

Eastsign

K-cup Filling and Sealing Machine

RCC-1-3000

User Manual



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1. Safety

To avoid accidents, the machine has fairly complete set of security measures, such as warning labels and safety protection devices. To give full play to these security measures, the user must also comply with the following provisions:

- 1) The machine can only be started when the safety door is closed. It is strictly prohibited to force open the door when the machine is running.
- 2) The operator should carefully check all moving parts areas, these areas may not have any possible damage to the foreign body of the machine.
- 3) When the machine is running, it is strictly prohibited to dig hands deeper into cup feeding area, pressure powder area, heat sealing and membrane absorption area.
- 4) Cut off air and electric power supply before cleaning the machine, lubrication, maintenance or repair.
- 5) If the machine safety facilities damaged or malfunction, the operators shall report in a timely manner.
- 6) During the stop production, must cut off power supply and air supply.

Should pay special attention to some areas

This machine may cause harm to the human body. Parts of the machine and area are:

- Cup feeding area
- pressure powder area
- cup area
- heat sealing
- membrane absorption area
- region of the powder filling device.

Emergency stop button

You can press the red "stop" button on the machine when meeting an emergency, the machine will stop running immediately. After troubleshooting, then you can reset the button. "stop button" location: in front of the machine frame.

2.2 Safety device

2.2.2 Security door

1) There is a proximity switch at the gate of organic glass, when the door is open, running machine will stop and the warning lights turn on.

2) You can cancel the function by adjusting the touch screen, even the door open, the machine can still run.

2.2.2 The emergency stop button

In an emergency, you can press the red "stop" button on the machine, the machine will stop running immediately. After troubleshooting, then you can reset the button. Turn it right to reset.

2.2.3 Safety device check

1) You must check the work condition of the safety device is normal or not before starting the machine.

2) The working state of the safety device must be checked by professional operator every day.

Warning

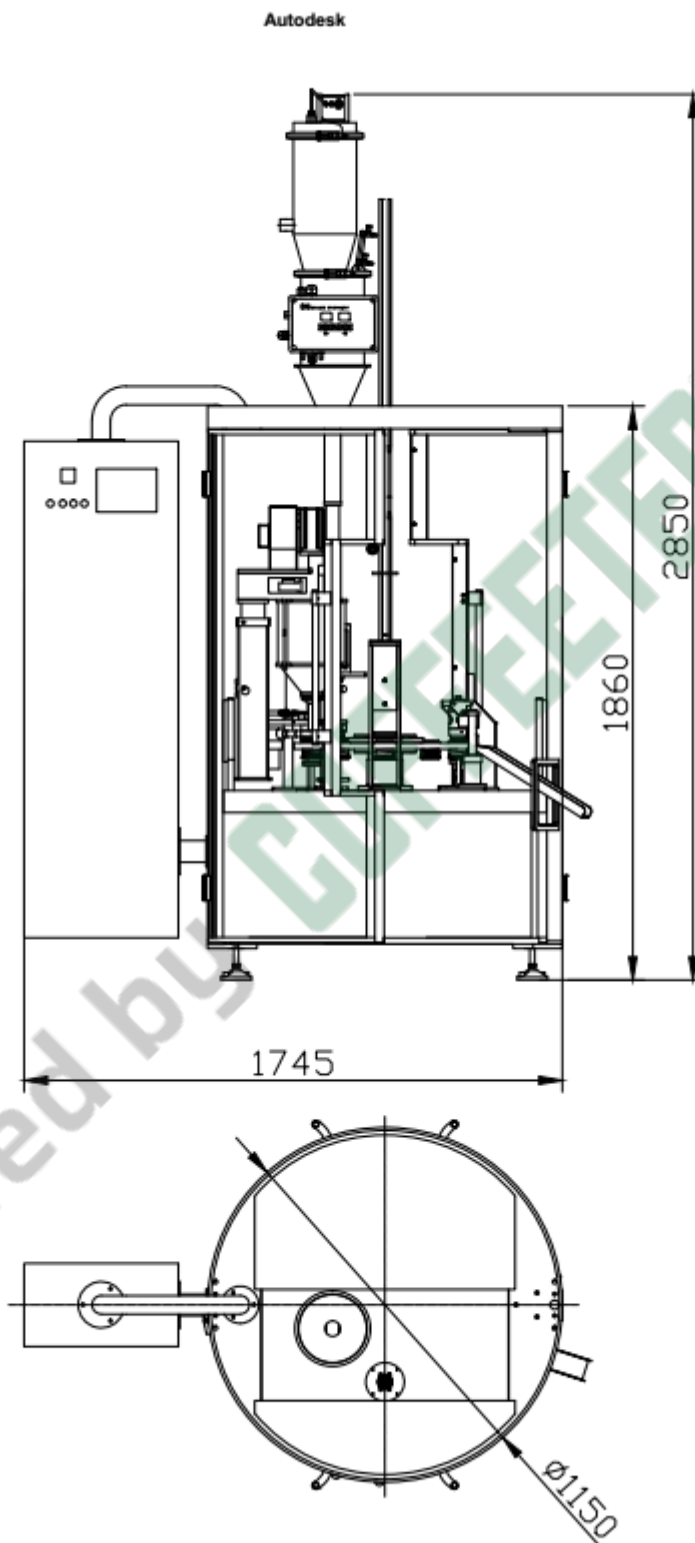
The temperature of heat sealing device is very high when the machine is working, if you need to adjust or maintain some parts of the region:

