Professional Solution for Meat and Quick Meal

AMF600-IV

AUTOMATIC MULTI FORMER

Operational Manual

HIWELL MACHINERY(SHANDONG) CO.,LTD.

CE

Hiwell Machinery (Shandong)Co., Ltd.
No.14, Shunyi Street, Jiyang District, Jinan ,Shandong Province, China 251411
Email: info@hiwell.cc http://en.hiwell.cc

CONTENT

Certificate of Approval

Automatic multi former

Model:

AMF600-IV

Manufacturer:

HIWELL MACHINERY(SHANDONG) CO.,LTD.

Add :

No.14, Shunyi Street, Jiyang District, Jinan ,Shandong Province, China

Tel.: 86 531 84277277

Fax: 86 531 88698166

Postal Code: 251411

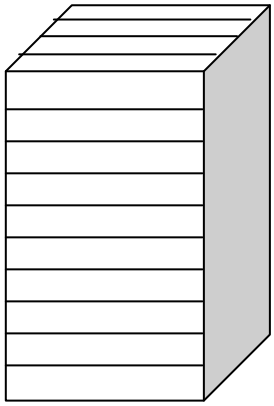
Website: www.hiwell.cc

E-mail : hiwell@126.com

Date of manufacture:

Signature:

Packing List



Item	Quantity
Automatic Multi Former	1 set
Steps	1 set
Platform	1 set
Auxiliary hopper	1 set
Cart	1 set
Conveyor belt	1
Water cup	1
Operational Manual	1
Tool	1 set
Belt	1m
Transducer operating manual	1book
Touching screen operating manual	1book
QST- ϕ 10- ϕ 8	1

Note:

- Check whether intact package.
- Check whether the parts in conformity with the packing list.
- In the case of anything lost, please inform the company in time.

Brief Introduction of Equipment

1. Applications

1.1.1 Based on the designed shape and weight of smashed meat, the products can be processed into triangle, rectangle, circle, heart shape and special shapes.

1.1.2 Scope of application: poultry(chicken, duck) , seafood(fish, shrimp), livestock(pork, beef), vegetables (potato, pumpkin blocks).

2. Features:

2.1 Hydraulic, pneumatic and mechanic driving is adopted with high degree of automation and the filling, forming, output, etc can be completed automatically.

2.2 Convenient mold adjustment and replacement

2.3 Convenient and reliable pressure adjustment easily satisfying the product weight requirements

2.4 Water sprayer facilitates the product to be freed from the mold

2.5 Reliable safety and protection device is available

2.6.Convenient operation and adjustment through Siemens touch screen and CPU processor to enable man-machine interaction;

2.7 Connection with the coating machine, flouring machine and frying machine to enable continuous production

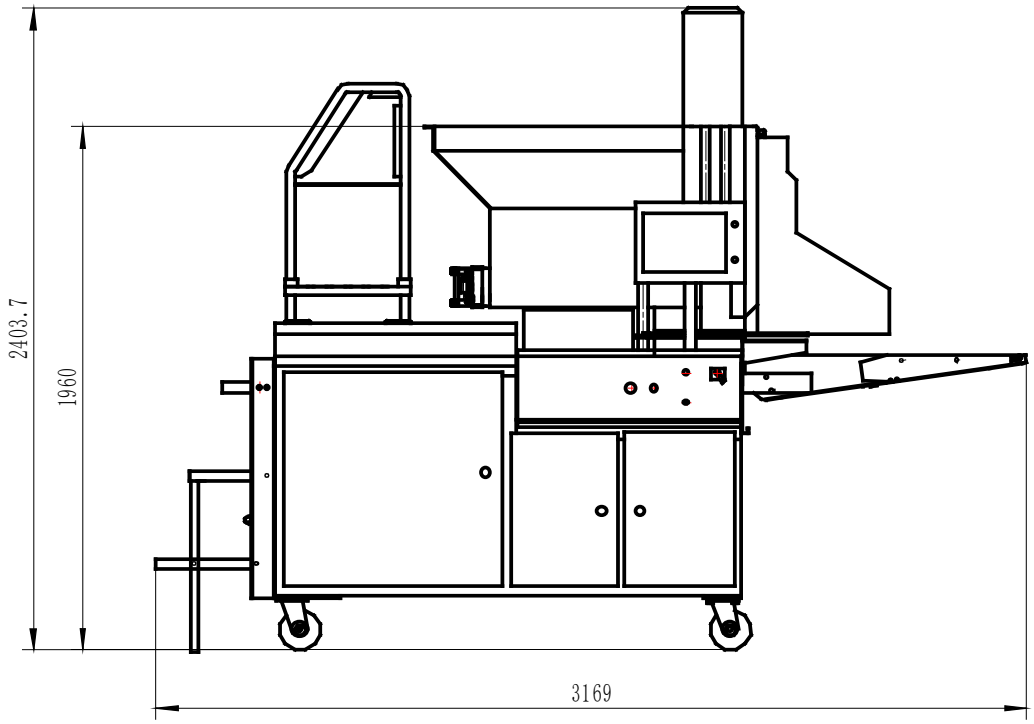
2.8 The whole machine is made of stainless steel with novel design, reasonable structure and reliable performances, and can meet the HACCP requirements.

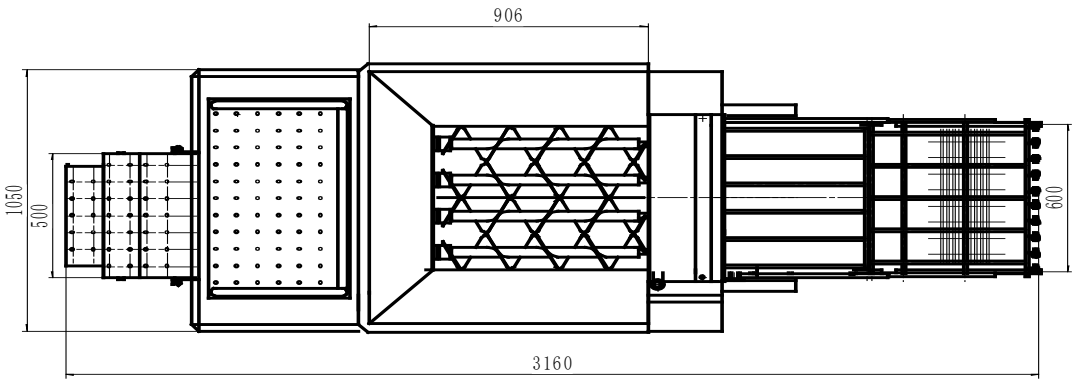
3. Main technical parameters:

Conveyor speed	3～15m/min
Belt width	600mm
Product thickness	6~40mm
Power	11.12 kW , 380V/50HZ
Production cycles	15～60 cycles/min
Air pressure	6bar
Water pressure	$2kgf/cm^2$
Cooling water	Temperature ≤40℃

Hydraulic oil	Shell Tellus T68（ or No. 46 refined hydraulic oil）must undergo oil filter cart
Overall dimensions	3170×1176×2436 mm
Weight	1600kg

Parameters of overall dimensions





Notes: Material temperature keeps in 0~-4℃ when use the machine

Can not be used in the machine except food material.

Safety Regulations

2.1 Safety regulations

In order to guarantee the safety of personnel and the machine, the machine is fitted with the following safety devices: a protective cover over punch head, interlocked switch. Nevertheless, this cannot cover all safety aspects and therefore the operator, before putting the machine into operation, must read this chapter and understand it fully. Furthermore the operator must also take into account other aspects of danger relating to the surrounding conditions and material. In order to guarantee the safety of personnel and the installation, the following guidelines should be observed.

2.1.1 Personnel quality

- Always observe the operating instructions and follow the guidelines which apply locally.

- Operation Maintenance and repair of the machine must be performed by a trained and qualified person.
- Wear proper Personal protection equipments. Experience shows that injuries are caused by various personal articles, e.g. rings, watches, bracelets, necktie etc. Therefore take them off before starting the work. Wear hair protection and fasten hair properly. Wear suitable tight cloth, shoes recommended or prescribed by labour-safety regulations of all the countries.
- Do not work on the machine under influence of drugs or alcohol, or when you are tired.

2.1.2 Basic safety requirements

- Before connecting the machine to the power supply, make sure that all items are in their positions and check their functioning. If it is necessary to open the door, unplug the plug and turn off the circuit breaker on the door. Of course, Never connect the machine to the power supply while the door is open.
- In the case that you are not going to work on the machine, turn off the machine.
- Before cleaning the machine, unplug the plug and switch off the machine.
- Before doing any maintenance work inside the machine, unplug the plug and switch off the machine.

- Do not alter the machine in any manner which might cause any risk to its safe operation.
- Do not neglect performance of regular inspections in accordance with the instructions for use.
- Keep work area clear, well lighted and well ventilated.
- Never put any tools or any other objects on the machine.
- Keep the machine clean and in good condition.
- The machine is not intended for use in potential explosive atmospheres.
- Avoid climbing on the machine. Climbing on the machine can be dangerous due to the risk of slipping and falling.
- The machine may not be put into operation without the protective cover having been positioned correctly.
- Never insert your hands between the roller and the dish when the machine is operational.
- Always watch out for loose-hanging clothes. These can get caught between the revolving or moving parts of the machine.
- Watch out for the damp, slippery floor around the machine. It is recommended that safety shoes are worn.

2.1.3 Safety regulations for set up

- Make sure the machine is grounded well.
- Make sure that electric cables are not damaged so that injuries caused by electric current leaking (electric shocks) are avoided.
- Check the function of the interlocked switch.
- Check the direction of the conveyor.
- Do not remove safety devices such as cover, limit switches.
- It is not recommended to set up the machine when the food car is not under the outlet of the food.

2.1.4 Safety regulations for operation

Never put the machine into operation before you get acquainted with the contents of

the instructions for use.

Hands are not allowed to be under the mold when the former is in operation.
Hands are not allowed to be in the hopper when the former is in operation

2.1.5 Safety regulations for cleaning the machine

- Clean food area and splash area of the machine with high pressure water(5~6bar).
- Never clear the non-food area with high pressure water directly.
- Clean the machine according to the procedure of the manual strictly and carefully.
- Do not clean the machine even if the machine is completely out of operation, unless the main circuit breaker is turned off and locked.
- When using cleaning agents, refer to the instructions for use provided by the supplier.
- Rinse cleaning agents off thoroughly after use using high pressure clean water(of drinking water quality) in order to prevent cleaning agent residues from being left behind in the machine and then getting into the product
- The power must be switched off whenever machine parts are being assembled and dismantled.
- Close the door of the switch box when cleaning with a water hose and/or high pressure hose.
- When spray cleaning with a high pressure hose you should be careful with sensitive equipment and instruments.
- Hands shall be away from the molding plate when the hopper moves downward.

Use the recommended (or equivalent) cleaning agents to clean the machine. HIWELL is not liable for the consequences of using other non-equivalent cleaning agents.

Consult the cleaning agents' supplier for safety information magazines. These publications provide information about safe working, the availability of protective materials, procedures to be followed in the event of disasters, etc.

2.1.6 Safety regulations for maintenance

Maintenance and repair must be performed by a qualified person. Do not do

maintenance work before you get acquainted with the instructions for maintenance thoroughly.

- Before you start to perform any maintenance work, always unplug the plug and lock the main circuit breaker. The possibility of accidental putting the machine into operation by another person is thus avoided.
- Any maintenance work on electric parts of the equipment may be done by a qualified person only.

 While replacing electrical parts of the equipment, turn off the main circuit breaker firstly. Faulty parts should be replaced only with products having the same specifications as the original ones. For replacement of parts and necessary things, get in advance those being identical with the original type and complying with standards. The use of other parts which do not conform to HIWELL specifications can endanger the safety of people and the machine.

