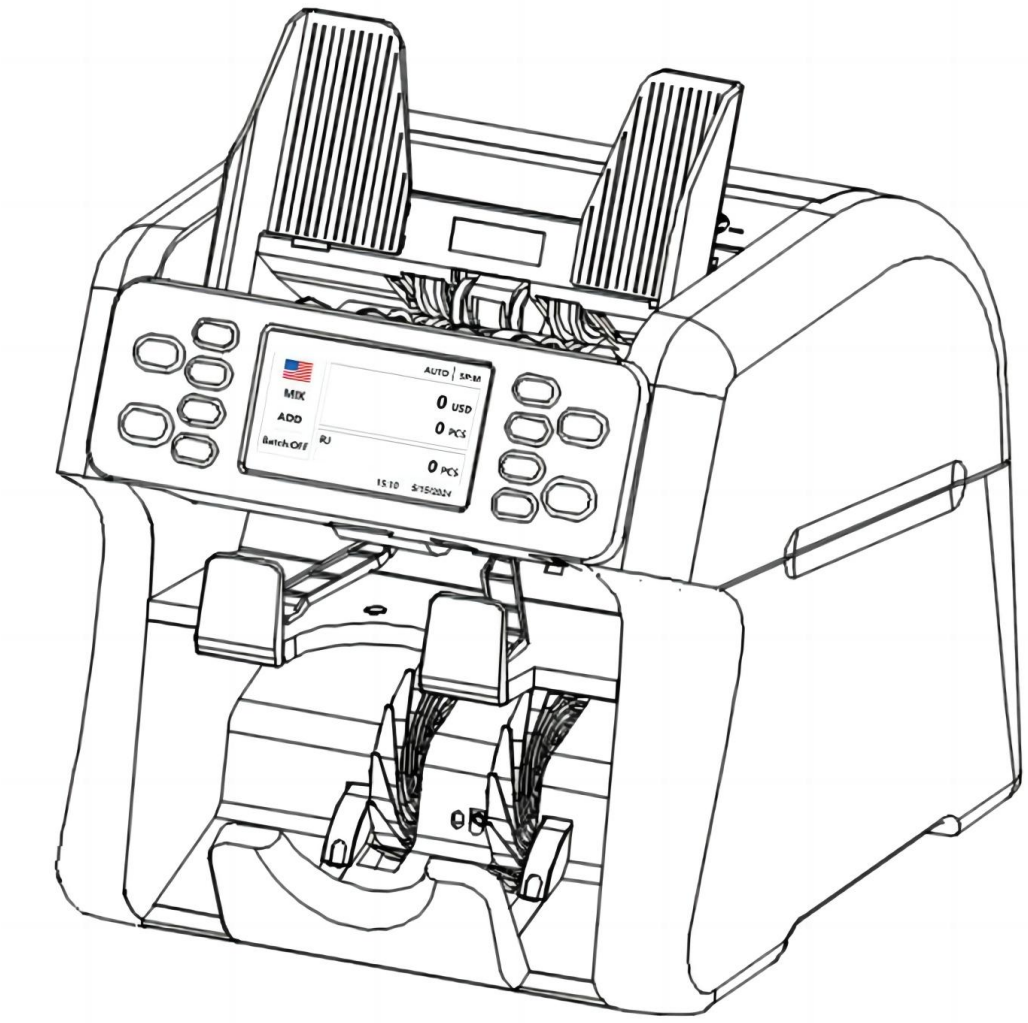
# Banknote Sorter
# MC-165
# User Manual



# TABLE OF CONTENTS

TABLE OF CONTENTS ..... 1
1. Overview ..... 2
1.1 Safety Instructions ..... 2
1.2 Installation Instructions ..... 3
1.3 Machines and Accessories ..... 4
1.4 Appearance ..... 4
1.5 Technical Parameters ..... 7
1.6 Startup Preparation ..... 8
1.7 Banknote Arrangement ..... 8
1.8 Counting Error Reporting Code ..... 9
2. Introduction of Functions ..... 12
2.1 Introduction to Usage Features ..... 12
2.1.1 Display Interface and Touch Screen Interface Description ..... 12
2.1.2 Operation Instructions for Function Buttons ..... 13
2.1.3 Automatic/Manual Mode Settings ..... 13
2.1.4 Counting Mode Selection ..... 14
2.1.5 Counting Speed Setting ..... 18
2.1.6 View Counting Details ..... 19
2.1.7 View the Details of Suspected Banknotes Reporting Errors ..... 19
2.1.8 View the Details of the Serial Number ..... 20
2.1.9 Preset Number and Amount Settings ..... 21
2.1.10 Accumulation Mode Settings ..... 24
2.1.11 User Settings ..... 25
2.1.12 System Settings ..... 35
2.1.13 Data Collection ..... 39
2.1.14 Software Version View ..... 41
3. Maintenance Instructions ..... 42
3.1 Software Upgrade ..... 42
3.1.1 U Disk Preparation ..... 42
3.1.2 Application Upgrade ..... 42
3.1.3 UI Software Upgrade ..... 43
3.2 Daily Cleaning Instructions ..... 44
3.2.1 Clean startup sensor ..... 44
3.2.2 Clean Banknote Feeding Block and Banknote Twisting Block ..... 45
3.2.3 Clean Banknote stacker Sensor ..... 45
3.2.4 Clean the Sensors Inside the Upper and Lower Partitions ..... 46
3.2.5 Clean the Sensors Inside the Upper and Lower Channel Plates ..... 47
3.3 Common Faults and Corresponding Descriptions ..... 48

# 1. Overview

## 1.1 Safety Instructions

**Special Reminder:**

- This product is used to count the banknotes described in the specification. Please do not use this product for other purposes. Due to the different specifications and safety standards of power supply, this product is only used in corresponding countries or regions, and may not be used in other countries or regions.
- Please understand that the items recorded in this manual are subject to change without prior notice.
- The appearance and technical specifications of this manual are subject to change without prior notice. Therefore, if the actual product is different from the contents in this manual, please understand.
- No alteration or modification in any form is permitted without the express written authorization of the Company.
- This machine is designed for indoor use. Please do not install or use it outdoors.
- Please do not install it in places where it can't bear the weight of this product or in inclined and uneven places.
- Do not use or place diluents and other combustibles, flammable materials and volatile materials around/inside this product.
- Do not over-bend the power cord, or put heavy and sharp objects on the machine.
- Do not use this product in excessively humid environment.
- Please avoid the interference of strong light and strong magnetic field.
- Please turn off the machine switch when the machine is not in use, so as to prevent curtains and various entanglements from being involved in the machine.
- Please turn off the machine switch in advance when cleaning the machine.

# 1.2 Installation Instructions

As shown in Fig. 1 below, please keep away from the surrounding walls and reserve sufficient operating space for placing banknotes, opening or closing the cover plate, etc., and leave room for maintenance.

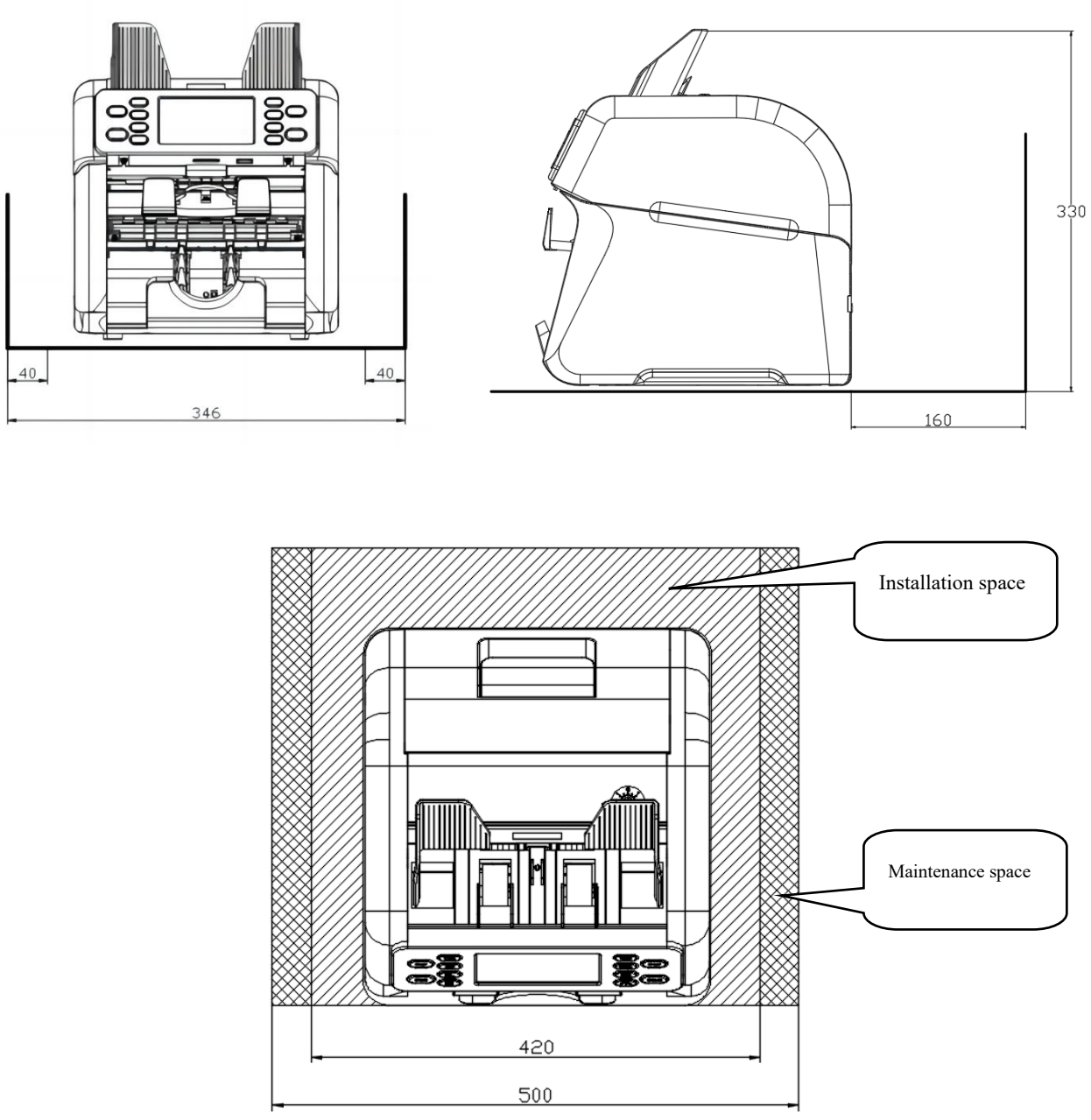



Fig. 1

Unit (**mm**)

# 1.3 Machines and Accessories

| | |
|---|---|
| Machine | 1PCS |
| Note guider (left) | 1PCS |
| Note guider (right) | 1PCS |
| Manual | 1PCS |
| Power cord | 1PCS |
| Cleaning brush | 1PCS |
| Simple instruction | 1PCS |
| Warranty card | 1PCS |
| Cleaning cloth | 1PCS |
| Dust cover | 1PCS |

