



# Cleveland Equipment



## 400 Series Label Shrinker Machine

## Operation Manual



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## **I. FOREWORD**

The CE-400 Series label shrinking machines have the advantage of high heating efficiency, accurate temperature control and stable performances.

## **II. FUNCTION**

The CE-400 Series label shrinking machine are mainly applied to shrink label of product in bottle shape, cup shape, or barrel shape. There are 4 models for choice -- - 435, 455, 415, and 425.

CE-435 is used in existing production lines where a conveyor is already available. The CE-435 is just the shrink tunnel machine mountable on the conveyor.

CE-445 and CE-415 is able to shrink label both on the whole bottle and in the middle of bottle. CE-445 has longer tunnel than CE-445.

CE-415 is to shrink label on the top of bottle. Its advantage is to be able to adjust the height of shrink tunnel according to bottle size.

Regarding to temperature control, the combination of intelligent temperature meter and solid booster is adopted to save energy. Controlling the temperature of part shrink tunnel according to position of label is utilized to minimize influence on product in bottle.



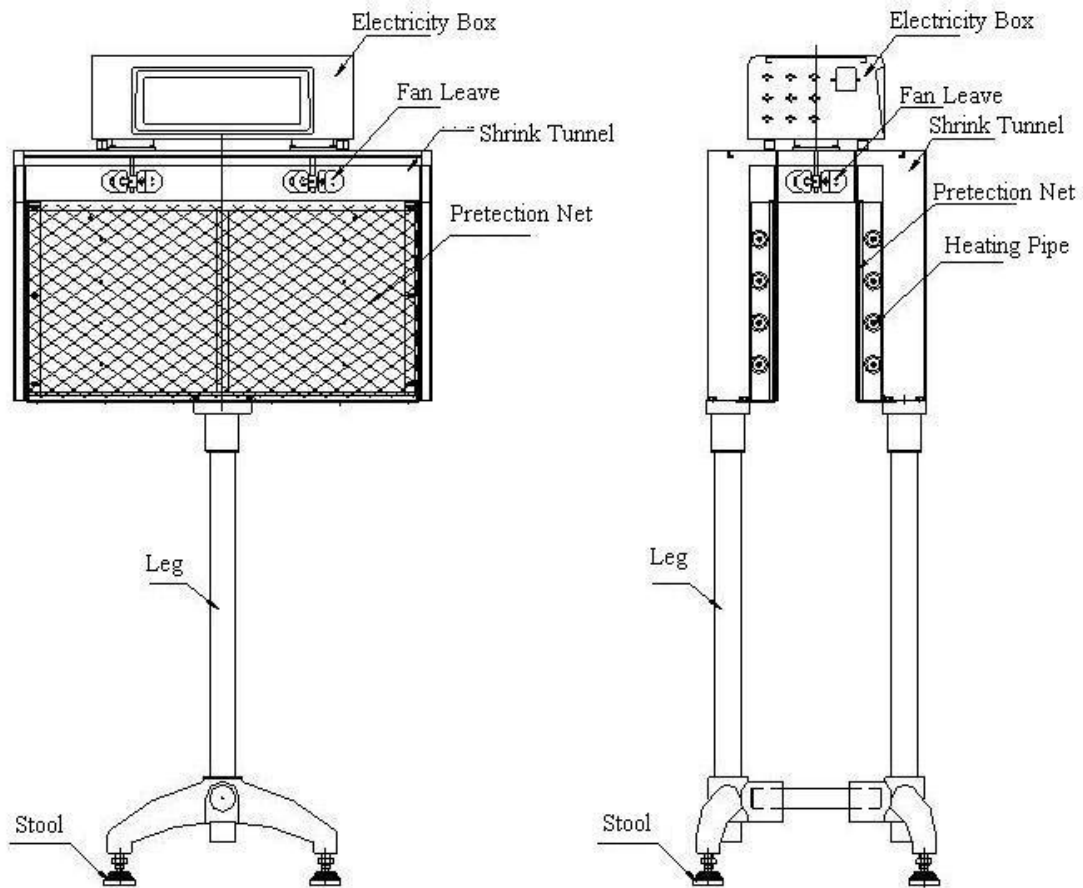
### III. SPECIFICATION

<b>Model</b>	CE-435	CE-445	CE-415	CE-425
<b>Power</b>	5 KW	9 KW	7 KW	8 KW
<b>Max. packing size (mm)</b>	Φ105*350H	Φ105*350H	Φ105*350H Adjustable	Φ160*350H
<b>Size of shrink tunnel (mm)</b>	800*150*380	1000*150*380	1000*150*150	800*200*400
<b>Conveyor motor</b>	/	AC90W/220V	AC90W/220V	DC50W/220V
<b>Conveyor speed</b>	/	0-10m/min	0-10m/min	0-10m/min
<b>Loading weight</b>	/	15kg	15kg	15kg
<b>Conveyor</b>	/	812 S/S plate	812 S/S plate	Teflon net
<b>Weight</b>	50 kg	96 kg	90 kg	66 kg
<b>Dimension (mm)</b>	800*430*1150	1500*350*1500	1500*350*1500	1500*400*1520
<b>Packed size (mm)</b>	920*500*750	1610*1050*490	1610*1030*490	1610*510*990



