Cutters

### 8 Repair (Solution)

- ◆ The Causes of Breakdowns

- ◆ Warranty Service

### 9 The Panel Board and the Circuit Diagram

- ◆ The Names of the Parts in the Panel Board and Its Use
- ◆ The Circuit Diagram



## 6 Maintenance

**Importance**※ Inspecting the machine is essential not only for the safe use of it, but also for preventing further breakdowns and accidents.



### Caution

- ① Turn the switch off when inspecting.
- ② Do not wear gloves while inspecting. Your hand could be jammed due to the gloves. ☞ Wear other safety equipments.
- ③ Making the working order clear.
- ④ Keep the working space clean.
- ⑤ Do not operate the parts not in your charge.

#### 1. General cautions while inspecting

☞ Follow the procedure of the safety examination.

#### 2. General cautions for maintenance

- 1) First, put the sign up that says it is under maintenance. And then turn the power switch off.  
☞ The sign board contains the name and the contact of the man in charge.
- 2) To prevent the operation of anything that runs by air pressure, make sure that the source of pressure is switched off. For the parts that run by magnetic power, place it on the safe side.
- 3) When electric work is involved, turn the power off, and put the signboard of warning.
- 4) When attaching, disassembling each part, be sure that nothing is falling apart. Check if the fixed screws are cut and if the parts are closely linked by grease.



## ◆ Daily Inspection and Maintenance

☞ Daily Inspection: It includes checking any unusual sound or vibration, leaking, errors and reporting the manager regarding any errors to prevent accidents in advance.

※ Inspection must be done before and after every operation. The standard operating hour is less than 10 hours. Thus, if the machine operates more than 10 constant hours, it must be stopped for the inspection.

### 1) Inspection before use

- ② Check every screw and nut, and make sure they are not loose.
- ③ Check tension of the timing belt
- ④ Check the sensor of every part
- ⑤ Check if the limit switch works

### 2) Inspection during the operation

Replace or polish the bite according to the state of the item's cut side.

### 3) Inspection after use

※ During the cleaning and maintenance, check if there is any damaged or transformed parts. If so, replace it with a new one or ask for maintenance.

☞ After inspection and maintenance, check the number of tools and keep them safely.

## ◆ Regular Inspection and Maintenance

☞ The aim of regular inspection is to prevent accidents beforehand, but it is hard to guarantee 100% of prevention. Any time unusual sound or vibration of the machine is detected, thoroughly examine the machine and take appropriate steps to fix problems.

### 1. Weekly Inspection and Maintenance

☞ It should be done every 260 hours along with the daily inspection.

- ① Check the wire (leaking, defect, abrasion, looseness)

### 2. Monthly Inspection and Maintenance

☞ It should be done every month, in other words, every 600 hours of operation

- ① Check every screw and nut, and make sure they are not loose.
- ② Check the main part. Detach the cover from the body of the machine, and then check the state of the chain and bite.



### 3. Annual Inspection and Maintenance

☞ It should be done every 3000 operating hours along with the inspection above.

- ① Check the state of chain and sprocket, and if worn enough, replace it with a new one.
- ② Check the state of installation. (horizontal, parallel, right-angle) ☞ 21P installation procedure

※ The limit of wear and management of the expendables.

☞ As of the expendables of each part, you might assume it is prepared. However, you cannot be sure about when to replace it with a new one for that the state of the machine is changeable.

But when the machine

- ① Makes a movement
- ② Makes big noise
- ③ The item's surface is not clean
- ④ Stops unusually

It is assumed there is failure in the machine. The failure might be caused from the linking state of the air hose, a foreign substance in LM guide rail, the abrasion in bite, the looseness of screws and nuts etc. These can be found in advance. Thus, regular inspection and maintenance are essential.

#### Note

Angle gauge

Memory 0

구분	inspection	Daily	1week	1month	3months	6months
Memory check		◎				
COVER spindle bite		◎				
Timing belt & motor		◎				
LM + Block cleanness		매일				
Electricity overload				◎		
Speed control check				◎		





## 7 Replacing Equipments



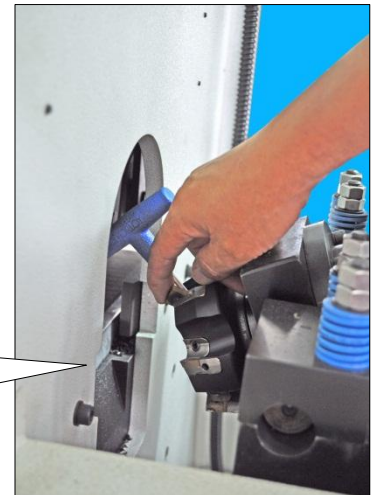
### Caution

- ① Replace with the standard screws and nuts.
- ② Do not put too much pressure when replacing equipments.
- ③ Follow the instruction when replacing equipments.
- ④ Keep the environment clean when doing a testing operation after replacing equipments.
- ⑤ Make sure to turn the power switch off before replacing equipments.

