

Smart Compactor Shelving Management System

User Manual

Model: 10-inch Mobile Carriage Touch Screen

Version: V2.0.8

July 2026

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一、Smart Compactor Shelving Control System



1. Zone & Column Number Display

This section displays the zone ID and column number of the current mobile carriage.



2. Archive Location Information Display

The screen shows archive title and full storage location data, including Column, Face, Section, Layer and Box.



3. Environmental Parameter Display

Eight environmental indicators are displayed in real time: Temperature, Humidity, PM1.0, PM2.5, PM10, CO₂, Formaldehyde (CH₂O), TVOC.



4. Alarm Notification

Corresponding alarm icons will turn red once a fault or risk is triggered. Icons will return to normal color after unlocking the alarm state. Common alarm types: Squeeze Alarm, Timeout Alarm, Fence Alarm, Motor Fault Alarm.



5. Positioning Light & Illumination Light Control

Tap the Positioning and Lighting buttons on the touch screen to turn the positioning lights and cabinet illumination lights on or off.



6. Settings Menu

(1) Code & Column Configuration

Configurable parameters:

- Code Number
- Column Number
- Aisle Width
- Time-Lapse Lighting

The screenshot displays a 'Set up' menu with a blue background and a futuristic design. At the top left is a 'Return' button with a left arrow. The title 'Set up' is centered at the top. Below the title is a horizontal menu bar with seven options: 'Zone settings' (highlighted in blue), 'Professional Setting 1', 'Professional Setting 2', 'Self-test test', 'Change password', 'Factory reset', and 'Information parameters'. The main area contains four input fields arranged in a 2x2 grid. The top row has 'Code:' and 'Column:', each followed by a text input box. The bottom row has 'Aisle Width:' followed by a text input box and the unit 'cm', and 'Time-Lapse Lighting:' followed by a text input box and the unit 's'. The entire interface is framed by a blue border with some decorative elements.

(2) Professional Settings 1

- Gesture Recognition Switch If enabled, users can control open, close and unlock operations via gesture sensing.
- Soft Start & Soft Stop When activated, the carriage accelerates and decelerates slowly to avoid impact.

- **Anti-Pinch Safety Function** Once triggered, the anti-pinch alarm activates and the carriage locks automatically. User must unlock the alarm before moving the shelf again.
- **Delayed Lighting Auto-Off** Lights will automatically turn off after a set delay when enabled.
- **Operation Time Threshold** Set the maximum continuous running duration. If the carriage runs longer than the preset value, a timeout alarm will trigger and the carriage will stop moving.
- **Tilt Detection Switch** Monitors abnormal tilting of the compactor rack.
- **Manual Dust & Mildew Removal Control** Manually turn on/off dust suppression and dehumidification equipment (relevant hardware required).
- **Dust & Mildew Removal Fan Speed** Adjust fan rotation speed of dust and mildew removal devices (relevant hardware required).

Return Set up

Zone settings Professional Setting 1 Professional Setting 2 Self-test test Change password Factory reset Information parameters

Gesture recognition:

Start slowly, stop slowly:

Crowd control:

Delayed lighting:

Running time: s

Tilt detection:

Dustproof and mildew removal:

Dustproof and mildew removal wind speed:

Dust and mildew removal manual opening:

(3) Professional Settings 2

Adjust motor advanced parameters (default values recommended, modification only for professional maintenance):

- Maximum Rotational Speed
- Number of Motor Pole Pairs
- Motor Speed
- PID Proportional Gain (P)
- PID Integral Gain (I)
- PID Derivative Gain (D)

The screenshot shows a 'Set up' menu with a 'Return' button at the top left. Below the title is a navigation bar with seven tabs: 'Zone settings', 'Professional Setting 1', 'Professional Setting 2' (which is highlighted), 'Self-test test', 'Change password', 'Factory reset', and 'Information parameters'. The main content area contains six input fields arranged in two columns. The left column has 'Maximum rotational speed:' with a text box and 'rpm' unit, 'Number of motor pole pairs:' with a text box and 'p' unit, and 'Motor speed:' with a text box. The right column has 'PID-P:' with a text box, 'PID-I:' with a text box, and 'PID-D:' with a text box. The background is a dark blue with a subtle pattern.

(4) Self-Test

All self-test items verify sensor and electrical component integrity:

1. Left Limit Function Test
2. Right Limit Function Test
3. Anti-Pinch Function Test
4. Head Count Function Test
5. Function test of infrared fence
6. Lighting Function Test



(5) Password Modification

Operation steps:

1. Input original administrator password
2. Enter new password
3. Re-enter new password for confirmation
4. Tap Confirm to save new password successfully

The screenshot shows the 'Change password' screen within the 'Set up' menu. The 'Change password' menu item is highlighted in blue in the top bar. The main area contains three input fields: 'Original password:', 'New password:', and 'Confirm Password:'. Each field is represented by a white rectangular box with a blue border. At the bottom center, there is a blue button with the text 'Click Confirm'.

