HT-9100 Series

Banknote Sorter

User's Manual

Preface

Dear Customer,

Thank you for choosing the HT-9100 banknote sorter, a hi-tech product elaborately designed in light of the newest concept regarding identification banknotes and sorting. As a highly automatic and intelligent financial appliance, it is a perfect combination of versatility, easy operation and impressive appearance, featuring big touch LCD screen and USB, LAN port for connecting to computers.

Please kindly read thoroughly this manual before using this machine and observe the instructions provided so that you can turn the outstanding counterfeit discrimination ability and accurate counting capability as well as the efficient sorting inherent in the machine to good account.

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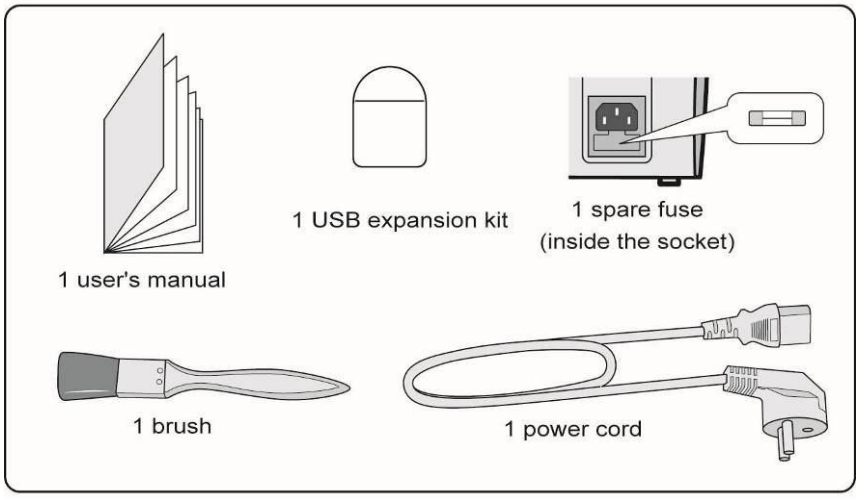
Sealing Off

Inspect the machine for any appearance deficiency and check all the accessories attached. Inside the package there are:



How To Use

1. Connect the machine with 110V or 220V AC power supply.

Switch on the machine that leads it to a self examination at first.

2. If the self check is OK, the machine will display the basic settings; if not, the error messages will be displayed.

Important: To avoid electric shock, please always use a socket with earth ground terminal for safety.

3. Remove the following notes to ensure correct detection:

A. Patched with white paper
B. Once washed
C. Seriously stained
D. Broken or cracked

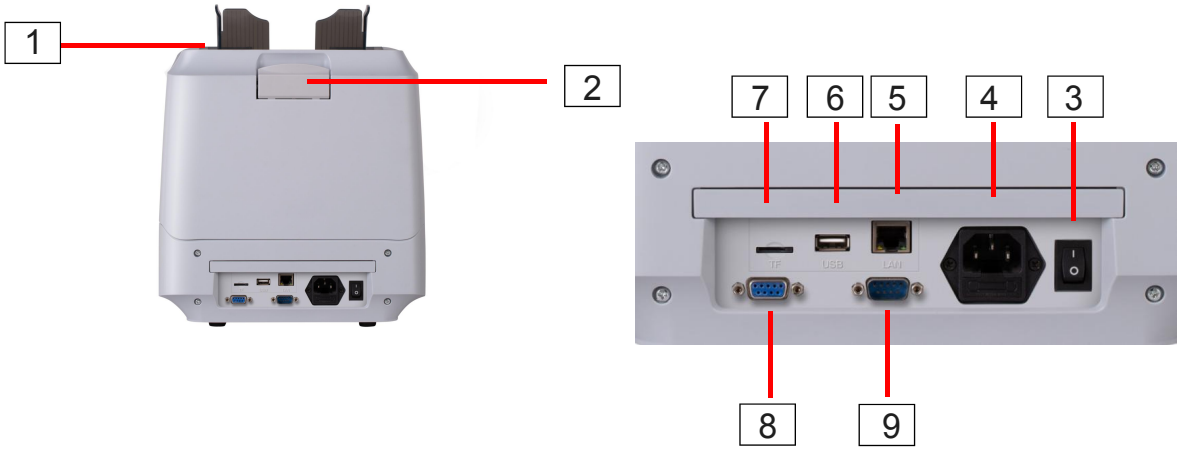
4. Feeding：

I. Align all the corners and edges of the notes, unevenness could cause errors.
II. Put the notes in the center of hopper and adjust the hopper guides if necessary.

