MICROTEC

APEX QUICK GUIDE

X-Pull

APEX X-Pull Auto Unloader

One picture per step. Follow the steps in order.



Safety first

The arm moves by itself

The gripper arm moves fast and without warning. Stay out of its path. Keep hands, hair and loose clothes away from the gripper.

Reaching in? Stop the machine first

Press the red EMERGENCY STOP button before you touch the gripper or clear a garment.

220V single-phase power — electrician only

Must be grounded: less than 4 ohms, ground wire thicker than 4 mm², no longer than 65 ft (20 m).

Keep the gripper air below 4 bar

4 bar is about 58 psi. Too much air pressure can burst the soft gripper.

Indoors, dry, level floor

32–104°F, humidity below 80%. Away from water, heavy dust and anything that can burn.

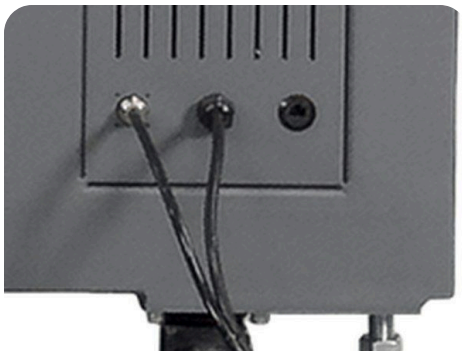
Emergency? Press the red **EMERGENCY STOP** button on the control panel. The machine stops at once and the light turns red. When it is safe: twist the button to release it, then hold **RESET** for 2 seconds so the gripper goes back home.

1 Set up



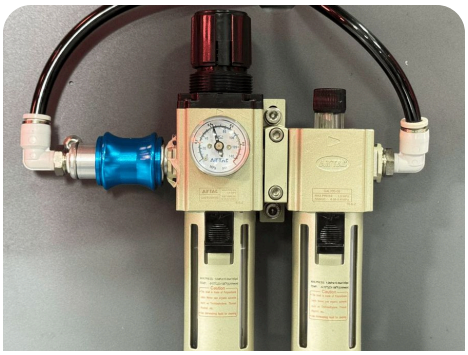
1. Set it next to your APEX rotary press

The X-Pull works with the APEX X4, X6 and X8. When the press finishes a garment, the X-Pull's gripper takes it off the platen and lays it on the stacking rack. Put it on a level floor where the gripper can reach the platen. Not sure where? Ask MicroTec support.



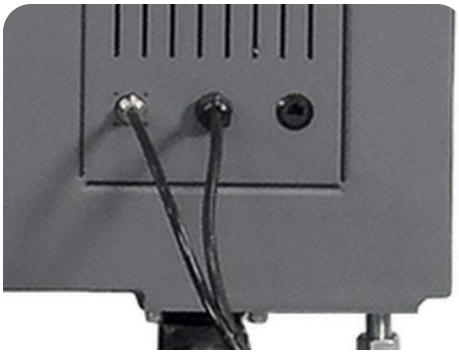
2. Have an electrician connect the power cord

The power cord and air inlet are at the bottom of the tall cabinet. It needs 220V single-phase, 9 A, 60 Hz and a good ground. Only an electrician should wire it.



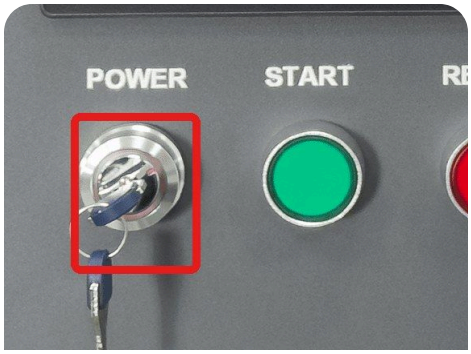
3. Connect clean, dry compressed air

Connect the air hose from your compressor to the air inlet. Without air the gripper cannot hold a garment.



4. Connect the network cable to the press

Plug the network (Ethernet) cable into the port at the bottom of the cabinet. The other end goes to your APEX X4 / X6 / X8. This is how the press tells the X-Pull when a garment is ready.