(6) Factory Reset

System prompt after entering the function: "All customized settings will be restored to factory default values. Are you sure to perform factory reset?" Two options: Cancel / Confirm



(7) System Information & Parameters

Display core hardware and software information:

- Screen hardware specification (7-inch / 10-inch)
- Motor drive model (Yi neng / Self-developed)
- Positioning light status (On / Off)
- Over-range detection status (On / Off)
- Screen version
- Program version

Return

Set up

Zone settings

Professional Setting 1

Professional Setting 2

Self-test test

Change password

Factory reset

Information parameters

Screen parameters:

Motor parameters:

Lighting positioning:

Over range detection:

Screen version: V

Program version: V

7. Mobile Carriage Operation Functions

(1) Open Shelving

After triggering the open command, the screen plays an opening animation with text prompt "Opening". Real-time motor current value is displayed during movement. Tap Pause to halt movement temporarily.



(2) Close Shelving

After triggering the close command, the screen plays a closing animation with text prompt "Closing". Real-time motor current value is displayed during movement. Tap Pause to halt movement temporarily.



(3) Alarm Unlock

Two scenarios require unlocking:

1. After the shelf finishes opening for archiving access
2. After any safety alarm is triggeredNo further shelf movement operations are allowed until unlocking is completed.

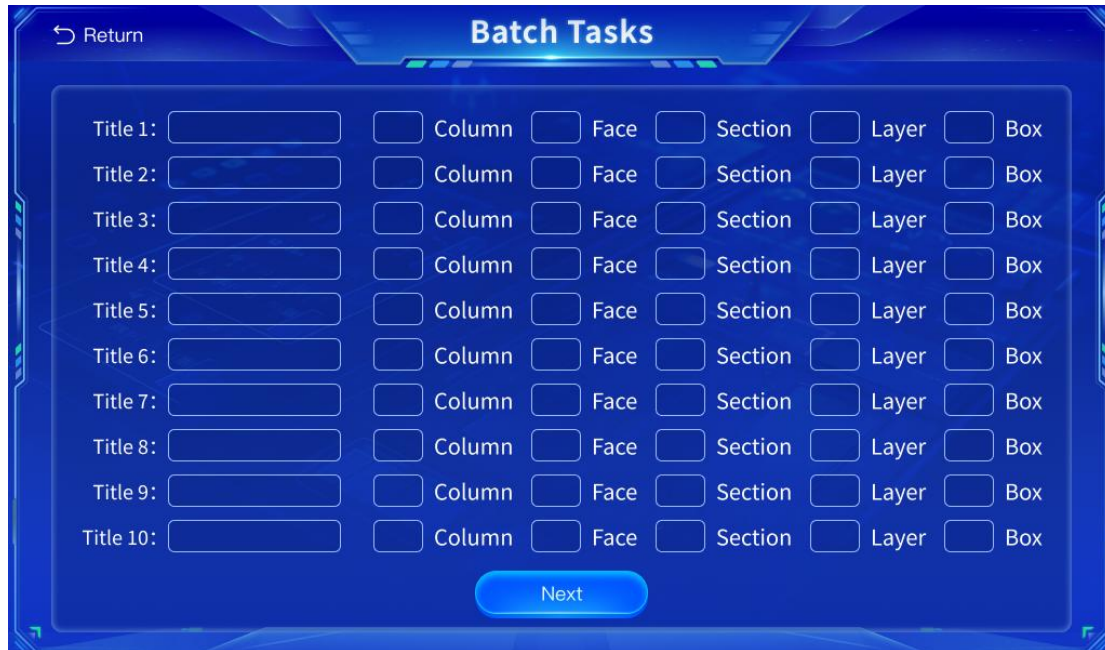


(4) Emergency Stop

Tap the Stop button at any time during carriage movement to immediately halt all shelf travel.

8. Batch Task Management

After the industrial control host sends batch archiving tasks to the system, the mobile carriage screen switches to the batch task interface. The interface lists archive titles and corresponding storage coordinates (Column, Face, Section, Layer, Box). After finishing the current task, tap Next to load and execute the subsequent archive task.



The screenshot shows a mobile application interface titled "Batch Tasks". At the top left is a "Return" button with a left-pointing arrow. The main area contains a list of 10 tasks, each with a title field and five coordinate fields: Column, Face, Section, Layer, and Box. Each coordinate field has a small square selection box to its left. At the bottom center is a "Next" button.

Title	Column	Face	Section	Layer	Box
Title 1:	☐	☐	☐	☐	☐
Title 2:	☐	☐	☐	☐	☐
Title 3:	☐	☐	☐	☐	☐
Title 4:	☐	☐	☐	☐	☐
Title 5:	☐	☐	☐	☐	☐
Title 6:	☐	☐	☐	☐	☐
Title 7:	☐	☐	☐	☐	☐
Title 8:	☐	☐	☐	☐	☐
Title 9:	☐	☐	☐	☐	☐
Title 10:	☐	☐	☐	☐	☐