

Qomolangma® Semi-Automatic T-shirt Clothes Folding, Stacking / Bagging Machine



USER'S MANUAL

DTF-FPM-ST3438

Please read this manual carefully before operation

Welcome Congratulations on Your Purchase of the ST3438 Folding Machine

Work Smarter, Not Harder!

Thank you very much for choosing our Qomolangma brand clothes-folding machine.

Smarter and people-oriented innovation in the design concept and details will give you simple and relax folding experience.

An automatic machine that offers precision folding and options to stack garments or package garments in a bag. Its folding, bagging and stacking machines are invaluable to increasing the production capacity and consistency and quality of packaging of products.

The automatic folding machine ST3438 folds clothes quickly, silently and with precision. It functions independently and requires 1 operator. It is designed to fold t-shirts, sweatshirts, sweaters, undershirts, etc. It can be very easily adjusted for the various sizes and types of clothes so that the best-desired folding is achieved.

Please read the manual carefully, including the installation, operation and maintenance to ensure the best output and the lifetime of the machine.

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The specifications and other information in this manual are subject to change without notice.

This manual is a reference guide for installing and operating ST3438 folding machine.

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Welcome to visit our Los Angeles showroom
to discuss cooperation.

Tel: **626-342-7605**

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1. STATEMENT

1.1 General

The purpose of the user's manual is not only to explain the operating procedures in order to operate this machine. It also provides the owner, users and operators with precaution procedures for safe and proper machine operation for its intended purpose.

All information in this manual must be read and understood before any attempt is made to operate the machine.

The manufacturer has no direct control over the machine operation and application. Proper safety practice is the sole responsibility of the owner, user and operator.

All instructions and safety warnings in this manual are based upon the use of this machine under proper operating conditions without alterations from the original design.

The installation of the machine, accessories and spare parts must not be done by untrained or unauthorized persons.

Also the described maintenance procedures need to be followed and performed by trained personnel.

This manual is dedicated to model: ST3438 (Hereinafter referred as Folding machine) for ensuring the normal operation and adjustment of this equipment.

This equipment is developed and manufactured by our factory independently and we reserves the rights as below:

- 1.1.1** In order to ensure the technology advantage and applicability of the product, we can rectify and upgrade the mechanical components, electronic control components and software as well as the structure, specifications & brands of the adopted components, but it's not promise to change and upgrade freely to the previously delivered products.
- 1.1.2** Our company has right to protect the integrity of the equipment. Without our permission or our technician guidance, the machine user shall not modify the mechanical structure or the electrical control system. Otherwise, the party who modify the machine should be responsible for all the damages caused.

1.2 Safety Notice

Safety precautions

Some safety labels are used on parts of the machine. They are explained below.



- Make sure to use the machine with ground wire to prevent electric shock.
- Make sure the voltage is not overloaded.
- Electrical box and circuit parts must be operated under the guidance of electricians or professionals.
- Be careful to the Rotating parts to prevent any crushing.

1.3 Operating Notice

- Make sure that only trained and authorized persons can operate and maintain the equipment.
- The following points must be ensured for machine operation:
 - Operators should be trained by factory's engineer before operating the labeling machine.
 - Operators must have basic knowledge of operating and repairing equipment.
 - During the use of the equipment, please follow the required procedures.

1.4 Working Environment

Do not use the machine under the following environment:

- Temperature changes rapidly.
- The humidity is too high with dew.
- With great vibration or shock.
- A place where there is dust, water, oil, chemical spatter, explosive or inflammable dangerous goods.

1.5 Break-in Period

This machine is customized base on custom products, it is not a standard product. It needs the operator has technical and experience. A run-in period is about one month. During the time, the user need to promptly reflect to the manufacturer for

technical support, in case the equipment performance can't meet the technical parameters.

2. PRODUCT INTRODUCTION

2.1 Basic Usage:

The machine functions are folding, bagging manually, it's used for POLO shirts, t-shirts, sweatshirts, casual pants, jeans, sweatpants and other products.

2.2 Technical Parameters

Garment Sizes

Before folding	After folding	Bag sizes
W: 300mm - 850mm L: 400mm - 1050mm	W: 210mm - 300mm L: 210mm - 400mm	W: 200mm - 320mm L: 240mm - 450mm