### ◆ Replacing the tip



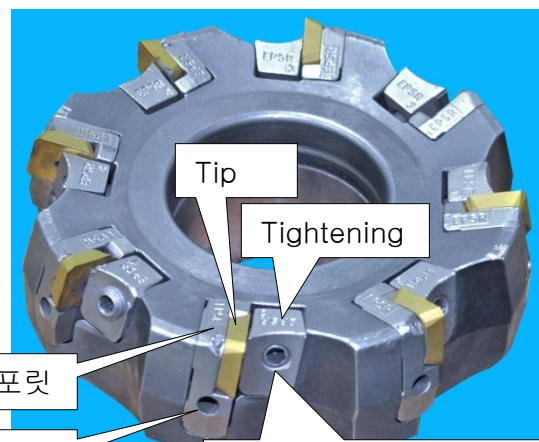
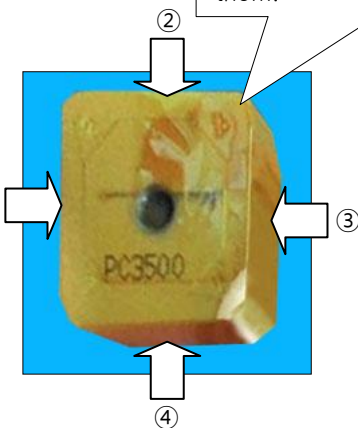
Open the door. Loosen with the wrench the pace cutter tightening fixing screw at the edge of the main motor. Picture below



Get the tip out. Replace it with the other fine side and tighten the screw to fix it.

### Note

Each of the 4 sides of tips can be used for replacing the rest of them.

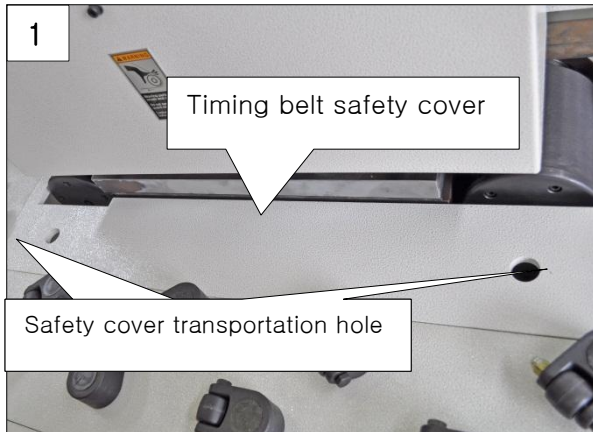


Tip 포트 fixing screw

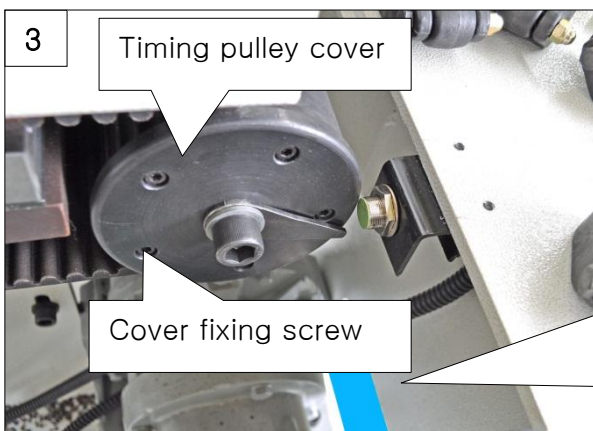
Tightness fixing screw



### ◆ Replacing the timing belt



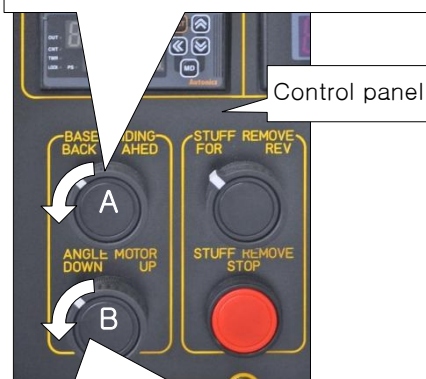
Put the finger into the hole and lift the cover.



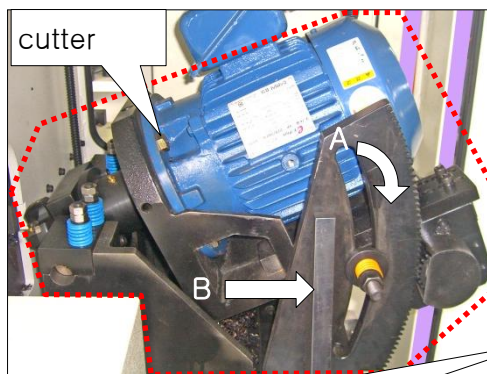
- ① Loosen the 5 fixed screws and lift the cover.
- ② Take off the timing pulley cover with the same way as ①.
- ③ Take off the timing belt. Replace it with a new one and then reassemble in the inverse order

### ◆ Replacing the pace cutter

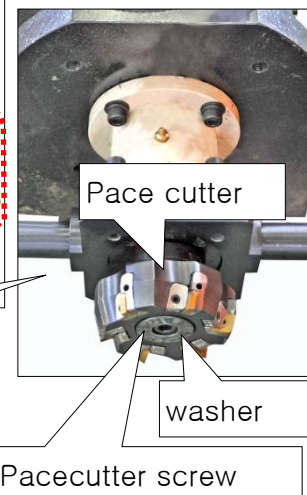
① Turn BASE SLIDING(A) button to 'back' and make the cutter move backward.