5. Turn on the power

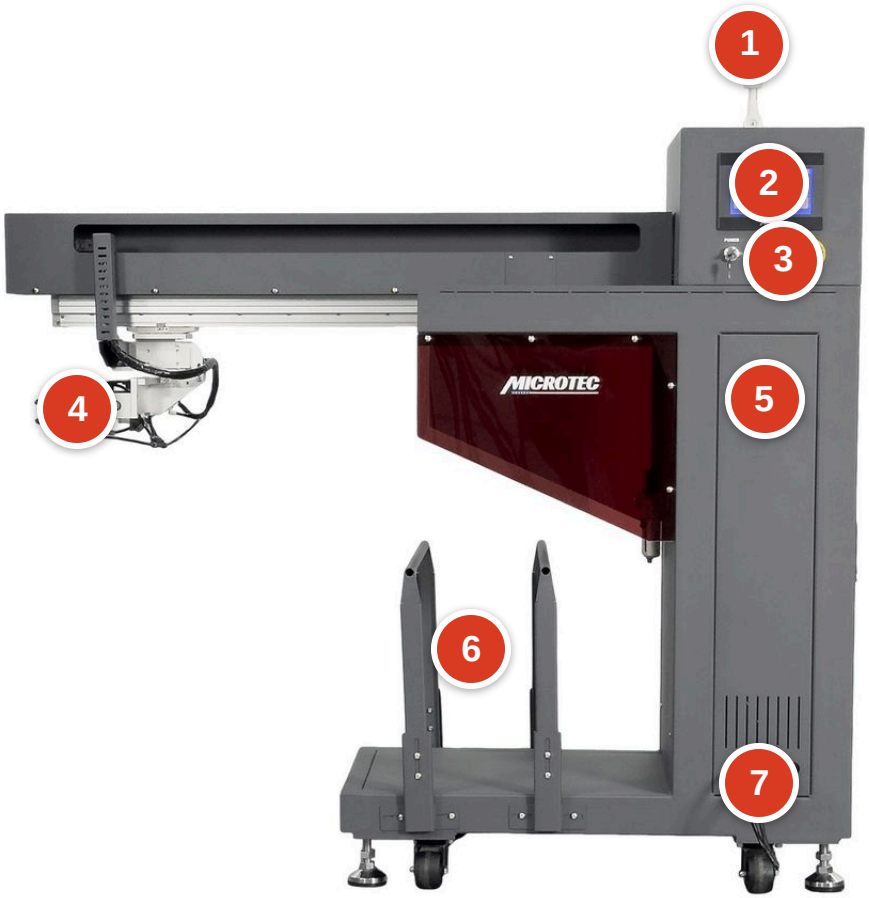
Turn on the main power. Then turn the **POWER** key switch on the control panel. The main screen comes up.



6. Set the gripper air pressure

The air regulator knob on the side of the cabinet sets how hard the gripper holds. Keep it **below 4 bar (about 58 psi)**. Turn a little at a time and watch the gauge.

2 Know your machine



1 Status light
Green = running in Auto. Yellow = Teach mode / standby. Red = emergency stop or alarm.

2 Touch screen
Gripper switch, counter, and teaching the arm positions.

3 POWER · START · RESET · EMERGENCY STOP
The four controls under the screen.

4 Soft gripper
Picks up the finished garment and places it on the stacking rack.

5 Air pressure regulator
Sets how hard the gripper holds. Keep it below 4 bar (about 58 psi).

6 Stacking rack
Finished garments are stacked here.

7 Air inlet · power cord · network port
At the bottom of the cabinet. The network port links to the APEX X4 / X6 / X8.

How it works with your press: the APEX rotary press sends a signal through the network cable when a garment is done. The X-Pull then picks it up and stacks it — you do not need to unload by hand.

Light turns red? The emergency stop is pressed or there is an alarm. Read the message on the screen.

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3 Control panel



1 **Teach mode / V1**
Shows V1 (the gripper position). It flashes while you are teaching.

2 **▶ (next)**
In Teach mode, hold to confirm this position and go to the next one.

3 **Return**
Leaves Teach mode without saving.

4 **+**
In Teach mode, moves the gripper position (V1).

5 **–**
In Teach mode, moves the gripper position (V1) the other way.

6 **Claw sw (gripper switch)**
Hold to turn the gripper ON or OFF. Must be ON to run.

7 **Count**
Adds 1 for each garment picked up. Hold 2 sec to reset to 0.

8 **Test sw**
In Teach mode, turn ON, then press START to try the new positions once.

9 **POWER key switch**
Turns the machine on and off.

10 **START (green)**
Press once to start Auto mode. The light turns green.

11 **RESET (red)**
When not in Auto: hold 2 sec to send the gripper back home.

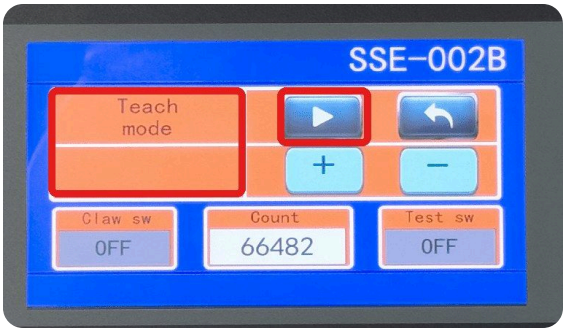
12 **EMERGENCY STOP**
Stops the machine at once. Twist to release.

