CARNATION
CASH COUNTING SINCE 2004

4+1 Pockets High-efficiency Banknote Fitness Sorter

User Manual **FedPro CR5000**
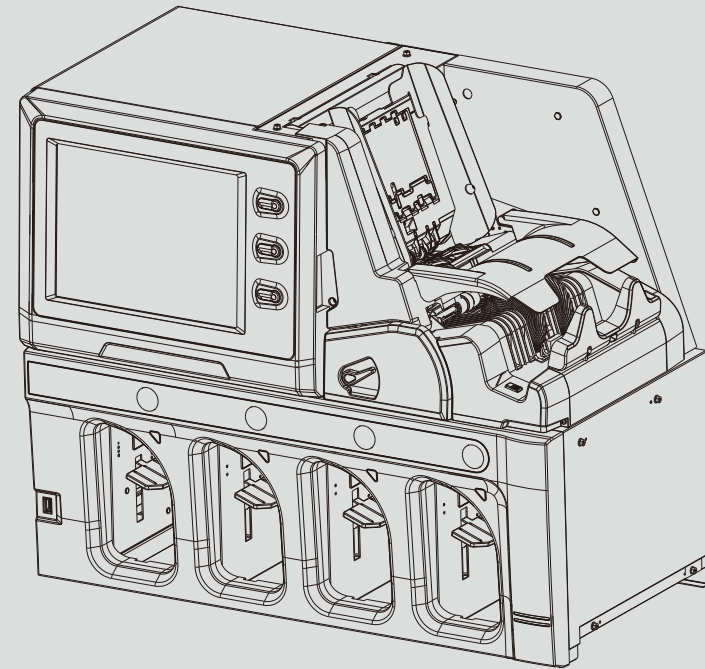
CARNATION

Preface

Thank you for choosing our banknote sorter! This automatic bill sorter is easy to use and features a crystal-clear display. It also boasts reporting and printing functions, auto-adjustable technology, and easy software upgrades via the USB port. Built with expandable and configurable stackers, this sorting machine comes with high performance, enabling more efficient and productive high-volume banknote processing.

Before first use, please read this manual carefully to ensure you fully understand how to safely operate it, and to avoid damage to the machine. Keep the manual in a safe place for reference and future use.

Content

1 Introduction

1.1 Safety Instructions

To ensure safe use of the device and to prevent equipment damage, personal injury, or property damage, please read this manual carefully before using the machine. If an accident occurs during the operation due to non-adherence to the instructions in this manual, all warranty terms will be invalid, and our company will not be responsible for any consequences or losses caused.

- The machine is intended exclusively for indoor use, do not use outdoors.
- Do not dismantle the device. If there are any problems with its operation, please contact the Technical Support Dept of our company or our service agent.
- Do not expose device to liquids, extreme humidity or moisture.
- Avoid operating machine in environments with strong magnetic and electromagnetic fields. For example, keep the device away from magnets and electrical appliances.
- Use the supplied power cord at a properly grounded outlet.
- When the machine is running, do not arbitrarily disconnect the power cord or switch the machine off.
- A leakage protection switch, distribution box, lightning protection device and related hardware are necessary at the site of operation.
- Avoid using a power extension. The distance between machine and power outlet should be less than 3 meters.
- The power cord is specifically designed for this machine, and it has been safety approved. To avoid accidents, please do not use power cords of other products with this machine.
- If the machine is not going to be used for a long time, please disconnect the power cord.
- The machine must be powered off before cleaning.
- Do not use alcohol for cleaning.

1.2 Unpacking

Please check whether the appearance of the machine is in good condition and whether all the accessories are present. Inside the package there should be the following.

Banknote sorter   User manual   Power cord

1.3 Figures Used

The figures used in this manual are for illustrative purposes only.
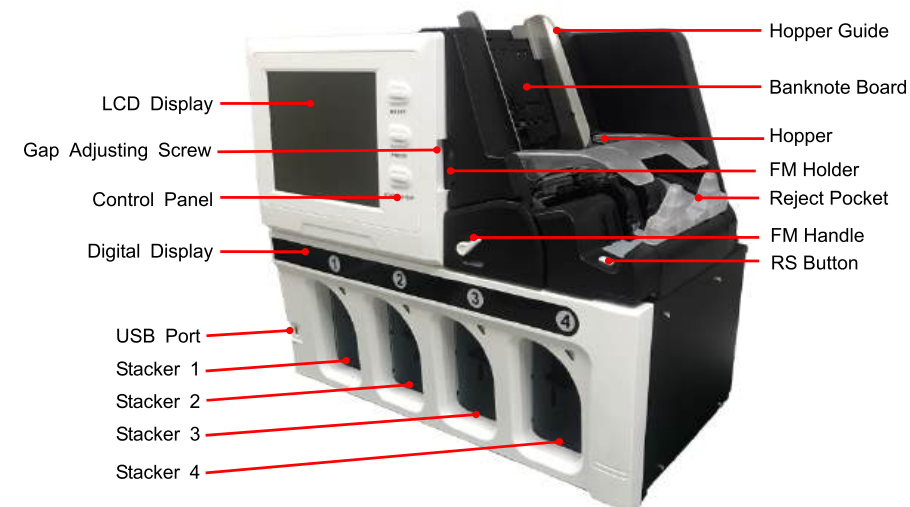
2 Model Overview

LCD Display
Gap Adjusting Screw
Control Panel
Digital Display
USB Port
Stacker 1
Stacker 2
Stacker 3
Stacker 4

Hopper Guide
Banknote Board
Hopper
FM Holder
Reject Pocket
FM Handle
RS Button

Fig. 2-1

Control panel:

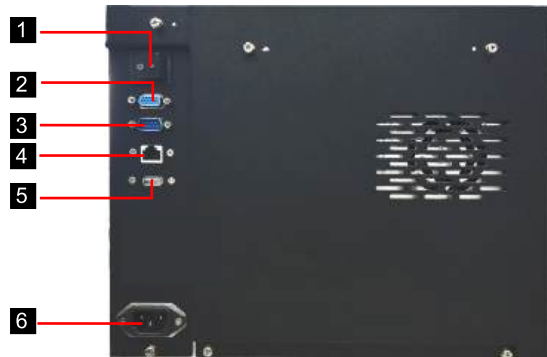| Key	Function
RESET	When an error or jam occurs, press this key and the machine will purge any notes left in the transport path.
PRESS	The banknote board presses down when banknotes are lower than the hopper sensor. Press this key and the board will be lifted.
START/STOP	Pressing this key stops and subsequently restarts the machine.

