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Model: X-Pull

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X-Pull User Manual

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Overview

1.1 Equipment Overview

Thank you very much for choosing our company's X-Pull film peeling machine (garment unloader)!

Please read this user manual carefully before use to ensure proper operation. Please keep this manual in a safe place for quick reference at any time.

Due to variations in configuration, some machines may not include all the features listed in this manual. Please refer to your specific model's operational features for definitive details.

1.2 Safety Precautions

NOTICE



The manufacturer is not responsible for damage, injury, production loss, or other losses caused by improper operation, unauthorized modification, incorrect installation, incompatible parts, or service by unqualified personnel.

1.3 Operating Environment

- Indoor, dry, clean, and well-ventilated location
- Storage Ambient Temperature: 32–122°F;
- Storage Ambient Relative Humidity: Below 80% (non-condensing).
- Operating Ambient Temperature: 32–104°F;
- Operating Ambient Relative Humidity: Below 80% (non-condensing)
- Stable, level, heat-resistant work surface
- Keep away from water, excessive dust, corrosive gases, flammable materials, and explosive vapors

1.4 Grounding & Technical Parameters

1.4-1 Grounding Requirements:

To prevent electric shock or fire accidents caused by electrical leakage, overvoltage, or insulation breakdown, please ensure the power control system is reliably and securely grounded. The grounding resistance must be less than 10 Ohms, the wire length must be within 20 meters, and the wire cross-sectional area must be greater than 4 mm². Machines in motion present inherent dangers! It is the user's responsibility to design effective error-handling and safety protection mechanisms during production. This equipment carries no obligation or liability for any incidental or consequential damages resulting from operation.

1.4-2 Technical Parameters:

Parameter	Specification
Model No.	X-Pull
Controller	PLC(MX310-32 + TK8072IP)
Amp \ Voltage \ Power \ Phase	9A\220V\2KW, 60HZ

Appearance and Functions

2.1 Exterior View

(Please refer to the images in your original document for labels 1 through 12.)



2.2 Component Names and Functions

1.Flexible Gripper: Grasps garments and places them onto the stacking rack.

2.Machine Status Indicator Light:

○**Green:** The machine is running in Automatic Mode.

○**Yellow:** The machine is in Teaching Mode.

○**Red:** Emergency Stop is engaged, or an abnormal state has occurred. Please check the alarm prompts on the touchscreen controller.

3.PLC Touchscreen Controller: Controls machine movements and manages program settings.

4.Power Switch: Turns the machine power on and off.

5.START Button: Press once to enter Automatic Mode; the status indicator light will turn green.

6.RESET Button: In non-automatic modes, press and hold for 2 seconds to reset the flexible gripper/axis.

7.Emergency Stop Button (E-STOP): Press in the event of an abnormality to stop the machine immediately. The status indicator light will turn red.

8.Air Pressure Regulator Knob: Adjusts the gripping force of the flexible gripper. Please maintain the pressure below 4 bar; excessive pressure may cause the gripper to burst.

9.Stacking Rack: Holds finished heat-transferred garments.

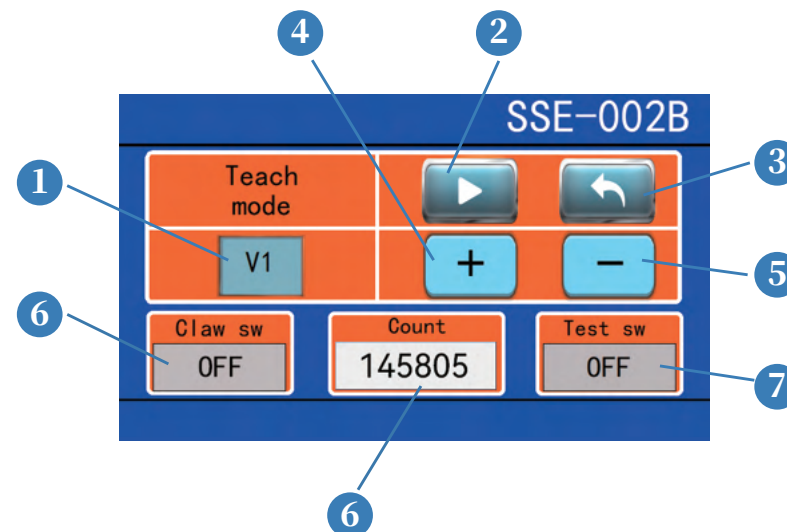
10.Air Inlet Fitting: Connects the main air supply required for machine operation.