# 1.4 Appearance

## 1.4.1 Front Appearance

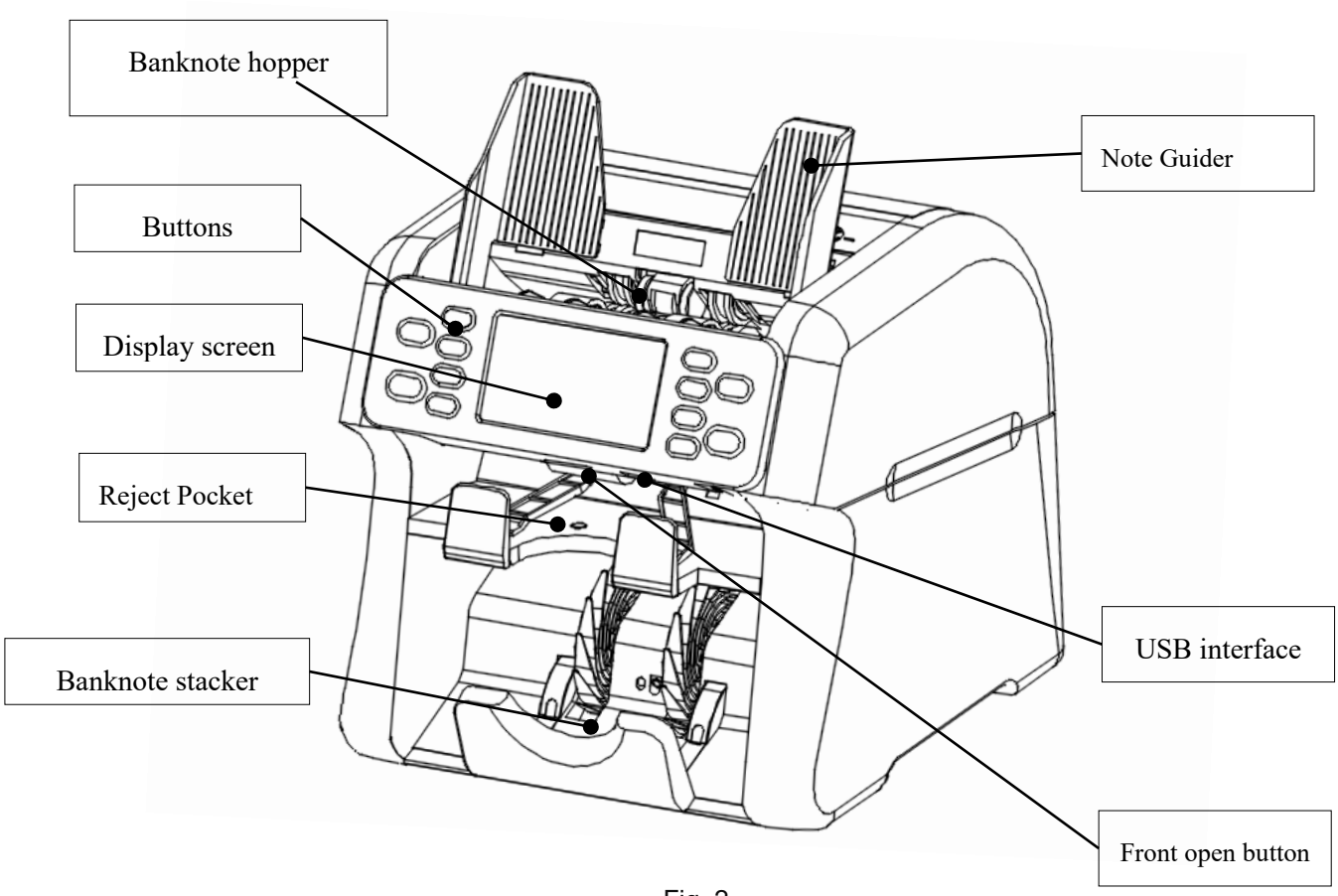



Fig. 2

## 1.4.2 Back Appearance

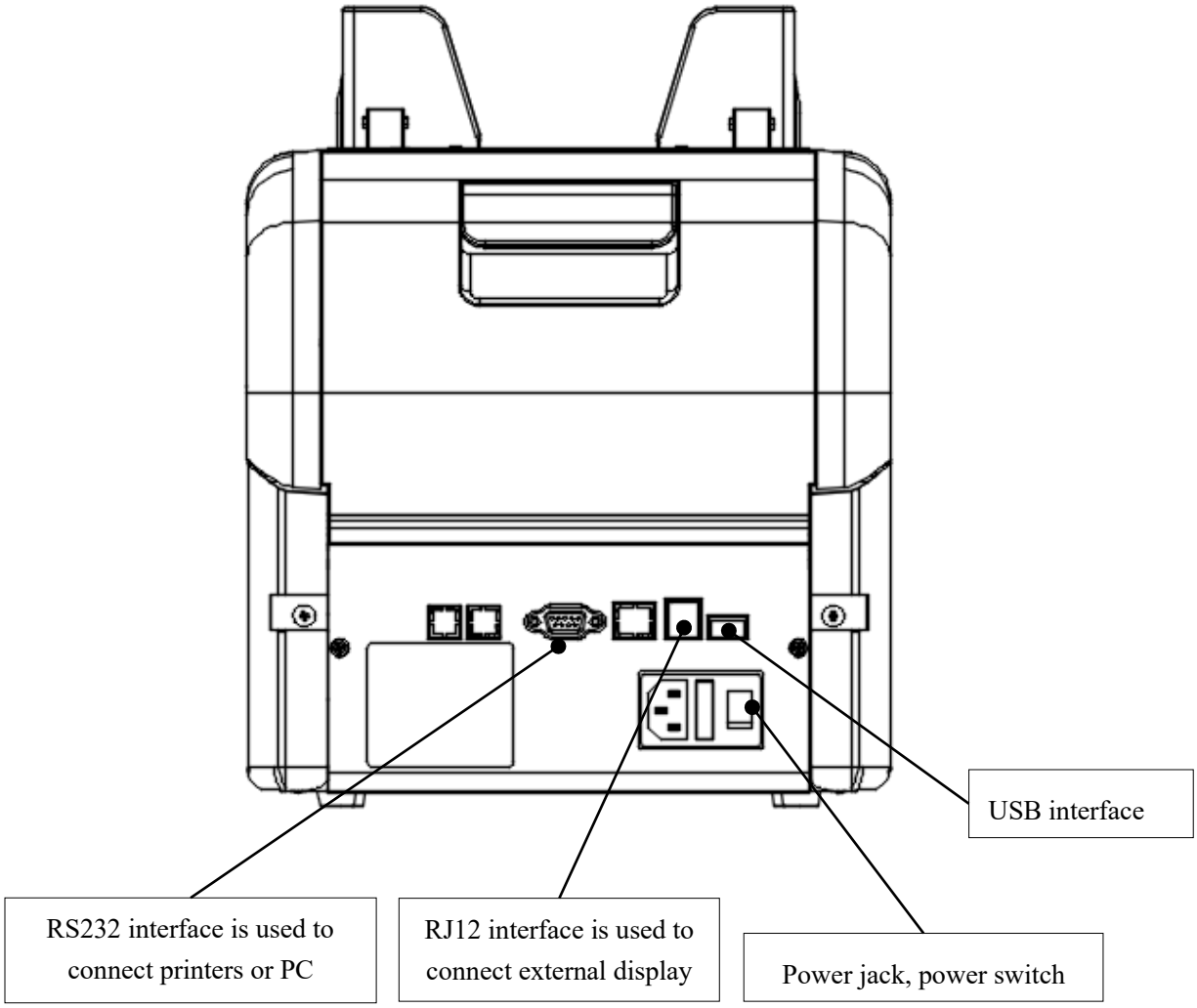



Fig. 3

## 1.4.3 Top Appearance

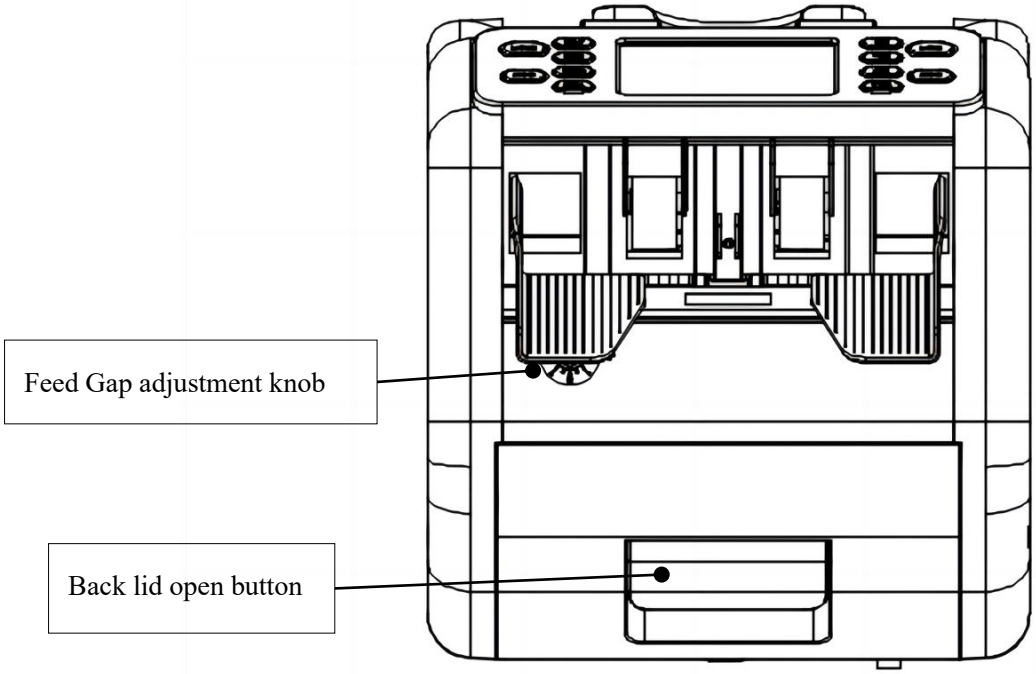



Fig. 4

# 1.5 Technical Parameters

| | |
|---|---|
| Dimensions (LxWxH) | 270x280x290mm |
| Weight | 9.5 kg |
| Capacity of banknote hopper | 600pcs |
| Capacity of banknote stacker | 250pcs |
| Banknote rejecting port capacity | Default 50, maximum 100 |
| Display screen | 4.3-inch TFT screen |
| Interface | RS-232/RJ12/USB |
| Currency capacity | Support up to 20 countries |
| Multi-country mixed point capacity | Support up to 20 countries |
| Size range of sortable banknotes | 100x55mm--180x85mm |
| Clear banknote thickness | 0.05mm~0.12mm |
| countingspeed | 800/1000/1200 sheets/min (**MIX**, **SDC, CNT** mode) |
| Counting Modes | Mixed denomination counting, Single denomination Sort, Face Sort, Orientation Sort, Piece count |
| Preset number | 1~200 |
| Preset amount | 1~999999999 |
| False detection function | UV/MG/MT/IRR/IRT/CIS |
| Power requirements | AC100-240V, 50/60 Hz ± 10% |
| Power consumption | Standby ≤ 8 W, operation ≤ 50 W |
| Use environment | Ambient temperature (0 ~ 40 C)/humidity (40 ~ 90%)<br>Air pressure (70-106kpa) |
| Storage environment | Ambient temperature (-40 ~ 55 C)/humidity (10 ~ 95%)<br>Air pressure (70-106kpa) |

# 1.6 Startup Preparation

1) Warm Tip: In order to ensure the smooth coin counting, please install the left and right note guider before using the machine.

2) Connect the machine to the power supply and turn on the power switch. First, the machine enters the loading interface. After the loading is completed, the machine enters the self-inspection interface, as shown in Fig. 5. After the self-test is successful, the machine enters the main interface. This process takes about 30 seconds, as shown in Fig. 6 below:

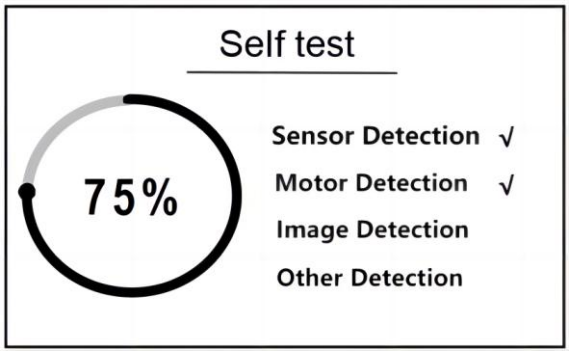



Fig. 5

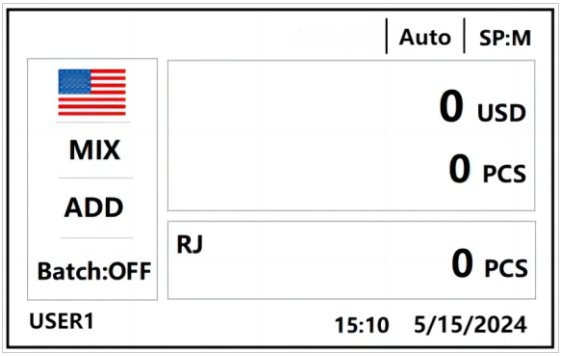



Fig. 6

# 1.7 Banknote Arrangement

1) Please sort the banknotes to be counted according to their size and put them into the banknote hopper. If there are folds and arches in the counted banknotes, they should be sorted in advance to ensure the smoothness of banknote counting.

2) In the process of counting banknotes, it is necessary to adjust the limit positions of the left and right note guider according to the maximum size of the current counting banknotes, so as to ensure that the banknotes can be accurately identified by relevant sensors. Take US dollars as an example, please sort out the banknotes first, and then adjust the limit position of the note guider according to the largest banknotes. Finally, put the banknotes into the banknote hopper for counting, as shown in Fig. 7:

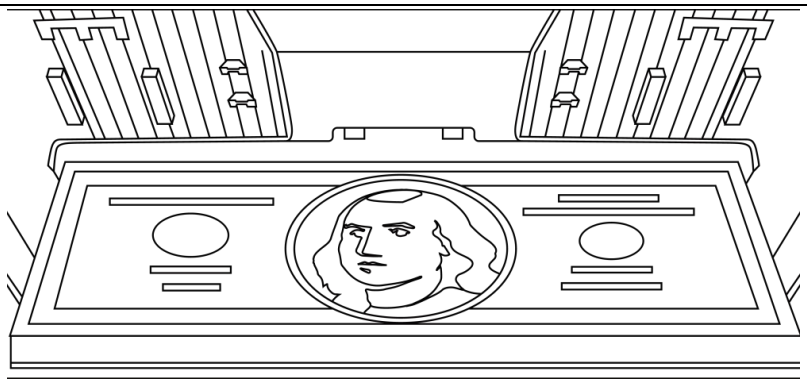


Fig. 7

# 1.8 countingError Reporting Code

| Error Code | Causes | Solutions |
|---|---|---|
| ERR-B001 | Stacker Full | The pickup bucket is full, please take the banknotes from the pickup bucket |
| ERR-B002 | Side Magnetic Quantity | The number of magnetic fields on the side of the banknote is abnormal, please place the banknote in the center |
| ERR-B003 | Side Magnetic Position | The magnetic position on the side of the banknote is abnormal, please place the banknote in the center |
| ERR-B004 | Middle Magnetic Quantity | The number of magnets in the banknote is abnormal, please check the banknote or put the banknote in the center |
| ERR-B005 | Middle Magnetic Code | Magnetic coding law in banknotes is wrong, please check banknotes or place banknotes in the center |
| ERR-B006 | Ultraviolet | There is a fluorescent reaction on the surface of the banknote, please check whether the banknote is washed abnormally or count the banknote again |
| ERR-B007 | Double Notes | There are overlaps in the banknotes, check the banknotes or the feed gap of the machines , and count the banknotes again |
| ERR-B008 | Half Notes | Half sheet, please check the banknote or count the banknote again |
| ERR-B009 | Abnormal Width(long) | If the banknote is too long, check the feed gap of the machine |
| ERR-B010 | Abnormal Width(short) | The banknote is too short, please check the banknote or count the banknote again |

| | | |
|---|---|---|
| ERR-B011 | Chained Notes | Chained Banknotes , check if the feed gap is too loose and make adjustment |
| ERR-B012 | Image Timeout | Banknote counting overtime, check the banknote and count again |
| ERR-B013 | Wrong Image Size | The size of the banknote does not match, check the banknote and the feed gap of machine |
| ERR-B014 | Image Not Recognized | The banknote is not identified, check the banknote and the feed gap of machine |
| ERR-B015 | Different Note Version | The version of the bill is different from the first one, check the version switch setting |
| ERR-B016 | Different Note FACE | The face of the banknote does not match the first one, check whether the face sorting function is turned on |
| ERR-B017 | Different Note Orientation | The orientation of the banknote does not match the first one, check whether the orientation sorting function is turned on |
| ERR-B018 | Clined Note | If the angle of banknote entry is abnormal, check whether the gap between the two sides of the machine is consistent |
| ERR-B019 | Infrared Image Abnormal(OVD) | Holographic wide strips of banknotes recognize abnormalities, please check the banknote or count the banknote again |
| ERR-B020 | Infrared Image Abnormal(MT) | The infrared security line of the banknote is abnormal, please check the banknote or count the banknote again |
| ERR-B021 | IR Hole Or Dog-ear | Banknotes have holes or corners, please sort them out and count them |
| ERR-B022 | IR Dog-Ear | Banknotes have corners, please sort them out and count them |
| ERR-B023 | Dirty Note | There is dirt on the surface of the banknote, please clean the banknote and count it again |
| ERR-B024 | Infrared Image Abnormal 1 | The infrared signature 1 of the banknote is abnormal, please check the banknote or count the banknote again |
| ERR-B025 | Infrared Image Abnormal | The infrared signature 2 of the banknote is abnormal, please |

| | | |
|---|---|---|
| | 2 | check the banknote or count the banknote again |
| ERR-B026 | Infrared Image Abnormal 3 | The infrared signature 3 of the banknote is abnormal, please check the banknote or count the banknote again |
| ERR-B027 | Infrared Image Abnormal 4 | The infrared signature 4 of the banknote is abnormal, please check the banknote or count the banknote again |
| ERR-B028 | Infrared Image Abnormal 5 | The infrared signature 5 of the banknote is abnormal, please check the banknote or count the banknote again |
| ERR-B029 | Infrared Image Abnormal 6 | The infrared signature 6 of the banknote is abnormal, please check the banknote or count the banknote again |
| ERR-B030 | Infrared Image Abnormal 7 | The infrared signature 7 of the banknote is abnormal, please check the banknote or count the banknote again |
| ERR-B031 | Infrared Image Abnormal 8 | The infrared signature 8 of the banknote is abnormal, please check the banknote or count the banknote again |
| ERR-B032 | Different Face &Orientation | The direction of the banknote does not match the orientation of the first banknote, please check that both theface and orientation sorting functions are turned on |
| ERR-B033 | SN Recognition Abnormal | The banknote serial number recognition is abnormal, please check the banknote or count the banknote again |
| ERR-B034 | SN Comparison Abnormal | The contrast between the serial numbers of the banknotes is abnormal, please check the banknote or count the banknote again |
| ERR-B035 | Repeat SN | There are duplicate serial numbers in the count, please check the banknote or count the banknote again |
| ERR-B036 | Infrared Image Abnormal 9 | The infrared signature 9 of the banknote is abnormal, please check the banknote or count the banknote again |
| ERR-B037 | Infrared Image Abnormal 10 | The infrared signature 10 of the banknote is abnormal, please check the banknote or count the banknote again |
| ERR-B038 | Infrared Image Abnormal 11 | The infrared signature 11 of the banknote is abnormal, please check the banknote or count the banknote again |
| ERR-B049 | Infrared Image Abnormal | The infrared signature 12 of the banknote is abnormal, please |

| | | |
|---|---|---|
| | 12 | check the banknote or count the banknote again |
| ERR-B040 | Infrared Image Abnormal 13 | The infrared signature 13 of the banknote is abnormal, please check the banknote or count the banknote again |
| ERR-B041 | Infrared Image Abnormal 14 | The infrared signature 14 of the banknote is abnormal, please check the banknote or count the banknote again |
| ERR-B042 | Infrared Image Abnormal 15 | The infrared signature 15 of the banknote is abnormal, please check the banknote or count the banknote again |
| ERR-B043 | Image Double Notes 1 | Double notes detected, please check the banknotes or recount. |
| ERR-B044 | Image Double Notes 2 | Double notes detected, please check the banknotes or recount. |
| ERR-B045 | Image Double Notes 3 | Double notes detected, please check the banknotes or recount. |

# 2. Introduction of Functions

## 2.1 Introduction to Usage Features

### 2.1.1 Display Interface and Touch Screen Interface Description

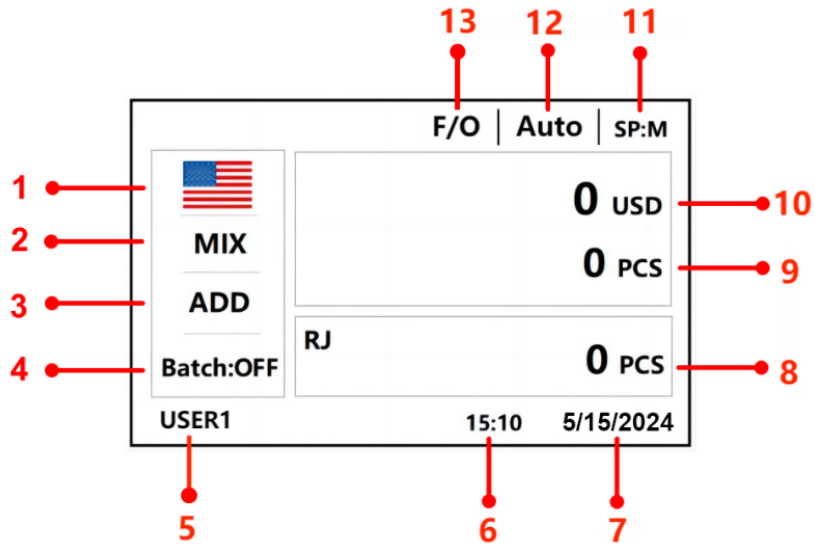



Fig. 8

1. Currency Selection Button
2. Counting Mode Switch Button
3. Accumulated Function Button
4. Number of Current Preset
5. User Mode Display
6. Current Time Display
7. Current Date Display
8. Quantity of Suspected Currency
9. Qty of banknote Counted
10. Counting Amount
11. Counting Speed Display
12. Auto/Manual Mode Display
13. Face/Orientation Mode Display

## 2.1.2 Operation Instructions for Function Buttons

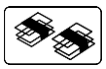
 **Currency Selection Button**

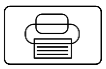
 **Counting Mode Switch Button**

 **Function Setting Button**

 **Counting Details View Button**

 **Accumulated Function Button**

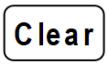
 **Preset Function Button**

 **Data Print Button**

 **Speed Switch Button**



**Manually Start Machine Button**



**Clear Button**

## 2.1.3 Automatic/Manual Mode Settings

Click the "" button to enter the "User Menu" interface, as shown in Fig. 9, touch and select the "Auto/Manual" option to enter the automatic Manual Mode selection, as shown in Fig. 10, touch and select "Auto Mode" or "Manual Mode" according to your needs, and then Touch the "" button in the upper right corner of the screen or click the "CLEAR" button to return to the main interface.

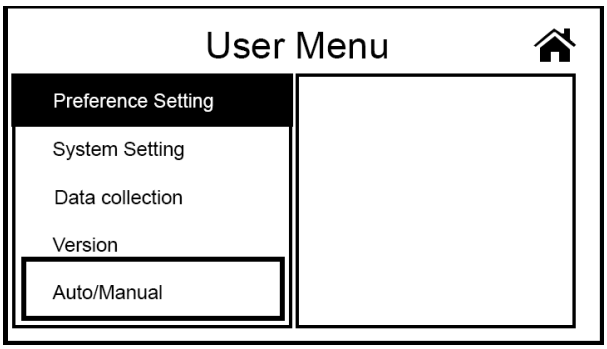



Fig. 9

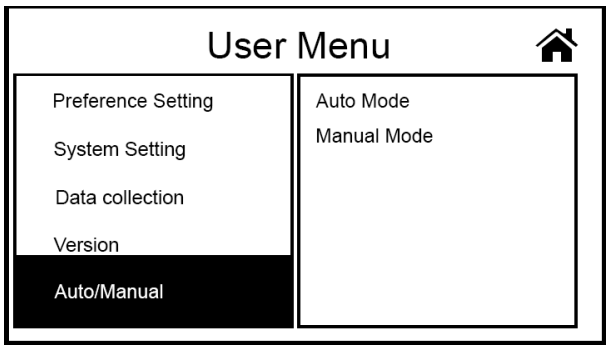



Fig. 10

Auto Mode: "Auto" appears in the upper right corner, as shown in Fig. 11. At this time, put the banknotes into the banknote hopper of the machine, and the machine will automatically count the banknotes.

Manual Mode: "Manual" is displayed in the upper right corner. As shown in Fig. 12. At this time, the banknotes are put into the banknote hopper of the machine, and the machine will not automatically count the banknotes. The "START" button must be pressed before the machine counts the bills.

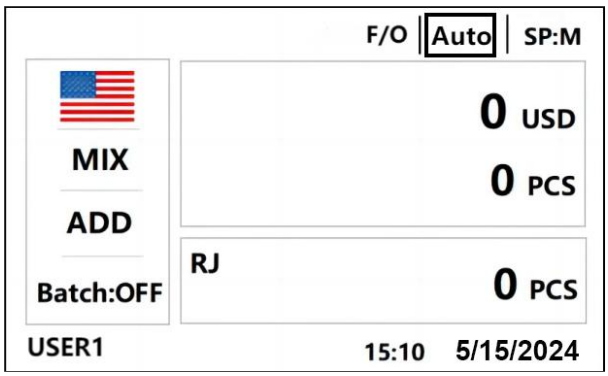



Fig. 11

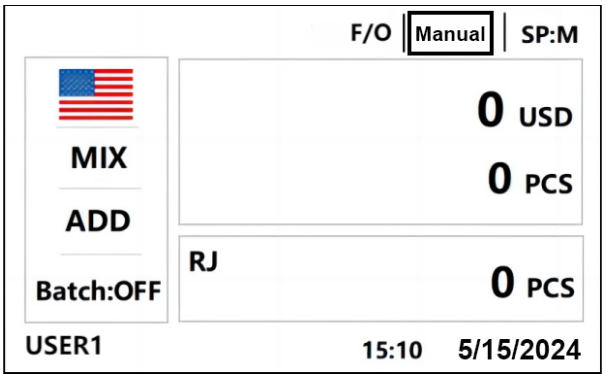



Fig. 12

## 2.1.4 Counting Mode Selection

### 2.1.4.1 Single National Currency Mode

Under the main interface of the machine, you can click the ""button on the left or touch the "" logo pattern in the upper left corner of the display screen, as shown in Fig. 13, enter the "Currency List" interface to select the currencies of different countries, as shown in the following Fig. 14:

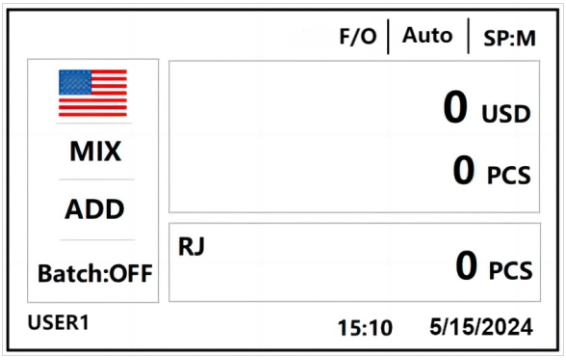
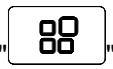



Fig. 13




Fig. 14

Take the dollar as an example. After touching the "" button, the display screen returns to the main interface, and the "" logo graphic is displayed in the upper left corner, indicating that the machine is in the mode of counting US dollar bills.