External interface:

Fig. 2-2

No	Name	Use
1	Power Switch	Switches the machine on and off
2	VGA Port	To connect an external display
3	RS232 Port	To connect a computer or external printer
4	Network Port	To connect the industrial computer board
5	USB Port	To connect a USB stick
6	Power Socket	Enables the machine to be connected to the AC power supply

3 Operating Instructions

3.1 Switch on/off

How to switch on the device:

1. Connect the power cord to the machine and the power outlet.
2. Press the Power Switch button on the left side of the machine.

   Note: It's normal for the power switch to rebound.
3. After a short boot-up and self-test phase, the machine shows main interface and then enters the sorting interface, as shown in Fig. 3-1-1, Fig. 3-1-2 and Fig. 3-1-3.

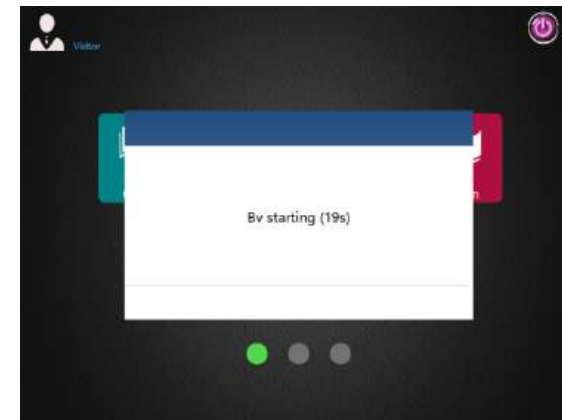   **Note:** The sorting mode varies according to your setting.
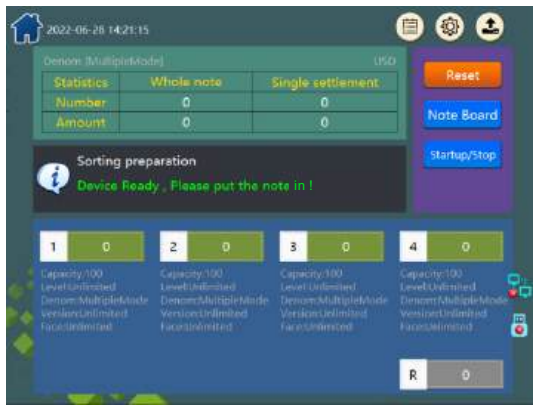

Fig. 3-1-1

Fig. 3-1-2

Fig. 3-1-3

How to switch off device:

Press the power switch button again to turn the machine off.

3.2 How to Handle and Place Banknotes

To count banknotes smoothly, please follow these guidelines:

1. Avoid counting wet, excessively dirty, or spoiled notes.
2. Check for foreign matter mixed with the notes, i.e.: paper clips, rubber bands, etc. which may jam the note path or even damage the sensors.
3. Remove folds or curls from the notes before placing them in the hopper.
4. Align all the corners and edges of the notes, as unevenness could cause errors.
5. Put the notes in the center of the hopper and adjust the left and right hopper guides to a suitable position according to the size of the notes.

Fig. 3-2-1

3.3 Sorting Interface Overview

The machine automatically enters a sorting interface after being turned on due to default settings. In the sorting interface, the machine comes with four configurable sorting modes (the default is Denom Multiple Mode) and you can select another sorting mode and configure the stackers via the configuration icon to cater to various business requirements.
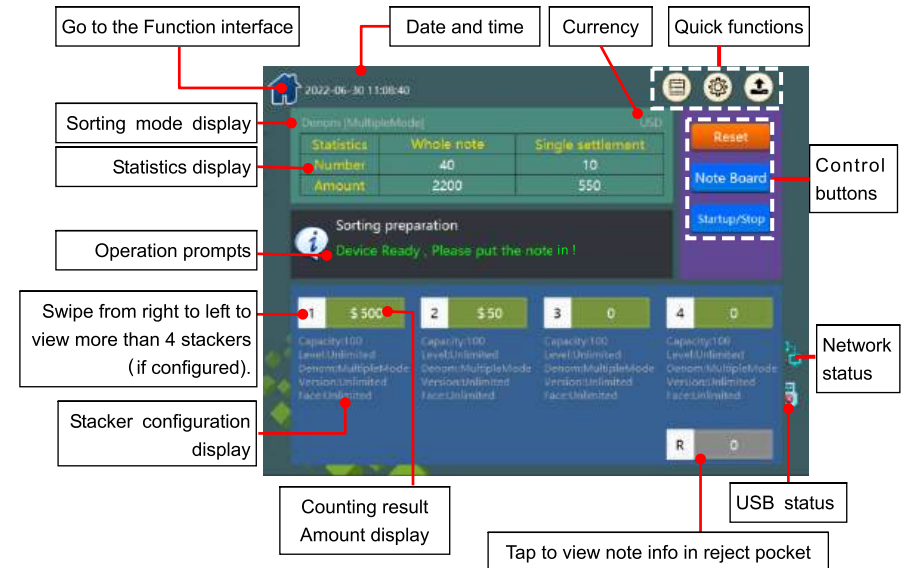

Go to the Function interface

Date and time

Currency

Quick functions

Sorting mode display

Statistics display

Control buttons

Operation prompts

Swipe from right to left to view more than 4 stackers (if configured).

Network status

Stacker configuration display

USB status

Counting result Amount display

Tap to view note info in reject pocket

Fig. 3-3-1

3.3.1 Currency Selection
You may need to change the currency. See "4.9 Configuring the Machine" to select a currency.

3.3.2 Quick functions

Icon	Function description
📋	Record of last transaction. See Section below for details.
⚙️	Stacker configuration. Configure the settings of each stacker. See Section below for details.
⬆️	Submits the data of last transaction to the totals and meanwhile prints the data of the last transaction if the machine is connected to a printer. The "Single settlement" will be reset to 0. Clear the notes in the stackers as the machine prompts (the light indicator flashes) and you can proceed to the next count.