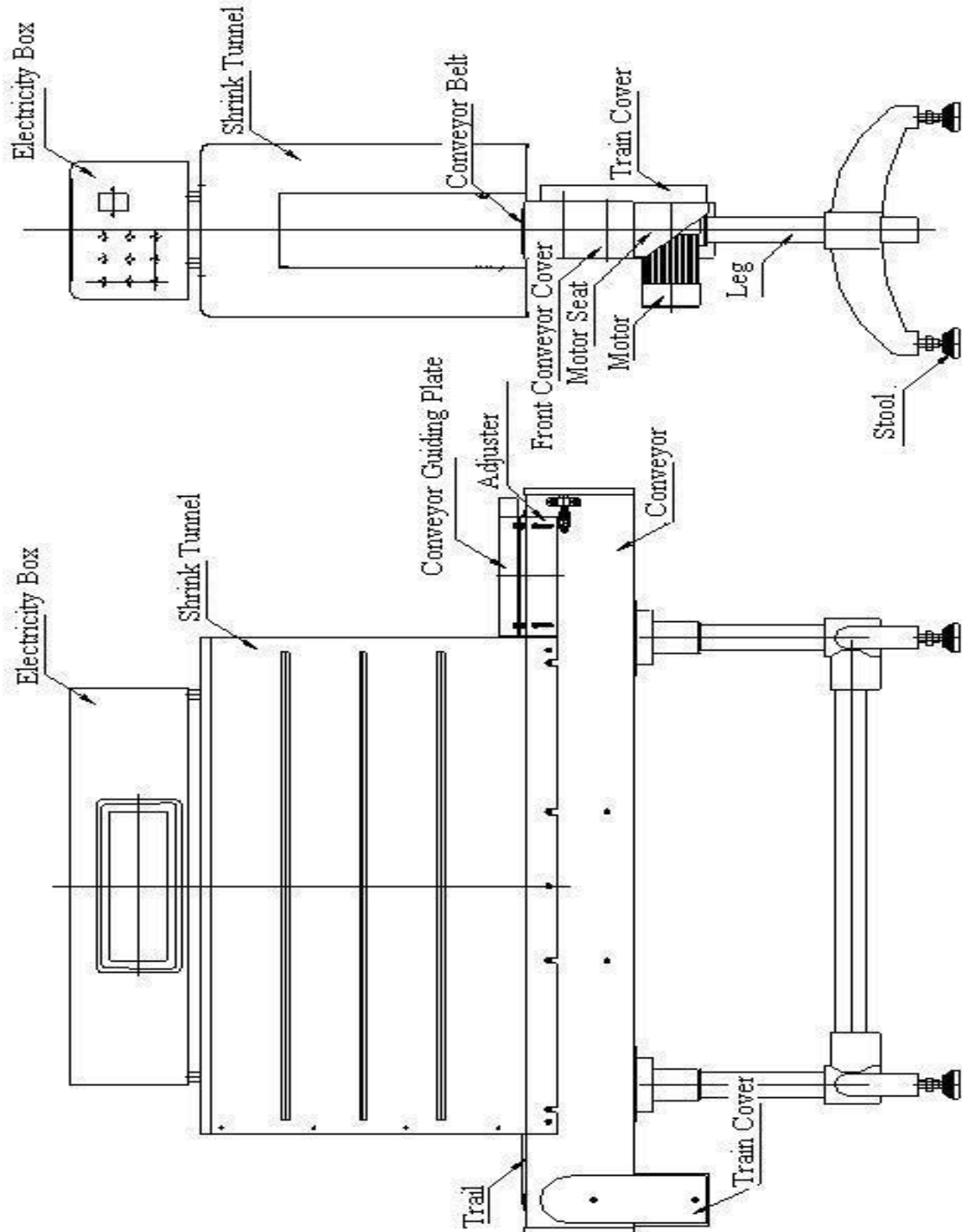
#### IV. STRUCTURE DIAGRAM

##### 1. CE-435



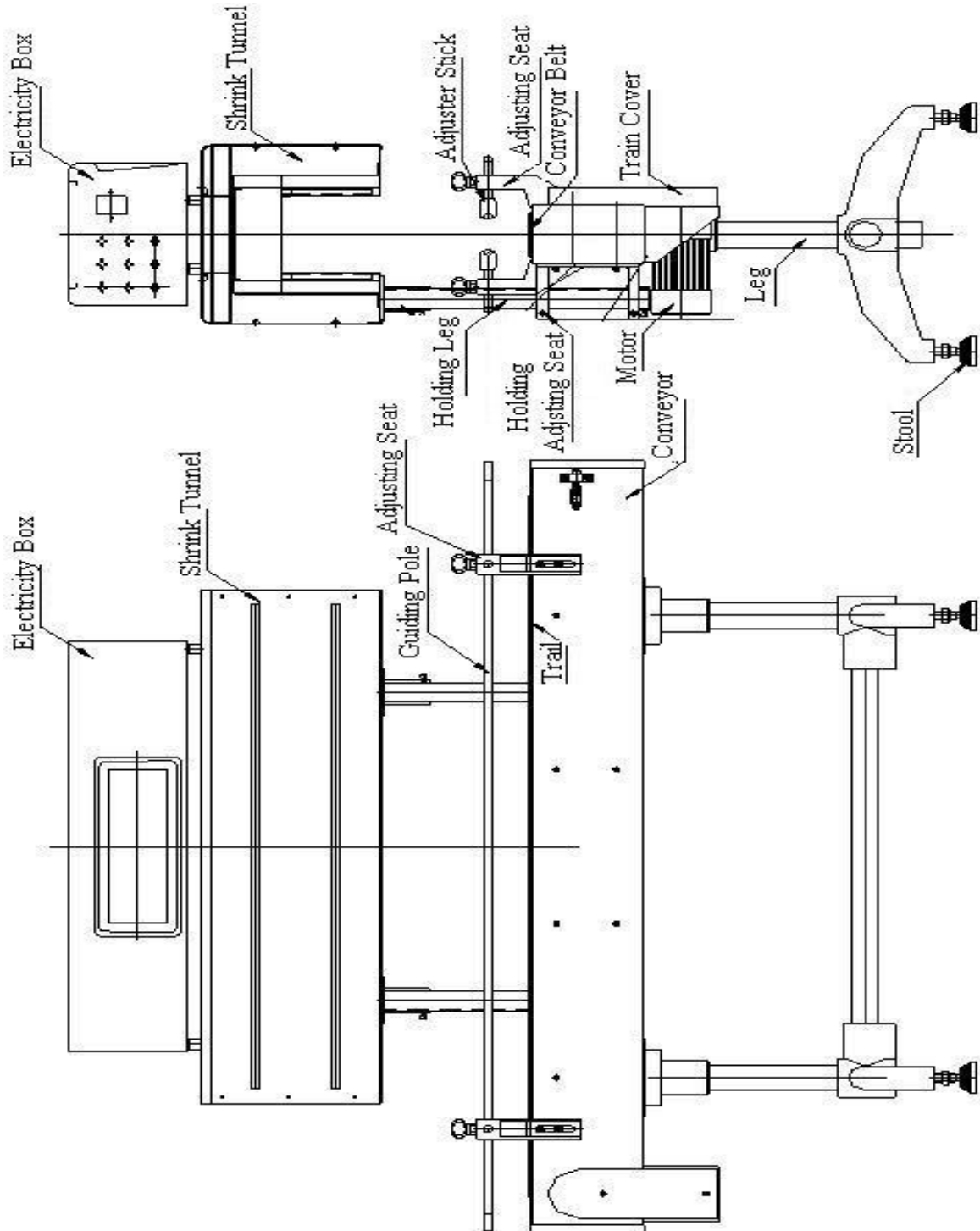