Press the "" button on the left side of the button panel, or click "MIX" on the left side of the display screen to cycle between three counting modes. The three counting modes cycle according to MIX-SDC-CNT, as shown in Fig. 15 below.

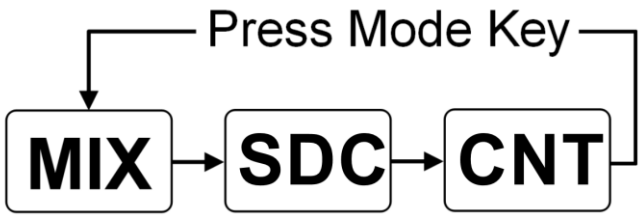



Fig. 15

## 2.1.4.2 <MIX> Mix Denomination Count Mode

Fig. 16 below shows the interface of the mixed denomination counting mode in the automatic state of the machine. In this mode, the machine will count all denominations of the same national currency, and record the detailed information of the counted banknotes, including the total amount and total number of banknotes in the bucket, which is convenient for users to view. When this mode is selected, the machine will count by the speed gear selected (L: 800 sheets/minute; M: 1000 sheets/minute, H: 1200 sheets/minute, 3 optional).

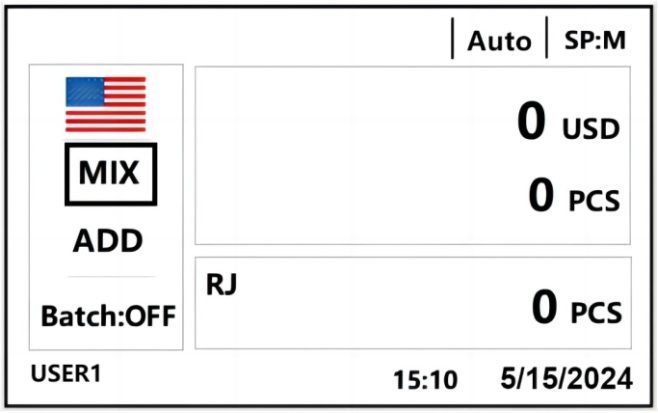



Fig. 16

## 2.1.4.3 <SDC> Single Denomination Counting Mode

Fig. 17 below shows the single denomination counting mode in the automatic state of the machine. In this mode, the machine will take the first banknote to be counted as a reference to count the banknotes of the same currency and the same denomination, and at the same time count the detailed information of the banknotes in the banknote stacker, including the total amount and the total number of banknotes, which is convenient for users to view (Note: in this mode, currency of different denominations

cannot be put in, if a banknote of different denomination than the first recognized banknote is put in, it will be kicked into the suspicious banknote bucket). When this mode is selected, the machine will count by the speed gear selected (L: 800 sheets/minute; M: 1000 sheets/minute, H: 1200 sheets/minute, 3 optional).

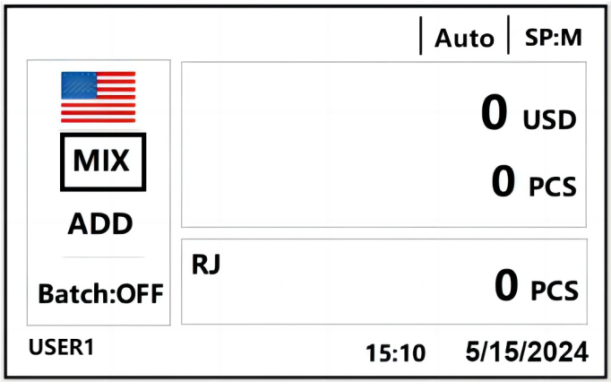



Fig. 17

## 2.1.4.4 <CNT> Piece Count Mode

Fig. 18 below shows the interface where the machine only performs quantity counting in the automatic state. This model does not limit the currency, but only counts the number of banknotes. When this mode is selected, the machine counts by the speed gear selected (L: 800 sheets/minute; M: 1000 sheets/minute, H: 1200 sheets/minute, 3 optional).

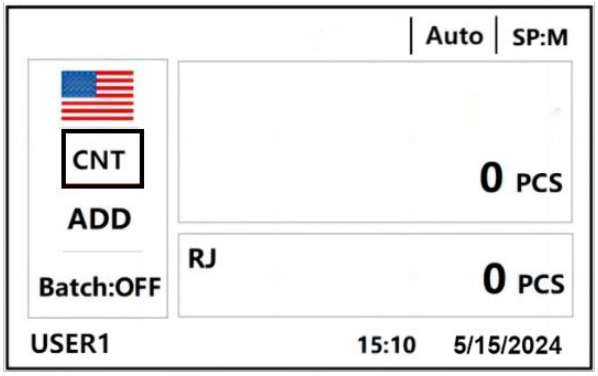



Fig. 18

Note: In MIX mixed counting mode and SDC single denomination counting mode, the machine has image, magnetic detection, UV detection and retension detection functions. In CNT counting mode, only retension detection function is available.

## 2.1.4.5 Multi-Country Counting Mode

Multi currency counting: The currencies of various countries are mixed together and put into the machine for counting, and the quantity and amount of each currency are displayed according to the currency name. Note: The machine can only recognize the supported national currency displayed by the machine. Unsupported currencies will be kicked into the rejection bucket. Please change the counting mode of the machine to MIX mixed counting mode first.

On the main interface, click the "" button on the left or touch the "" sign in the upper left corner of the display screen to enter the currency selection interface, as shown in Fig. 19. Then click "" Multi-country mixed denomination counting mode, and the display screen will automatically switch to the main interface. Fig. 20 below shows:

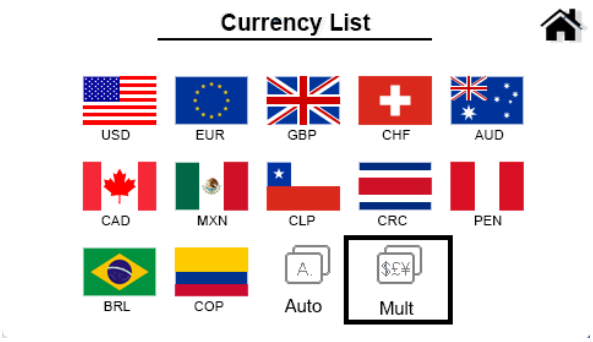



Fig. 19

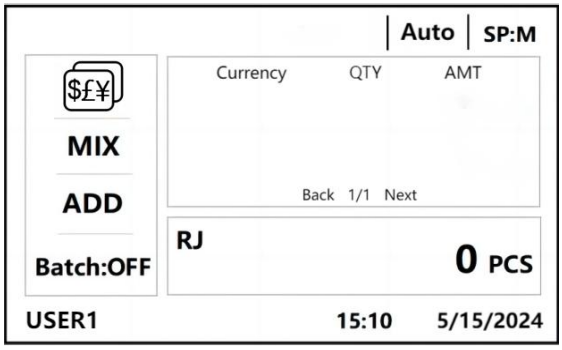



Fig. 20

Example: Put a handful of bills (including dollars, euros, pounds, Canadian dollars) into a machine to count and count. Details of countingare shown in Fig. 21 below:

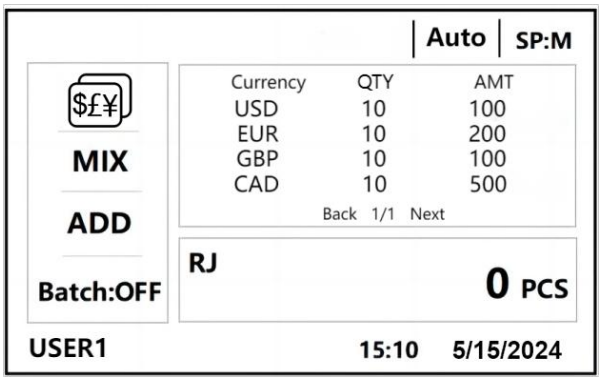



Fig. 21

## 2.1.4.6 Automatic Recognition Mode

Automatic identification: Automatic identification of currency types put into the machine. In the process of counting banknotes, the machine identifies banknotes of all denominations in the same

country based on the first banknote passing through the sensor. When it recognizes banknotes from other countries, the machine kicks the banknotes from other countries to the banknote rejecting bucket. The machine can only recognize the currency of the country displayed in the program.

Click the "" button on the left side of the main interface or touch the "" sign in the upper left corner of the display screen to enter the currency selection interface, as shown in Fig. 22. Click "" Automatic Recognition Mode, and the display screen will automatically jump to the main interface after selection, as shown in Fig. 23 below:




Fig. 22

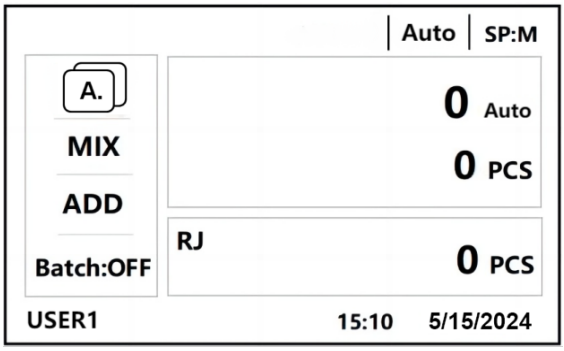



Fig. 23

## 2.1.5 Counting Speed Setting

The machine has three counting speed options: high speed (1200PCS/min), medium speed (1000PCS/min) and low speed (800PCS/min). In any counting mode, you can switch between different counting speeds by clicking the "" button on the right. As shown in the red box in Fig. 24 below, SP: M means that the machine is in medium counting speed mode at this time.

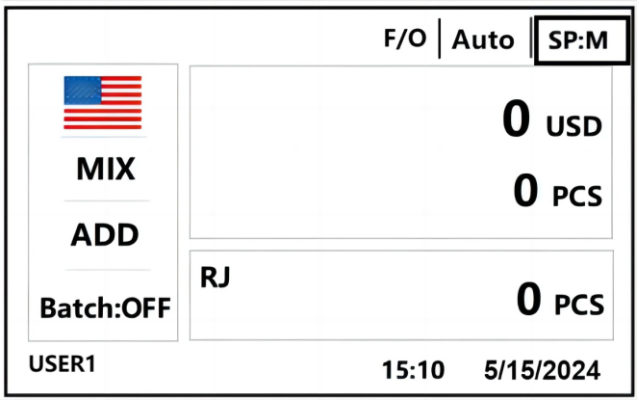



Fig. 24

The following table shows the corresponding countingspeeds for each count speed gear in each count mode:

| Counting mode | H | M | L |
|---|---|---|---|
| MIX | 1200PCS/min | 1000PCS/min | 800PCS/min |
| SDC | 1200PCS/min | 1000PCS/min | 800PCS/min |
| CNT | 1200PCS/min | 1000PCS/min | 800PCS/min |

## 2.1.6 View countingDetails

In the MIX mixed counting mode or SDC single denomination counting mode, press the "" button on the left side of the face frame or touch the amount counting display area on the screen after the end of the coin counting, as shown in Fig. 25, you can view the details of the counting by touching the box area, as shown in Fig. 26, taking USD as an example.

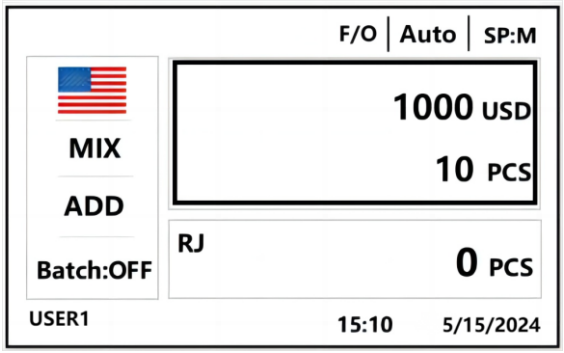



Fig. 25

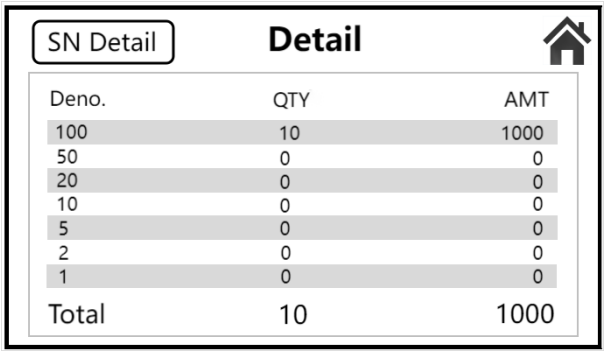



Fig. 26

This interface is used to view the number of banknotes of the corresponding country denomination and the total amount of that denomination, as well as the total amount of all banknotes. To exit the interface, touch the "" button in the upper right corner of the screen or click the "CLEAR" button.

## 2.1.7 View the Details of Suspected Banknotes Reporting Errors

After the counting is over, if there are suspicious banknotes in the banknote bucket and you want to check the reason for rejecting the banknotes, please touch the suspicious banknote display area to enter, and then look at Fig. 27. This interface can view detailed information, as shown in Fig. 28 below. If you

need to exit the current interface, please touch the " " button in the upper right corner of the screen or click the "CLEAR" button.

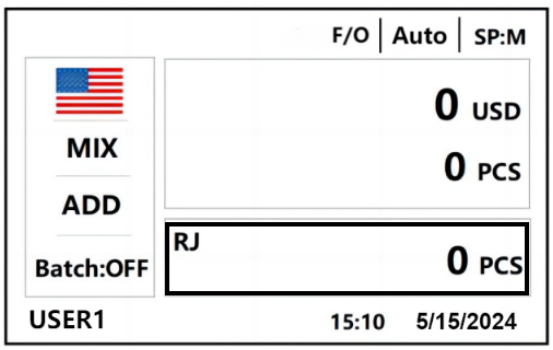



Fig. 27

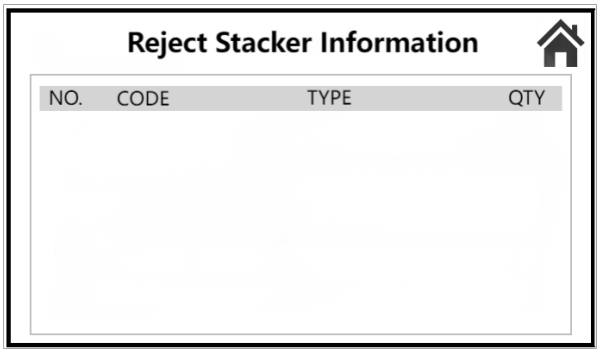



Fig. 28

## 2.1.8 View the Details of the Serial Number

1) This function requires adjusting the counting mode to MIX mixed counting or SDC single denomination counting mode.

2) After the counting is over, if you want to check the details of the Serial Number, please press the " " button or touch the amount display area on the screen to enter the counting details interface. Then press the " " button or touch the "SN Detail" button as shown in Fig. 29 to enter the serial number details interface, as shown in Fig. 30 below. Touch the "Back" and "Next" buttons at the bottom of the interface to turn up and down to see the serial number of the bill. If you need to exit the current interface, please touch the "" button in the upper right corner of the screen or click the "CLEAR" button.

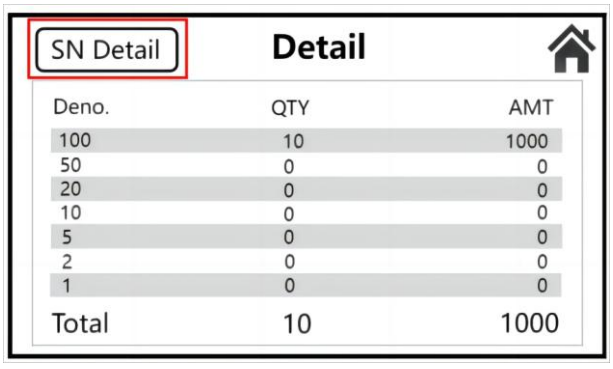



Fig. 29

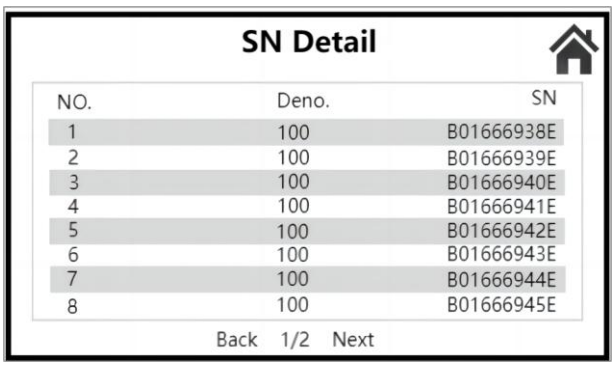
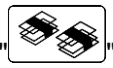



Fig. 30

3）The Serial Number viewing function has a switch, and the specific switch steps refer to 2.1.11.3.

# 2.1.9 Preset Number and Amount Settings

## 2.1.9.1 Preset Number Setting

1) Press the "" button on the main interface, and the preset number of the main interface will be switched between "10/25/50/100/Custom/OFF", as shown in Fig. 31, the lower left corner of the main interface displays "Batch: 10" logo. When the preset number here is "OFF", the machine defaults to 200. When the preset number reaches 200, the machine will automatically stop running.

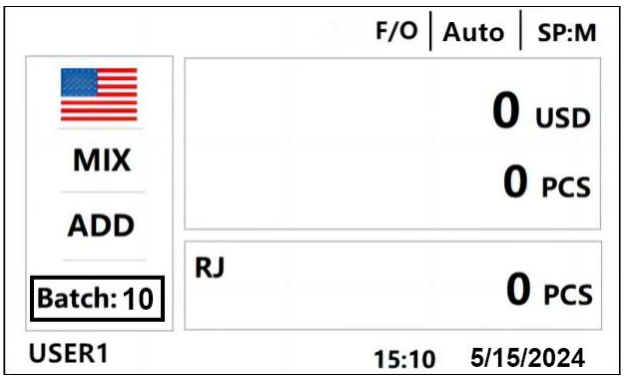



Fig. 31

2) Touch the preset number area of the main interface to enter the custom preset number interface, as shown in Fig. 32 below, click the number keypad below to enter the value within "1 ~ 200", and then click the "SAVE" button below to SAVE the set preset number, and automatically jump back to the main interface. As shown in Fig. 33, set the preset number to 155. Note: When the number of presets exceeds 200, the machine cannot save, the default number of presets is 200.

