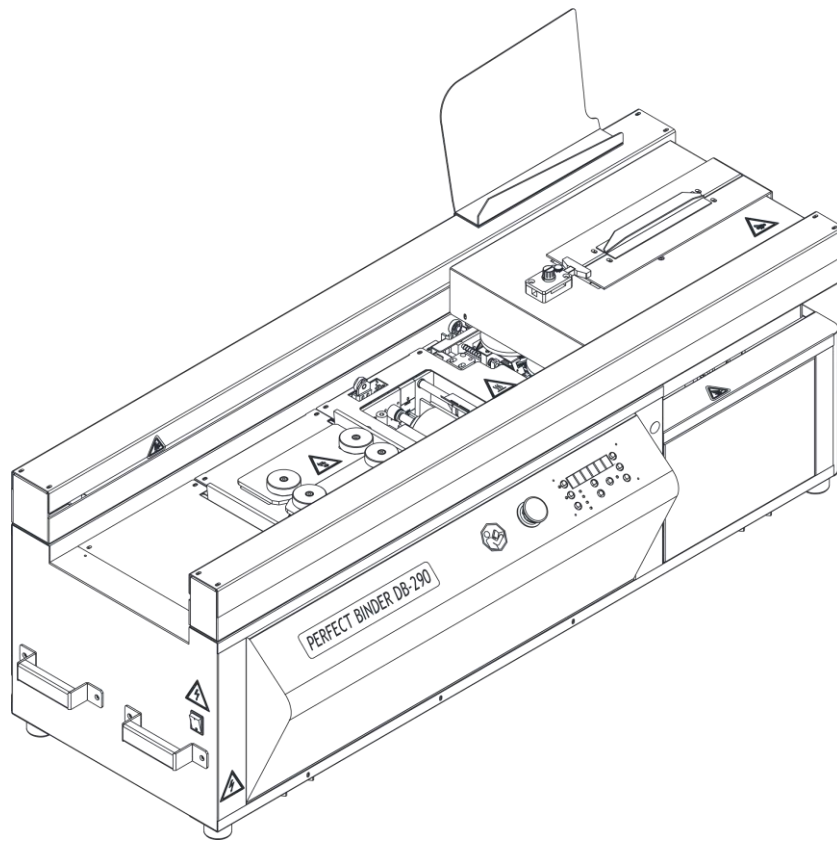


**Instruction Manual**  
**PERFECT BINDER**  
**MODEL: DB-290, DB-280, DB-200,**  
**DB-660, DB-700**



**Duplo Taiwan Corporation**

**TEL:886-2-27212117      FAX:886-2-27211669**

**8F., NO.2, SEC.4, CHUNG HSIAO E.RD., TAIPEI, TAIWAN**

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# 1 Safety Instruction

## General Safety Regulation

### Warning

**Be careful of the following items that may cause injury or damage.**

Do not place tiny items on top of the machine to avoid dropping them into the machine.

Pay close attention to the warning signs on the machine that indicates a dangerous or “no-touch” area of the machine.

Keep hands and fingers away from glue tank and notching station.

Use only the suggested hot melt glues with the following characteristics:

Application temperature: 338 F (170 °C) to 308 F (150 °C)

Working Glue Viscosity: 4,000 to 8,000 CPS

**Duplo is not responsible for the quality of the binding that is produced by the non-suggested glues.**

### In case of thermostat failure :

DB-290 has implemented the secondary thermostat to protect the glue tank temperature over 410F (210 °C). When it occurs, the power of DB-290 will be automatically turned off. You have to wait for the glue tank to cool down before you can restart the machine. If this problem occurs again, call your authorized dealer for service.

## 1.1 Safety Regulation

### KNOW YOUR MACHINE.

For your own safety, read the owner's manual carefully. Learn its application and limitations as well as specific potential hazards pertinent to this machine.

### KEEP GUARDS IN PLACE AND IN WORKING ORDER.

### REMOVE ADJUSTING KEYS AND WRENCHES.

For habit of checking to see that keys and adjusting wrenches are remove from the machine before turning it on.

### KEEP WORK AREA CLEAN.

Cluttered areas and benches invite accidents.

### DO NOT USE IN DANGEROUS ENVIRONMENTS.

Do not use power tools in damp or we locations, or expose them to rain. Keeps work area well illuminated.

### KEEP CHILDREN AWAY.

All visitors should be kept at a safe distance from work area.

### MAKE WORKSHOP CHILDPROOF.

With padlocks, master switches, or by removing starter keys.

### DO NOT FORCE THE MACHINE.

It will do the job better and be safer at the rate for which it was designed.

### USE THE RIGHT TOOLS.

Do not force the machine or attachments to do a job for which they were not designed.

### WEAR PROPER APPAREL.

Avoid loose clothing, gloves, neckties, rings, bracelets, or jewelry, which could be caught in moving parts.

Nonslip footwear is recommended. Wear protective hair covering to contain long hair.

### SECURE WORK.

Use clamps or a vice to hold work when practical. It is safer than using your hand and frees both hands to operate the machine.

### DO NOT OVERREACH.

Keep proper footing and balance at all times.

### MAINTAIN MACHINE IN TOP CONDITION.

Keep machine clean for best and safest performance. Follow instructions for lubricating and changing accessories.

### DISCONNECT MACHINE FROM POWER SOURCE.

Before servicing and when changing accessories, or when mounting and remounting motor.

### USE RECOMMENDED ACCESSORIES.

Consult the owner's manual for recommended accessories.

### NEVER LEAVE MACHINE RUNNING UNATTENDED. TURN POWER OFF.

Protective guards and shields must be in place at all times unless that specific part requires servicing.

Never clean or remove chips while the machine is running.

Do not remove or alter warning labels and replace any that become obscured.

## **Warranty**

If any part is proved to be defective within ONE YEAR from the date of purchase then the manufacturer or distributor shall repair or replace the part provided the defective part is returned immediately to the manufacturer or distributor.

The manufacturer or distributor shall have no obligation to repair or replace those parts failing due to operator carelessness, misuse or due to any cause such as parts failing due to poor lubrication, inadequate cleaning, improper operating environment, improper utilities or operator error.

## 1.2 Warning Plate

This machine has warning symbols attached on it as shown below to ensure proper and safe operation. These symbols are used on the machine to indicate points or instances of specific danger to operating personnel. Make sure to memorize these symbols and bring them to the attention of others as and when necessary. Do not remove safety symbols from the machine.



Electrical shock



Hand Crush/Force from two sides



Cutting of fingers or hand rotating blade



Burn Hazard/Hot Surface



Hand Crash/ force from side

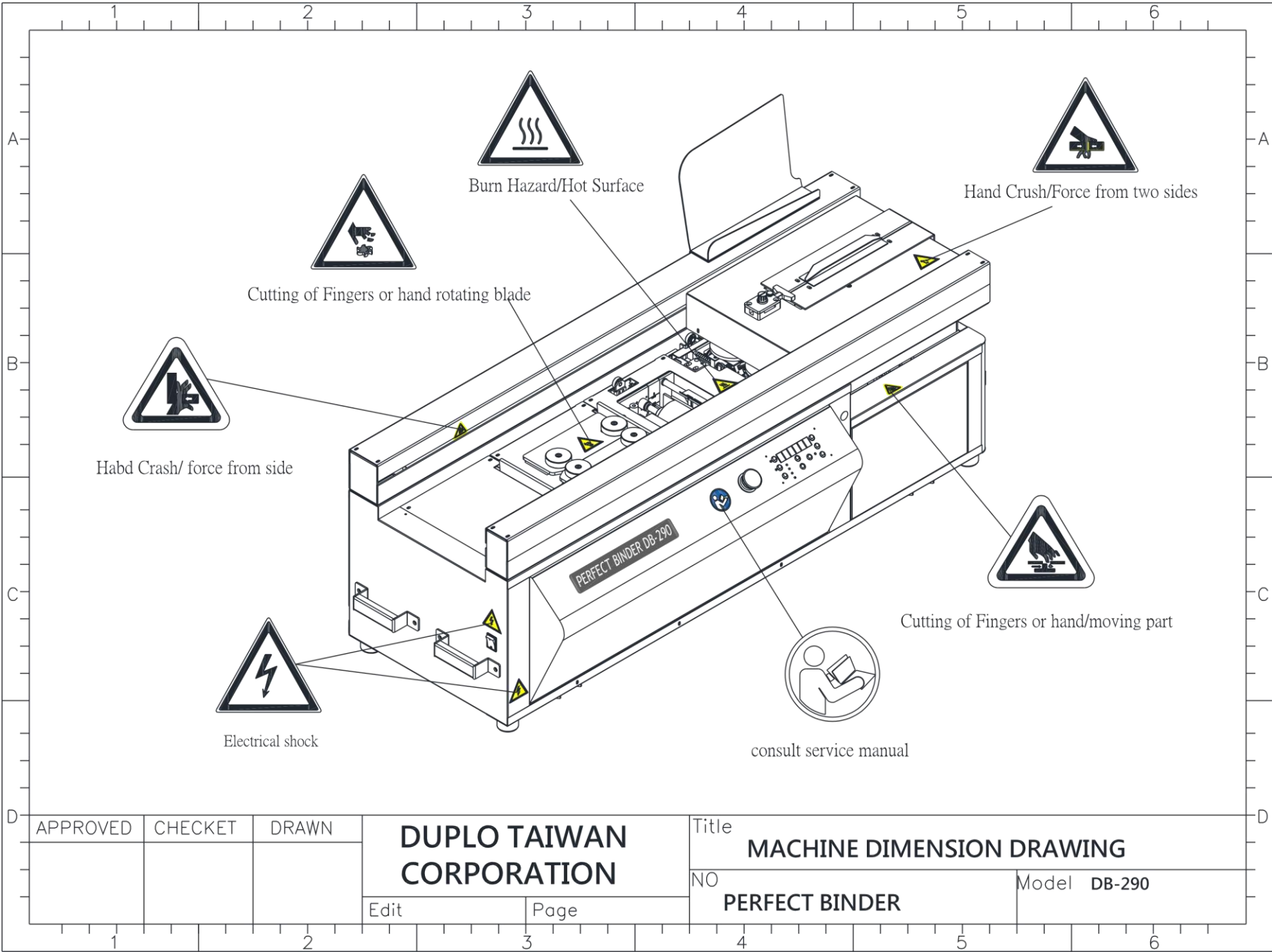


Cutting of fingers or Hand/moving part



Consult service manual


1.3 Location of safety signs on the press brake is shown in the figure below



~7~

APPROVED	CHECKET	DRAWN	<b>DUPLO TAIWAN CORPORATION</b>	Title <b>MACHINE DIMENSION DRAWING</b>	
				Edit _____ Page _____	NO <b>PERFECT BINDER</b>

## 1.4 Name Plate

<h1>Duplo Taiwan Corporation</h1>		
8F,#2,SEC. 4, Chung-Hsiao E.Road., Taipei, Taiwan		
Tel:+886-2-2721-2117 ; Fax:+886-2-2721-1669		
E-mail: duplo@duplo.com.tw Website: www.duplo.com.tw		
<b>EQUIPMENT ITEM</b>	<input type="text" value="Perfect Binder"/>	
<b>MODEL</b>	<input type="text" value="DB-290"/>	<b>SER.NO.</b> <input type="text"/>
<b>MFG DATE</b>	<input type="text"/>	<b>WEIGHT</b> <input type="text" value="123"/> kg
<b>ELECTRIC</b>	<input type="text" value="V"/> <input type="text" value="Hz"/>	
<b>MADE IN TAIWAN</b>		



## 2 Specification

### 2.1 Specification

<b>Model</b>	<b>DB-290</b>
Maximum Book Size	12.6" x 15.75" ( 320mm x 400mm )
Minimum Book Size	4.72" x 1.97" ( 120mm x 50mm )
Maximum Binding Thickness**	1.6" ( 40mm )
Glue Warm Up*	30~40 minutes ( varies depending upon glue type )
Glue Warm Up in Stand-by Mode	5 minutes
Cycle Speed	360 cycles per hour
Production Speed	Up to 200 books per hour
Power Source	110V, 60 Hz ( Option: 220V, 50 Hz )
Power Consumption	11 Amps.
Machine Weight	271 lbs ( 123Kg )
Machine Dimension	51.2"(L) x 22"(W) x 18.5"(H) (1300x560x470mm)

\* Varies upon glue type

\*\* When binding book thickness exceeding 30mm, please adjust notching blade height lower according to the operation manual by technician.

As part of our continuous product improvement program, specifications are subject to change without notice.

<b>Model</b>	<b>DB-280</b>
Maximum Book Size	12.6" x 15.75" ( 320mm x 400mm )
Minimum Book Size	4.72" x 1.97" ( 120mm x 50mm )
Maximum Binding Thickness	1.6" ( 40mm )
Glue Warm Up	30~40 minutes ( varies depending upon glue type )
Glue Warm Up in Stand-by Mode	5 minutes
Cycle Speed	360 cycles per hour
Production Speed	Up to 200 books per hour
Power Source	110V, 60 Hz ( Option: 220V, 50 Hz )
Power Consumption	10 Amps.
Machine Weight	262 lbs ( 119 Kg )
Machine Dimension	49.2"(L) x 22"(W) x 18.5"(H) (1250x560x470mm)

<b>Model</b>	<b>DB-200</b>
Maximum Book Size	12.6" x 15.75" ( 320mm x 400mm )
Minimum Book Size	3.15" x 1.97" ( 80mm x 50mm )
Maximum Binding Thickness	1.6" ( 40mm )
Glue Warm Up	25 minutes ( varies depending upon glue type )
Glue Warm Up in Stand-by Mode	5 minutes
Cycle Speed	360 cycles per hour
Production Speed	Up to 200 books per hour
Power Source	220V/240V, 50 Hz
Power Consumption	10 Amps.
Machine Weight	255 lbs ( 116 Kg )
Machine Dimension	45.3"(L) x 22"(W) x 14.5"(H) (1150x560x370mm)

<b>Model</b>	<b>DB-660</b>
Maximum Book Size	11.7" x 15.53" ( 297mm x 420mm )
Minimum Book Size	5.7" x 5.51" ( 145mm x 140mm )
Maximum Binding Thickness	2.3" ( 60mm )
Glue Warm Up	40~50 minutes ( varies depending upon glue type )
Glue Warm Up in Stand-by Mode	5 minutes
Cycle Speed	570 cycles per hour
Production Speed	Up to 200 books per hour
Power Source	110V, 60 Hz ( Option: 220V, 50 Hz )
Power Consumption	10 Amps.
Machine Weight	210~230 Kg $\pm$ 3 Kg
Machine Dimension	54.3"(L) x 25.6"(W) x 40.9"(H) (1380x650x1040mm)

<b>Model</b>	<b>DB-700</b>
Maximum Book Size	11.7" x 8.26" ( 297mm x 210mm )
Minimum Book Size	5.7" x 5.51" ( 145mm x 140mm )
Maximum Binding Thickness	1.57" ( 40mm )
Glue Warm Up	40~50 minutes ( varies depending upon glue type )
Glue Warm Up in Stand-by Mode	5 minutes
Cycle Speed	620 cycles per hour
Production Speed	Up to 200 books per hour
Power Source	110V, 60 Hz ( Option: 220V, 50 Hz )
Power Consumption	10 Amps.
Machine weight	250~270 Kg $\pm$ 3 Kg
Machine Dimension	78.7"(L) x 43.3"(W) x 25.6"(H) (2000x1100x650mm)

## 2.2 Machine Noise

DECLARED NOISE EMISSION VALUES in accordance with ISO 7960.	
	Operating
Declared A-weighted Sound Power Level Lward , in dB re 1 pW	81.8
Declared A-weighted Emission Sound Pressure Level , 1pAd , dB re 20 iPa , at The operator's position.	68.8

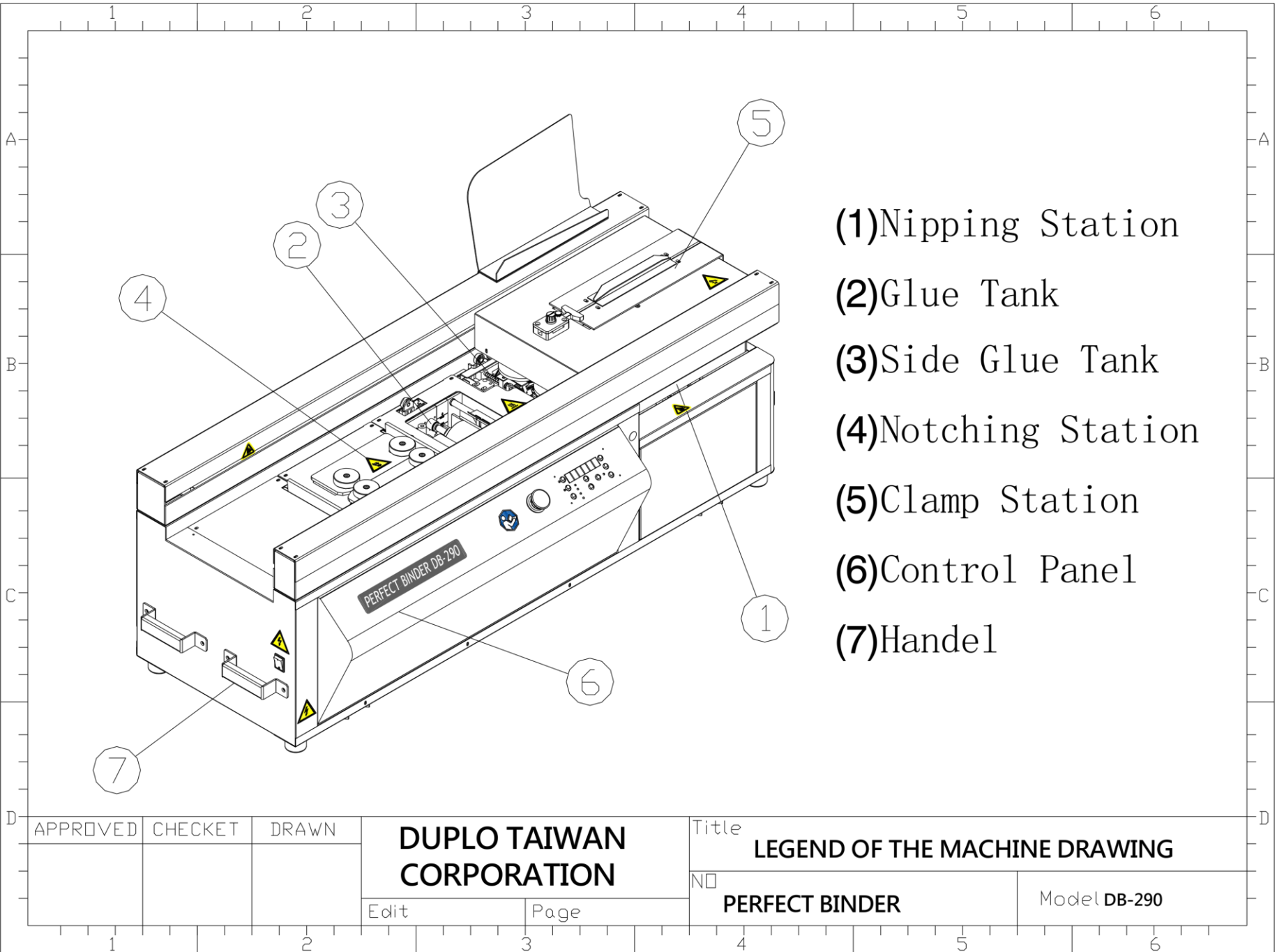
**The values are determined according to specific test code ISO 3746.**

The figures quoted are emission levels and are not necessarily safe work levels, whilst there is a correlation between emission and the exposure level. This cannot be used reliably to determine whether or not further precautions are required. Factors that influence the actual level of exposure of work piece include the duration of noise. (i.e. The number of other adjacent machines).

Also, the permissible exposure levels can vary country to country. The information, however, will enable the machine user to make a better evaluation of hazard and the risk.

## **2.3 Function of the Machine**

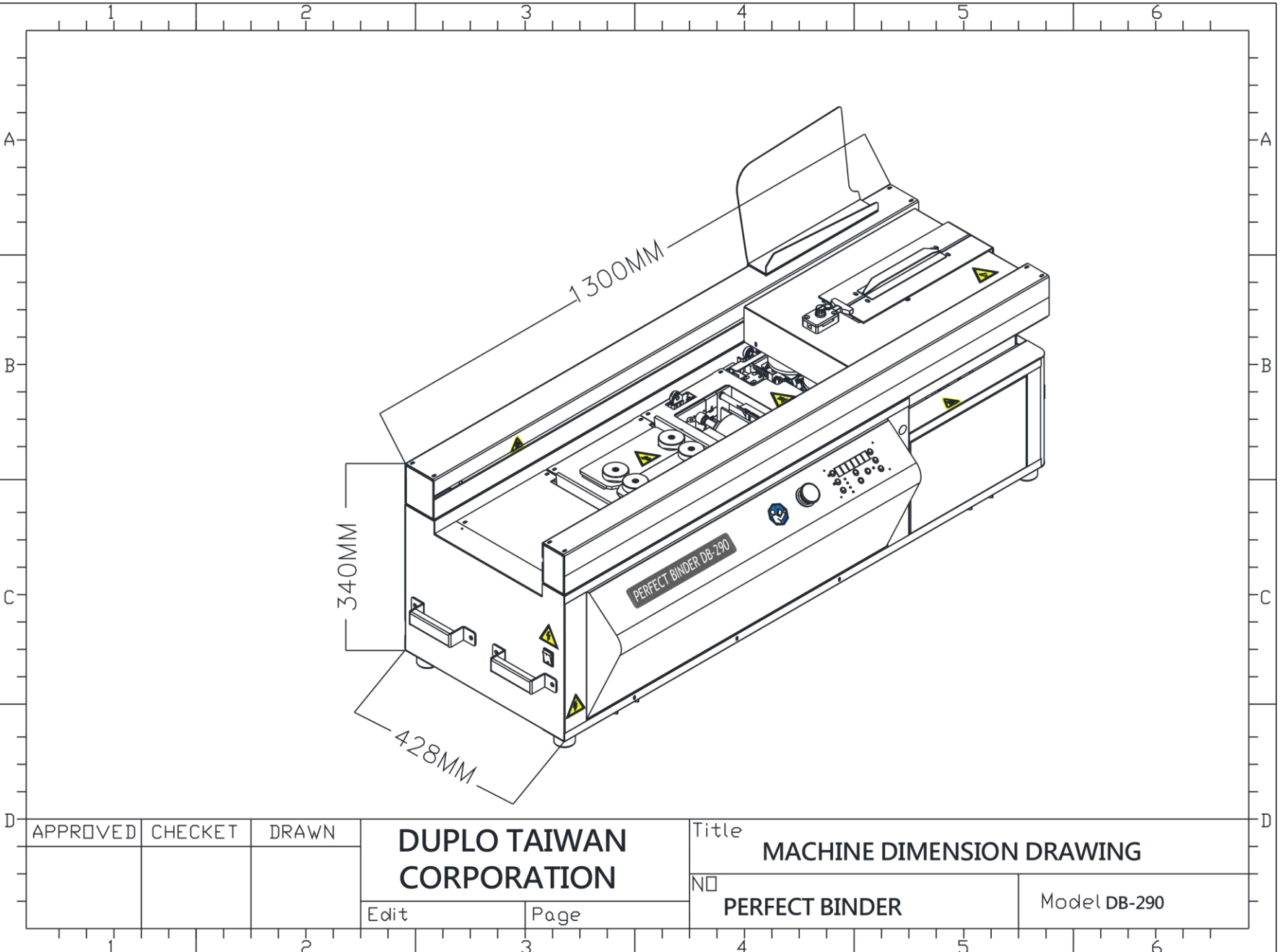
1. Provided a flat surface for the book block, when there are being placed into the clamp station. It also provides the nipping force to form the cover around the spine of the book.
2. Holding the book block for the notching, gluing, and nipping processes of bookbinding.
3. Provides driving power to move and locate the clamp station over the glue drum and notching station, then return it back to the nipping station for covering and binding.