Last Transaction Record:

Tap icon in sorting interface. Transaction Record interface will pop up. It displays a record of the last transaction. A transaction is completed when the banknotes in the stackers are removed after sorting is finished and no banknotes are left in the hopper. In this case, a transaction record will be generated.
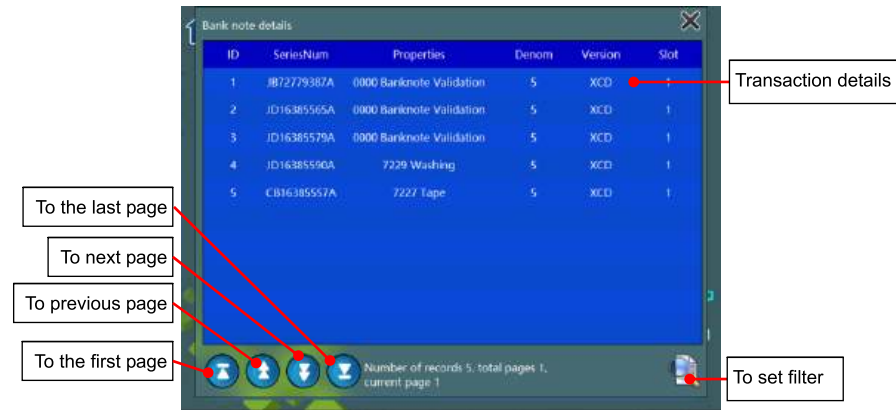

Transaction details

To the last page

To next page

To previous page

To the first page

To set filter

Fig. 3-3-2-1

Stacker Configuration:

Tap the icon in sorting interface, stacker configuration interface will pop up.

Configuration options
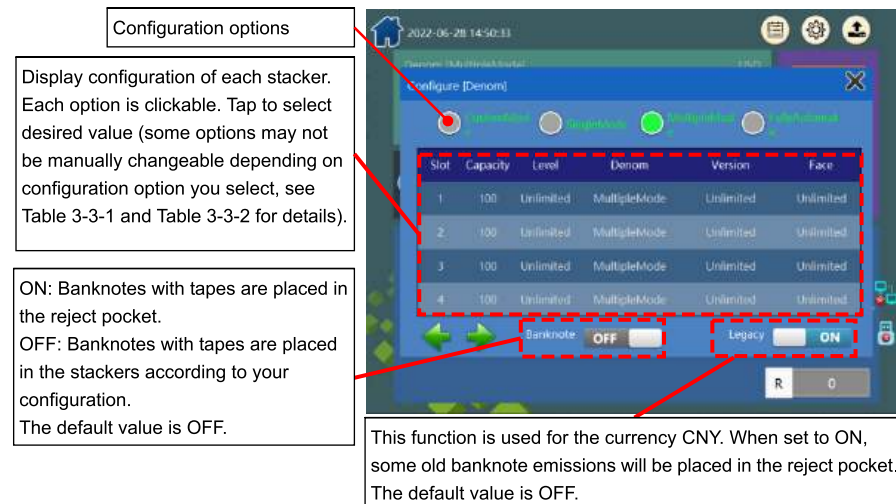
Display configuration of each stacker. Each option is clickable. Tap to select desired value (some options may not be manually changeable depending on configuration option you select, see Table 3-3-1 and Table 3-3-2 for details).

ON: Banknotes with tapes are placed in the reject pocket.
OFF: Banknotes with tapes are placed in the stackers according to your configuration.
The default value is OFF.

This function is used for the currency CNY. When set to ON, some old banknote emissions will be placed in the reject pocket. The default value is OFF.

Fig. 3-3-2-2

Configuration option	Description
Custom mode	Select configuration according to your needs.
Single mode	The banknote attribute of stacker is configured according to the denomination of first detected eligible banknote. All stackers only accept this denomination, while other denominations and unrecognized notes go to the reject pocket.
Multiple mode	The banknote attribute of stacker is configured according to the denomination of first detected eligible banknote by each stacker. Normally, each stacker always accepts the denomination of first detected eligible banknote by itself, while other denominations and unrecognized notes go to the reject pocket (In this mode, during the processing of a transaction, even if you clear the notes in a stacker, it will not accept other denominations until you remove the notes from all stackers).
Fully automatic mode	Basically, it is the same as multiple mode, but includes free stacker recycle function (when a stacker is full and the banknotes in it have been removed, the stacker will be recycled and then become redistributable).

Stacker configuration option of different sorting modes:

Table 3-3-1   Custom Mode Option

Sorting Mode	Level	Denomination	Version	Face
Quality	Optional	Optional	Optional	Optional
Denom	Optional	Optional	Optional	Optional
Facing	Optional	Optional	Optional	Optional
Version	Optional	Optional	Optional	Optional

Table 3-3-2   Single Mode, Multiple Mode and Fully Automatic Mode Options

Sorting Mode	Level	Denomination	Version	Face
Quality	Optional	Automatic	Optional	Optional
Denomination	Optional	Automatic	Optional	Optional
Face	Optional	Automatic	Optional	Optional
Version	Optional	Automatic	Automatic	Optional

Note:
- Optional for **Level**: Available to select the options of ATM Notes, Negotiable Notes (circulation banknotes), Damaged Notes (mutilated banknotes), Defaced Notes (old, dirty banknotes), A+T Notes (ATM banknotes + circulation banknotes), Dirty+Scrap (dirty+mutilated banknotes), Suspicious Notes, NON ATM Notes (negotiable notes + damaged notes + defaced notes), and Unlimited.
- Optional for **Denomination**: Available to select the denominations of 1, 2, 5, 10, 20, 50, 100 and Unlimited (for USD).
- Optional for **Version**: Available to select the options of OCD, NCD, XCD and Unlimited (for USD).
- Optional for **Face**: Available to select the options of Front Forward, Front Reverse, Front, Negative Forward, Negative Reverse, Negative and Unlimited.
- Automatic: Options appear automatically and cannot be changed.

3.3.3 Viewing Counting Details

Tap the "**Whole note**" column to view the details of the totals or tap the "**Single settlement**" column to view the details of last transaction.

Fig. 3-3-3-1

Here you can tap the icon and confirm to delete the counting results and totals, tap the icon to print the corresponding counting results.