Teach new pick-up and drop-off spots



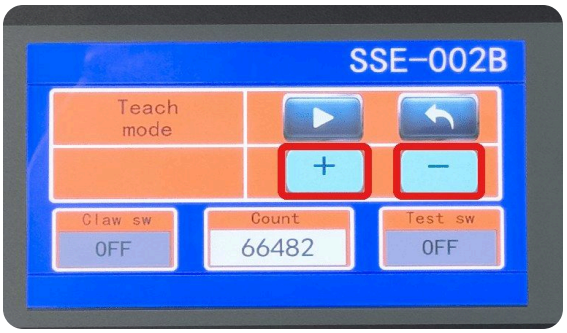
1. Get ready (light must be yellow)

Light green? Press **EMERGENCY STOP**, twist it to release, then hold **RESET** 2 sec so the gripper goes home.



2. Set the pick-up spot

Hold ▶ until **V1** flashes. Tap **+** / **–** to move the gripper to where it should grab the garment.



3. Set the drop-off spot

Hold ▶ again until **V1** flashes. Tap + / − to move the gripper over the stacking rack.



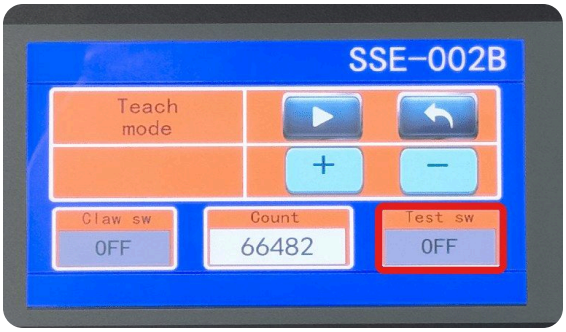
4. Finish

Hold ▶ one last time. "Finish teach!" pops up.



5. Save

Tap **Save**. (Tapping **X** throws the changes away.)



6. Test it

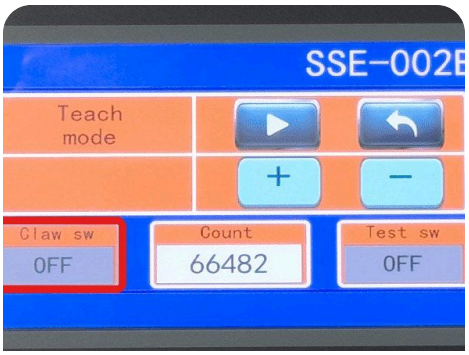
Turn **Test sw** ON, then press the green **START** button. Not right? Teach and save again.

> ⚠ Teach only when the machine is **not** running in Auto (light yellow). Stay clear of the arm while it moves.

Quick reference

I WANT TO…	DO THIS
Start automatic unloading	**Claw sw** ON → green **START**
Send the gripper home	Hold **RESET** 2 sec (not in Auto)
Open / close the gripper	Hold **Claw sw**
Reset the counter	Hold **Count** 2 sec
Leave Teach mode without saving	Tap the return key

4 Run automatic unloading



1. Turn the gripper on

Hold **Claw sw** on the screen until it shows ON.



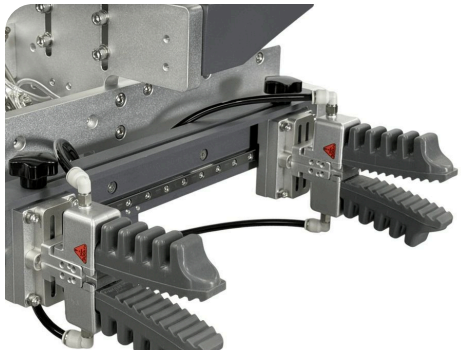
2. Press the green START button

The light turns green. The X-Pull is now in Auto mode.



3. Run your APEX press in Auto

The X-Pull waits for the press to send its signal.



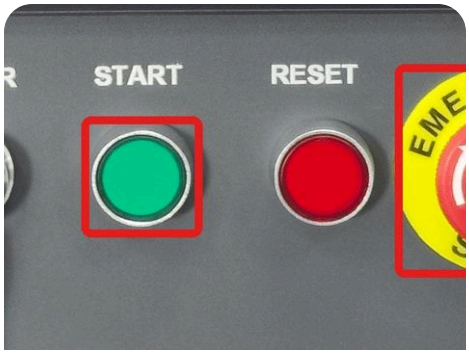
4. The gripper picks up each finished garment

It lays the garment on the stacking rack. The counter adds 1. Keep your hands away from the arm.



5. Take the stack off the rack

Do not let the stack get too high. Reach in only when the arm is not moving toward the rack.



6. To stop: press EMERGENCY STOP

Then twist it to release and hold RESET 2 sec. The gripper goes home.