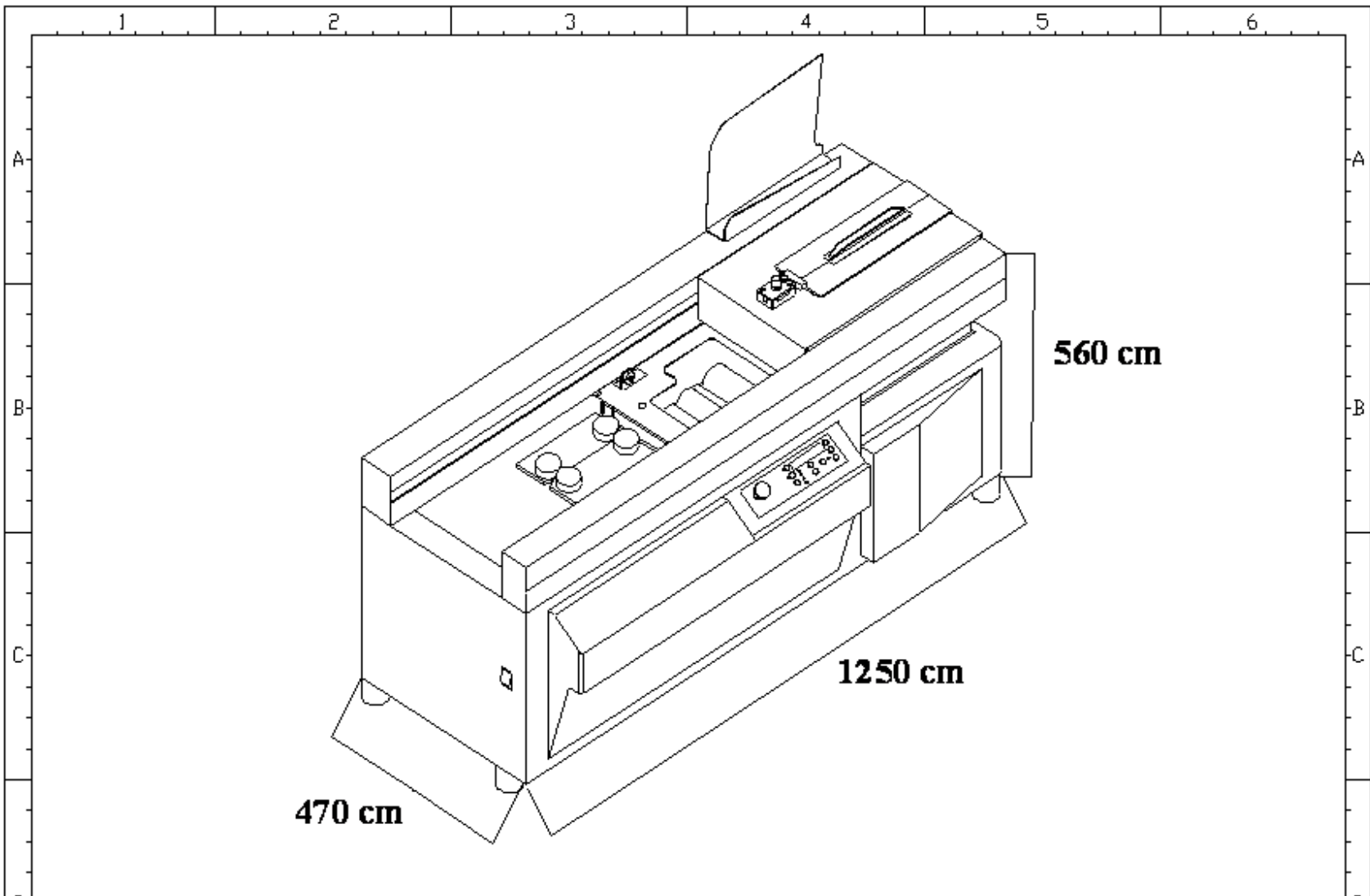


- (1) Nipping Station
- (2) Glue Tank
- (3) Side Glue Tank
- (4) Notching Station
- (5) Clamp Station
- (6) Control Panel
- (7) Handel

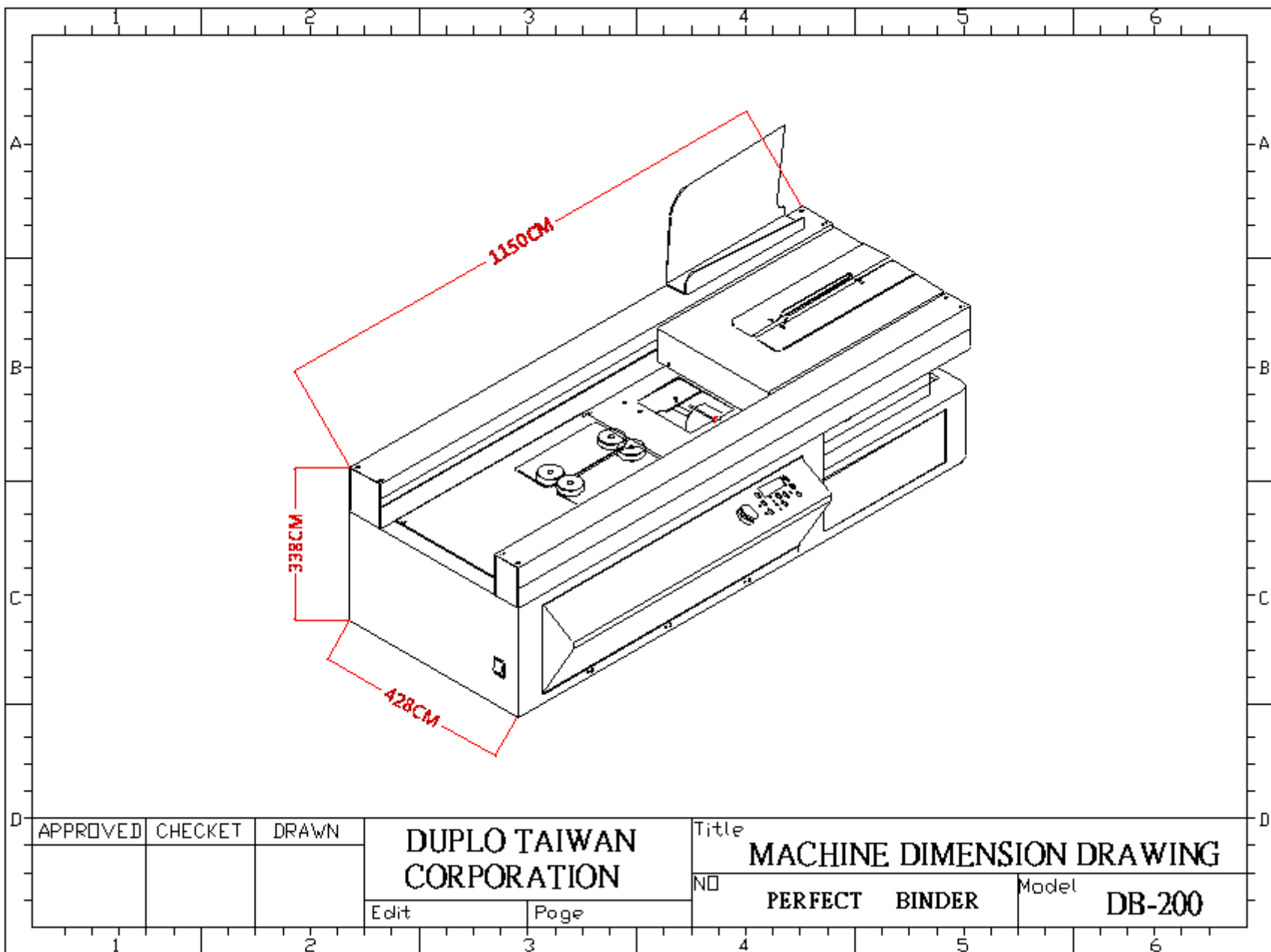
APPROVED	CHECKET	DRAWN	<b>DUPLO TAIWAN CORPORATION</b>	Title <b>LEGEND OF THE MACHINE DRAWING</b>	
				Edit	Page
					Model <b>DB-290</b>

**2.5 Machine Dimension Drawing**  
**DB-290**

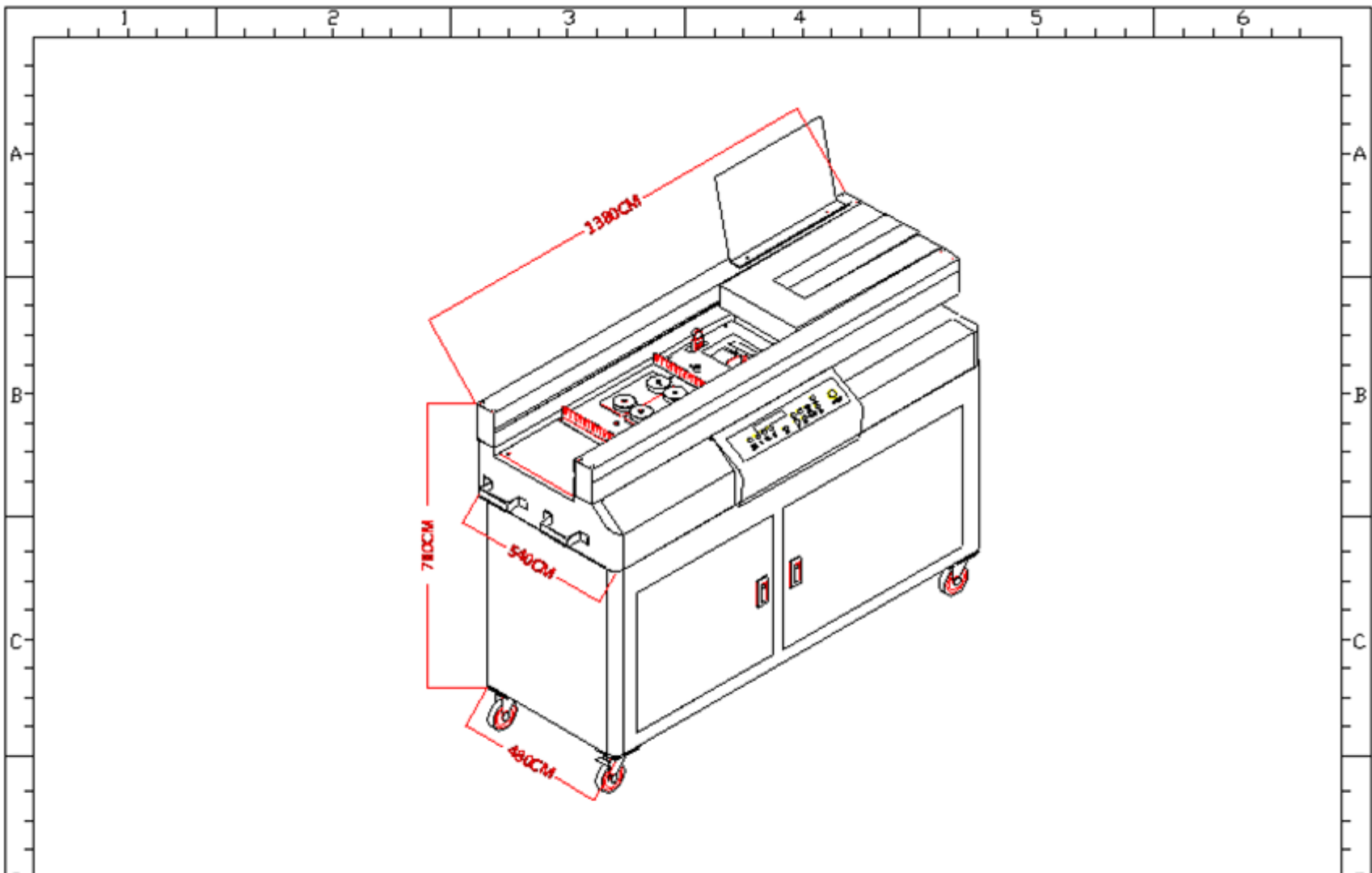




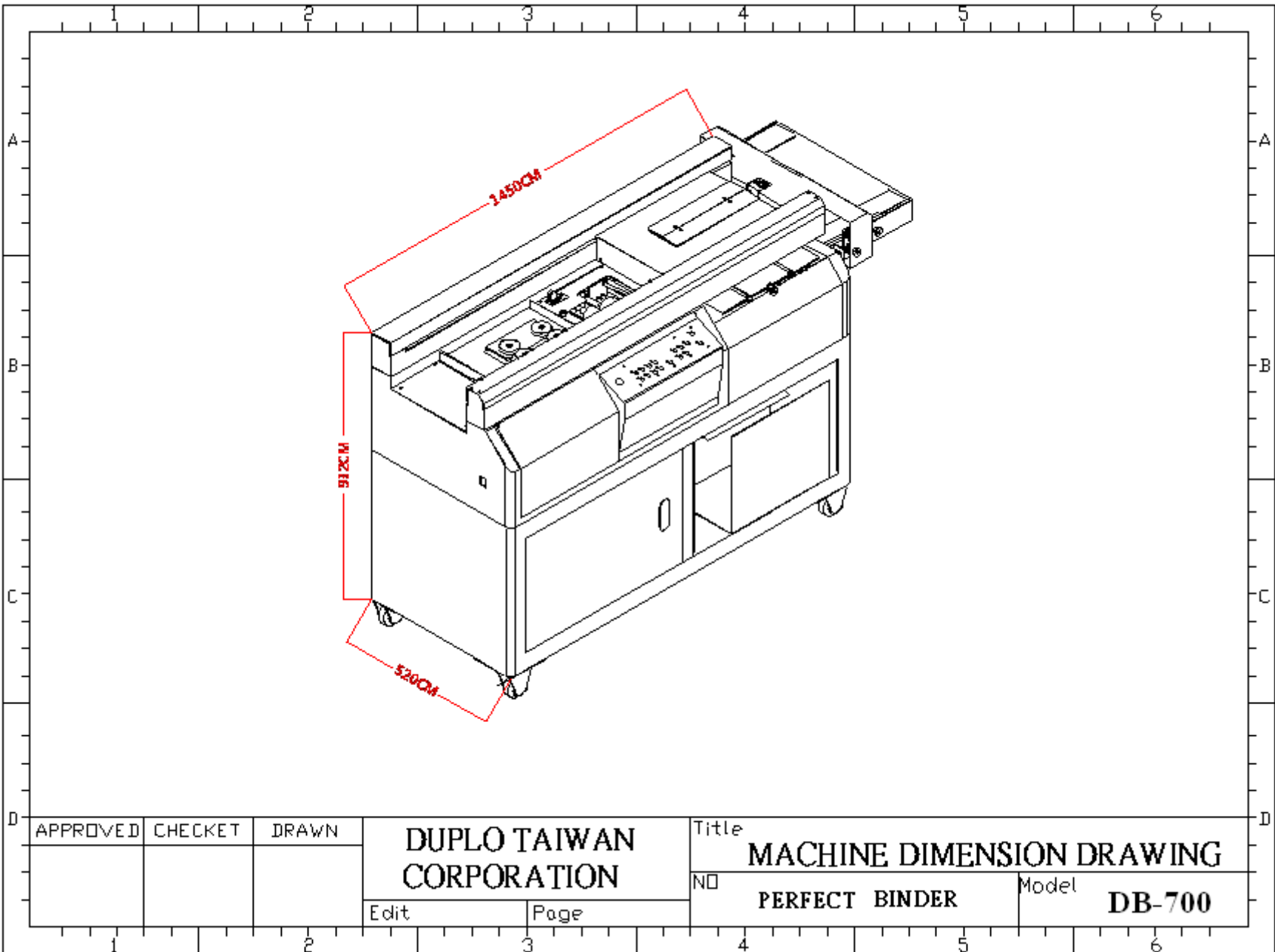
APPROVED	CHECKED	DRAWN	<b>DUPLO TAIWAN CORPORATION.</b>		Title		<b>MACHINE DIMENSION DRAWING</b>	
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							Model	
							<b>DB-280</b>	
1	2	3	4		5		6	







APPROVED	CHECKET	DRAWN	DUPLO TAIWAN CORPORATION	Title MACHINE DIMENSION DRAWING	
				NO PERFECT BINDER	Model DB-660
			Edit	Page	



APPROVED	CHECKET	DRAWN

**DUPLO TAIWAN CORPORATION**

Edit Page

Title	<b>MACHINE DIMENSION DRAWING</b>	
NO	<b>PERFECT BINDER</b>	Model <b>DB-700</b>

## 3 Installation

### 3.1 Safety Rules for Machine Movement

#### SETTING THE MACHINE IN PLACE

The haulage of the machine to the installation place is done with the crane or forklift.

Before unloading the machine, conduct a complete inspection of any damage which might have been caused during transportation.

Before placing the machine on the production floor, make sure that the floor base is thick and strong enough to endure mechanical vibration and to support the weight of the machine for a long time.

Allow enough room around the machine for auxiliary production equipment for the maintenance of the machine.

Use haulage equipment with sufficient strength for the machine weight. (Such as a crane, forklift, wire ropes, and hooks)As for machine size, make sure the specifications table.

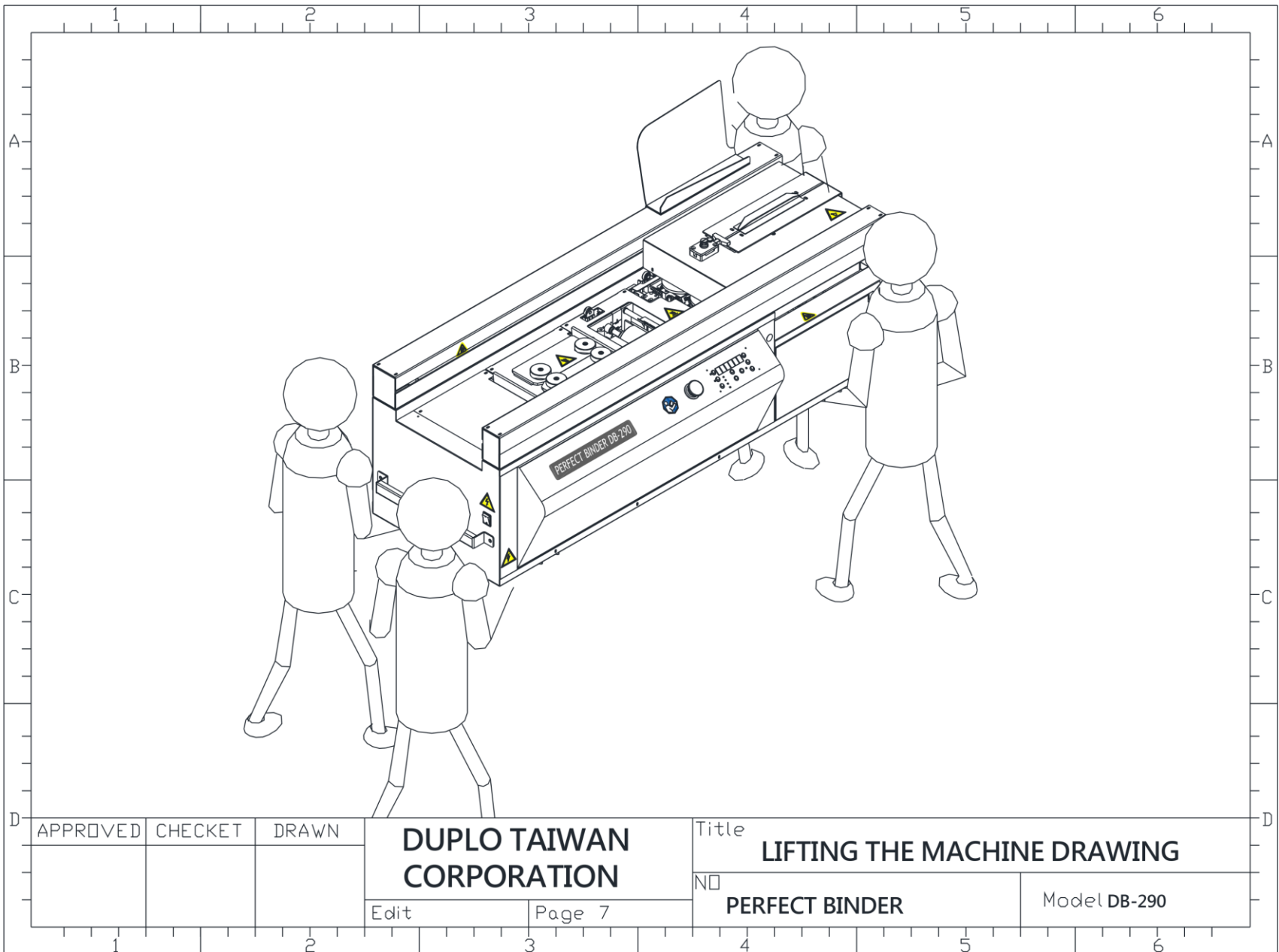
When looping the wire ropes, put pads between the wire ropes and the machine body at the places where the wire ropes contacts the machine body so that the machine will not get damage.

specifications table about haulage:

Variant NO.		Basic
Variant Identification	Unit	DB-290
Environment temperature	°C	+0°C~+40°C
Environment humidity	%	85%
Machine size (L.W.H)	mm	1300x560x470
Machine weight	kg	124
Center-of-gravity position (L.W.H)	mm	1300x560x470
Min. room for setting place (L.W.H)	mm	1300x560x470

### 3.2 Lifting the Machine / Drawing

At least four people to lift up the machine



### 3.3 Selection of Installation Location

1. Install the machine on a level safe, firm and solid table which will hold the weight of the machine.
2. Keep the machine away from the direct sunlight and heat sources such as stoves, heaters and radiators.

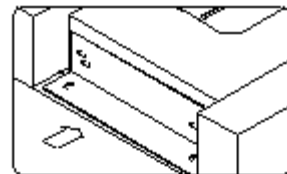
### 3.4 Installation/Drawing

**Note:**

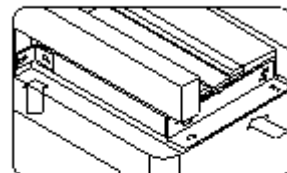
1. Before you take a machine out, make sure “DO NOT” holding two trackers that on the top of nipping station.
2. You must remove the three red shipping brackets before installing your DB-290

**The procedures for installation:**

Remove the red shipping bracket located on the left side of the clamp station as shown. Then reinstall the screws in clamp station.



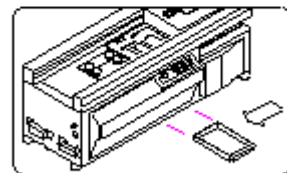
Remove two red shipping brackets that are located around the nipping station as shown.



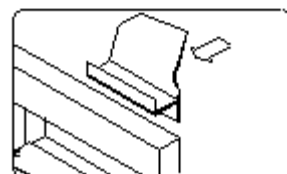
Please remove the M6 screw which located around the Glue Tank



Lift up your DB-290, slide in the bottom cover first. Then slide in the glue draining tray underneath the glue tank as shown.



Place your DB-290 on a safe, firm and solid table. Then mount the cover-sheet holder to the right side of the machine as shown.



## 3.5 Installation and Leveling

3.5.1 Tools: adjust screw by screwdrivers , Allen wrench

3.5.2 The main machine is calibrated by level gauge to hundredth precision

## 3.6 Power Supply Requirement

Insufficient voltage from factory power source may affect the power output of the motor and the function of the controller.

It is important to connect this machine to the correct voltage in the factory power source. Use only an independent power source.

Table for power supplies requirement:

Model	Kw	Voltage	Current	Breaker capacity	Wire size
DB-290	1.1 Kw	220V	13A	50A	2.08mm <sup>2</sup>

## 3.7 External Power Connection

1. Connect the machine to a dedicated power outlet. Never connect the machine to a power outlet servicing other appliances or electrical devices.
2. Place the machine close to the power outlet. Do not use extension cords. Use the machine only where voltage is relatively constant.
3. The range of power supplies for proper operation of the machine.  
Tolerance of power supply: LOCAL VOLTAGE 110V or 220V 10%  
Frequency fluctuation: 110 V @ 60Hz 10% or 220V @ 50Hz 10%

### **3.8 Check Connection of Power Wires**

After the power wires have been connected it is necessary to check if the power wires are connected to the correct connection points.

