# ST-350 User Guide

Currency Fitness Sorter



ST-350 is smart, practical multi-currencies fitness sorter and banknote counter designed for user's convenience, optimized for high performance, enhanced authentication and easy operation.

## - Contents -

Introduction	4
For Safety Use	4
Packing List	11
Options	11
Appearance	12
1. Screen Description	14
2. Operation Mode 1	
2-1. ATM	18
2-2. FIT	20
2-3. ATM+FIT	22
2-4. ADD	22
2-5. GT	23
2-6. MIX/SP/SG/DIR-MF/DIR-MO/DIR-SF/DIR-SO	26
3. Operation Mode 2	
3-1. Currency	33
3-2. Mode	33
3-3. Display	34
3-4. Print	34
4. Others	
4-1. Batch	36
4-2. Counting Speed	37
4-3. User Information	37
4-4. Language	38
4-5. Date and Time	38
4-6. Sound	38
4-7. Operation	39

## ST-350 USER Guide

#### 5. Menu

5-1. Machine Model	44
5-2. Help	44
5-3. Machine State	45
5-4. System Setting	
5-5. Upgrade	47
5-6. Machine Setting	47
6. Specification	48
7. Error Code	48
8 Maintenance	52

## Introduction

Thank you for purchasing ST-350.

ST-350 is smart, practical multi-currencies fitness sorter.

ST-350 sorts holes, tears, dog-ears, tape, soil, stains, folded and de-inked banknotes with high speed.

The machine is designed for user's convenience, optimized for high performance and easy maintenance.

ST-350 has high connectivity interfaces and 7" full color graphic LCD display.

## For Safety Use

In this section, the compliance matters are described in order to use the product safely, and to prevent you and other people from the damages brought by the product to the human bodies or properties.

Please read this instruction manual thoroughly in advance to use in the correct way.



It denotes the contents in which mishandling of the product by neglecting this indication may cause the people's serious injury.



It denotes the contents in which mishandling of the product by neglecting this indication may cause the people's light injury or only physical damage.



This symbol indicates that the precautions for handling the product. Please read the indications well and utilize the product safely.





This symbol indicates prohibited matters not to do. Please read the indications well and never do the prohibited matters.





This symbol denotes that there are indication matters which should be done without fail. Please read the indicated matters thoroughly and perform the matters without fail.





### **Warning**

### Installation



- 1. At installation and relocation of the products, please contact our distributor near you or our designated dealers. If installation is not perfect, there is a risk of a falling accident, electric shock, fire and burn injury.
- 2. At installation and use of the products, keep the space sufficient for opening and closing the door, cover and operation. If a part of the product touches a human body, it may cause an accident.
- 3. In case of installing the product at the following places, you should confirm the Road Law, Road Traffic Law and Fire Protection Law, etc. If compliance conditions are not clear, please consult with the authorities concerned.
- The place which may disturb traffic or accident prevention.
- The place adjacent to the fire extinguishing and detecting apparatus.
- The place adjacent to the road signs or traffic signals.
- The place where combustible materials or gas are treated (gas stations, etc.)

  Passages and facilities for evacuation Illegal installation may cause an accident.
- 4. Keep an installation space as described in the instruction manual, and do not choke up the ventilation inlet. If the ventilation inlet is choked, heat is accumulated inside and it may cause fire.
- 5. Depending on the installation place, mounting of an earth leakage breaker is required by Electricity Enterprises Law. Illegal installation may cause an accident.



- 1. Do not install the product at the place where water may spill on it. If water enters into the product, insulation performance degrades and it may cause fire and/or electric shock.
- 2. Do not install the product at the place where the floor cannot bear the load of the product, or at the unstable place with inclination and/or irregularity. It may cause the accidents of floor caving and sudden move of the product.
- 3. Installation at the following places should be avoided.

There are safety problems and deterioration of the product may be accelerated, which leads to a cause of failure.

- 1m or less from volatile combustible materials or curtains.
- 1m or less from heating apparatus such as stoves, heaters etc.
- The place with direct winds blown from air conditioners, ventilating openings etc.

#### ST-350 USER Guide

- The place with high temperature, high humidity, or low temperature.
- The place with direct sunlight.
- The place with much dust.

When installing the product at the following places, please contact our distributor near you or our designated dealers.

- The place exposed to salty winds or corrosive gas.
- The place with much swinging or vibration.



Grounding work should be made for safety and prevention of static electricity and noise failure. In addition, a ground wire should be installed independently without sharing the wire with other products. At grounding work, please be sure to contact our distributor near you or our designated dealers. In case of electrical leakage when grounding is insufficient or not connected, it may cause fire and/or electric shock.

The place where a ground wire can be fitted:

- Ground terminals for power receptacle.
- The copper piece etc. with a length of 65 cm or more, buried in the ground.
- The ground terminals on which grounding work is made.

The place where is a ground wire must not be fitted.