“CAUTION HOT”

Important implications

Before installing the machine, please read this manual carefully, in order to avoid personal injury and damage the machine.

No 2. Machine dimensions



No 3. Machine technical parameter

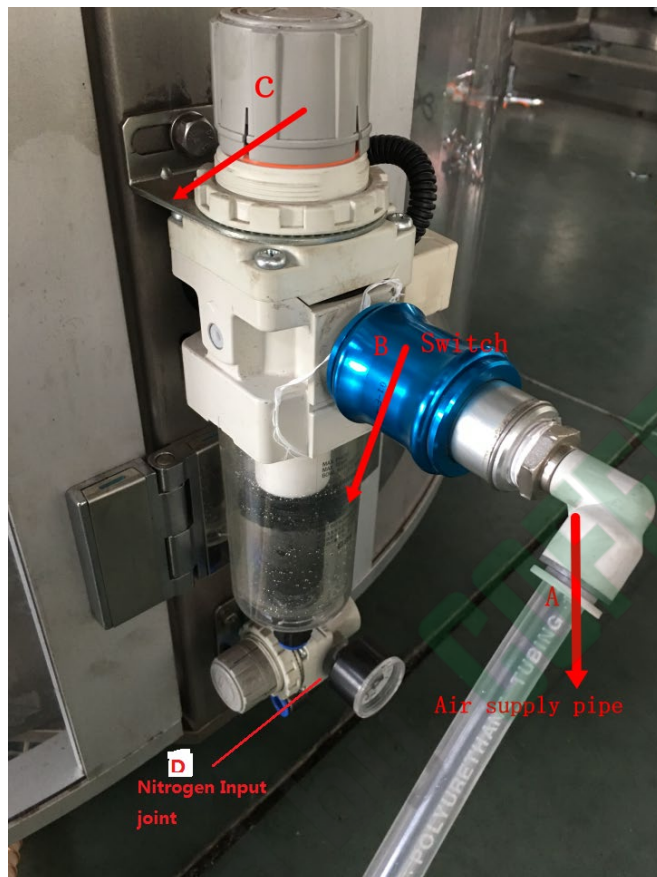
Technical Parameters	Parameters
Max filling powder weight	8-15g
Packaging speed	50cups/min
Coffee filling accuracy	$\pm 0.15\text{g}$
Laying-off station	1
Net weight of the machine	750Kg
Machine case size	1745mm (length) X1150mm (width) X2850mm (height)
Note: This machine can only packaging a certain specification capsule, if you change the capsule's size, then need to change the mold plate.	

No 4. Installation

How to connect with air pipe and vacuum feeding machine

And electric line

1 Air supply



A is air supply pipe from Air compressor or air tank.

B is switch, push inside is switch on air supply, pull outside is shut down air supply.

C Pull out, you can turn it right or left to adjust air pressure, in the right side of this device, these has a pressure gauge to show pressure, 0.6bar -0.8bar pressure is ok. After make sure it, press it down.

D Nitrogen input joint, which is connected with nitrogen cylinder or nitrogen generator machine.