Check periodically to ensure the following :

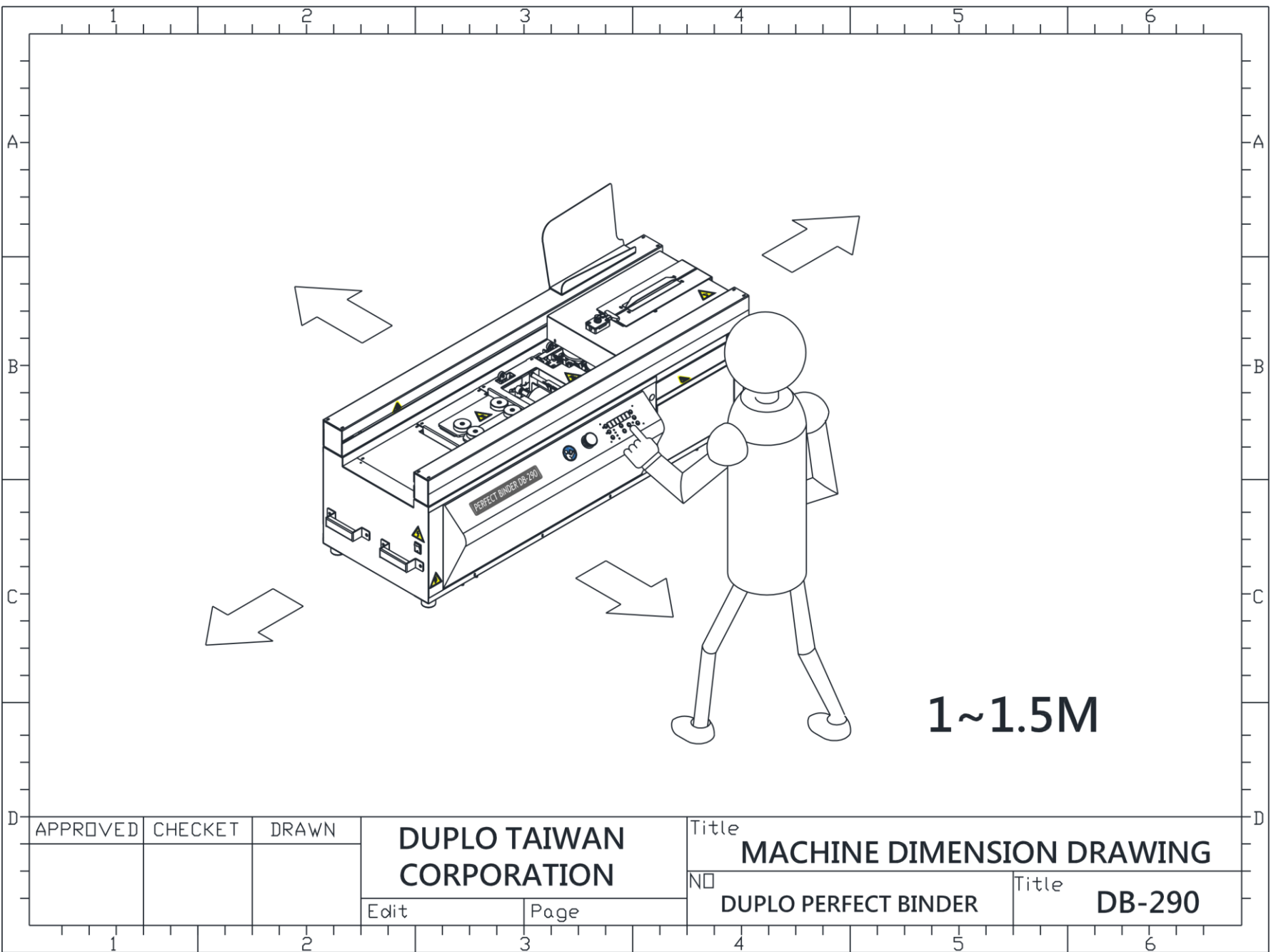
The plug is not excessively hot

The power cord is not damaged

The plug is firmly plugged into the outlet

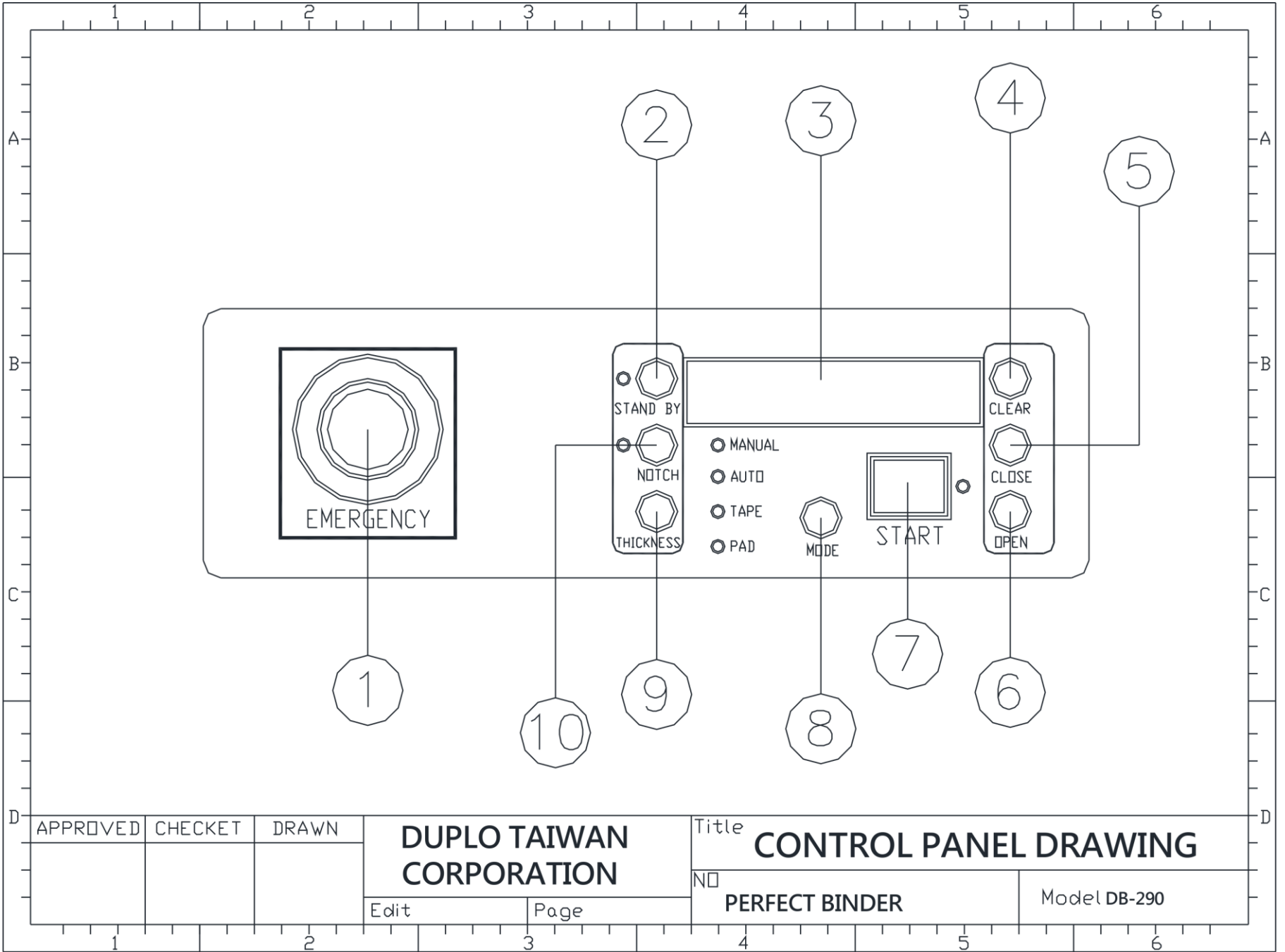
# 4 Operation

## 4.1 Operator Position (Drawing)





4.2 Control Panel



APPROVED	CHECKET	DRAWN	<b>DUPLO TAIWAN CORPORATION</b>	Title <b>CONTROL PANEL DRAWING</b>	
				NO	<b>PERFECT BINDER</b>
Edit		Page			

<u>No.</u>	<u>Name</u>	<u>Description</u>	<u>LED Display / Example</u>
1	EMERGENCY	Stop all the actions of the machine. Except when "HOT" shows on the LED DISPLAY.	"STOP" (flashing)
2	STAND BY / LED	Temporarily lowers the temperature of glue tank so it won't burn the glue when the machine is not operated.	STBY00
3	LED DISPLAY	The amount of books bound. 1)The amount of books bound. 2) Operating status. 3) Perform self-test and stir the hot melt glue. 4) Error messages.	____100  BIND S-TEST ERR = L1
4	CLEAR	Clear the display counter for books bound.	____0
5	CLOSE	Close clamp.	
6	OPEN	Open clamp.	
7	START / LED	Indicates the "START" button is ready for proceeding to the next operation.	
8	MODE / LED	Select one of the function modes - MANUAL, AUTO,TAPE, or PAD.	One of the mode indicators will be lit.
9	THICKNESS SWITCH	Switch thick book or thin book	LOAD THICK BOOK LOAD THIN BOOK
10	NOTCH / LED	Select the notching function during the bookbinding operation.	

### 4.3 Emergency Stop

When the emergency and Safety function is started, the machine will be stopped immediately and reset all commands, the motor is stopped too. During machining, if any malfunction occurs, press this switch to stop all motion. When restarting machine remember to turn this switch to the right to release it.



## 4.4 Operation Procedure

(Using the DB-290)

### START UP:

Turn ON the power switch of DB-290 as shown.

( where “I” for ON; “O” for OFF )

The heater of DB-290 will automatically heat the glue to the preset working temperature and display the status of the heating processes. The 4 leftmost spaces of LED: the status of heating process ( COLD, WARM, or HOT ). The 2 rightmost spaces of LED: The elapsed time of heating.

### Start melting the glue.

The status is COLD and the elapsed time is one minute for this example as shown.

### Melting glue is processing.

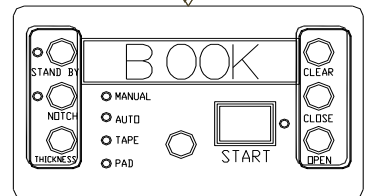
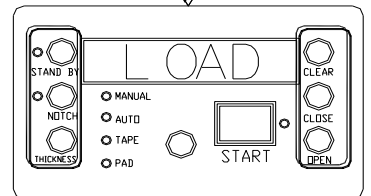
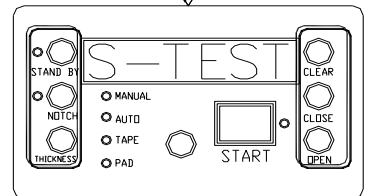
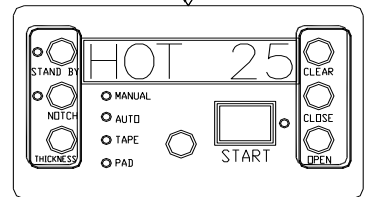
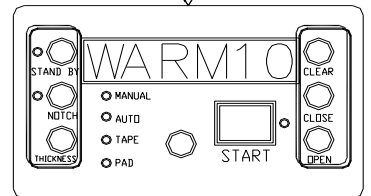
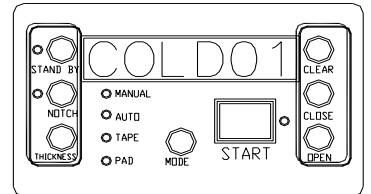
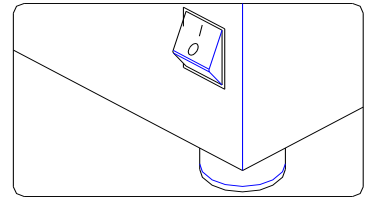
The status is WARM and the elapsed time is 10 minutes for this example as shown.

After heating for a while, the glue temperature has reached HOT status. The elapsed time is 25 minutes for this example as shown.

When the glue temperature has reached the working temperature, DB-290 performs the self-test and stirs the melting glue.

DB-290 is ready for bookbinding and set to MANUAL mode for your desired operation. At this moment, the control panel will display and flash "LOAD BOOK" for your attention.

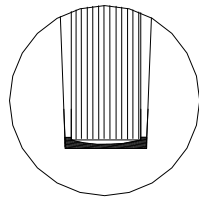
For binding operations, please refer to the MANUAL, AUTO, TAPE and PAD operations.



## 4.4.1 Glue Adjustment

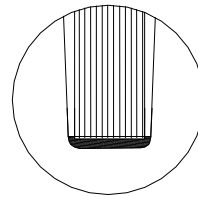
The glue level may require adjustment when the thickness of the book or pad varies. Use the following book spine illustrations for guidelines.

Increasing the hot-melt glue when



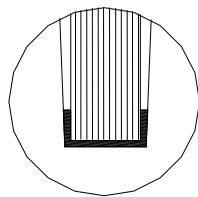
Hollow middle

OR



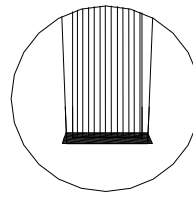
Round

Decreasing hot-melt glue when



Too much glue on both sides

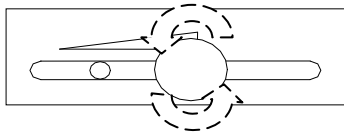
OR



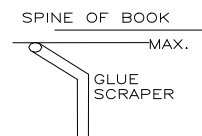
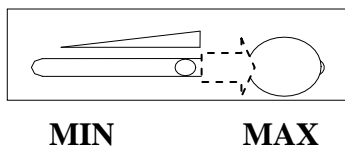
Nail head

Adjusting the glue level :

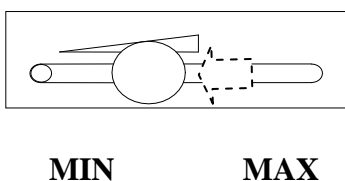
1. Turn the glue adjustment lock knob counter clockwise to loosen.



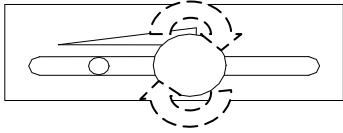
2. Increase the amount of glue by sliding the knob to the right at the appropriate position.



3. Decrease the amount of glue by sliding the knob to the left at the appropriate position.



4. Turn the knob clockwise to lock the setting



**Note that the thickness of the cover sheet is an important factor for you to make a good spine. Use only the suitable thickness of the cover sheet associated with the appropriate glue-meter position to make a good book.**

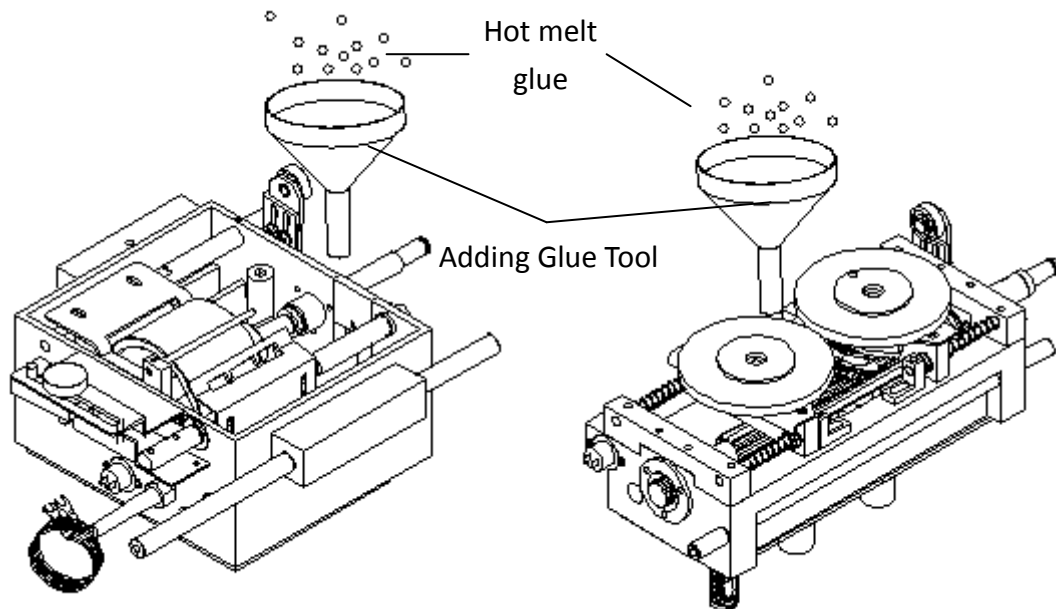
## 4.4.2 Replenishing Glue Tank

**CAUTION:** Great care must be taken when handling hot molten glue.

Be sure not to place an excessive amount of glue in the tank at one time. Keep it at such a level that the glue will not go over the redline in the tank while the application drum is rotating. This will prevent glue from spilling out of the tank

### Adding Glue

Please make sure that the glue should be added into the “Glue Adding Area”



### Glue Replacement

1. Warm up the DB-290 as described in the STARTUP section on page 5.
2. Make sure the draining tray is warped by Aluminum foil and positioned underneath the glue tank so that the tank drains into it.
3. Use the 6 mm Allen wrench to loosen (Counter Clockwise) the glue drain Allen screw, which is located on top of the glue tank.

**Do not attempt to remove the draining tray until the glue cools down.**

4. Close (Clockwise) the glue drain Allen screw when the glue stops flowing.
5. Add new glue to the glue tank. Be sure to keep the glue level not going over the red line.
6. Remove the glue drain tray and discard the cold drained glue.

Note that it's not necessary to drain the glue frequently if the machine is used constantly under normal working conditions. However, in case the glue has been left unused for a long period of time with the unit in the “ON” position, and the quality is found to be unacceptable, use the glue replacement procedures or call your authorized dealer.

### 4.4.3 Manual Mode

After the “STARTUP” procedures, the DB-290 will automatically set itself MANUAL and THICK status operation and flashing "BOOK -> LOAD -> THICK" display. Note that the “NOTCH” LED is ON.

Please refer to the “ 4.4.8 Thick/Thin Book Switch” to switch the thickness of the book.

- 1 (1) Press the “OPEN” button and place the book block inside the clamps. Be sure to follow the label instructions on the clamp to load the book block to the RIGHT of the red line, then slide the book block to the far LEFT of the clamps and you will see the flashing "PUSH CLOSE" display.

**Step 1:**

Load book to the  
RIGHT of the red line.

**Step 2:**

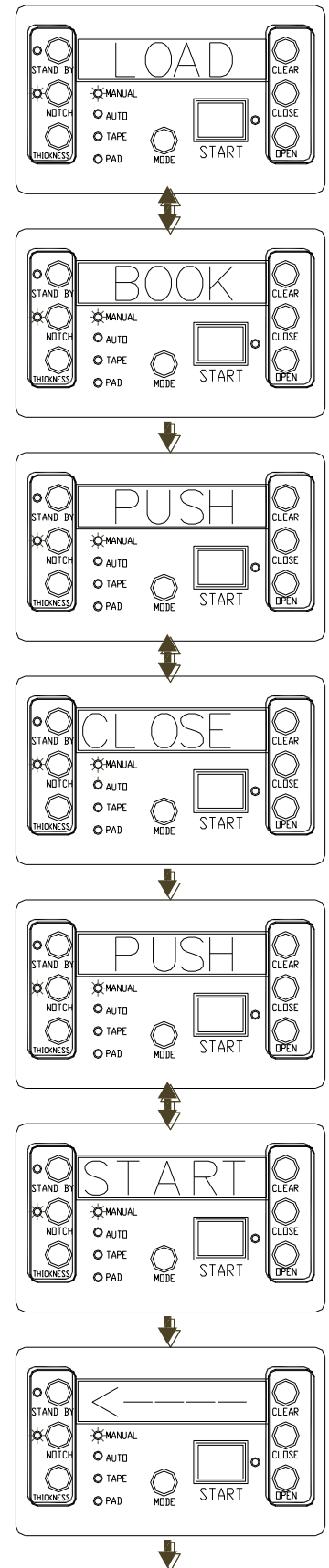
Slide the book to  
The far LEFT.

- (2) Then press the “CLOSE” button to clamp down the book block and you will see the flashing "PUSH START" display.

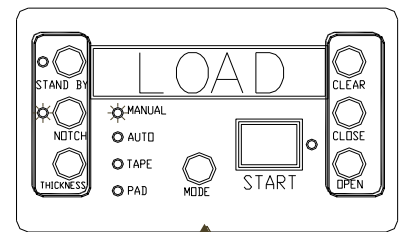
**Note:**

In case you need to adjust the book block after you have closed the clamps, you can press the "OPEN" button twice to release it. The LED display will show "PUSH CLOSE". After you have adjusted the book block, you have to press "CLOSE" button until the clamps close. Then you will see the flashing "PUSH START" display again.

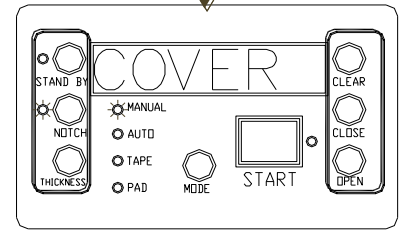
- (3) Press the “START” button. The LED display of control panel will show a “←” sign and the clamp station will move over the notching station for notching.



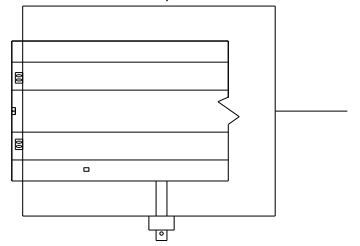
2 After the first notching process, the clamp station will remain to the left side of DB-290 and the LED display of the control panel will display and flash "LOAD COVER".



3 Center the cover sheet and adjust the side guide:  
Measure the width of the book plus half the thickness of the spine. Then set side guide accordingly.

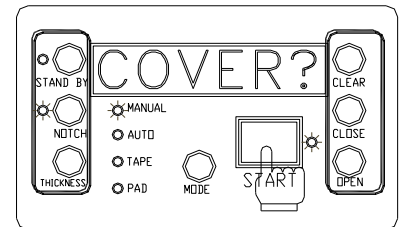


4 Place the cover on the nipping station, the "START" LED will be lit and flashing "PUSH START". Then press the "START" button to move the clamp station over the nipping station starting the binding process for the book block and cover sheet.

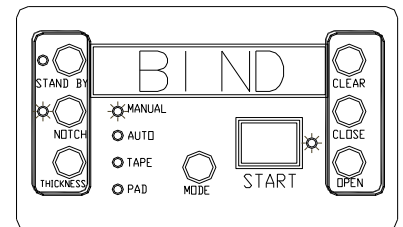


**Note:**

If you accidentally remove or drop the cover sheet during the clamping station returning to the nipping station, the control panel will show "COVER?". At this moment, you have to place the cover on the nipping station and press "START" button to resume the process.

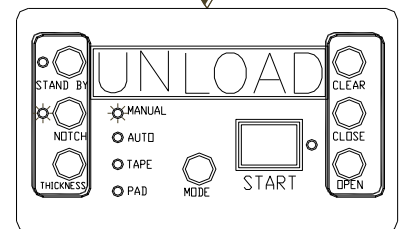


5 The clamps will automatically open. Then, remove the finished book from the right end of the clamp station.



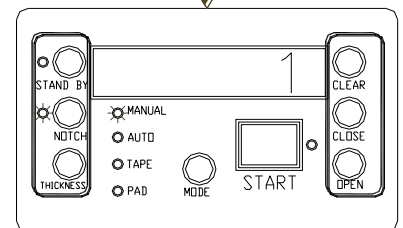
Having completed one bound book, the LED display of control panel will count once for the total binding amount as shown.

Then the control panel will display and flash "LOAD BOOK" for binding next book.



6 In the "MANUAL" operation to start to make the second book, and load the book block to the RIGHT of the red line, then slide the book block to the far LEFT of the clamps, then the clamps will automatically close and the control panel will show "START"; please repeat step 3 to 5 for more books.

Please refer to the "4.4.8 Thick/Thin Book Switch" to switch the thickness of the book.





## 4.4.4 Auto Mode

**Note:** All books done in this mode must be same thickness.

1 In the MANUAL mode, make one book.

Before making this book, you can still switch the thickness

Please refer to the “ 4.4.8 Thick/Thin Book Switch” to switch the thickness of the book.

Centering the cover to the centered point and adjust the side guide.

2 Press “MODE” button to switch to “AUTO” operation. The “AUTO” LED will be lit and display flashing "LOAD BOOK" as shown. **Note:** The “NOTCH” LED is ON

Step 1:  
Load book to the  
RIGHT of the red line.

Step 2:  
Slide the book to  
The far LEFT.

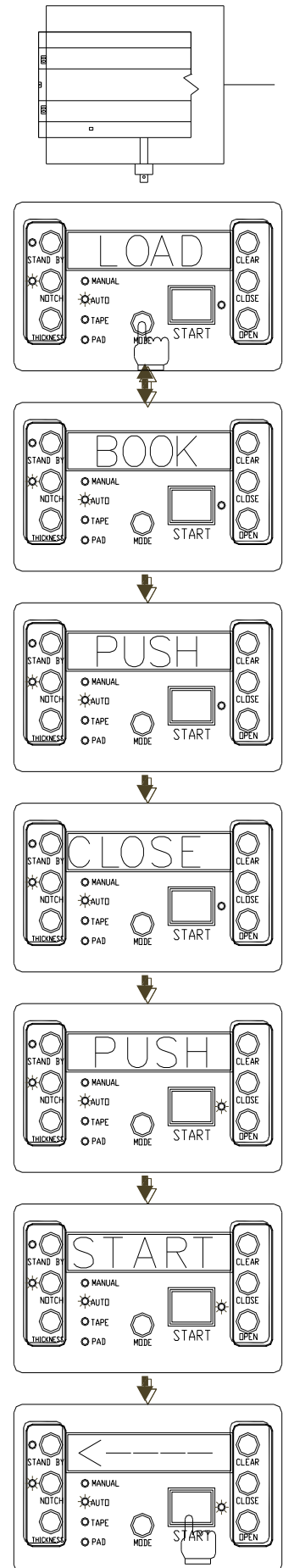
3 (1) Press the “OPEN” button. Be sure to follow the label instructions on the clamp to load the book block to the RIGHT of the red line, then slide the book block to the far LEFT of the clamps and you will see the flashing "PUSH CLOSE" display.