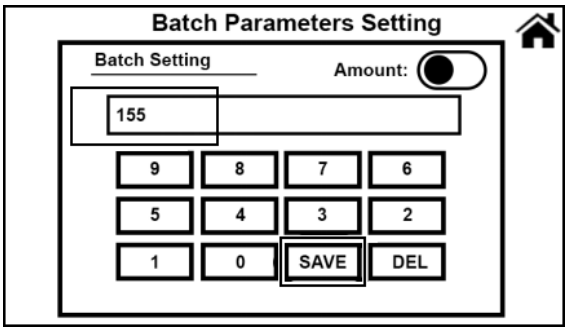



Fig. 32

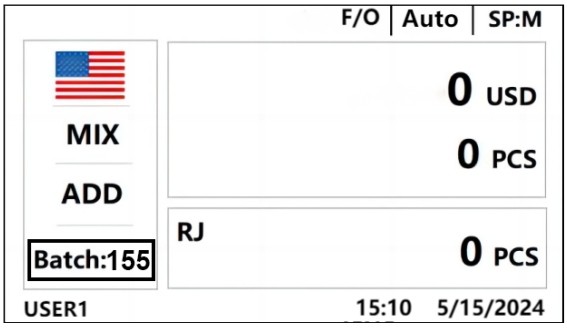



Fig. 33

3) Press the "" button to enter the "User Menu" interface, touch and select the "Preference Setting" option, as shown in Fig. 34, touch the "Batch" option on the right side of the screen, and the interface jumps to the default preset number setting interface. The default preset value is "10/25/50/100", as shown in Fig. 35.

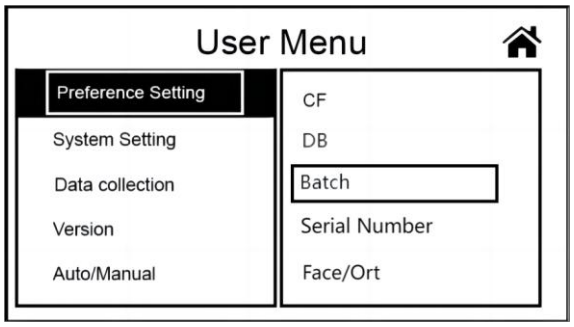



Fig. 34

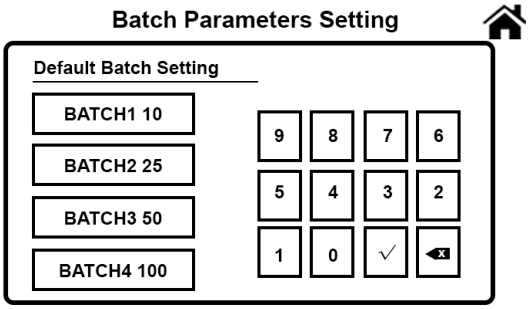



Fig. 35

4) If the default 4 sets of presets do not meet the needs of customers, the default presets can be modified as follows:

a. For example, change "BATCH1 10" to the preset number "155". First touch the screen and select "BATCH1 10" as shown in Fig. 36, and then click "⌫" to clear the original preset number, as shown in Fig. 37.

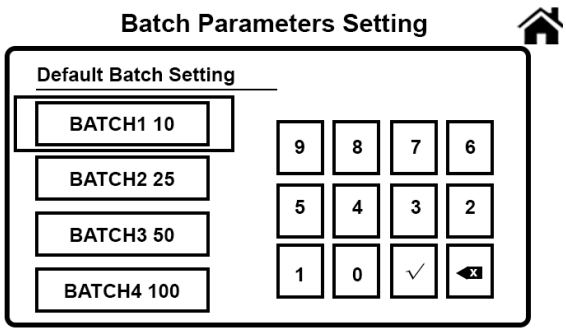



Fig. 36

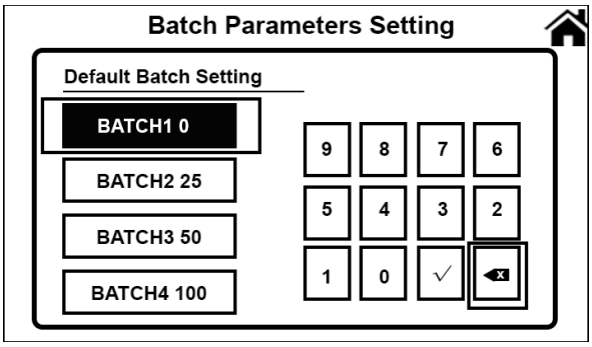



Fig. 37

b. Then click the number button 1-5-5 on the right in turn, and then click "√" to complete the preset number setting, as shown in Fig. 38. The position of the main interface preset number is changed to "Batch: 155", as shown in Fig. 39.

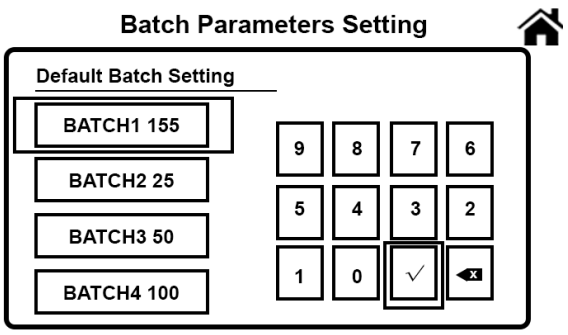



Fig. 38

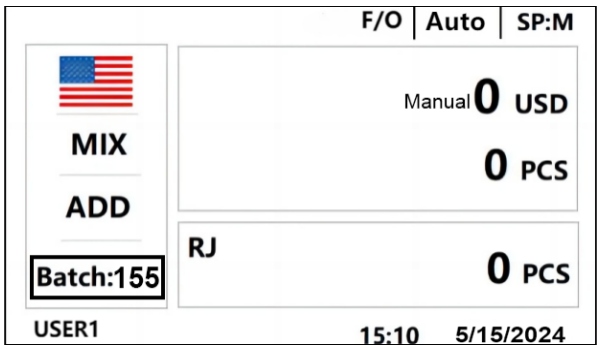



Fig. 39

c. At this time, the default preset number will become "155/25/50/100/". If you need to modify other default preset numbers, or restore the original preset number, refer to the above steps to set.

## 2.1.9.2 Preset Amount Settings

1) Touch the preset number area of the main interface to enter the custom preset number interface. As shown in Fig. 40 and Fig. 41.

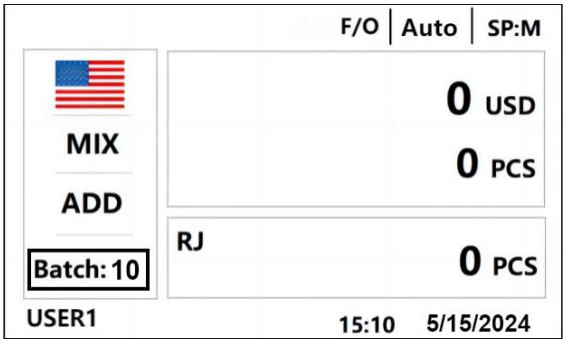



Fig. 40

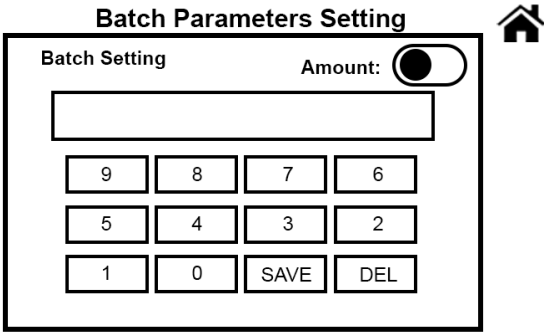



Fig. 41

2) Click the button behind "Amount" on the touch screen, change from  to , indicating that the Amount preset function is turned on, see Fig. 42, the Amount can be preset in the range of "1 ~ 999999999", enter the preset Amount through the number keyboard below, example; As shown in Fig. 43, the preset amount is 500.

Then press the "SAVE" button to confirm the SAVE, and the machine will automatically return to the main interface.

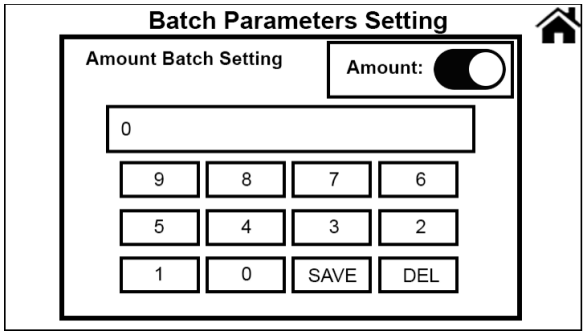



Fig. 42

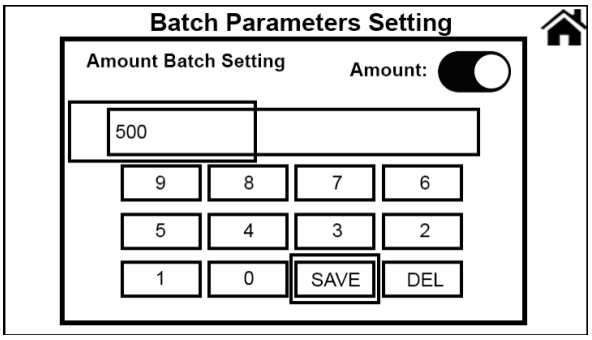



Fig. 43

3) As shown in Fig. 44, the "Amount: 500" logo is displayed in the lower left corner of the main interface.

Note: Quantity and amount presets can only preset one of them at one time, and the default quantity preset of the machine.

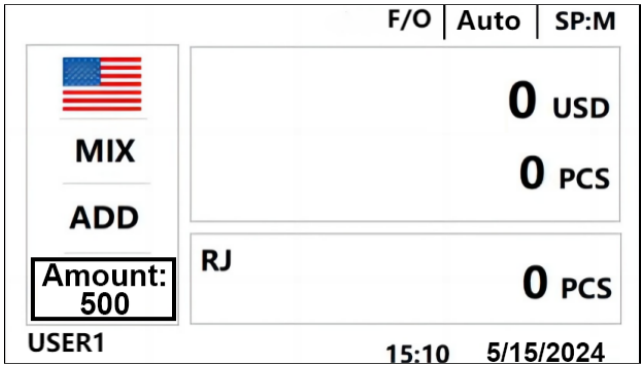



Fig. 44

## 2.1.10 Accumulation Mode Settings

In any counting mode, you can turn on the machine's accumulation function by pressing the "" button on the right side or touching the "ADD" position on the screen. At the same time, the "ADD" letter logo on the left side of the main interface will change from gray to black. Fig. 45 shows the closed state of accumulation mode. Fig. 46 shows the accumulation mode on state.

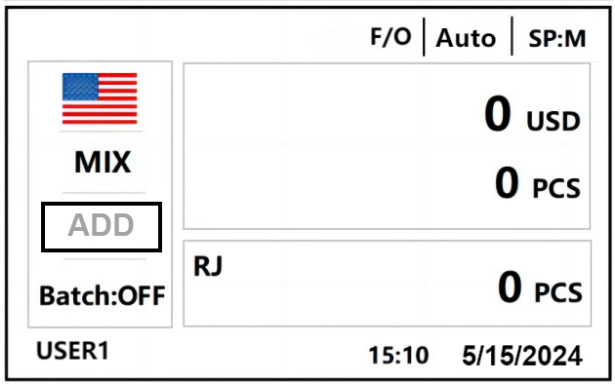



Fig. 45

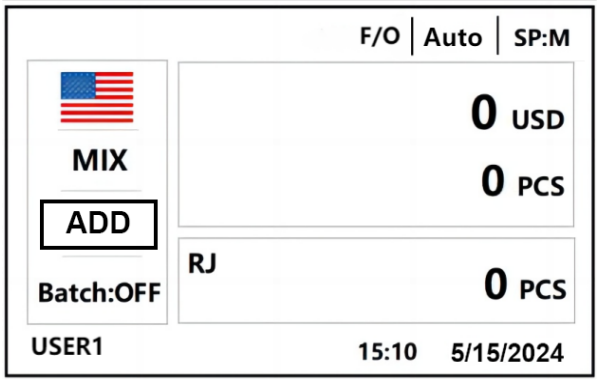



Fig. 46

1) Accumulation function is closed: Put a banknote into the machine for counting, and the machine will display the number and amount of banknotes counted this time after counting. After taking out all the banknotes in the banknote stacker, put them back into the banknotes for counting. After counting, the machine will only display the banknote information counted this time, but not the banknote information counted before.

2) Accumulation function is turned on: Put a banknote into the machine for the first counting, and the machine will display the number and amount of banknotes counted this time after the counting is completed. After taking out all the banknotes in the banknote stacker, put them back into the banknotes for the second counting. When the banknotes are not taken out from the banknote stacker after counting, the machine will display the number and amount of banknotes counted for the second time. When the

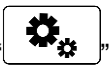
banknotes are taken out of the bucket, the machine will accumulate the number and amount of the banknotes counted for the second time and the first time. At this time, press CLEAR button to clear the first counting information, and then press CLEAR button to clear all counting information.

3) During the counting process, if there are faults or abnormalities such as banknotes, the counting results may be inaccurate, and the machine will automatically delete the counted banknote information and prompt to re-count.

4) When switching currencies in automatic identification mode, the accumulation function will fail.

# 2.1.11 User Settings

## 2.1.11.1 Counterfeit Detection Level Setting

1) Press the “” key on the left to enter the “User Menu” interface, as shown in Fig. 47. Then touch the “Preference Setting” and enter the interface, as shown in Fig. 48.

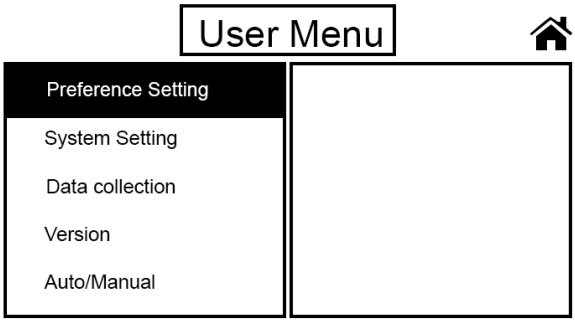



Fig. 47

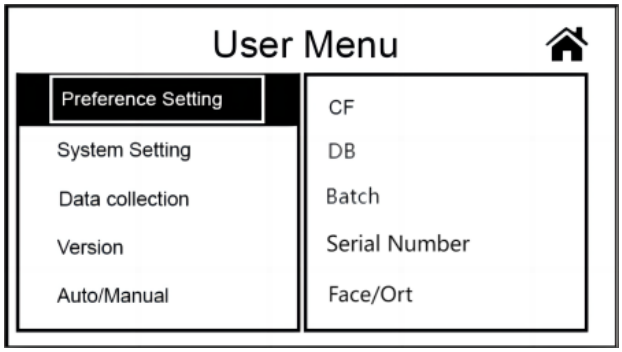



Fig. 48

2) As shown in Fig. 49, touch the first “CF” button on the display to enter the interface of counterfeit detection level setting. You need to input the password 0508 before entering the interface, as shown in Fig. 50.

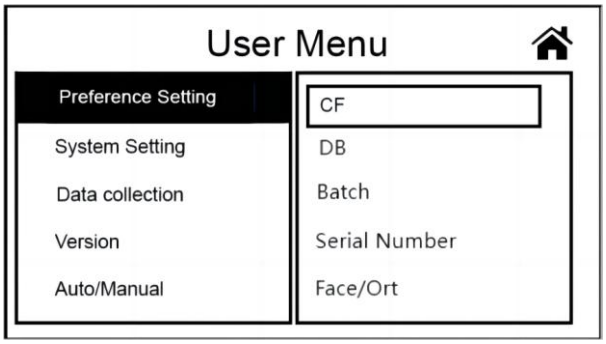



Fig. 49

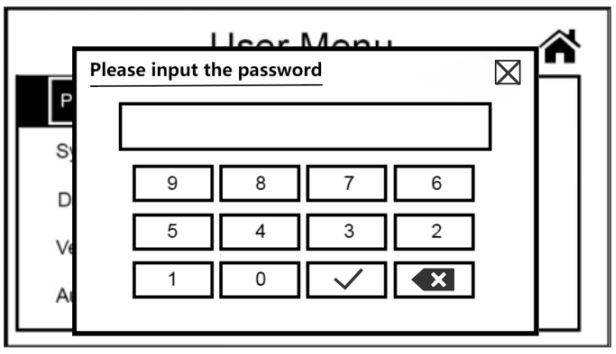



Fig. 50

3) Customers can carry out the corresponding counterfeit detection level settings according to the actual demand for counting as shown in Fig. 51.

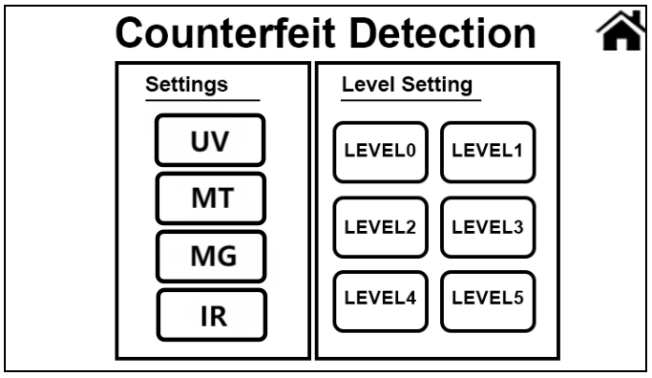



Fig. 51

4) If the customers wishes to change the MT counterfeit detection level, please do as following:

a. As in Fig. 52, touch the “MT” option on the left side of the screen, and the default level of the machine is “LEVEL3”.

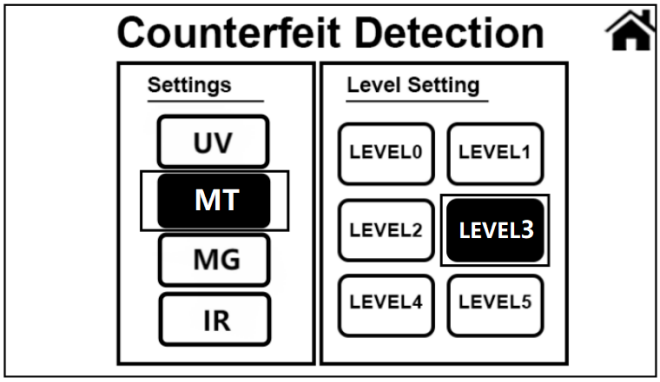



Fig. 52

b. Example: We want to improve the counterfeit detection level of “MT”. We choose “Level 4”, and each counterfeit detection level has 6 gears, ranging from 0 to 5. 0 represents the ability to detect counterfeit off, 1 represents the weakest ability to detect counterfeit. A low detection level enhances the smooth counting of genuine banknotes but at the same time reduces the ability to catch counterfeit notes, while a high detection level enhances the ability to catch counterfeit notes but at the same time may result in the error reports. The customer can change the gear value according to the actual demand, as shown in Fig. 53. After selection, the machine can automatically save the setting. Touch the “ ” key on the upper right corner of the screen to return to the main interface or click the “CLEAR” key to return to the previous interface.

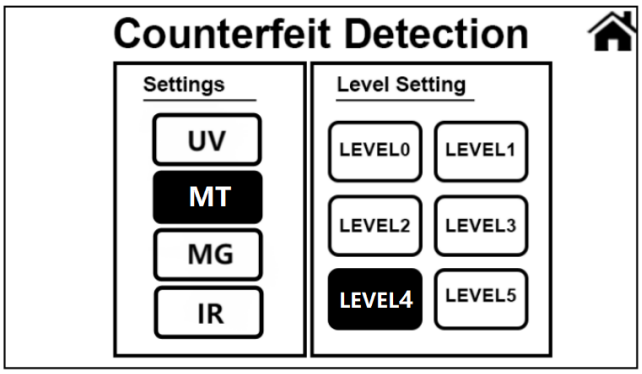
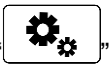



Fig. 53

## 2.1.11.2 DB Counterfeit Level Setting

1) Press the “” key on the left to enter the “User Menu” interface, as shown in Fig. 54. Then touch the “Preference Setting” and enter the interface, as shown in Fig. 55.