- Do not remove safety devices such as cover, limited switch.
- Do not switch the machine on before the door of the cabinet is not put in their places again.
- Always keep the maintenance areas including the working place clean.
- Only use specified lubricating oils and grease or those equivalents to them.
- When carrying out welding work, first switch off and disconnect the power supply.

2.1.7 Safety regulations for Production

 -When the machine is in use, the food and meat temperature shall be ≥－4℃; only the raw materials within the scope of application can be applied to the equipment.

HIWELL is not liable for personal and/or material damage caused by changes to the machine.

2.2 Safety symbols and their positions

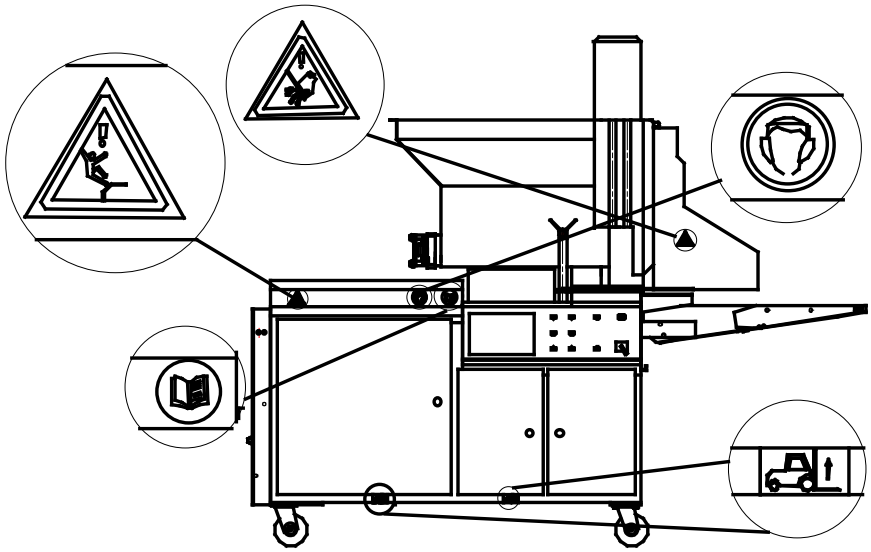


Fig.1 Safety symbols 1 on the machine

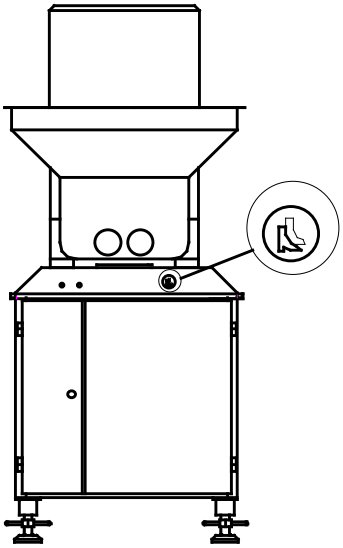


Fig.2 Safety symbols 2 on the machine

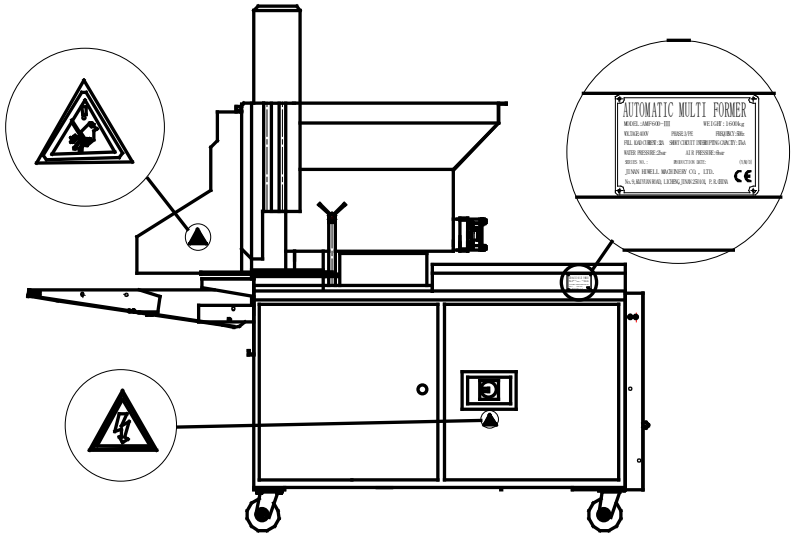


Fig.3 Installation of machine nameplate

Meanings of the labels on the machine

Read the handbook before starting operations

Keep hands away form the knife part of the machine when it is operational

Electrical shock

Lifting position

Wearing the protective clothes

Don’t climb.

Manual warning symbols

Danger for life! The user’s life is in immediate danger if the prescribed procedures are not implemented carefully.

Warning of a hazardous situation. The user can (seriously) injure himself or

seriously damage the machine if the prescribed procedures are not carefully followed.

Caution

Care! There is a risk of damage being done to the machine if the prescribed procedures are not implemented carefully.

Attention

Attention! A comment containing extra information for the user; attracts the user's attention to possible problems.

2.3 Required training

- Machine operations;
- Safety regulations;
- Maintenance;
- Cleaning

2.4 Noise information

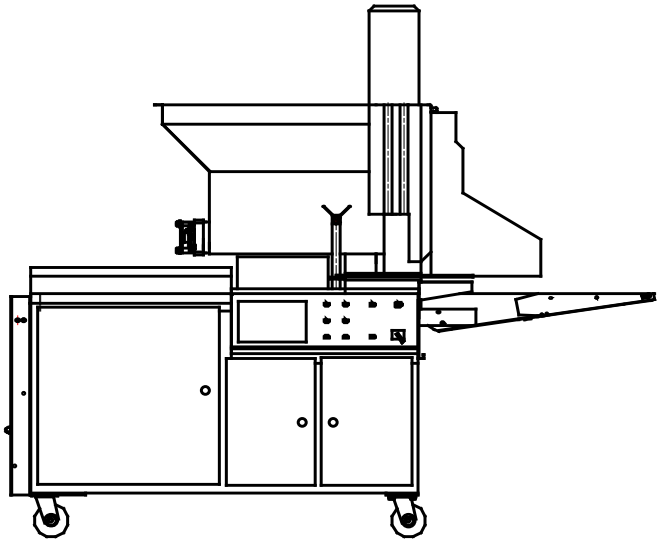
The test was held under environment noise levels of 54db. Noise test with machine operating in the conditions according to Annex I is 73db.

The figures quoted are emission levels and are not necessarily safe working levels. Whilst there is a correlation between the emission and exposure levels, this cannot be used reliably to determine whether or not further precautions are required. Factors that Influence the actual level of exposure of the workforce include characteristics of the work room, the other sources of noise, etc. i.e. the number of machines and other adjacent processes. Also the permissible exposure level can vary from country to country. The information, however, will enable the user of the machine to make a better evaluation of the hazard and risk.

Handling and placing

Handling:

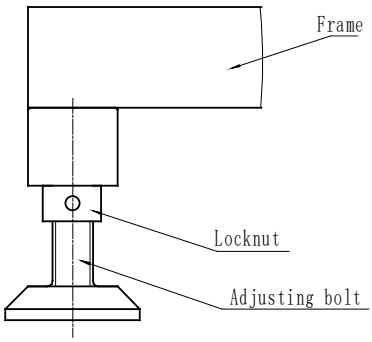
Using a fork-lift truck to unload and moved meat to the fixing position,



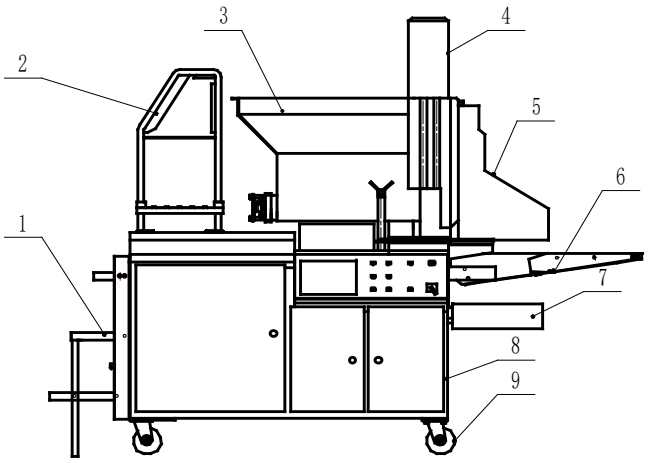
Placing:

Move the machine to the expected position, no less than 500mm from the wall to make it convenient to inspect and maintain. Then adjust the machine to the needed height and locked the wheel.

The machine shall be placed on level and solid ground with the supporting height properly adjusted as needed and shall be locked.



Brief Introduction of the Equipment component



Mechanical parts

1. Steps
2. Platform: dismantling and cleaning;
3. Hopper:
4. Forming and filling unit
5. Ejector protection cover
6. Conveyor belt ;
7. Water cup
8. Frame
9. Casters wheels: To move the machine

Procedures

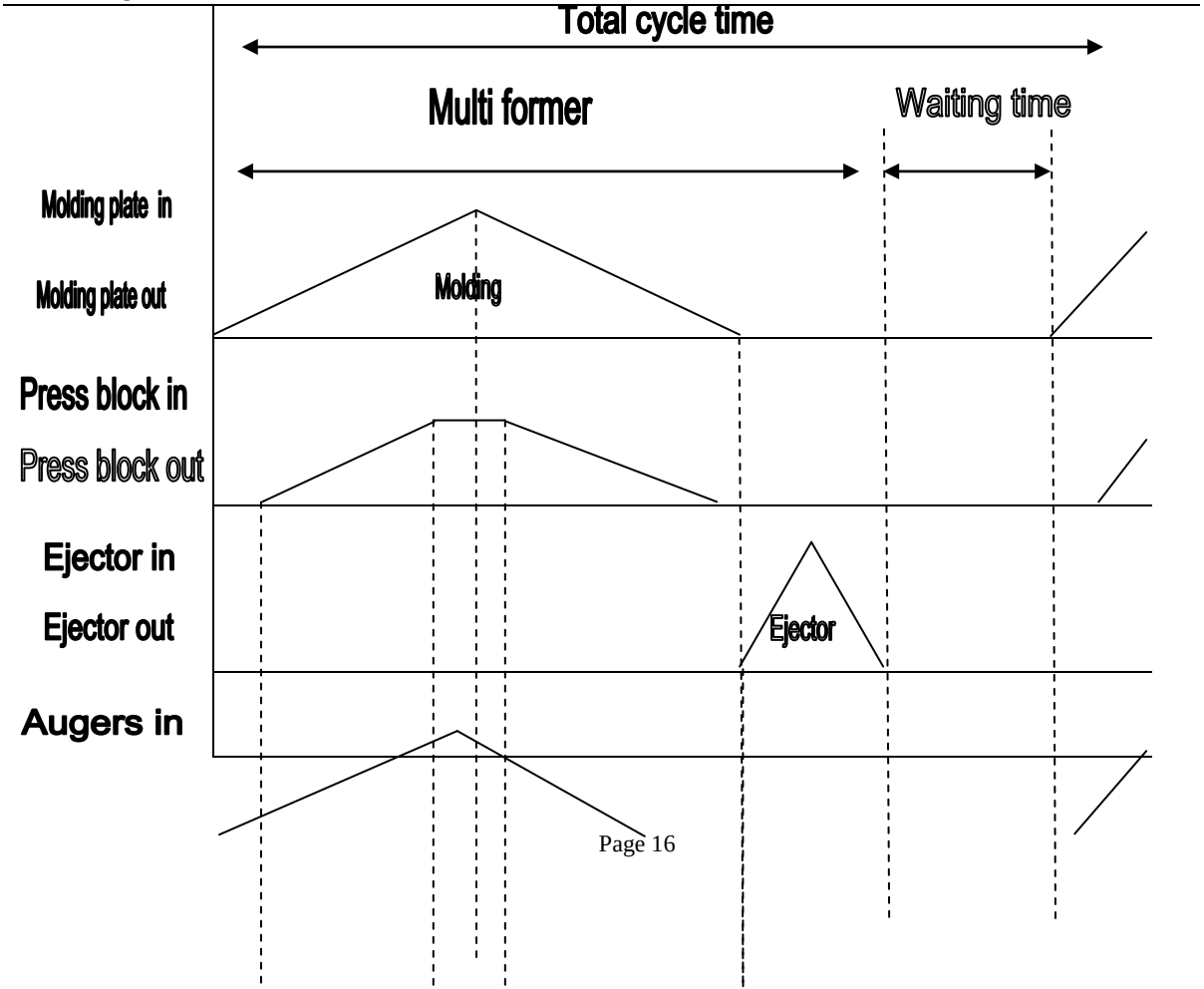
The forming process is jointly adjusted through PLC controller and man-machine touch screen interface. One of the functions of touch screen is to directly report to the control system the processing time.

