

# User's Manual



**Model: GGS-240P5-A**

## **Plastic Ampoule Filling and Sealing Machine**

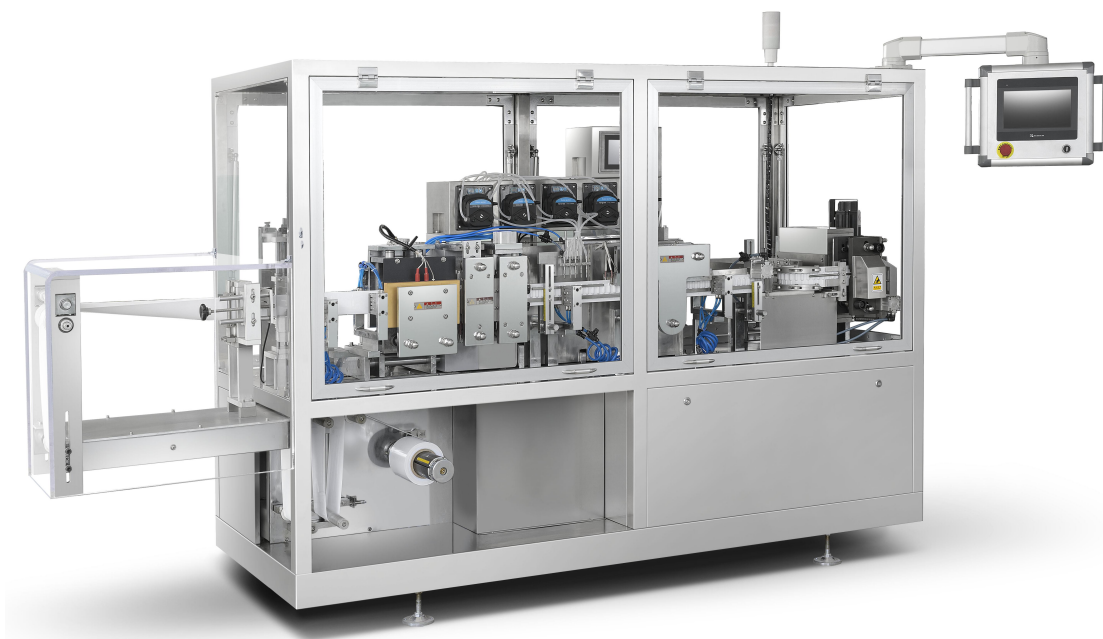
**Link:**

<https://pharmamachinecn.com/plastic-ampoule-filling-and-sealing-machine/>



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## **1. Introduction**

Our company is specialized in the automatic filling and sealing machine for plastic bottles with oral liquid since it was founded. It is a kind of mini-type packing machine, which adopts the latest technology. As this machine has the advantages of small occupied area, low investment, non-pollution and low noise, it is a perfect filling and sealing machine to implement clean room.

## **2. Range of Application**

All kinds of liquid and pasty fluid including oral liquid, pesticide, perfume, cosmetics, jam and food, etc.

## **3. Characteristics**

This machine adopts compound film of PVC/PE and PET/PE, heat-sealing while forming and camshaft driving.

The mould is installed on the middle guide plate, running through the movement of ejector pin roller forward and backward, which is driven by the double cam. Air is blown to plastic bottles during forming with heat-sealing. Filling & sealing, perforating and punching can be operated on-line at the same time.

#### 4. Main Technical Parameters

|                         |                                |
|-------------------------|--------------------------------|
| Max. forming depth      | 12mm                           |
| Punching Frequency      | 1-35 times/min                 |
| Packing Material        | PVC/PE, PET/PE (0.2-0.4)*260mm |
| Filling volume          | 0.1-200ml                      |
| Power supply            | 7KW, 38V, 50Hz                 |
| Machine weight          | 1000kg                         |
| Dimension (L*W*H)       | 3380*950*1800 (mm)             |
| Split dimension (L*W*H) | 2500*950*1800 (mm)             |

#### 5. Mould Installation

- 1) Install the inside mould on the guide plate in parallel, then install the outside mould after adjusting the rail to the right position.
- 2) Adjust the rail height to keep the bottleneck at the same line, and then adjust it again to make its upper track 1mm higher than the bottle body for bottle moving.
- 3) After finishing the adjustment of rail, install the outside mould on the guide plate in parallel firstly, then install the mounted plate on the outside mould. The next step is to tighten up the jackscrew and then the nut of the mounted plate. At last release the spring on the guide plate to contact it with the mounted plate.
- 4) After fixing up the inside and outside moulds, install the blowing head at the middle of them.
- 5) While installing the tail sealing moulds, firstly adjust the sealing device 2mm higher than the bottle body, then release the spring to make the outside mould contact with the inside mould for alignment.

- 6) While installing the punching moulds, used for cutting the scrap edge material, firstly put the inside mould at the middle place and fix it up by screws, then screw up the outside mould after aligning it.
- 7) While installing the integrated moulds for both perforating and cutting, also fix up the inside mould together with the cutter at first and then the outside mould.

## **6. Notice for Installation**

- 1) The thickness of bottom foot pad should be uniform, and need adjust the rubber plate in parallel.
- 2) Need to arrange professional staff to operate and repair the machine.
- 3) Must connect to the ground wire at the specific location signed by the landmark label.
- 4) Must lubricate all the moving parts of the machine by engine oil before it working, and the air filter by dedicated oil for air cylinder.
- 5) Suggest using oilless air compressor for this machine.
- 6) Please not use over-pressure in forming, tail sealing and creasing process, or the life of the machine will be shortened.

## **7. Pre-operation Process**

- 1) As the safety utilization of electric power required, plug in three-phase four-wire power of 380V 50Hz.
- 2) Dredge the water flowing way as the signs showed to make the cooling water flow in and out smoothly.
- 3) Connect the air tube to the joint and turn on the air compressor to adjust the pressure over 0.6MPa, then the machine can start to run.

## **8. Operating Process**

- 1) Turn on the machine to enter the human-machine interface and turn on the heating switch. The temperature

for pre-forming can be set at 95-100°C, that for forming at 110-120°C and that for sealing at 115-125°C.