2. CE-445



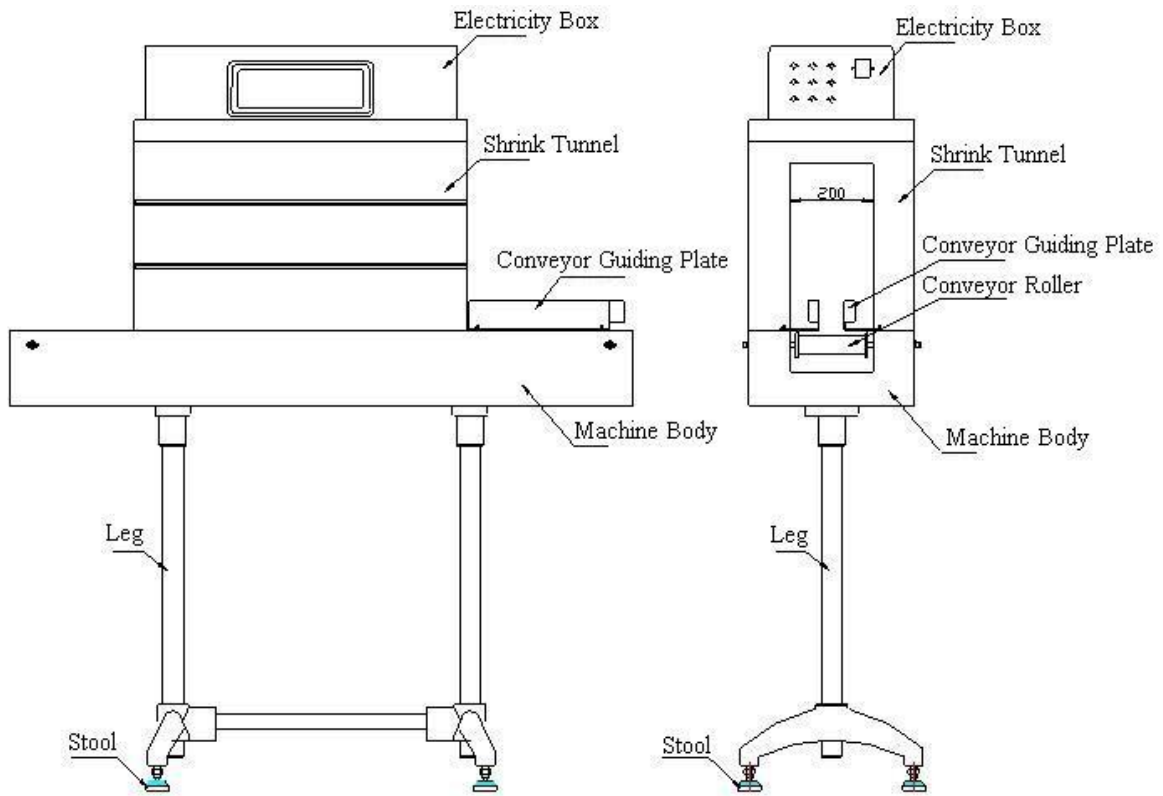


3. CE-415



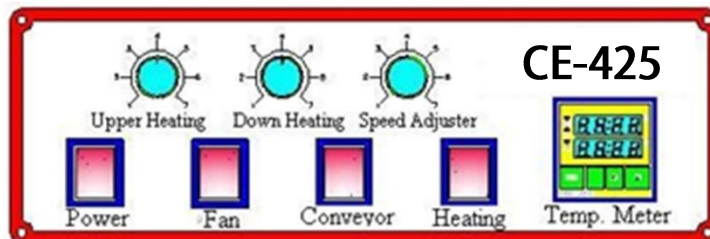
