

# APEX

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**Model: XC-25/37**

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# XC-25/37 User Manual

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## Overview

### 1.1 Equipment Overview

Thank you very much for choosing our automatic slitting machine series!

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 Environment Temperature:** 32–122 °F.
- **Storage Environment Relative Humidity:** Below 80% (no condensation).
- **Working Environment Temperature:** 32–104 °F.
- **Working Environment Relative Humidity:** Below 80% (no condensation).
- 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 mm<sup>2</sup>. 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:

|                         |                            |                            |
|-------------------------|----------------------------|----------------------------|
| MODEL NO.               | XC-25                      | XC-37                      |
| Controller              | PLC(XD3-32T-E + TPC4023CD) | PLC(XD3-32T-E + TPC4023CD) |
| Amp\Voltage\Power\phase | 9A\220V\2KW, 60HZ          | 9A\220V\2KW, 60HZ          |
| cut size (Inch)         | 25                         | 37                         |

Appearance and Functions

2.1 Exterior View

(Please refer to the images in your original document for labels 1 through 16.)



XC-25



XC-37

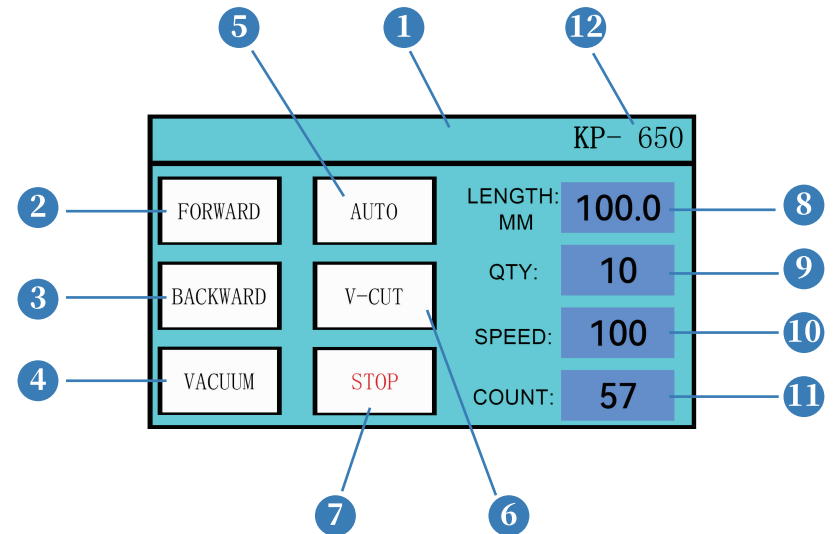


## 2.2 Component Names and Functions

- 1. Air Shaft:** Holds and secures the material to be cut.
- 2. Feeding Sensor:** Detects automatic material feeding. When a material shortage is detected, a prompt appears at the top-middle section of the PLC touchscreen. After reloading material, press and hold the prompt area to clear the error. (For details, see section 2.3.1).
- 3. AIR SHAFT Button:** Pneumatic switch for the air shaft. Tap to toggle between inflating (gripping) and deflating (releasing) the material.
- 4. H-CUT Button:** In Manual mode, press and hold for 2 seconds to cycle the horizontal cutter once. Before switching to Automatic mode, please press and hold this button once to clear internal program data; otherwise, the motor will reverse.
- 5. START Button:** Tap once to enter the automatic cutting mode.
- 6. PLC Touchscreen Controller:** Controls machine actions and program settings.
- 7. Power Switch:** Turns the machine power ON and OFF.
- 8. Emergency Stop Button:** In the event of an anomaly, press the emergency stop button to halt machine operation. A prompt will display in the top-middle section of the PLC touchscreen. Once the anomaly is resolved, twist the button to reset it, then press and hold the prompt area on the screen to clear the error. (For details, see section 2.3.1).
- 9. Color Mark Sensor:** In Automatic mode, it detects the specific positions where the blade needs to cut.
- 10. Feeding Guide Shaft Handle:** Lift upward to open the guide shaft pinch rollers. Push forward to close the guide shaft pinch rollers.
- 11. Safety Light Curtain:** If triggered while the horizontal cutter is running, it will cause the machine to stop operating. A prompt will appear in the top-middle section of the PLC touchscreen. Press and hold the prompt area to clear the error. (For details, see section 2.3.1).
- 12. Vertical Cutter:** Vertical slitter equipped with an ON/OFF switch. Loosen the black thumb screw on the slitter assembly to adjust the vertical cutting position.