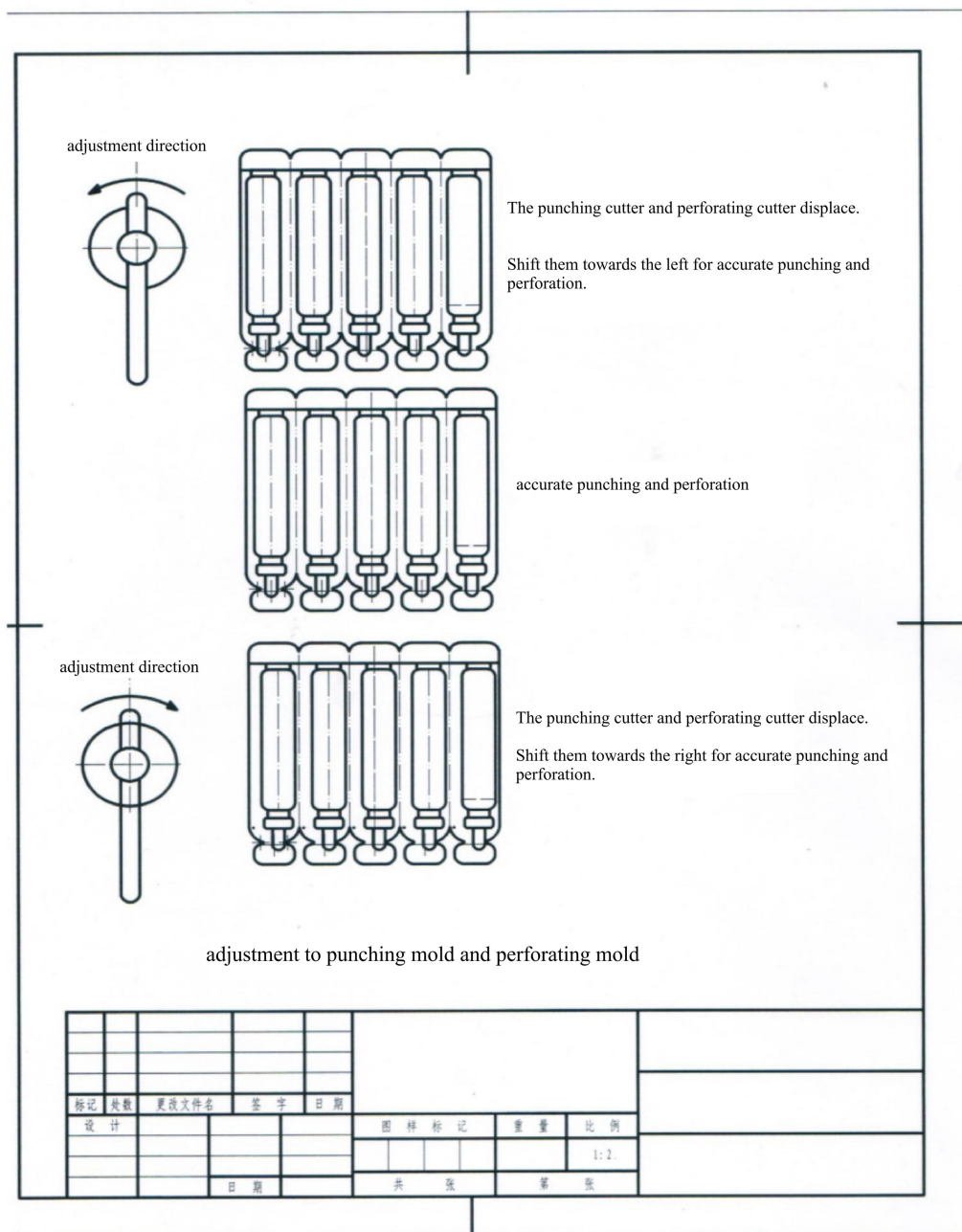
- 2) Pull the PVC material along the running direction of the machine to pass through the punching parts; press the “traction on” button and the positioning air cylinder will clamp the PVC.
- 3) Open the gas and cooling water before turning on the machine. Wait for 5mins after the temperature reaches the set normally, then start the main engine. Keep the filling device at off status before the forming device runs normally, and then adjust the punching device after running a few minutes.
- 4) If the PVC material is used up in running process, stop the machine and connect the start of the new PVC with the end of the previous PVC by scotch tape. While the connecting part runs to the filling process, turn off the filling function. Turn on it after this part passing through the filling place.