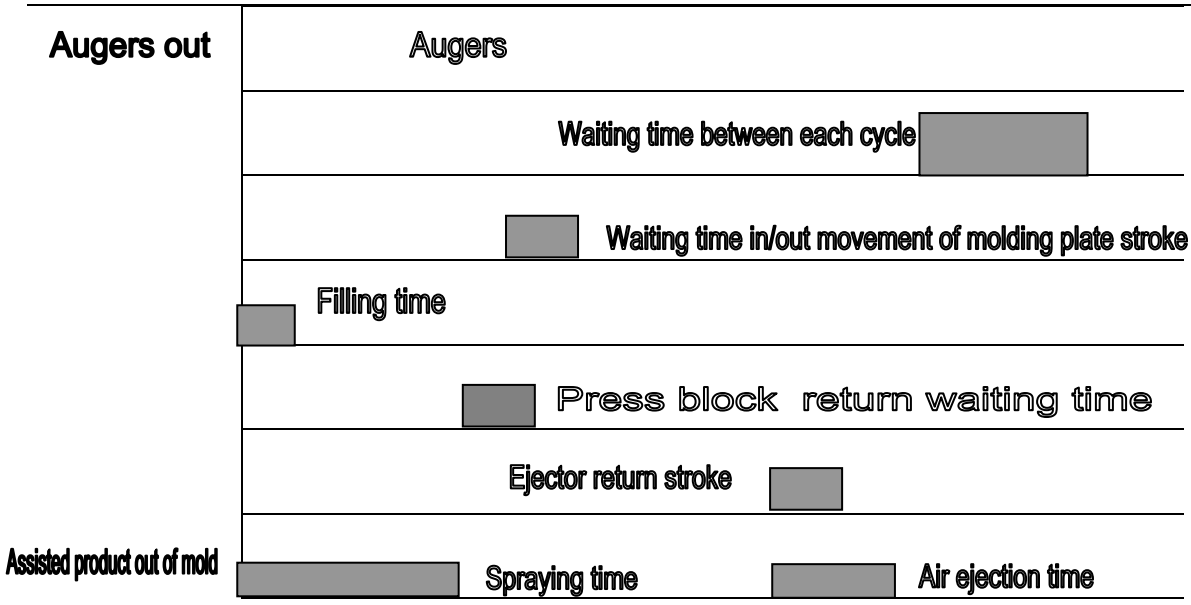
The former may be used to produce products of various shapes. All these products feature specific viscidity, density, processing temperature and water contents. Such elements are also very important to set the optimal operating conditions of the machine.

Without detailed data of specific products, we explain various settings through the process/time diagram. Combination of possible conditions of machine and the specific features of products will achieve the optimal effects. A well forming product can keep its natural structure.

Please remember “complete cycle” when reading the time for different processes.

From the process / time diagram, we can see the relationship between different processes. More detailed explanations are made to various parameters in this diagram.





Molding cycle

At rest, the molding plate cylinder is extended. Once the machine is started, the molding plate cylinder is retracted and a split second later the press block cylinder moves out to bring the material into the molding plate.

The molding plate is extended once again as soon as the press block cylinder has reached its stroke length. The molding cavity is then under the filling slot. When the molding cavity passes the filling slot, the molding plate is filled with the raw material. When the molding plate, filled with product, is in its rest position, the ejectors are activated to push the product out from the molding plate to the outfeed conveyor. Then, it is ready for the next molding cycle.

Waiting time between each cycle

It is the time interval between each cycle and decides the production efficiency. In the test phase, the waiting time between each cycle may be lengthened a little.

Waiting time in/out movement of molding plate stroke

It is the waiting time when the molding plate reaches its stroke length and decides the accuracy of ejector return stroke. Normally it is ≥5. It is also related to production efficiency.

Filling time

It is the stop time after H_K signal is received and decides the filling quality of product.

Press block return waiting time

It is the time when the pressing block receives H_K signal and is in waiting and is adjusted based on product.

Ejector return stroke time

It is the time of ejector downward movement, and decides whether the product can be ejected out of the mold successfully. It is normally ≥10.

Filling ratio switch

It refers to press block movement per specific number of cycles during filling.

When the setting is “2”, it means the press block move twice in sequence during 2 cycles.

It is the parameter when filling low-weight product to prevent excessive movement of raw materials and excessive damage of protein.

Spraying time

It refers to the cleaning time when receiving H_K, the water solenoid valve is connected and the spraying tube begins to spray water onto the molding plate. The purpose is to facilitate pushing the product out of the mold at next cycle. Normally the setting is 150.

Air ejection time

It is the time when the ejector begins to move, U_K is connected and the air ejects the product out of the mold. Normally the setting is 8.

. Connection

 Power supply: 380V/50Hz, 11.12 kW, Three phases and four wires（earth wire）waterproof wire cable, with the wire diameter of 6mm^2.

Voltage: 380V±10％

Frequency: 50Hz±1％

Overcurrent protector: 20A

Surge protector: BSPD-C (SHBJSNDER)

 **The machine shall be reliably earthed.**

 The power supply for this machine should be provided under-voltage protection device and over-voltage protection device due to lightning by the end-user.

Installation, Adjustment and Operation

Notes

When opened the box, please check:.

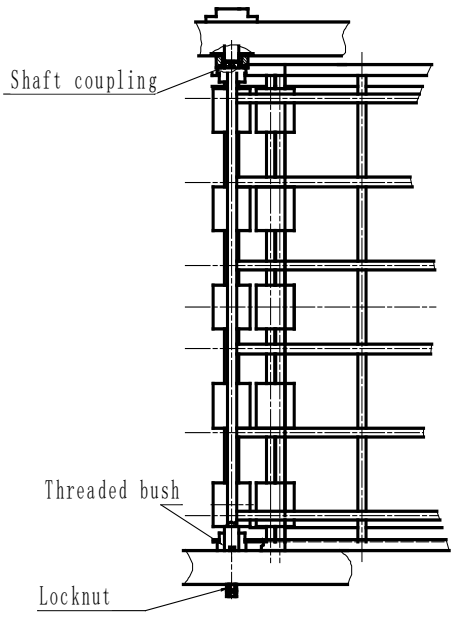
- Whether the wire is loose.
- Whether the Mechanical parts are loose.
- Whether the belt is tight.
- Whether the protection cover is properly installed.

The machine shall be installed within a food processing workshop and be away from vibration sources.

1. Installation

1.1 The machine shall be placed on the level and solid ground with the height of rigid caster adjusted as needed.

1.2 Install the conveyor to frame: Align the conveyor end with coupling to the frame coupling and then put the other end to the threaded bushes of frame. Then tighten the bolts at the threaded bushes. Adjust the screw under the conveyor to proper positions.



1.3 Install the platform to the frame

1.4 Install the steps to the frame

2. Connection with water, electricity and air

2.1 Power connection: Connect three phase power supply to the equipment. **The machine must be reliably earthed**!!

 **From starting conveyor(inching), the direction reversal conveyor shall move forward（ or when facing the hydro- pump motor, the fan rotates clockwise）**

2.2 Air supply: Quick change coupler is used to connect air supply to the machine.

 **Water and oil shall be removed from the air supply.**

2.3 Cooling water: Connected to the oil tank（cooling water comes in and out from lower to higher）

2.4 Water source: Connect water to spray tube（≤4bar）

3. Adjustment

3.1 Open the protective cover at the mold.

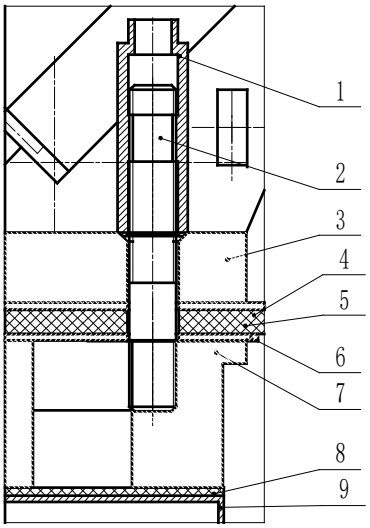
3.2 Open the protective cover at the molding plate.

3.3 Open the protective cover at the position switch.

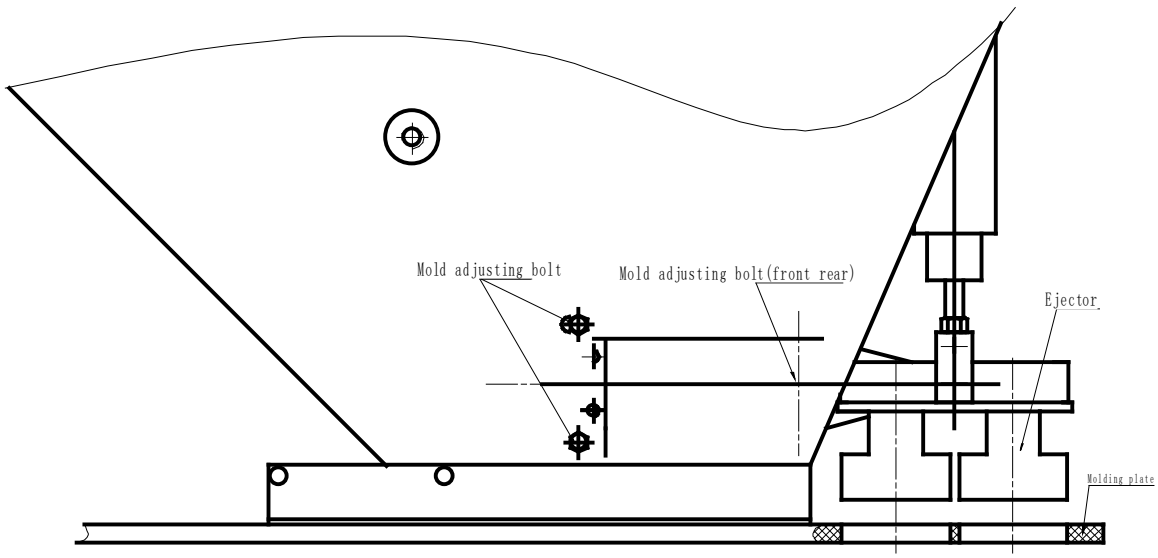
3.4 Turn the pneumatic switch to hopper up/down.

3.5 Remove the feeder hopper locknut

3.6 Press hopper up button to lift the hopper up. Check correctness of plates in the proper sequence: from the base plate up, de-aeration plate, molding plate（pay attention to direction and the upper mold shall be aligned to）, cutting plate and sealing plate.