3.4 Setting the Feed Gap

<u>Tools:</u>

A flat head screwdriver and a 0.08mm feeler gauge

The feed gap is factory set, however, if the gap is either too large (frequent "double notes" or "chained notes" error messages) or too narrow (frequent jams, or banknotes pass the feeder with difficulty), please adjust the adjusting screw at the front of machine (as shown in figure below).

Use a flat head screwdriver to adjust.
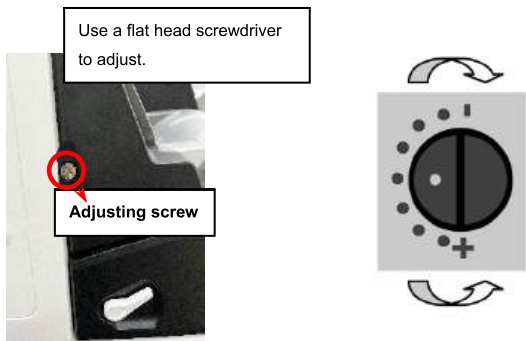
Adjusting screw

Fig. 3-4-1

Spin the adjusting screw anticlockwise, the clearance will get larger, or spin the adjusting screw clockwise, and the clearance will get narrower. Use the 0.08mm feeler gauge to test the feeding gap when you're adjusting the screw until it's appropriate (you will feel some resistance when inserting/removing the feeler gauge).

<u>Note</u>: Please adjust the gap according to the actual counting effect.

4 Function Interface Introduction

Tap the icon in the sorting interface to access the function interface.

User authority

Function icon

Page indication*
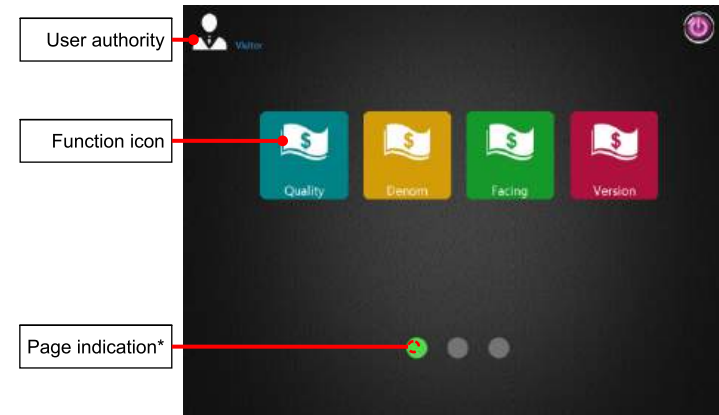
Fig. 4-1

Item	Description
User authority	Display the current user authority. Tap the icon to switch user authority.
Function icon	The main software functions. More functions may be accessible by swiping the screen (left and right). Select each function by touching the corresponding square.
Page indication	If there is more than one page, dots will be shown below the function icons area, indicating how many pages there are and the location of the current page. Swipe the screen (left or right) to switch pages.

4.1 Switching User Authority

The top left corner of the screen displays current user authority. Tap the ![icon] icon, and a user authority switching window will pop up, as shown in Fig. 4-1-1. Tap the "maintainer" icon to switch authority, and you need to input a password, as shown in Fig. 4-1-2, touch the 1 to 9 buttons to enter the maintainer password. The default password is 159. Then the machine displays the Maintainer menu. The available user authorities include: visitor, maintainer.

Note: There is no need to input a password when switching to the "Visitor" authority.

Current authority   Tap to switch authority

Fig. 4-1-1

Input a password
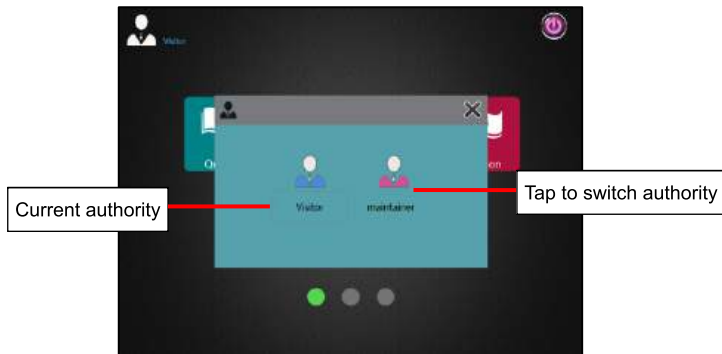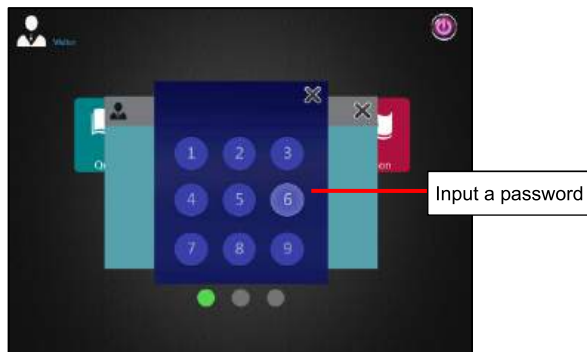
Fig. 4-1-2

The options on the Maintainer menu control the more technical aspects of the operation of the machine. It is important to understand the effect of any changes that are made. For this reason, access is restricted to users who have been issued with a password.

4.2 Sorting Mode Introduction

Tap one of the sorting function icons to enter corresponding sorting function interface. Please refer to "3.3 Sorting Interface Overview" for details of the sorting interface.
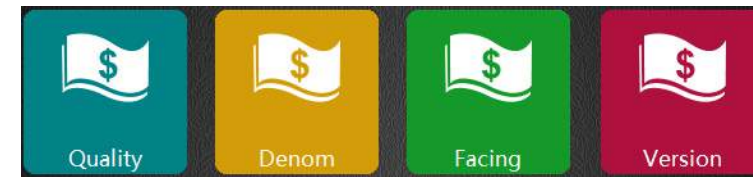
Fig. 4-2-1

Function	Description
Quality	Enters quality sorting interface.
Denom	Enters denomination sorting interface.
Facing	Enters position (orientation) sorting interface.
Version	Enters version quality sorting interface.