11.Power Cord: Connects the main power supply required for the machine.

12.Ethernet Port: Communication interface for connecting to multi-station X4/6/8 machines.

2.3 PLC Touchscreen Controller Interface and Functions:

(Please refer to the corresponding numbers in the original interface diagram.)



1.Flashes when in Teaching Mode. Press the "+" and "-" buttons to adjust the garment gripping position.

2.In Teaching Mode, press once to confirm completion of the current action.

3.Return Key: Exits Teaching Mode without saving.

4.& 5. Adjusts the V1 flexible gripper's position for grabbing garments while in Teaching Mode.

6.Claw Switch: Press and hold to toggle the flexible gripper open or closed.

7.Counter: Increments by 1 each time a garment-gripping action is completed. Press and hold this area for 2 seconds to reset the counter to 0.

8.Test Switch: In Teaching Mode, turn this switch ON, then press the **START** button once to preview the currently taught movements.

2.4 Startup Preparation

1. Verify that the equipment is connected to a power supply that meets the requirements.
2. Verify that a clean, dry air supply is connected.



3. Turn on the main power switch, then press the key switch "POWER" on the operation panel. Once energized, the equipment will boot into the main interface.

2.5 Automatic Operation



1. Press and hold to turn on the gripper switch "Claw sw -> ON" as shown in the figure.



2. Press the "START" button. The machine will enter the automatic run state, and the status indicator light will turn green (AUTO mode).

3. Wait for the multi-station machine (X4/6/8) to send the film peeling signal.

2.6 Teaching Method



NOTE: Teaching Mode must be executed when the machine is NOT in automatic operation (the status indicator light must be yellow). If the machine is in automatic operation (status light is green), press the "EMERGENCY STOP" button on the panel, rotate it to reset, and then press and hold the "RESET" button on the panel to return the flexible gripper/axis to its home origin before entering Teaching Mode.

Teaching Steps:



1. Press and hold the "►" button on the touch-screen until "V1" flashes. Use the "+" and "-" touch buttons to move "V1" to the garment gripping position.



2. Long press and hold the "►" button again until "V1" flashes. Use the "+" and "-" touch buttons to move "V1" to the garment placement position.



3. Long press and hold the "►" Button one last time, and a "Finish teach!" confirmation window will pop up.



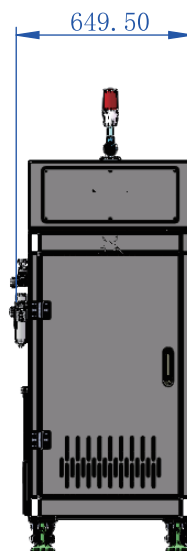
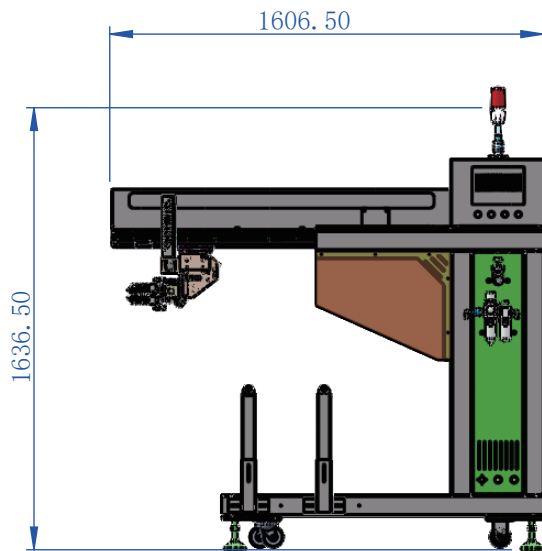
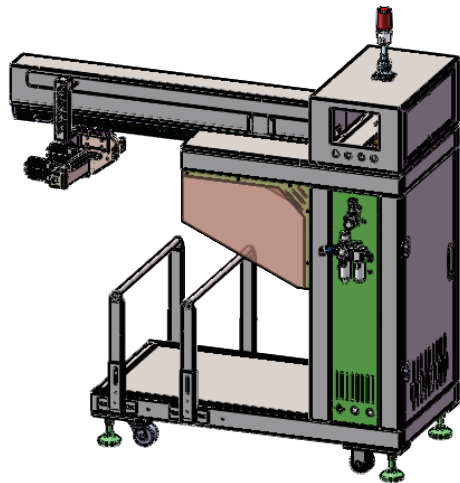
4. Tap the "Save" button to store the configuration and exit. If you select the "X" button instead, the system will discard the current session data and exit.