- Gas pipes
- Telephone wires for exclusive use
- Lightning rods
- Water pipes or faucets with plastic materials at their intermediate part.



Do not use or put the combustible materials such as thinner, combustible gas, or a high-volatile object around/inside the product. Otherwise, it may cause explosion and/or fire due to heating from the product or flashing from power supply.



## **Power Supply**



- 1. When using the product, connect it to the power supply specified in the instruction manual. If it is connected to the power supply, other than the product's specification, it may become a cause of fire, electric shock, and/or electrical leakage.
- 2. Do not use a power supply cord and the plug other than the attached ones. If a current that exceeds the rating flows in the power supply cord, it may cause fire.
- 3. Be sure to insert the blade part of the power supply plug into an outlet. Insufficient insertion may cause fire.



- 1. When the earth leakage breaker frequently operates, please contact our distributor near you or our designated dealers. If the product is used or left as it is, it may cause fire and/or electric shock.
- 2. Do not modify, process, or repair the power supply cord and the plug. In addition, do not convert a 3-prong power supply plug into a two-pole type. Grounding becomes insufficient and there may cause electric shock.



Please follow the items below to prevent electric shock and/or fire due to damage of the power supply cord.

- Do not pull the cord part when pulling out the power supply plug.
- Do not put anything on the cord part.
- Do not pass the cord near a source of heat.
- Do not bend or pinch the cord.
- Do not tread or twist the cord.
- Do not spill chemicals on the cord.
- Do not use it while it is bundled.
- Do not fix it with a stapler etc.



- 1. Do not use the power supply cord and the plug for other products or purposes. Further, when they are lost or damaged, please purchase them at our distributor near you or our designated dealers. The attached power supply cord and the plug are designed and confirmed the safety for connecting to this product to use. If they are used for other products or purposes, it may cause fire and/or electric shock.
- 2. The product should be used at the specified frequency. If it is used at other than the specified frequency, it may cause an accident.



### **Caution**

## **Handling**



- 1. The product should be used under the environment specified in the instruction manual. If it is used under the other environment of the specification, there may cause fie and electric shock.
- 2. When operating inside the product for error or clearing or cleaning etc., the operation should be made in accordance with the description in the instruction manual. Operation other than the description may cause an accident.



- 1. Do not turn off the power, pull out the power supply plug, or open the cover of the product during the operation. Otherwise, it may cause an accident.
- 2. Do not put a vase or glass with an object and/or water etc. on the product. Otherwise, it may cause fire, electric shock, and/or injury by spilling water or dropping.
- 3. Do not apply shock on the product. There is a risk of damaging the product and normal operation cannot be performed.
- 4. Do not use chemicals such as thinner or benzene when removing dirt of the product. Otherwise, it may cause damages.
- 5. Do not use a interface cable other than the attached one. When cables are other than the attachment, it may cause the interface error or machine trouble.



Do not us a combustible spray etc. around product. If spray gas etc. contacts the electrical parts inside the product, it may cause explosion and fire.



- 1. When touching inside the product for cleaning or parts replacement etc., be sure to turn off the power. If you work with turning the power on, it may cause electric shock and/or injury.
- 2. Do not touch the product and power supply plug and cord with a wet hand. There is a risk of electric shock.
- 3. The electrical parts inside the product should not get wet by rain or water at cleaning etc. if they get wet, it may cause electric shock and/or shock.
- 4. Do not turn of air heating suddenly when the product is completely cold. Moisture may adhere inside the product due to sudden air heating and it may cause electric shock.

#### ST-350 USER Guide

5. There is a charging part inside. Be sure to open the cover with turning off the power. If the cover is opened without turning off the power, it may cause electric shock.



- 1. Do not drop any metallic piece such as a clip, staple etc. inside or in a clearance of the product. If a metallic piece drops inside the product and contacts the electric circuit, it may cause fire.
- 2. When the product is not use for a long time, be sure to pull out the power supply plug from an outlet for safety. Otherwise, it may cause heating and/or firing due to dust accumulation.



Do not modify the product or mount modified parts on the product. Further, do not dismount the portion which is not indicated to be opened/closed in the manual, or the cover and parts etc. fixed with screws etc. Otherwise, it may cause fire, electric shock, and/or injury.



- 1. Do not approach your hand or cloths during operation to moving parts of the product reachable. There may cause injury and/or pinching of a finger.
- 2. When closing a door, pay attention not to pinch a finger. It may cause of injury.
- 3. When working with a door opened, confirm it is locked. It may become a cause of injury because the door may suddenly close.



Do not touch the gear etc. It may cause injury.