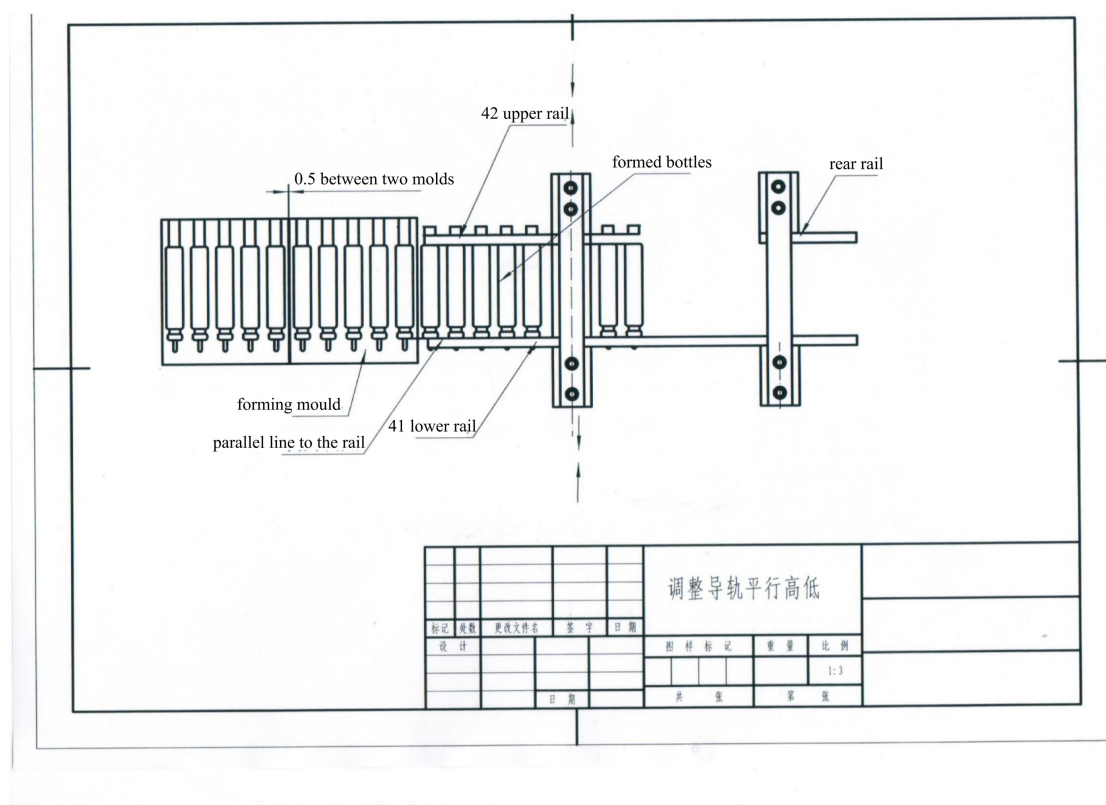
## 9. Faults Removal

| Faults                                   | Cause                                                                                                                                                                                                                                                                                                                              | Solving Methods                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Forming Defects                          | <ol style="list-style-type: none"> <li>1) Lower temperature.</li> <li>2) Lower air pressure.</li> <li>3) Mould temperature is too high.</li> <li>4) Deviation of air-blowing head.</li> <li>5) The surface of air-blowing head is uneven.</li> <li>6) Different height of rails.</li> <li>7) Lower weather temperature.</li> </ol> | <ol style="list-style-type: none"> <li>1) Increase the temperature.</li> <li>2) Increase the pressure to 6-8</li> <li>3) Use cooling-water machine.</li> <li>4) Adjust it to the centre place.</li> <li>5) The surface of air-blowing head modification.</li> <li>6) Adjust the rails to the same height.</li> <li>7) Need to keep warm inside room.</li> </ol> |
| Punching place is anterior or posterior. | The idle test result is some different from the practical production effect.                                                                                                                                                                                                                                                       | Adjust screws for punching cutter to make the cutter at proper position.                                                                                                                                                                                                                                                                                        |
| Wrong synch                              | The stroke is wrong.                                                                                                                                                                                                                                                                                                               | Adjust the stroke swing rob to make the stroke 1mm less than forming mould width.                                                                                                                                                                                                                                                                               |
|                                          | Deviation of manipulator                                                                                                                                                                                                                                                                                                           | Adjust the front traction place at the middle of two bottles, so as the latter traction.                                                                                                                                                                                                                                                                        |

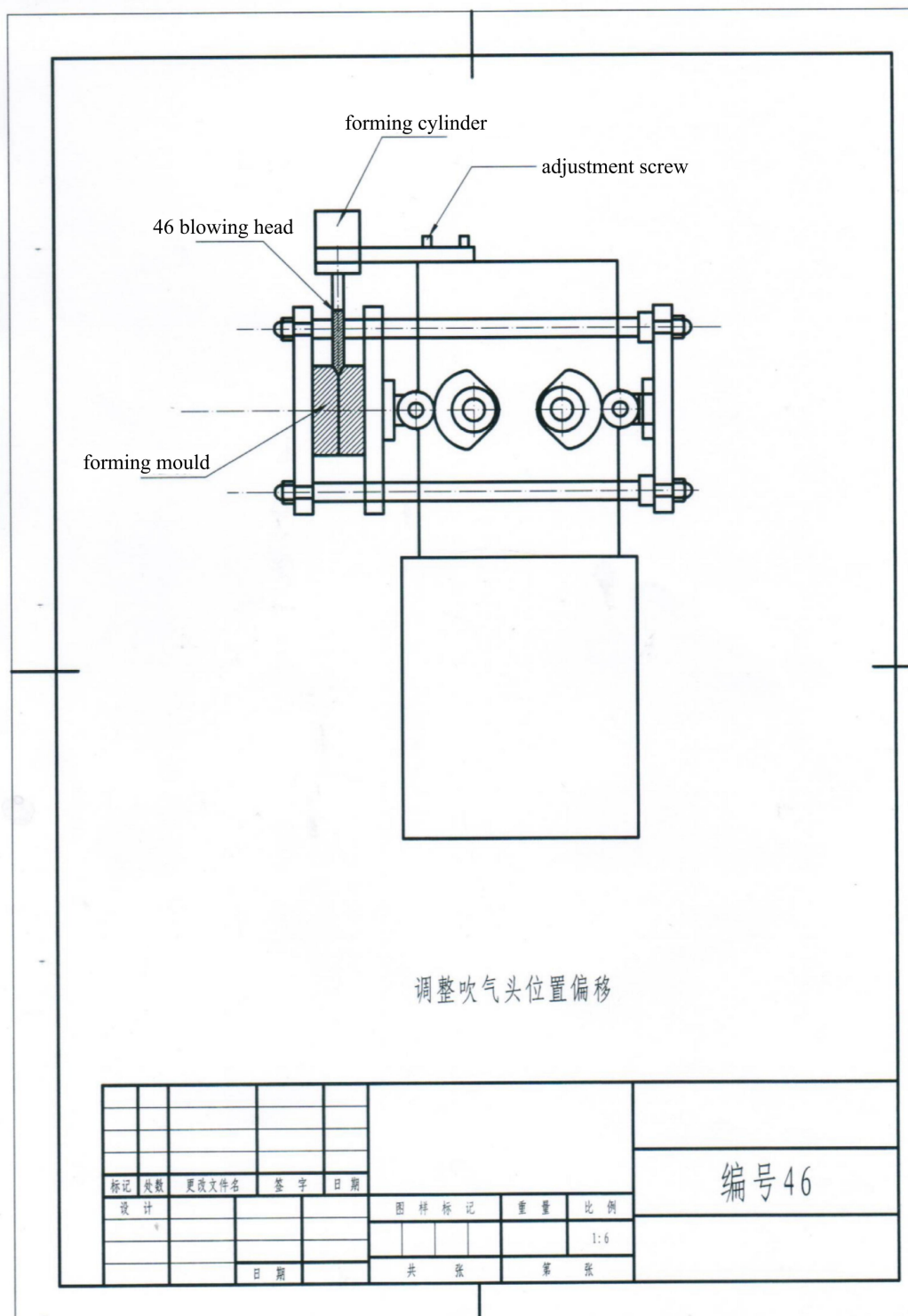
|                                                                                                                                                                    |                                                                                                                                           |                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Wrong tail sealing and lot position                                                                                                                                | Sealing length of forming cutter is wrong.                                                                                                | Adjust the forming screw by moving it front or back.                                                                   |
| Wrong punching position                                                                                                                                            | Deviation of the punching cutter.                                                                                                         | Adjust the punching cutter to the right place.                                                                         |
| The bottle head and tail are cut well                                                                                                                              | Punching cutters are not aligned.                                                                                                         | Adjust the cutter by moving it up or down.                                                                             |
| Uneven perforating edge                                                                                                                                            | Deviation of perforating cutter                                                                                                           | Adjust the perforating cutter to proper position.                                                                      |
| Piston Pump<br>1) Different filling capacity<br>2) No liquid flowing out from the filling head<br>3) The liquid filling into the bottle is too much or not enough. | 1) The blue one-way valve is blocked up.<br>2) The solenoid valve can't work.<br>3) the stroke of filling parts is wrong                  | 1) Change it or clean it by warm water.<br>2) Change the solenoid valve.<br>3) Adjust the screws of filling device.    |
| Liquid leakage from the edge of bottle.                                                                                                                            | The temperature is not high enough or the PVC film is unqualified.                                                                        | Adjust the temperature gradually with 3 degrees once or change the PVC film.                                           |
| Liquid leakage from the tail of bottle.                                                                                                                            | 1) The sealing heat temperature didn't reach the requirement.<br>2) The temperature is over-high, causing small holes for liquid leakage. | 1) Adjust the temperature.<br>2) Adjust the temperature of A or B side after confirming which side has liquid leakage. |