(2) Then press the “CLOSE” button to clamp down the book block and you will see the flashing "PUSH START" display.

**Note:**

In case you need to adjust the book block after you have closed the clamps, you can press the "OPEN" button twice to release it. The LED display will show "PUSH CLOSE". After you have adjusted the book block, you have to press "CLOSE" button until the clamps close. Then you will see the flashing "PUSH START" display again.

(3) Press the “START” button. The LED DISPLAY of control panel will show the “←” sign. The clamp station will move to the left side of DB-290 and will remain there.

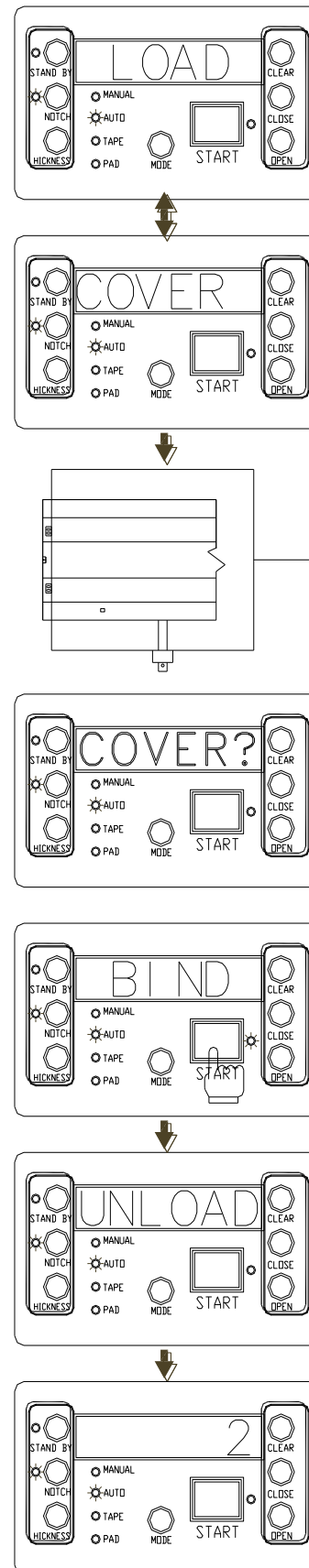


- 4 Place the cover sheet onto the nipping station when the display flashing "LOAD COVER". The clamp station will automatically move back to the position above the nipping station and start the binding process for the book block and cover sheet.

**Note:**

If you accidentally remove or drop the cover sheet during the clamping station return to the nipping station, the control panel will show "COVER?". At this moment, you have to place the cover on the nipping station and press "START" button to recover the process.

Having completed one bound book, the clamp will automatically open and display "UNLOAD" so that you can remove the finished book from the right end. Meanwhile, the LED display of control panel will count once for the total binding amount as shown. The DB-290 will flash "LOAD BOOK" display.



- 5 Place the same thickness of book block onto the clamp as the label instructions on the clamp. The clamp station will automatically clamp down the book block and move to the left. Repeat step 5 to 4 for more books in "AUTO" operation.

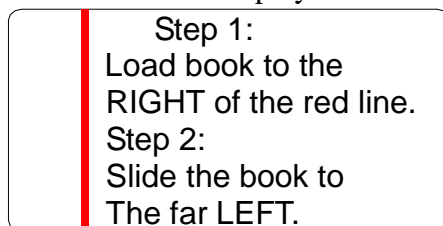
## 4.4.5 Tape Mode

- 1 Before use Tape Mode, two option parts are needed to be firstly installed. (Please refer to the Page 51)
- 2 In the MANUAL mode, make one book.  
Before making this book, you can still switch the thickness  
Please refer to the “ 4.4.8 Thick/Thin Book Switch” to switch the thickness of the book.  
Centering the cover to the centered point and adjust the side guide.
- 3 Press “MODE” to transfer to the operation of “TAPE” . The LED indicator will be ON and “LOAD BOOK” will show and be flashing as the picture.

### Note:

The operation is the same with the modes of “AUTO” and “MANUAL” , please load the tape on the correct location and press “START” .

Press the “OPEN” button and place the book block inside the clamps. Be sure to follow the label instructions on the clamp to load the book block to the RIGHT of the red line, then slide the book block to the far LEFT of the clamps and you will see the flashing "PUSH CLOSE" display.

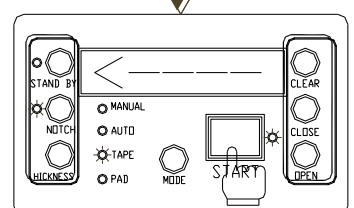
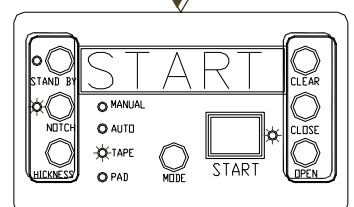
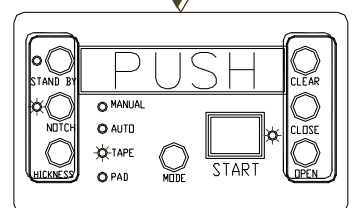
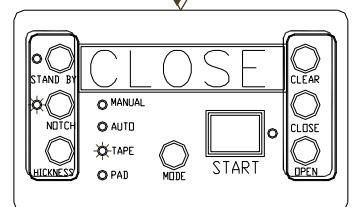
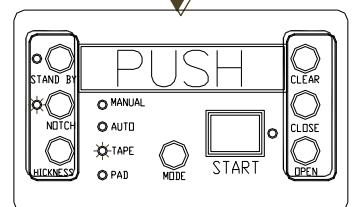
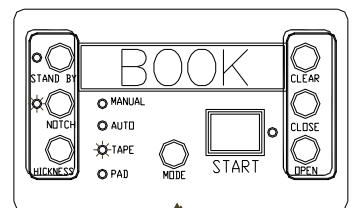
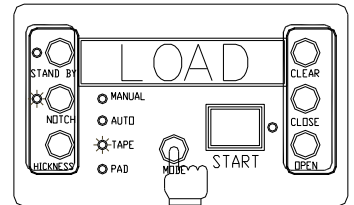
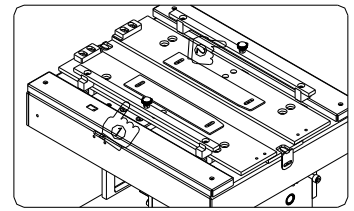


- 5 Press the “OPEN” button. Be sure to follow the label instructions on the clamp to load the book block to the RIGHT of the red line, then slide the book block to the far LEFT of the clamps and you will see the flashing "PUSH CLOSE" display.  
Then press the “CLOSE” button to clamp down the book block and you will see the flashing "PUSH START" display.

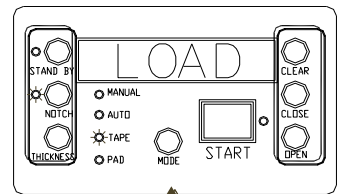
### Note:

In case you need to adjust the book block after you have closed the clamps, you can press the "OPEN" button twice to release it. The LED display will show "PUSH CLOSE". After you have adjusted the book block, you have to press "CLOSE" button until the clamps close. Then you will see the flashing "PUSH START" display again.

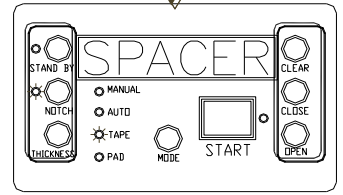
Press the “START” button. The LED DISPLAY of control panel will show the “←” sign. The clamp station will move to the left side of DB-290 and will remain there.



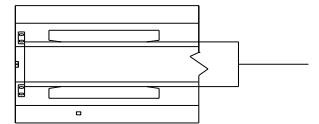
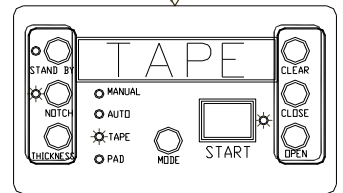
6 When the clamp station moves to the left hand side and to be notched for one time, the clamp station will stay there, the panel will show "LOAD SPACER LOAD TAPE PUSH START" .



7 Load tape to the correct position and press "START" button, the clamp station will move from left hand side to right hand side.



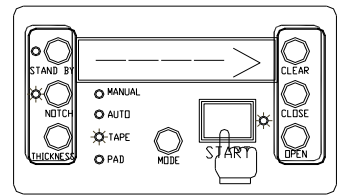
8 After the clamp station moves to the position of right hand side, the nipping plate will nip the tape and book block tightly, the panel will show "BIND".



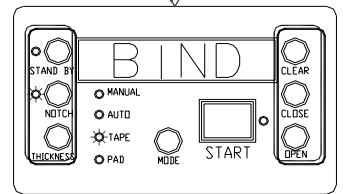
9 The clamps will automatically open. Then, remove the finished book from the right end of the clamp station.

Having completed one bound book, the LED display of control panel will count once for the total binding amount as shown.

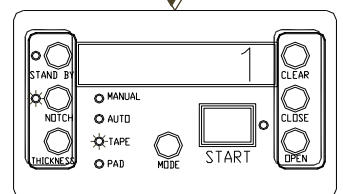
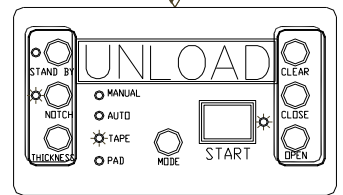
Then the control panel will display and flash "LOAD BOOK" for binding next book.



1 In the "TAPE" operation to start to make the second book, and  
0 load the book block to the RIGHT of the red line, then slide the book block to the far LEFT of the clamps, then the clamps will automatically close and the control panel will show "START"; please repeat step 3 to 9 for more books.



Please refer to the " 4.4.8 Thick/Thin Book Switch" to switch the thickness of the book.



## 4.4.6 Padding Mode:

“PAD” is one of the DB-290 operations that apply to special binding applications such as binding without cover sheet.

- 1 Press “MODE” button to switch to “PAD” operation. The “PAD” LED will be lit and display flashing "LOAD PAD" as shown.

**Note:**

The “NOTCH” LED is normally OFF. But you can press “NOTCH” button to actuate it, if desired.

- 2 (1) Press the “OPEN” button. Be sure to follow the label instructions on the clamp To load the pad block to the RIGHT of the red line, then slide the pad block to the far LEFT of the clamps and you will see the flashing "PUSH CLOSE" display.

Step 1:  
Load book to the  
RIGHT of the red line.

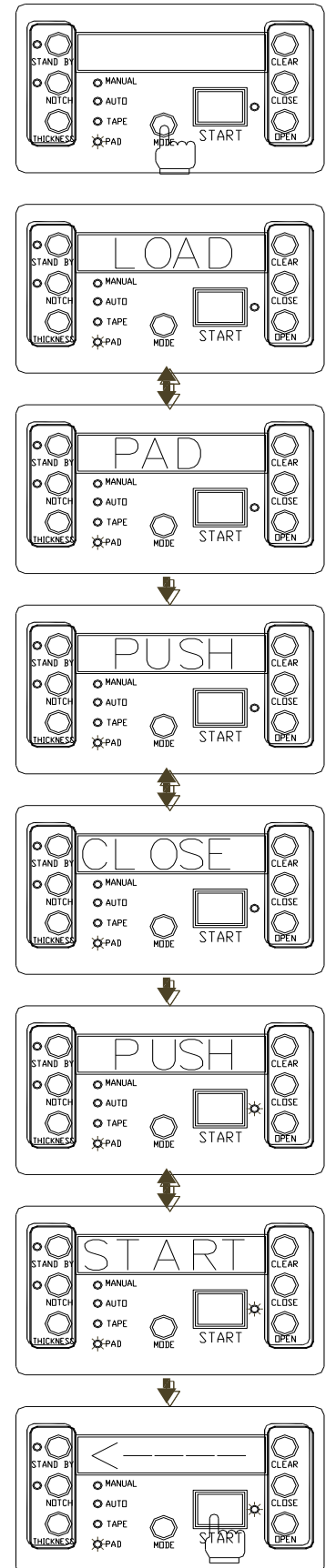
Step 2:  
Slide the book to  
The far LEFT.

- (2) Then press the “CLOSE” button to clamp down the pad block and you will see the flashing "PUSH START" display.

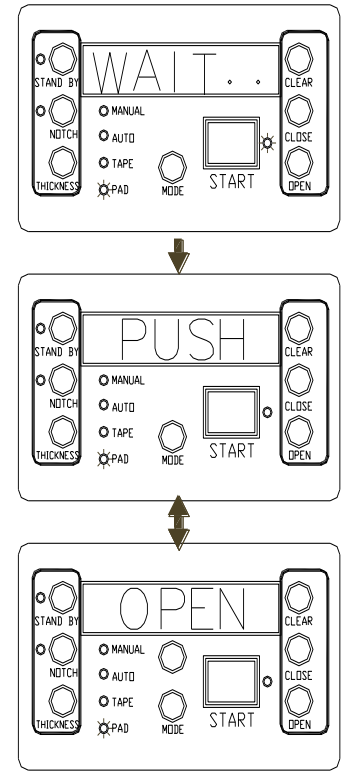
**Note:**

In case you need to adjust the pad block after you have closed the clamps, you can press the "OPEN" button twice to release it. The LED display will show "PUSH CLOSE". After you have adjusted the pad block, you have to press "CLOSE" button until the clamps close. Then you will see the flashing "PUSH START" display again.

- 3 (1) Press the “START” button. The LED display of control panel will show a “←” sign and the clamp station will move over the notching station and return to clamp station.



- (2) Having moved to the left position of DB-290, the clamp station will automatically move back to the right position and display "WAIT..".
- (3) Wait for a few seconds until the LED display of control panel displays "PUSH OPEN" as shown.



- 4 Then press the "OPEN" button to open the clamp so that you can withdraw the bound pad block. Meanwhile, the LED display of control panel will count once for the total binding amount. Then the control panel will display and flash "LOAD PAD" for padding next pad.

**Note:**

If glue is too thick on spine, adjust thickness in accordance with (G) Glue Adjustment.

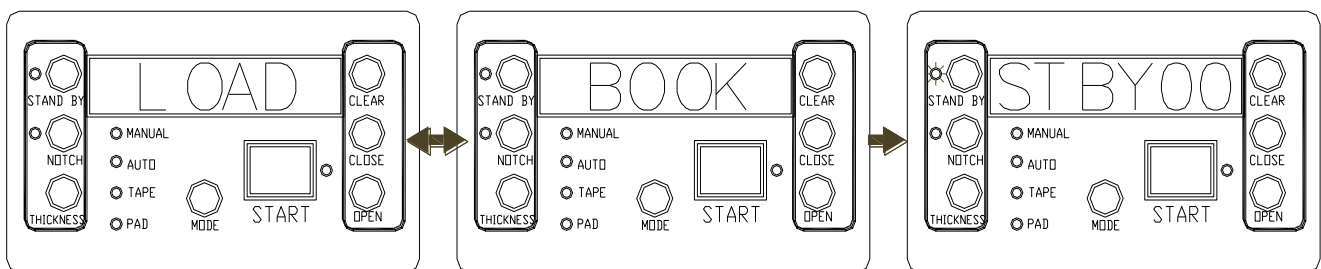
- 5 Repeat step 2 to 4 for more books in "PAD" operation.

### 4.4.7 Standby Mode

Press "STANDBY" button, the DB-290 will temporarily lower the temperature of glue tank so it won't burn the glue when the machine is not operated. The LED displays "STBY00" as shown below. Where "00" is the timer display for the duration of the standby period.

Press "STANDBY" button again when the "STANDBY" LED is on, the DB-290 will reheat the glue tank to the working temperature, then the "READY" LED will be lit and waiting for your desired operation.

Note that you have to wait a few minutes when LED displays "WARM00" status. The glue tank of DB-290 will be reheated, then the control panel will display and flash "LOAD BOOK".



## 4.4.8 Thick/Thin Book Mode Switch

Thick book and thin book mode are both available for this machine

Noted: If the thickness of the finishing book is thicker than 1.2cm, please select "THICK" book.

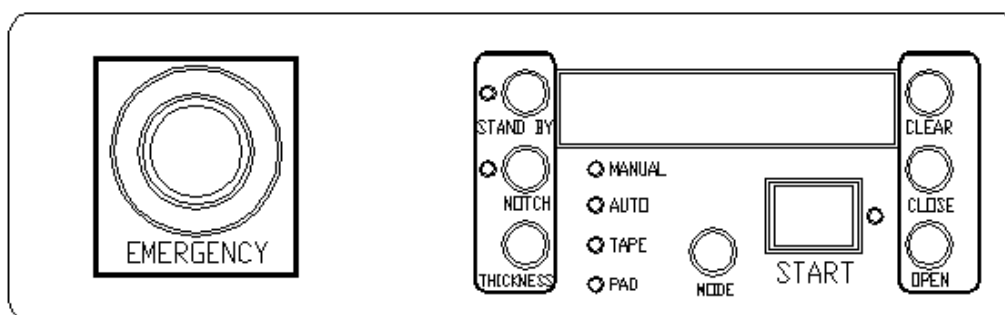
If the thickness of the finishing book is thinner than 1.2cm, please select "THIN" book.

### How To Switch between Thick and thin mode:

When you power on the machine, the default setting is Thick Book mode. Even if an operator power off the machine in Thin Book mode.

### For Thick Book

1. After power on and warm up the machine, the display will show LOAD || THICK || BOOK as default.
2. In this case, the finishing is in Thick Book mode, it doesn't matter whether the machine is in Manual / Auto / Padding / Tape Mode.



### Switch from Thick book mode to Thin Book mode

1. Return to "Manual Mode" (only in this mode the thickness can be switch in between thick and thin)
2. Press THICKNESS key one time, then the display will show "THIN BOOK" repeatedly.
3. Press START key to confirm your mode switching. (without START key the mode will NOT switch)
4. Nipping station will automatically perform a search cycle for its thin mode position.
5. After the search cycle is completed, the display will show LOAD || THIN || BOOK, which indicates thickness mode switching, has been completed.
6. After setting thickness mode, you can then change the operating mode as needed.(Manual, Auto, Tape...)

### Switch from Thin Book to Thick book

1. Return to "Manual Mode"
2. Press THICKNESS key one time, then the display will show "THICK BOOK" repeatedly.
3. Press START key to confirm your mode switching.
4. Nipping station will automatically perform a search cycle for its thick mode position.
5. After the search cycle is completed, the display will show LOAD □ THICK □ BOOK, which indicates thickness mode switching, has been completed.
6. After setting thickness mode, you can then change the operating mode as needed.(Manual, Auto, Tape...)

### Noted: When can you switch thickness mode?

- Only in Manual operating Mode.
- In Auto operating Mode, you can only switch the thickness mode before making the first book. After you have made the first book, you cannot switch the thickness mode any more. If you still need to switch the

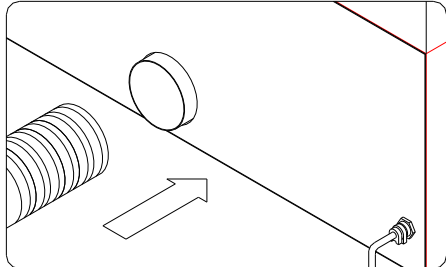
thickness mode in this case, please return to the Manual operating Mode and then switch the thickness mode accordingly.

- In Tape operating Mode, you cannot switch thickness mode.
- In Padding operating Mode, you cannot switch thickness mod

#### 4.4.9 VACUUM DUST REMOVAL SYSTEM

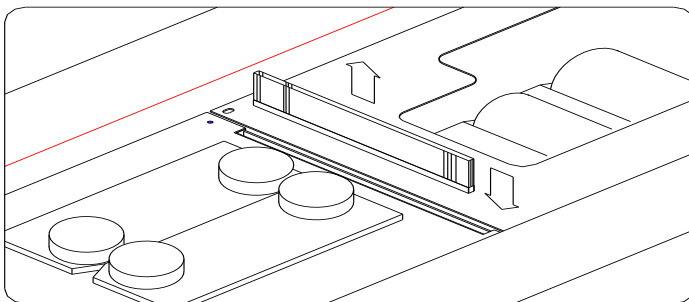
When blade cutting , it brings paper dust, so use vacuum dust removal system to clean.

The vacuum pipe size :4”



#### 4.4.10 THE BRUSH

**ATTENTION : DO NOT PUT HANDS CLOSE TO GLUE TANK**



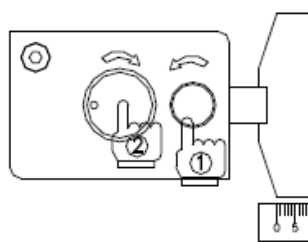
#### 4.4.11 CASING UNIT CONTROL

The casing unit is used for adjusting the distance between book sheets and hard cover ,

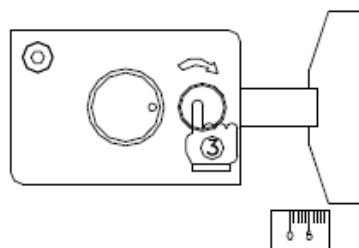
Adjusting range 0~10mm

Tuning angle 0~180degrees

Release the M4 screw first, after adjusting tight the M4 screw.



The hard cover side is align with the book sheet in normal



After adjusting casing unit, there is a distance between hard cover and book sheets.

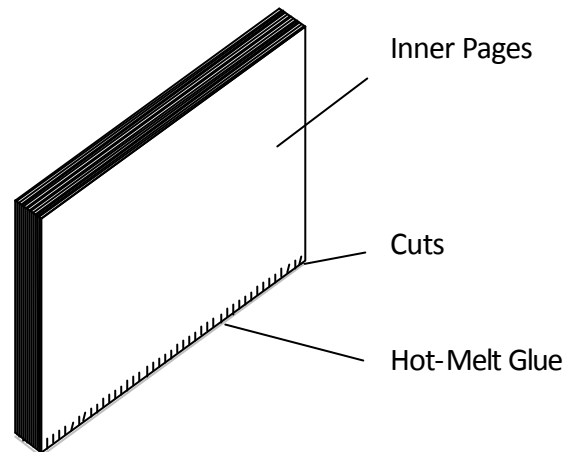


## 4.5 Adjustment of the Machine/Components

### 4.5.1 Notching Station

#### Function

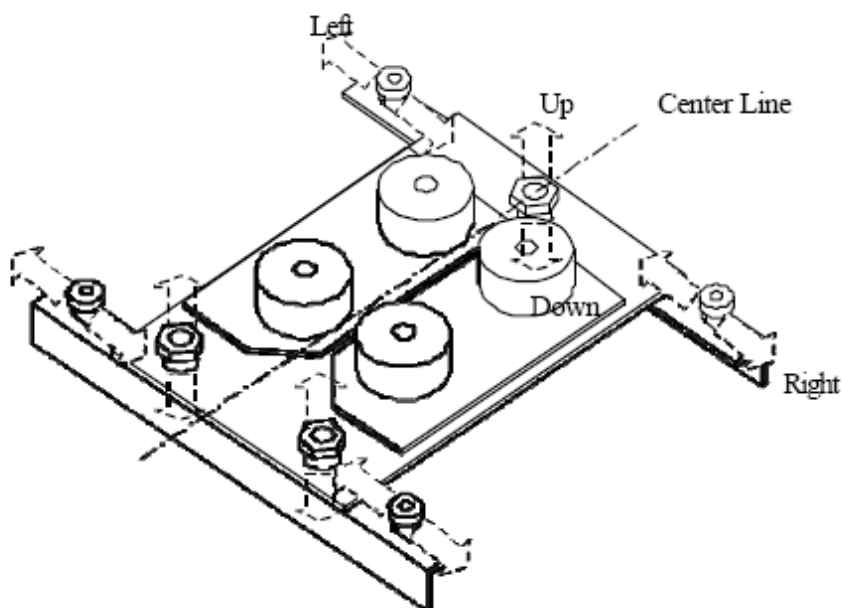
The purpose of notching is to enhance the solidification of the bookbinding. The notching blade makes numerous cuts on the spine of the book so that the melted glue can penetrate the binding area.