② Turn the ANGLE MOTOR(B) button to 'down'. Lower the angle of the cutter.



- ③ Loosen the screw.
- ④ Get the washer out. Get the pace cutter out.
- ⑤ Replace it with a new pace cutter and reassemble in the inverse order.





## 8 Repair (Solution)

### ◆ The Causes of Breakdowns

Breakdown	Cause	Solution
Increased noise degree	When replacing the pace cutter and the tip, there is a foreign substance in the tip pockets.	Clean the tip pocket with the air gun.
Too much noise	Spindle shaft bearing worn down. Lubricant injection	Replace bearing. Inject lubricant
Failing to meet the standard speed	Tip worn down or broken	Check/replace the speed reduction motor
Irregular cutting side	Tip worn down or broken	Replace a tip
The spindle (pace cutter) does not spin	An error with the motor	Check/replace the speed reduction motor
	Bearing worn down or broken	Examine a bearing or replace it

※ Contact us if the solutions above does not work.

### ◆ Warranty service



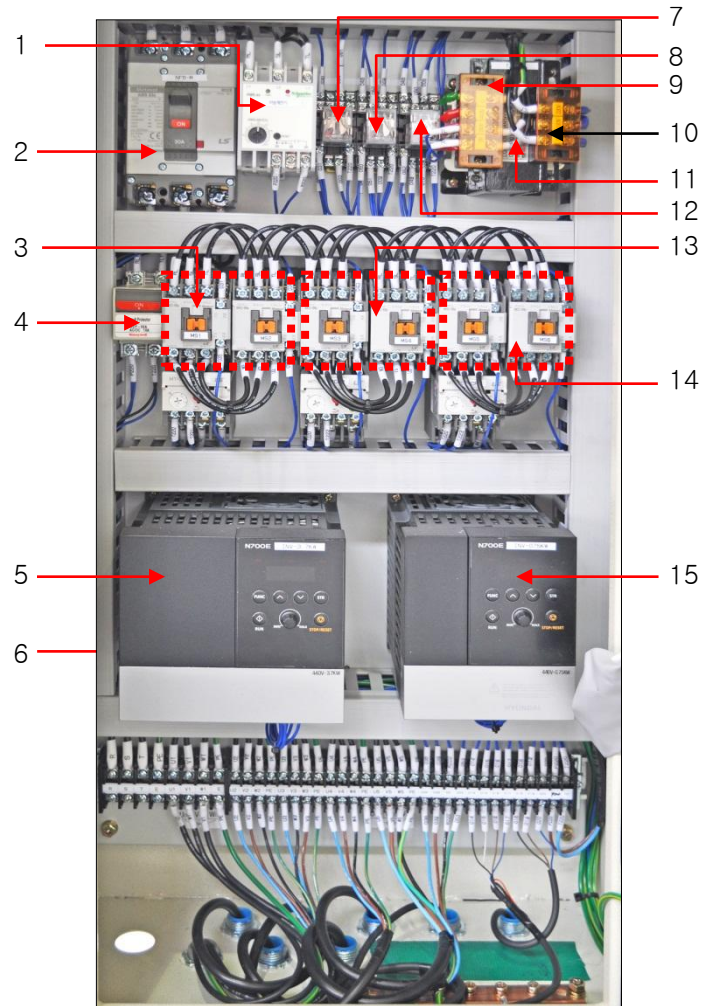
| 본사 및 공장 : 경남 김해시 주촌면 내삼리 941 번지  
 | 부산 사무소 : 부산시 사상구 감전동 502-1 번지 마트월드 A 동 212 호  
 | Main office & Factory : Naesam-Ri Juchon-Myeon, Gimhae City Gyeongsangnam-Do, South KOREA.  
 | Busan Office : A-212 Martworld 502-1, Gamjeon-Dong Sasang-Gu, Busan City Soyth KOREA.  
 | TEL : 82-51-310-1766~7 / H.P : 82-10-8001-5977  
 | FAX : 82-51-310-1768  
 | e-mail : tech5977@naver.com  
 | http://www.ildeungtech.co.kr