## 10. Drawing of Machine



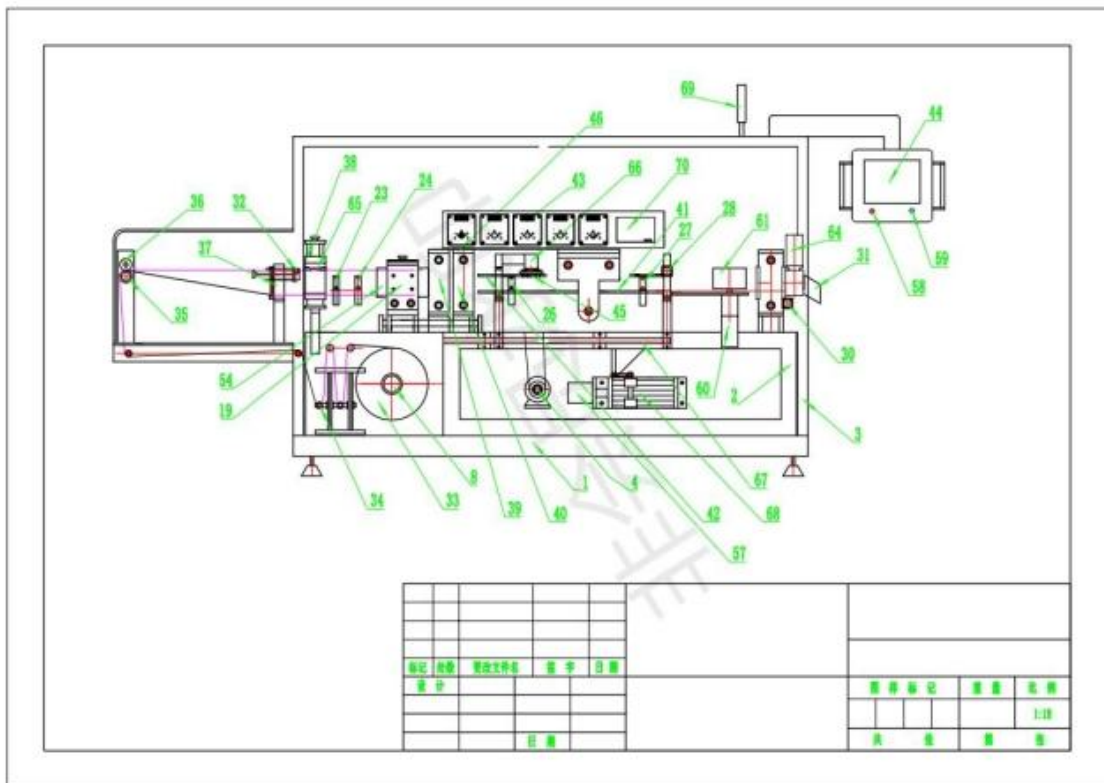
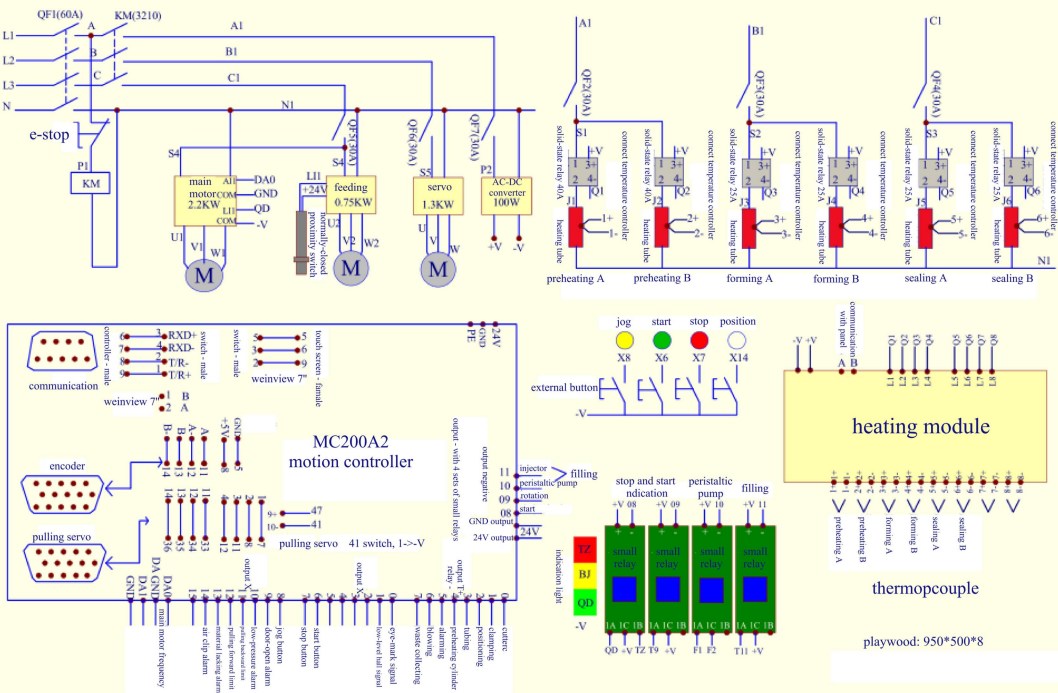


Adjustment to the height of rail



Adjustment to the blowing head

+V -V X12 X11 X10 X9 -V X8 X7 X6 X14 -V -V T0 T1 T2 T3 T4 T6 T7 -V T9 T11 -V F1 F2 P1 A  
N1 N1 N1 P2 J6 J5 J4 J3 J2 J1 地 N L3 L2 L1 Terminals No.