#### Adjustment

In order to get appropriate depth of the cuts and the precision of the center path for clamp station, the notching station can be adjusted to the up, down, right, and left positions as shown. Note that notching surface should be adjusted evenly on both sides to prevent tilting the notching surface. Otherwise, the cuts of the book will have one side deeper than the other. The standard depths of the cuts are 1 mm evenly on the spine of the book.

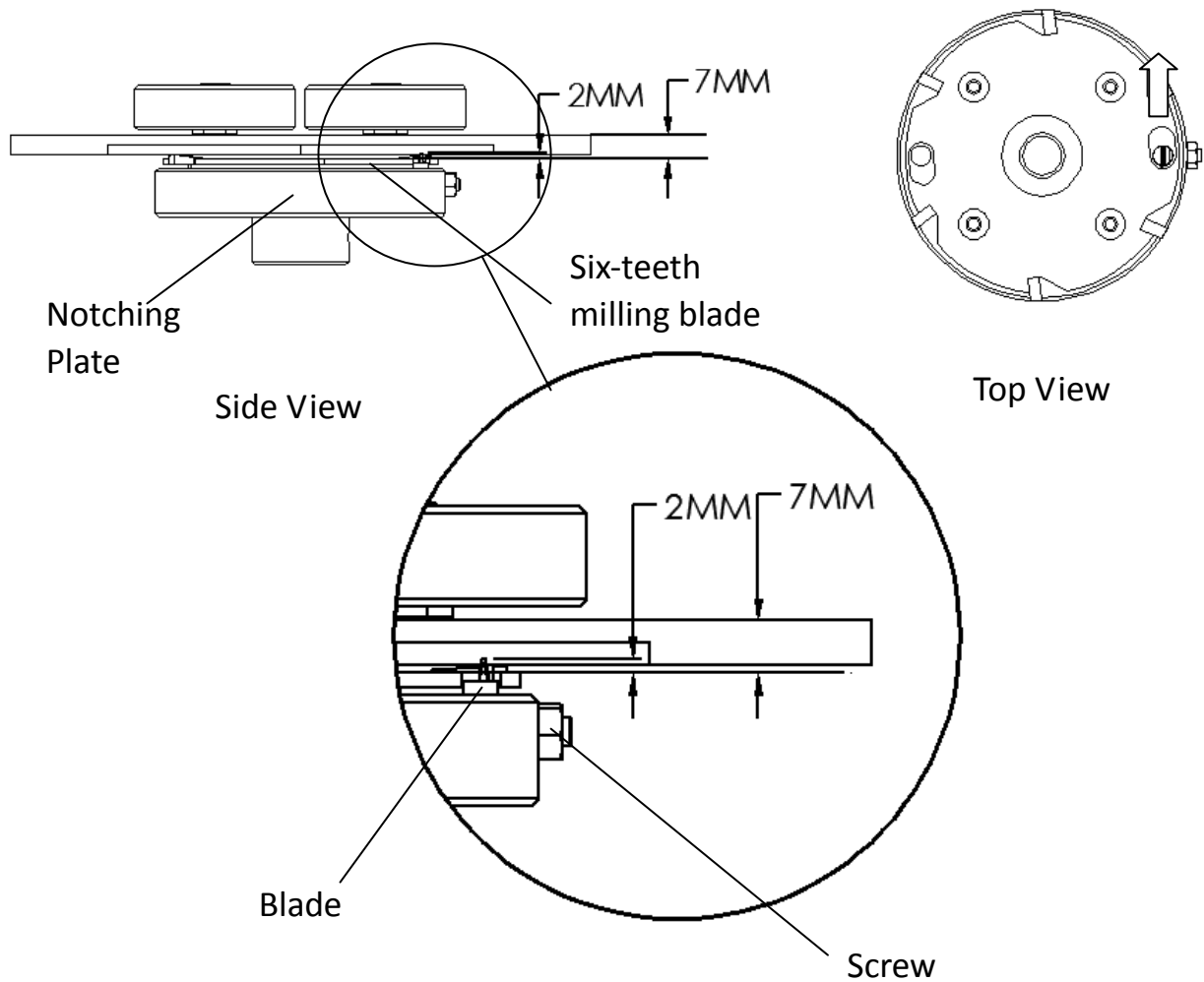
You also can lift up the notching station to gain the depth of the cuts when the blade has been worn out a little bit. Or you have to change the blade.



## Replace New Blade

1. Open one side of Notching Cover
2. Loosen the screw of blade and remove the old blade
3. Install the new blade as the picture below, then set the height between the level of six-teeth milling blade and the peak of notching blade 2mm
4. Fix the screw of blade.

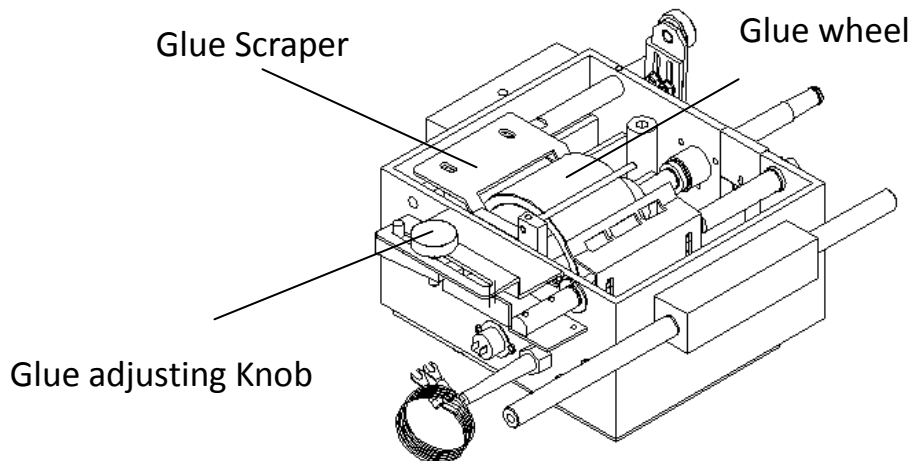
The direction of rotation of the notching blade (CCW)



## 4.5.2 Glue Tank

### Function

Providing a layer of melted glue on the spine of the book so that cover and pages can be bound together .  
The glue scraper of glue tank controls the quantity of the melted glue on the glue drum while the glue meter controls the thickness of melted glue that is applied to the spine



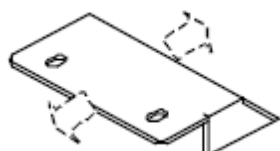
### Adjustment

#### Adjusting the gap for the glue meter:

- 1.) Set the glue-adjusting knob to the left ( MIN ) position
- 2.) Use a ruler from the surface of the nipping station across the glue tank as shown on the following page. The ruler should touch the glue meter. Then measure the distance between the ruler and the peak of glue drum. Note that the standard gap between the ruler and the peak of glue drum is 3 to 4 mm.

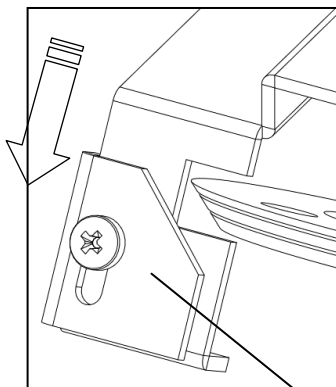
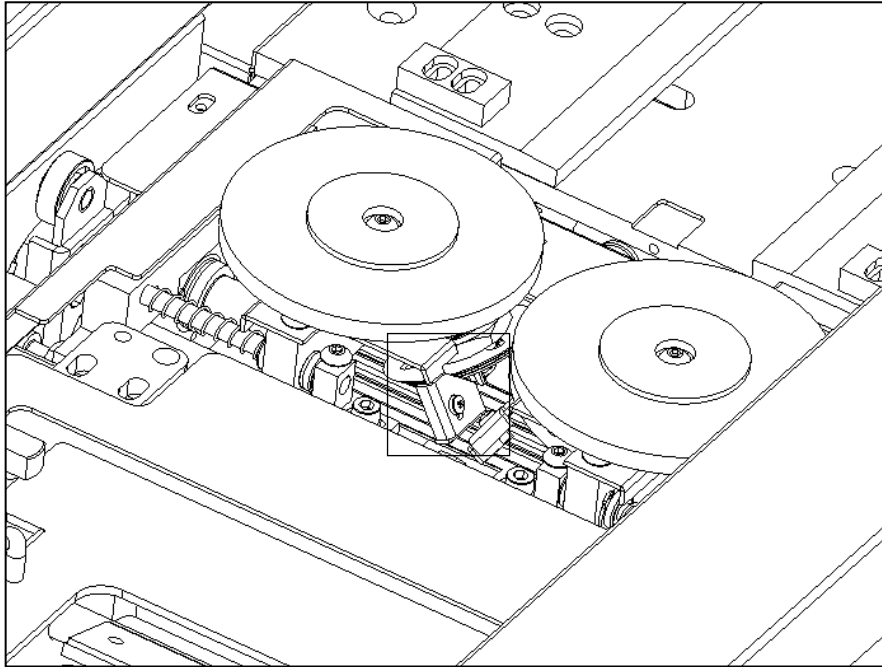
#### Adjusting the gap for the glue scraper:

- 1.) Loosen the two screws on the glue scraper.
- 2.) Measure the distance between glue scraper and the glue drum as shown. Note that the standard gap between glue scraper and the glue drum is 2 mm.
- 3.) Tighten the screws.

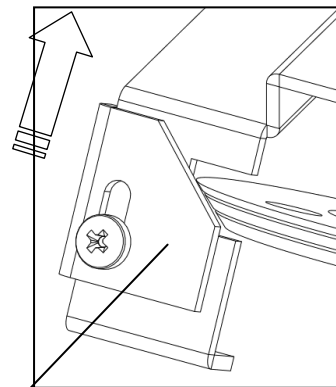


## Adjusting the quantity of glue of the side gluing tank

When the glue quantity of side gluing is abnormal, please fine adjust the side glue scraper to adjust the quantity of gluing.



Increase the quantity of glue

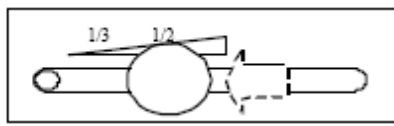


Decrease the quantity of glue

Side Glue Scraper

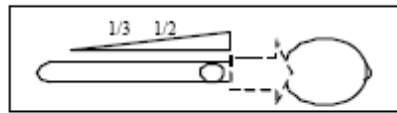
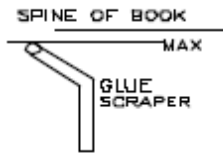
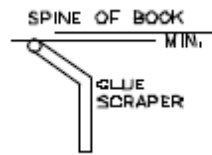
## Setting the glue -adjusting knob to the appropriate positions:

Normally, the indicator is set at  $\frac{1}{3}$  to  $\frac{1}{2}$  of the arrow mark.



MIN

MAX

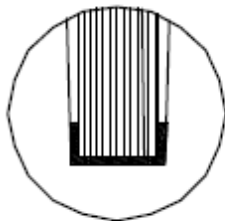


MIN

MAX

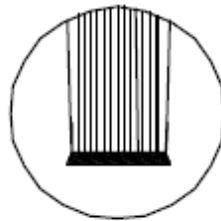
**Controlling the quality of a book by means of the glue meter: Note that the thickness of the cover sheet is an important factor for you to make a good spine. Use only the appropriate thickness of cover sheet to make a good book.**

1.) Decrease the melted glue when:



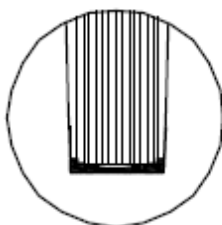
Too much glue on both sides

OR



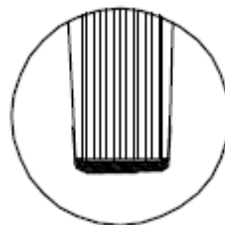
Nail Head

2.) Increase the melted glue when:



Hollow Middle

OR



Round

## 4.5.3 Nipping Station

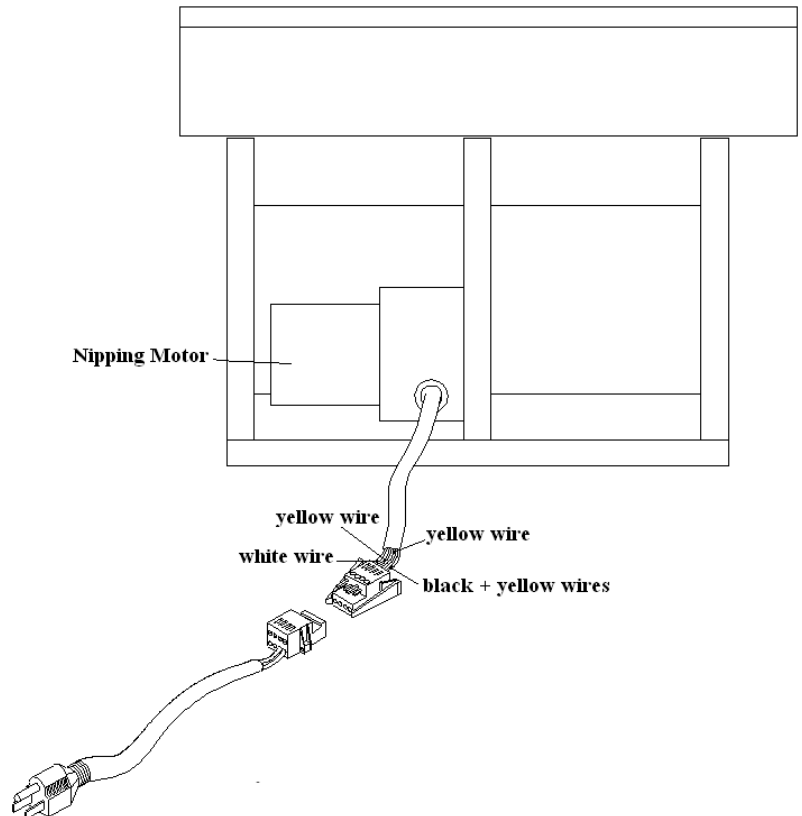
### Function

Provided a flat surface for the book block, when there are being placed into the clamp station. It also provides the nipping force to form the cover around the spine of the book

### Adjustment

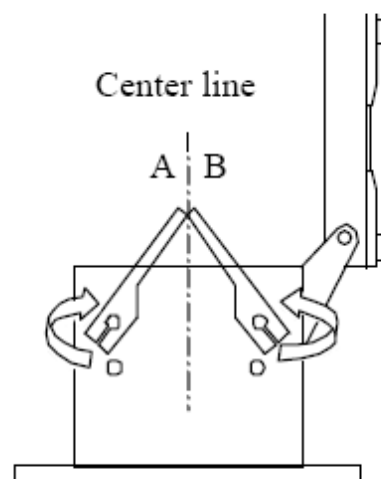
Noted: the nipping swing arms are locked by motor. Before you adjust the nipping swing arms, you should release the brake of motor by connecting a power supply as the picture shows.

- 1.) During the nipping process, the nipping plates must exert an even pressure on the cover in order to form a spine
- 2.) The nipping swing arms provide this pressure



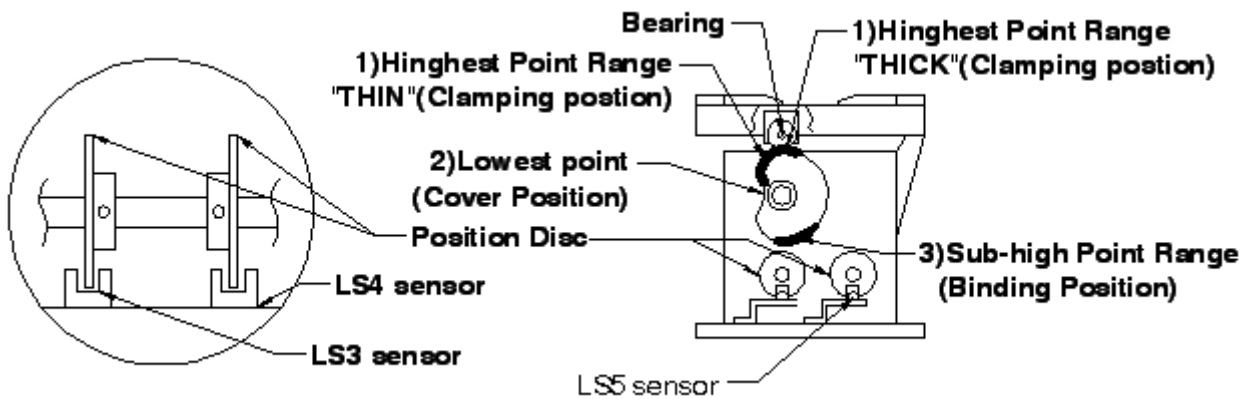
Open the nipping station, then turn the swing arms counter-clockwise to the position shown. The swing arms must touch together at the centerline as shown.

If not, they need to be adjusted.



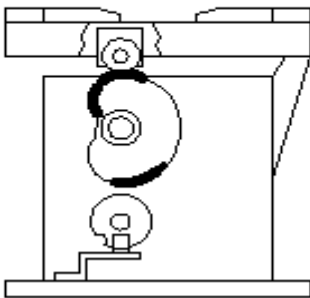
## Position change on the position disc of nipping station

There are three positions of the nipping station for executing the clamping, the cover, and the nipping processes. The LED of the sensor (LS3 or LS4) goes on when the notch of position disc travels through the trench of the sensor as shown below:

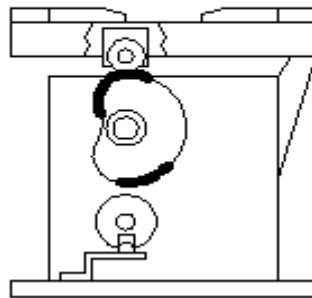


1.) **Clamping:** when the bearing is at the highest point (THICK)

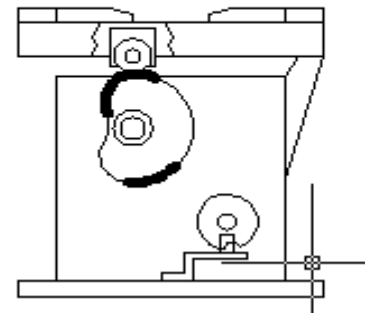
**LS3 OFF**



**LS4 ON**

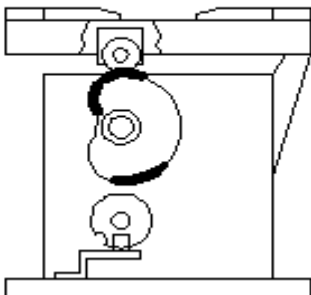


**LS5 OFF**

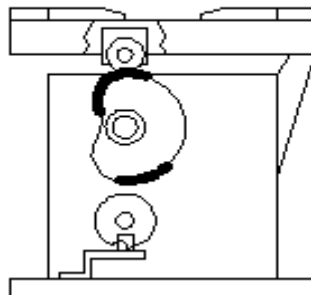


**Clamping:** when the bearing is at the highest point (THIN)

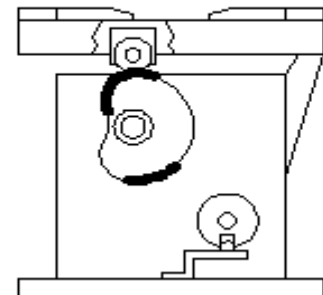
**LS3 OFF**



**LS3 OFF**

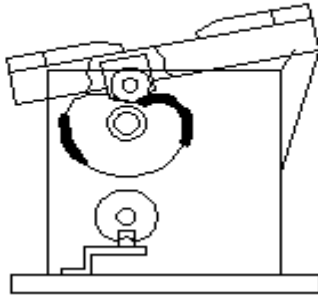


**LS5 ON**

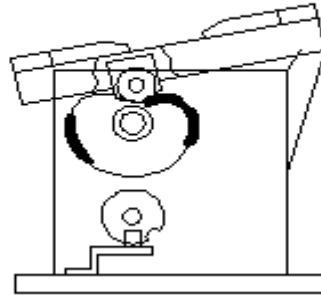


2.) **Cover:** when the bearing is at the lowest point

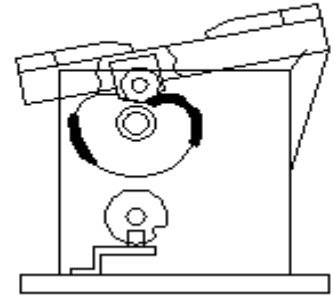
**LS3 ON**



**LS4 OFF**

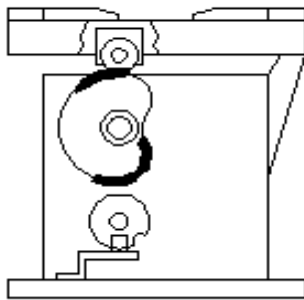


**LS5 OFF**

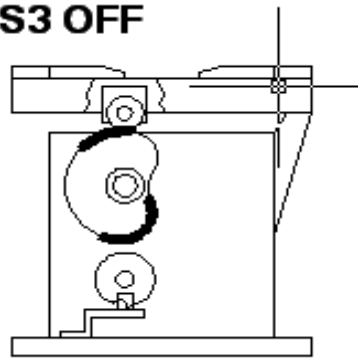


3.) **Nipping:** when the bearing is at the sub-high point

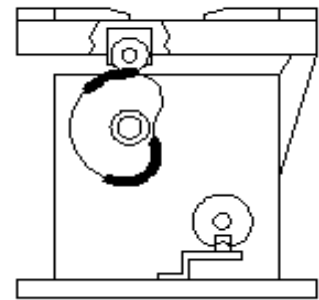
**LS3 OFF**



**LS3 OFF**



**LS5 OFF**

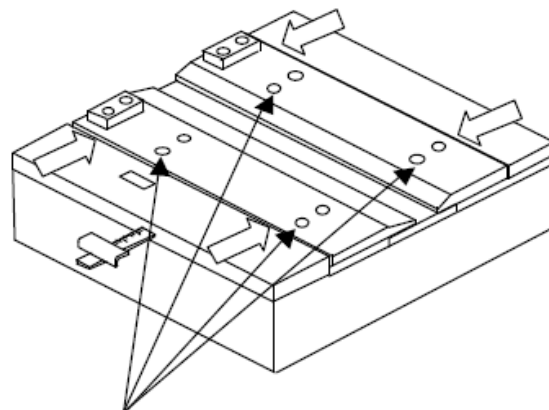


**If the spine is not being nipped evenly, adjust the nipping plates as follows:**

#### **Adjusting on the Nipping Plates**

1.) Push each side of nipping plates to find out which side is too tight.

2.) Then use the nipping plate screws to do the fine adjustment until both sides have the same tension. Note that you can use the "MOTOR2" or "TEST2" to verify the nipping plate position before tightening them.



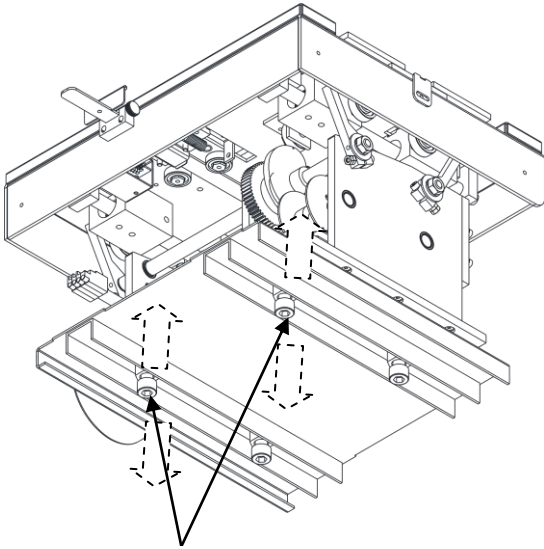
**Nipping plate adjustment screws**



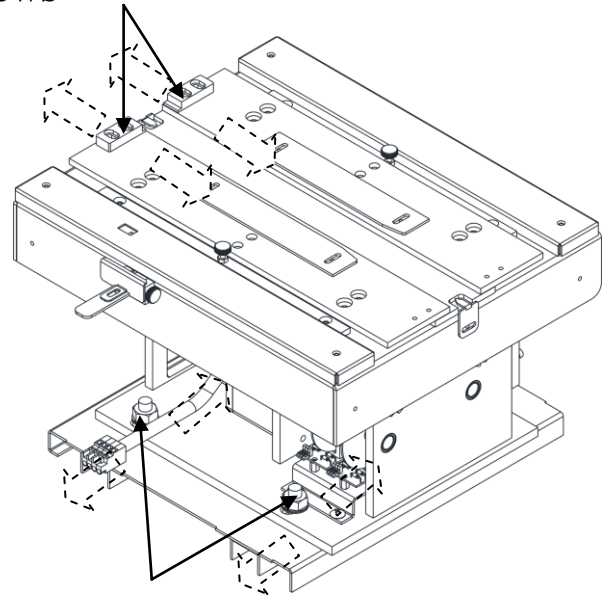
## Position Adjustments on Nipping Station

(A) The level of nipping station should be adjusted evenly on the corresponding ends to prevent tilting the nipping station surface, by level adjusting screws. (B) The centerline of the nipping station must match the projected centerline of the clamp station by the front/rear adjusting screws. (C) The position of cover can be adjusted by the cover position adjusting screws, along with the position of LS1.