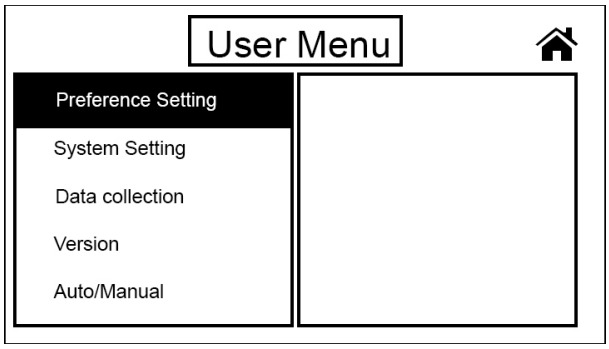



Fig. 54

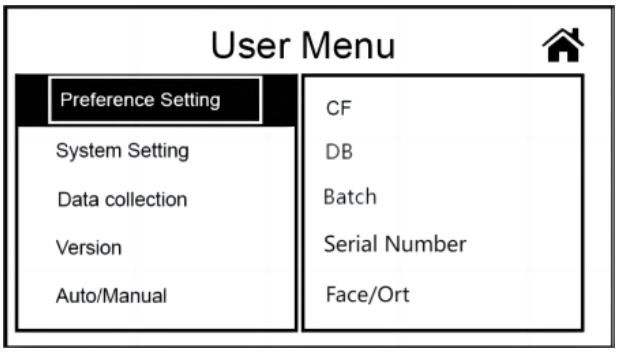



Fig. 55

2)As shown in Fig. 56, touch the second “DB” option to enter the interface of DB counterfeit detection level setting. Input the password 0508 before entering the interface, as shown in Fig. 57.

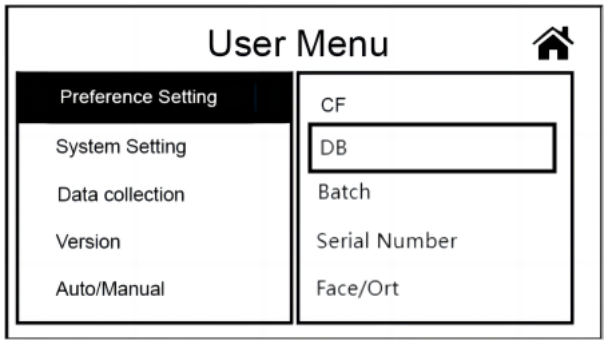



Fig. 56

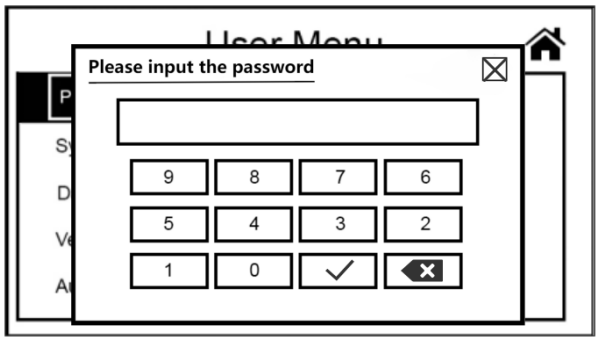



Fig. 57

3）The customer can set DB counterfeit detection level in the interface as shown in Fig. 58. There are 6 gears for DB counterfeit detection level, ranging from 0 to 5. 0 represents the ability to detect counterfeit off, 1 represents the weakest ability to detect counterfeit, and 5 represents the strongest ability to detect

counterfeit. A low detection level enhances the smooth counting of genuine banknotes but at the same time reduces the ability to catch double notes, while a high detection level enhances the ability to catch double notes but at the same time may result in the DB error reports. Therefore, when the rate of DB errors is high, you can lower the DB detection level, and when double notes cannot be caught, you can increase the DB detection level. Customers can change the detection level according to their actual needs. After selection, the machine will save it automatically. Touch the "" key on the upper right corner of the screen to return to the main interface or click the "CLEAR" key to return to the previous interface.

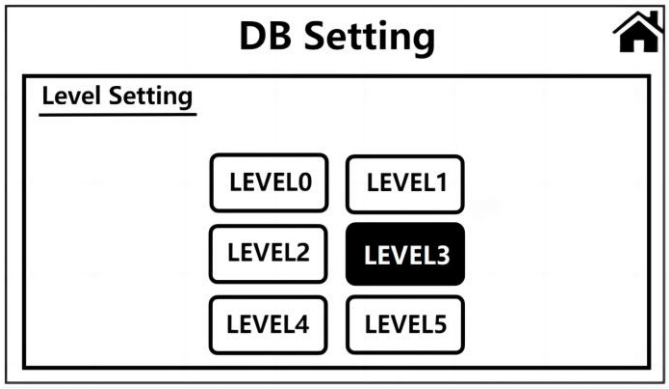



Fig. 58

## 2.1.11.3 Serial Number switch function setting

1) Press the "" key on the left to enter the "User Menu" interface, as shown in Fig. 59. Then touch the "Preference Setting" and enter the interface, as shown in Fig. 60.

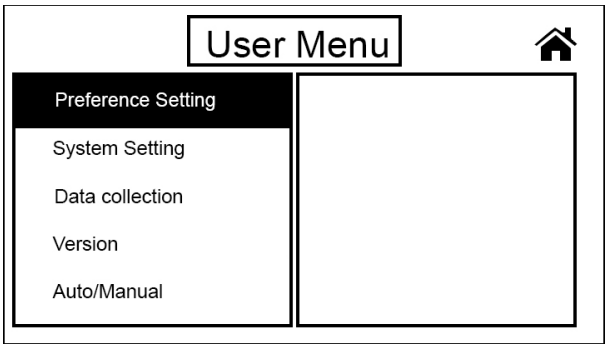



Fig. 59

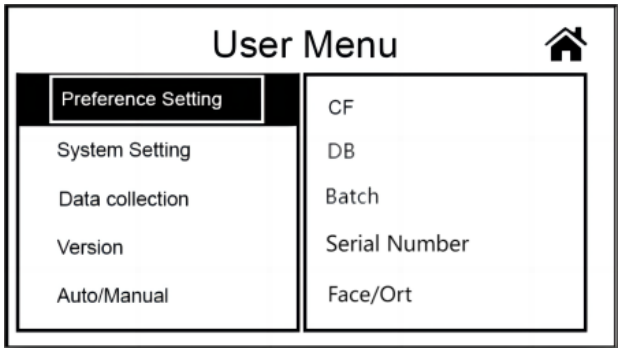



Fig. 60

2)As shown in Fig. 61, touch the forth option "Serial Number" to enter the serial number switch setting interface, as shown in Fig. 62. Customers can set serial number reading and serial number comparison in this interface. The "SN.Reading"ON on the left side of the interface means to turn on the serial number

reading function, and OFF means to turn off the serial number reading function. This function is only available in MIX mode and SDC mode. Under SN.Reading mode, the machine will read the serial numbers of the recognized currency (see 2.1.8). The “SN.Comparison”ON on the right side of the interface means to turn on the serial number comparison function, OFF means to turn off the serial number comparison function. This function is only available for the currencies that developed the serial number comparison function where the “SN.Comparison” is on. Touch the “ ” key on the upper right corner of the screen to return to the main interface or click the “CLEAR” key to return to the previous interface.

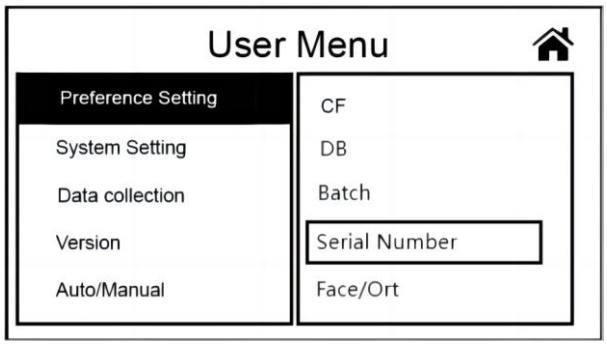



Fig. 61

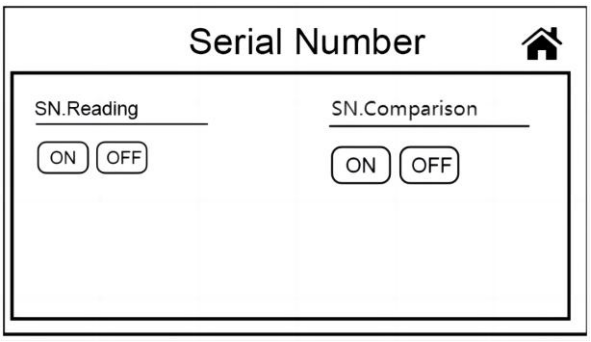



Fig. 62

## 2.1.11.4 Face/Orientation Function Settings

1) Press the “ ” key on the left to enter the “User Menu” interface, as shown in Fig. 63. Then touch the “Preference Setting” and enter the interface, as shown in Fig. 64.

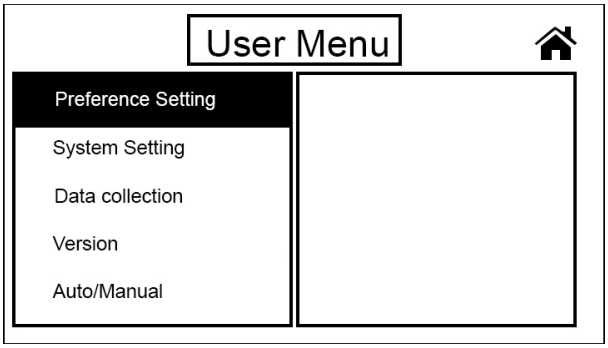



Fig. 63

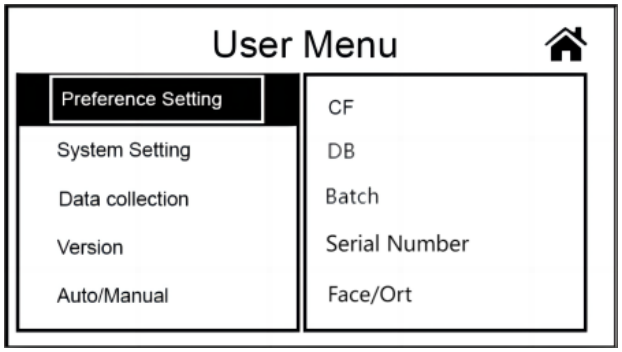



Fig. 64

2) As in Fig. 65, touch the fifth option “Face/Ort” to enter the interface of Face/Ort function setting, as in Fig. 66, in which the customer can set the switch of Face and Ort function.

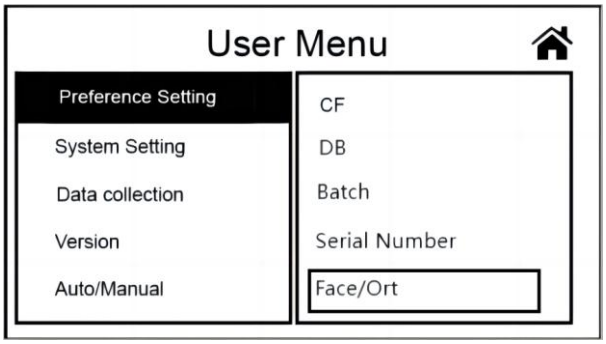



Fig. 65

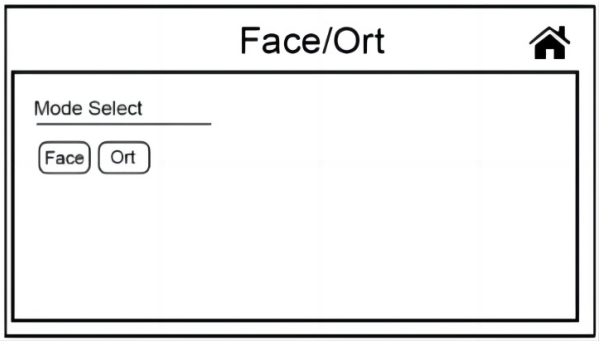



Fig. 66

3) When the background color of both buttons is gray, it means the Face and Ort functions are off. Touch the “ ” button in the upper right corner of the screen to return to the main interface. As shown in Fig. 67, the Face/Ort information is not displayed in the upper right area of the main interface.

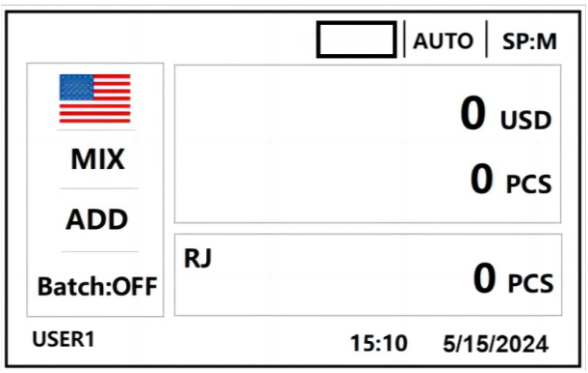



Fig. 67

4) When clicking on the “Face” button, the background color of the button changes to blue, as in Fig. 68. Touch the “ ” button in the upper right corner of the screen to return to the main interface. The upper right corner of the main interface displays the “FACE” message, as shown in Fig. 69. Count banknotes at this point, the machine will take the face of the first banknote as the standard, and banknotes with different faces will be kicked into the reject pocket.

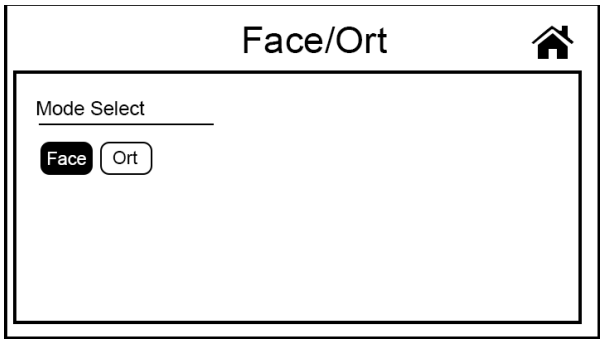



Fig. 68

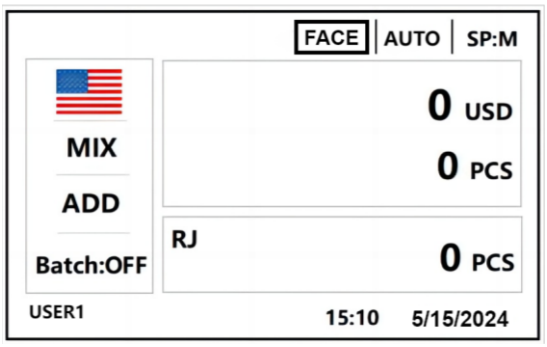



Fig. 69

5) When clicking on the “Ort” button, the background color of the button changes to blue, as in Fig. 70. Touch the “ ” button in the upper right corner of the screen to return to the main interface. The upper right corner of the main interface displays the “ORT” message, as shown in Fig. 71. Count banknotes at this point, the machine will take the orientation of the first banknote as the standard, and banknotes with different orientations will be kicked into the reject pocket.

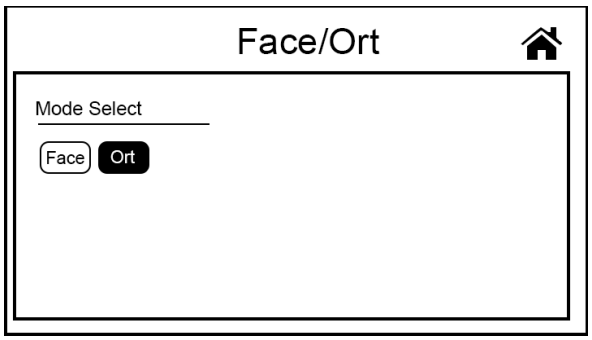



Fig. 70

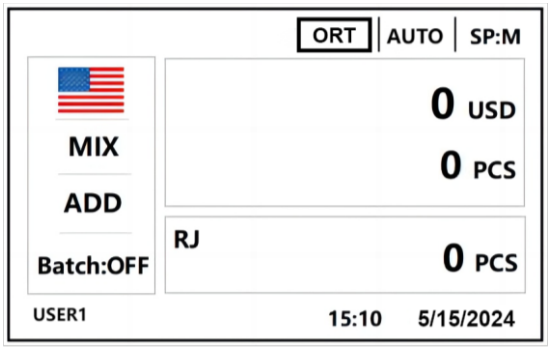



Fig. 71

6) When both “Face” and “Ort” buttons are selected, the background color of both buttons changes to blue, as shown in Fig. 72. Touch the “ ” button in the upper right corner of the screen to return to the main interface. The upper right corner of the main interface displays the “F/O” message, as shown in Fig. 73. Count banknotes at this point, the machine will take the face and orientation of the first banknote as the standard, and banknotes with different faces and orientations will be kicked into the reject pocket.

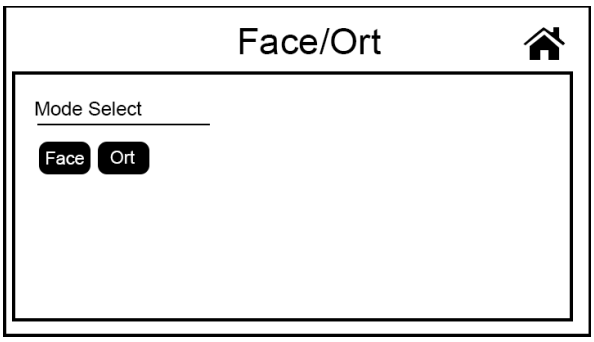



Fig. 72

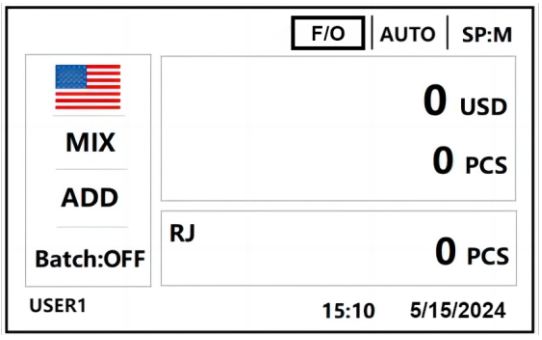



Fig. 73

Tip: It is recommended that customers use this function to organize Face first before organizing Ort.

## 2.1.11.5 Dual-user Operation Mode Switching

1) Press the “ ” key on the left to enter the “User Menu” interface, as shown in Fig. 74. Then touch the “Preference Setting” and enter the interface, as shown in Fig. 75.