- 13. Manual Slide Valve:** Quickly opens or closes the machine's main air supply.
- 14. Air Filter-Regulator Combo (FR Unit):** Adjustable pressure regulator and filtration unit for the incoming air supply.
- 15. Air Inlet Connector:** Provides the pneumatic supply required for all machine operations.
- 16. Power Cord:** Provides the electrical power required for the entire machine.

## 2.3 PLC Touchscreen Operation Interface and Functions:



- 1. Alarm Information Area (1):** Displays current active alarms. Once the anomaly is resolved, press and hold this area to clear the message.
- 2. FORWARD (2):** In **MANUAL mode**, tap to feed material forward.
- 3. BACKWARD (3):** In **MANUAL mode**, tap to retract material backward.
- 4. VACUUM (4):** Manually toggles the vacuum suction function ON and OFF.
- 5. AUTO/MANUAL (5):** Press and hold to toggle between Manual and Automatic modes.
- 6. V-CUT (6):** Turns on automatically in automatic cutting mode. Press and hold STOP to turn off the vertical slitting function.
- 7. STOP (7):** Press and hold to stop the current task and turn off the vertical slitting function.
- 8. LENGTH (MM/INCH) (8):** Sets the target cutting length for **MANUAL mode**. This function is recommended if the material does not stretch or deform.

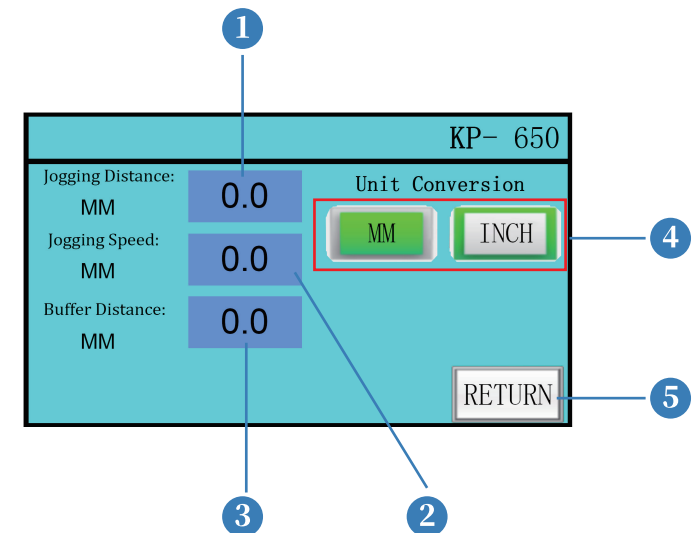
**9. QTY (9):** Sets the target batch quantity for MANUAL mode. This quantity does not accumulate sequentially. For example: if set to 5 pieces and the emergency stop is pressed when cutting the second piece, restarting the machine will run a fresh batch of 5 pieces.

**10. SPEED (10):** Sets the material feeding speed for automatic cutting. If the material tends to deform, it is recommended to set this value below 100.

**11. COUNT (11):** Counter for AUTO mode. Increases by 1 for each cut performed. Press and hold this area to reset the counter to 0.

**12. Parameter Settings Entry (12):** Press and hold this area to access the Parameter Settings page.

## 2.4 PLC Touchscreen Parameter Settings Interface and Functions:



**1. Jogging Distance (MM) (1):** Configures **MANUAL mode**. Sets the distance the machine feeds or retracts material when FORWARD or BACKWARD is pressed and held once.

**2. Jogging Speed (MM) (2):** Configures **MANUAL mode**. Sets the feeding speed when pressing FORWARD or BACKWARD.

**3. Buffer Distance (MM) (3):** Used in **AUTO mode** to fine-tune and correct the cut position of the horizontal blade.