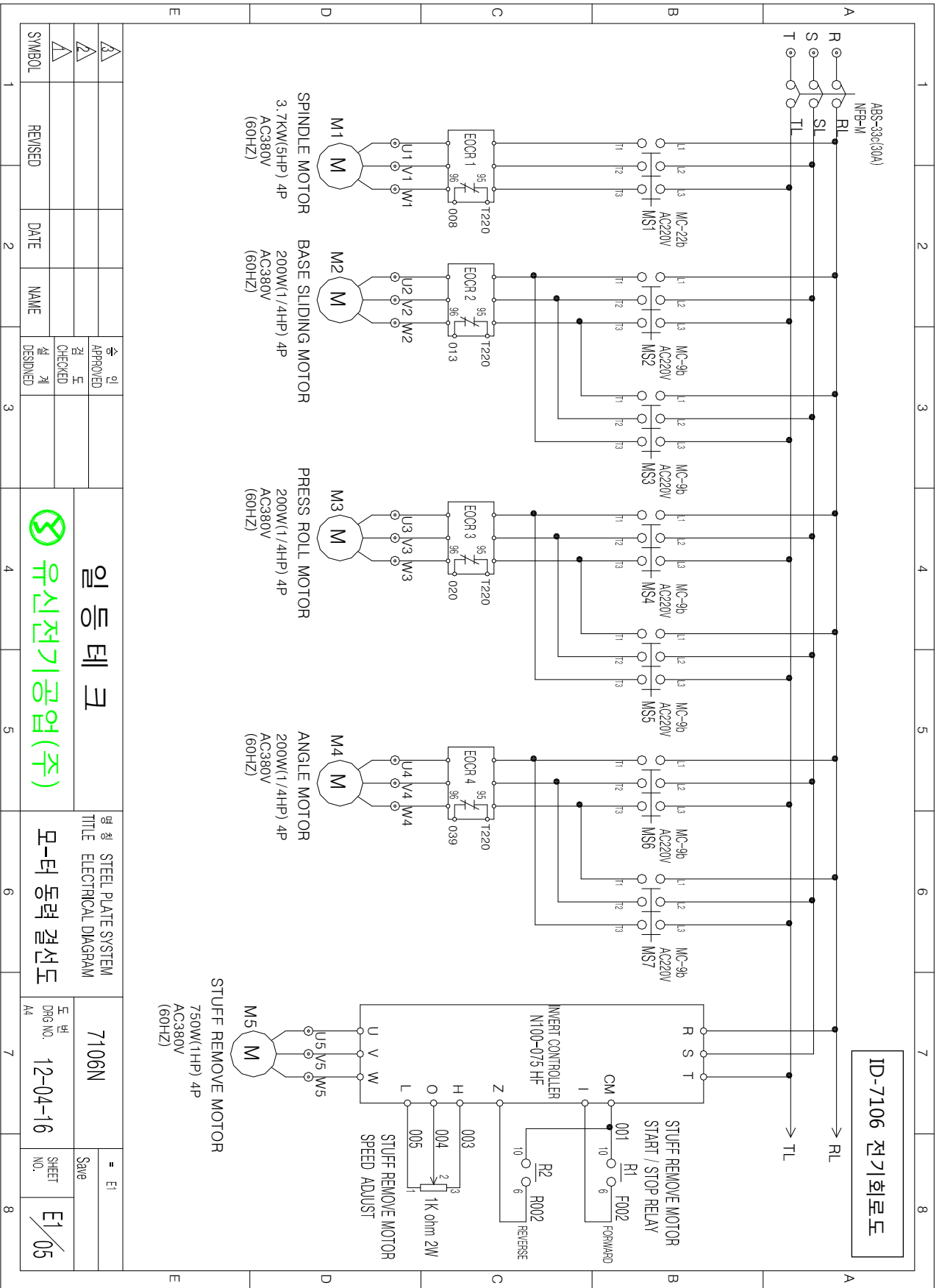
## 9 The Panel board (The switch board)