Connect with vacuum feeding machine



Electric line and power switch



Electric line Supply power for machine



Power switch

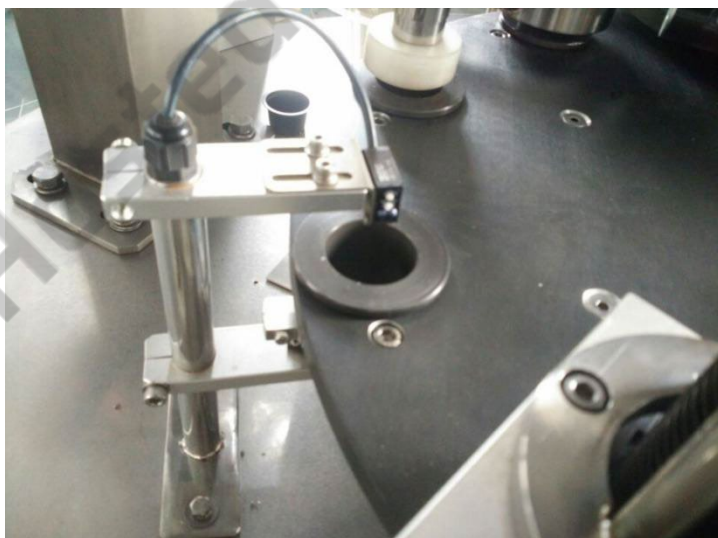
No 5. Machine parts

5.1 Cup Loading



Work principle: There has cylinder to control one cup into mould, one by one. Add empty cup by hand.

5.2 Empty cup sensor



Work principle: sensor detect cup, no cup no filling.

5.3 Filling powder



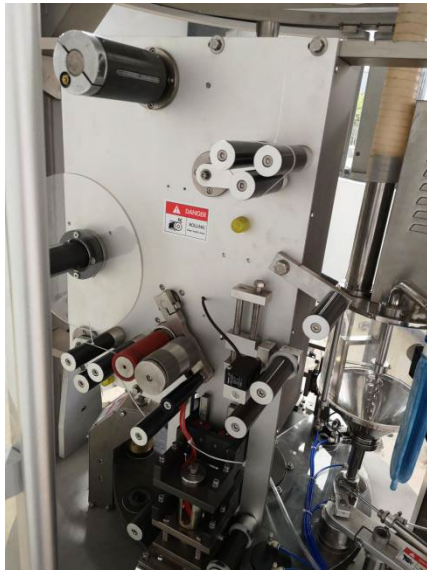
Work principle: Servo motor control auger filling, filling weight by set on touchscreen.

5.4 Tamping and Pressing



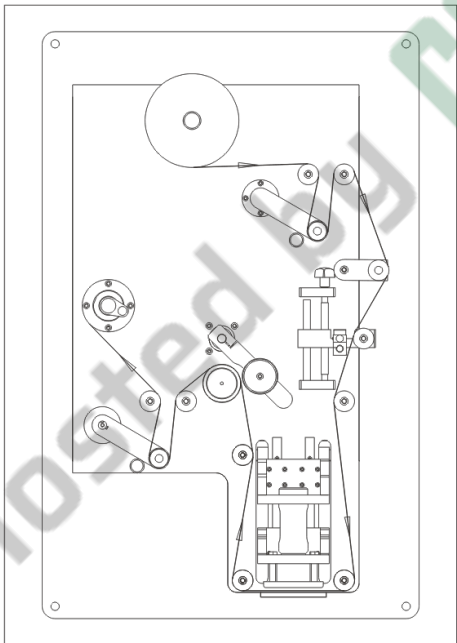
Work principle: Press powder inside cup, and clean capsule's top rim remaining coffee, suck it to filter tank.

5.5 Roll film cutting and sealing

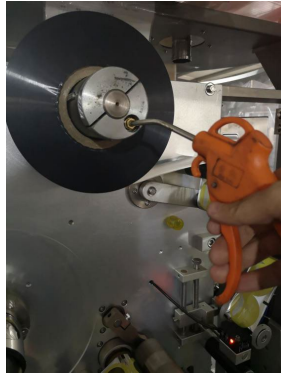


Work principle: Cutting roll film and form circle lids, seal lids on the top of capsule.

5.6 How to install roll film:



After finish roll film installation, inject compressed air inside bear, look below pictures, use air pistol inject air, the shaft will expand. So the film will be tighten.



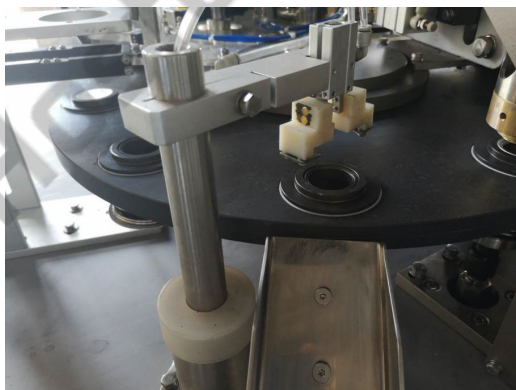
If you want to take roll film out, please press this hole, discharge compressed air, so the bear will be smaller, the fill will be loosen.

5.7 Heat seal



Work principle: To make sure more seal effect, the second time seal lids, the lids sealing will be better.