**4. Unit Conversion Button (4):** Configures **MANUAL mode**. Selects the measurement unit for the cutting length field (2.3.8).

**5. RETURN (5):** Exits to the primary PLC operation interface.

## 2.5 Startup Preparation

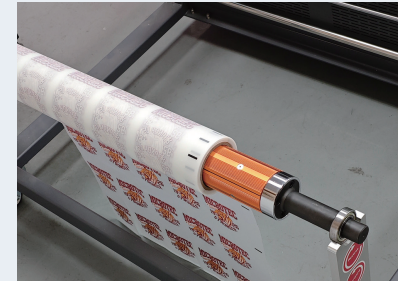
1. Verify that the equipment is connected to a power source meeting the specifications.
2. Verify that a clean, dry air supply is connected to the machine.
3. Turn on the main breaker, then flip the red power switch (POWER) on the control panel. The equipment will power up and display the operation interface shown below.

| KP- 650  |       |            |       |
|----------|-------|------------|-------|
| FORWARD  | AUTO  | LENGTH: MM | 100.0 |
| BACKWARD | V-CUT | QTY:       | 10    |
| VACUUM   | STOP  | SPEED:     | 100   |
|          |       | COUNT:     | 57    |

4. Release the air shaft bracket lock and remove the air shaft support bracket.



5. Slide the transfer film roll onto the air shaft, reinstall the support bracket, and tighten the locking screw secure.



6. Feed the film according to the DTF routing diagram. Flip the handle to the left to raise the guide shaft located between the vertical and horizontal cutters.



7. Once the transfer film passes through the raised guide shaft, adjust the edges of the film so that it aligns parallel across the air shaft, tension bars, and vacuum platform (as indicated by the arrows below).



8. Activate the "AIR SHAFT" switch to lock and secure the material core.

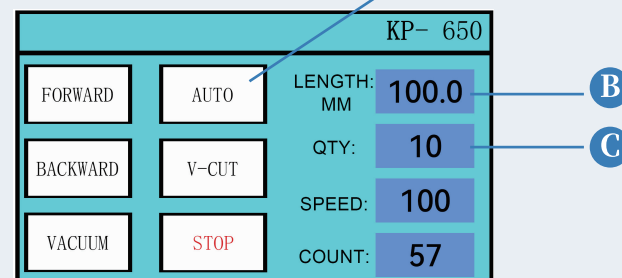


9. Manually adjust the vertical slitter assemblies to the desired positions and lock them into place.

## 2.6 Automatic Operation (Fixed-Length Cutting)

- **Fixed-Length Cutting:** Suitable for materials that do not deform easily and do not have printed registration/mark points for tracking.

1. ○A: Press and hold the "AUTO" button on the screen to switch to "MANUAL" mode.  
○B: Enter the desired target cutting length.  
○C: Enter the desired target cutting quantity.



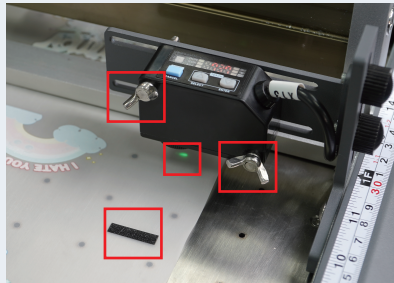
2. Press the physical "START" button. The machine will begin automatic cutting and stop automatically once the target quantity is reached.



## 2.7 Automatic Operation (Color Mark Positioning Cutting)

● **Color Mark Positioning Cutting:** Suitable for DTF films or other materials printed with registration/mark points for optical alignment tracking.

1. Loosen the thumb screws on the color mark sensor assembly. Shift the sensor left or right to align the green spot beam with the printed mark point track line, then retighten the screws securely (as shown below).



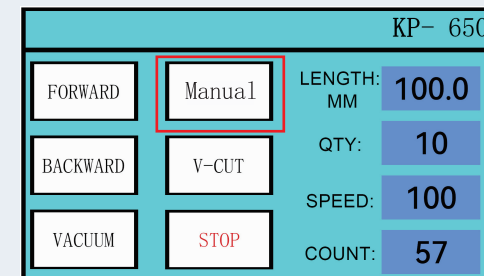
2. Press the physical **"START"** button. The machine will begin automatic cutting based on mark detection and stop once completed.