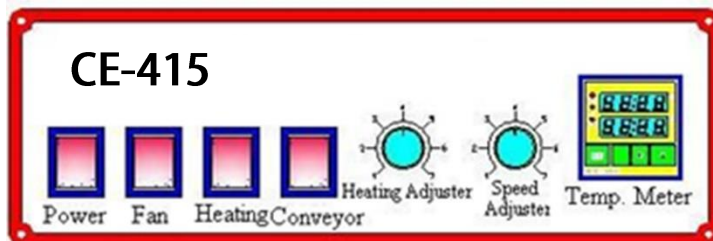
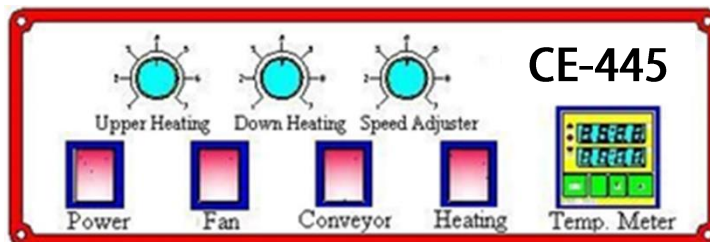
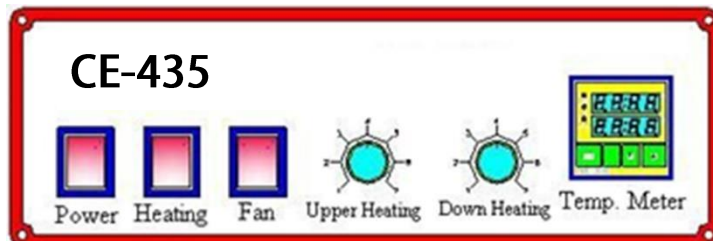