4.3 Favorite Interfaces

Favorite1 and Favorite 2 are sorting interfaces that have been configured, users can directly tap the function icons to use the configured interfaces, which is more convenient and faster. Other interfaces are left to be configured by users according to their actual needs, so that once configured and saved, users can tap the function icon to use this sorting interface directly.
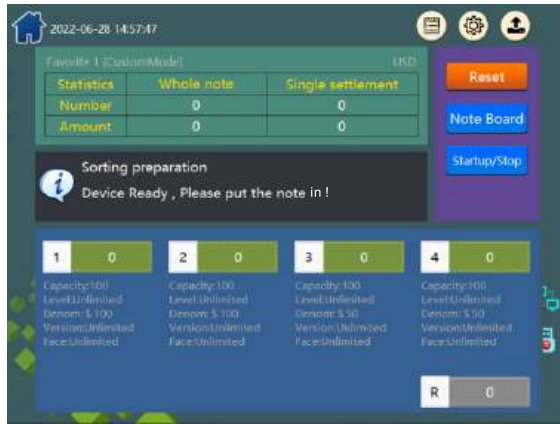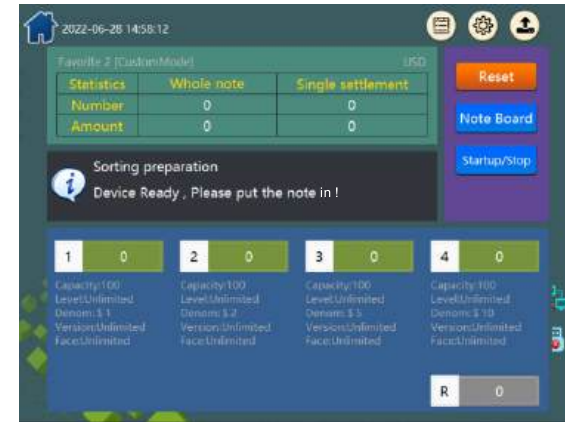
Fig. 4-3-1

4.3.1 Favorite 1 Interface

Fig. 4-3-1-1

In this sorting interface, the capacity of each stacker is 100 notes; the machine sorts USD notes based on denominations, $100 notes (all versions, fitness levels and faces) are placed in stacker 1 and stacker 2, $50 notes (all versions, fitness levels and faces) are placed in stacker 3 and stacker 4. Other denominations and unrecognized notes are placed in the reject pocket. Swipe from right to left to view more information if you have chosen the option to add extra stackers.

The standard machine has 4 stackers, however more stackers can be added, 4 at a time, by purchasing an extension module as seen in the pictures below. The machine can then be adjusted to make an 8+1 or a 12+1 version or even a 16+1 version, which will need extra software updated at the same time. Then you can swipe right to see information on the additional stackers.

4.3.2 Favorite 2 Interface

Fig. 4-3-2-1

In this sorting interface, the capacity of each stacker is 100 notes; the machine sorts USD notes based on denominations, $1 notes (all versions, fitness levels and faces) are placed in stacker 1, $2 notes (all versions, fitness levels and faces) are placed in stacker 2, $5 notes (all versions, fitness levels and faces) are placed in stacker 3 and $10 notes (all versions, fitness levels and faces) are placed in stacker. 4. Other denominations and unrecognized notes are placed in the reject pocket. Swipe from right to left to view more information if you have chosen the option to add extra stackers.

4.3.3 Configuring a Favorite Interface

Users can also configure other favorite interfaces according to actual requirements. Here take Favorite 3 as an example.

1. Tap the [icon] icon to access the sorting interface, as figure below shows.

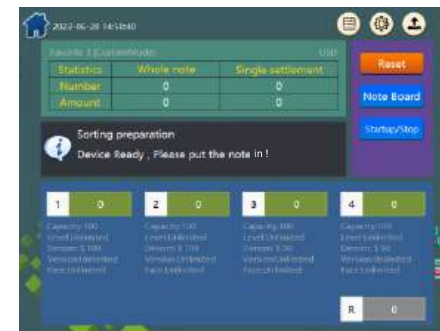The default currency is USD, you can also select a different currency (see "4.9 Configuring the Machine").

Fig. 4-3-3-1

2. Tap the ⚙ icon to enter the configure screen. The default mode is Custom Mode. Then tap "**Level**" to select fitness level, "**Denom**" to select denominations, "**Version**" to select versions and "**Face**" to select orientation for each stacker. When finished, tap "**Save**" to save the configuration.

Fig. 4-3-3-2

3. Then you can tap the [icon] icon to use the sorting interface.

4.4 Transaction Query

If you tap the [icon] icon in function interface, you can check the transaction of any scheduled date, or a transaction that appears at a certain time.
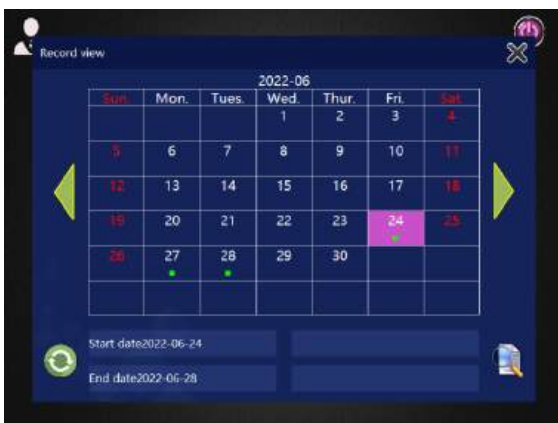
Fig. 4-4-1

1) There are green dots on the calendar, indicating that there are sorting transaction records for query those days, set the date range as needed.
2) The boxes at the bottom of the interface can be used to input filter criteria. Then tap the [icon] icon to query, as shown in Fig.4-4-2.
3) You can swipe the calendar (left or right) to view the record of last or next month.