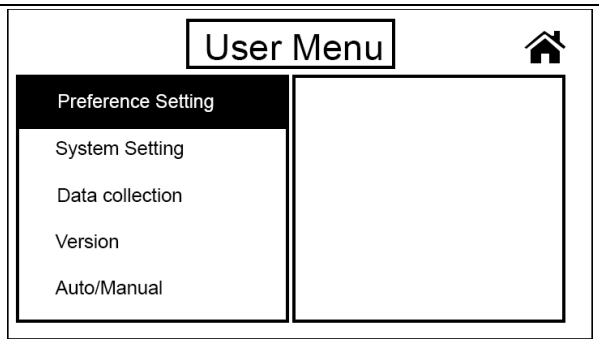



Fig. 74

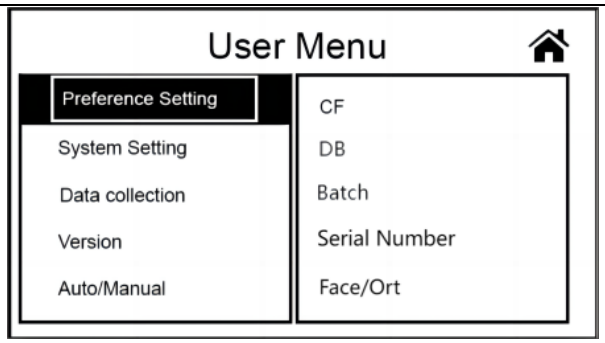



Fig. 75

2) As in Fig. 76, slide up the right interface, touch the sixth option “User” to enter the dual-user mode switching settings interface, as in Fig. 77, the customer can switch the user mode in this interface.

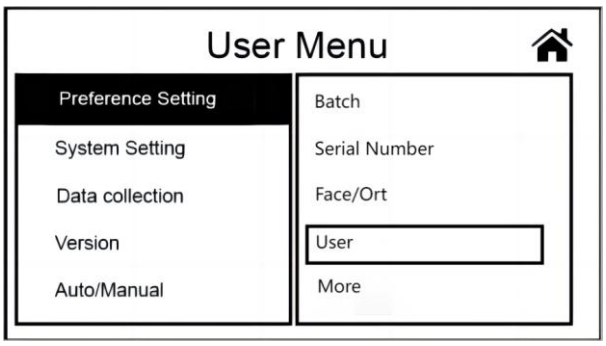



Fig. 76

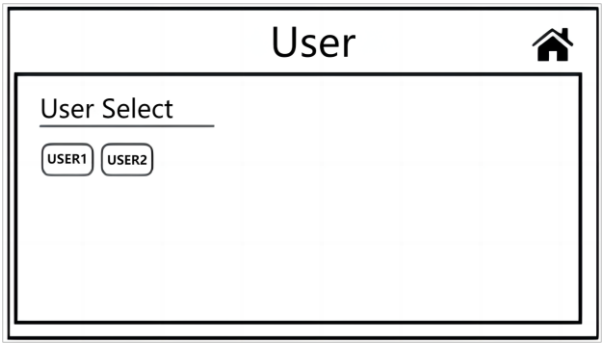



Fig. 77

3）As in Fig. 78, when USER1 is selected, it means that it is now in User 1 mode. Touch the “ ” button in the upper right corner of the screen to return to the main interface. As in Fig. 79, “USER1” is displayed in the lower left corner of the main interface.

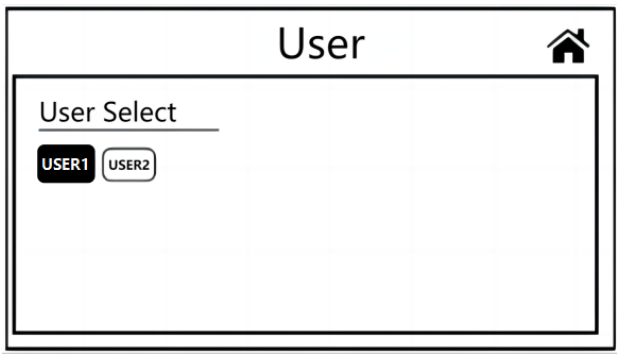



Fig. 78

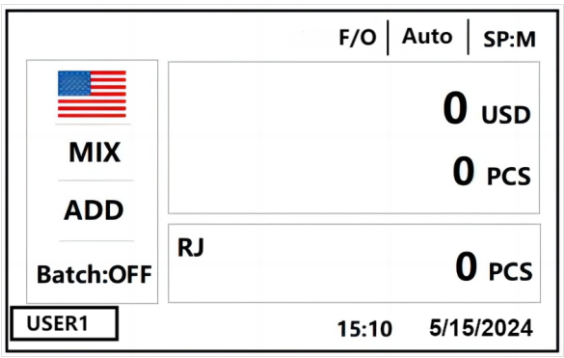



Fig. 79

4) As in Fig. 80, when USER2 is selected, it means that you are now in User 2 mode. Touch the “ ” button in the upper right corner of the screen to return to the main interface. As in Fig. 81, “USER2” is displayed in the lower left corner of the main interface.

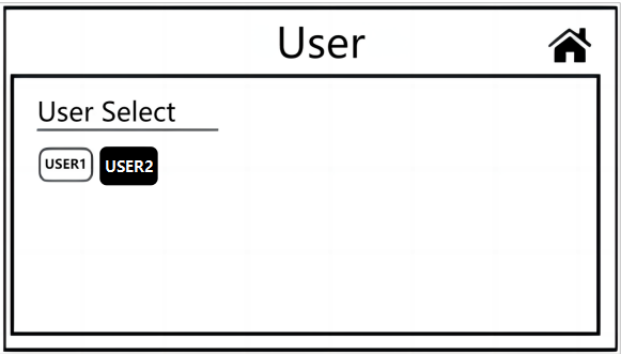



Fig. 80

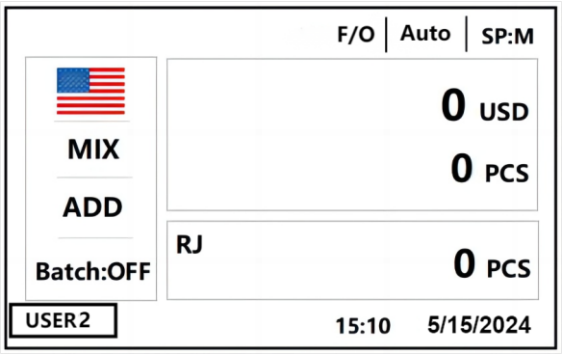
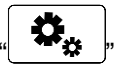



Fig. 81

## 2.1.11.6 Version Sorting Function Settings

1） Press the “” key on the left to enter the “User Menu” interface, as shown in Fig. 82. Then touch the “Preference Setting” and enter the interface, as shown in Fig. 83.

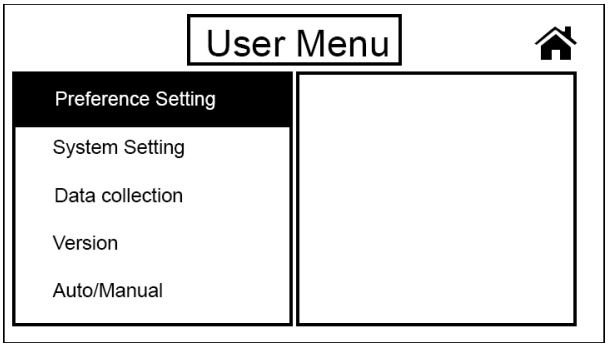



Fig. 82

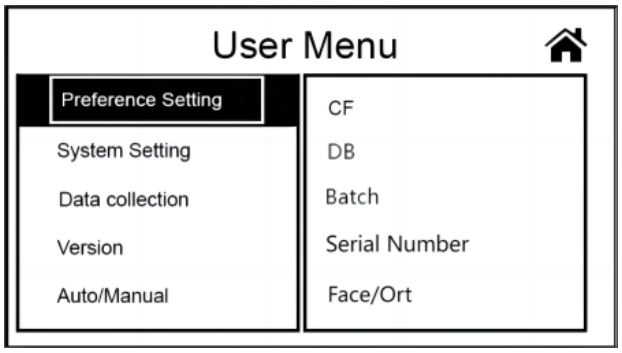



Fig. 83

2）Touch the seventh option “More” to enter the interface, as in Fig. 84. Customers can set the switch of version sorting function in this interface, Enable means version sorting function is on, Disable means version sorting function is off, this function is only available in SDC mode, in version sorting mode, the machine will kick the different versions of banknotes into the reject pocket, and the same version will be put into the stacker. This function is off by default, after selecting it, the shadow will change from gray to blue, as in Fig. 85, the machine can save it automatically. Touch the “” key on the upper right corner of the screen to return to the main interface or click the “CLEAR” key to return to the previous interface.

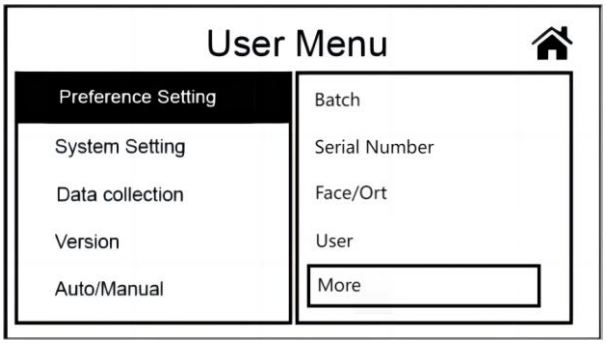



Fig. 84

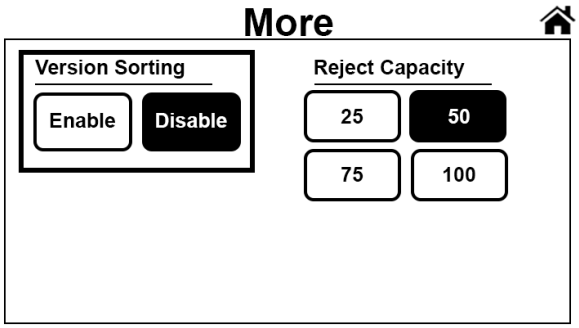



Fig. 85

## 2.1.11.7 Banknote rejection capacity setting

1） Press the “” key on the left to enter the “User Menu” interface, as shown in Fig. 86. Then touch the “Preference Setting” and enter the interface, as shown in Fig. 87.

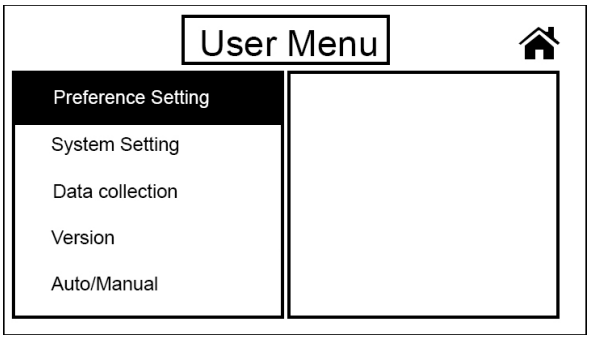



Fig. 86

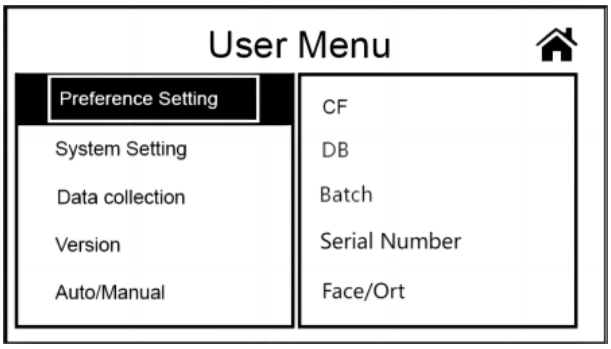



Fig. 87

2）As in Fig. 88, touch the seventh option “More” to enter the interface. Customers can choose the capacity of reject hopper in this interface. The default is 50, as shown in Fig. 89 below. There are four values of the capacity: 25/50/70/100. Customers can choose according to their own demand, after selection, the background color from gray to blue, the machine will automatically save it. Touch the “” key on the upper right corner of the screen to return to the main interface or click the “CLEAR” key to return to the previous interface. Note: The capacity of 100 is based on the flatness of the banknotes, if the counted banknotes are too wrinkled or soft, please reduce the value of the reject capacity.

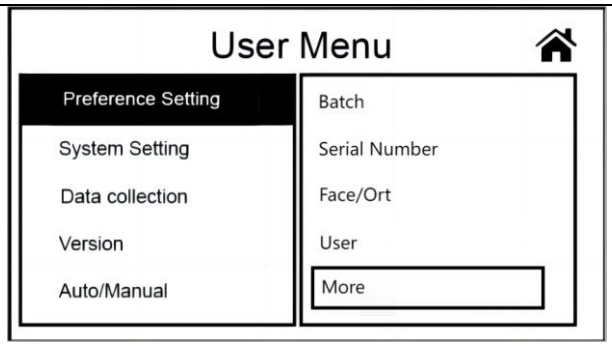



Fig. 88

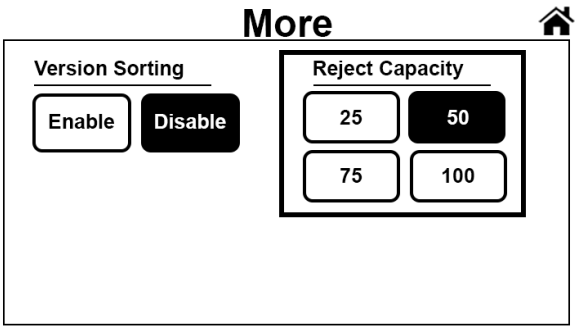
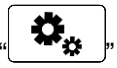



Fig. 89

# 2.1.12 System Settings

## 2.1.12.1 Time and Date Settings

1） Press the “” key on the left to enter the “User Menu” interface, as shown in Fig. 90. Then touch the “Preference Setting” and enter the interface, as shown in Fig. 91.

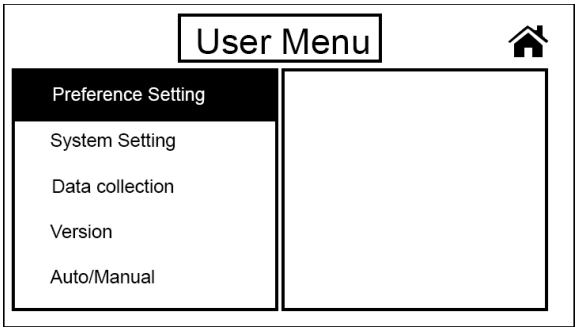



Fig. 90

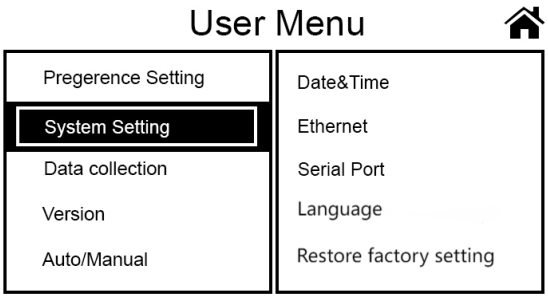



Fig. 91

2） Touch the first option “Date & Time” to enter the interface, as shown in Fig. 92 below. Touch the value of time and date, the interface will pop up the numeric keyboard, as shown in Fig. 93, at this time the customer can modify the time and date according to their own needs. After modification, the machine will save automatically. Touch the “” key on the upper right corner of the screen to return to the main interface or click the “CLEAR” key to return to the previous interface.

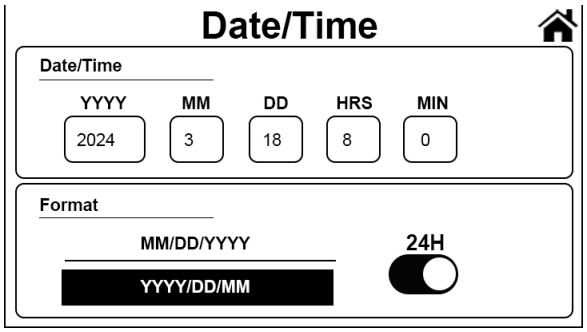



Fig. 92

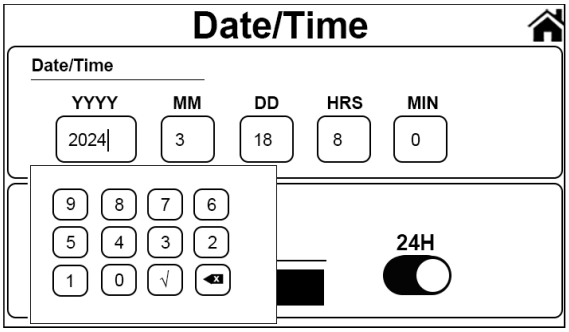



Fig. 93

## 2.1.12.2 External serial port settings

1) Press the “” key on the left to enter the “User Menu” interface, as shown in Fig. 94. Then touch the “Preference Setting” and enter the interface, as shown in Fig. 95.

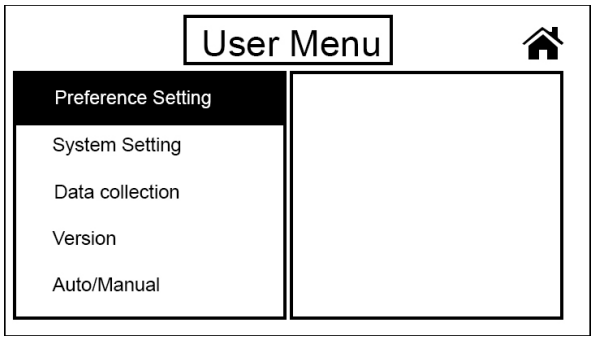



Fig. 94

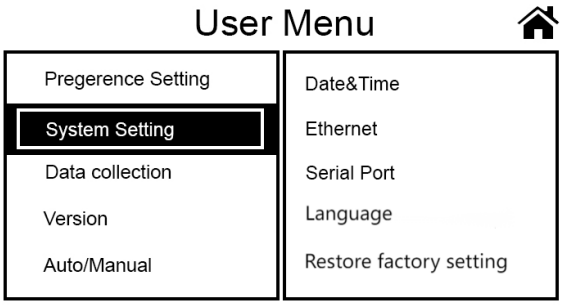



Fig. 95

2) As in Fig. 96, touch “Serial Port” to enter the external serial port setting interface. On the left side of the interface, you can select printer and PC, the background color of the corresponding serial port will change to blue. As in Fig. 97, the interface is for choosing printer. After selecting, only the baud rate of the printer can be switched, and the background color of the corresponding baud rate value will change to blue, and the machine can save the settings automatically. Touch the “” key on the upper right corner of the screen to return to the main interface or click the “CLEAR” key to return to the previous interface.

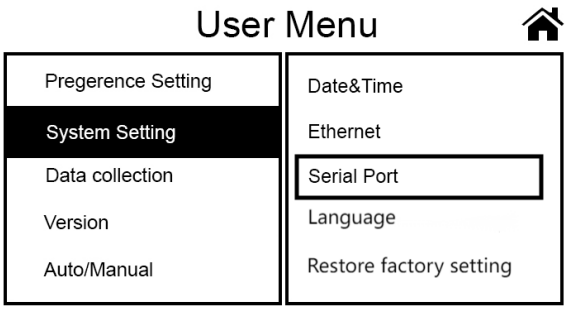



Fig. 96

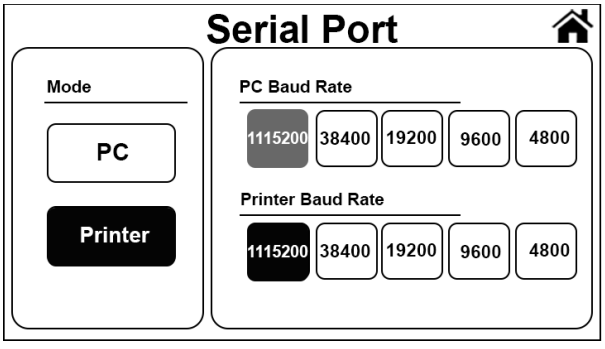



Fig. 97

3) Connect the printer to the power supply, connect one end of the data line in the printer box to the printer, and connect the other end to the RS232 interface of the machine.