1.1 Machine Overview (front)

1	4.3 Inch TFT LED Display	5	Note guides
2	Reject pocket	6	Note hopper
3	Drive vane roller	7	Top note latch
4	Stacker pocket	8	Control panel

1.2 Machine Overview (rear)

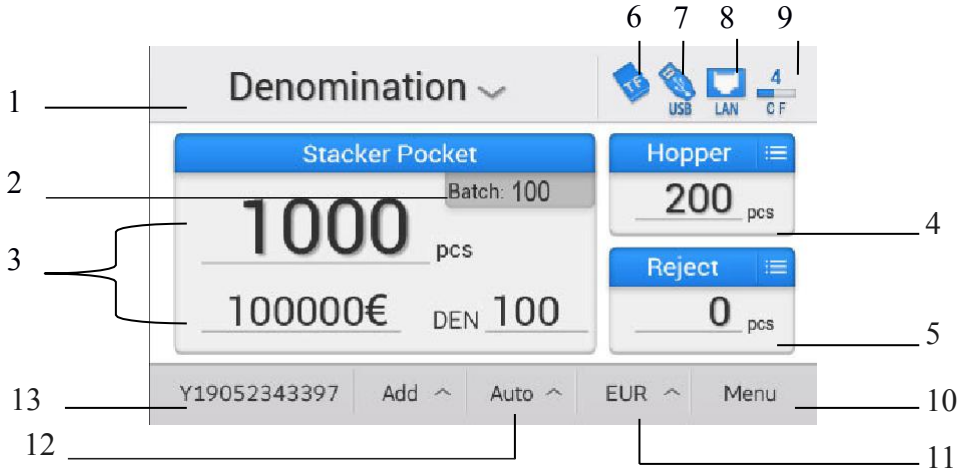


1	Gap screw	8	Serial A
2	Top bill latch	9	Serial B
3	Power switch		
4	Power supply socket (with built-in fuse)		
5	RJ-45 port		
6	USB port (Connecting port)		
7	TF(Micro SD) Card port		

1.3 Overview of Control Panel

1. Mode
   Set Counterfeit Detection Mode.
2. FIT
   Set Fitness Mode.
3. CUR
   Select Currency.
4. MENU
   Enter Set-up Mode.
5. START / ENTER
   Start motor, Start or Save function item.
6. DEL / EXIT
   Exit the Set-up Mode or clear counts.
7. BATCH
   Set the batch number.
8. ADD
   Accumulate the counted number.
9. PRINT
   Detail information of current count.
10. INFO
    Detail reason of reject pocket.

1.4 Overview of Control Display



1	Counting Mode	8	LAN Mode
2	Batch number	9	Sensitivity Level
3	Stacker Pocket result	10	User set-up Mode
4	Total count	11	Currency
5	Reject Pocket result	12	Start Mode
6	TF Card Mode(Micro SD)	13	Serial number
7	USB Mode		

Technical Specifications

Operation mode	Denomination, Mixed, Fitness, Face, Emission
Currency available	Multi-currency
Speed:	
Normal Counting without counterfeit detection	1200 notes/min
Denomination Counting with counterfeit detection	1000 notes/min
Serial number Counting with counterfeit detection	1000 notes/min
Fitness Counting	900 notes/min
Applicable banknote size	Length 120-180mm Width 62-85mm Thickness 0.075~0.15mm
Hopper capacity	500 notes
Stacker capacity	200 notes
Reject capacity	100 notes
Dimensions	300(L)x330(W)x310(H)mm
Power supply	AC220V 50Hz / AC110V 60Hz
Interface	Dual RS-232, USB, LAN, Micro SD
Net weight	12Kg

2. Function Keys

2.1 MODE key:

Press "MODE" key to choose the operating mode in turn.

A. Denomination: Sorted denomination value counting.
   - Sort the notes based on the first genuine note.
   - Counterfeit detection with counting.
   - Serial number printing.