Back to previous interface

Double-tap a transaction to view statistics

To the first page   To next page   To the last page

To previous page
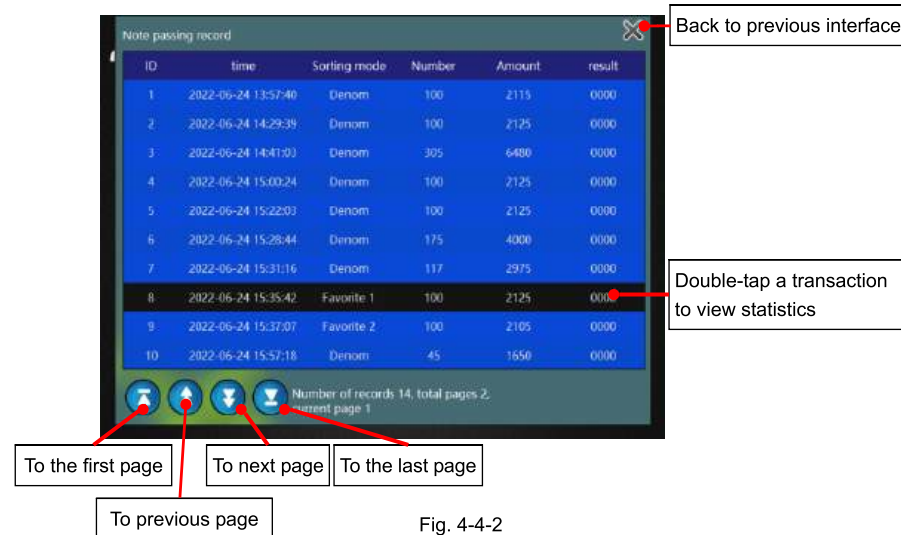
Fig. 4-4-2

1) Here are listed all transactions which fit the filter criteria, each line is a summary of each transaction record.
2) If there are multiple transactions on that day, you can use the buttons on lower left corner to turn page.
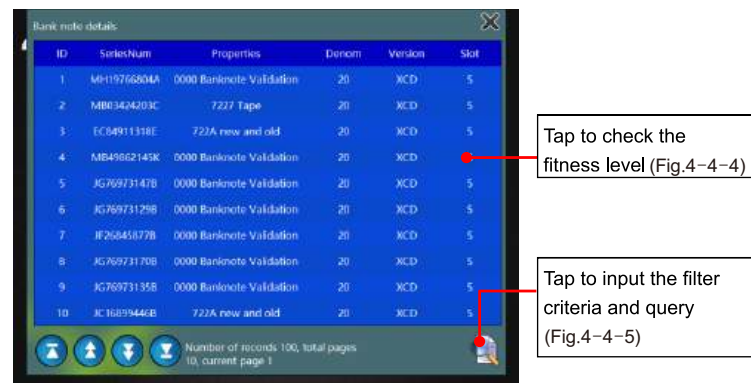3) Select a transaction and tap it to view its statistics, as shown in Fig. 4-4-3.

Tap to check the fitness level (Fig.4-4-4)

Tap to input the filter criteria and query (Fig.4-4-5)

Fig. 4-4-3

Fig. 4-4-4

Fig. 4-4-5

Tap the boxes and select the options as required, as shown in Fig.4-4-6.

Fig.4-4-6

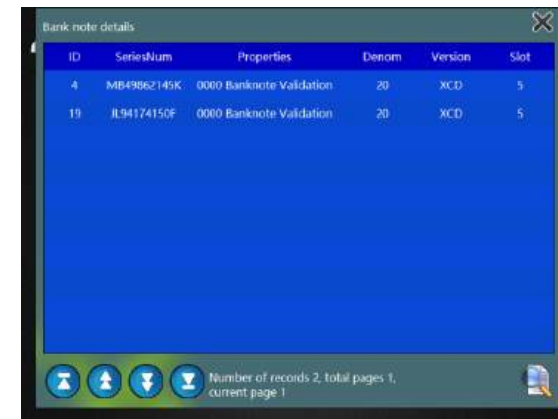Then Tap the icon to query, the results are shown as below:

Fig.4-4-7

4.5 Serial Number Query

You can tap the icon in function interface to check the transaction of a certain serial number on a specific date or within a date range.

Fig. 4-5-1

1) There are green dots on the calendar, indicating that there are sorting transaction records for query those days, set the date range as needed.

2) The boxes on the right at the bottom of the interface can be used to input the serial number. Then tap the [icon] icon to query, and the search result will be shown.

3) You can swipe the calendar (left or right) to view the record of last or next month.

4.6 Blacklist

Blacklist enables serial numbers of Suspect/CF notes to be saved. When notes are processed that match the numbers on the blacklist the notes will be rejected. Please note that currently the data is saved in the data base temporarily, not written into the machine.

Tap the [icon] icon in the function interface to enter the blacklist interface, as shown in Fig. 4-6-1.

Fig. 4-6-1

● **Adding a serial number into the blacklist** - Tap the [icon] icon to input the serial number of a banknote, then tap the **Enter** button on the touch keyboard to confirm. Tap the [icon] icon to save.

● **Viewing blacklist** - If there are multiple blacklist entries, tap the [icon] [icon] icons to turn the pages.

● **Deleting a serial number from the blacklist** - Select a blacklist entry, then tap the [icon] icon to remove the serial number from the blacklist and tap the [icon] icon to save.

4.7 Banknote Data Sampling

1) Tap the [icon] icon in the function interface, as shown in Fig.4-7-1.

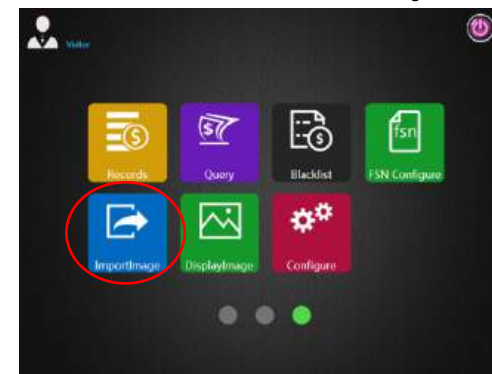

Fig.4-7-1

2) It will prompt the data sampling window, as shown in Fig.4-7-2, set up the file path to store the images (local disk or movable devices) and tap the [icon] icon to start data sampling.

Fig.4-7-2

Notes:
1. Only the last 100 images of banknotes can be captured for a counting process.
2. Feed the banknotes and perform the counting before image sampling.
3. If necessary, the images can be stored in a movable storage device (such as USB stick) directly by setting up the file path, or you can exit the app interface and copy the images into a movable storage device.

4.8 Viewing the Sampling Images

Please open the file in the local disk or the movable storage device (the file path you set up to store the images) to view the sampling images.