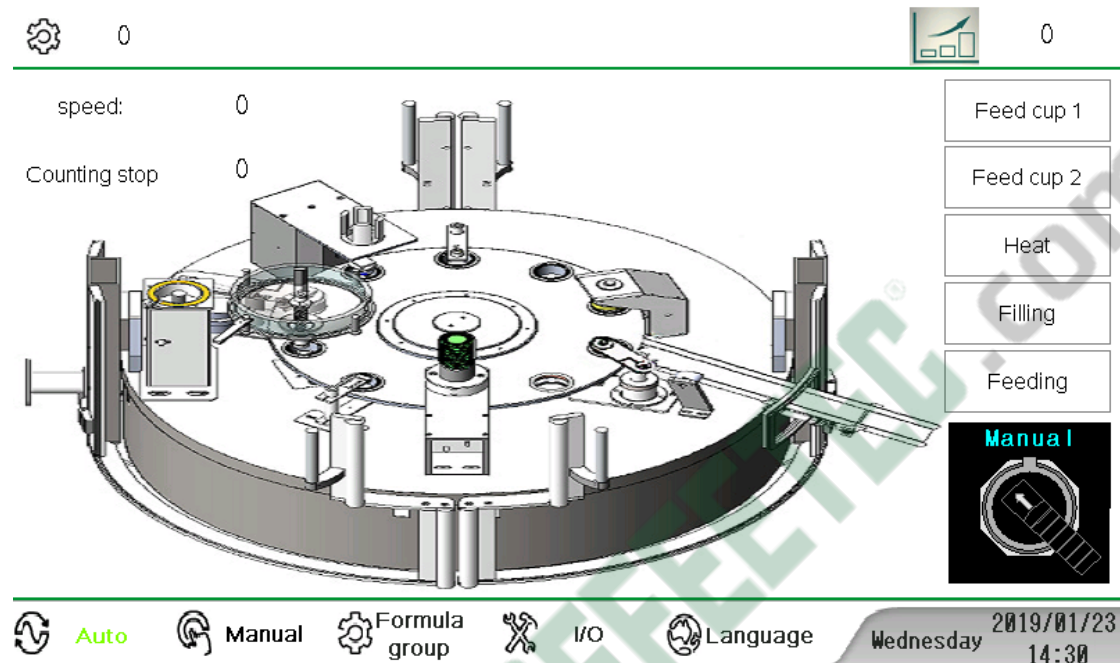
5.8 Finished cup output




Work principle: Swing cylinder control air claw, suck finished cup output.

No 6 Touchscreen Operation and Circuit Diagram

6.1 Touchscreen



 0 This button is counter, Count how many cups finished. Just record shows.
If you want to Clear 0, Please press Stop button.

 speed This machine speed can be adjusted. You can write 35-50 cups per minute.

 Counting stop 0 Count how many cups finished, machine stop automatically.

Feed cup 1 Feed capsules into machine's mold.

Feed cup 2 Feed another type capsules into machine's mold.

Heat Open Temperature Controller, Sealing head is heating

Filling Filling Powder inside the cup.

Feeding Vacuum feeding powder to machine's hopper.



Manual and Automatic Mode change.



Language

This is operation interface language change, from English to Chinese.