◆ The names of the parts in the panel board

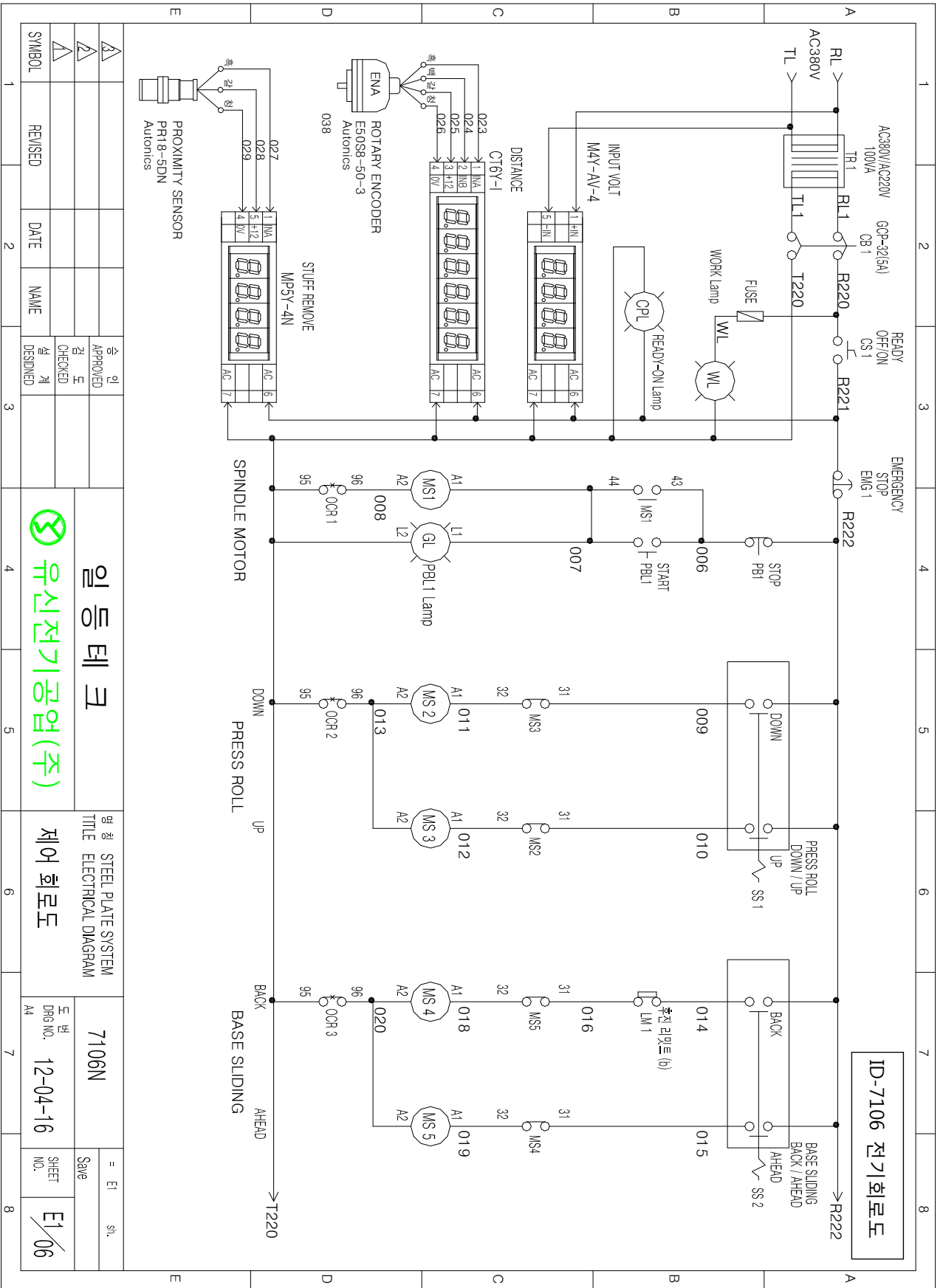


No.	Name	No.	Name
1	Opposite phase detector	9	Port
2	Power switch	10	Port
3	Angle UP/DOWN switch	11	Control voltage trans
4	Control power switch	12	Transporting motor counter direction relay
5	Main movement inverter	13	Base motor forward/backward switch
6	Port	14	Compressing motor UP/DOWN switch
7	Main movement relay	15	Transporting inverter
8	Transporting motor forward direction relay		





SYMBOL	REVISED	DATE	NAME	설계 DESIGNED	검토 CHECKED	승인 APPROVED	<b>인 등 테 크</b> <b>유신전기공업(주)</b>										<b>모-터 동력 결선도</b> STEEL PLATE SYSTEM ELECTRICAL DIAGRAM		도번 DRG NO. 7106N		SHEET NO. E1/05	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			