5. Tap the screen to turn on the test function "Test sw -> ON", then press the physical "START" button to check if the newly taught positions are appropriate. If adjustments are needed, repeat the teaching process and save again.

2.7 Equipment Dimension

(Refer to the technical drawings in your original document for specific measurements.)



Troubleshooting

1. Servo Alarm Interlock: If the "Servo alarm!" fault window appears on the screen, shut off the main power supply. Check whether the axis home origin switch is disconnected/broken or if there is a mechanical jam or physical blockage. Once the mechanism is verified to be clear and normal, restart the power supply.

Servo alarm !
Please check the
fault and reset !

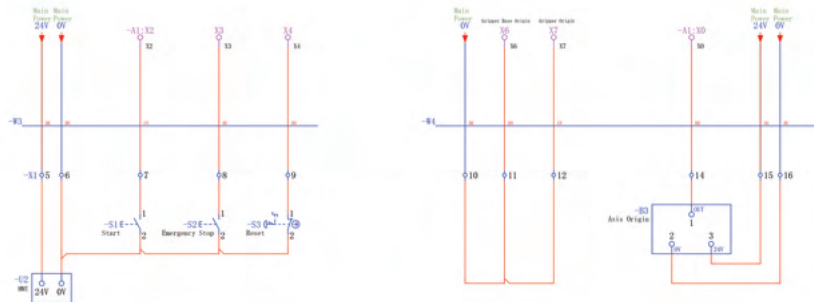
Reset

2. Cylinder Alarm Interlock: If the "Cylinder alarm!" fault window displays on the screen, check the incoming air supply pressure. Verify whether the cylinder upper limit travel switch has shifted out of position or suffered a broken/disconnected wire.

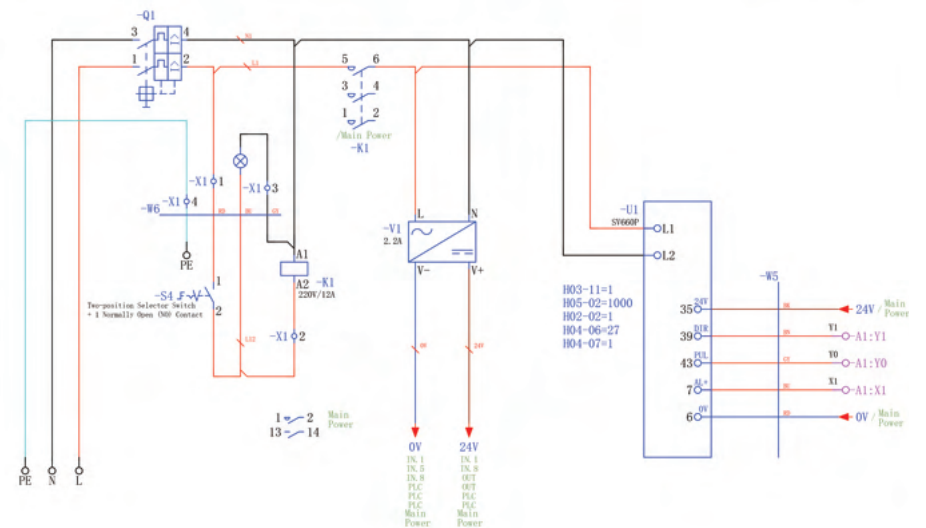
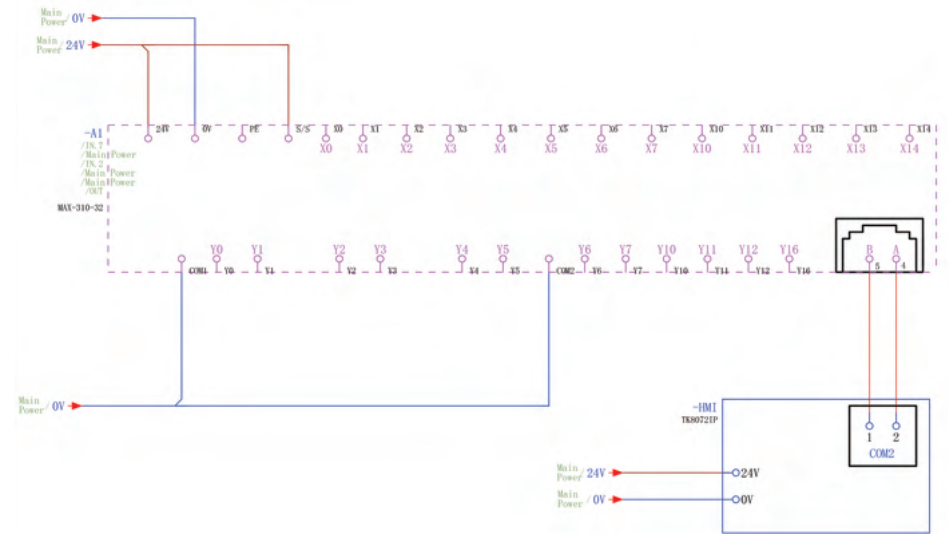
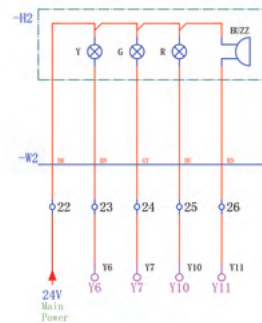
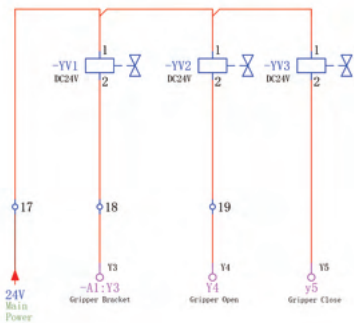
Cylinder alarm !
Please check the
fault and reset !