## 4. CE-425





## V. CONTROL PANEL



1. **Power:**  
Control the power of machine
2. **Fan:**  
Control the motor of fan
3. **Conveyor:**  
Control the motor of conveyor
4. **Heating:**  
Control the heating pipes
5. **Temp. meter:**  
Adjust temp. of shrink tunnel
6. **Speed Adjuster:**  
Adjust speed of conveyor
7. **Upper Heating:**  
Adjust heating of upper heating pipes
8. **Down Heating:**  
Adjust heating of down heating pipes



## VI. OPERATIONAL PROCESS

1. Place the machine on the level ground and unpack it; make sure to complete the ground connection for the safety of operator. (Notice: Grounding plate is displayed in the picture on the right; it can be found on one of 3 power wires if it is single phase; it can be found on the body of machine if it is 3 phase with 4 power wires)
2. Do the relevant adjustment to different model machine.
  - ✓ **CE-435:** CE-435 must be connected with conveyor or production line correctly. The bottle is able to pass through tunnel smoothly and is in the middle of position. In order to reduce loss of heat, try to enable tunnel to be close to conveyor.
  - ✓ **CE-415:** The height of CE-415 is decided by height of bottle. Loosen the nuts and adjust shrink tunnel to be about 5cm higher than bottle; make sure that it is in a horizontally level position; retighten the nuts to secure height position.
  - ✓ **CE-445 / CE-425:** No special adjustment is needed.
3. Confirm the power supply requirement of machine, and plug in the machine with right power source as noted on the index tag.
4. Turn on the main power switch on the right side of machine and power switch on control panel. Then its light will be on.
5. Turn on the “Heating” button, then temperature meter will show practical value and set value; set required temperature according to the dimension of packing products and thickness of film etc., normally 150-170°C.



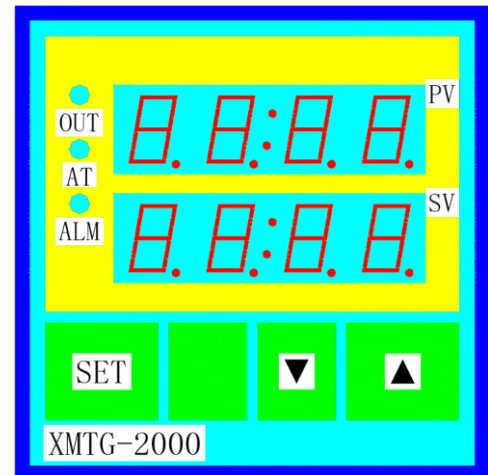


The method of adjusting intelligent temperature meter is below:

A. The upper line of number in red shows the practical value (PV), and the down line of number in green shows the set value (SV). B. Press the SET button, the green light flashes.

C. Press ▲ to increase or press ▼ to decrease the temperature.

D. After setting the temperature, press down the SET button again. It starts to work when the green light stops flashing.



**Notice: When setting temperature, use a soft touch as the intelligent meter is sensitive.**

6. Turn the down heating adjustment knob of heat shrink tunnel all the way to the right to Maximize. Once it reaches temperature, adjust the knob according to practical shrink effect and packing requirement. CE-415 only has one knob of heating adjustment, without division of upper and down adjustment.