4) After the external printer is connected and ready to print, press the “” key to print directly from the main interface or the counting list interface, and the printer will print the counting details. The format of the printout is shown in Fig. 98 below.

CUSTOMER ID:

---

USD

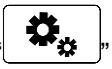
| Deno. | Count | Value |
|---|---|---|
| 100 | 15 | 1500 |
| 50 | 7 | 350 |
| 20 | 16 | 320 |
| 10 | 12 | 120 |
| 5 | 31 | 155 |
| 2 | 1 | 2 |
| 1 | 18 | 18 |
| Total: | 100 | 2465 |

---

2024/5/15 04:26:00 PM

Fig. 98

## 2.1.12.3 Language Setting

1) Press the “” key on the left to enter the “User Menu” interface, as shown in Fig. 99. Then touch the “Preference Setting” and enter the interface, as shown in Fig. 100.

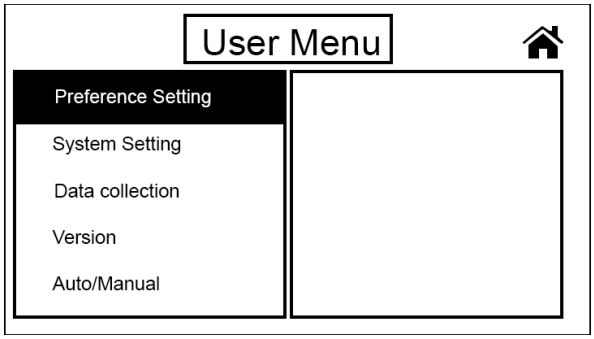



Fig. 99

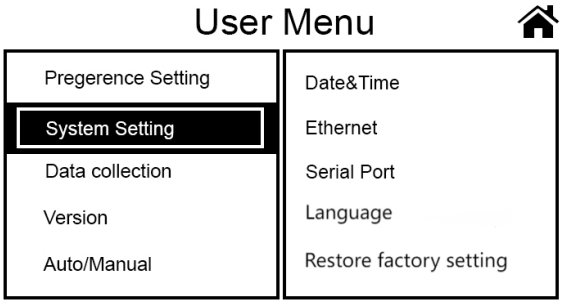



Fig. 100

2) As in Fig. 101, touch “Language” to enter the language setting interface. The language displayed on the interface can be selected according to the user's needs, after selecting the corresponding language, the background color will change to blue, as shown in Fig. 102, the machine can automatically save the settings. Touch the “” key on the upper right corner of the screen or click the “CLEAR” key when it will prompt the need to reboot to configure the selected language.

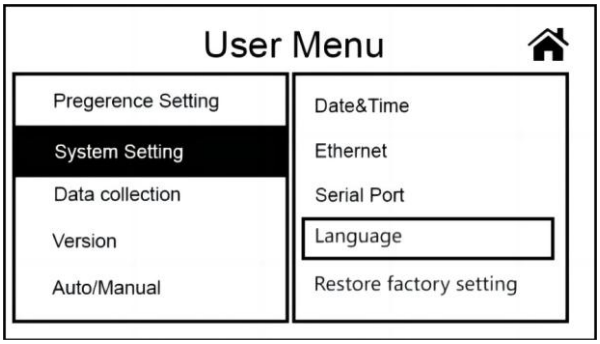



Fig. 101

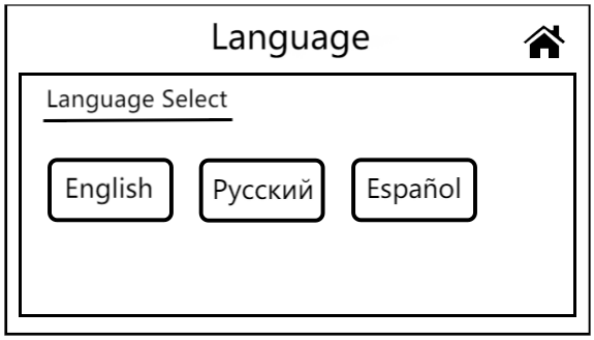
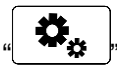



Fig. 102

## 2.1.12.4 Restore Factory Setting

1) Press the “” key on the left to enter the “User Menu” interface, as shown in Fig. 103. Then touch the “Preference Setting” and enter the interface, as shown in Fig. 104.

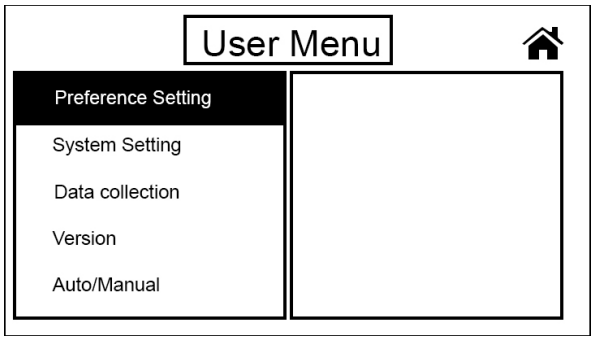



Fig. 103

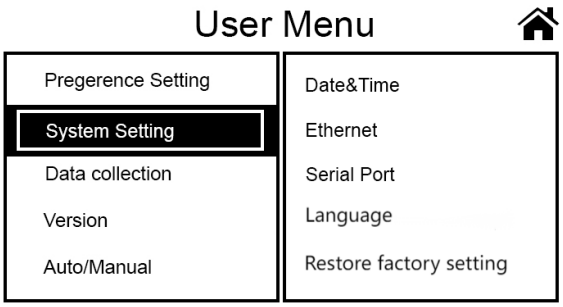



Fig. 104

2) As in Fig. 105, touch the “Restore factory setting” option to enter the factory setting interface, as in Fig. 106.

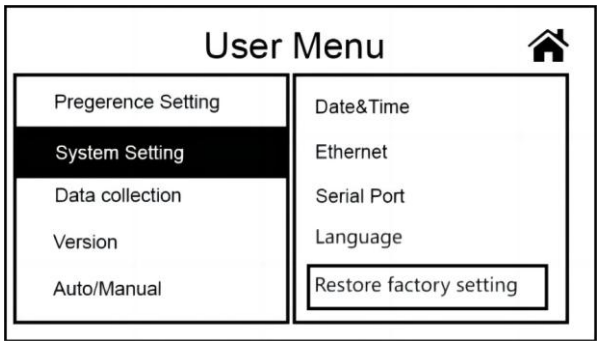



Fig. 105

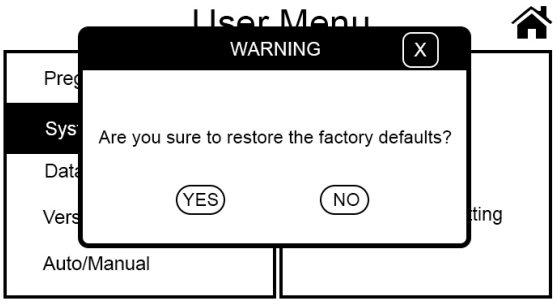



Fig. 106

3) Click the “YES” button to restore the factory settings, all other settings except the initial time and date settings will be restored to the initial state. After restoring the factory settings, please reboot the machine, as shown in Fig. 107 below:

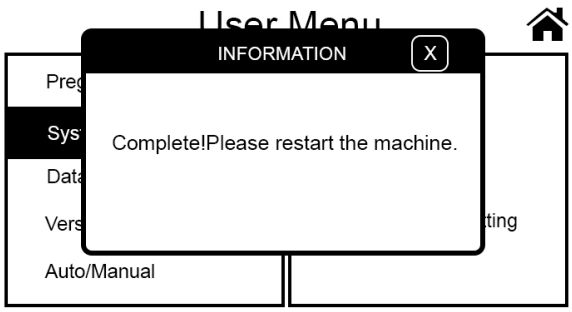



Fig. 107

# 2.1.13 Data Collection

## 2.1.13.1 Full Data Acquisition Setting

1) Insert the U disk before collecting, as shown in Fig. 108

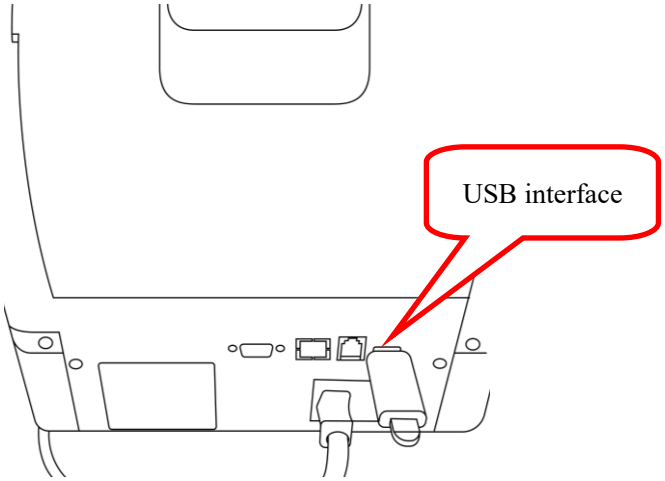



Fig. 108

2) Press the "" button on the left to enter the "User Menu" interface, as shown in Fig. 109. Touch "Data Collection" again, and then enter the "Data Collection" interface, as shown in Fig. 110.

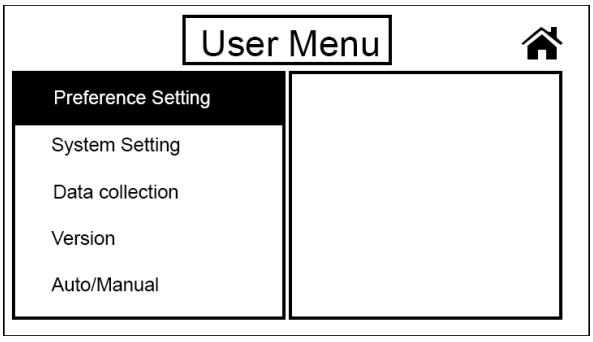



Fig. 109

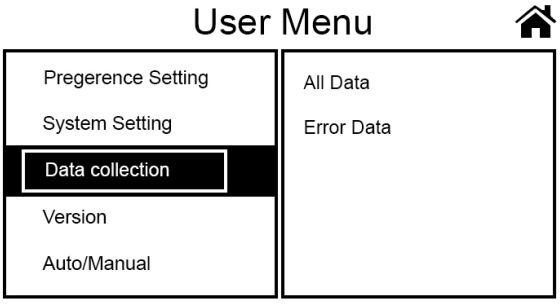



Fig.110

3) Touch the **"ALL Data"** option to enter the full data acquisition interface, as shown in Fig. 111. Click the "Collection by U-Disk" button to enter the collection interface, as shown in Fig. 112.

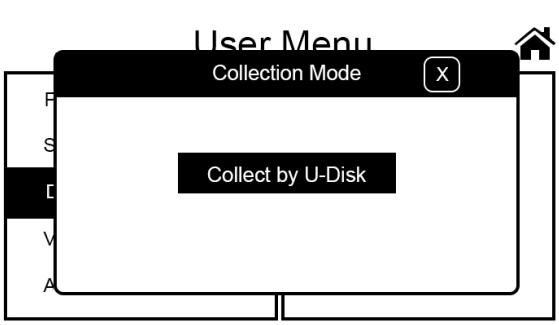



Fig. 111

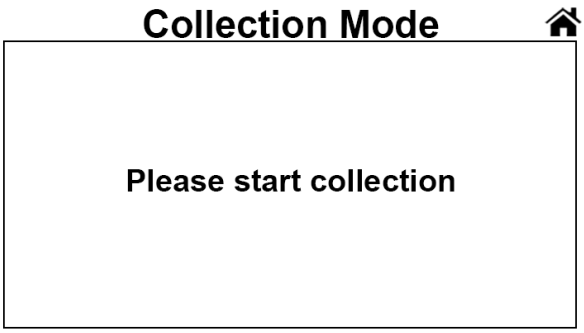



Fig. 112

4）After passing the currency under this interface, the machine will automatically store the collected image in the folder " collect_cash " under the root directory of the U disk.

## 2.1.13.2 Error images Acquisition Settings

1) Insert the U disk before collecting, as shown in Fig. 113

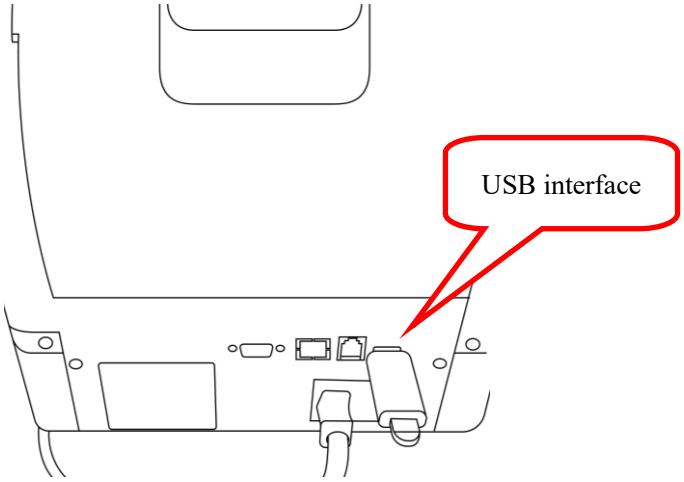



Fig. 113

2) Press the " " button on the left to enter the "User Menu" interface, as shown in Fig. 114. Touch "Data Collection" again, and then enter the "Data Collection" interface, as shown in Fig. 115.

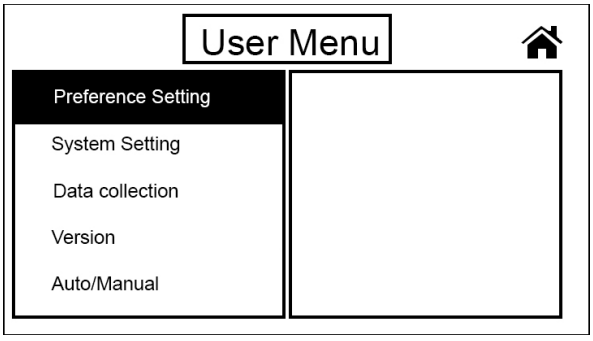



Fig. 114

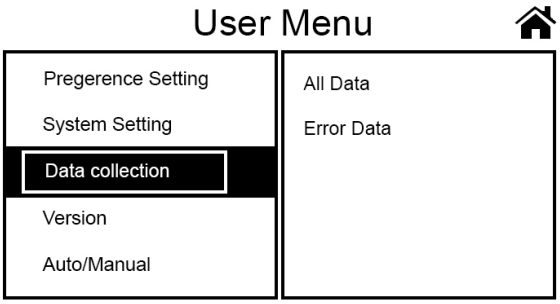



Fig. 115

3）Touch the **"**Error Data**"** option to enter the error image acquisition interface, as shown in Fig. 116. First click the switch above to turn on the wrong image acquisition mode, and then click the "Collection by U-Disk" button, as shown in Fig. 117, the machine will automatically jump back to the main interface.

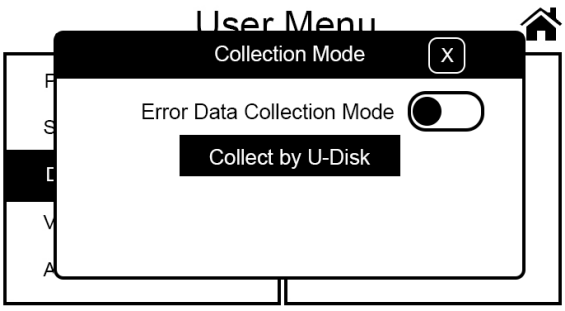



Fig. 116

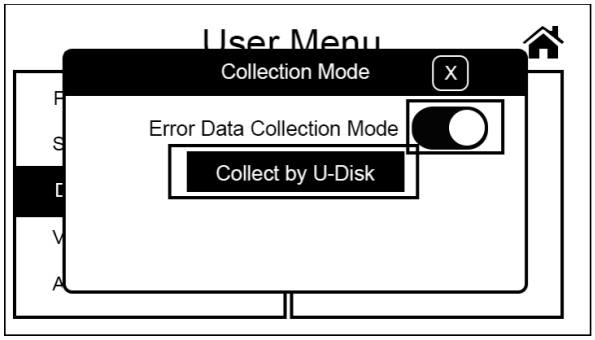



Fig. 117

4）When passing the currency on the main interface, the error images will be stored in the " abnormal_cash " folder under the root directory of the U disk.

5）Canceling the erroneous image acquisition requires turning off the switch in Fig. 117.

## 2.1.14 Software Version View

Press the left "" button to enter the "User Menu" interface, as shown in Fig. 118. Touch "Version" again, and then enter the "Version" interface, through which customers can view various software versions, as shown in Fig. 119.

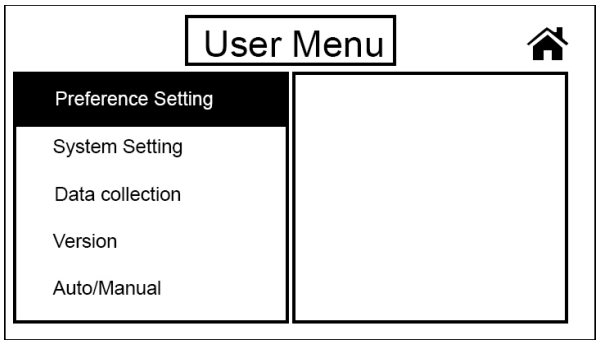



Fig. 118

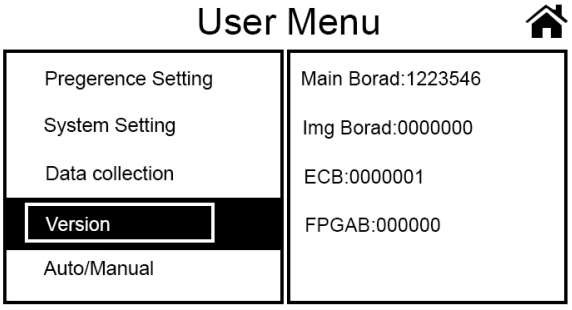



Fig. 119

# 3. Maintenance Instructions

## 3.1 Software Upgrade

### 3.1.1 U Disk Preparation

1) The software upgrade of this product adopts U disk upgrade mode.

2) Please connect the USB flash drive to the PC first.

3) Please decompress the application software in .rar or .zip format provided by our company to obtain the application software with the suffix "ZPK" format and the display software with the suffix "bin". Will upgrade the software "**********. ZPK" and "APP.bin" should be placed at the bottom of the root directory of the USB flash drive, please do not modify the suffix of the software, otherwise the machine will not recognize the USB flash drive and the upgrade will fail.

Special reminder: There can only be one file in the root directory of the U disk in the format of "ZPK" and "bin", otherwise the software upgrade will fail.