### (C) Cover Position Adjusting Screws



**(A) Level Adjusting Screws**  
(2 of them on each side)

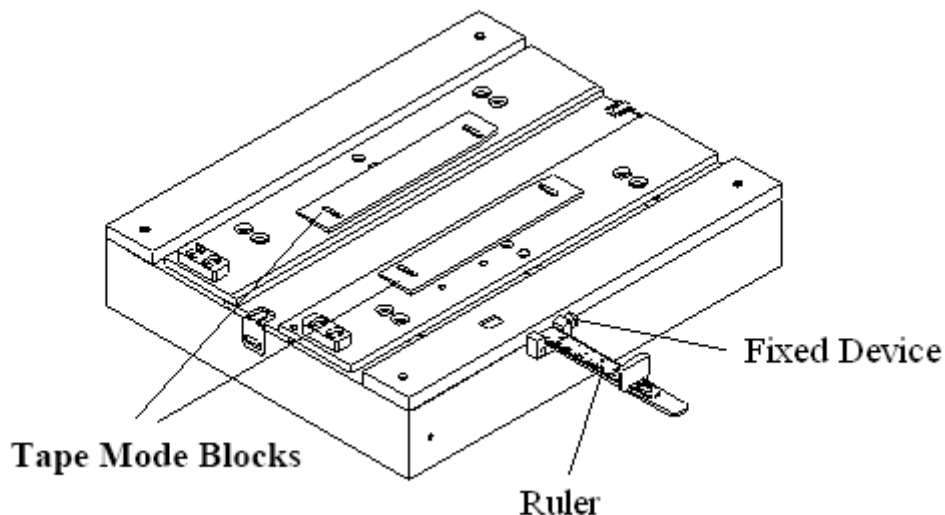


**(B) Front/Rear Adjusting Screws**  
(2 of them on each side)

## TAPE MODE BLOCKS Adjustment / Cover Position Fixed ruler

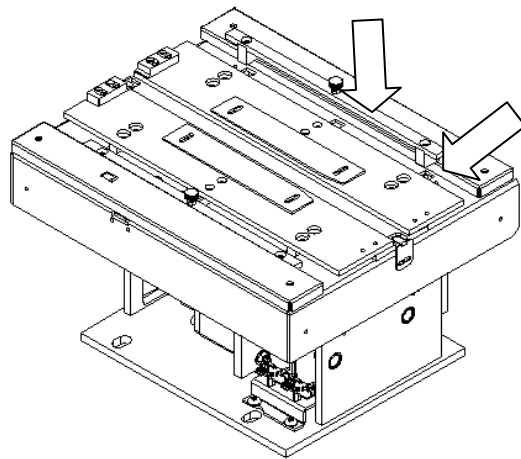
**TAPE mode** using tape instead of cover blocks adjusting was as the cover center adjusting. Please install blocks first before your adjustment.

**Cover position fixed ruler** can be pulled out to fix your covers position. **Fixed device** can fix the ruler firmly in the place you want.

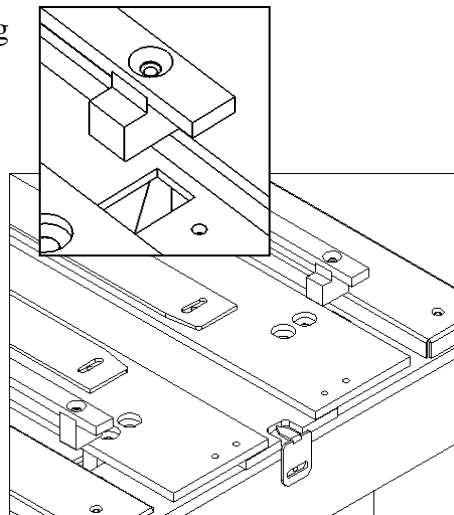
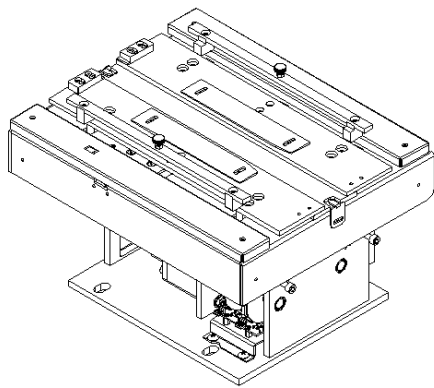


## Install the spacers for “TAPE” mode

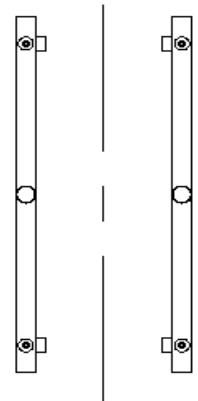
Push the nipping plates toward the center of nipping station and load spacers for tape.



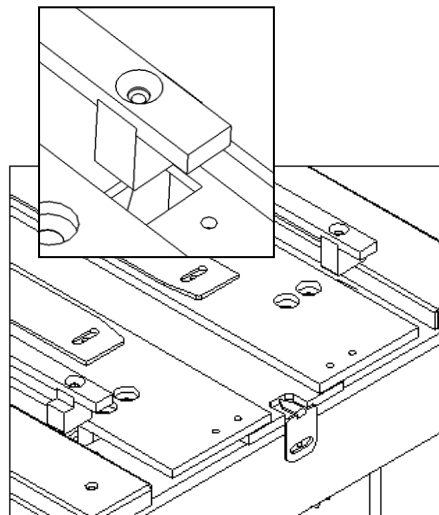
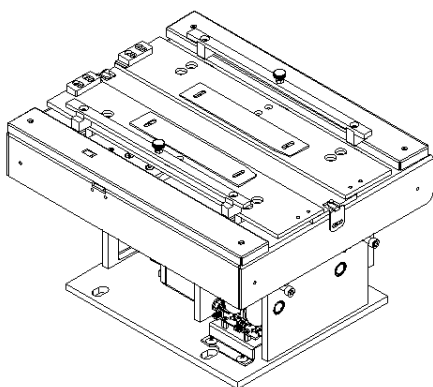
When using the 30 mm tape to make books, load spacer into the main body of nipping station by the projecting side toward the center of nipping station.



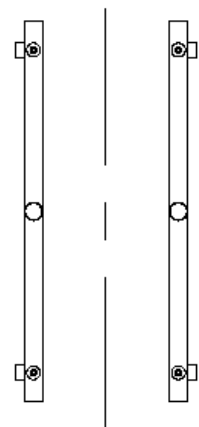
Center of nipping station



When using the 43 mm tape to make books, load spacer into the main body of nipping station by the flat side toward the center of nipping station.



Center of nipping station



## 4.5.4 Clamp Station

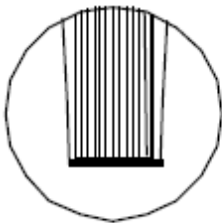
### Function

Holding the book block for the notching, gluing, and nipping processes of bookbinding.

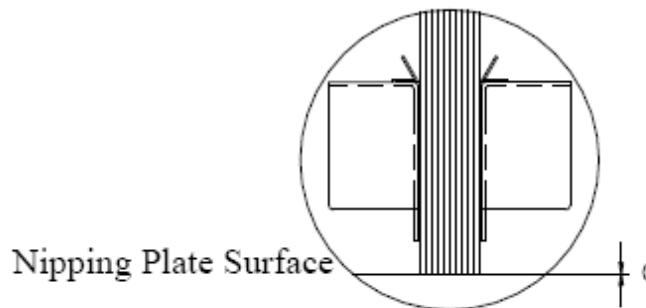
### Adjustment

The acceptable spine of a book and the shape of book block after being clamped are shown below. If you find different shapes such as “round”, “hollow” and “nail head” for one end or both ends, remove the clamp covers, then adjust the screws on both clamps.

**Stand of Book**



**Stand Shape of book Block**



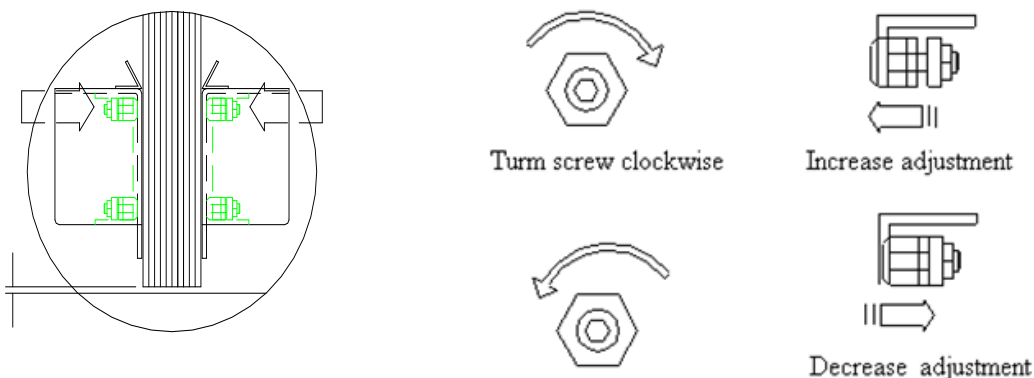
### How to adjust

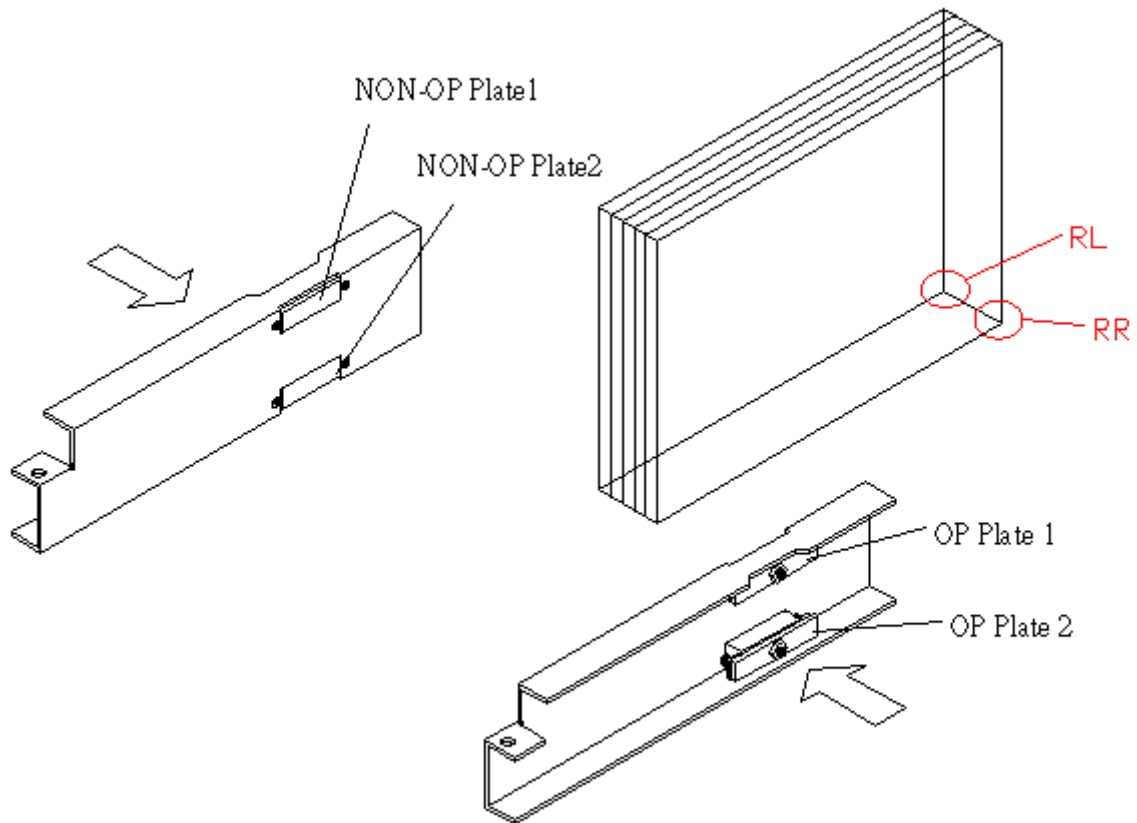
#### 1.) Making book is a top priority (to see where is the machine need to be adjusted):

The priority way of machine's measurement is making books. We usually make 5mm, 10mm, 15mm, 20mm as well as 30mm of thickness to inspect. However, 20mm is a standard for us to make sure the spine of the book should be good. Because nail head usually happens in thicker books, and round spine usually happens in thinner books.

#### 2.) How to adjust the angle/pressure of the clamp plate

If you need to adjust the clamp plate, please refer to following points:





**RL and RR corners are nail head:** it means that the right spine of the book should be lift up to make the right side of the spine rounder. So you can increase adjustment on NON-OP Plate 1 and OP Plate 1 , and then making book to see RL and RR corners are ok or not.

**RL corner is nail head:** it means that the RL corner should be lift up to make the RL corner rounder, So you can increase adjustment on NON-OP Plate1 , and then making book to see RL corner is ok or not.

**RR corner is nail head:** it means that the RR corner should be lift up to make the RR corner rounder, So you can increase adjustment on OP Plate 1 , and then making book to see RR corner is ok or not.

**All above are nail head situation, if round spine or corner happened, please refer to following point:**

**RL and RR corners are round:** please refer to above steps to work on NON-OP Plate 2 and OP Plate 2.

**RL corner is round:** please refer to above steps to work on NON-OP Plate 2.

**RR corner is round:** please refer to above steps to work on OP Plate 2.

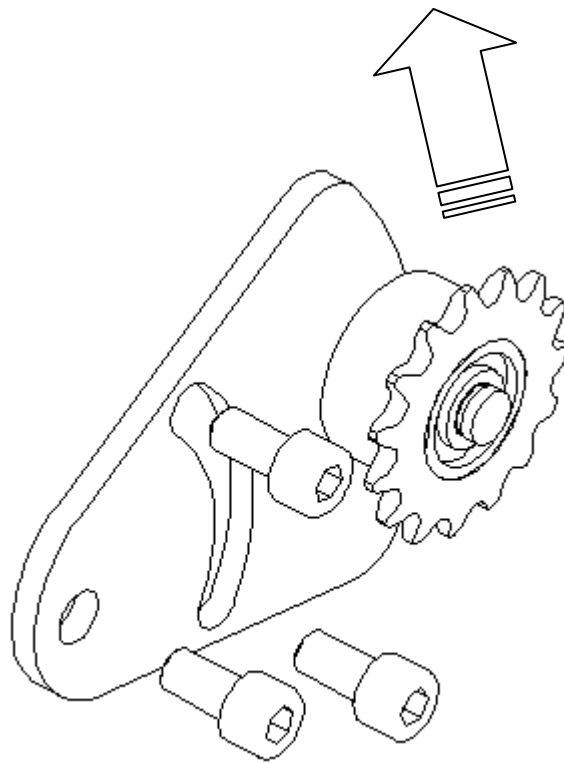
## 4.5.5 Driving Unit

### Function

This unit provides the clamp station the dynamic power of driving to pass the glue tank and notching station and to do positioning, then the clamp station could return the above nipping station to carry the cover-nipping and perfect-binding out.

### Adjustment

Use chain slack adjuster to adjust the tight or loose of any chains.



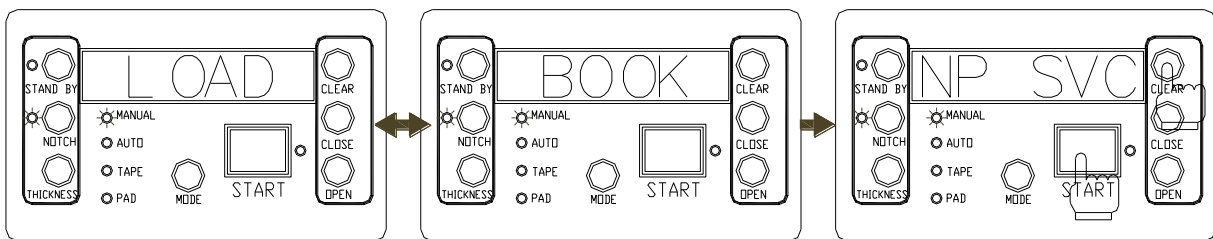
# 5 Maintenance

## 5.1 Day/Month/Year Maintenance

### Daily Cleaning Procedures

After you have finished using the binder for the day, follow the following steps:

1. Close the clamps while the LED display flashing "LOAD BOOK" .
2. Press "START" and "CLEAR" keys simultaneously. The clamp station will automatically move to the left of the machine and LED display "NP SVC".
3. Clean the residual glue that might be on the nipping plates and plate surfaces.
4. Press the "START" and "CLEAR" keys, the clamp station will return to its home position. Open the clamps to the maximum position. Clean their surfaces and wax them.
5. Turn the DB-290 off.



### Three-month period

Depends on how frequency you use the machine, we recommend that you should do the following maintenance at least once during three-month period.

#### (1) Clamp Station

1. Open the clamps to the maximum position then turn off the power of the machine.
2. Take apart the clamps from the clamp station.
3. Clean the residual glue that might be on the clamps.
4. Install the clamps to the clamp station.
5. Turn on the power of the machine.
6. Clamp some inner pages to see if the clamps have been installed properly. If clamp adjustment need, please refer to A1 section of Appendix for details.

#### (2) Notching Station

This is a monthly maintenance. However, we recommend that you should use vacuum to clean the paper dust on the notching station when the machine has made 2,000 books.

**Warning: You must power off the machine in order to perform the notching blade maintenance.**

1. Power off the machine.
2. Remove the notching covers.
3. Use the vacuum to clean up the paper dust.
4. Clean up the residual glue around the notching wheel, rollers and blade.
5. Clean the notching covers, notching blade, and rollers.

6. Check to see if the notching blade has been worn out or broken. If so, replace a new one.

7. Install the notching covers.

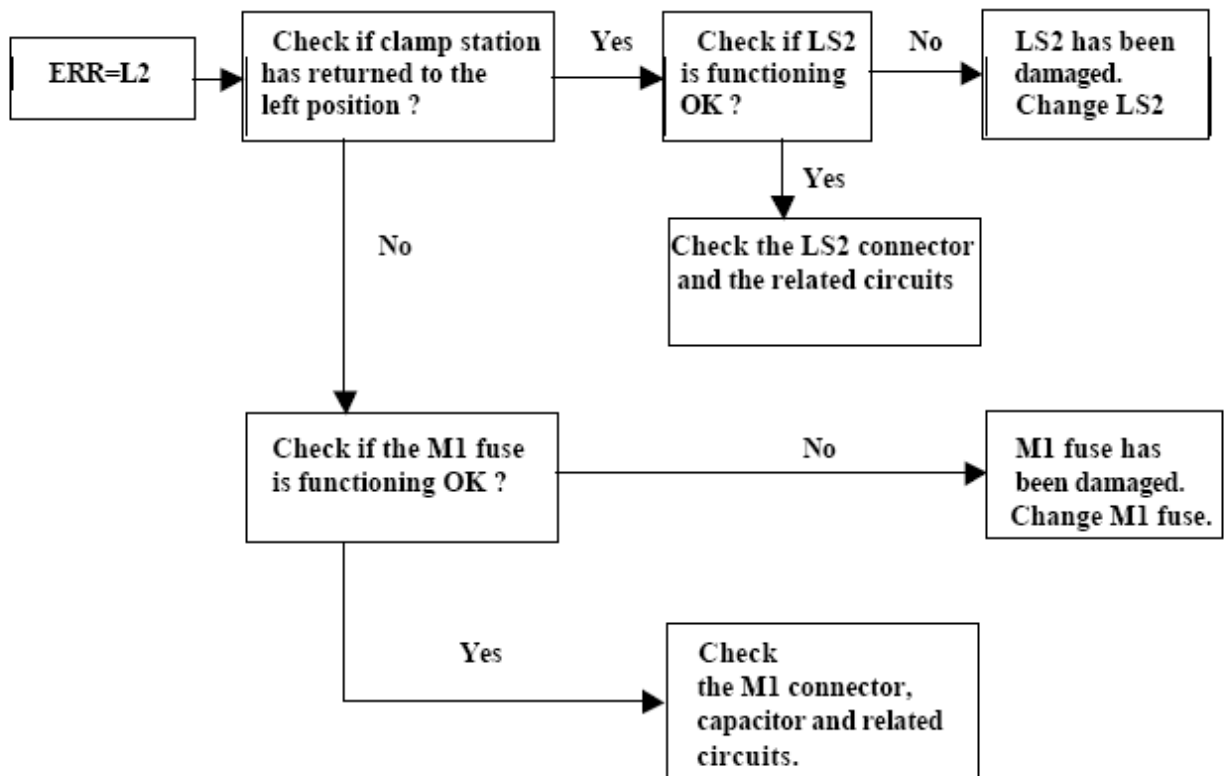
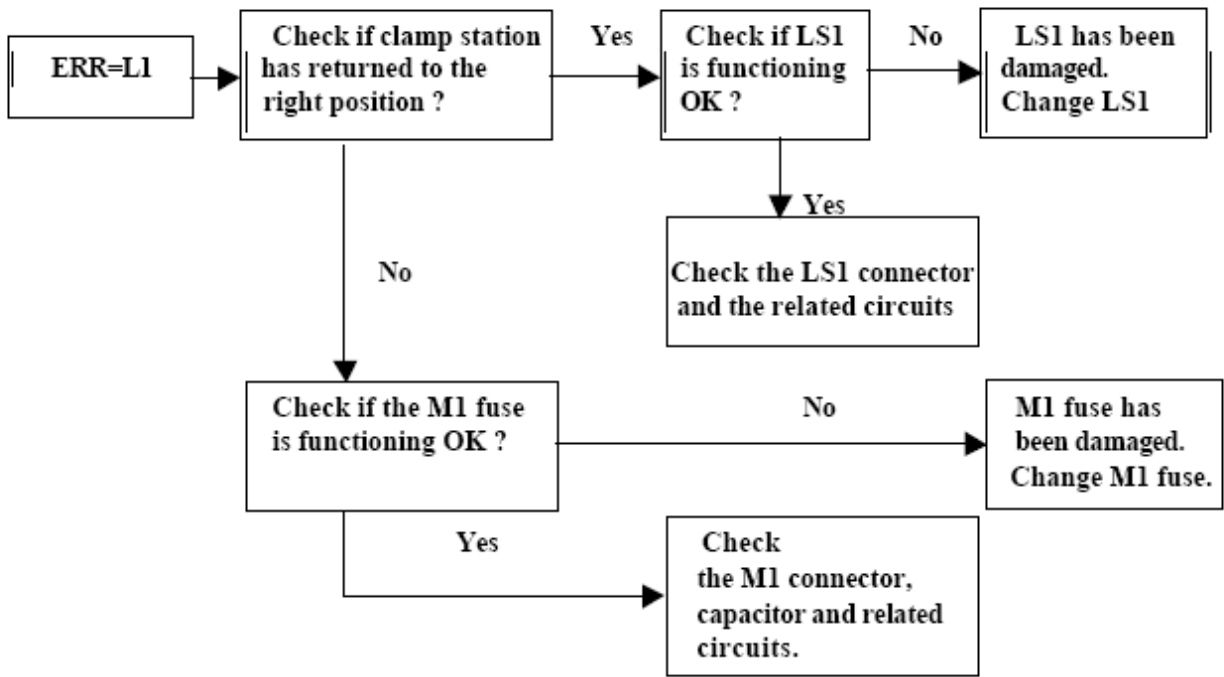
## **5.2 Lubrication**

5.1.1 All operating components such as chains, chain sprockets, gears, racks shall be routinely added with lubricating oil or grease.