## 2.8 Color Mark Sensor Calibration

● **NOTE:** The sensor is pre-configured by quality control technicians prior to shipment and typically requires no user adjustments. If the sensor fails to register marks properly during operation, use the following method to recalibrate. Please note that switching to a different color mark requires recalibration.

1. Press and hold the mode toggle on the screen to select **"Manual"** mode.



2. Press the **"MODE"** button on the physical color mark sensor housing and select the **"TEACH"** function.



3. Tap the **"FORWARD"** or **"BACKWARD"** button on the touchscreen to advance the film until a printed color mark aligns directly under the green light beam of the sensor, then press the **"SELECT"** key on the sensor housing.

| KP- 650  |        |            |       |
|----------|--------|------------|-------|
| FORWARD  | Manual | LENGTH: MM | 100.0 |
| BACKWARD | V-CUT  | QTY:       | 10    |
| VACUUM   | STOP   | SPEED:     | 100   |
|          |        | COUNT:     | 57    |



4. Tap the **"FORWARD"** or **"BACKWARD"** button again to move the film so that the color mark leaves the sensor beam area. Press the **"ENTER"** key on the sensor housing to sample the blank (unprinted) background area. The sensor screen should display **"GOOD"**, indicating calibration is successful.

| KP- 650  |        |            |       |
|----------|--------|------------|-------|
| FORWARD  | Manual | LENGTH: MM | 100.0 |
| BACKWARD | V-CUT  | QTY:       | 10    |
| VACUUM   | STOP   | SPEED:     | 100   |
|          |        | COUNT:     | 57    |



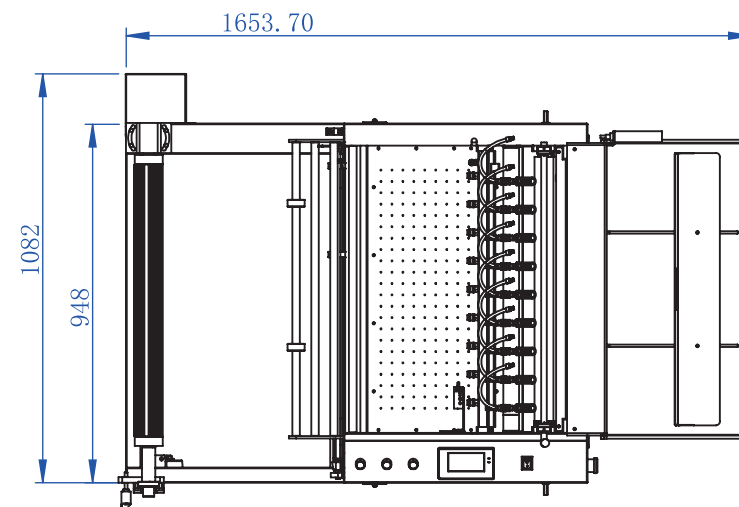
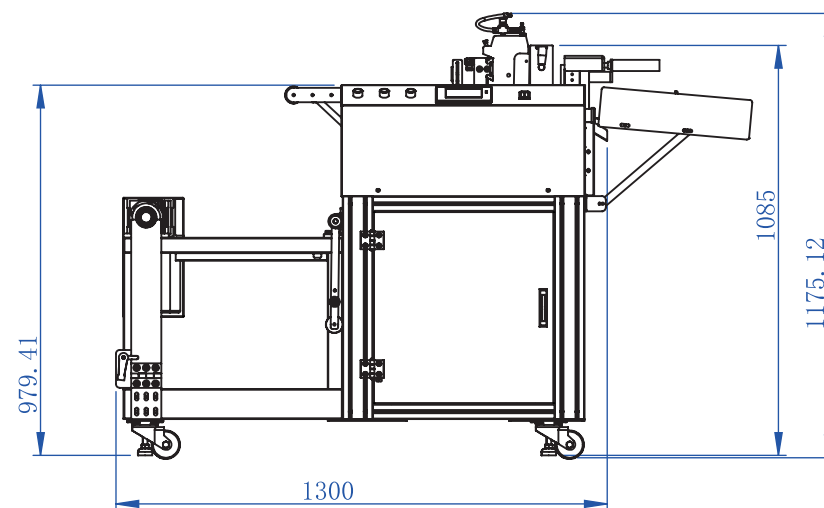
5. To verify the settings, tap **"FORWARD"** or **"BACKWARD"** to move the film manually. The orange signal indicator light on the sensor should remain OFF when scanning the blank background area and turn ON when passing over a printed color mark. If it behaves this way, setup is complete.