- |                                  |                                                |
|----------------------------------|------------------------------------------------|
| 33. PVC/PE material film         | 53. Sensing switch                             |
| 34. Rotating tube                | 54. Preheating A                               |
| 35. Pressing roller              | 55. Preheating B                               |
| 36. Pressing wheel               | 56. Film separating board                      |
| 37. Folding roller               | 57. Servo motor pulling                        |
| 38. Easy-tear baffle             | 58. /                                          |
| 39. Forming with sealing station | 59. Power switch                               |
| 40. Forming station              | 60. Adjustment to perforating blade and cutter |
| 41. Lower rail                   | 61. Feeding servo motor                        |
| 42. Upper rail                   | 62. Feeding wheel                              |
| 43. Peristaltic pump             | 63. Upper pressing wheel of feeding wheel      |
| 44. HMI                          | 64. Upper fixing frame of pressing wheel       |
| 45. Filling needle               | 65. Cutting servo motor                        |
| 46. Blowing head                 | 66. Easy-tear blade                            |
| 47. /                            | 67. Filling cylinder                           |
| 48. Forming device               | 68. Pulling guide rail                         |
| 49. Sealing device               | 69. Pulling screw rod                          |
| 50. Punching device              | 70. Alarm light                                |
| 51. /                            | 71. Touch screen of peristaltic pump           |
| 52. Sensing wheel                |                                                |

## 11. Controller

### 1) Overview

This control system adopts high-end motion controller (HC), touch screen (Weinview), frequency converter (Pioneer), servo motor (Yaskawa) for machine control and driving. The machine can catch eye marks. When the eye mark is missing, the system will alarm and stop the machine while the servo pulling length will not change. The encoder (Omron) has 360 sections. Automatic electronic cam replaces the traditional mechanical cam for

less mechanical friction and precise cam motion. Besides, the start angle can be adjusted. Temperature control module is also adopted for automatic temperature control. PID calculation and control can make temperature control more precise. The temperature can also be set and displayed on the touch screen. Therefore, fully automatic temperature control is achieved.

## 2) Control System Components

- a. Control: HC-A6 motion controller
- b. HMI: Weinview touch screen
- c. Yaskawa servo

## 3) Touch Screen

Note: since the touch screen is pretty delicate, do not touch it with sharp objects or oily hands.



Homepage

English

Click to enter the operation page in English.



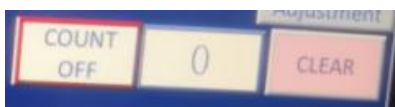
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: this is the button for main motor frequency speed regulation. It's set before the machine leaves the factory. Do not increase it casually to avoid some discoordination between parts.



: start mode: 1) double start: starting the whole machine; 2) filling start: start the front part of the machine; 3) start the perforating and cutting station.



: displaying the output count. Turn on the counting switch and the system

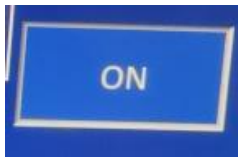
starts counting. The count number can be cleared at any time. “0” means page switch. Press it and the password input box pops up. The default password is 1111.



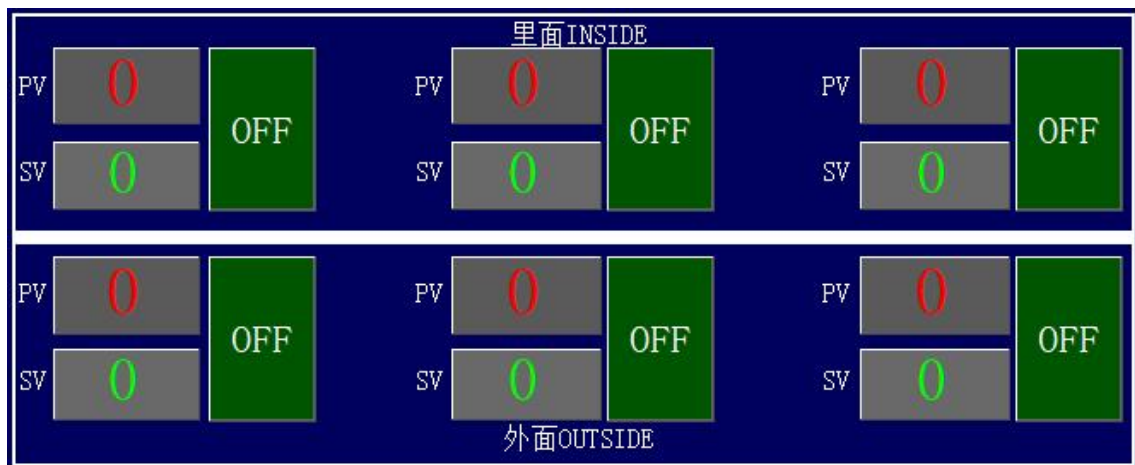
: bottle number of each perforating.



: pulling number of each cutting.

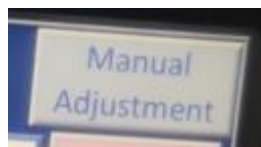


: turn on this switch for material with eye mark.



Temperature control: turn on the switch first. PV: actual temperature, SV: set temperature

Other parameters have been adjusted to the best. Do not change them casually.

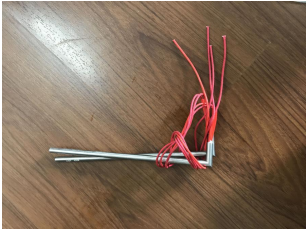


: click it to enter the page for manual adjustment. Normally no adjustment is needed.