B. Mix: Mixed denomination value counting.
   - Mixed denomination identification.
   - Counterfeit detection with counting.
   - Serial number printing
   - No batch function. (Only with stacker full function)

2.2 START / ENTER key:

This key is used to:

A. Start or Restart the operation.
B. Store various settings into memory.

2.3 DEL / EXIT key:

This key is used to:

A. Exit the Set-up Mode and clear counts.
B. Hold on the key can clear counts information.

2.4 " ⇦ / ⇨ " key:

A. Batch number setting adjustment.
B. Change Item setting.

2.5 " ⇧ / ⇩ "key:

A. Batch number setting adjustment.
B. Item adjustment
C. Change Item setting.

2.6 BATCH key:

This key is used for batch number settings.

By pressing "BATCH" key successively, the batch number can be changed from **100, 50,20,10,5,5000,2000,1000,500,200,0** in turn and by presetting "BATCH" key, then press " ⇧ " key the BATCH number will "+1", or press " ⇩ " key the BATCH number will "-1". The batch number setting could be changed gradually.

2.7 ADD key:

Press "ADD" key if you need accumulation to be displayed. "ADD" will be displayed in the LCD. Once counting is completed, the total sum will be displayed. Counting display is automatically reset to zero when upper bound of number is overflowed.

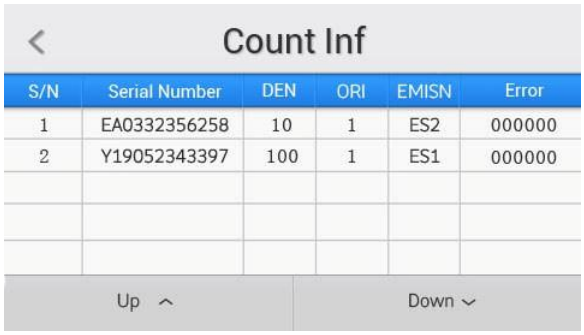
2.8 PRINT key:

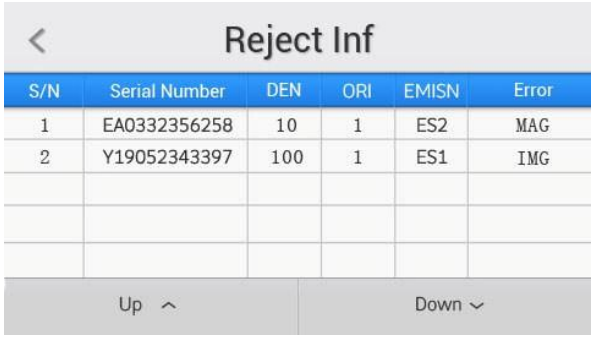
After counting is done, press "PRINT" to see the detail information list on the display.

Press "PRINT" key 1 time to see the Reject information.

Press "PRINT" key 2 times to see the Count information.

Press and hold "PRINT" key about 3 seconds to send out the summary and serial number to the external printer.





2.9 FIT Key

- ATM Fitness (HT-9100+, HT-9100L only) : Sort ATM applied banknotes, the fitness sensitivity level is high. Press "⇦" key to the desired sorting mode.
  - Mix：Mixed denomination fitness.
  - DEN：Sort the notes based on the first genuine note.
- Fitness Sorting (HT-9100+, HT-9100L only) : Apply to banknotes in circulation sorting, the sensitivity level is normal. Press "⇦" key to the desired sorting mode.
  - Mix：Mixed denomination fitness.
  - DEN：Sort the notes based on the first genuine note.
- Face Sorting: Recognize the face by the first detected genuine note and sort out other different faces.
- Emission Sorting: Count banknotes for the emission by the first detected genuine note.

2.10 INFO Key

See the detail causes of reject banknotes.
Definition of reject reasons:

- ERR11：Double notes.
- ERR12：The notes skew during the process.
- ERR13：The notes got chained in the bill path.
- ERR14：A gap between two notes is too close.
- ERR21：The notes got jammed in the bill path.
- ERR31：Magnetic error
- ERR32：Image error
- ERR41：Fluorescence error
- ERR42：Tears, Holes, Dog Ear banknotes.
- ERR51：The Tape on the banknotes.
- ERR52：Limpness and Tears
- ERR53：Stain, Graffiti, Ink, Mark, banknote Washed.
- ERR54：Blacklist banknotes.
- Other：Other error

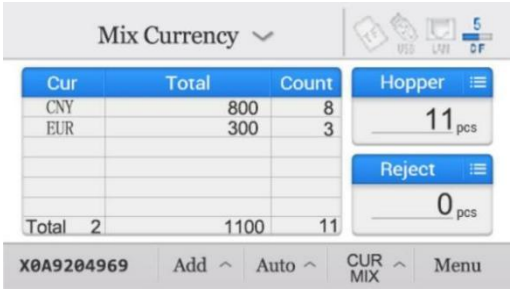
2.11 CUR Key

Select each currency / Mix & Multi currency mode.