| KP- 650  |        |            |       |
|----------|--------|------------|-------|
| FORWARD  | Manual | LENGTH: MM | 100.0 |
| BACKWARD | V-CUT  | QTY:       | 10    |
| VACUUM   | STOP   | SPEED:     | 100   |
|          |        | COUNT:     | 57    |

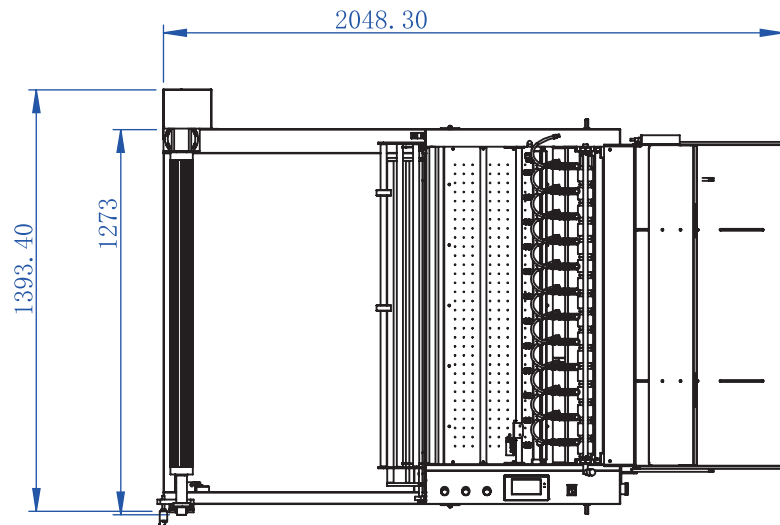
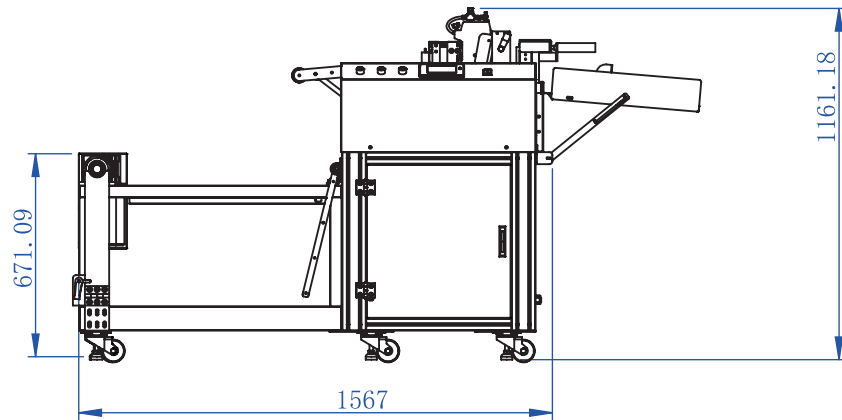