4.9 Configuring the Machine

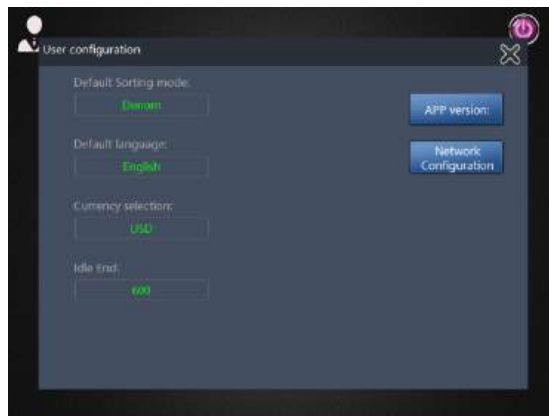Tap the [icon] icon in the function interface to enter the function configuration screen (as shown in Fig. 4-9-1).

Fig. 4-9-1

Function	Description
Default Sorting mode	Set up the default sorting mode after booting up the machine.
Default language	Select the default display language of the machine.
Currency Selection	Select the currency type.
Idle End	Set up the idle time to clear the transaction data automatically after a counting process if the notes have not been taken away from the stackers (Unit: second). For example, "600" means that, after a counting, if you do not take away the notes from the stackers within 600 seconds (10 minutes), the data of the counting will be reset to 0 automatically.
APP version	View the current APP version.
Network Configuration	This function is optional. Only machines with network function need to configure it.

5 Troubleshooting

5.1 Messages

When fault occurs, the fault information will be displayed in the operation prompt area, as shown in Fig. 5-1-1. The machine sends messages to tell you its status and asks you to take action. If you cannot resolve a problem using the corrective action shown, or a message is not listed here, contact your supplier.

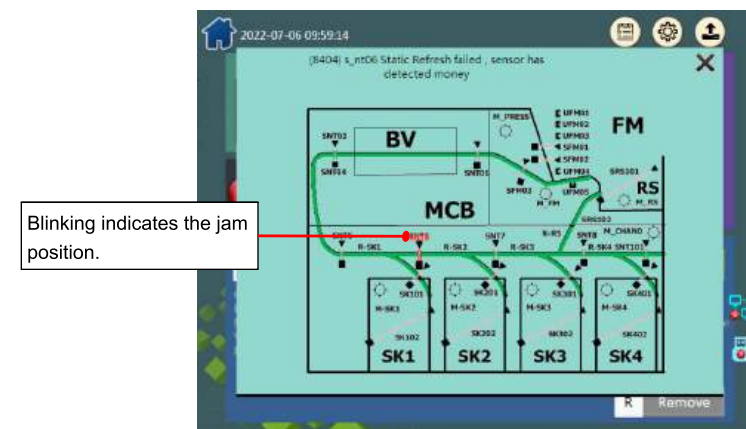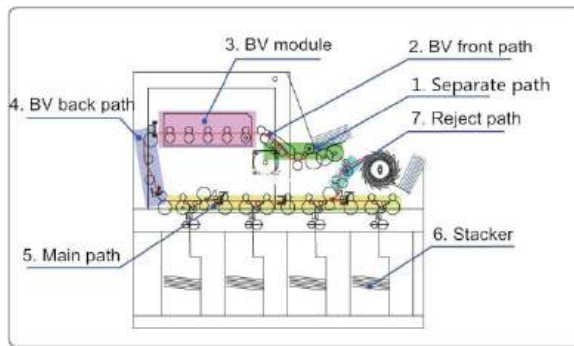Fig. 5-1-1

5.2 Banknote Jam and Troubleshooting

Fig. 5-2-1

Fig. 5-2-2　Sorter Modules

1. Separate path → 2. BV front path → 3. BV module → 4. BV back path → 5. Main path

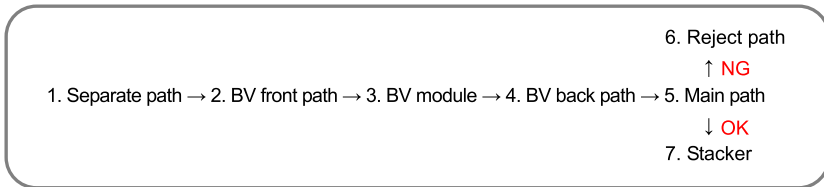6. Reject path
↑ NG

↓ OK
7. Stacker

Fig. 5-2-3　Sorting Process

In the process of sorting banknotes, a banknote jam could occur in any module. Refer to Fig. 5-2-1, Fig. 5-2-2 and Fig. 5-2-3, find out where the jam is and deal with it according to the following operations.

5.2.1 Jam in Separate Path

Step 1　Remove banknotes in the hopper, open the front cover.

Step 2　Press down switch ① to unlock the lock catch, lift module ② to the support position of brace, as shown in Fig. 5-2-1-1.
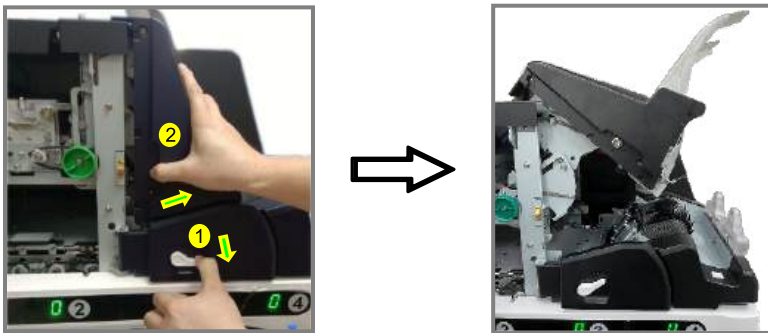

Fig. 5-2-1-1

Step 3　Remove the jammed banknotes in separate path.

Step 4　Slowly put module ② down, press it until it is locked, indicated by hearing a click.
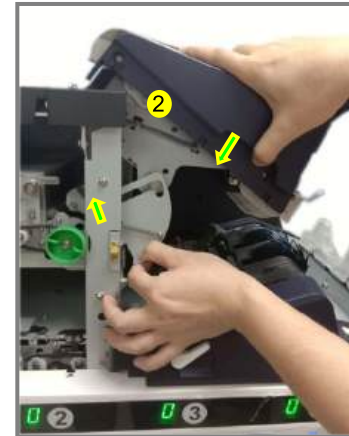

Fig. 5-2-1-2

5.2.2 Jam in BV Front Path

Step 1　Remove banknotes in the hopper, open the front cover and top cover.