CUR_MIX：Automatic recognition of mix Currencies.

CUR_AUTO：Automatic currency recognition.

CUR_AUTO



CUR_MIX

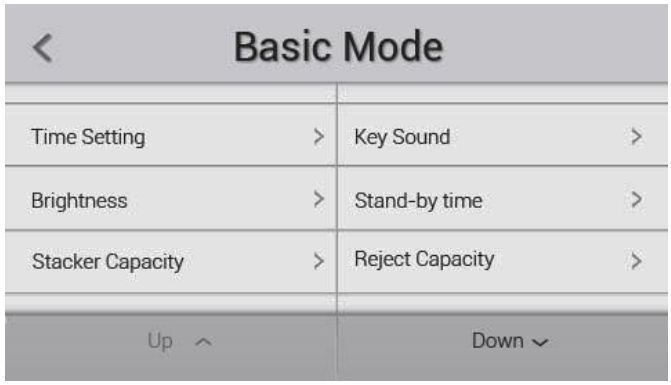
3. MENU Setting

From the basic setting window you can press “MENU” key to perform the following tasks:

- The function of each key on this mode

Key	Function
DEL / EXIT	Exit
⇦ / ⇨	Change the option of the item
⇧ / ⇩	Change the option of the value
Start /Enter	Confirm / Store

3.1 Basic Mode



➔ 1. Time Setting:(**HH-MM-SS**)

- Date and time setting

Key	Function
DEL / EXIT	Exit
⇦ / ⇨	Change the item
⇧ / ⇩	Change the value
Start / Enter	Confirm / Store

➔ 2. Brightness

- Set the display brightness.

-Level1 is the brightest, Level5 is the darkest.

➔ 3. Stacker Capacity:

- The limit of the stacker.
- Options include "100, 200, OFF". (Default: 200)
- Once the number of notes in stacker is reached the Stacker Limit, the screen will display "Stacker Full" message until the notes in stacker are taken away.
- **This function will be disabled when BATCH function is activated.**

➔ 4. Key Sound

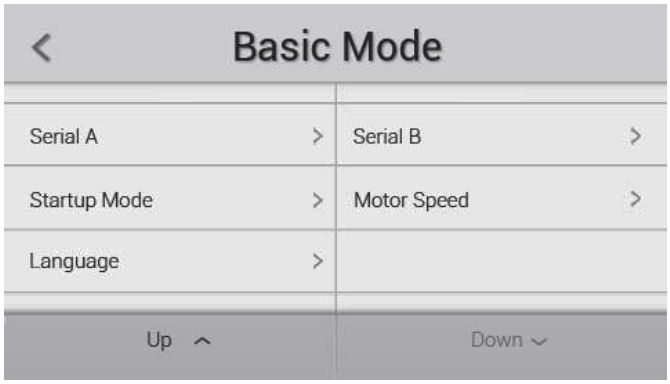
- The key sound is enabled (ON) or disabled (OFF) (Default: ON)

➔ 5. Stand-by time

- Options include "15min, 10min, 5min, OFF". (Default: 5min)

➔ 6. Reject Capacity

- Options include "100, 50, OFF". (Default: 100)
- Once the number of notes in stacker is reached the Stacker Limit, the screen will display "Reject Full" message until the notes in stacker are taken away.



➔ 7. Serial A

- Output port.
- Options include:"PC Port", "External Display". (Default: External Display)

➔ 8. Startup Mode

- Auto (Default: Auto)

  The machine starts up when banknotes are placed on the top of the hopper.
- Manual

  The machine starts up when user presses "START/ENTER" key.

➔ 9. Language

- The language of the User Interface.
- Optional customized language choice.

➔ 10.Serial B

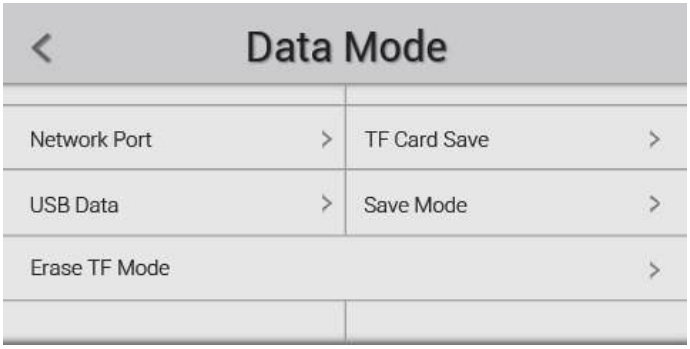
- Output port.
- Options include:”PC Port”, “Print QR Code”, “Print SN”.