Gripper drops garments or grabs in the wrong spot? Check the air pressure first (below 4 bar). Then teach the pick-up and drop-off spots again (see Control panel).

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5 If something is wrong

"Servo alarm!"

1. Turn off the main power.
2. Look for something blocking the arm, or a loose or broken home switch wire.
3. When all is clear, turn the power back on.

"Cylinder alarm!"

1. Check the incoming air pressure.
2. Check the cylinder's top limit switch — moved out of place or a broken wire?
3. Still there? Call us.

Light is red

1. Check that EMERGENCY STOP is not pressed in.
2. Read the message on the screen and do what it says.
3. Hold RESET 2 sec, then press START.

Doesn't pick up garments

1. Is the light green (Auto)? If not, press START.
2. Is Claw sw ON?
3. Check the network cable to the press, and that the press is running in Auto.

Garment slips out of the gripper

1. Check the air supply is on.
2. Turn the regulator up a little — never above 4 bar.
3. Teach the pick-up spot again.

Specifications

	X-Pull
Works with	APEX X4 / X6 / X8
Power	220V single-phase · 2 kW · 9 A · 60 Hz
Gripper air pressure	below 4 bar (≈58 psi)
Output	up to 580 pcs / hour
Controller	PLC (MX310-32 + TK8072IP)
Size (width × depth × height)	1606 × 650 × 1637 mm
Net weight	456 lb
Working room	32–104°F · <80% RH

Still stuck? Call us.