Step 2　Lift module ② to the support position of brace.

Step 3　Remove the jammed banknotes in BV front path, as shown in Fig. 5-2-2-1.

Fig. 5-2-2-1

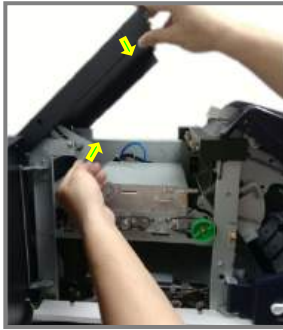**Step 4**　Return the covers to their normal positions.

Fig. 5-2-2-2

5.2.3 Jam in BV Module

Step 1 Open the front cover and top cover.

Step 2 Unlock the BV lock catch, turn and open the upper cover of BV module, as shown in Fig. 5-2-3-1.
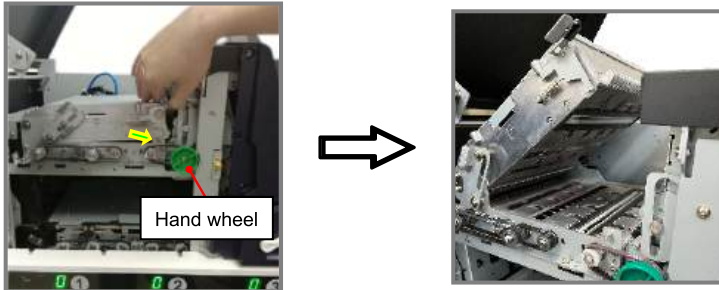

Hand wheel

Fig. 5-2-3-1

Step 3 Remove the jammed banknotes in BV module. (If it is difficult to take out jammed banknote, turning the hand wheel will be a great help.)

Step 4 Restore the structure of machine, as shown in Fig. 5-2-3-2.

Fig. 5-2-3-2

5.2.4 Jam in BV Back Path

Step 1 Open the left cover, unlock the lock catch, as shown in Fig. 5-2-4-1.

Step 2 Remove the banknotes in BV back path.

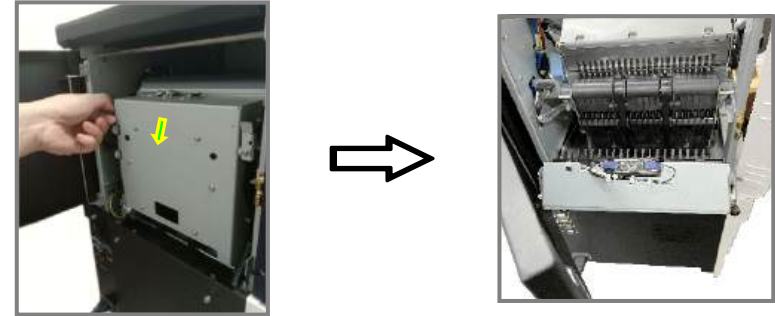**Step 3** Restore the structure of machine.

Fig. 5-2-4-1

5.2.5 Jam in Main Path

<u>Jam in main path 1</u>

Step 1 Open the front cover, lift module ② to the support position of brace, open the small cover ③, as shown in Fig. 5-2-5-1.
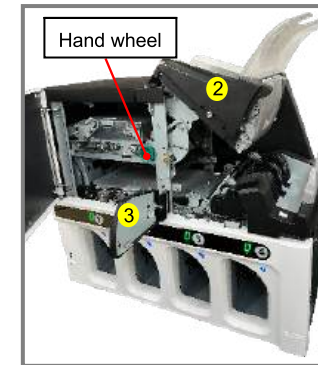

Hand wheel

Fig. 5-2-5-1

Step 2 Unlock the lock catch, remove the jammed banknotes, as shown in Fig. 5-2-5-2.
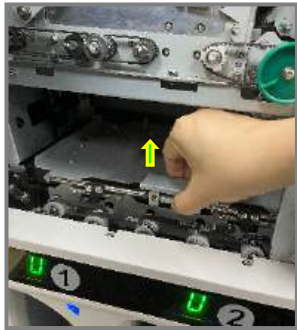
Fig. 5-2-5-2

Step 3 Restore the structure of machine.

Jam in main path 2

Step 1 Lift module ② to the support position of brace, press button on module ④ to lift it, as shown in Fig. 5-2-5-3.
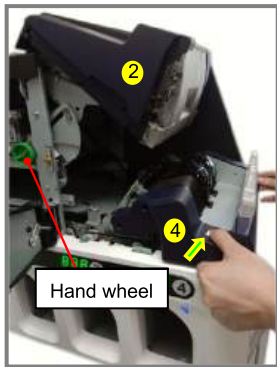

Hand wheel

Fig. 5-2-5-3

Step 2 Remove the jammed banknotes. (If it is difficult to take out jammed banknote, turning the hand wheel will be a great help.)

Step 3 Restore the structure of machine.

5.2.6 Jam in Reject Path

Step 1 Open the front cover, lift module ② to the support position of brace, open the small cover ③.

Step 2 Unlock the lock catch, remove the jammed banknotes in reject path, as shown in Fig. 5-2-6-1. (If it is difficult to take out jammed banknote, turning the hand wheel will be a great help.)
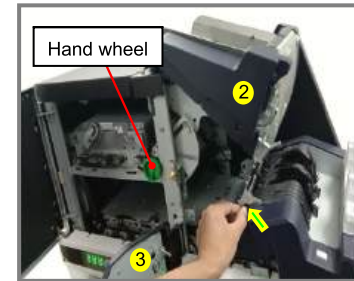

Hand wheel

Fig. 5-2-6-1

6 Technical Specifications

Counting speed:	900 notes/min
Sorting speed:	750 notes/min
Hopper capacity:	1200 notes
Stacker Capacity:	600 notes*4
Reject Pocket Capacity:	200 notes
Power Supply:	220VAC, 50Hz±5％
Power Consumption:	≤350W
Temperature:	0℃~40℃
Humidity:	40~90%
Image Storage:	64G (Solid-state SSD)
Interface:	RS232, RJ-11, USB, LAN
Dimensions:	28.1"x14.8"x23.6" (715(W)×375(D)×600(H)mm)
Weight:	154.3lb (70.0kg)

✧ **Specifications are subject to change without further notice.**