UPH: 400pcs/hour

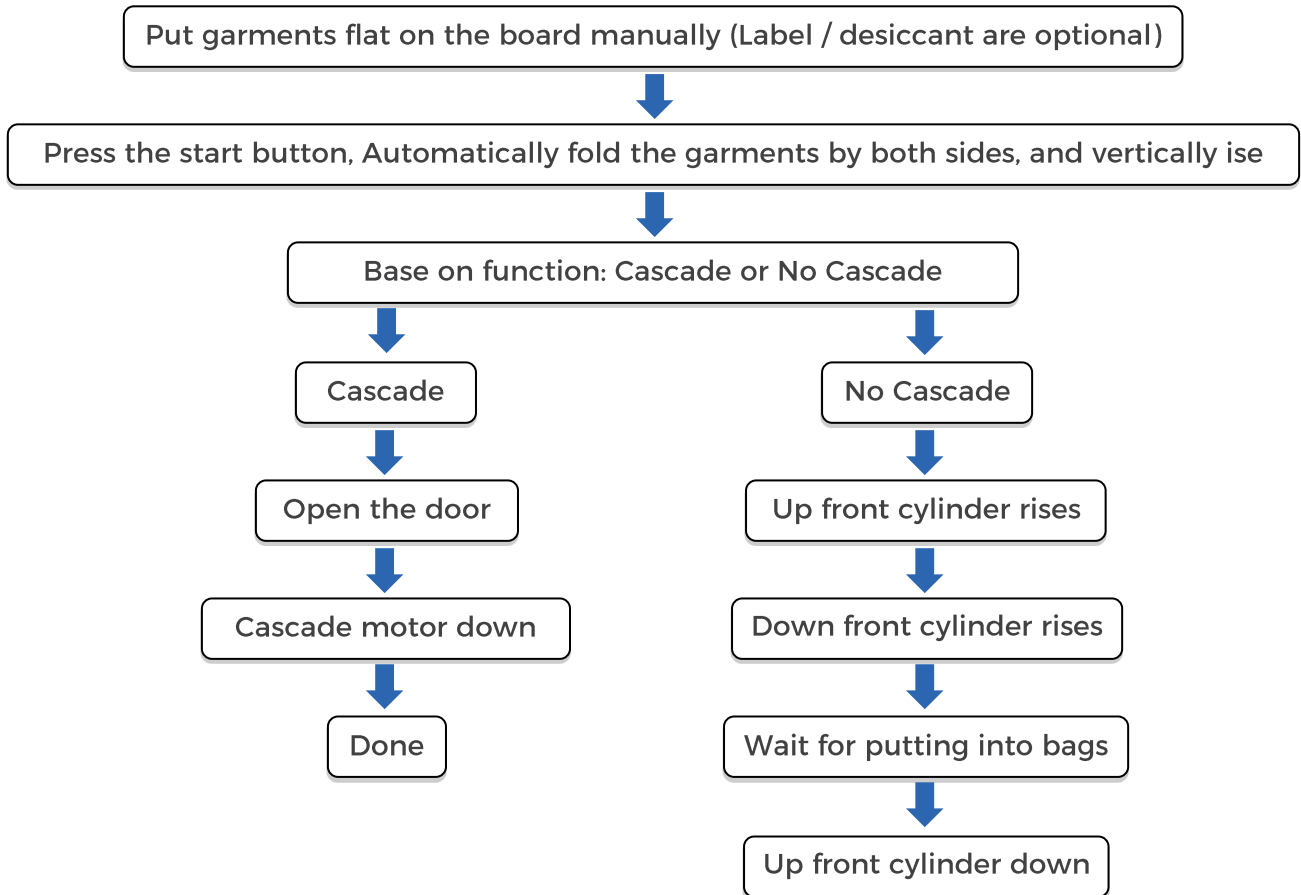
Machine sizes: 44.7" x 34.7" x 31.5" (1160 x 880 x 800mm)

Power: 110/220V, 50/60HZ

Weight: 566.6lb (257KG)

Air pressure: 0.5Mpa - 0.7Mpa

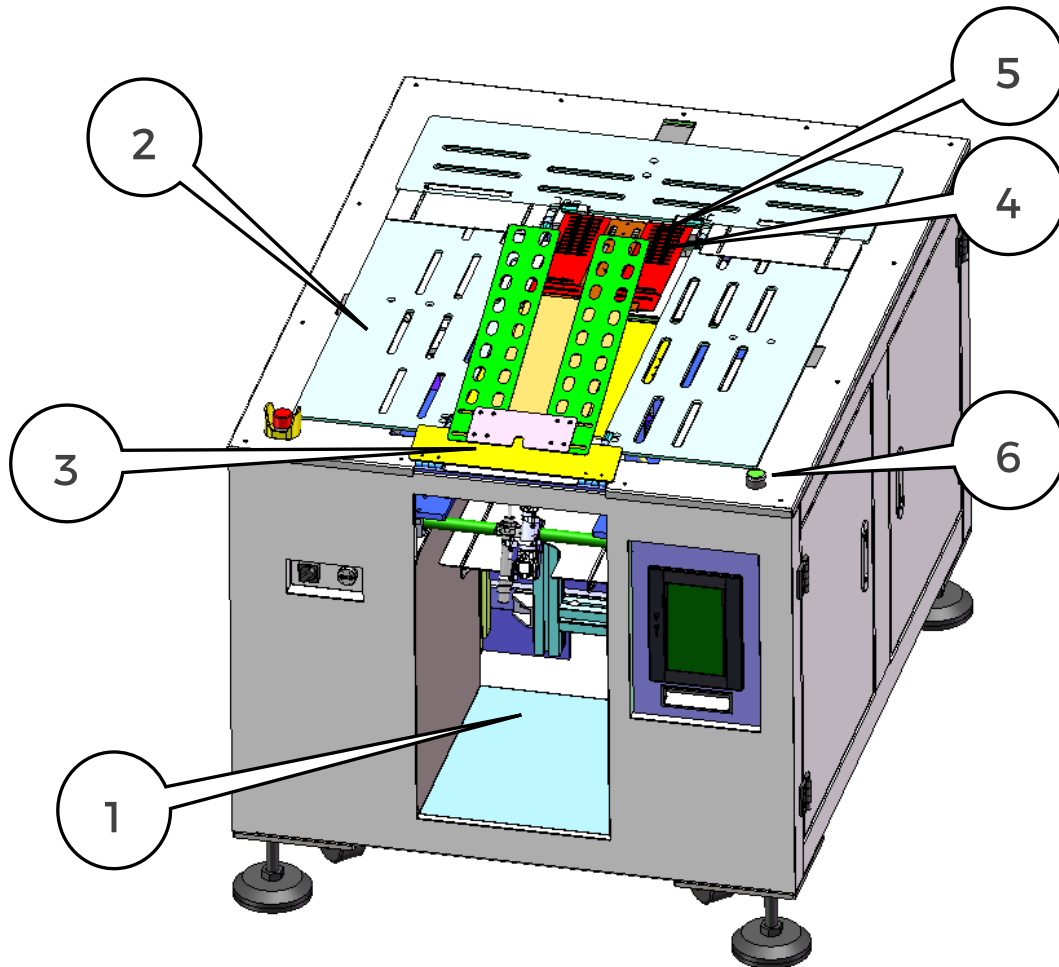
2.3 Process Introduction



3. INTRODUCTION TO MECHANISM


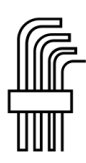





3.1 General View

Main structures and functions are as below photo shows.



- 1) **Cascade:** folded clothing that falls into the cascade.
- 2) **Left flips plate:** the mechanism for folding the left side of clothes.
- 3) **Front flap part:** fold the clothes up to make it easy for customers to pack bags.
- 4) **Middle flip plate:** the folding flip plate mechanism of the middle part.
- 5) **Collar flap part:** folding collar edge mechanism.
- 6) **Start button:** control the machine start and alarm reset.