Phone

(714) 261-9498

Mon–Fri · 7:30 am – 5:00 pm Pacific

Email

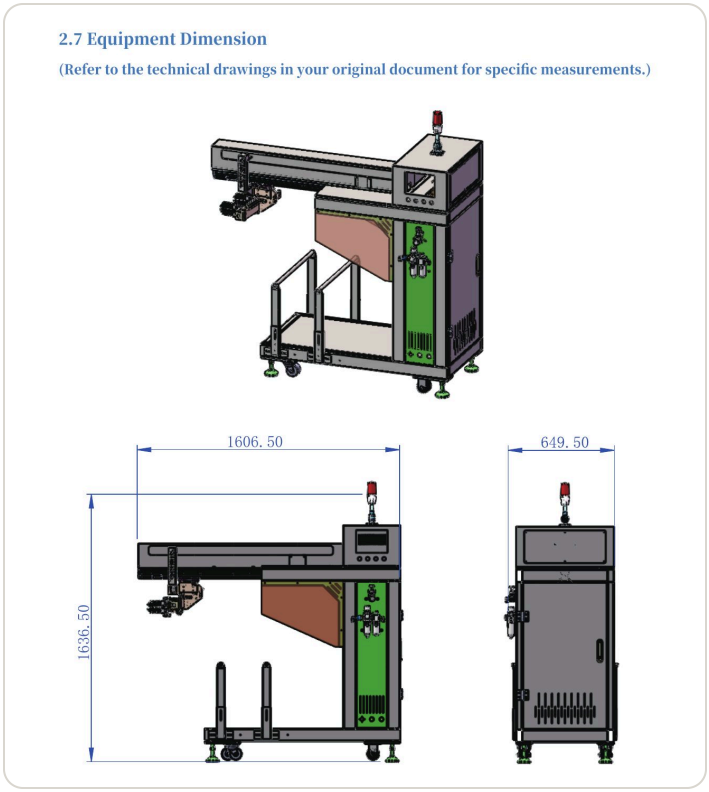
sales@microtecusa.com

Free lifetime tech support

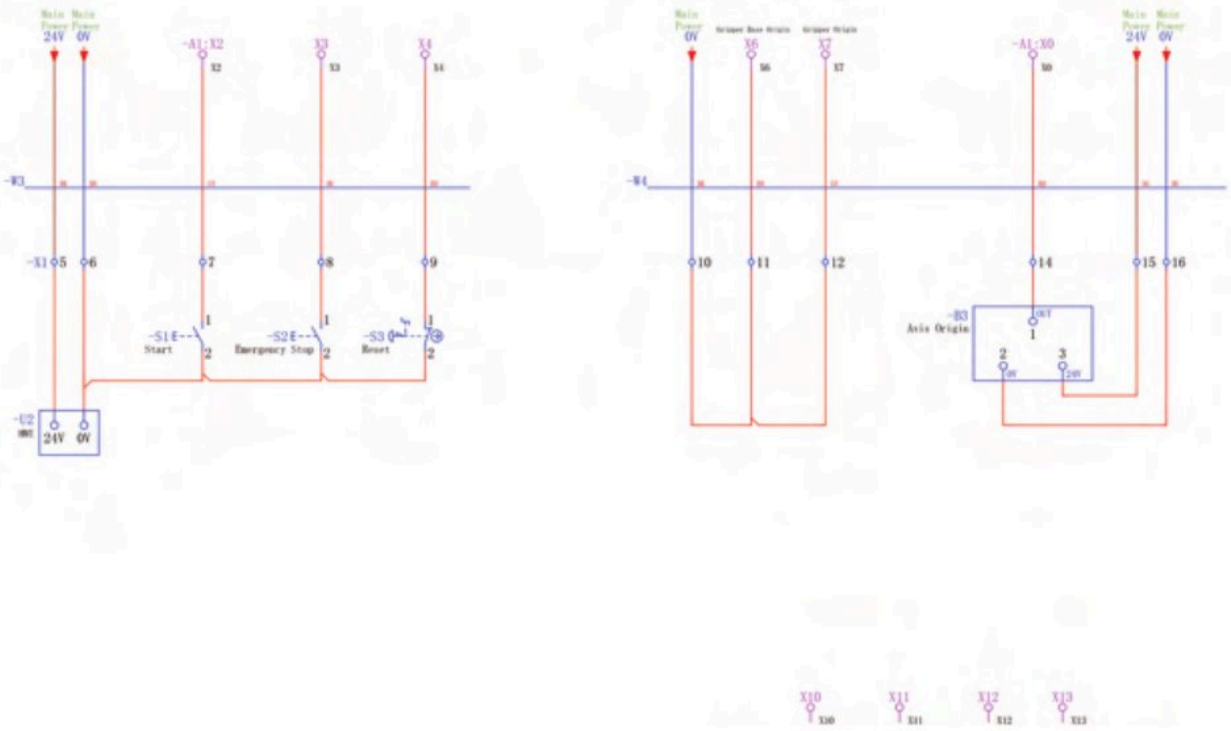
Dimensions & diagrams

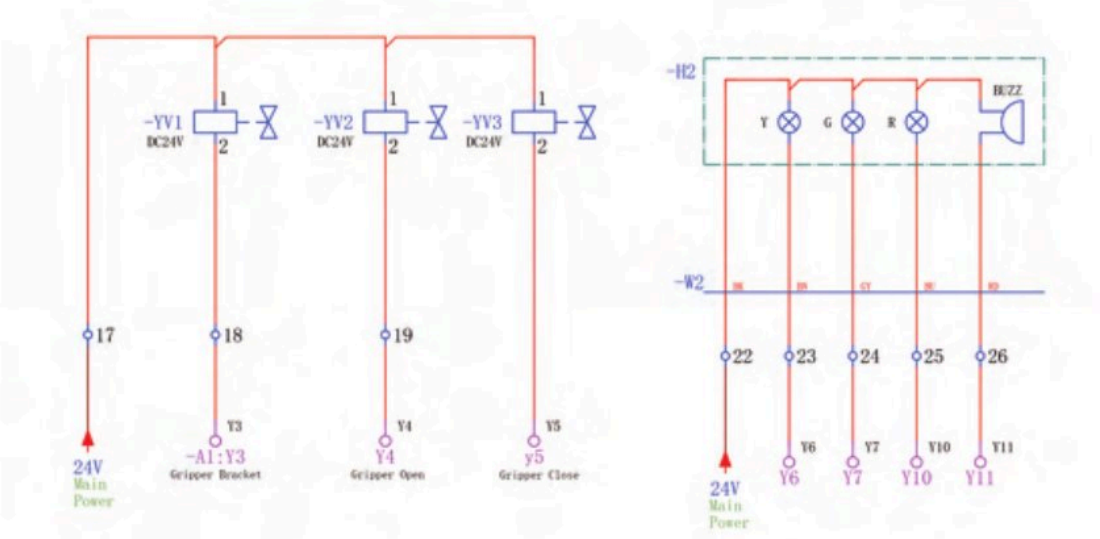
For service technicians. **Unplug the machine** and **disconnect the air** before opening any cover.