### 3.1.2 Application Upgrade

1) In the shutdown state, insert the U disk into the USB interface behind the machine, as shown in Fig. 120 below:

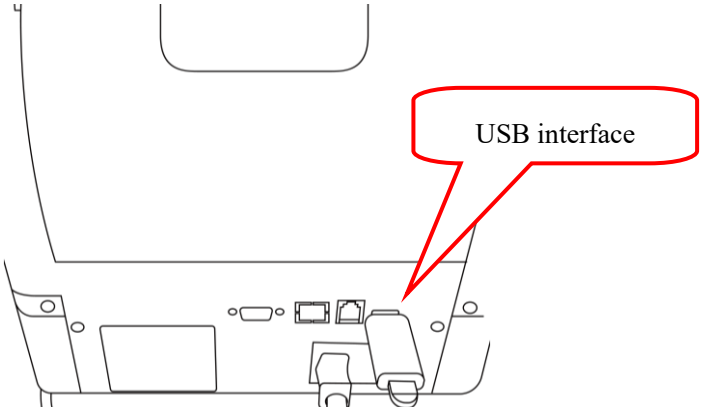



Fig. 120

2) Turn on the power supply of the machine, and the machine automatically reads the software in the U disk for upgrading. The interface shown in Fig. 121 appears for about 5 seconds. After that, it will jump to the interface, as shown in Fig. 122. This interface indicates that the machine is establishing a connection with the U disk. This interface takes about 1 minute to wait.




Fig. 121




Fig. 122

3）Then the machine will jump to the upgrade interface, as shown in Fig. 123 below. After the software upgrade is successful, the interface will prompt to restart the machine, as shown in Fig. 124 below. Please pull out the U disk first, and then restart the machine. After the machine self-inspection is completed, it will automatically enter the main interface, and the machine software upgrade is completed. This process takes about 2 minutes and 20 seconds.




Fig. 123




Fig. 124

## 3.1.3 UI Software Upgrade

1) In the shutdown state, press Fig. 125, open the front cover, and insert the U disk into the USB interface under the machine face frame, as shown in Fig. 126 below

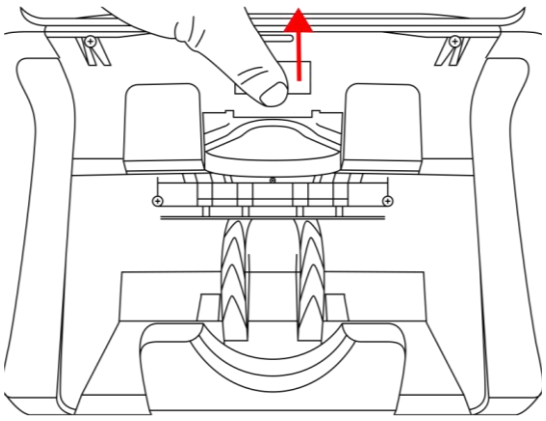


Fig. 125

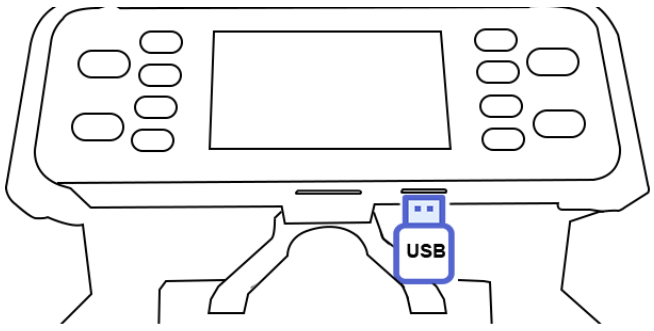



Fig. 126

2) Turn on the power supply of the machine, and the machine will automatically read the software in the U disk to upgrade. The upgrade interface appears as shown in Fig. 127. After the software upgrade is successful, the machine will be prompted to restart, as shown in Fig. 128 below. First pull out the U disk, close the upper and lower channels, and then restart the machine. After the machine self-inspection is completed, it will automatically enter the main interface, and the machine software upgrade is completed. This process takes about 2 minutes.

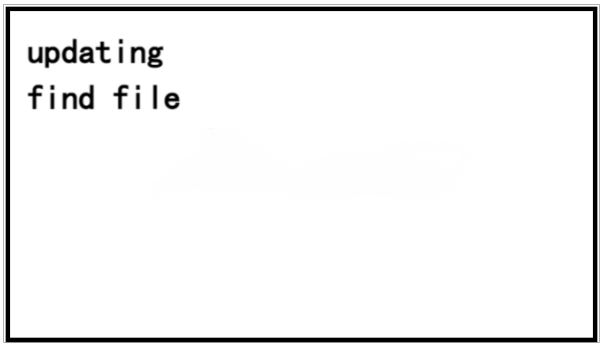



Fig. 127

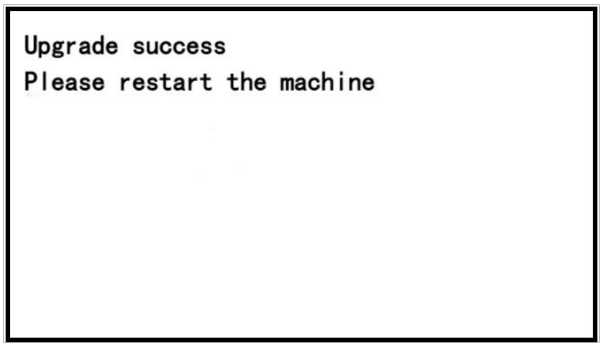



Fig. 128

# 3.2 Daily Cleaning Instructions

Any dust, dirt or other substance that adheres to the sensor will interfere with the normal operation of the sensor and lead to wrong countingresults. Therefore, clean the sensor daily with the included cleaning tool as needed.

Please turn off the power switch before cleaning to prevent electric shock or other injuries.

Please do not use chemicals such as benzene, diluents or water, which may cause the machine to fade or crack.

## 3.2.1 Clean hopper sensor

As shown in Fig. 129, clean the start sensor with a clean brush or cloth.

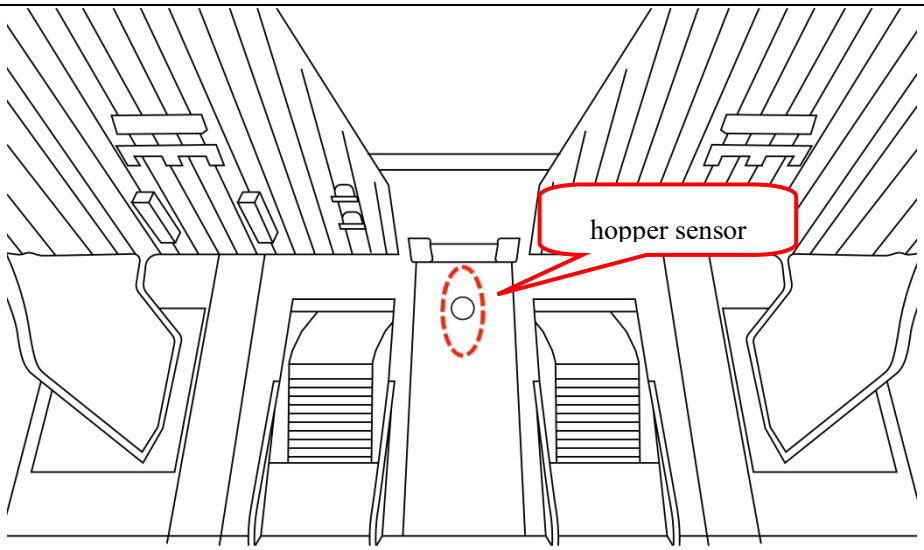



Fig. 129

### 3.2.2 Clean Banknote Feeding Block and Banknote Twisting Block

As shown by the arrows in Fig. 130 below, clean the banknote feeding block and banknote twisting block with a clean brush or cleaning cloth.

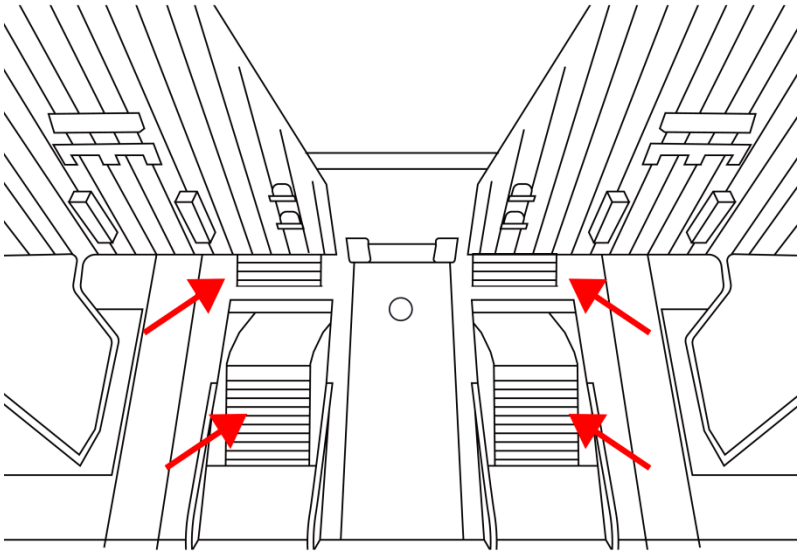


Fig. 130

### 3.2.3 Clean Banknote Stacker Sensor

As shown in Fig. 131 below, clean the banknote stacker sensor with a clean brush or cleaning cloth.

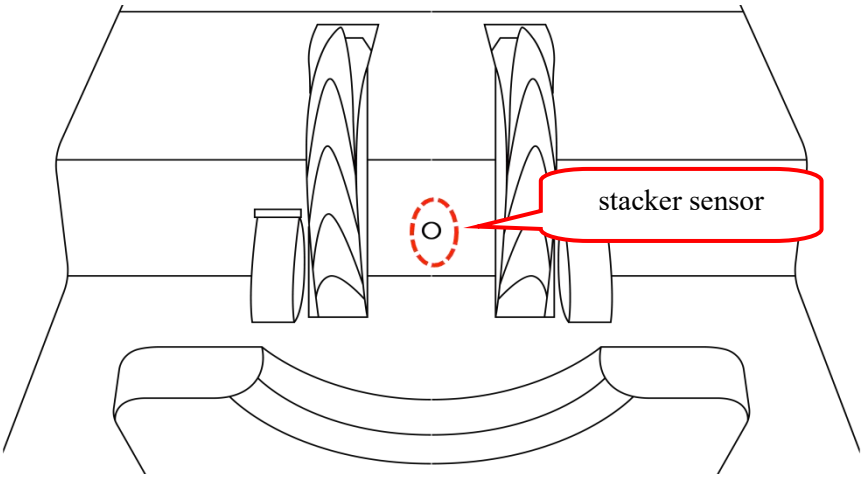



Fig. 131

### 3.2.4 Clean the Sensors Inside the Upper and Lower Partitions

1) Press upward and inward in the direction of the arrow in Fig. 132 to open the back cover.

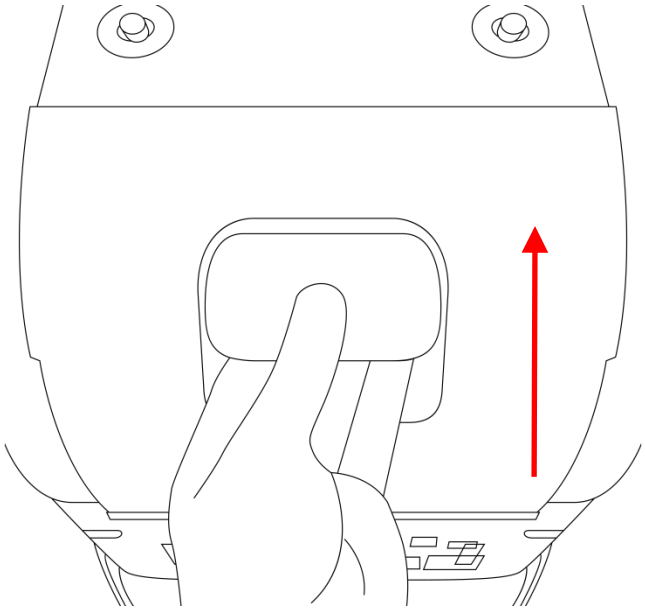


Fig. 132

2) As shown in Fig. 133, wipe the CIS sensor of Mark 1 in one direction with a dust-free cloth, and clean the brush stick of Mark 2 and the lower UV sensor of Mark 3 with a nylon brush.

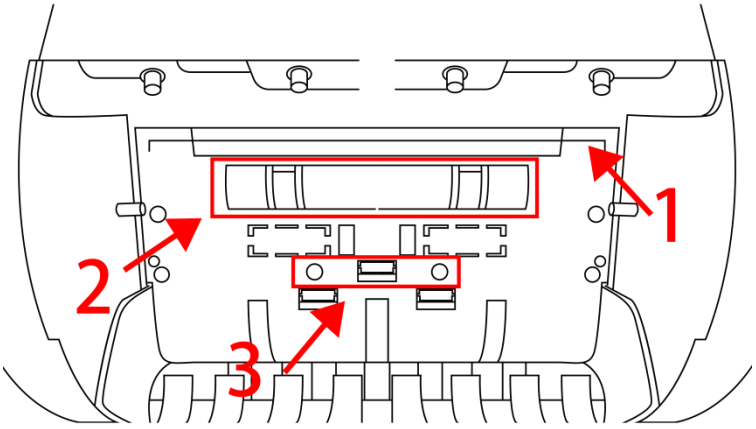



Fig. 133

3) As shown in Fig. 134, wipe the upper CIS sensor uni-directionally with a dust-free cloth, and then clean the upper UV, PS1, PS2, MG, and MT sensors with a clean brush.

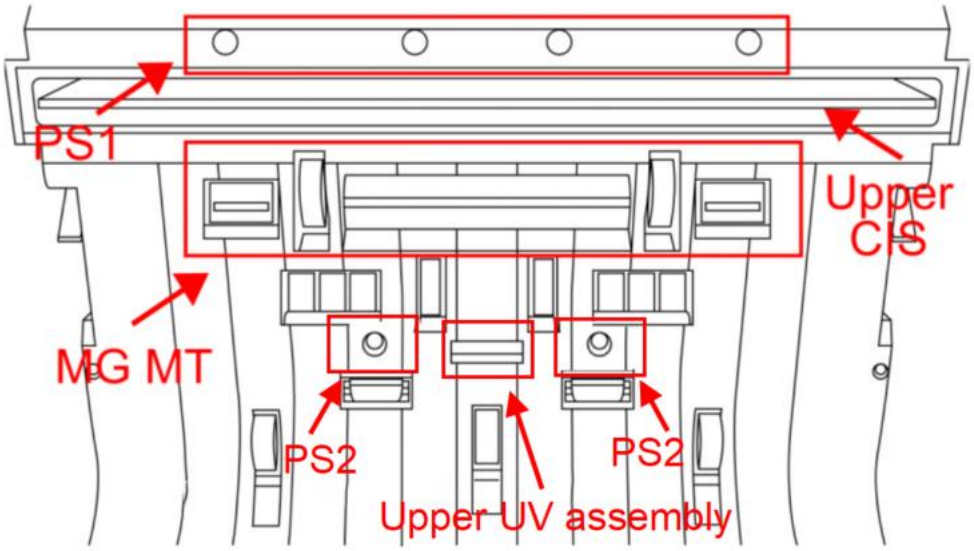



Fig. 134

## 3.2.5 Clean the Sensors Inside the Upper and Lower Channel Plates

1) Press upward in the direction of the arrow in Fig. 135 to open the upper and lower channel plates.

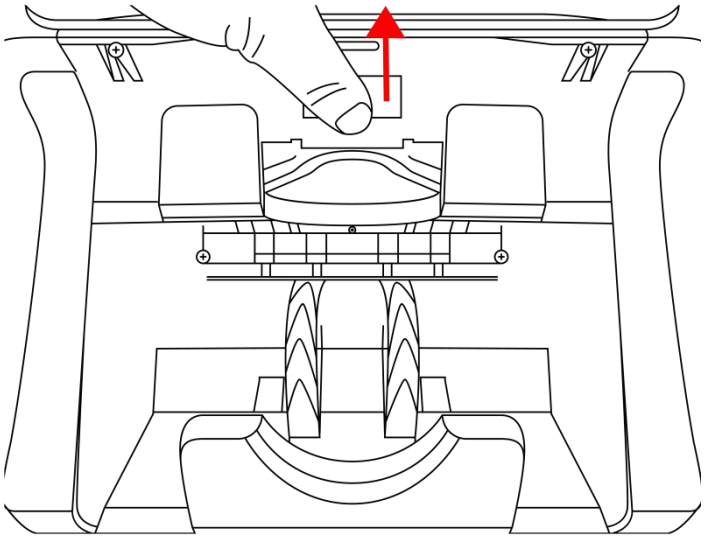


Fig. 135

2) Clean the sensor lights in the red box in Fig. 136 below with a clean brush.

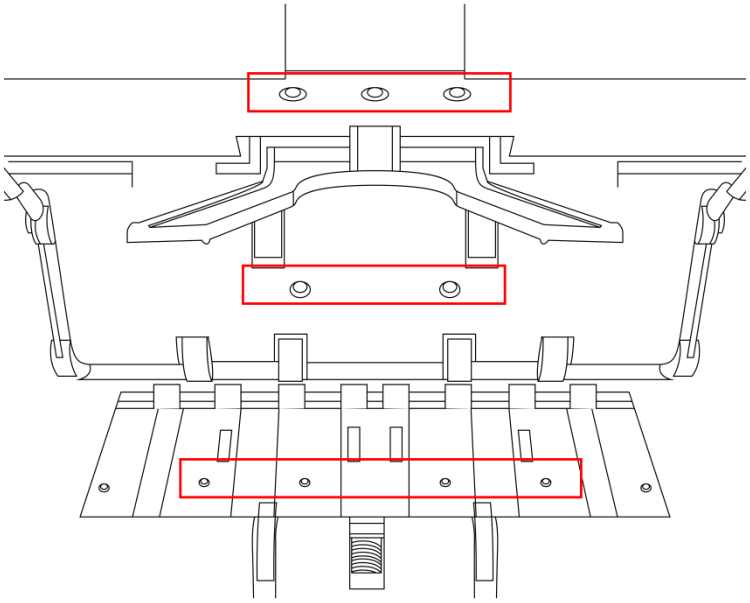


Fig. 136

# 3.3 Common Faults and Corresponding Descriptions

In the process of using the machine, the machine may appear abnormal state, resulting in abnormal operation, and the machine will display corresponding fault information. The following provides the phenomena when the machine fails. Please refer to the maintenance manual for specific treatment methods. If the user still cannot solve the problem according to the maintenance manual, please contact us.

## Fault description of boot self-test:

| Error code | Error position | Causes | Solutions |
|---|---|---|---|
| Banknote Hopper Jam | Hopper sensor | The hopper sensor is blocked | Check the sensor for dust accumulation or occlusion. |
| Banknote Stacker Error | Stacker sensor | The banknote stacker sensor is blocked | Check the sensor for dust accumulation or occlusion.<br>Check whether the sensor harness falls off |
| Reject Pocket Jam | Suspicious pocket sensor | Suspected pocket sensor blocked | Check the sensor for dust accumulation or occlusion. |
| Lower Passenger Error | Upper and lower channel plates | The sensors in the upper and lower channel plates are blocked | Check the channel sensor for foreign objects or dust accumulation |
| Lower Passenger Open | Upper and lower channel plates | The upper part of the machine is opened | Check that the upper channel of the machine is not closed tightly |
| Upper Passenger Error | Upper and lower partitions | The back of the machine is opened or the sensors in the channel are blocked | Check whether the rear channel of the machine is not closed tightly or the channel sensor is blocked by foreign objects or has dust accumulation |

***** In order to continuously improve our products, we reserve the right to change the instructions. *****