7. Turn on the fan and conveyor switches. Generally, put speed of conveyor in the middle position first, and then adjust it while testing.

8. When it reaches required temperature, we can start testing or working.

9. While label is in upper position of bottle, turn the **down heating adjustment** knob down or off. In the contrary, while label is in the bottom position of bottle, turn **upper heating adjustment** knob down or off. In this way, it is able to preserve energy and minimize the influence of heat to products.



10. During the process of shrinking, adjust the temperature, conveyor speed and down heating according to practical case. If there are some wrinkle, which means too low temp. or too fast speed, we can increase its temperature or lower the speed. In the contrary, it means too high temperature or too low speed if the film is broken. Adjust these three factor--- temperature, conveyor speed and heating adjustment, until shrink effect is satisfied.

11. After finish packing, turn off heating switch. It's better to let conveyor and fan run for a while in order to cool down the shrink tunnel to prolong the life of the machine.

## VII. REFERENCE OF SHRINK TEMPERATURE AND TIME

SHRINK MEMBRANE	THINKNESS (MM)	SHRINKING TIME (S)	TEMPERATURE (°C)
PVC	0.02-0.06	5-10	110-130
PP	0.02-0.04	6-12	130-170
PE	0.06-0.20	10-60	150-180



### **VIII. CAUTION**

1. The electrical input power rate must be higher than the Rated power of the machine to ensure proper function. The power source must be the same as noted on the tag to avoid any circuitry or electrical shock or fire hazard.
2. The electricity wires must be connected properly; otherwise it makes damage to machine and operator. When the power is 3 phases (4 wires) as noted on the tag, it must input the null wire, or the machine can't work normally and easy to burn the electronics.
3. The machine must do the earth connection. It is easy to get electric shock for operator without earth connection.
4. Do not set temp. above 200°C, or damage heating pipes or shorten its life.
5. The machine should be placed level; otherwise it will reduce the life of heating pipe.
6. During working, carbon brush in motor wears off. It is only for CE-425. So check carbon brush in every half year. Replace it carbon brush when it wears out. If not, motor will damage. Clean powder of carbon brush in motor while replacing.
7. Every three months, check the wire and heating pipe in the tunnel because it is get aging and burned by heat from shrink tunnel; replace it if it is necessary.
8. Do not touch conveyor or stretch hands into shrink tunnel to keep from burning, while the machine is working.



9. In order to prolong the life of heating pipes, do the right operation according to following step:

- a) While start machine, put on the heating device and hot fan together at the same time.
- b) While stop machine, put off the heating device first and let fan run for a while to cool down.

10. Check the carbon brush of fan motor when the speed of motor is getting slower; carbon brush wears off gradually during usage, so check up the carbon brush often, which is found under a small cap; Replace it if carbon brush uses up, and clean up brush powder inside of motor.

## IX. COMMON MALFUNCTION

Case	Cause	Method
No heat in the tunnel	No power	Put on the power
	Heating switch broken	Replace
	Heating pipe or circuitry broken	Replace or repair
	AC contactor, Solid-booster or temp. meter broken	Replace
	Heating adjustment is in the lowest position	Adjust
The temp. of the tunnel is too low	Some heating pipes broken	Replace
	Heat adjustment is too low	Increase
	The temp. is set too low	reset
	One of the 3 fire wires loose	Re-connect
Conveyor motor stop running	Switch or Adjuster broken	Replace
	The motor burned	Replace
	Conveyor adjustment is in the lowest position	Adjust
	Block on the driving unit	Adjust or mend
The fan motor does not work	The switch of the fan broken	Replace
	The motor of the fan broken	Replace
	Circuitry broken	Mend
Stop suddenly	Power loose or fuse pipe broken	Replace