➔ 11.Motor speed

- This feature allows users to set the counting speed in any mode.
- (Default: MIDDLE)

HIGH	MIDDLE	LOW
1000 notes/min	**900 notes/min**	**800 notes/min**

3.2 Data Mode



➔ 1. Network Port

- For PC connection.
- “ON“: Enable. (Default: ON).
- “OFF“: Disable.

➔ 2. USB Data

- For PC connection.
- “ON“: Enable. (Default: ON).
- “OFF“: Disable.

➔ 3. Erase TF (Micro SD) Mode

It can allow users to erase the TF (Micro SD) Card data of month record (by month only).

- Erase level from 1 to 6 month data. (Default: Erase 3 months data)
- “No Setting”: Disable.

➔ 4. TF (Micro SD) Card Save

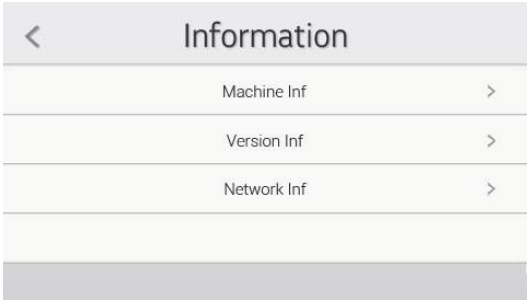
- The device supports TF (Micro SD) Card to store serial number.
- “ON”: Enable. (Default: ON)
- “OFF”: Disable.

Not support “Hot plugging” function.

➔ 5. Save Mode (Only for PC connection) ※**Optional**※

- The device provides the different forms to store serial number.
- Supported saving forms: .FSN, .DAT, .KYO

3.3 Information



➔ 1. Machine Inf

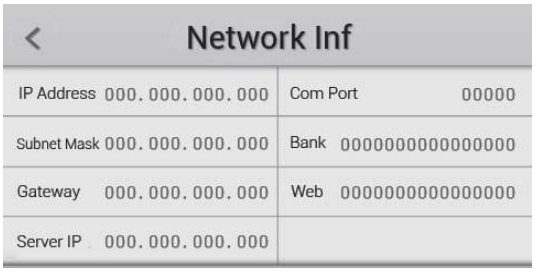
- See machine information and total count.

➔ 2. Version Inf

- See all the versions information.

➔ 3. Network Inf (Only for PC connection)

- See network(LAN) information for connecting PC.



3.4 Fitness Setting

➔ 1. Sensitivity Level

- The range is from “1” to “5”

➔ 2. New/Old Level

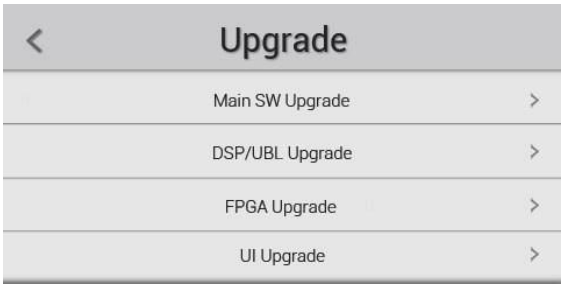
- Fitness New/Old Level, the range is from 1 to “5”.
- higher value is higher sensitivity.

➔ 3. Damage Level

- Fitness New/Old Level, the range is from 1 to 5, ”
- higher value is higher sensitivity.

3.5 Teller Setting (Disable)

3.6 Upgrade



➔ 1. Main SW Upgrade

- Upgrade Main board software.(Reserve)

➔ 2. DSP/UBL Upgrade

- Upgrade Image board software.

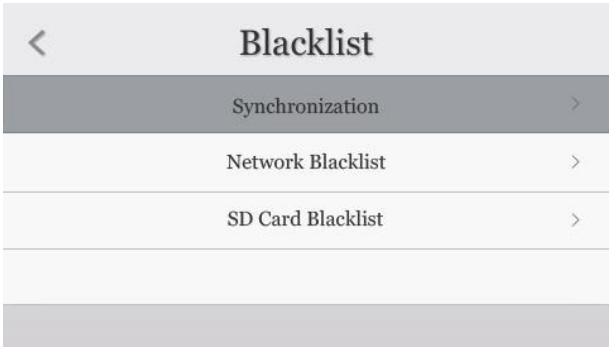
➔ 3. FPGA Upgrade

- Upgrade Image board software.