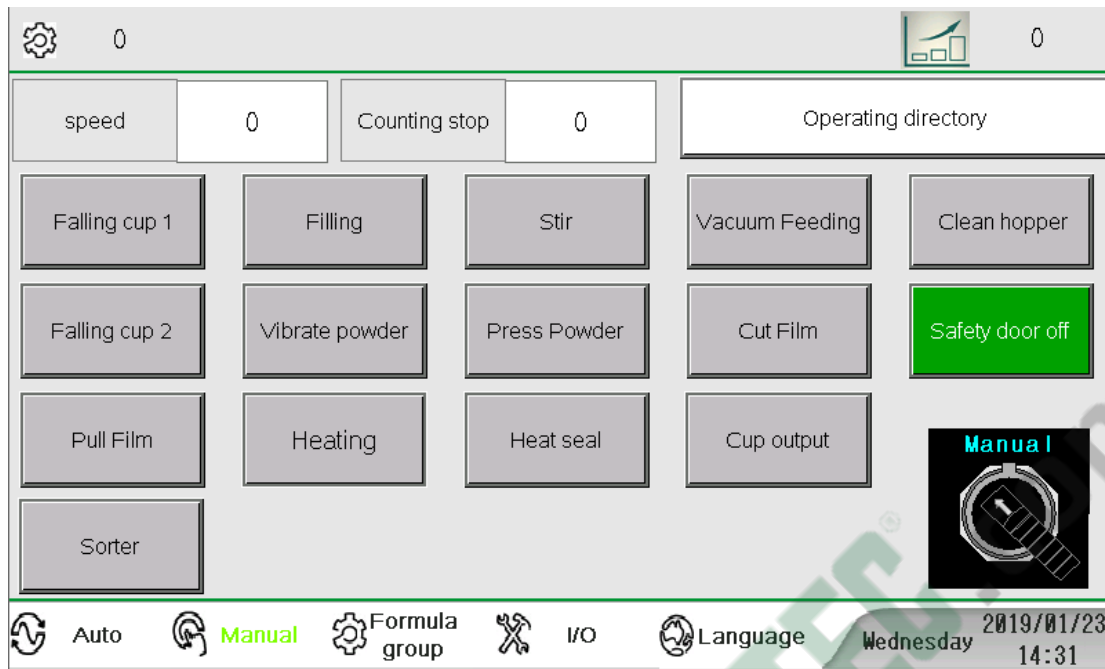
Normal Production Process Operation

1. Firstly switch on “heat” function, when temperature go up to capsule sealing condition, then we check if machine’s turntable is clean. And load capsules, lids, please sure has compressed air supply.
2. Secondly, Press Feeding cup 1 or Feeding cup 2 button, filling button, feeding button.
3. Thirdly, press white color “Run” button on the Operation manual, then machine will run.

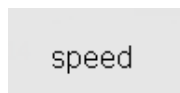


Manual

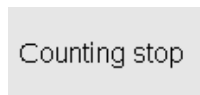
Press _____ We will go to this page



This button is counter, Count how many cups finished. Just record shows.
If you want to Clear 0, Please press Stop button.



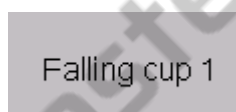
This machine speed can be adjusted. You can write 35-50 cups per minute.



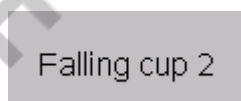
Count how many cups finished, machine stop automatically.

Operating directory

When machine meet some problems, you can open this page, do some machine's every movement adjustment.



Fall cup 1 type into machine's mold.



Fall cup 2 type into machine's mold.



Convey film and unwind film to cutting film system.

Sorter

Switch on/off Automatic centrifugal sorter machine, feed capsules into machine's mold.

Filling

Filling powder in the cup.

Vibrate powder

When filling powder in the cup, at the same time, vibrate powder in the cup, let powder distribute evenly.

Heating

Open the temperature controller, Sealing head start to heating. Sealing temperature can be adjust on the Temperature displayer.

Stir

When filling powder into cup, Stirring powder in the hopper, it will let powder distribute in the center of hopper.

Press Powder

After filling powder in the cup, will press powder in the cup, and clean cup's top ring.

Heat seal

Second Heat Seal lids on the top of cup.

Vacuum Feeding

Vacuum feeding powder into hopper.

Cut Film

Cutting roll film and form circle lids on the top, then sealing it.

Cup output

Pick finished cups from machine's mold to outside.

Clean hopper

When you wanna change coffee powder, but want to clean remaining powder in the hopper, you should switch on this function, and you need open stir this function. In this case, you should

Safety door off

Switch ON machine's safety door function. When machine is running, if open the door, machine will stop automatically. Switch off it, when machine is running, open the door, nothing happened.



Press this button, go to below this page interface.

<div><div></div><div>0</div></div>					Diffussence1					Yield record		servo	
Name	Int	Start	End	protect	Name	Int	Start	End	protect				
Cups loading		0	0		Rotation of cleaning	0	0	0					
Cups loading up and down		0	0		0	Suck lid vacuum	0	0	0				
Cups loading vacuum		0	0		Suck lid vacuum	0		0	0				
Cup swinging arm		0	0		Heat sealing cylinder 2	0		0	0				
Feed servo	0	0	0		Heat sealed cylinder 1	0	0	0					
Vibration powder	0	0	0	0	Cups output swing	0	0	0	0				
Suck powder	0	0	0		Cup swing arm		0	0	0				
Clean		0	0		Cup clip		0	0					
<div><div> Auto</div><div> Manual</div><div> Formula group</div><div> I/O</div><div> Language</div></div> <div>Wednesday 2019/01/23 14:31</div>													

This page parameters already set, no need change it. Please keep this parameters record before you change it.

Press "Yield record", this is one day production capacity record list.

0
Yield record

No .	Date	Quantity	No .	Date	Quantity
1	0	0	1	0	0
2	0	0	2	0	0
3	0	0	3	0	0
4	0	0	4	0	0
5	0	0	5	0	0
6	0	0	6	0	0
7	0	0	7	0	0

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Wednesday 14:32

Press “Servo” button, we will go to filling servo interface.