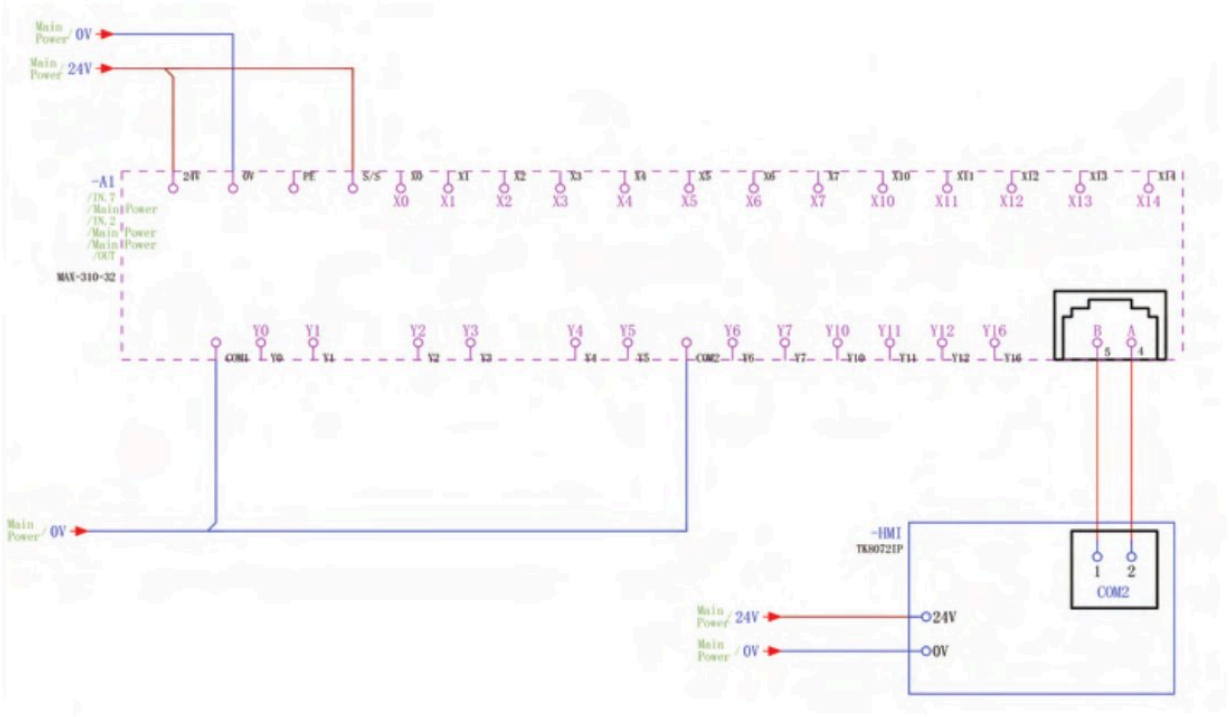
Dimensions (mm)