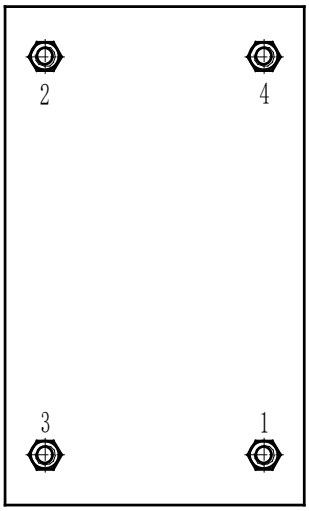
Drawing: 1－locknut，2－bolt，3－feeder hopper，4－cutting plate，5－molding plate，6－de-aeration plate，7－base plate，8－sealing plate，9－frame



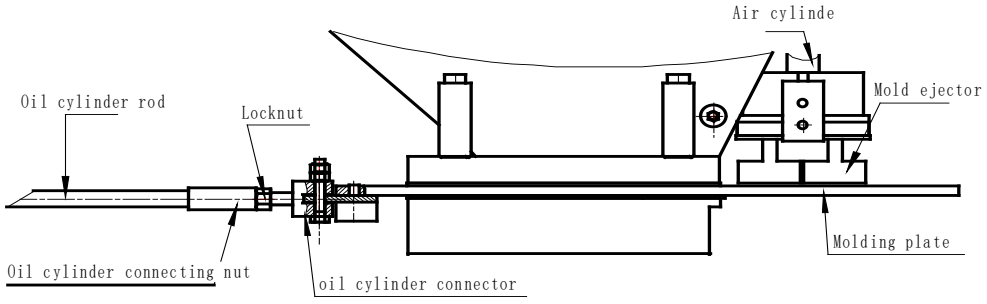
3.7 Press hopper down button to lower the hopper to the bottom and install locknut.

Note: Installation sequence of locknut: Facing the machine, install the front right

nut first, then the rear left nut, front left nut and finally the rear right nut.



3.8 Check alignment between molding plate and its ejector: First turn the pneumatic switch to middle position and manually pull the ejector to observe the alignment. Micro adjustment of ejector: The molding plate adjustment bolt can adjust the horizontal position of ejector. The molding plate adjusting bolt（front-rear）can adjust the relative position of molding plate against ejector (front-rear direction). The ejector shall be at the center of molding plate hole.

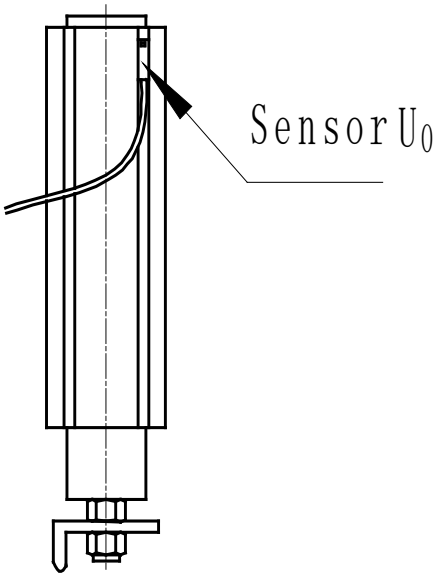


Primary alignment between ejector and molding plate: If the distance between the ejector and the molding plate is too big, the oil cylinder connector shall be adjusted. After such adjustment, micro adjustment shall be conducted. 089794

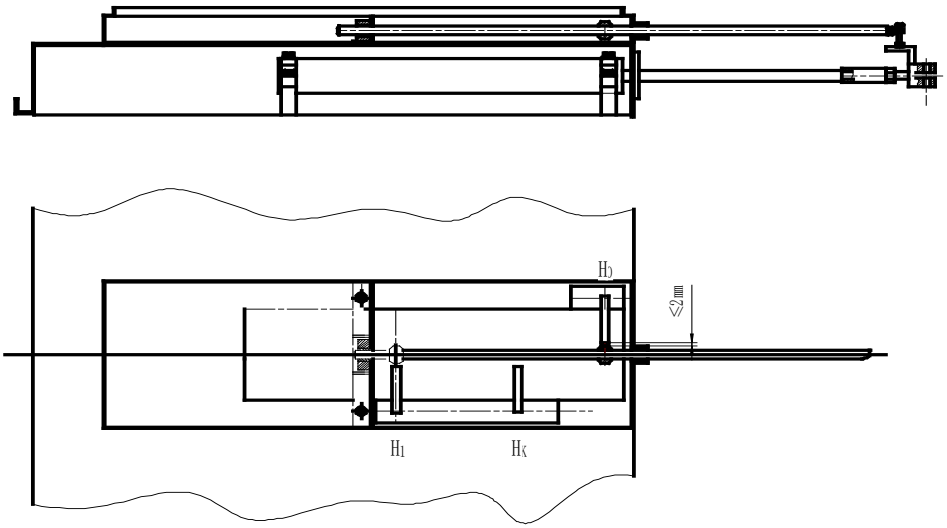
The locknut shall be tightened after adjustment is finished.

3.9 Adjustment of sensor position

Adjustment of ejector cylinder sensor: Turn the sensor indicator, it is always on, or otherwise the machine does not work.



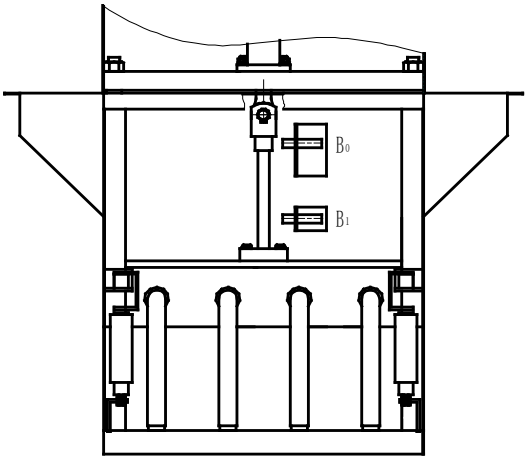
Adjustment of sensor above oil cylinder:



Original position of sensor H_0 – oil cylinder

H_K- Signal for press block cylinder

H_1- Terminal position of oil cylinder



Action signal diagram:

Signal	U_0	H_K	H_1	H_K	H_0	B_0	B_1	Time T
Molding plate cylinder	Return stroke		Forward push					
Press block cylinder		Move down		Return stroke		Up pause	Down pause	
Ejector cylinder						Down stroke		Return stroke

3.10 Adjustment of press block oil cylinder:

a. B_0 adjustment: B_0 decides the amount of material to enter the filling area and prevent excessive raw materials from being cut. The lower the position, the better.
b. B_1 adjustment: B_1 decides the amount of material to enter the filling area and is the signal point of oil cylinder buffer. The higher its position, the better for the oil cylinder.

3.11 Ejector pressure adjustment: Adjust the ejector pressure to 2.5～3bar.

4. Operation

4.1 Connect with water, electricity and air. Turn on the main power switch.

 Turn on the machine only after cooling water is connected.

4.2 Turn the pneumatic switch to “work position”.

 Check sensors U_0 and H_0 and whether the indicator is on.

4.3 **Press “Reset” button to reset (Reset whenever starting the machine or eliminating faults)**

4.4 Start “hydro-pump” button on the panel, start touch screen “conveyor” button and “filling” button(in case of material with good fluidity, it may not be turned on, based on production requirements).

4.5 Ten minutes later, start “production” button.

Hands or other objects shall be away from moving parts during production.

4.5 In case of fault or power failure during production, first press “Reset” upon starting.

4.6 In case of shutdown, press “production” and “hydraulic pump” button in sequence to stop. Then turn off the main power, air and water.

4.7 Fault indication: Faults will be displayed on the touch screen in case of any. Identify the source of fault as per the indication.

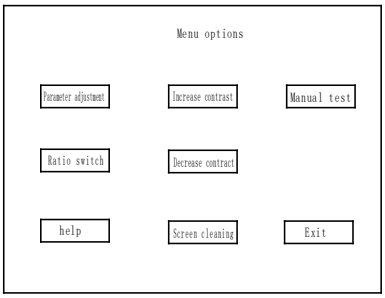
Chinese and English interfaces: Press “Enter” and then “Chinese” or “English” to enter the required operation page.

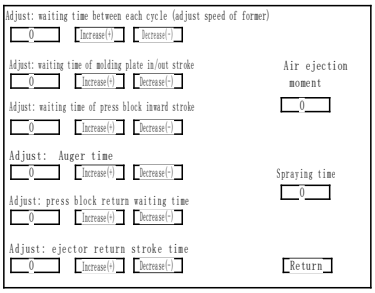

I
O
2004-1-1 12:01:28
产品参数调整
液压泵
速度
充填比例
充填压力
传送带
充填压力
TOUCH


SMART LINE
I
O
2004-1-1 12:02:22
产品参数调整
循环间隔时间，用于调整生产速度。
模板伸出等待时间，用于调整模板在最后端等待的时间。
充填等待时间，用于调整模板缩进后充填等待的时间。
预先充填时间，充填先于模板缩进的时间。
充填返回等待时间，充填得到返回信号延迟返回的时间。
冲头打击时间，敲模系统下击后到返回的时间。
冲头喷气时间，冲头喷气脱模。
模板冲洗时间，控制模板冲洗阀开通时间。
液压马达旋转时间，控制螺旋喂料的时间。
TOUCH

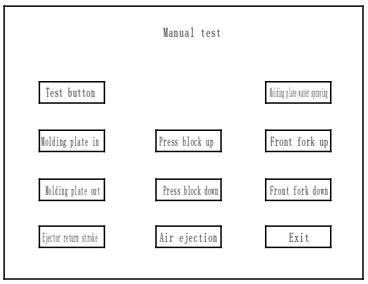

I
O
2004-1-1 12:02:03
产品参数调整
1 油路堵塞。
2 油温极限开关。
3 气电转换开关。
4 举升缸底部限位开关。
5 模板原点H0。
6 急停开关。
7 安全开关。
8 冲头气缸原点U0。
TOUCH

Parameter adjustment: Press “Menu” and then “Parameter adjustment”, and then select proper parameters. Press “Increase” or “Decrease”, or press “number” for direct adjustment.





Manual testing: The function is to facilitate machine maintenance. The molding plate can conveniently extend and retract, and filling, ejector, water spraying and air ejection can be conveniently tested. Firstly press test button and begin to test after it is displayed.



8.1 Add raw materials into the hopper. Raw meat temperature: －2～-6^{0}C

8.2 Start machine for production.

8.3 Product adjustment

Product not well formed	
Faults	Solution
Molding plate does not get “filled” 	1－Adjust touch screen parameters by reducing waiting time of the press block inward stroke.
	2－ Increase hydraulic pressure
	3－ Move sensor H1 to the left
	4－Move sensor H_K to the right.
Molding plate becomes “overfull”	1－ Lower hydraulic pressure

	2—Reduce waiting time of molding plate in/out stroke
	3— Turn off infeed button
"Tear" in the product 	Stroke length too long. Increase the press block inward stroke waiting time.
Ejector does not free the product well	1—Increase ejector return stroke time
	2— Check air supply pressure
	3— Check water source pressure
	4— Increase waiting time air ejection

8.4 Alarm on touch screen: The machine has self-diagnosis function

During adjustment or production, faults will be displayed on the screen in case of improper adjustment or faults.

Alarm display	Solution
Emergency stop	Turn on emergency stop switch
Lifting cylinder is not at the bottom	Press "Lifting cylinder down" button
	Check the sensor position of lifting cylinder
Blocking of oil filter	Replace hydraulic oil, and oil filter elment
Air is not connected	Connect with air supply
Safety switch	Install front protective cover
H_1 can not be detected	The distance between H_1 and switch is over 2mm

Cleaning, Maintenance and Lubrication

Note: Turn off all the power supply. Never spray water onto electronic and . terminal box. Never spray directly onto bearings, chains and motors.