## 12. Packing List

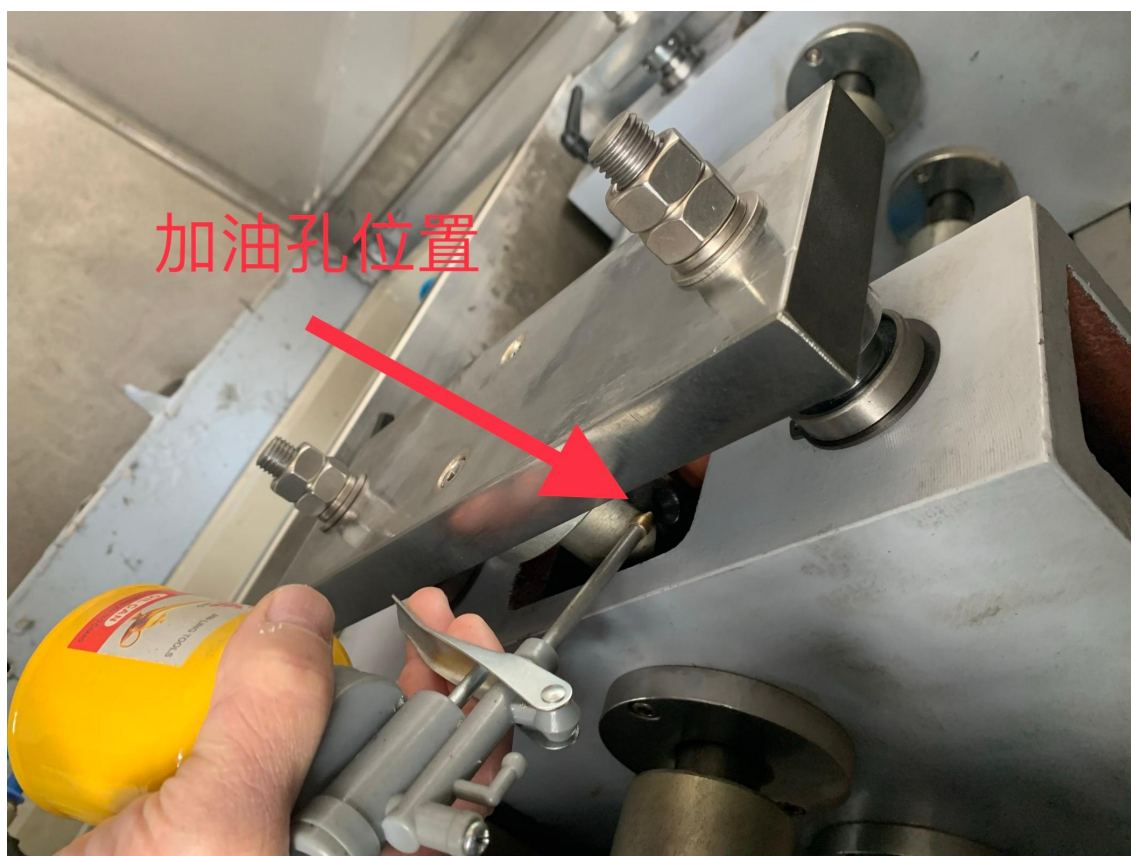
| No. | Name and spec. | Unit | Qty | Remark                                                                                |
|-----|----------------|------|-----|---------------------------------------------------------------------------------------|
| 1   | Steel brush    | pc   | 1   |  |
| 2   | Roller         | pc   | 2   |  |

|    |                                            |       |                     |                                                                                       |
|----|--------------------------------------------|-------|---------------------|---------------------------------------------------------------------------------------|
| 3  | Roller core                                | pc    | 2                   |    |
| 4  | Rolling pin 5*30                           | pc    | 30                  |    |
| 5  | Wire pliers                                | pc    | 1                   |    |
| 6  | Cross screwdriver                          | pc    | 1                   |   |
| 7  | Straight screwdriver                       | pc    | 1                   |                                                                                       |
| 8  | Inner hexagon wrench<br>(5mm/6mm/8mm/10mm) | pc    | 1 for each<br>spec. |  |
| 9  | Lubricator                                 | pc    | 1                   |  |
| 10 | Silicone tube                              | meter | 10                  |  |
| 11 | Electric diagram                           | copy  | 1                   |                                                                                       |

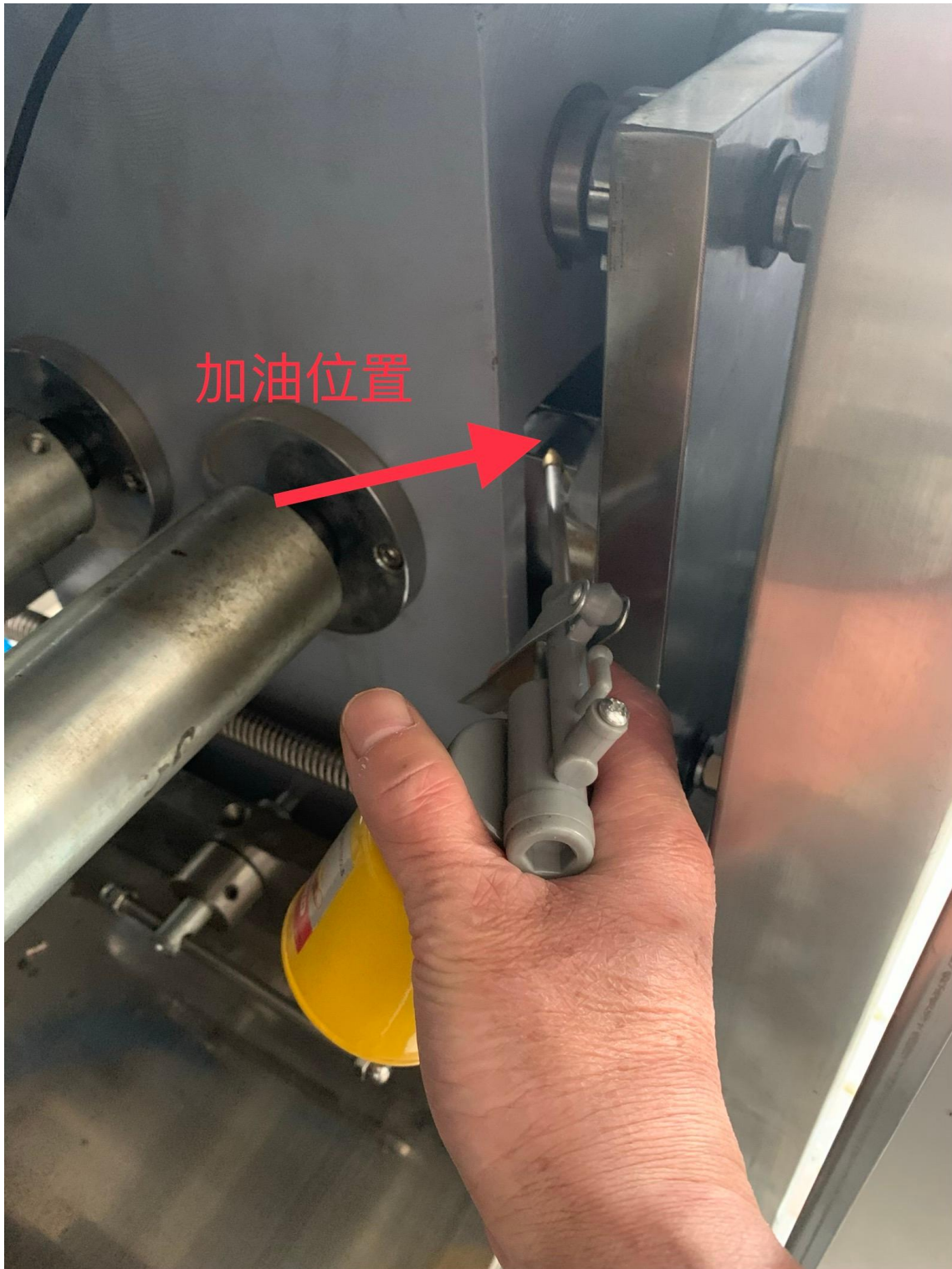
|    |                        |      |    |                                                                                       |
|----|------------------------|------|----|---------------------------------------------------------------------------------------|
| 12 | Heating tube (8*210)   | pc   | 4  |    |
| 13 | K-type thermocouple    | pc   | 2  |    |
| 14 | Steel letters          | box  | 1  |    |
| 15 | Easy-tear blade        | pc   | 10 |   |
| 16 | Small spring           | pc   | 1  |  |
| 17 | Solenoid valve         | pc   | 1  |  |
| 18 | Certificate of quality | copy | 1  |                                                                                       |
| 19 | User's manual          | copy | 1  |                                                                                       |