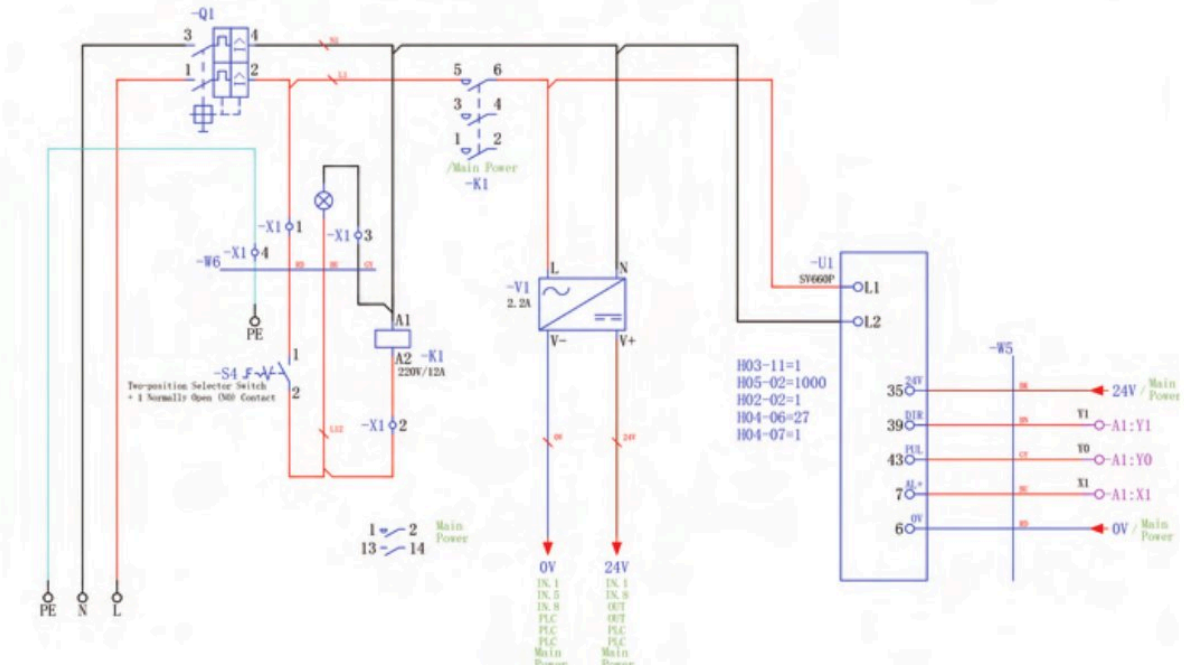


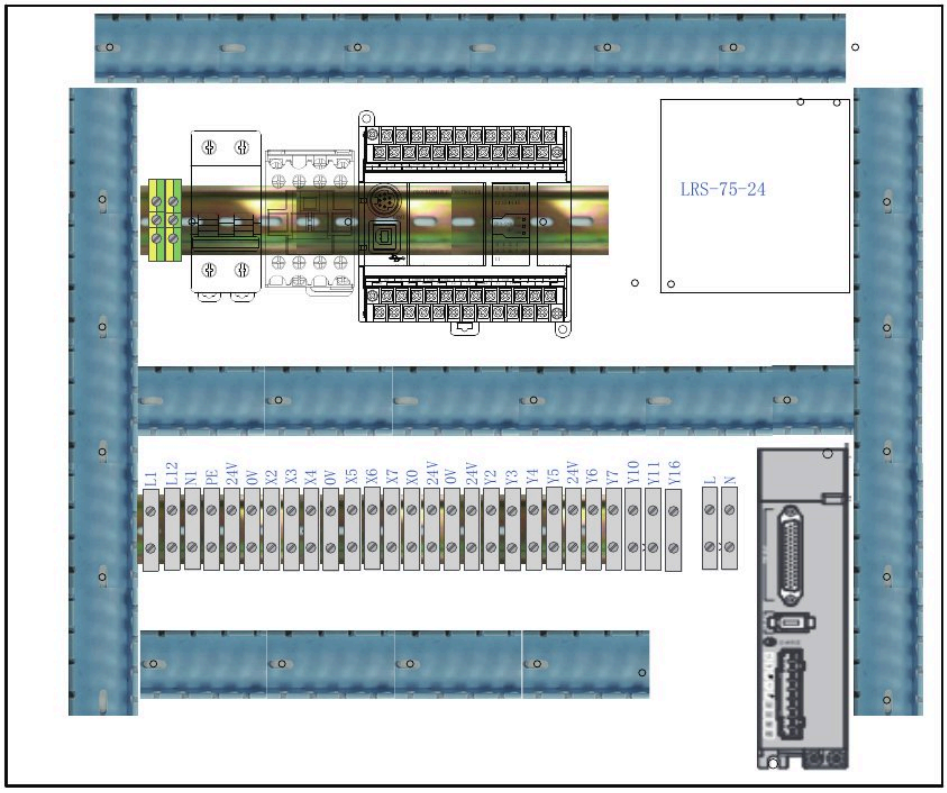
Wiring diagram

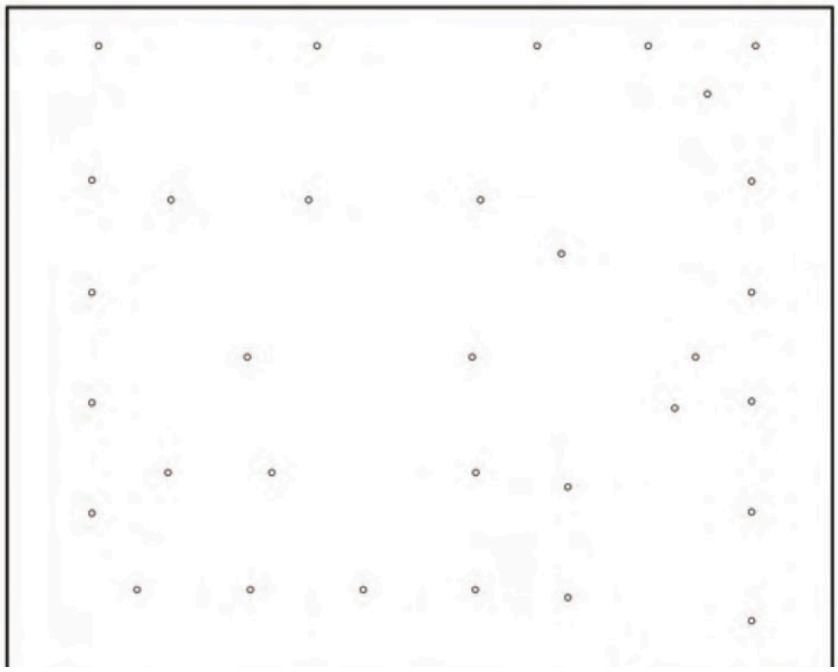




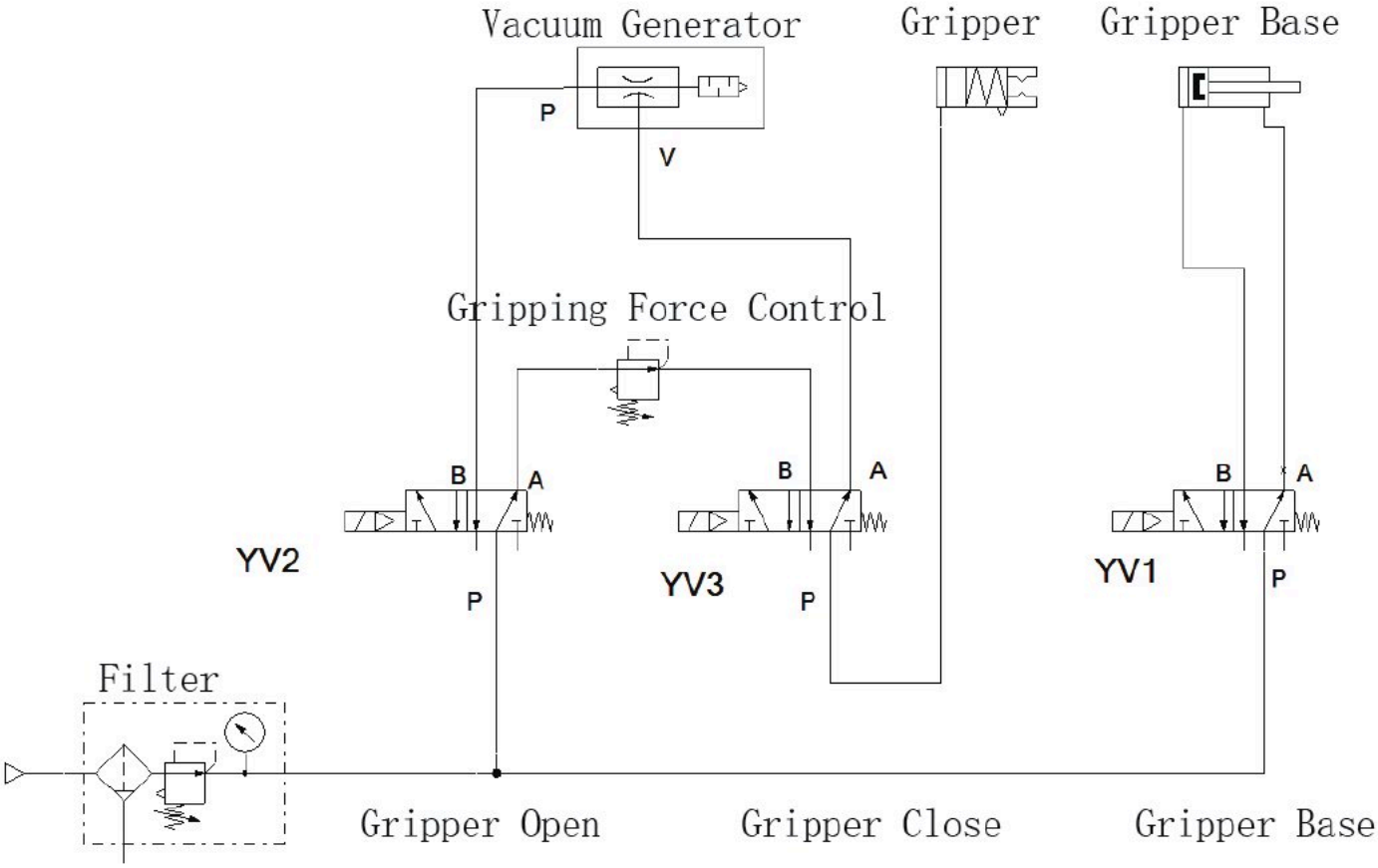

Main Power 0V
Main Power 24V
-A1
MAX-310-32
X0 X1 X2 X3 X4 X5 X6 X7 X10 X11 X12 X13 X14
Y0 Y1 Y2 Y3 Y4 Y5 Y6 Y7 Y10 Y11 Y12 Y16
B A
-HMI
TK8072IP
1 2
COM2
24V
0V


-Q1
-K1
/Main Power
-X1 1
-X1 3
-W6 -X1 4
PE
-S4
Two-position Selector Switch
+ 1 Normally Open (NO) Contact
A1
A2 -K1
220V/12A
-X1 2
1 2
13 14
Main Power
-V1
2.2A
L N
V- V+
0V
24V
-U1
SV660P
L1
L2
H03-11=1
H05-02=1000
H02-02=1
H04-06=27
H04-07=1
-W5
35 24V
39 DIR
43 PUL
7 AL+
6 0V
24V / Main Power
A1:Y1
A1:Y0
A1:X1
0V / Main Power
PE N L


LRS-75-24
L1
L12
N1
PE
24V
0V
X2
X3
X4
0V
X5
X6
X7
X0
24V
0V
24V
Y2
Y3
Y4
Y5
24V
Y6
Y7
Y10
Y11
Y16
L
N



Air diagram


Vacuum Generator
Gripper
Gripper Base
P
V
Gripping Force Control
B
A
B
A
B
A
YV2
YV3
YV1
P
P
P
Filter
Gripper Open
Gripper Close
Gripper Base