3.2 Accessory Box List

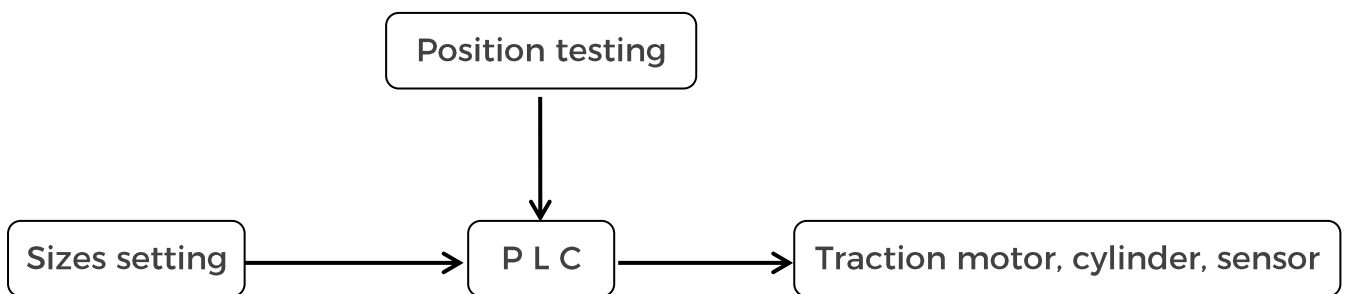
						
Adjustable Wrench	Allen Key	Bearings	Cylinder sensor	Phillips screwdriver	Screws	Slotted screwdriver
1pcs	1pcs	6pcs	1pcs	1pcs	80pcs	1pcs

4. ELECTRICAL PART

4.1 Control System

Electrical control principle:

Different garments base on the pre-set folding size, through the sensor detection, after PLC data processing, control the motor and cylinder action, to complete the product folding, bagging, sealing and other procedures.



4.1.1 Start Interface

When it's on power, the touch screen enters the "QOMOLANGM Brand Interface". Click any position of the screen to enter the main interface of the system.

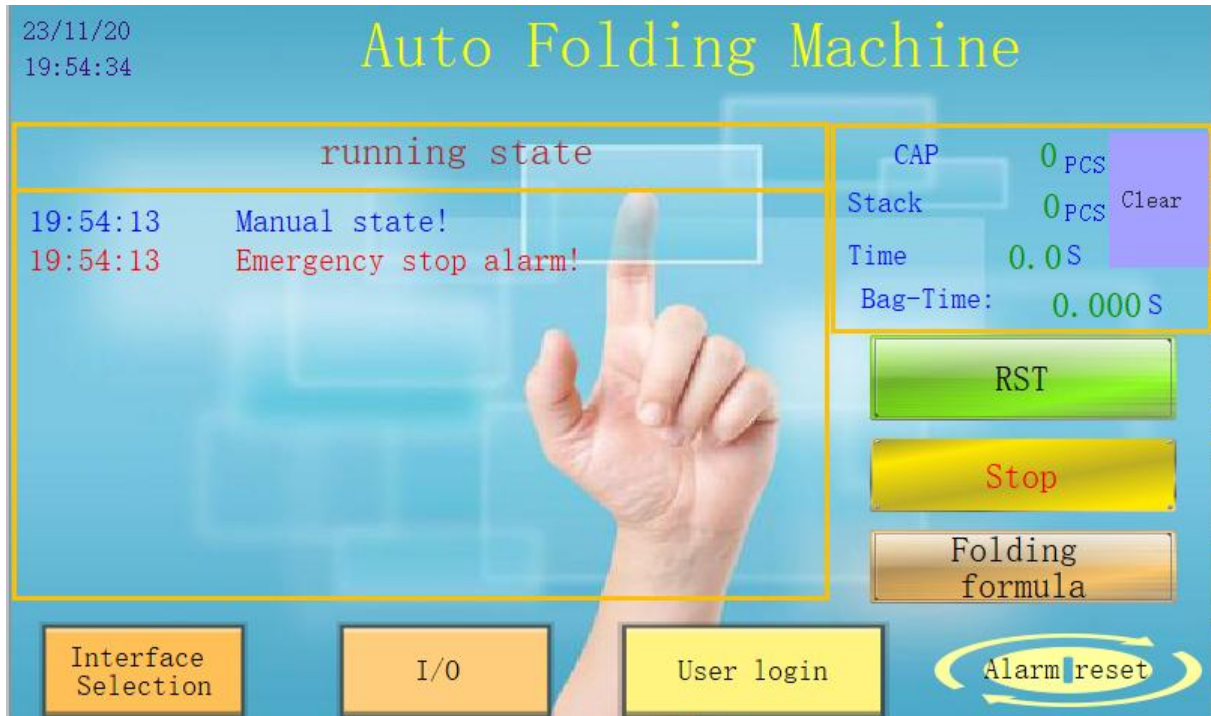


4.1.2 Main Interface Introduction

The main interface has two parts: the operation and the information area

Operation area: system initialization, interface selection, product formulation selection, etc.