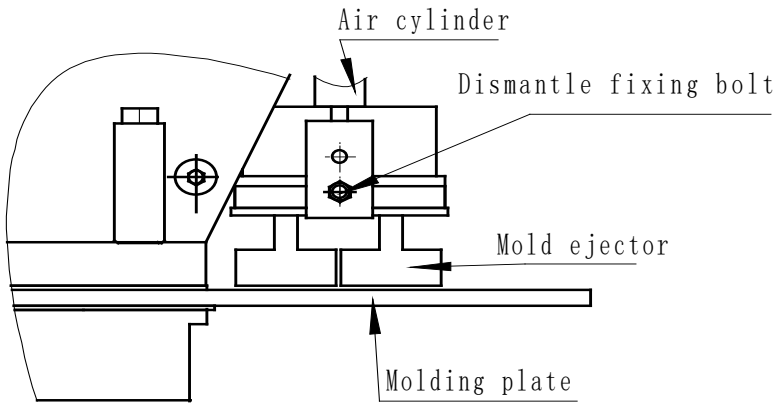
1. Cleaning

The machine must be cleaned after production.

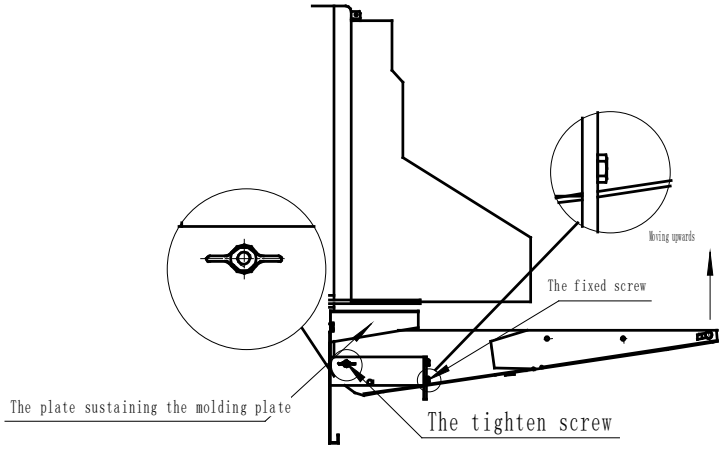
1.1 Cleaning

Dismantling

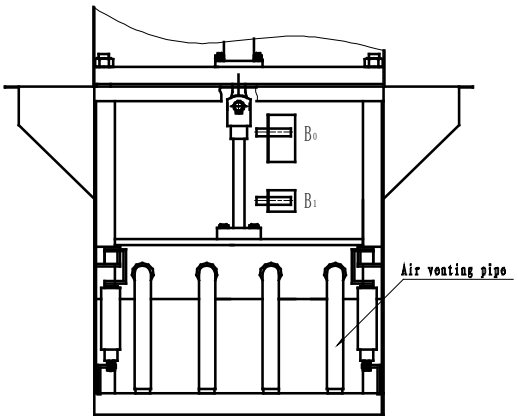
- Open the front protection cover.
- Dismantle the ejector assembly and Apply CIP cleaning.



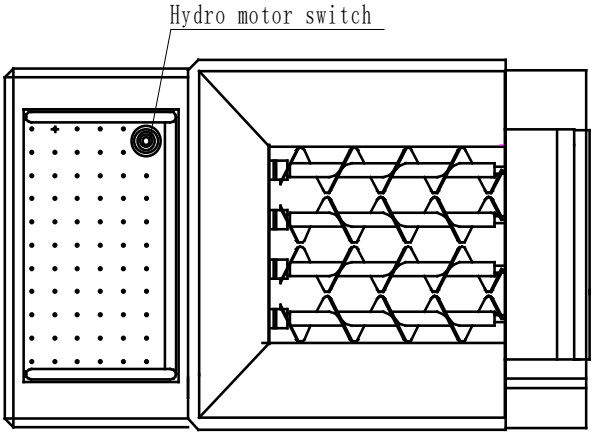
- Dismantle the conveyor belt and Apply CIP cleaning. Loosen the fixed screw、the tighten screw, move the conveyor belt upwards, so the conveyor belt is dismantled. Dismantle the plate sustaining the molding plate.



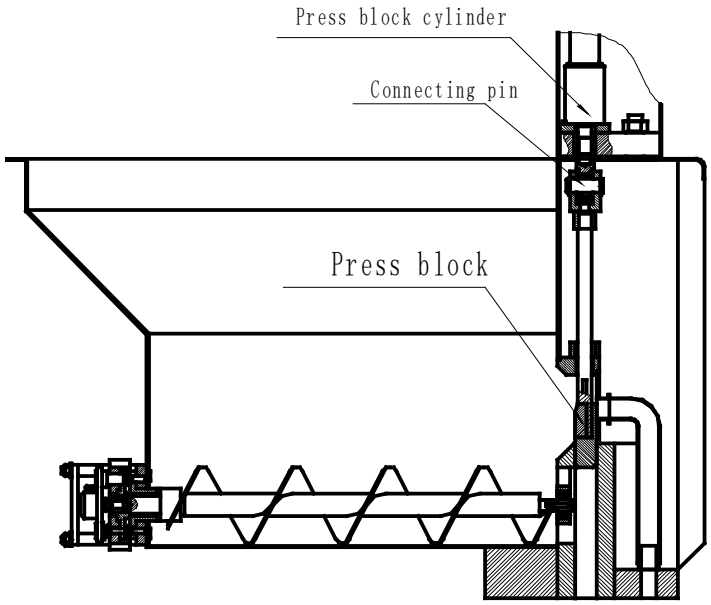
- Dismantle air venting pipes and Apply CIP cleaning. （Note: Preserve the gasket）



- Remove 4 locknuts and Apply CIP cleaning .
- Turn pneumatic switch to “hopper up/down”, press “hopper up” button to lift the hopper to a higher position
- Dismantle the cutting plate, molding plate, side guides and base plate and Apply CIP cleaning.
- Screw cleaning: Turn on the hydraulic pump and press the switch above the platform. The screw starts. Apply CIP cleaning.



- Press block cleaning: Manually move press block up and down and apply CIP cleaning.



Note: Close the doors at all sides before cleaning, especially the electric cabinet door to prevent water from spraying onto other parts.

Rinse the hopper and places contacting with meat through hot water and cleaning agent.

Apply CIP cleaning to various parts of machine.

Attention Natural drying is applied if the equipment can be placed idle for some time.

If the equipment shall be used immediately, dry it with hot air.

1.2 Cleaning with cleaning agents

1.2.1 GENERAL

Attention The parts and components specified in the Cleaning Instructions of User's Manual shall be cleaned per shift, and all the other parts and components not specified, such as air fans, air blades and protective cover, shall be cleaned weekly .

Cleaning the machine involves cleaning the plating, the blow-off unit, the transport conveyor and the belt guide.

- Never spray directly onto electrical parts, bearings and chains.
- Ask the suppliers of cleaning products for a copy of their safety information sheets. These provide information about safe working, the provision of protective devices, measures to take in the event of disasters, etc.
- (Partial)dismantling of the machine for cleaning purposes must always be done with 2people because of the weight of various machine parts.
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General instructions for the use of cleaning agents

◆ Follow the cleaning procedure for the appropriate cleaning method (Cleaning in place, Foaming-in or Cleaning Bath/Soaking-in)

Manufacturer	Type		Concen-tration	Temperature	Contact time
Clean in place(CIP)					
Henkel-Ecolab	Strong alkaline	P3-mipCIP	0.7-2%	50-80℃	5-15min
DiverseyLever		Efacip	0.5-2%	70-90℃	8-45min
Henkel-Ecolab	Acidic cleaning agent	P3-PE4	0.5-2%	60-80℃	10-30min
DiberseyLever		R708	1-2%	60-80℃	At least 20 min
Foam-in					
Henkel-Ecolab	Strongly alkaline	P3-topax 32	2-5%	70-90℃	20-40 min
DiverseyLever	Foamgel	Gelclean	4-10%	Max 60℃	15 minutes to max 2 hours
Henkel-Ecolab	Acidic cleaning agent	P3-PE4	2-5%	Cold spraying-in	10-20min(av-oid drying-out)
Cleaning bath /Soak-in					

Henkel-Ecolab	Strongly alkaline	P3-topax32	1-3%	60-80℃(maintain temperature)	15-30 min
DiverseyLever		Efacip	2%	90℃	30min-1hour
Henkel-Ecolab	Acidic cleaning agent	P3-PE4	1-2%	60-70℃	at least 20 min
DiverseyLever		R 708	1-2%	60-80℃	

☆Depends on the degree of contamination. To be determined in consultation with the supplier.

The following applies to each cleaning:

◆Remove coarse contamination in advance and pre-rinse with water if necessary.

◆Post-rinse thoroughly after cleaning.

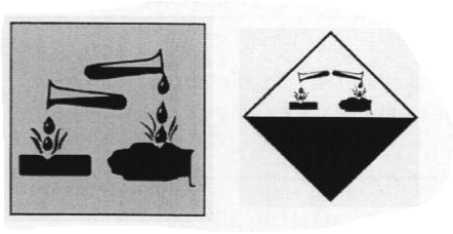
Temperature: preferably 50-60℃.

Quality: drinking- water.

◆ If necessary, disinfect immediately after cleaning.

1.2.2Safety of cleaning agents

①Hazard class:



Warning: Causes (severe)burns.

②Safety recommendations

Wear suitable protective clothing.

Wear suitable protective gloves.

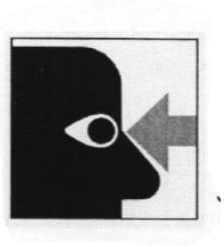
Wear a protective device for the eyes/face.

In the case of atomisation wear breathing apparatus

◆Do not eat, drink or smoke during use.

◆Wash hands after use.

③First aid measures



●Rinse immediately with plenty of water(preferably at room temperature)

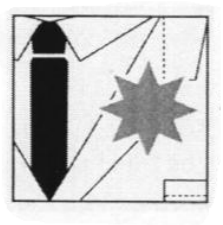
●Keep eyes wet

●Consult a doctor

●Rinse off immediately with plenty of water.

●Keep skin wet.

●Consult a doctor



●Remove clothing and rinse.

●Rinse skin with plenty of water.

●Consult a doctor if necessary.

●Bring into fresh air.

●Keep calm end warm.

●Consult a doctor.

●Rinse mouth with water.

●Drink plenty of water.

●Do not vomit or induce vomiting.

●Medical assistance is obligatory.

If an accident occurs, inform a doctor and, if possible, show him or her the safety information sheet and/or label for the product concerned.

◆ Ask the suppliers of cleaning products for a copy of their safety information sheets. These provide information about safe working, the provision of protective devices, measures to take in the event of disasters, etc.

◆ Always read the information on the labels of cleaning agents.

2. Maintenance

2.1GENERAL

◆Regularly check the presence and legibility of the pictograms on the machine. Take any steps that may be necessary. A diagram of the pictograms used is recorded in the appendices.

◆when being moved. The machine's centre of gravity is off-centre on the output side.

◆W hen working on the electrical circuit, switch off and disconnect the power supply.

◆Replace damaged or broken safety devices immediately. Never bypass the automatic safety electrical systems.

◆Regularly check all moving and rotating parts for wear, and replace them if necessary.

◆First of all, remove and disconnect the power supply for any maintenance work which has to be carried out on the machine

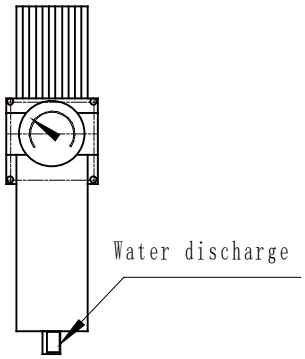
Consult the supplier of lubricating agents for safety leaflets. These publications give information about safe working, health and environmental regulations, procedures to be followed in the event of disasters etc.