## 2.9 Equipment Dimension

The following dimension diagrams are for model: XC-25

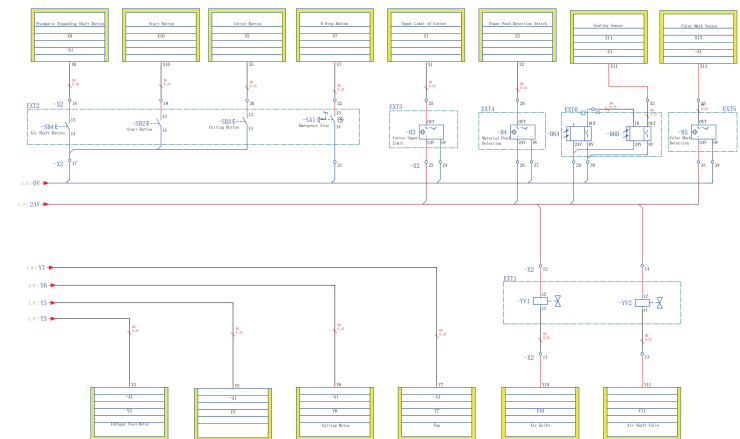
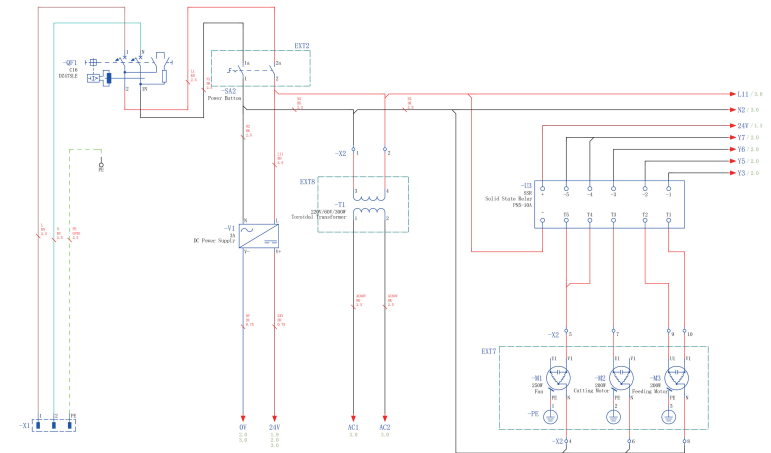


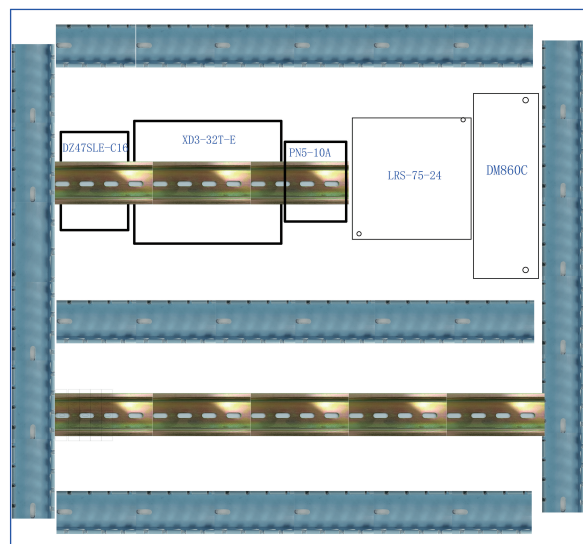
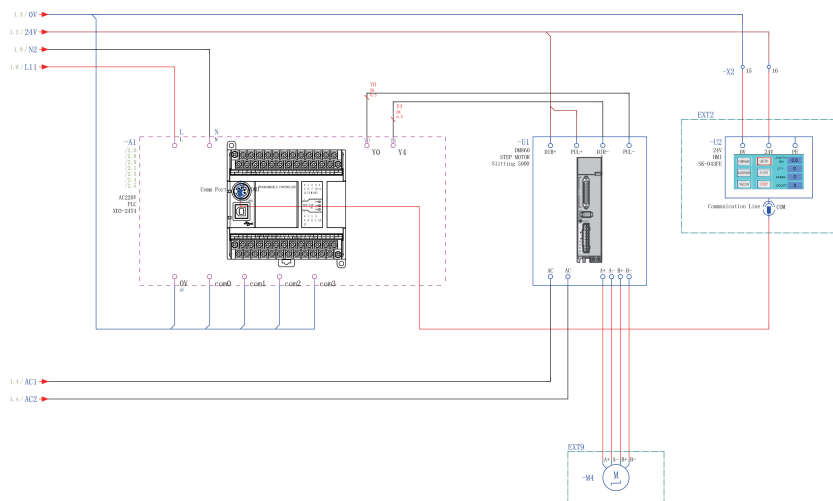
The following dimension diagrams are for model: XC-37



## Circuit Diagram

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





## Pneumatic Diagram

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