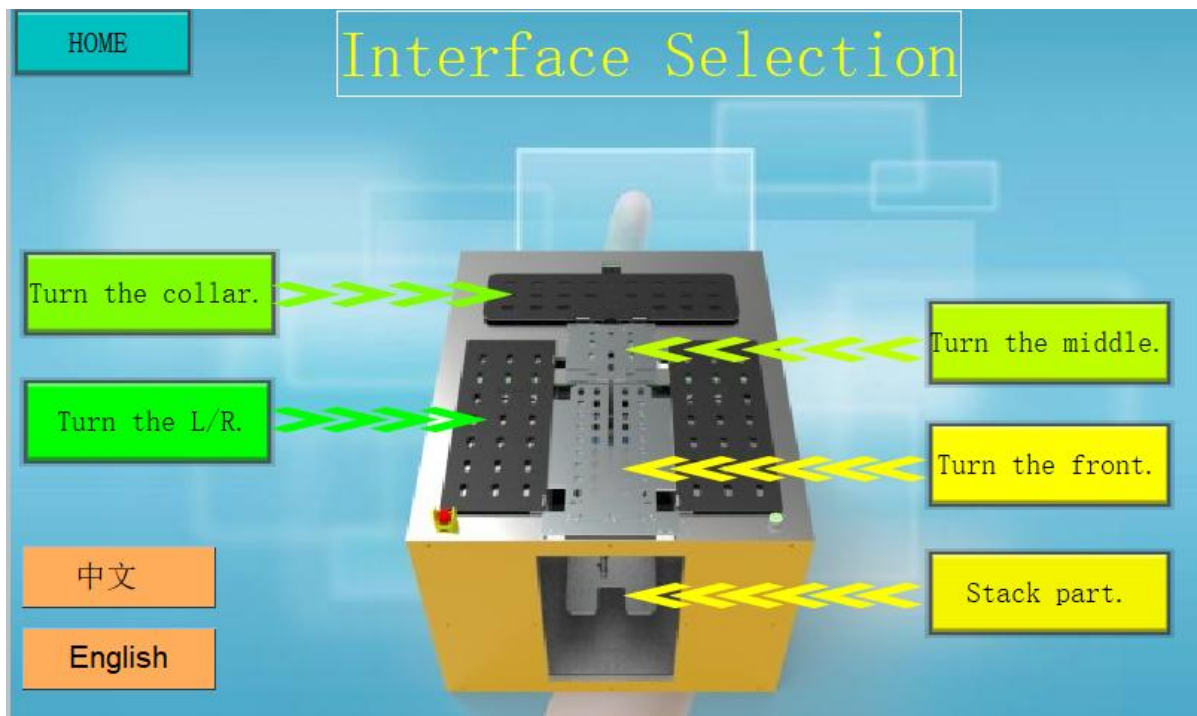
Information area: information prompt area, PLC communication status, etc.



4.1.3 Introduction to The Main Interface

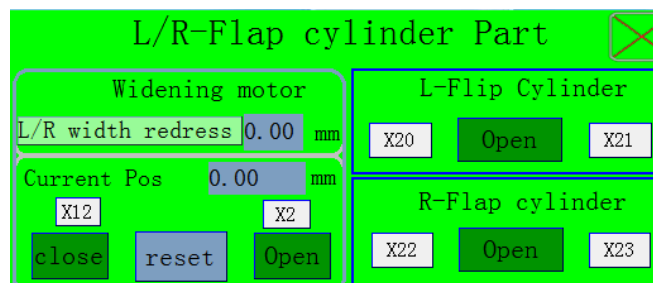
- 1) When it's on power, the system can be initialized. After the initialization is completed, the "start" button will be green, and the system will automatically enter the automatic mode for production.
- 2) On the main interface, you can select "interface selection", "IO interface", "user login" or "folding formula" to enter the corresponding screen for operation.
- 3) On the main interface, it also shows the "total production" of the machine that has been folded and the "time" of each piece.
- 4) On the main interface, "cascade quantity" and "time value" of manual bagging can be set.

4.1.4 Introduction to The Interface Selection

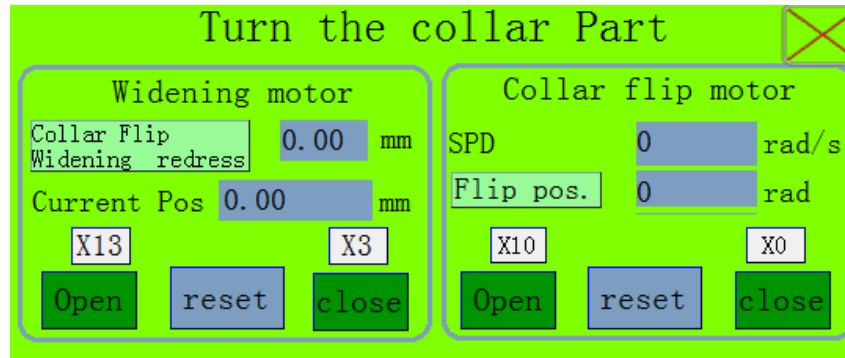


In the selection interface, there are: "left and right flip plate", "collar flip plate", "middle flip plate", "front flip plate", and "cascade plate".

Each interface corresponds to the manual test operation of the cylinder and motor of each mechanism.



- 1) In the interface of "left and right flip plate", the left side is the compensation data of "tuner", the current position of the motor, and the origin and positive limit inductor of the motor. Motor JOG and origin reset operation can be carried out here.
- 2) In the interface of "left and right flip plate", the right side is the induction signals of "left flip plate cylinder" and "right flip plate cylinder" extending and retracting. The cylinder can be opened and closed here.

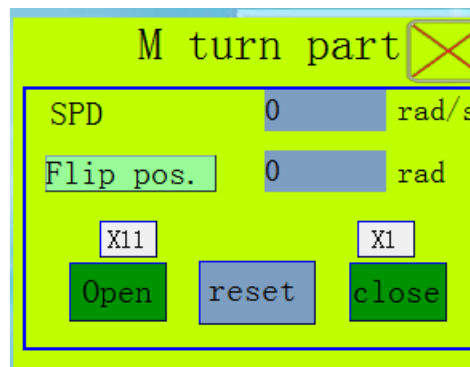


- 3) In the interface of "collar flip plate", the left side is the compensation data of "tuner", the current position of the motor, and the origin and positive limit inductor of the motor.

Motor JOG and origin reset operation can be carried out here.