➔ 4. UI Upgrade (Reserve)

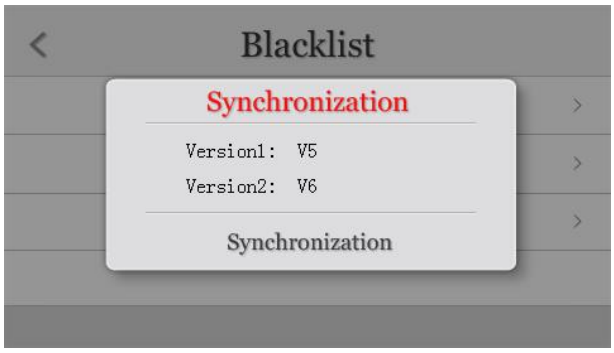
3.7 Default (Reserve)

3.8 Blacklist (Only for PC connection)



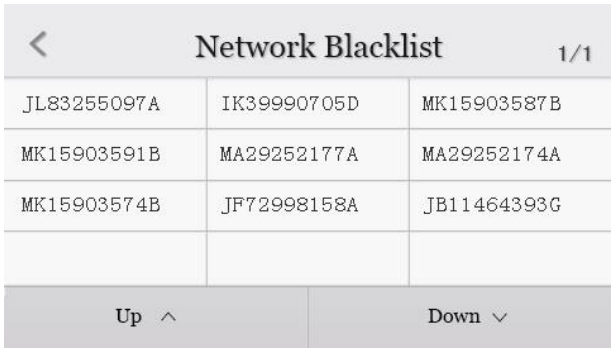
➔ 1. Synchronization (Only for PC connection)

- Download and synchronization black list from Device Server.
- Press “START” key 1 times will show server and SD card black list version.
- Press “START” key 2 times will synchronize server and SD card black list.



➔ 2. Network Blacklist (Only for PC connection)

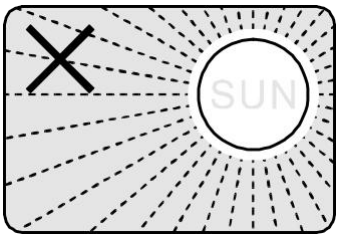
- See download blacklist.

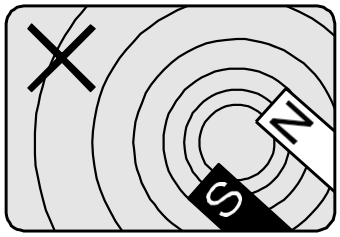


➔ 3. SD Card Black list (Reserve)

4.1 Tip On Maintenance

1. Keep and run the machine at a well-ventilated indoor place. Avoid strong light and magnetic field.





2. The power plug should be connected to a socket with earth ground terminal.

3. To make sure that the machine can work properly, the power supply should be in the range of 110V±10% or 220V±10%.

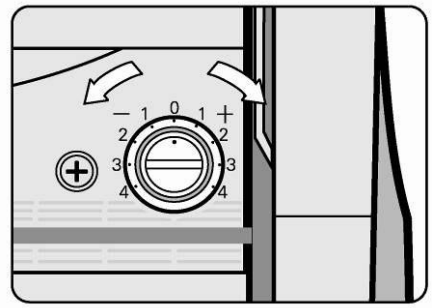
4. There should be no oil or grease or any kind of oil sludge on catch wheel, feeding wheels and conveying wheels. Slip may occur causing miscounting in this case.

5. The fuse rating is 1.5A/220V or 3A/110V, which should be strictly observed.

6. Use the brush to clean away the dust deposited on any photo diode pairs at least once a week. Use a piece of dampened soft cloth to clean catch wheels and receiving wheel.

4.2 Feeding Gap Adjustment

To determine the proper position of the paper thickness adjustment screw: The screw is generally well tuned in factory. However if the machine stops during operation and shows "Chained" in LCD screen quite often, slightly rotate the screw counterclockwise (towards "-"). And similarly if notes feeding is not smooth and shows " Slip Slantways " quite often, slightly rotate the screw clockwise (towards "+"). Adjustment should be made by trial and error.