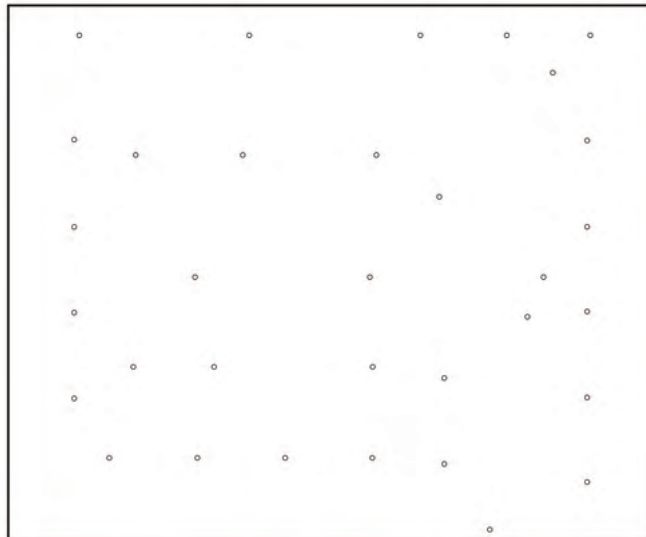
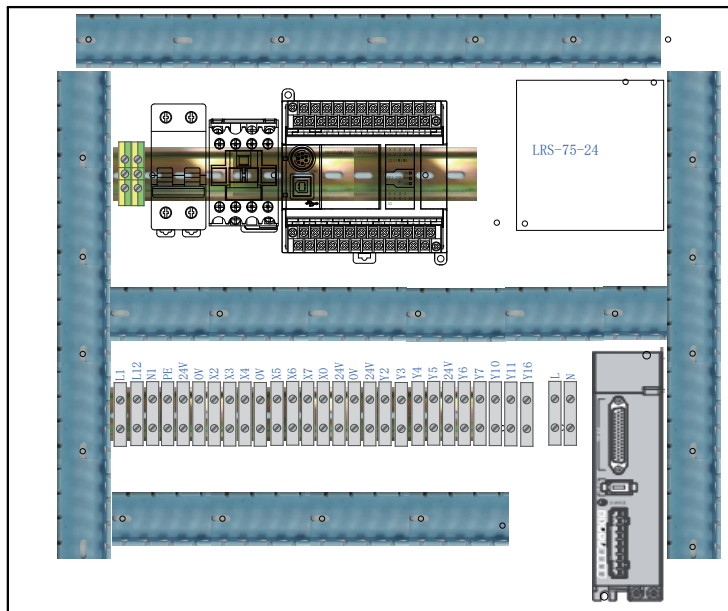
Circuit Diagram

(Refer to your original document for the diagram layout.)



X10 1 100
X11 1 101
X12 1 102
X13 1 103





Pneumatic Diagram

(Refer to your original document for the diagram layout.)