Use only the recommended lubricating agents. HIWELL is not liable for any damage resulting from the use of non-equivalent lubricating agents.

2.2The machine shall be often checked for operation conditions and shall be free from abnormal noises or vibration, which shall be punctually eliminated in case of any.

Daily maintenance

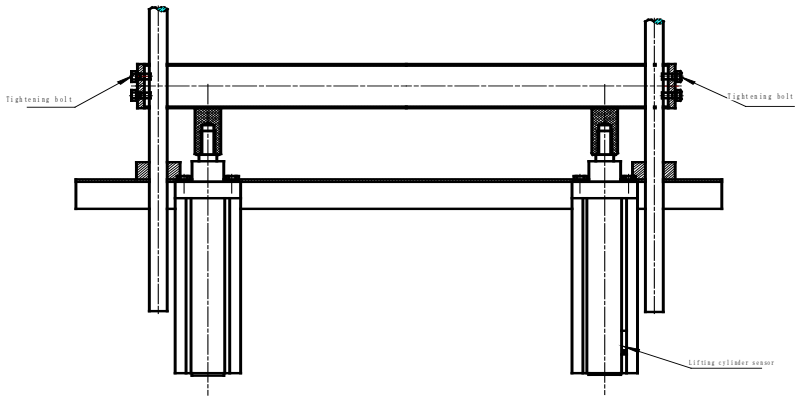
- ✓ Check the oil level. The oil must be above the gauge glass. If this is not the case, add Shell Tellus T68)
- ✓ Check that the pump is not making any abnormal noises, nor getting too warm.
- ✓ Remove the water from the air cleaning unit.



- ✓ Make sure that the valves and the approximity switches are properly clean.
- ✓ Check reliability of connections of movable parts
- ✓ Check the locknuts at the oil cylinder connections
- ✓ Check reliability of ejector part connection
- ✓ Apply lubricating grease on the copper bush of molding plate testing rod

Weekly maintenance

- ➢ Check that the air pressure is corrected set.（max.6bar）
- ➢ Check the hydraulic filter element and replace if necessary.
- ➢ Check for worn or damaged conveyor belt
- ➢ Check for disconnection or lubrication of chain connection buckle
- ➢ Check the bolt at the lifting girder



Monthly

- ✓ Check the chain and the sprocket of the outfeed conveyor. Lubricate if necessary.
- ✓ Check the reliability of various mechanic parts, electronic parts, pneumatic parts and hydraulic parts connections.
- ✓ Check the cooling water system for scale.

After the first 1000-1250 operation hours

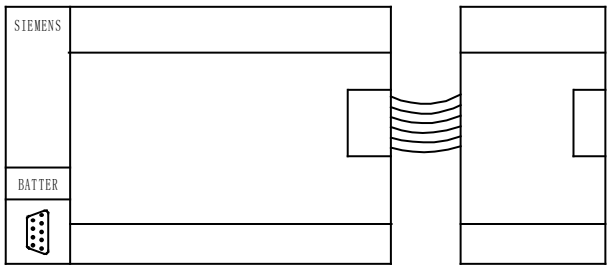
— Check the hydraulic unit for leakages.

Every 2000～2500 operation hours

- Replace the lubricating oil of the motor variator
- Replace the hydraulic oil of oil tank

- Prepare to molding plate cylinder and press block cylinder
- Check ejector cylinder for leakage

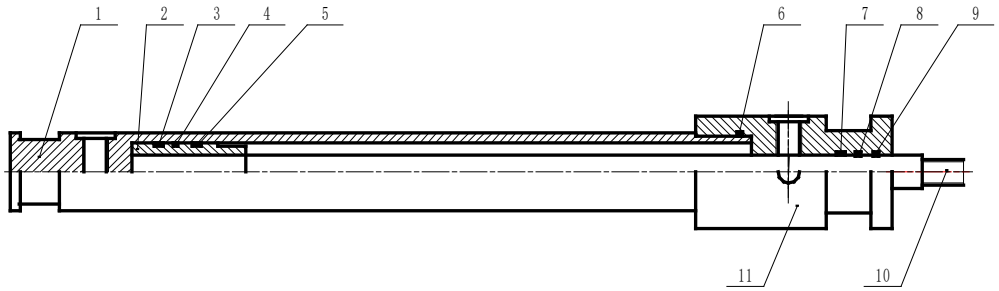
PLC



Battery is the power of PLC programs and it shall be replaced every 3 years.

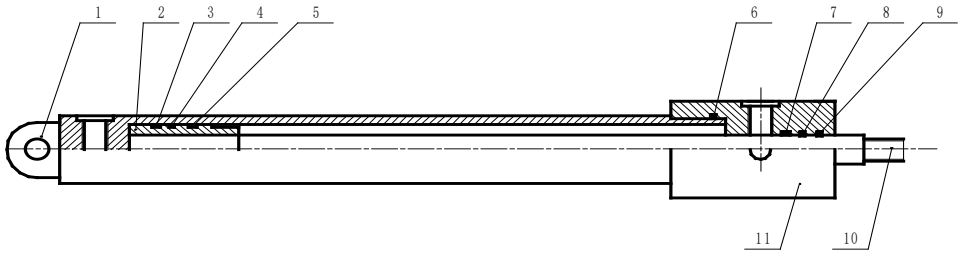
Hydraulic part

Molding plate cylinder



1－Cylinder body，2－ cylinder head，3－sealing ring，4－sealing ring，5－sealing ring，6－sealing ring，7－sealing ring，8－sealing ring，9－sealing ring，10－piston rod 11－cylinder body

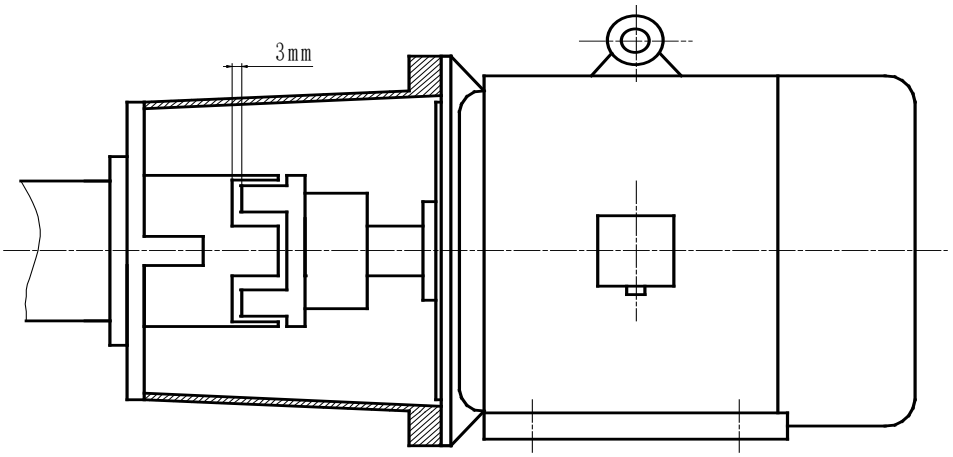
Press block cylinder



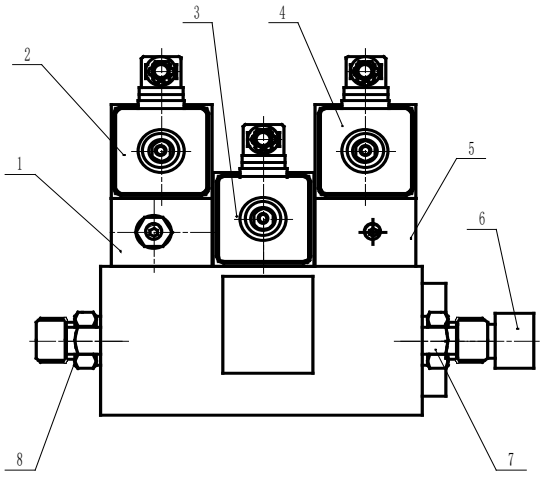
1－cylinder body，2－cylinder head，3－sealing ring，4－sealing ring，5－sealing ring，6－sealing ring，7－sealing ring，8－sealing ring，9－sealing ring，10－piston rod，11－cylinder body

Hydro-pump and motor

The clearance between hydro-pump and two shaft couplers of motor shall be 3mm to ensure reliability of power transfer.



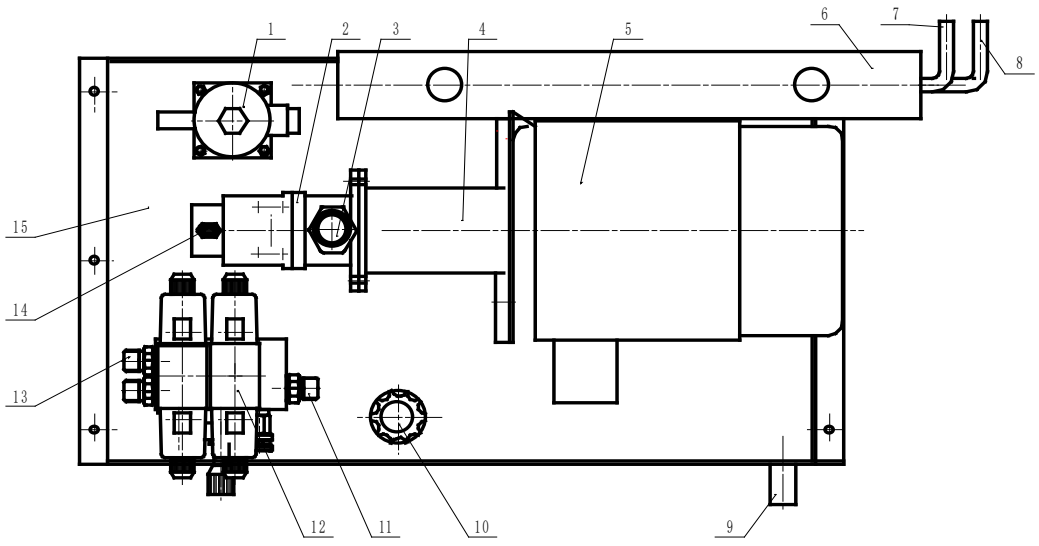
Valve block



1—press block overflow valve; 2— press block solenoid reversing valve; 3— molding plate solenoid reversing valve; 4— hydraulic motor solenoid reversing valve; 5—molding plate overflow valve; 6—speed control valve; 7—joint with pump PV20;

8— joint with pump PV10

Hydraulic diagram



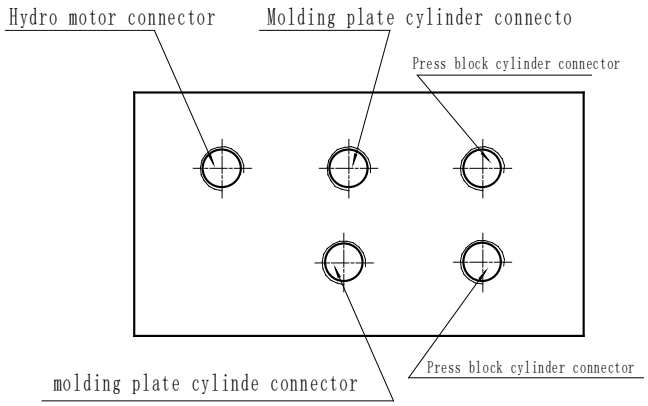
1— oil filter; 2— hydraulic pump; 3—PV20 joint; 4—shaft coupler; 5—motor; 6—cooler; 7—cooling water outlet; 8—cooling water inlet; 9—oil outlet; 10—respirator（oil inlet）; 11—PV20 joint; 12—valve block; 13, 14—PV10 joint

15—oil tank;