### 13. Maintenance

- 1) Lubricate the forming with sealing roller and cam once per day.
- 2) Lubricate the forming roller and cam once per day.
- 3) Lubricate the sealing cam and roller once per day.
- 4) Lubricate the punching eccentric wheel once per day.
- 5) Lubricate the perforating and cutting eccentric wheel once per day.
- 6) Add special cylinder oil in the filter once per week.
- 7) Open the pump head and remove the objects pressing the tubes when the peristaltic pump is out of use for a long time.



Lubricating oil feeding hole



Lubricating position



Lubricating point



Lubricating the blade



Lubricating the blade



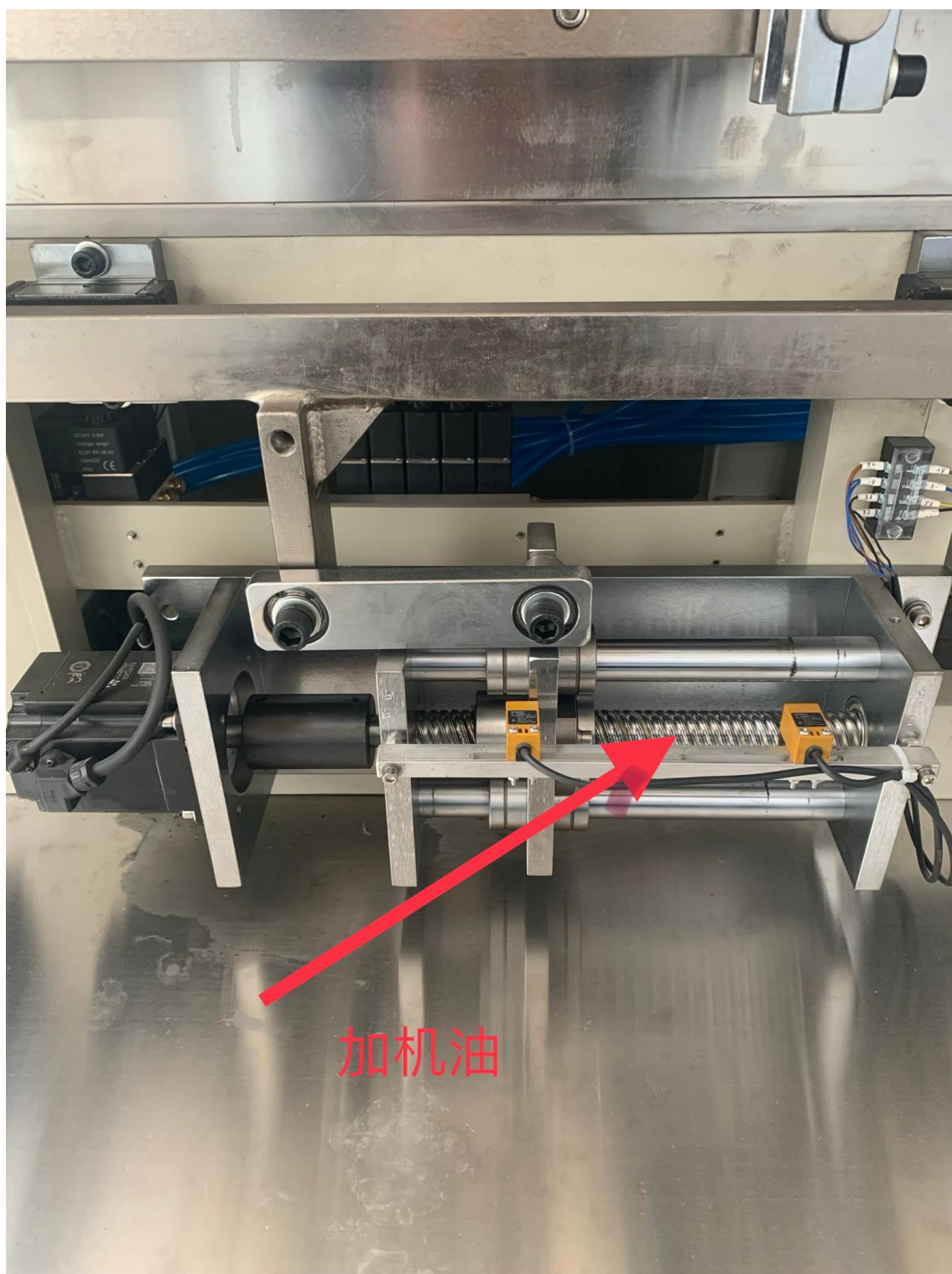
油位少了要加  
油.气缸专用油

Special oil for cylinder. When there is insufficient oil, add it.