△			승 인	
△			검 도	
△			CHECKED	
△			설 계	
△			DESIGNED	
SYMBOL	REVISED	DATE	NAME	
1				
2				
3				

**일 등 테 크**

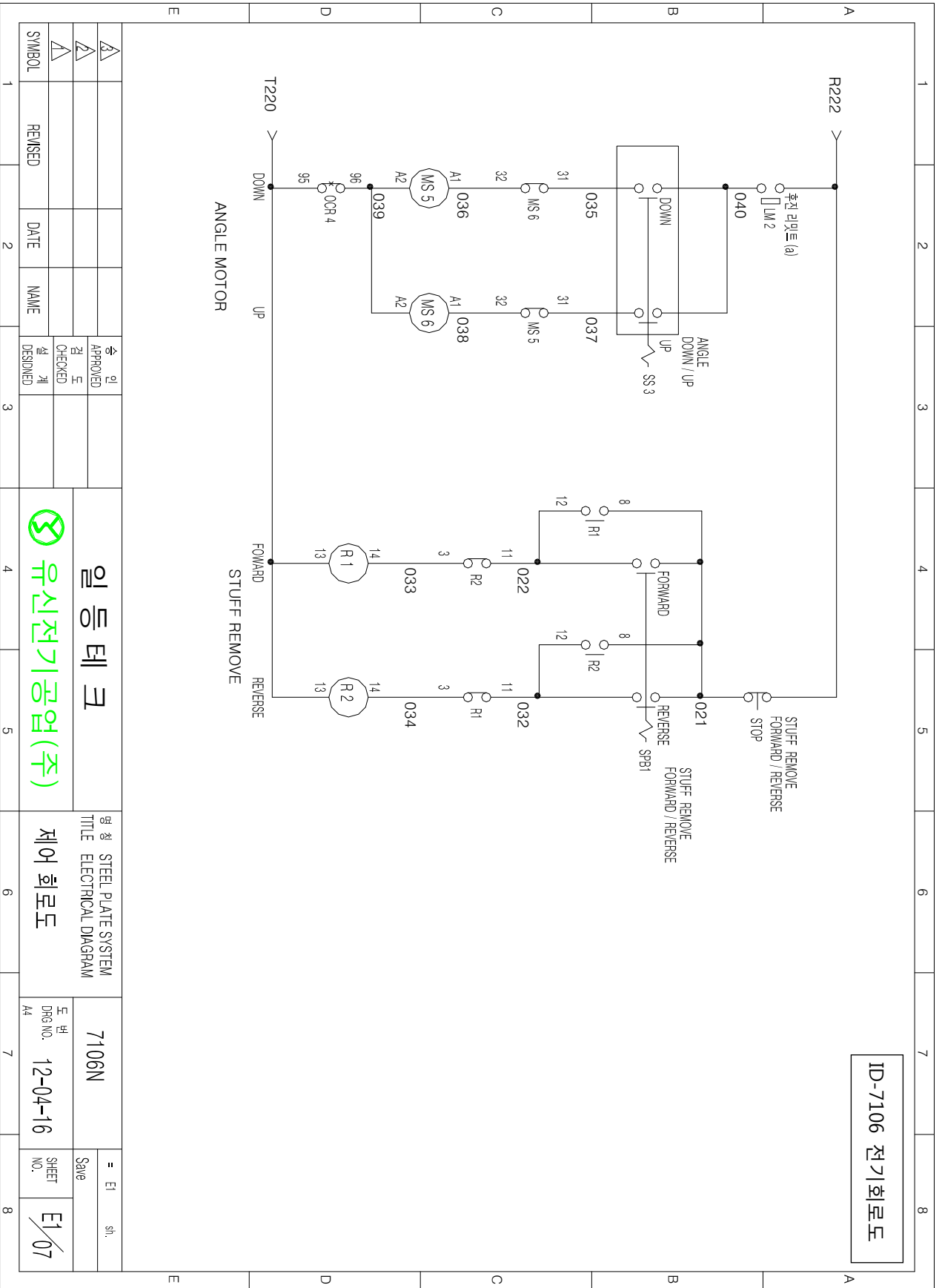
**유신전기공업(주)**

명 칭 STEEL PLATE SYSTEM  
TITILE ELECTRICAL DIAGRAM

제어 회로도

도 번 7106N  
DRG NO. 12-04-16

시트 E1/06

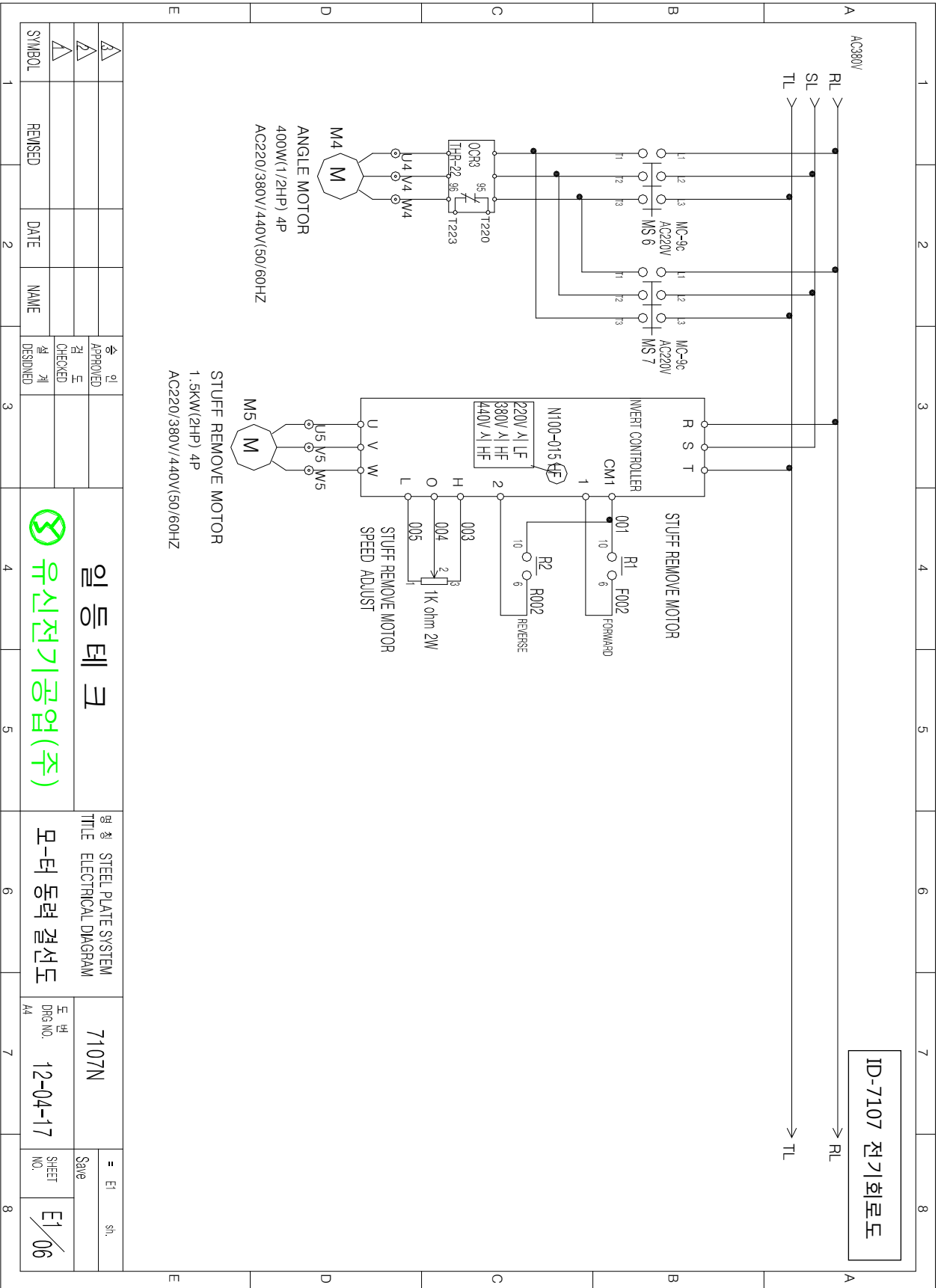


SYMBOL		REUSED	DATE	NAME	승 인 APPROVED	검 도 CHECKED	설 계 DESIGNED	일 등 테 크 유신전기공업(주)		명 칭 TITLE	STEEL PLATE SYSTEM ELECTRICAL DIAGRAM	도 번 DRG NO.	7106N 12-04-16	시트 SHEET NO.	E1/07