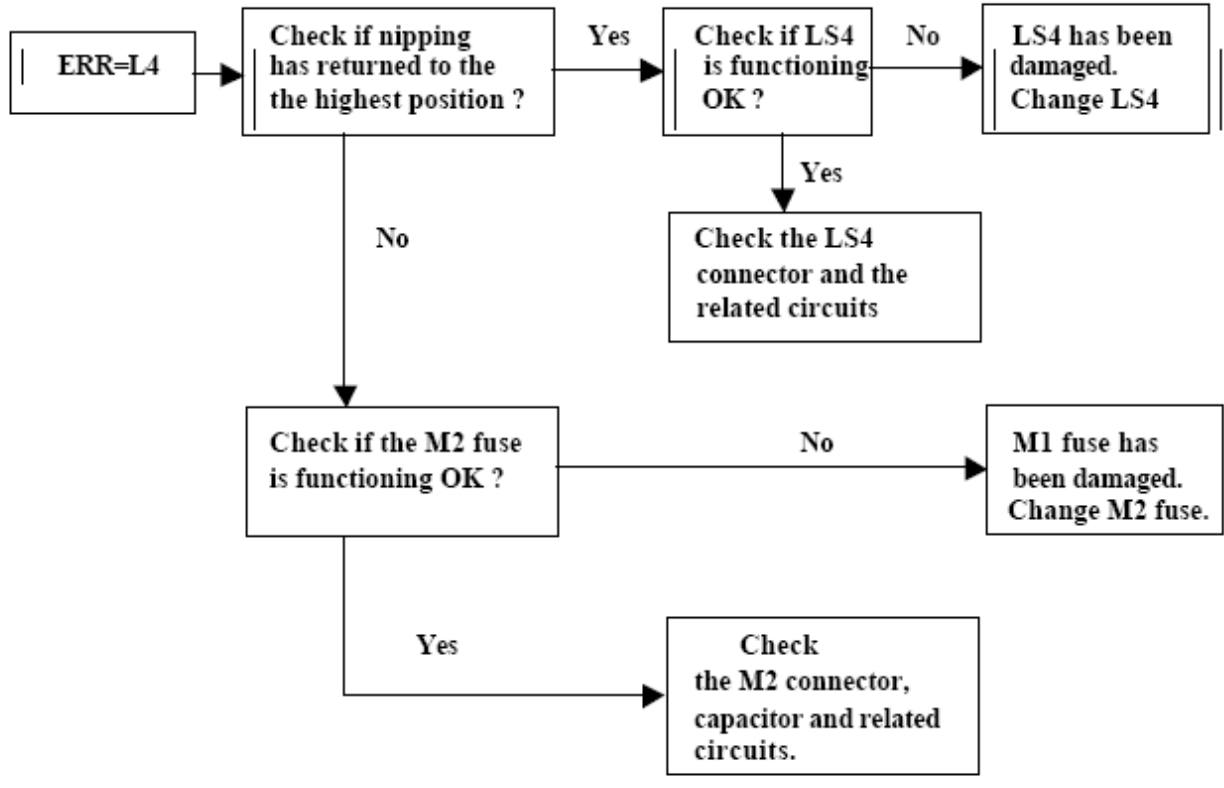
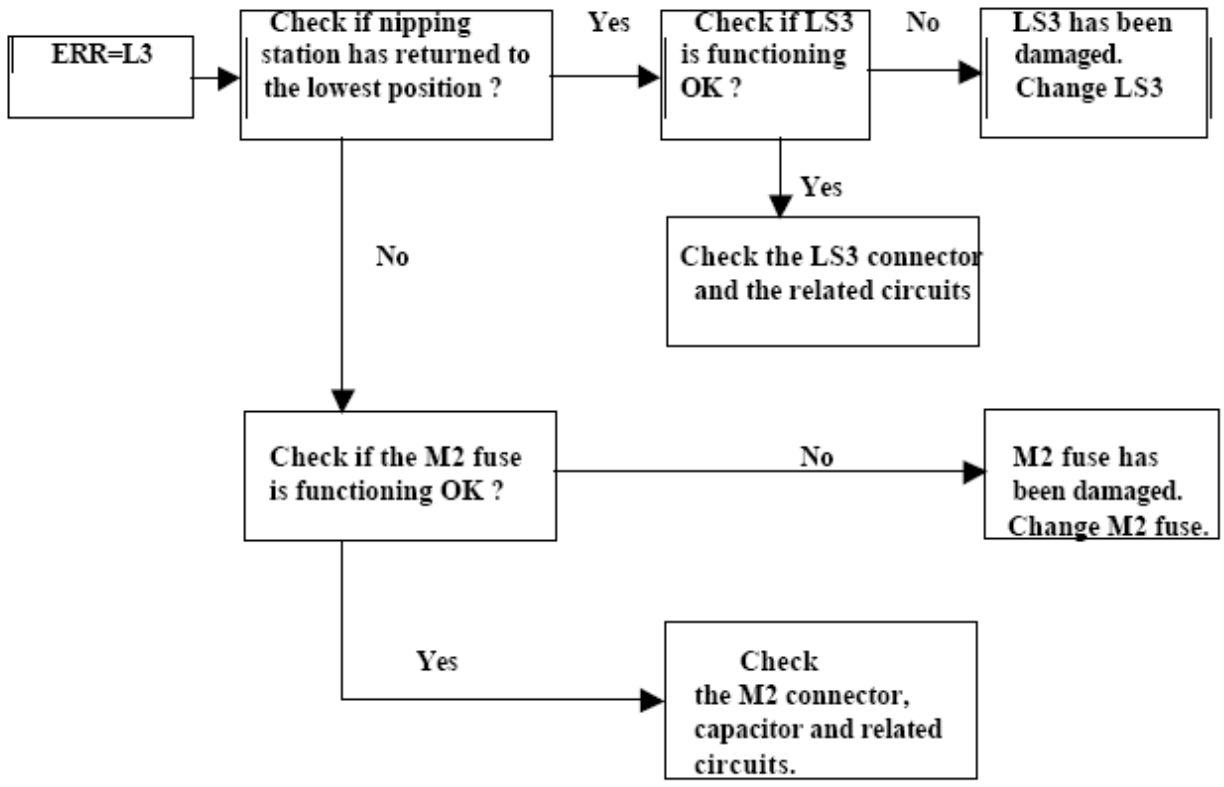
5.2.2 All rotating joints at spindle ends attached with oil cups shall be routinely filled with lube oil.

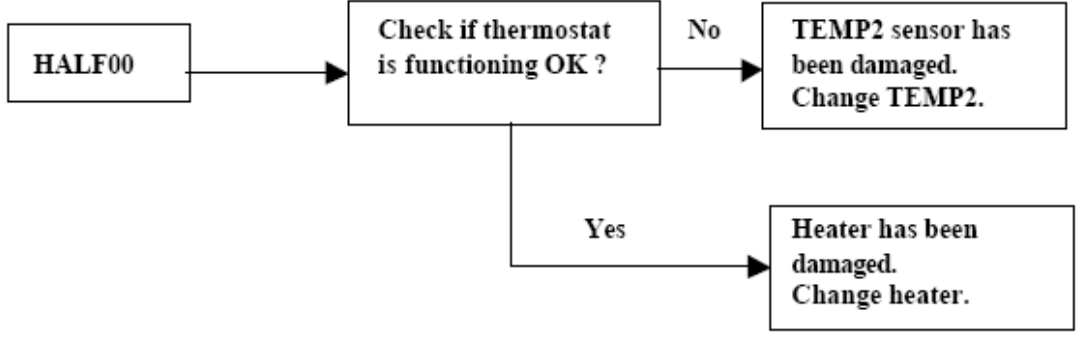
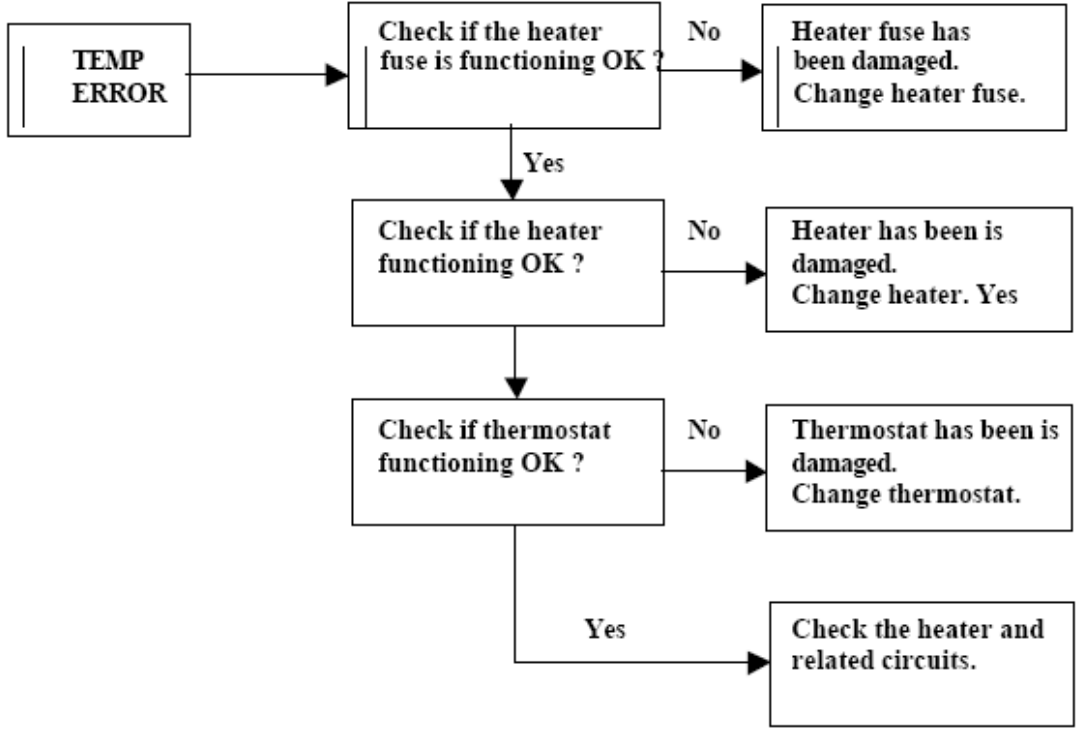
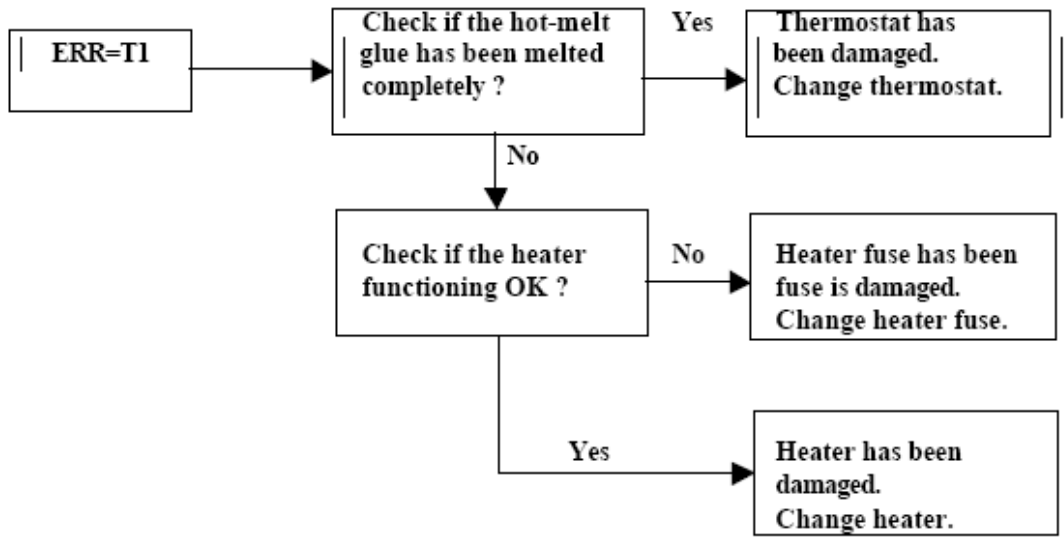
## **5.3 Trouble Shooting**

In case, when the control panel display error message, please refer to following step to correct.









## 5.4 Test Of Safety Devices

### TEST1 – Operation Test:

MODESTART

Press and hold down the “MODE” and “START” buttons, then turn the power on. You should see the “TEST1” in the LED display. After performing the “WARM”, “HOT”, and “S-TEST” processes, the DB-290 will execute the entire operation test procedures as the following order:

Open the clamps ☿ Close the clamps ☿ Move clamp station to pass the notching station / Run the notching wheel  
☿ Back to nipping station ☿ Up/Down the nipping station / Close/Open the nipping plates

**Note:** Test1 is an infinite loop. To return to MANUAL operation, you can stop Test1 by pressing the FUNCTION button when the LED display shows "READY".

### TEST2 – Module Test:

MODESTANDBY

Press and hold down the “MODE” and “STANDBY” buttons, then turn the power on. You should see the “TEST2” in the LED display. After performing the “WARM”, “HOT”, and “S-TEST” processes, the DB-290 will display “MOTOR 1” in the LED display. Then you can select the following module tests by pressing “OPEN” or “CLOSE” button to toggle “MOTOR 1”, “MOTOR 2”, “MOTOR 4”, and “MOTOR 6” followed by pressing “START” button to execute.

#### **MOTOR 1** (Main motor motion):

Moves clamp station to notching station, then back to nipping station.

#### **MOTOR 2** (Nipping motor motion):

Moves the nipping station surface to the highest point, the sub-high point, and the lowest point and provides the nipping force for nipping plates.

#### **MOTOR 4** (Notching motor motion):

Runs the notching wheel for a few seconds.

#### **MOTOR 6** (Clamp motor motion)

Opens the clamps, then close the clamps.

**Note:** To return to MANUAL operation, press FUNCTION button when LED display shows "MOTOR1/2/4/6".

### Displays the total amount of bookbinding:

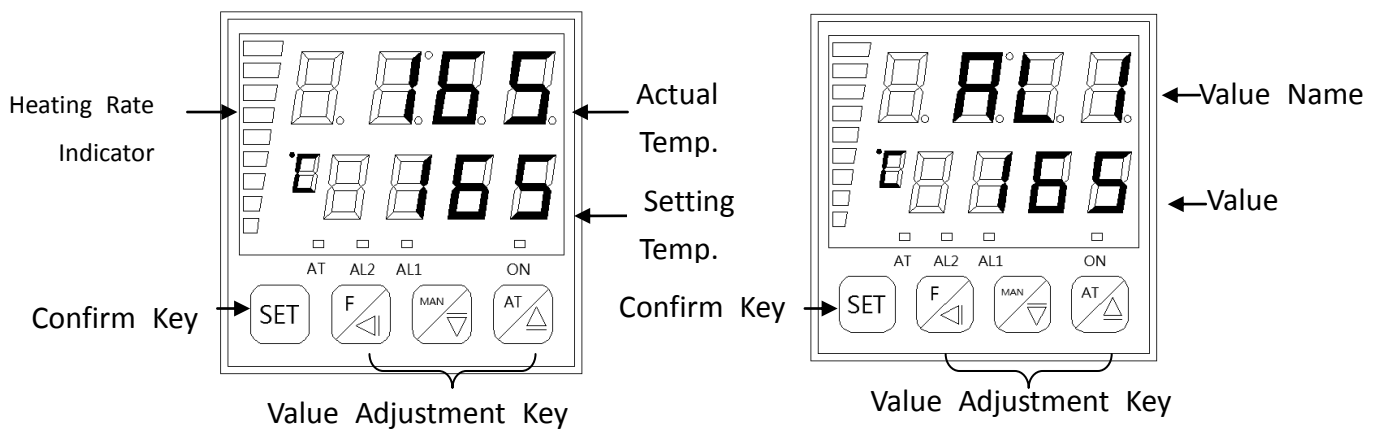
MODECLEAR

Press and hold down the “MODE” and “CLEAR” buttons, then turn the power on. You should see the total amount of bookbinding in the LED display.

## 5.5 Introduction of Temperature Setting

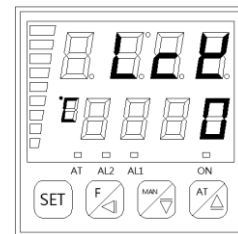
There are two parts of temperature setting for DB-290; the first part is value setting AL1, and the second part is the temperature of temperature setting. The setting of the two values must be the same, and then the machine could be used normally.

### Introduction of the function of Digital Thermostat

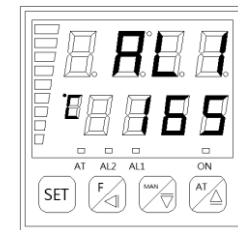


#### 5.5.1 Steps of Temperature Value Setting

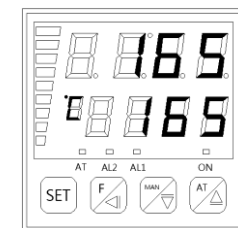
1. Hold **SET** + **F** Digital Thermostat will show as Picture 1.
2. Press **SET** Digital Thermostat will show AL1 (Picture 2).
3. Press **MAN** or **AT** to adjust to desired temperature (Default value is 165)
4. Press **SET** to jump to the next setting, until setting is finished.



Picture 1



Picture 2

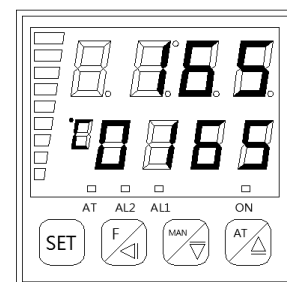


Picture 3

**Only need to adjust AL1 to set the temperature; please DON'T adjust other setting, otherwise, the machine couldn't work normally.**

#### 5.5.1 The Temperature Setting of Temp. Meter

1. Press **SET** the value of temp. setting will be flashing.
2. Press **MAN** or **AT** to adjust the value to the same temp. of AL1.
3. Press **SET** to finish the setting.

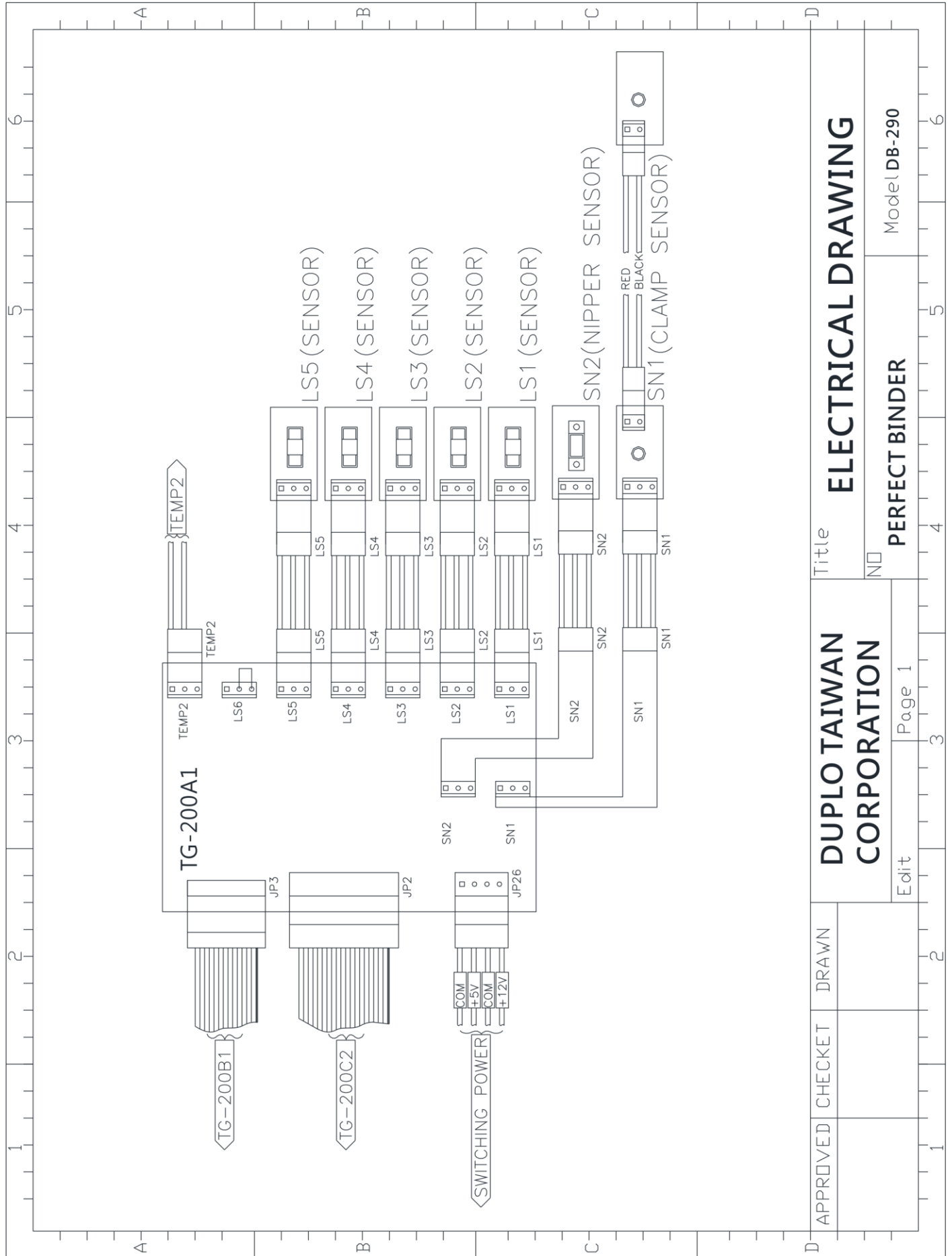


# 6 Electric

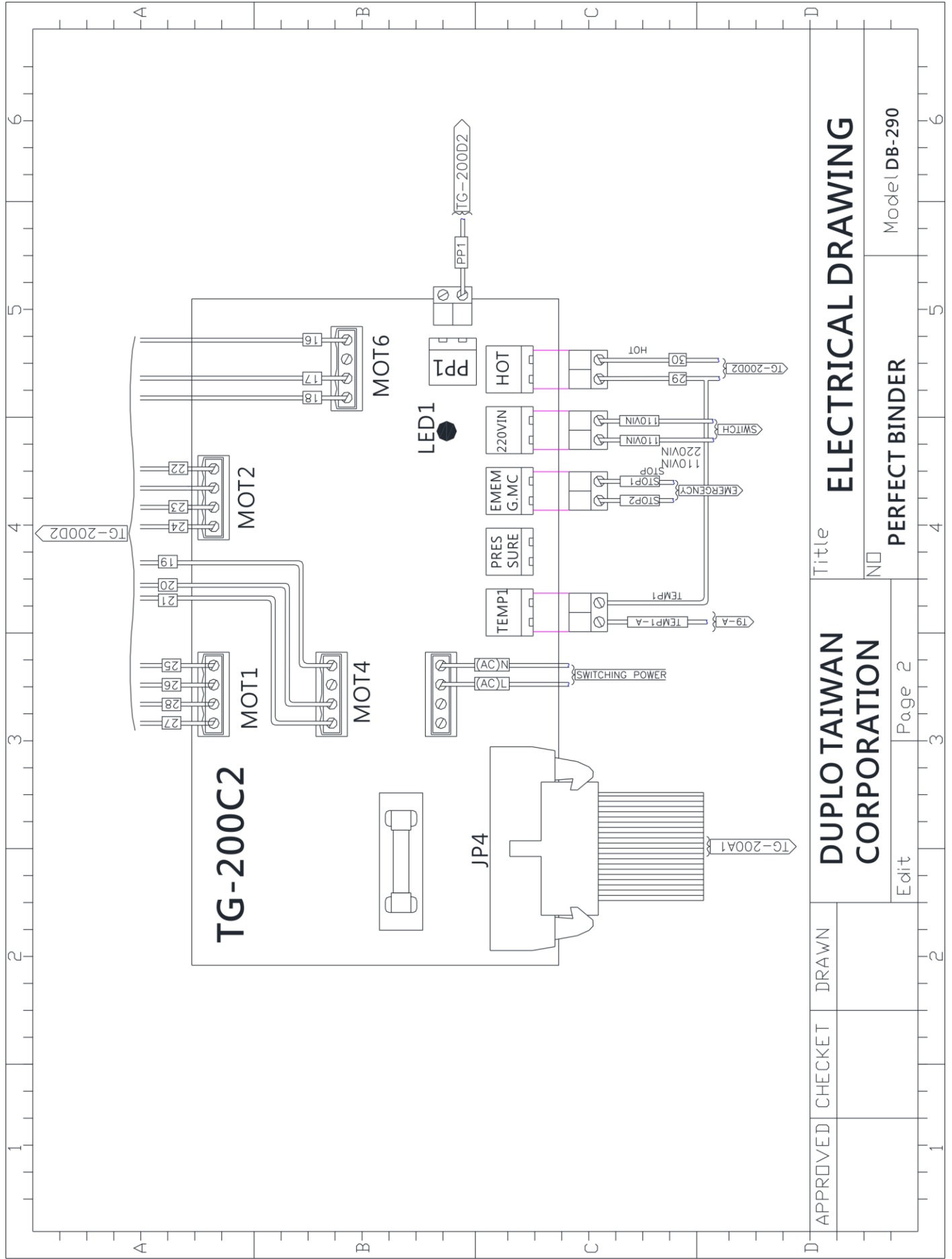
## 6.1 Safety Rules For Electrical Control System

- 1.) Only personnel who are properly trained and have adequate knowledge and skill should undertake all electrical/electronic troubleshooting and repair.
- 2.) Do not alter or bypass protective interlocks.
- 3.) Before starting, read and observe all warning labels.
- 4.) When trouble shooting make sure the power source has been disconnected and main switch has been locked.
- 5.) Take extra precautions in damp areas to protect you from accidental grounding.
- 6.) Before applying power to any equipment it must be established, without a doubt, that all persons are clear.
- 7.) Do not open the electrical control panel unless it is necessary to check the electrical equipment.
- 8.) Do not alter the electrical circuits unless authorized to do so by the manufacturer.
- 9.) When replacing electrical components, make sure they conform to the manufacturer's specifications, including proper colour coding.
- 10.) Do not wear metal frame glasses, metallic necklaces or chains while working on any electrical equipment. Also do not wear any ring, watch or bracelet while operating electrical equipment.