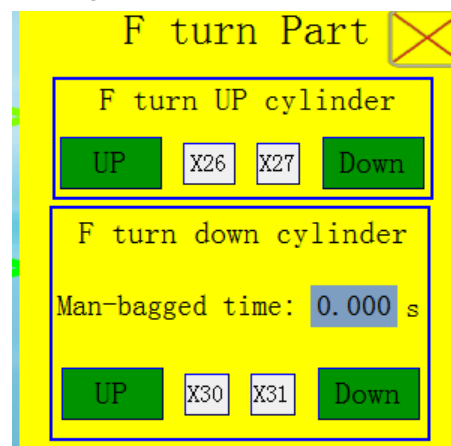
- 4) In the interface of "collar flip plate", the right side is the speed value of "collar flip motor", the Angle value of "collar flip position", the origin of the motor and the positive limit sensor.

Motor JOG and origin reset operation can be carried out here.



- 5) The interface of "middle flip plate" contains the speed value of "middle flip motor", the Angle value of "middle flip position", the origin of the motor and the positive limit sensor.

Motor JOG and origin reset operation can be carried out here.



- 6) In the interface of "front flip plate", the upper part is the "up" and "down" operation of "front flip up cylinder", and corresponding to the induction of upper and lower limits of cylinder.
- 7) In the interface of "front flip plate", the following part is the "up" and "down" operation of "front flip down cylinder", which also corresponds to the induction of upper and lower limits of the cylinder.

The next part also has the setting value of "manual bagging time", which is the same data as the setting value of the main interface.

- 8) In the interface of "cascade part", the upper part is the "open-close" operation of "cascade door cylinder", and corresponding to the induction of the cylinder in the left and right limits.
- 9) In the interface of "cascade part", the following part is the cascade "speed" value, the origin of the motor and the positive limit sensor.

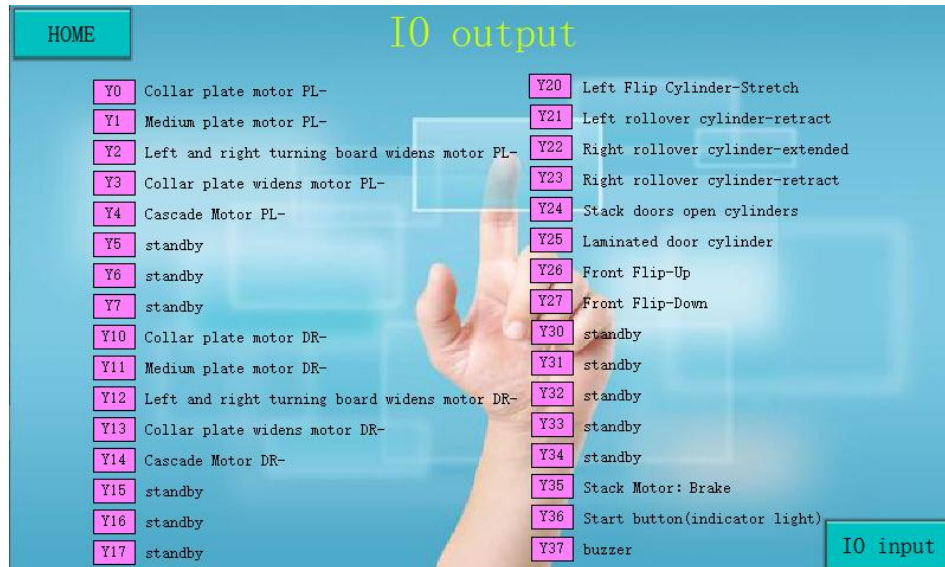
Motor JOG and origin reset operation can be carried out here.

4.1.5 IO Interface Introduction

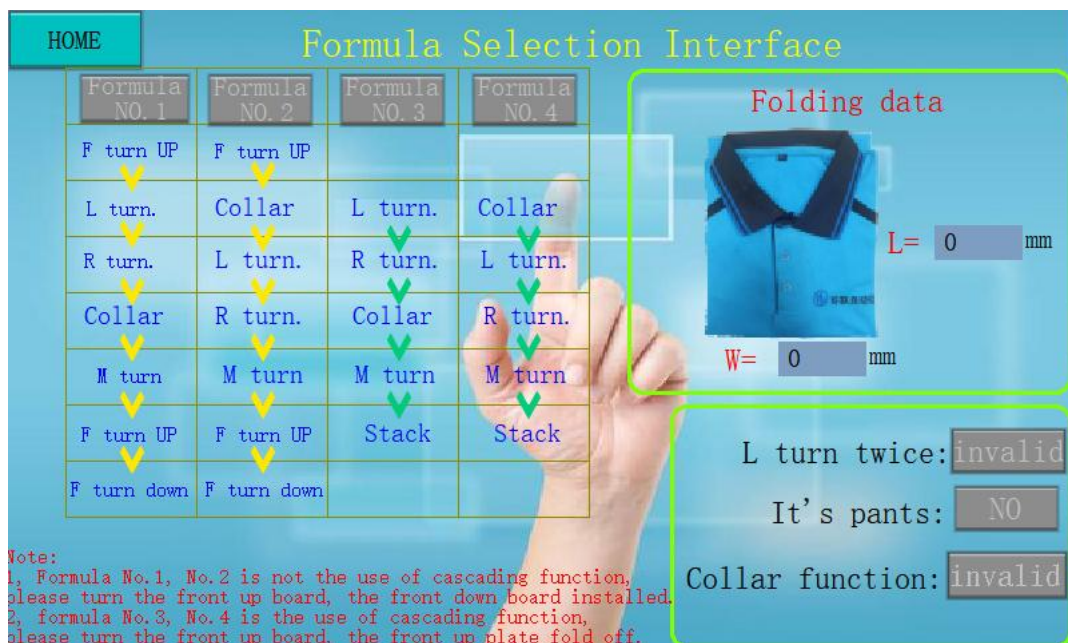
Specify the name of each input and output IO point.