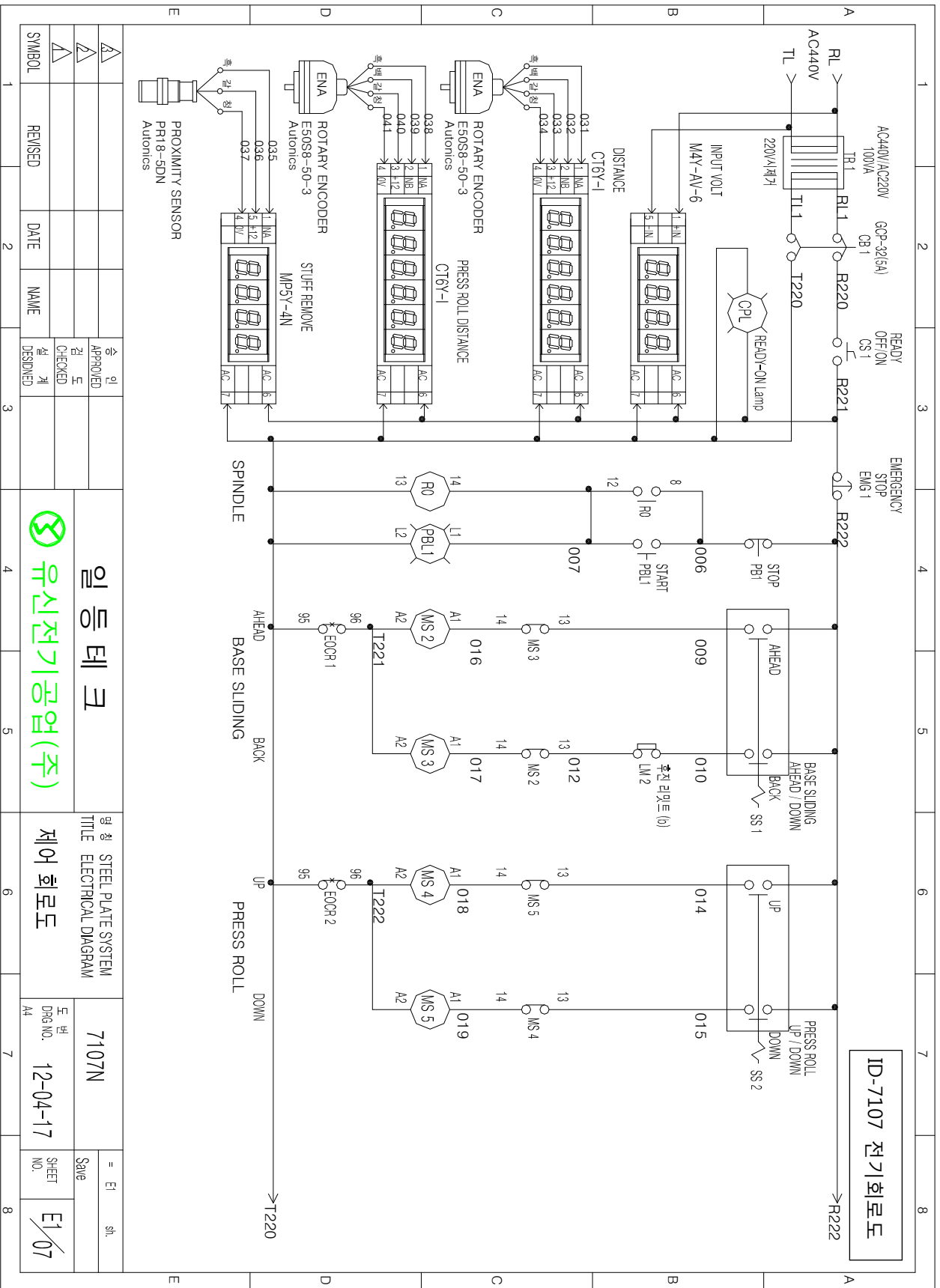








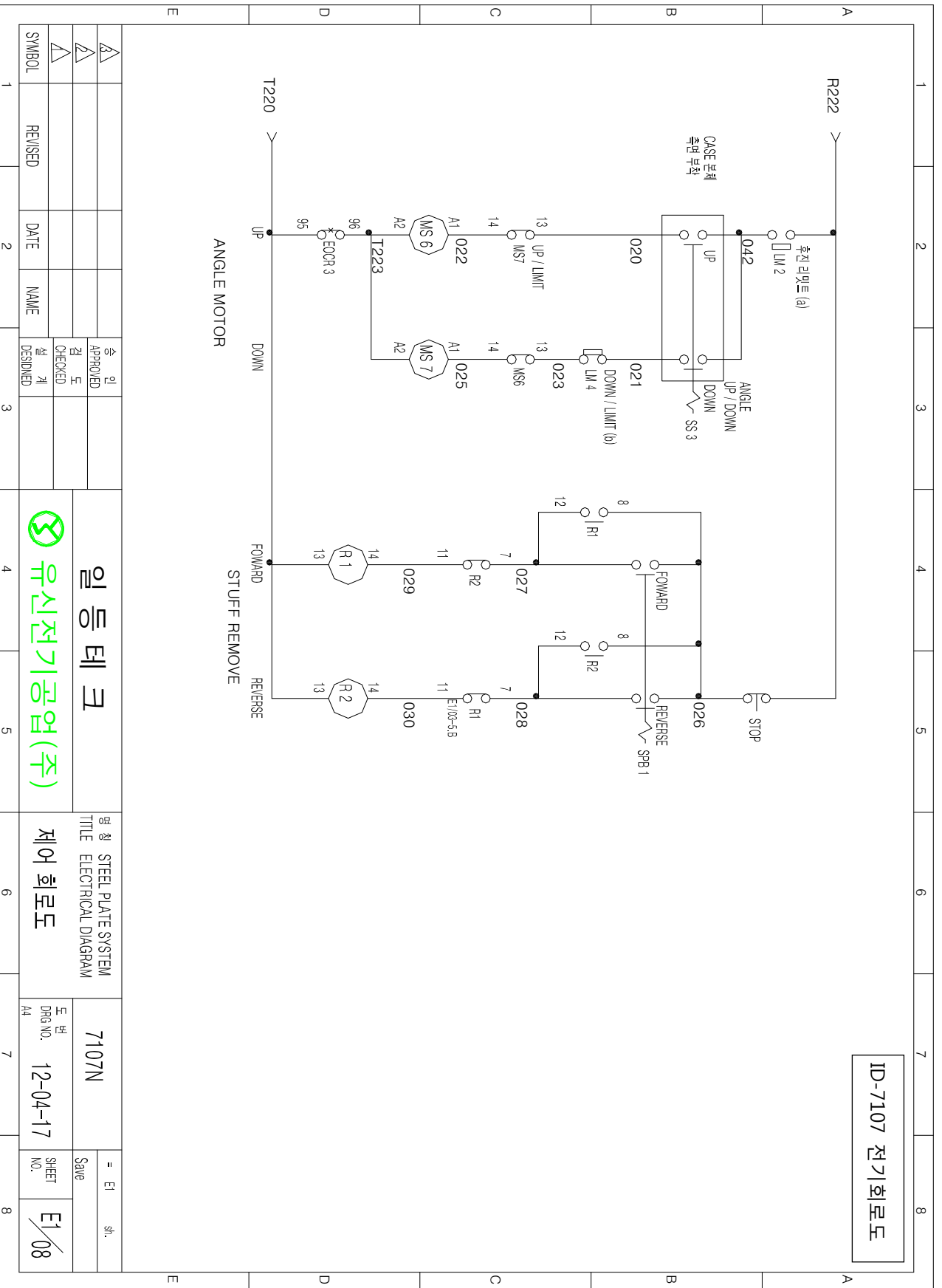
SYMBOL	REUSED	DATE	NAME	승인 APPROVED	검토 CHECKED	설계 DESIGNED	<b>일드테크</b> <b>유신전기공업(주)</b>	명칭 TITLE STEEL PLATE SYSTEM ELECTRICAL DIAGRAM	도번 Dwg NO. 7107N 12-04-17	= E1 sh. Save SHEET NO. E1/06



△	승 인	
	APPROVED	
△	검 도	
	CHECKED	
△	설 계	
	DESIGNED	
SYMBOL	REVISED	DATE

<b>일 등 테 크</b>	
<b>유신전기공업(주)</b>	

명 칭	STEEL PLATE SYSTEM
TITLE	ELECTRICAL DIAGRAM
도 번	7107N
DRG NO.	12-04-17
도 번	Save
DRG NO.	E1/07



ID-7107 전기회로도

△	승인	APPROVED	일등테크	영칭 STEEL PLATE SYSTEM	7107N	= E1 sh.
△	검토	CHECKED	유신전기공업(주)	TITLE ELECTRICAL DIAGRAM		Save
△	설계	DESIGNED		제어 회로도	도번 12-04-17	SHEET NO. E1/08
△	REVISED	DATE	NAME		AA	



MEMO

A large rounded rectangular area containing horizontal lines for writing.