Oil cylinder connection diagram

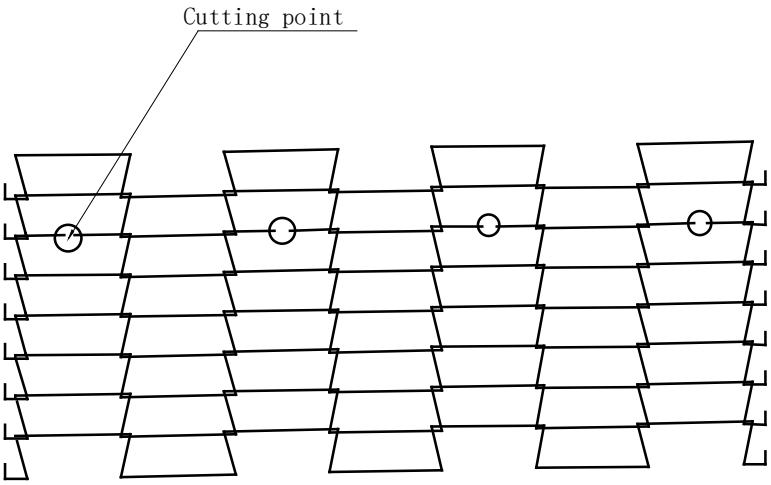
Molding plate cylinder connected to A_1 at the top，and to cylinder A_0 joint at the bottom

Press block cylinder connected to B_0 at the top，and to cylinder B_1 at the bottom

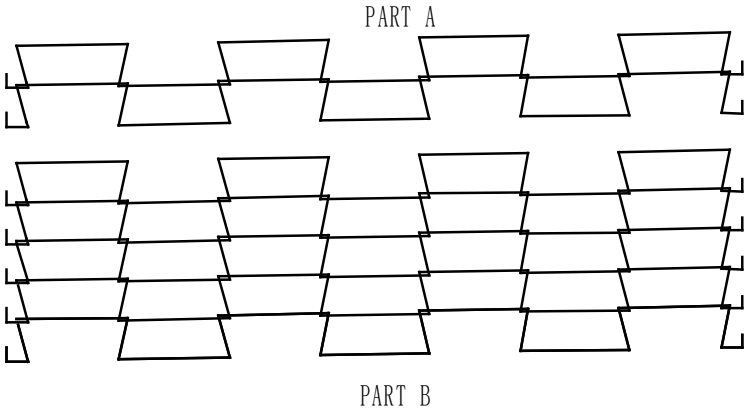


2.3 Maintenance of wire belt:

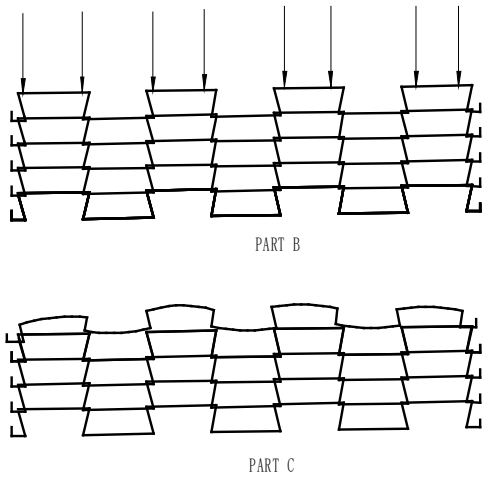
1．Cutting



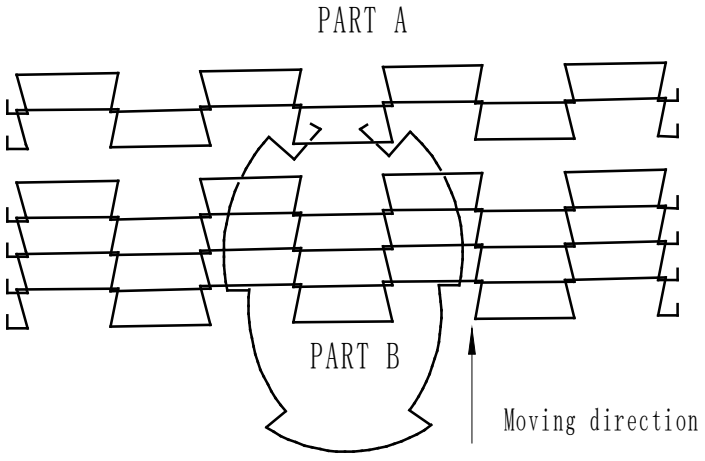
2．Take the cut wire out



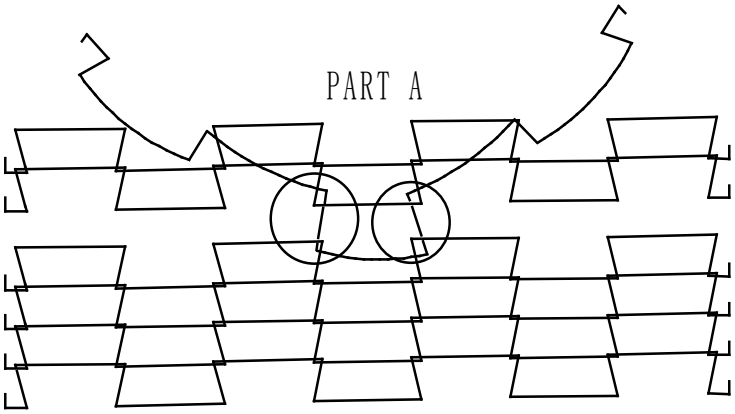
3. Retake a complete section out again



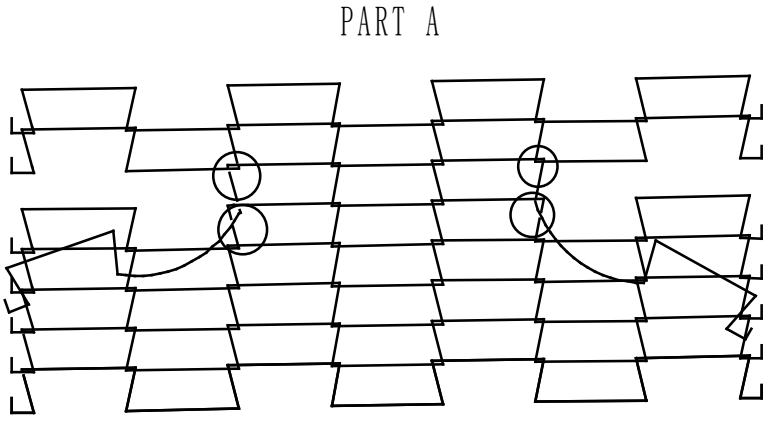
4. After the required length is cut, the wire belt is connected again.



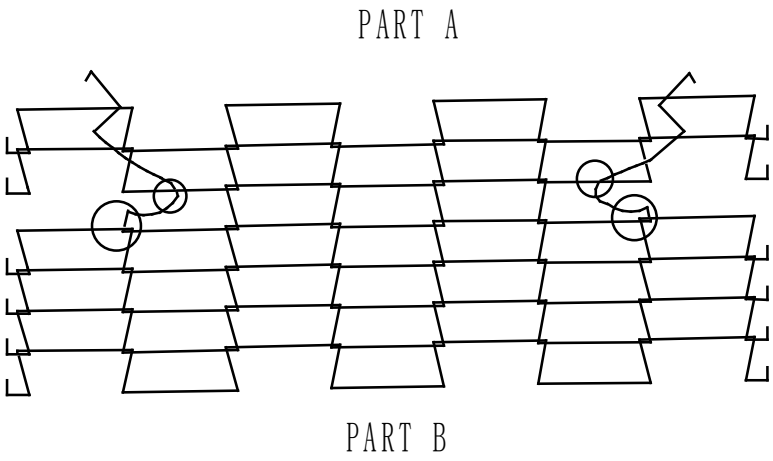
①



②

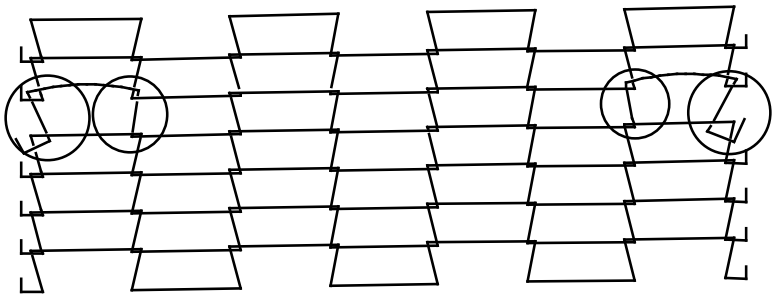


③



④

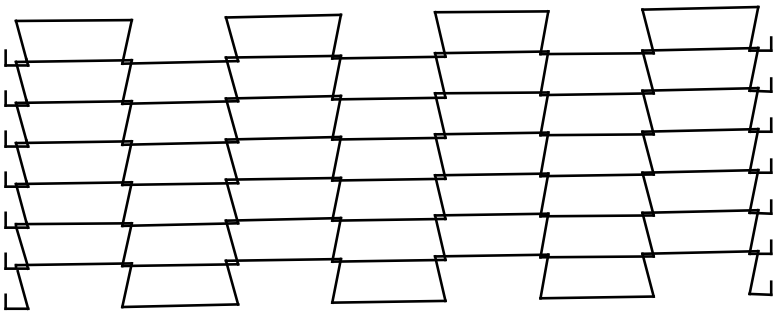
PART A



PART B

⑤

PART A



PART B

⑥

Lubrication

1. The chain wheel of motor variator shall be lubricated monthly

2. The lubricants for the motor bearing and variator shall be used and replaced as required and the variator lubricants shall include the following: Lithium based srease, Brand of oil :0-00#,Change period:10000h.

Emergency Situations

EMERGENCIES

EMERGENCY STOP

The emergency stop must be operated in any event of disaster.

When the emergency shop is operated, the moulding plate and the press block are halted.

The ejector returns to its starting position.

When the machining is re-started, everything is returned to its starting position during the first “initialisation stroke”.

If the ejector mechanism protection cover is opened, the machine is put into its emergency stop mode.

GENERAL

There are no specific situations which can be mentioned in relation to fire fighting, emission/leakage with serious consequences and safety data regarding chemicals/raw materials which are used. In these cases, all the general regulations for company safety apply-according to the lastest standards of the authorised body in your country.