HOME		I/O input	
X0	Turnboard Motor Origin	X20	Left Flip Cylinder-Stretching Induction
X1	Medium plate motor origin	X21	Left rollover cylinder-retraction induction
X2	Left and right turning board widens origin	X22	Right Flip Cylinder-Stretch Induction
X3	Turnboard widens origin	X23	Right rollover cylinder-retraction induction
X4	Cascade motor origin	X24	Laminated Door-Open Sensor
X5	standby	X25	Cascade door-combined sensing
X6	standby	X26	Turn the cylinder forward-reach out
X7	standby	X27	Flip the cylinder forward-retract induction
X10	Collar plate motor positive limit	X30	Flip the cylinder forward-reach out
X11	Medium plate motor positive limit	X31	Flip the cylinder forward-retract induction
X12	Left and right turning board widens positive limit	X32	standby
X13	Collar plate widens positive limit	X33	standby
X14	Cascade motor high induction signal	X34	standby
X15	standby	X35	Cascading sensing signal
X16	standby	X36	Emergency stop signal.
X17	standby	X37	Start button(green)

IO output



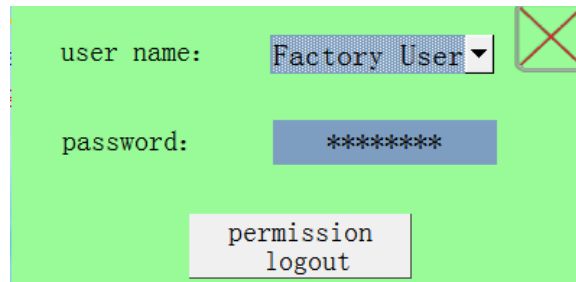
4.1.6 Folding Selection



- 1) In the "folding formula" interface, four machine action formulas are classified. According to the folding requirements of customers, customers can choose by themselves.
- 2) Note: when replacing formula 1 and 2 with formula 3 and 4, remove the support plate of the front turning up and down cylinder. On the contrary, install the upper and lower cylinder plates.
- 3) After choosing the folding formula, set the length L and width W of clothes after folding in "folding data".
- 4) The setting range of length L of the machine is 210~300mm and width W is 280~300mm

- 5) When the two sides of the folded clothes are longer, you can choose to open the "left flip plate folding twice" action.
- 6) When the folded clothes are pants, you can choose to click "yes" pants, so that the left and right turning plate will not move, reducing the production action time and increasing the production efficiency.

4.1.7 Login



The login interface has a light green background. It contains a 'user name:' label followed by a dropdown menu showing 'Factory User' and a small square icon with a red 'X'. Below this is a 'password:' label followed by a blue button with '*****' text. At the bottom is a grey button with 'permission' and 'logout' text.

According to user's level , select the corresponding user, enter the corresponding password, then operate the machine.

4.1.8 Common Abnormal Alarm Processing

- 1) **Abnormal cylinder induction alarm:** when the cylinder induction is abnormal, there will be a red message in the alarm prompt area on the main interface. Observe whether the corresponding cylinder sensor is normal according to the prompt.
- 2) **PLC communication abnormal alarm:** first press the reset button to see if the alarm prompt can be eliminated. If not, check whether the touch screen works normally and whether the communication line between PLC and touch screen is connected normally.
- 3) **Motor abnormal alarm:**
Observe whether the driver of alarm motor alarms. If the driver does not alarm and PLC prompts alarm, check whether the motor alarm signal line is connected normally. If the driver alarms, check whether the mechanism driven by the motor hits the hard limit, whether the motor power line connection is normal, whether the motor limit sensor is normal, whether the belt is stuck to a foreign body, etc.

5. AIR SOURCE INSTALLATION

This clothes folding machine requires an air compressor when used.

The air compressor is not supplied as a standard accessory. It must be purchased separately.

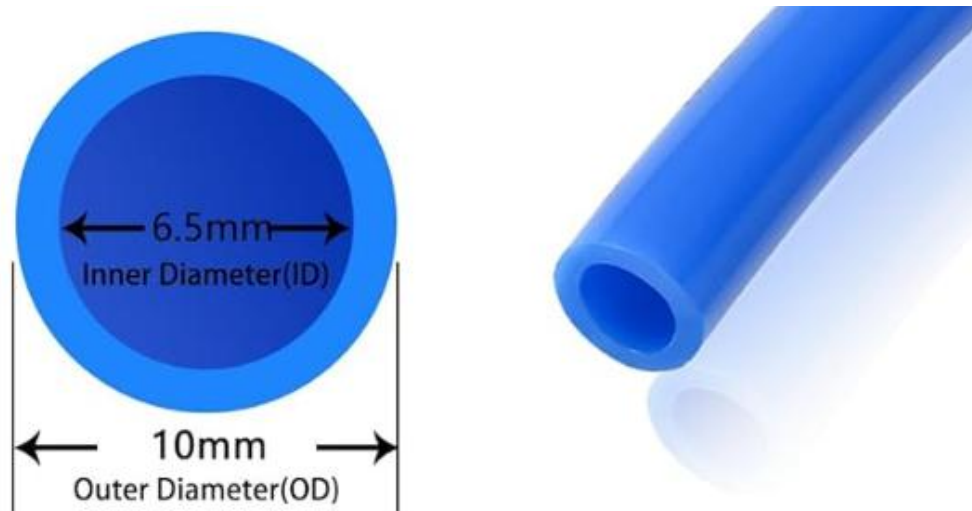
- Be sure to select a vacuum pump which is affixed with either a label showing compliance with the relevant safety standard or with the CE marking.

- Air compressor selection:

With minimum 200L/min (7.1 cfm) air displacement and 25L (6.6 gallon) tank capacity.

Connects the air compressor with an air hose of 3/8-inch (10mm) outer diameter.

Normally pressure range is from 0.5 to 0.7 Mpa (72.5 to 101.5 psi).