0
servo
←

Feed servo		Traction servo	
Volume Auger	0.000	Traction speed	0
Feed weight	0.0	Traction acceleration	0
Servo speed	0	Traction deceleration	0
Servo acceleration	0	Traction length	0
Servo deceleration	0	Traction compensation	0
Feeder delays on	0ms	No feed times	0
Feeder delay	0ms	Stop position	0
Powdering time	0ms	No cups after the cup	0
Stirring delay	0ms	No feed times	0

Auto
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 Language

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Wednesday 14:31

About filling accuracy, how to adjust it. The powder thickness is different, you shall go to here, do some changes.

Feed servo	
Volume Auger	0.000
Feed weight	0.0
Servo speed	0
Servo acceleration	0
Servo deceleration	0

Feed weight	0.0
-------------	-----

If you want to fill 5 grams powder in

the cup, please write it 5 grams.

Volume Auger	0.000
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If cup's powder standard weight can't

reach 5 grams, you can adjust this parameters. Volume Auger, parameters range is 0.00-1.00. if CUP'S powder less than 5 grams, you can let this number be smaller, the filling powder will be more. If cup's powder higher than 5 grams powder, you can let this number be bigger, the filling powder will be smaller.

Servo speed	0
Servo acceleration	0
Servo deceleration	0

Servo Speed, acceleration, deceleration speed, before leave factory, already set it, there is no need change.

This is vacuum feeding machine parameters setting

Feeder delays on	0ms
Feeder delay	0ms
Powdering time	0ms
Stirring delay	0ms

Feeder delay on, when hopper is going to empty, when sensor detect hopper is empty.

Vacuum feeding machine can start to convey powder to the hopper.

Feeder delay, when vacuum start to work, after how many seconds, vacuum feeding machine will stop.

Powdering time, this is vibrate powder time when coffee powder go down to machine's hopper, it will help coffee flow inside of hopper easily.

Stirring delay, when start to stir powder in the hopper after convey powder to machine's hopper.

Traction servo		
Traction speed	<input type="text" value="0"/>	Fixed length
Traction acceleration	<input type="text" value="0"/>	
Traction deceleration	<input type="text" value="0"/>	Positioning
Traction length	<input type="text" value="0"/>	
Traction compensation	<input type="text" value="0"/>	Finding

Traction Servo, this is pull film servo parameter setting.

Traction speed, it is unwind film speed, , convey film to cutting film station.

Traction length, it is unwind film's length, cutting one capsule, film will move how long.

Traction compensation, if film's logo is not in the center, we will adjust sensor track eyemark's distance on the roll film, then cut it, let logo in the center of cup.

No 7. Maintenance

- 1.The transmission structure at regular intervals (every one to three months)to add lubricant, such as chain wheel, chain, cam divider, joint bearings, bearings and other parts.
- 2.Regular discharge sewage at air treatment device on screw off button on the drain outlet, pour sewage to the prepared container, then screw in the button.
- 3.Before using the machine, must clean all parts in contact with the material powder, cup, clean funnel, powdered head of debris, etc.; If you do not use the machine for a long time, also must clean the parts, and sealed parts

No 8.Common trouble and troubleshooting methods

In the process of operation, the improper operation and settings, and mechanical parts, electrical components damaged and other reasons, will cause the machine doesn't work, please first find the reason, from table following and take effective measures. If the problem still can't be solved, please contact the supplier.