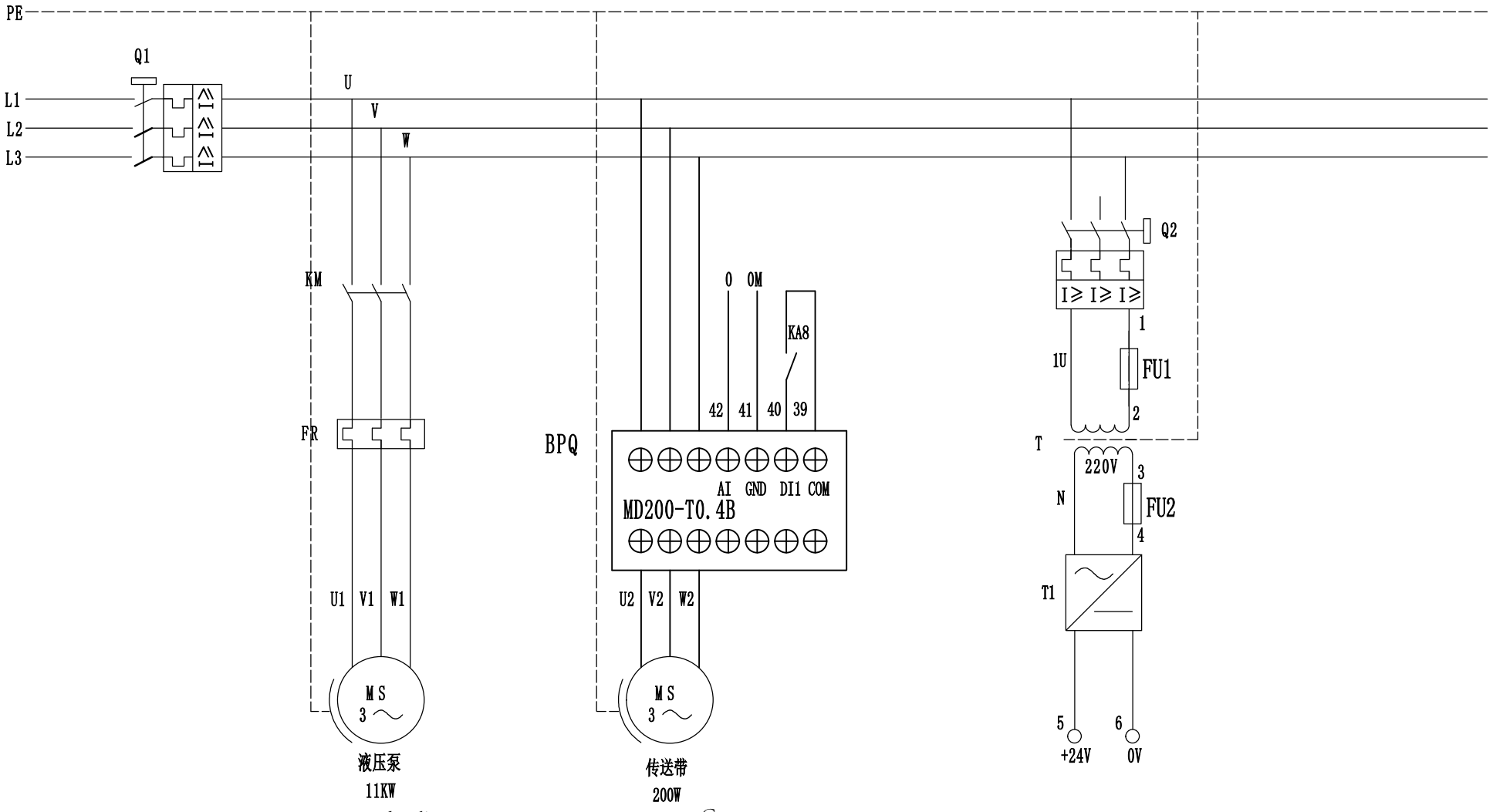
Fault Analysis

Faults	Cause	Check
Machine does not work	No voltage	- Power supply is not connected; - Power supply is not turned on; - Power supply fuse; - Machine fuse tube; - Press emergency stop switch
	Damage of electric circuit	- Electric circuit
	Sensor	- H_0 is not at the max. stroke - U_0 is not at the high position - Front protection cover safety switch - Rear protection cover safety switch - Lifting cylinder sensor is not at the bottom position
	Air supply	- Air supply is not connected - Pneumatic switch is not at the work position
	Reset button	- Not reset
Motor rotates, while conveyor does not.	Too loose wire belt	- Adjust tightness of wire belt; - Tensioning of chain
Oil leakage at the hydraulic unit	Connecting pipes and fixture	- Loose - Replace sealing ring
	Oil cylinder	- Replace sealing ring - Replace oil cylinder

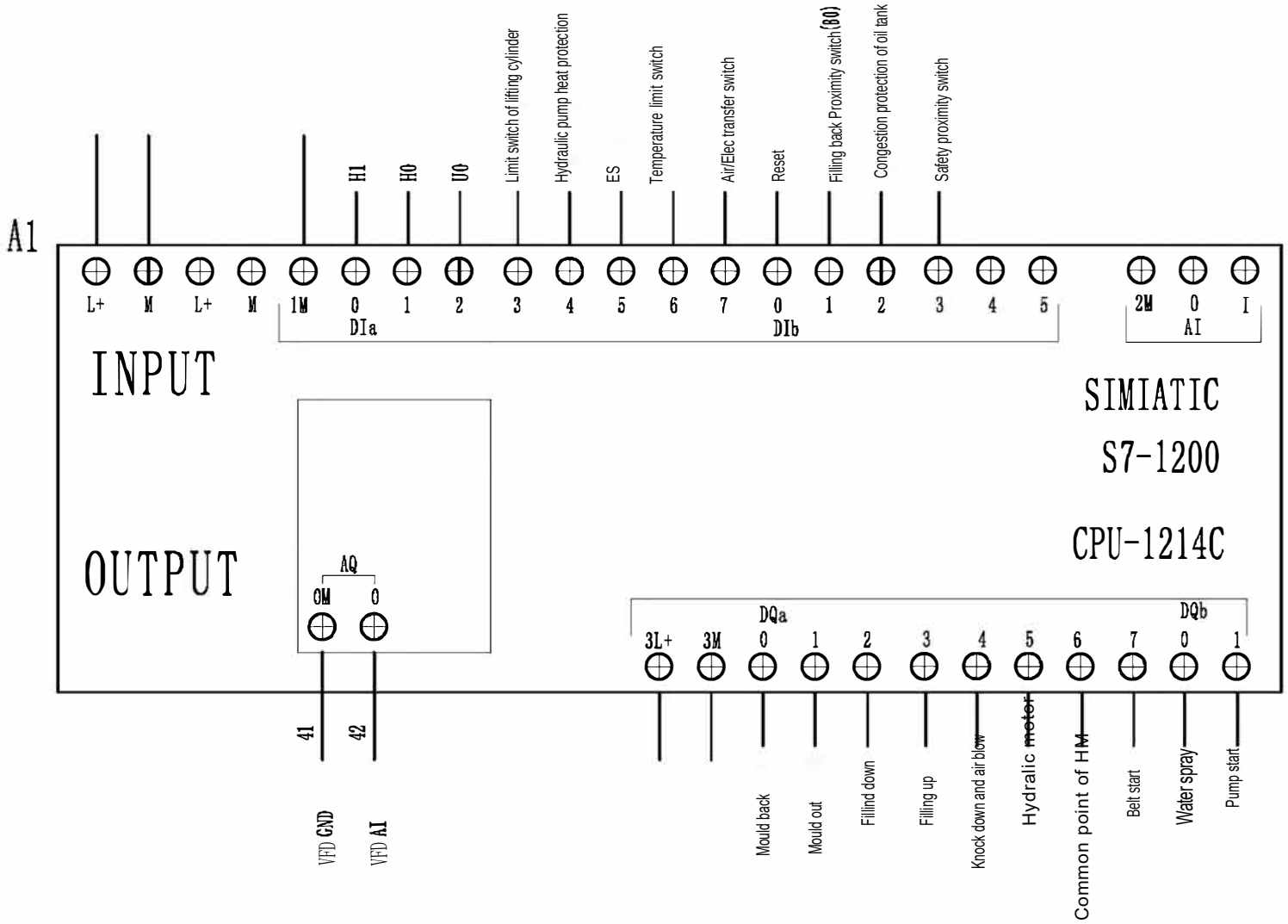
Too high oil temperature	Cooling water	- Cooling water is not connected - Too high temperature of cooling water
Blocked oil filter	Hydraulic oil	- Too dirty, and replace oil filter element
Pneumatic part does not work	Air supply	- No air is connected
	Pipeline	- Loose
	Air cylinder	- Replace sealing ring - Replace air cylinder
	Quick discharge valve	- Blocked, cleaning - Replace
	Electric circuit	- Damaged intermediate relay, replace it - Connector of connecting wire - PLC

Note: In case of other problems, please dial 86-531-84277277, and we will solve your problems immediately!

AMF600-IV-DQ-01



制图		成型机（西门子）	1:1
校核			
		AMF600-IV-DQ-01	



制图			成型机（西门子）	1:1
校核				
			AMF600-Ⅳ-DQ-02	

AMF600-Ⅳ-DQ-03

	0	1	2	3	4	5	6	7	8	9	

制图			成型机（西门子）	1:1
校核				
			AMF600-Ⅳ-DQ-03	

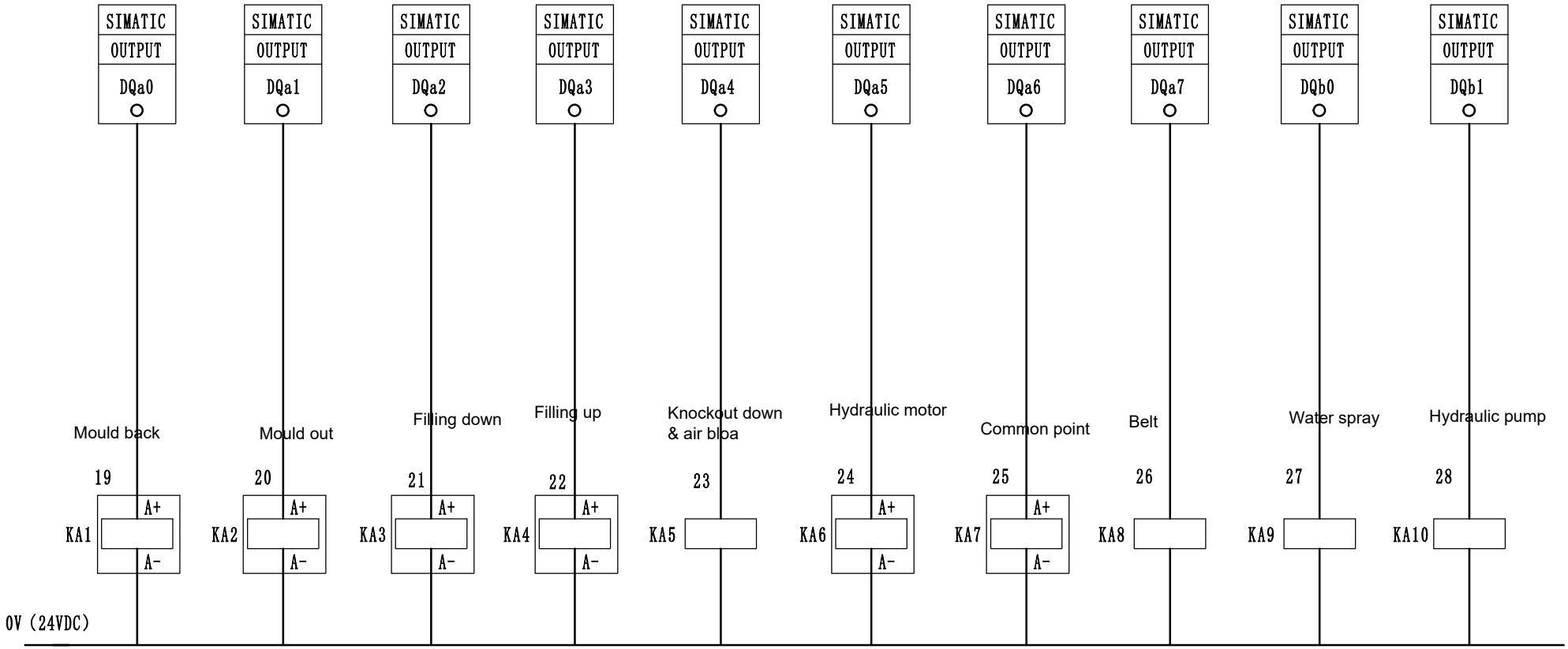
AMF600-IV-DQ-04

	0	1	2	3	4	5	6	7	8	9	

制图			成型机（西门子）	1:1
校核				
			AMF600-Ⅳ-DQ-04	

AMF600-IV-DQ-05

	0	1	2	3	4	5	6	7	8	9	



制图			成型机（西门子）	1:1
校核				
			AMF600-IV-DQ-05	

AMF600-IV-DQ-06

	0	1	2	3	4	5	6	7	8	9	

制图			成型机（西门子）	1:1
校核				
			AMF600-IV-DQ-06	

AMF600-IV-DQ-07

	0	1	2	3	4	5	6	7	8	9	

制图			成型机（西门子）	1:1
校核				
			AMF600-IV-DQ-07	