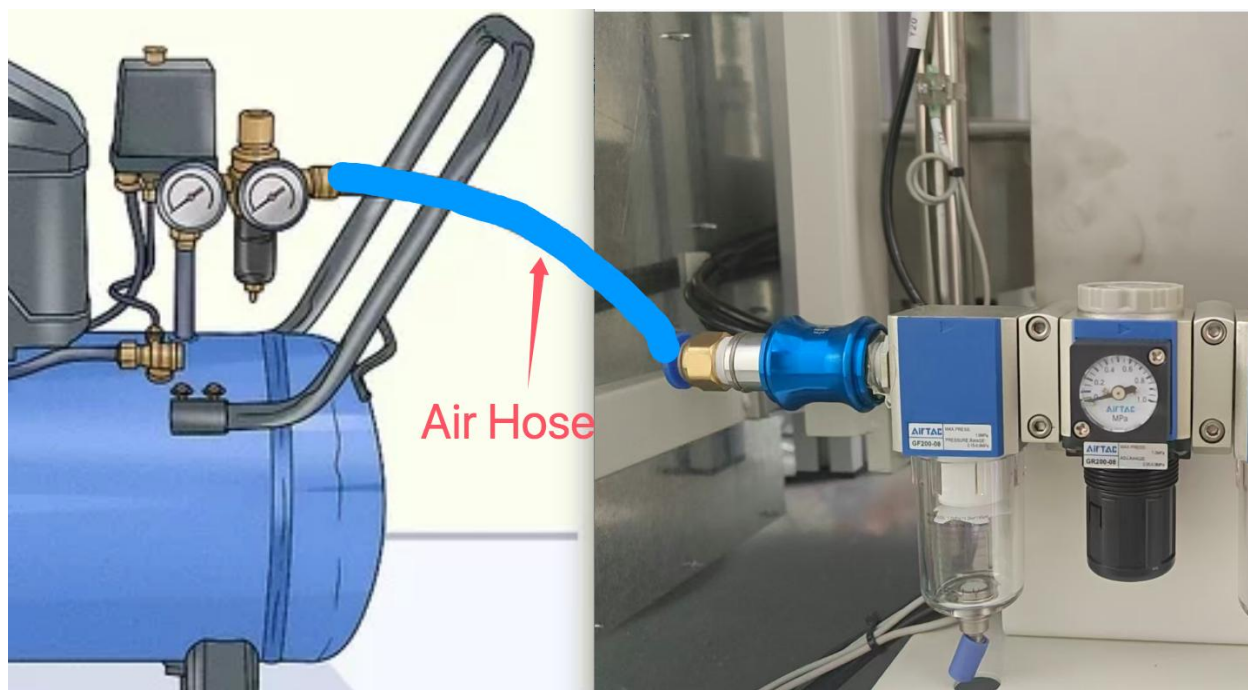
When connecting the vacuum pump to a power supply, be sure to follow the wiring instructions given in the user's manual provided with your pump.

Please open the side door of the machine and find the Air Source Treatment Unit.

As shown below



1. Attach the hose to the regulator valve.
2. Set the compressor on flat ground.
3. Connect the free end of the hose to the air inlet of the compressor. As shown below.



Note: The outer diameter of the air pipe is 10mm. If you use a quick-connect coupler to connect the air compressor, please purchase 10mm quick connector.

Kind Reminder:

If you are using an air compressor for the first time, it is wise to do a test run.

1. Turn the pressure power switch to “off.”
2. Plug in the power cord, now starts the compressor by turning it “on.” The pressure gauge should slowly rise.
3. Turn if “off,” unplug the cord and release any air in the tank.
4. You’ll know if an air compressor isn’t working correctly when the pressure gauge indicates that there is a decrease in pressure.
5. If you are using the air compressor to power a tool, always make sure the pressure switch is in the “off” position before you plug it into an outlet.

Attach any air hose connections, close any drainage valves. Turn down the pressure in the air hose, then plug in the power supply cord, and turn the power switch to “on.” Turn up pressure slowly until desired pressured is reached. If you need to set PSI specifications, make sure you know which PSI specification you need ahead of time and don’t forget it to set it.

6. MACHINE OPERATION

6.1 Machine Operation

1. Determine the folding mode of clothes first: select the corresponding action formula in the folding formula interface.
2. Determine the parameter values of length L and width W for clothes folding, and input.
3. According to the data of folding length L and width W just entered, adjust the width W of the front turning plate of the machine, and adjust the width W and length L of the middle turning plate
4. Note: the length L and width W adjusted by the machine should not be larger than the set data, otherwise the board will flip and collide.
5. After completing the above steps 1, 2 and 3, click "initialization" on the main interface or long press the "start" button on the machine for 1 second to carry out the machine initialization.
6. After initialization, the "start" button of the machine will turn green.

7. Place clothes.
8. Press the "start" button on the machine to start the machine.
9. After the machine operation is completed, place clothes and "start".

6.2 Alarm Operation

When an alarm occurs on the machine, first queue up for the alarm problem, and then press the "alarm reset" on the main interface or the "start" button for alarm reset.

When the machine is stacked full of material alarm, first take out the stacked clothes, then press the "start" button or long press the "confirm" on the interface, after completion, the machine continues to produce.

7. MAINTENANCE

Regular maintenance of guide rail can reduce running wear, effective maintenance not only ensure the accuracy and speed of the equipment, but also extend the service life of the equipment.