## X. MAINTAINANCE

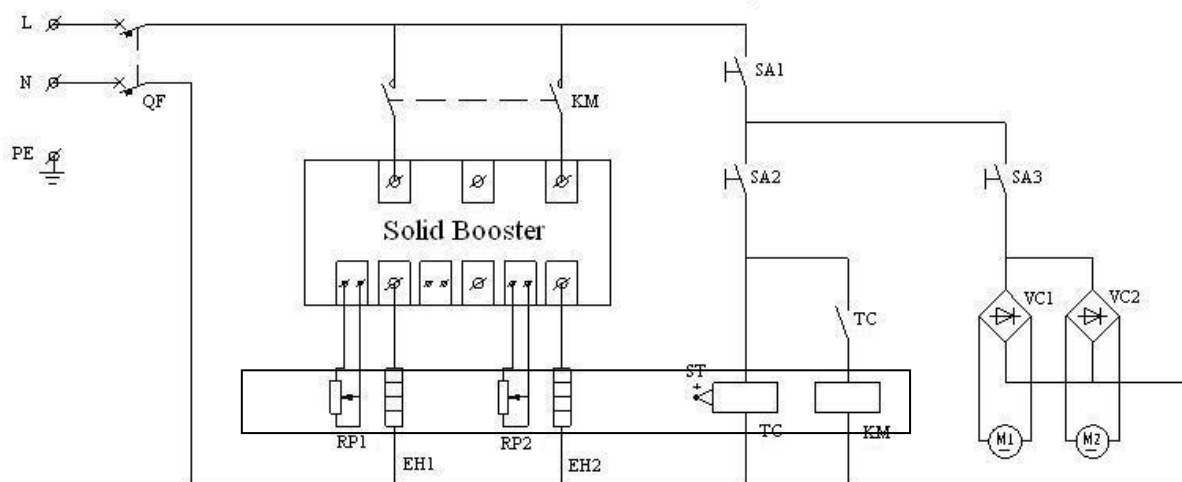
1. Switch off power while doing maintenance service. Professional technician is required.

## XI. SPARE PARTS LIST

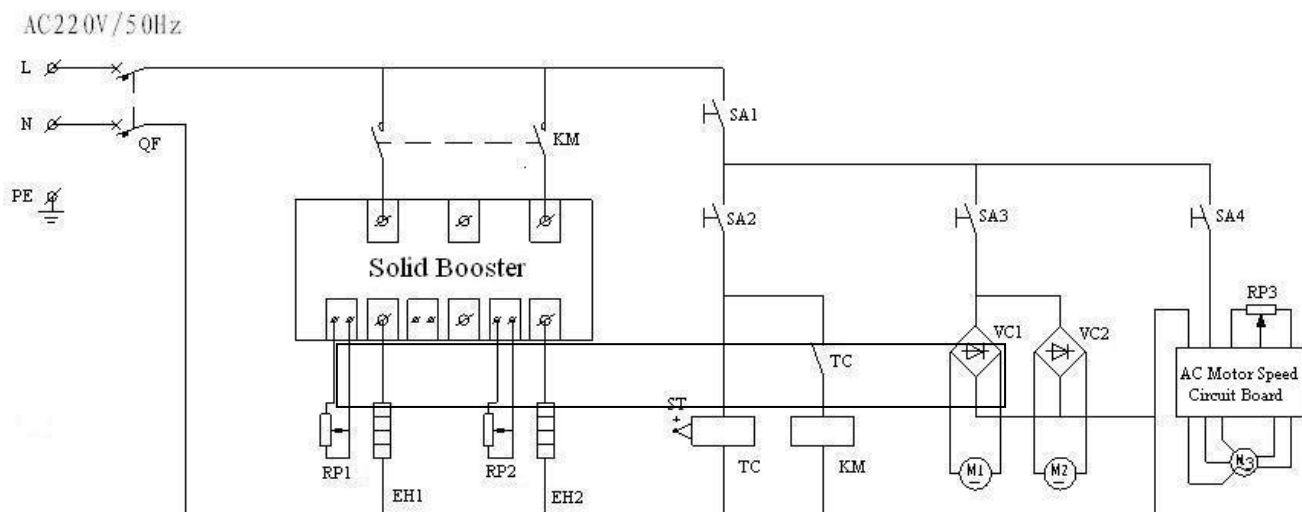
NO.	ITEMS	CE-435	CE-445	CE-415	CE-425
1.	Inner-hexagon spanner, 4 mm	1	1	1	1
2.	Inner-hexagon spanner, 6 mm	/	1	1	1
3.	Inner-hexagon spanner, 10 mm	/	1	/	1
4.	Spanner, 8*10mm	1	1	1	1
5.	Spanner, 14*17mm	1	1	1	1
6.	Test pen	1	1	1	1
7.	Cross-head screwdriver	1	1	1	1
8.	Carbon Brush	/	/	/	2