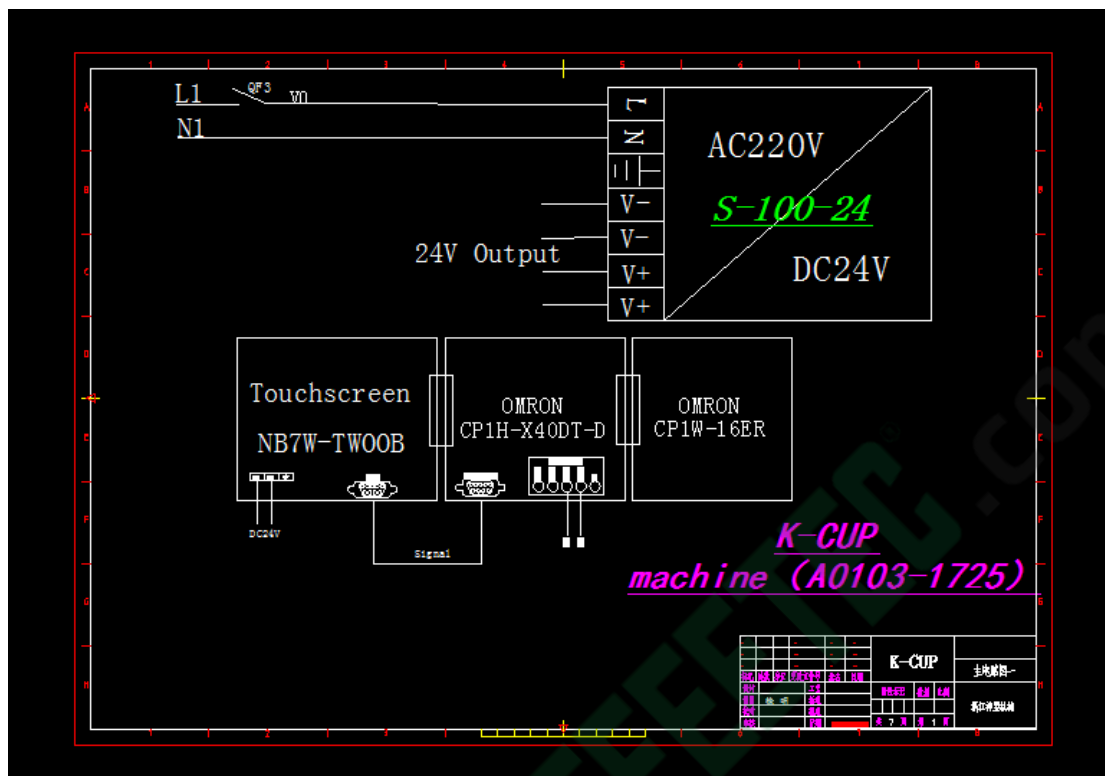
The fault phenomenon	Cause analysis	Solution
Powder filler is not accurate	1.the parameters is wrong 2.stir not evenly 3.Feeding screw is loose 4.Hopper detector is out of control.	1.Reinstall the screw parameters. 2.Check whether mixing motor rotating, if not, the agitator state by the touch screen switch to a "NO". 3.Open funnel mouth, and check the screw. 4.Check and adjust, if necessary, to change.
	1. The film is not	1. Adjust membrane

<p>Heat sealing is not straight or sealing film is easy to fall off.</p>	<p>straight.</p> <p>2. Sealing temperature is not high enough.</p> <p>3. Heat sealing punch press stroke is not enough.</p> <p>4. Heating rods, thermocouple damaged.</p>	<p>absorption section.</p> <p>2. Through the temperature controller reset temperature.</p> <p>3. Replace the heating rods or thermocouples.</p>
<p>Jacking cup is abnormal</p>	<p>1. Jacking cup parameters set wrong.</p> <p>2. Cylinder of jacking cup damaged.</p> <p>3. Cylinder movement angle is not correct.</p>	<p>1. The jacking cup parameters set by the touch screen, make time to meet.</p> <p>2. Replace the cylinder.</p> <p>3. Adjusting cylinder installation plate angle.</p>
		<p>1. Check the encoder circuit or</p>