Adjustments should be made slightly.

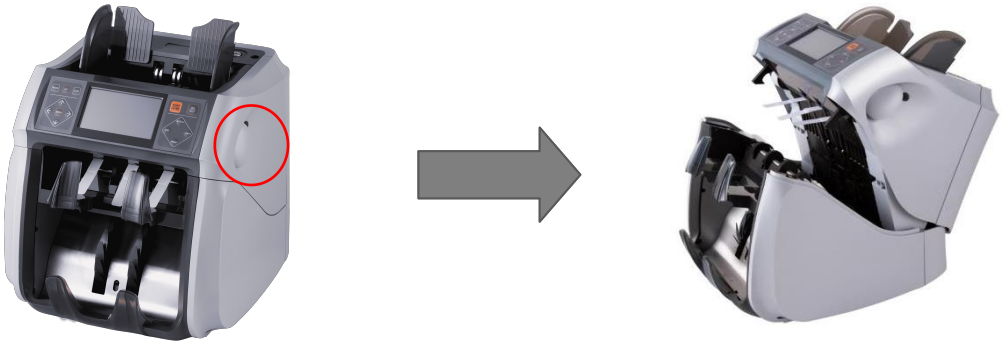
Feeding gap adjustment is required for the following reasons:

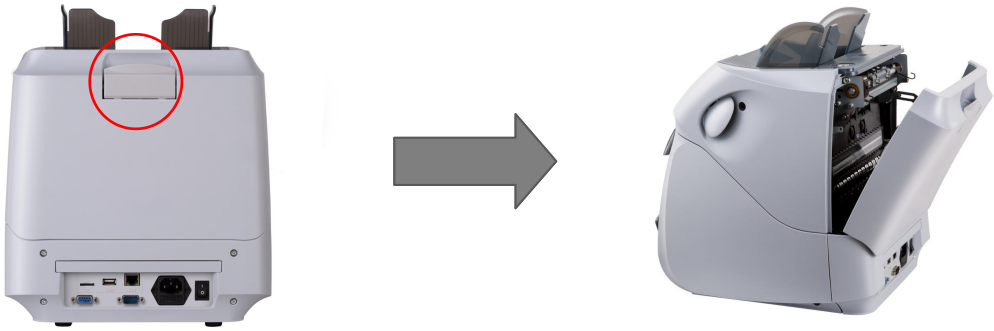
- The counting of new or mint condition notes.
- The counting thin or poor condition notes.
- The counting of average condition notes.

4.3 Note Jams

Note jams- on the Bottom Note Path
Open the Bottom bill latch and remove jammed notes.

Note jams- on the Top Note Path
Open the Top bill latch and remove jammed notes.





Power-on self-diagnose error

Message	Trouble Location	Trouble shooting
Hopper Error	Input Sensor	Take out the banknotes. Clear away the dust.
Reject Error	Reject Sensor	See above
Stacker Error	Stacker Sensor	See above
SPIRL / SPIRR Error	SPIRL / SPIRR Sensor	Clear away the dust.
CISIRL / CISIRR Error	CISIRL / CISIRR Sensor	See above
IRL2 Error	Left IR2 Sensor	See above
IRR2 Error	Right IR2 Sensor	See above
IRL1 Error	Left IR1 Sensor	See above
IRR1 Error	Right IR1 Sensor	See above
Motor1 Error	Feeding Motor	Check connecting cable.
Motor2 Error	Transmission Motor	Check connecting cable.
Motor3 Error	Note Toggle	Check connecting cable.
Communication Error	Image board / IO board	Check connecting cable
ROM1 Error	Main board	Default Setting
ROM2 Error	Main board	Default Setting
Display Error	TFT LCD board	Check connecting cable
UV Error	UV Sensor	Check connecting cable Clean UV Sensor
MG4 / MG5 / MG6 Error	MG sensor	Check connecting cable Clean MG Sensor
MG8 / MG9 Error	MG sensor	Check connecting cable

Events during operation and relevant remedies

Message	Causes and Remedies
Channel Error1	The note jam was detected. Please take out the note(s) in the machine and recount
Channel Error2	The note jam was detected. Please take out the note(s) in the machine and recount
Channel Error3	The note jam was detected. Please take out the note(s) in the machine and recount
Channel Jam1	The note jam was detected. Please take out the note(s) in the machine and recount