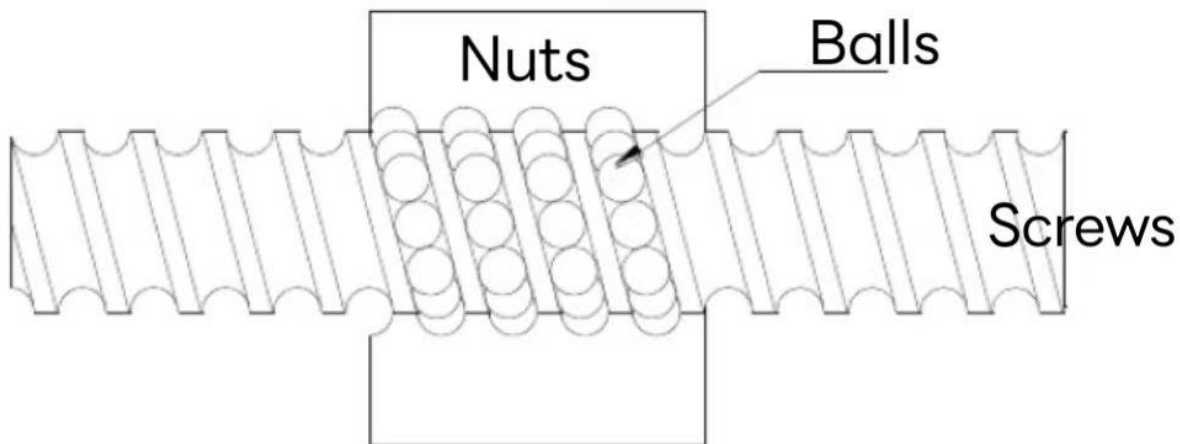
7.1 Maintenance Steps of Guide Rail

1. Open the protection guide and slide plate metal guard. Pay attention to the grease in the mounting hole of guide rail.
2. Carefully wipe guide and slider surface cotton wool.
3. Carefully check to ensure that the guide surface and surrounding no debris.
4. Hand push slider back and forth to reciprocate a few times, check again whether the slider is smooth operation.
5. Cover the cover plate, lock the screw, and restore the equipment.
6. The maintenance cycle

Item	Content	Time
Screws	Cleaning and lubrication	1 / 3months

7.2 Lead Screw Maintenance

7.2.1 Structure Drawing of Ball Screw



The screw is not in direct contact with the screw, and the ball is sealed in the groove between the screw and the screw. When the lead screw and the lead screw work, the ball rolls in the groove between the lead screw and the lead screw, the friction between the lead screw and the guide rail is the friction between the ball and the lead screw and the groove between the lead screw and the lead screw. The lubrication of the lead screw and guide screw is actually the lubrication between the ball and the groove.

Most ball screws have a grease tip at the end of the lead screw and a grease gun is used to inject grease into the inside of the guide rail and lead screw. Guide and lead screw other surface lubrication is the main role of rust, and so on.

7.2.2 Lead Screw Lubrication Maintenance Steps

- 1) Carefully wipe the screw surface oil, especially in the groove oil. Pay attention to the grease in the mounting hole of guide rail.
- 2) Use the nozzle in the nozzle to fuel the transmission cavity inside, until the internal oil is completely extruded. Remove the extruded oil.
- 3) In the lead screw surface coated with a little grease, priority to ensure the groove.
- 4) Push the silk mother back and forth several times, to ensure that the oil film even.
- 5) Remove excess grease machine.

Note: if there is no oil nozzle on the slide seat (thread), step 2 can be omitted.

Maintenance period

Item	Content	Time
Screws	Cleaning and lubrication	1 / 3months

7.3 Installation Environment of Equipment

The requirement is room temperature, not suitable for long-term use in the environment of high temperature, humidity and acidity, so as not to affect the service life, efficiency and accuracy of the equipment.

7.3.1 Keep clean

After use, the equipment should be cleaned, such as friction roller, electrical box, etc. Cleaning and maintenance can be done using alcohol or commercial neutral cleaning fluid.

7.3.2 Cleaning needs attention

Do not use mechanical surface damage cleaning tools.

Do not use caustic plastic utensils.

Use acidic solutions indiscriminately.

8. COMMON PROBLEM SOLUTION

1. The device alarm cannot enter the automatic mode after starting up

Check whether the air pressure is normal.

The equipment should work under the air supply condition of 0.5-0.7mpa.

Check that the emergency stop button is pressed.

2. The product folding width is deviated

Check whether the locking hand wheel of adjusting mechanism is loose. If it is loose, tighten it.

3. Bag opening mechanism left and right stretch distance is not consistent, resulting in bag tilt

Check whether the locking hand wheel of the adjusting mechanism below is loose.

If it is loose, adjust the width of bagging again and tighten the hand wheel after completion.

4. Sensor does not respond

Check that there is no dust or other objects on the sensor head, and clean the sensor lens with a soft brush or clean cloth.

9. WARRANTY

9.1 Commitment

Customer first, to make sure customers with satisfactory, we offer pre-sale and after-sales service.

1. Provide professional technical consultation before sales, and guide customers to choose the right type;
2. Provide training service, guide customers to correctly use and maintain folding machine;
3. Provide technical support services and guide customers to solve related supporting services.
4. The equipment shall be guaranteed for one year. During the warranty period, maintenance service shall be provided free of charge.

9.2 Warranty

Our one Year limited warranty covers all factory original parts for one year from the date of purchase. Once the limited warranty ends, the customer is responsible for any troubleshooting and cost of parts.

The limited warranty will not cover the following:

1. Damage caused by disasters, such as fire, flood, lightning, improper electrical current, software problems, or interaction with non-sign-in-global products.
2. Damage caused by improper installation, failure to follow the proper instructions, performing preventive maintenance, improper or abnormal use, misuse, neglect, or accident including but not limited to improper storage or transporting the product without the proper preparation and packaging, unauthorized adjustments, modifications or addition of accessories, normal wear and tear or external causes such as accidents or other actions or events beyond our reasonable control.
3. The product has been altered or modified in any way, including but not limited to attempted repairs without prior authorization from sign-in-global or the use of unauthorized parts.
4. The Defective on Arrival (DOA) period is 10 days starting the date customer receives the shipment. If the product you purchased arrives with missing parts

or non-working parts that are not covered by the limited warranty, we will cover the replacement part and shipping cost to send the part/s you need. After 10 days, the customer is responsible for any part and shipping costs.

For return requests:

1. Equipment must be returned in original sign-in-global crate. If not, customer will be charged for a new crate to return the equipment.
2. If the item needs to be repackaged, please use original box and packing materials. If return is in an alternative box, please ensure that the box is packed thoroughly to avoid damage during shipping – NO foam peanuts in box, NO duct tape on returned product.
3. Returns for refund: Once the package has been returned to our facility it will be inspected before request is released for a refund.

Thank you for your attention, support and use, if you are not satisfied with the quality of equipment, performance, service and other places, welcome you to put forward valuable Suggestions, our after-sales service department will respond positively, answer you timely and deal with!



Welcome to visit our Los Angeles showroom
to discuss cooperation.

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