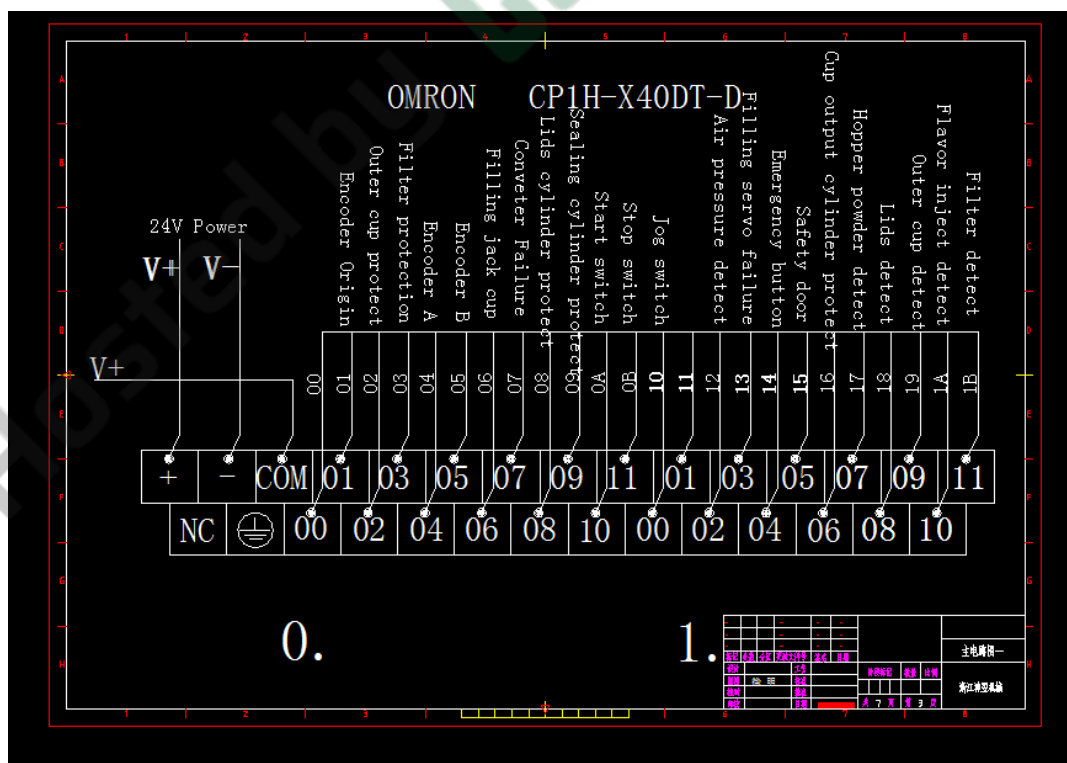
<p>The machine runs abnormally, cannot stop or automatic stop</p>	<p>1. The encoder failure.</p> <p>2. No signal output to the PLC.</p> <p>3. Photoelectric switch is wrong.</p>	<p>replace the encoder.</p> <p>2. Check the electric schematic diagram to solve the problem.</p> <p>3. Adjust the photoelectric switch position or sensitivity, if necessary, to replace it.</p>
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No 9. Circuit diagram

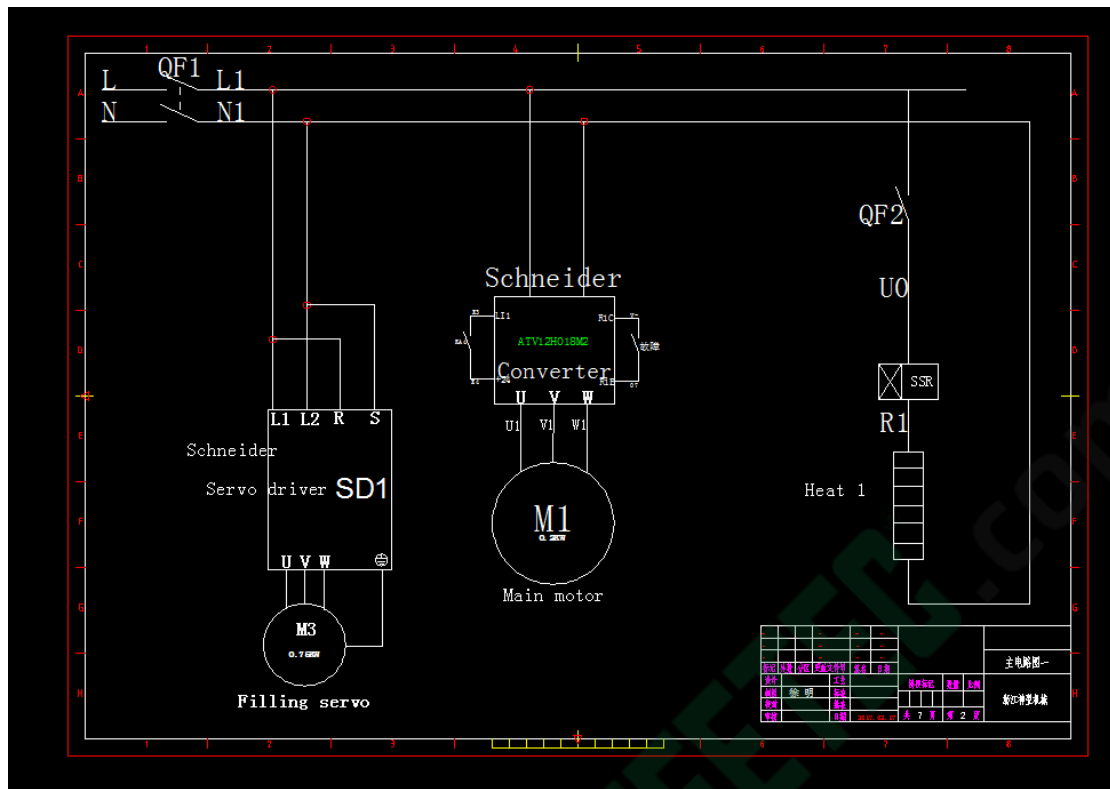
1.



2.



3.



6.