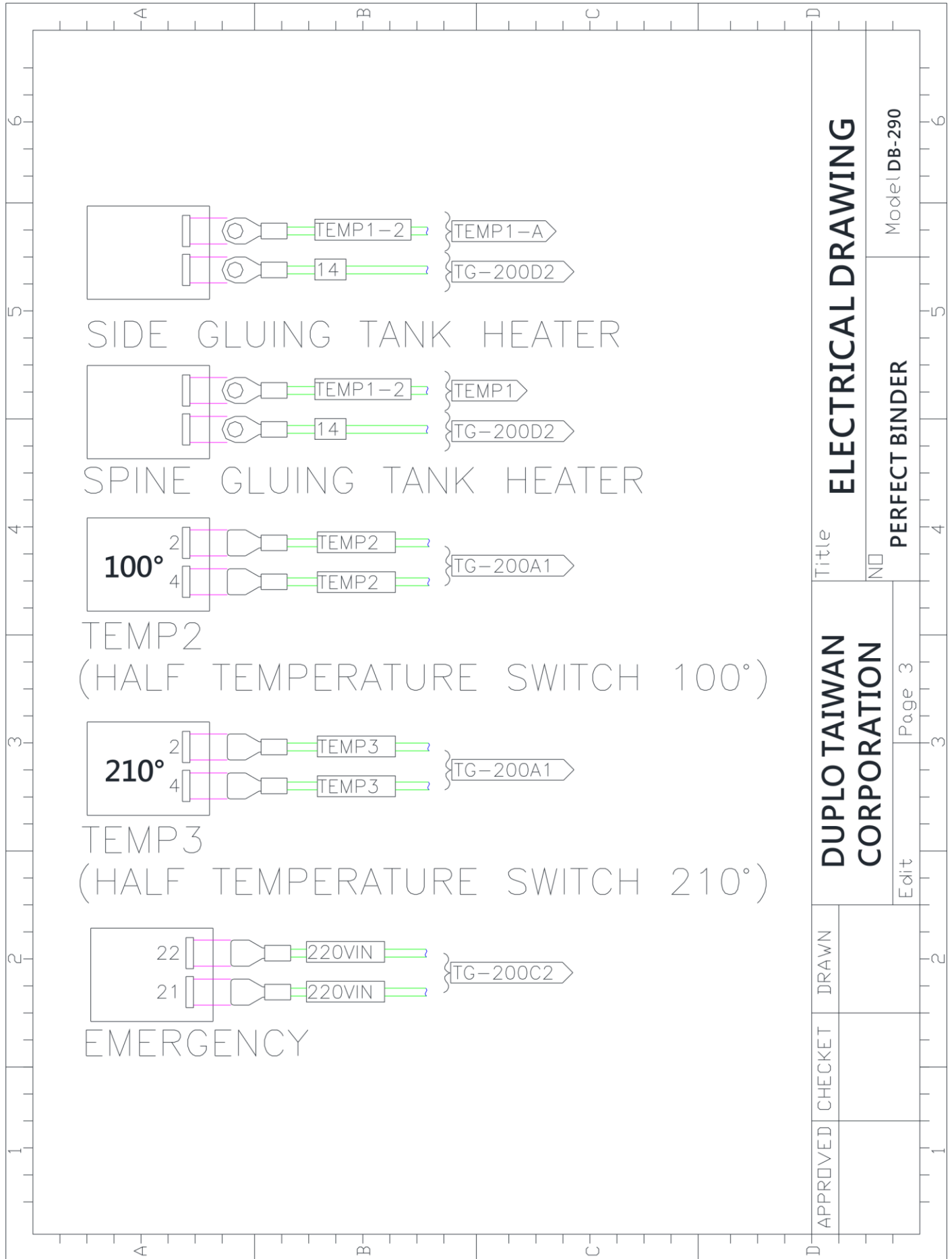
## 6.2 Electrical Drawing



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			Page 1	3	3
Title <b>ELECTRICAL DRAWING</b>			Model: <b>DB-290</b>		
NO <b>PERFECT BINDER</b>			4	5	6



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			Edit			Model <b>DB-290</b>		
			Page 2			PERFECT BINDER		



**ELECTRICAL DRAWING**

Title

**DUPLO TAIWAN CORPORATION**

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Model DB-290

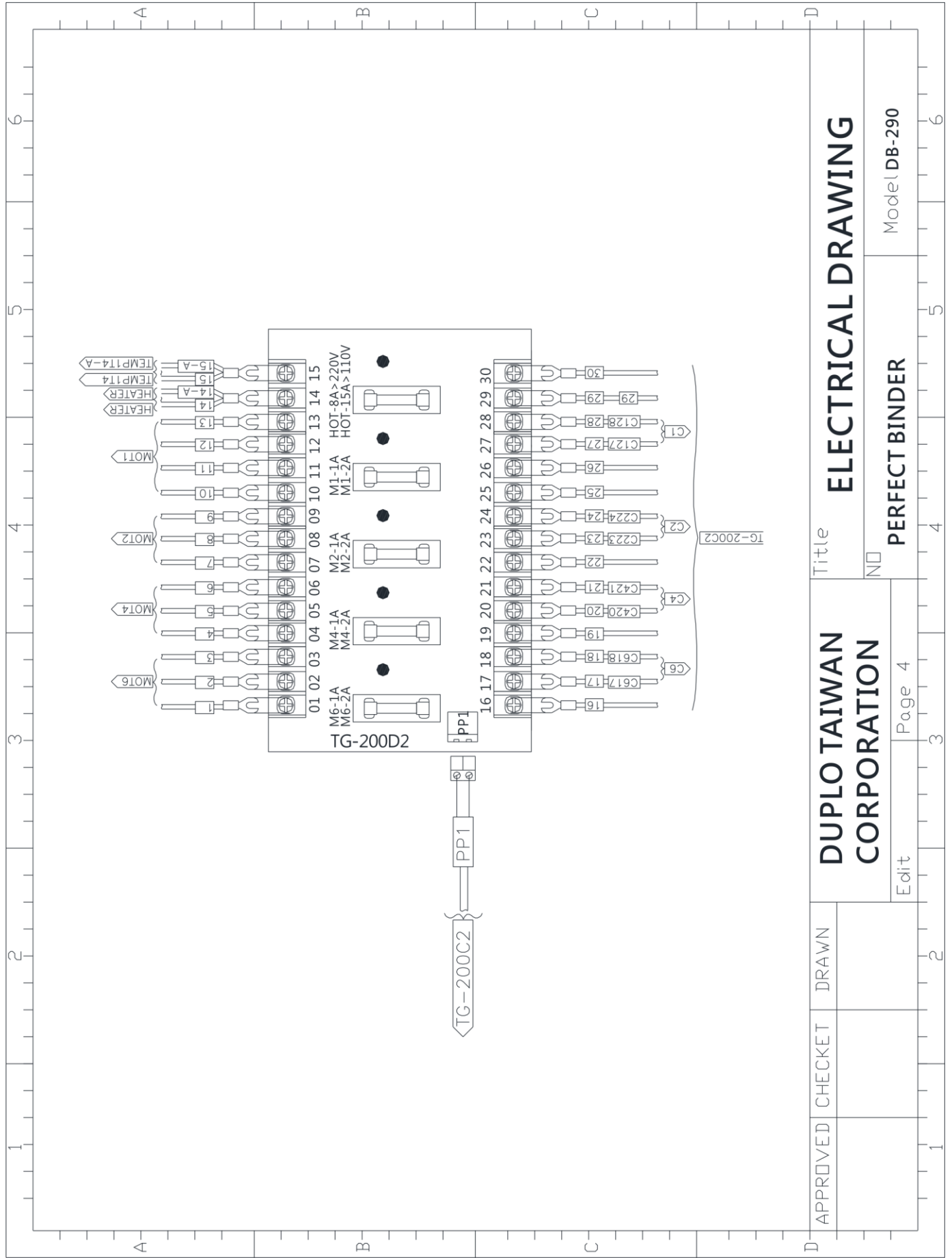
**PERFECT BINDER**

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Page 3

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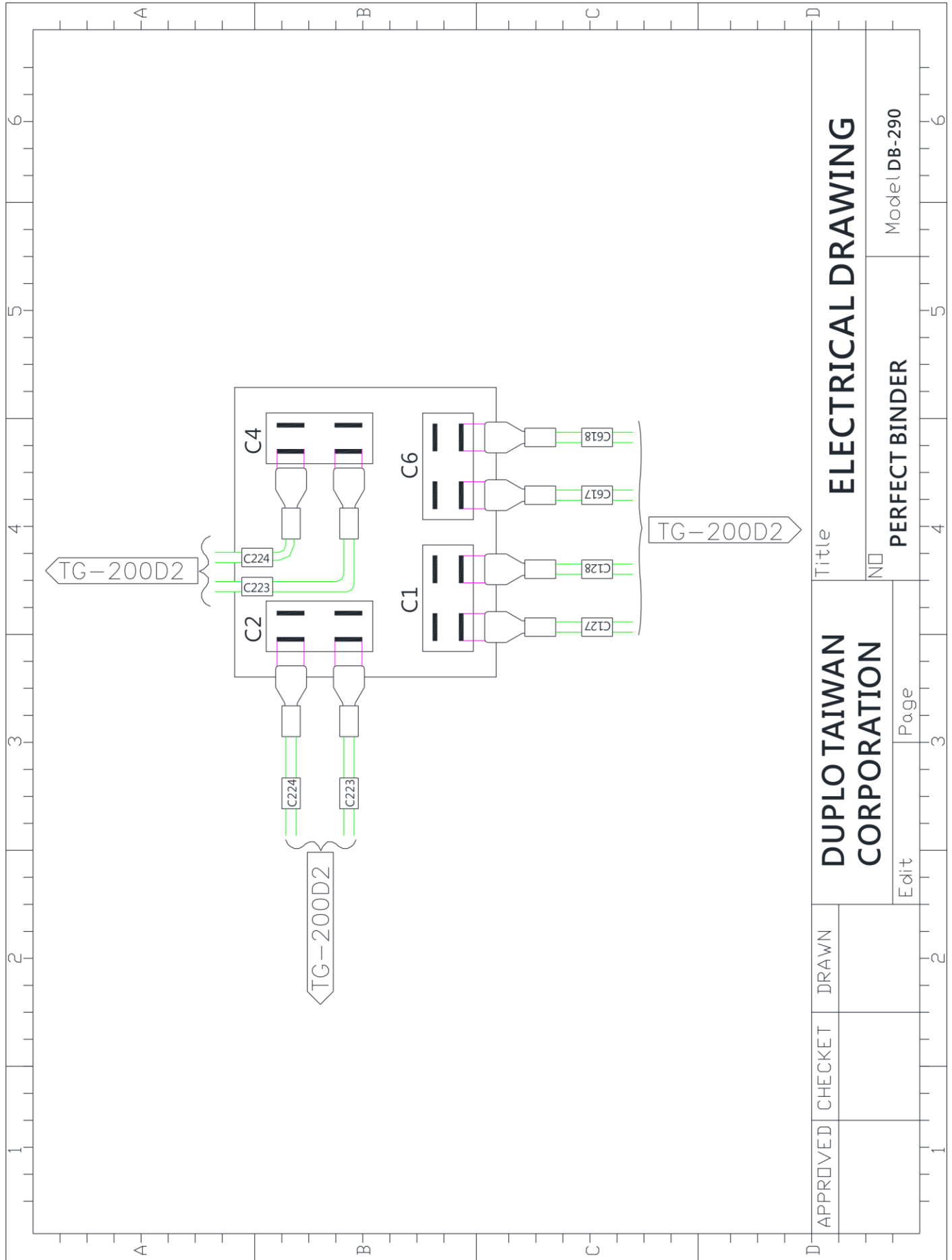




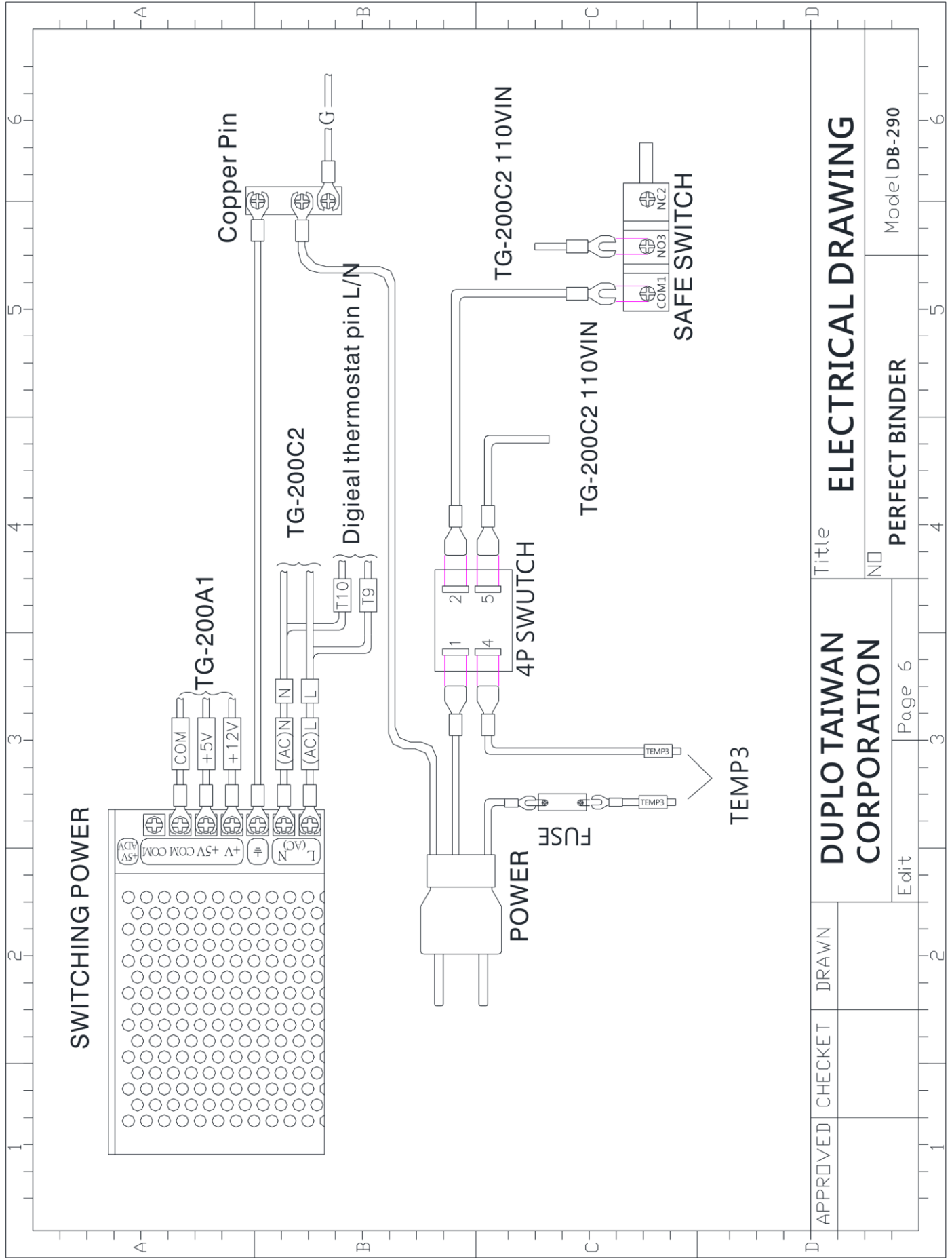
**ELECTRICAL DRAWING**

Title  
**DUPLO TAIWAN CORPORATION**  
 NO  
**PERFECT BINDER**  
 Model DB-290

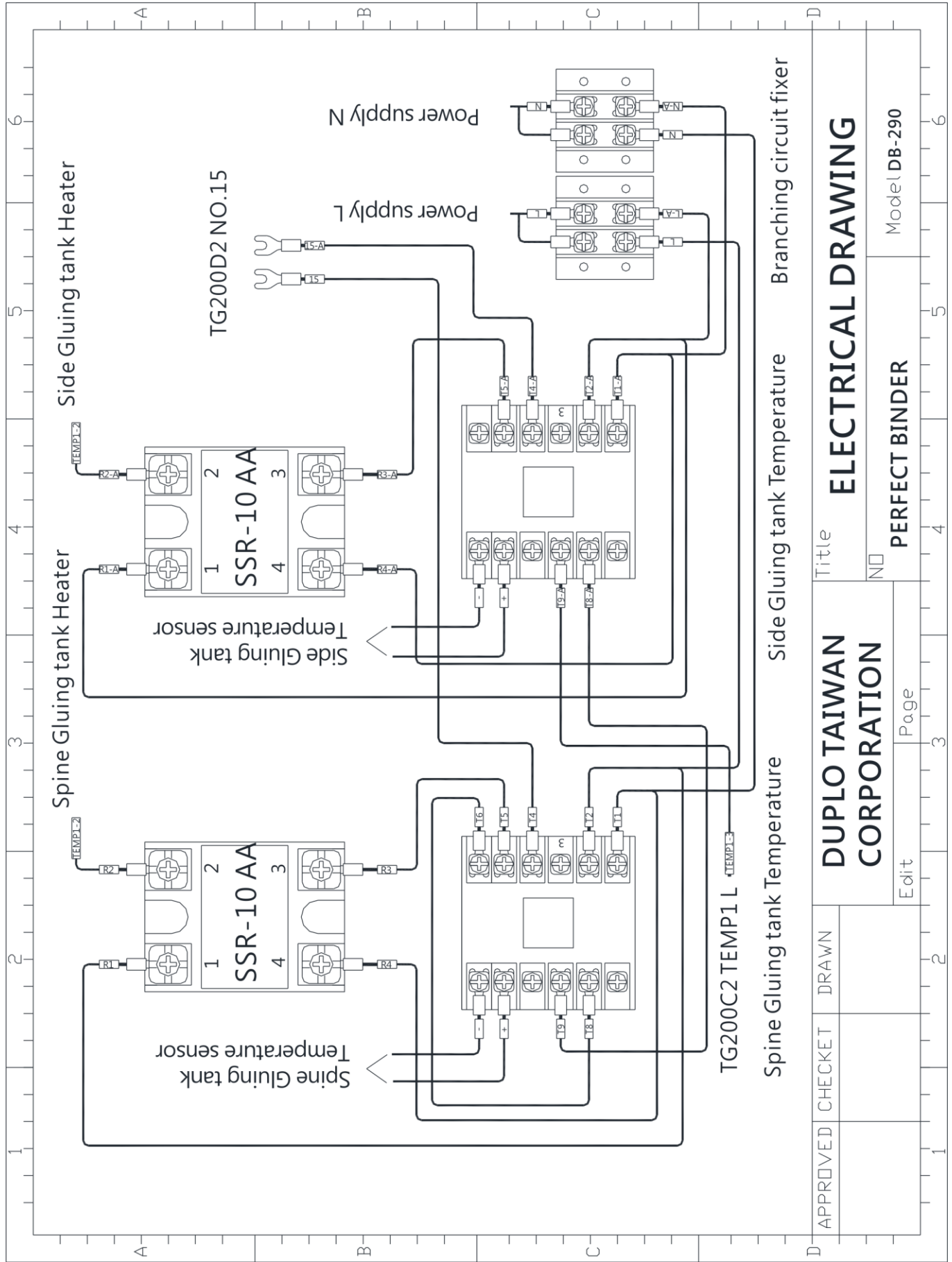
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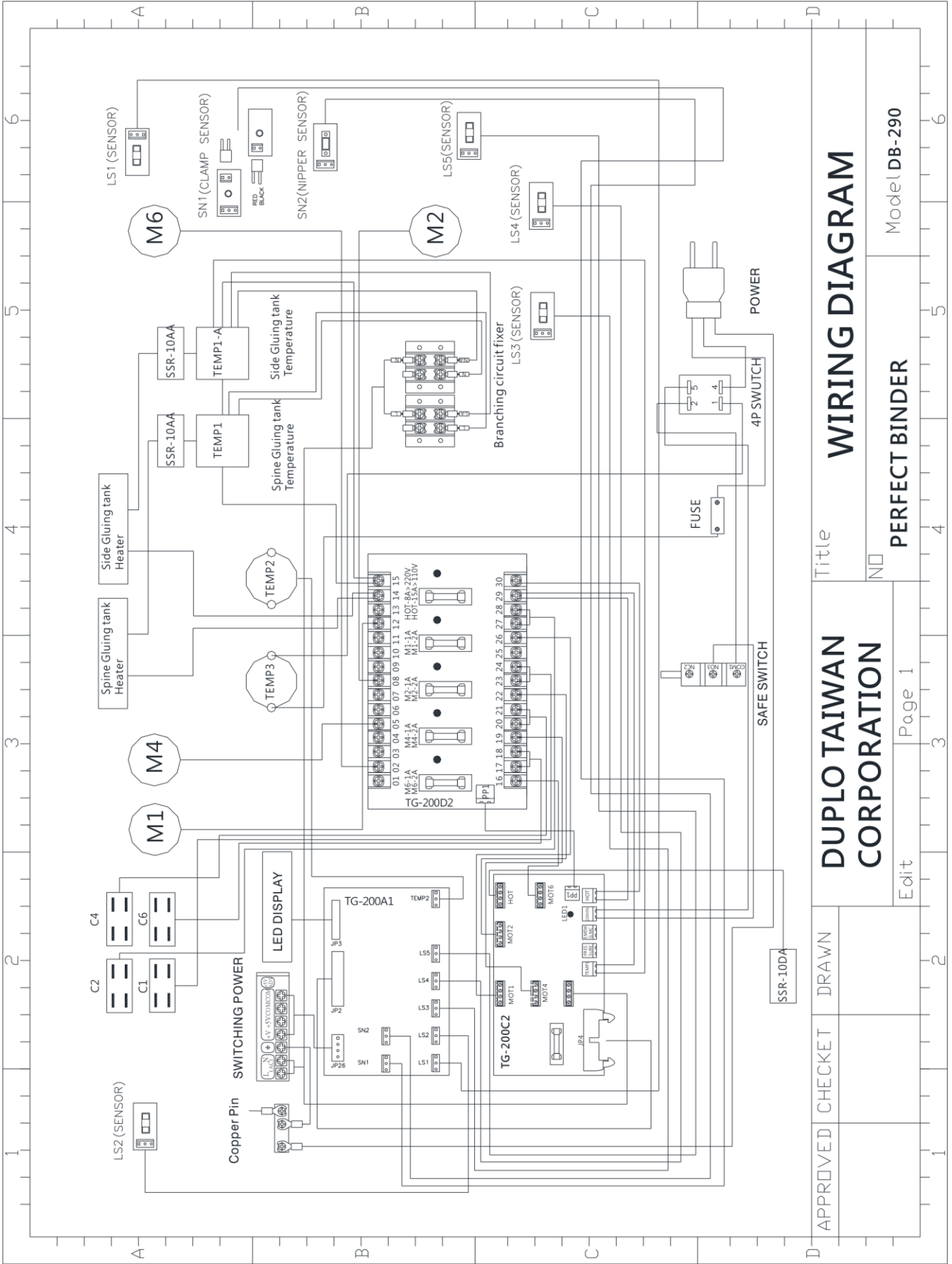


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Model DB-290		

# WIRING DIAGRAM

Title

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Model **DB-290**

**PERFECT BINDER**

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Page 1

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### 6.3 Electrical Component List

	Function	Symbol	Specification
1	Motor	M1	4RK25GN
2	Motor	M2	5TK50GN
3	Motor	M4	5IK135A
4	Motor	M6	2GN30K
5	Power supply	GS1	
6	EMG STOP	SB1	1A1B
7	Circuit breaker	QF1	4P
8	Spine gluing tank heater	U1	
9	Side gluing tank heater	U2	
10	Temp switch	SQ1	FOTEK
11	Temp switch	SQ2	100°C
12	Temp switch	SQ3	210°C
13	Limit switch	SQ4	Z-15GW-B
14	Temp switch	SQ5	FOTEK
15	Photo sensor	BP1	

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