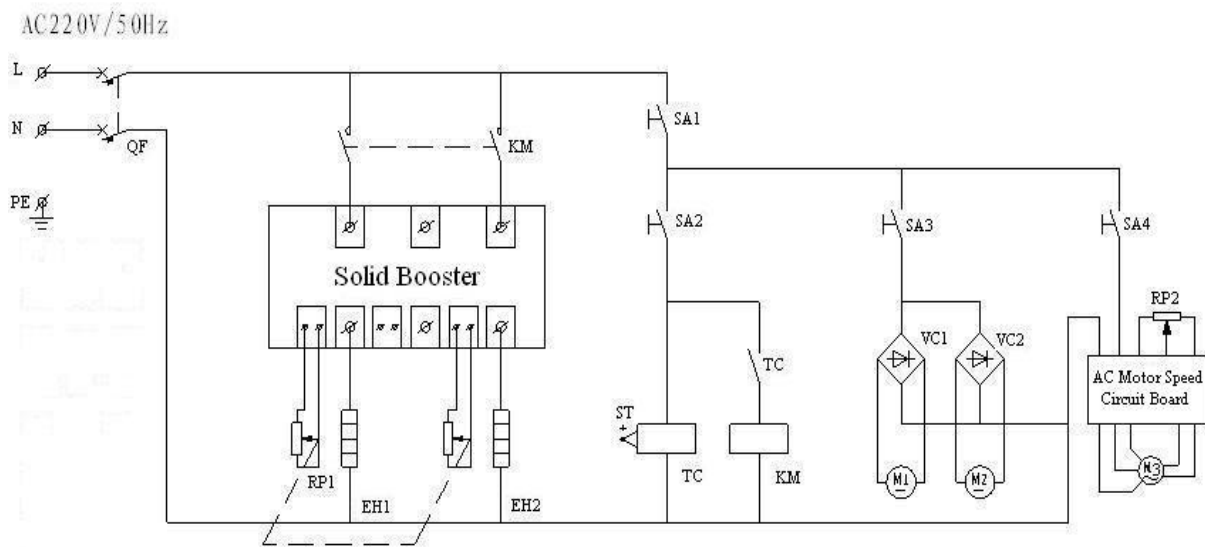
## XII. CIRCUIT DIAGRAM



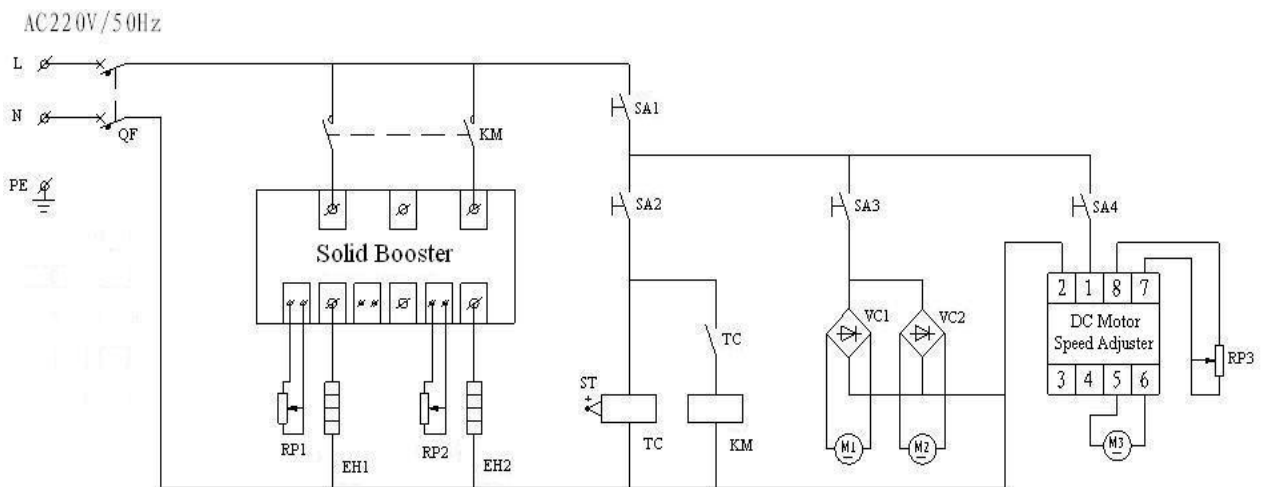
**CE-435 Label Shrink Packaging Machine**



**CE-445 Label Shrink Packaging Machine**



**CE-415 Label Shrink Packaging Machine**



**CE-425 Label Shrink Packaging Machine**