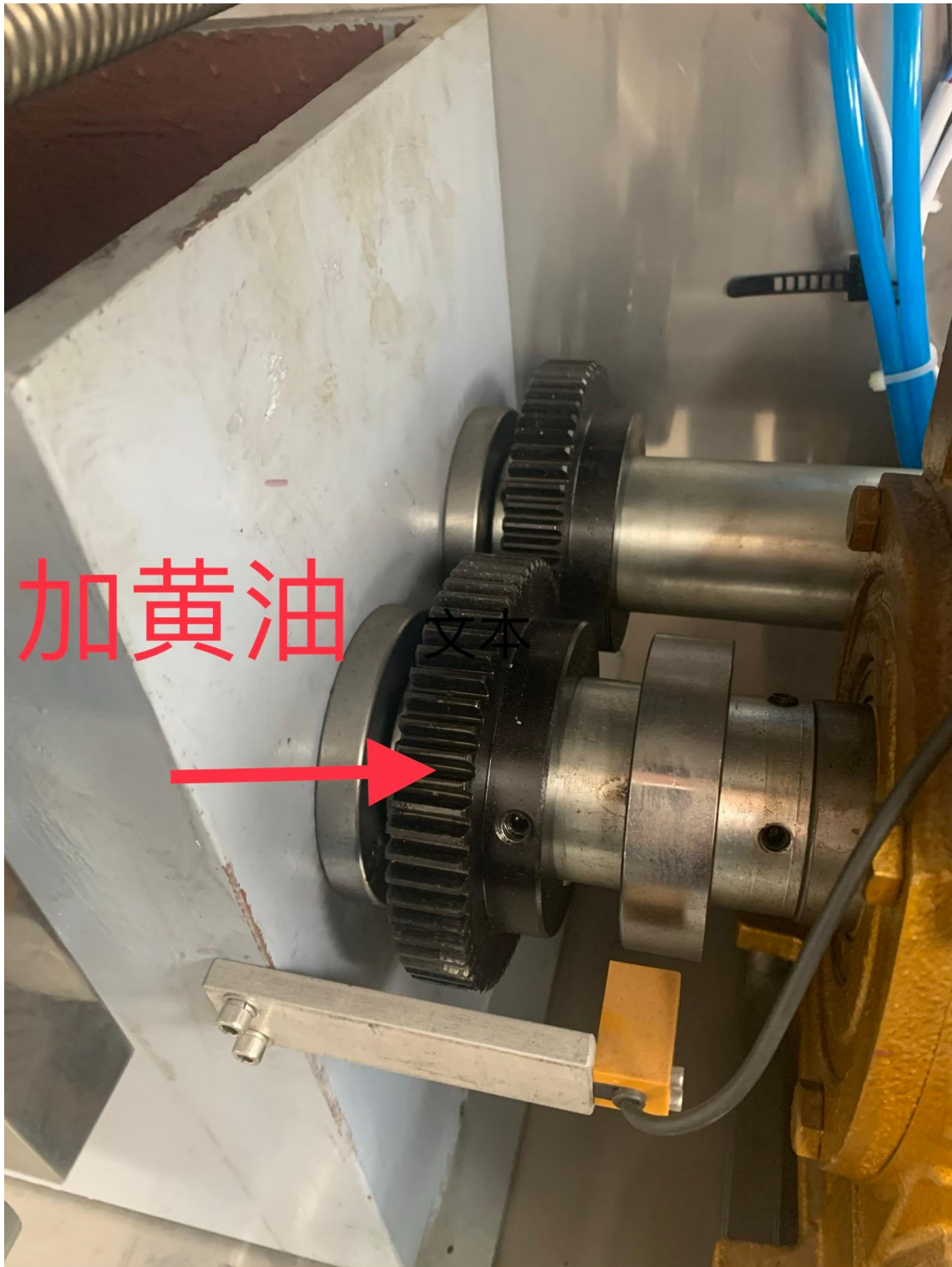


Upper: adjustment to oil release amount

Lower: lubricating hole



Lubricating with engine oil

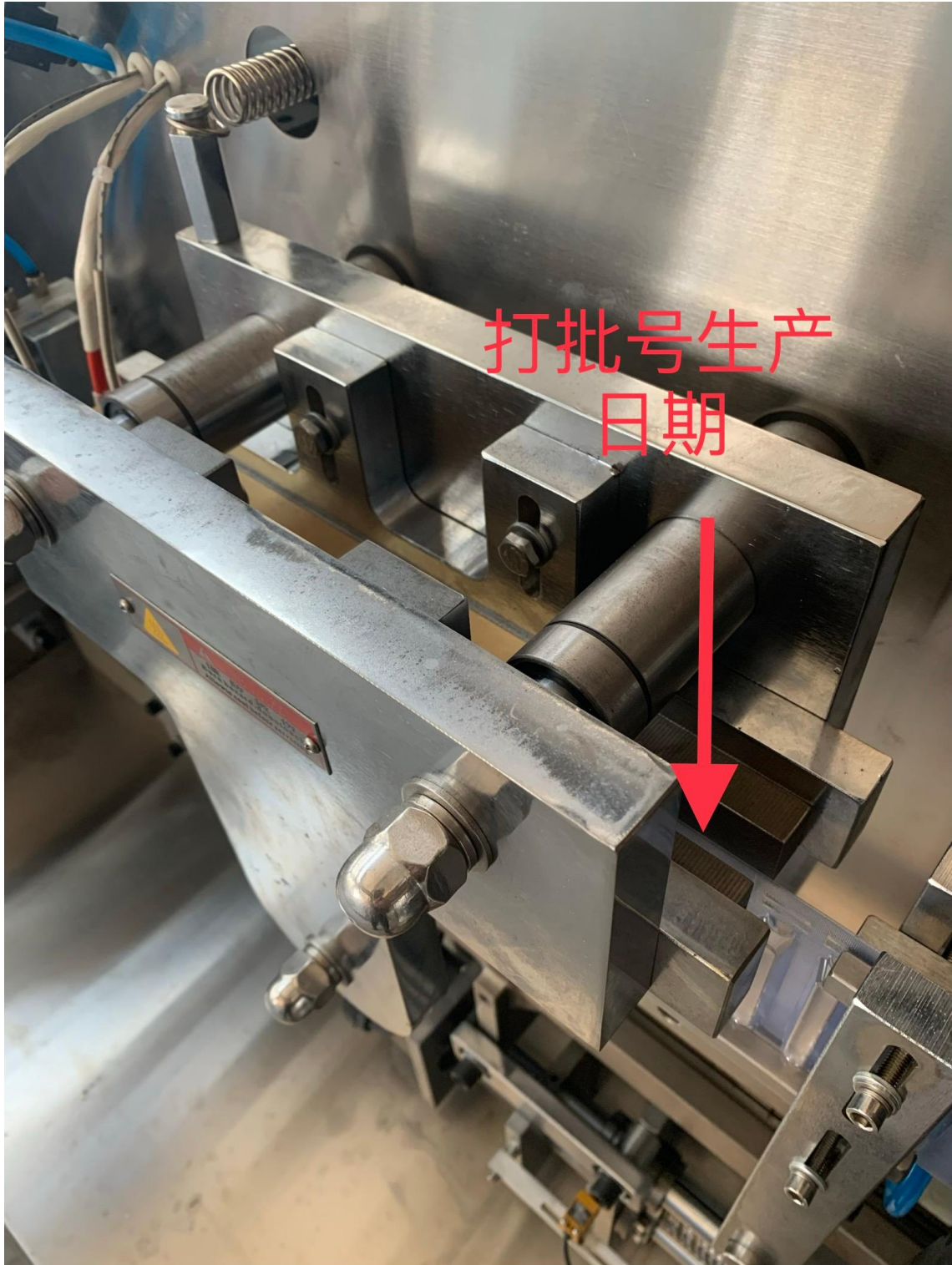


Lubricating with butter



Upper: letter installation

Lower: pull it out for letter installation



Production batch embossing