### **Maintenance**



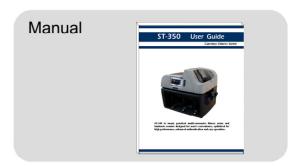
- 1. For repairing the product, please contact our distributor near you or our designated dealers. Insufficient repair may cause fire, electric shock, and/or injury.
- 2. When the product has sunk under the water due to a disaster etc., stop using it and please ask for repair/check to our distributor near you or our designated dealers. If used as it is, it may cause fire and/or electric shock.
- 3. Check periodically whether its installation place is unstable or not. If there is any abnormality, please contact our distributor near you or our designated dealers. If it is continuously used with insufficient installation, it may cause a falling accident.
- 4. Check and clean the power supply plug and the cord regularly. It the power supply plug is broken or the cord is damaged, stop using and please replace it by contacting our distributor near you or our designated dealers. It may cause fire and/or electric shock.

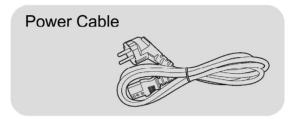


When smoke, abnormal smell, or abnormal sound is generated from the product, stop using it immediately, cut off power supply and pull out the plug from the outlet. Then, please contact our distributor near you or our designated dealers. It used or left as it is, it may cause fire and/or electric shock.

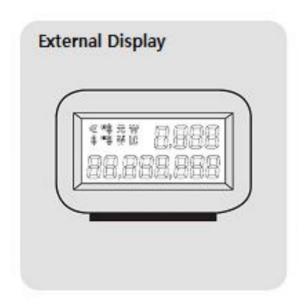
## Packing List







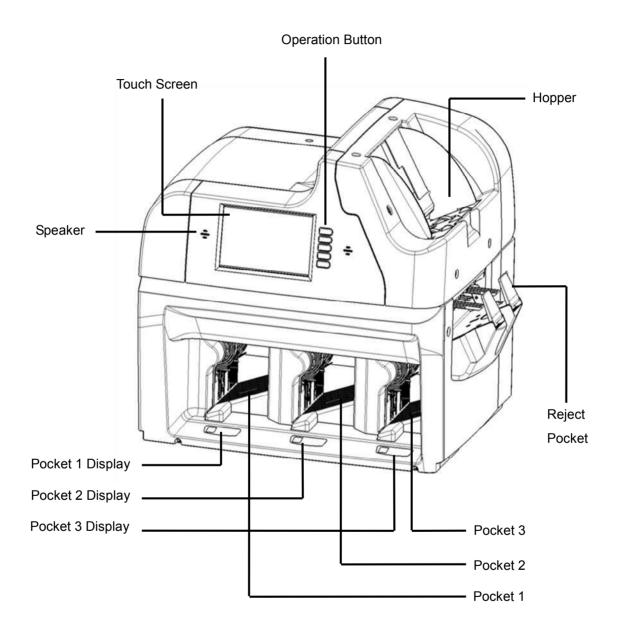
## **Options**



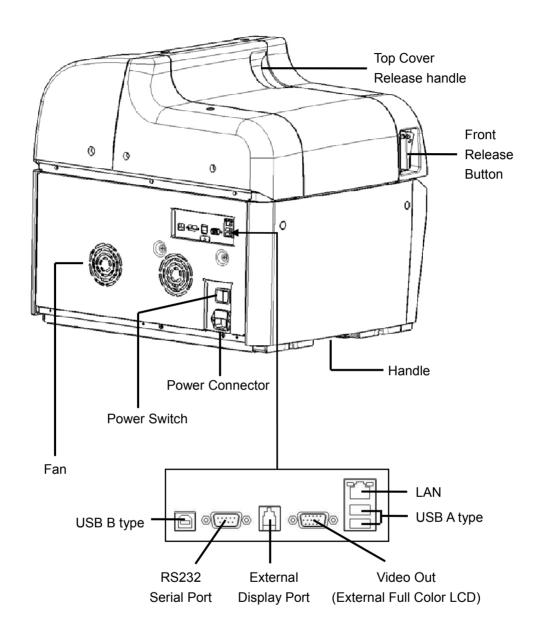


## Appearance

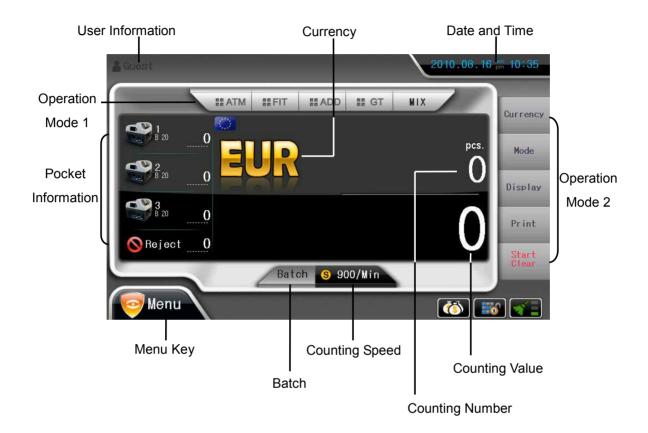
#### <Front View>



#### <Rear View>



## 1. Screen Description



#### 1) Operation Mode 1

#### ATM

Machine sorts good condition notes.

#### FIT

Referring to Fitness condition, the machine sorts banknotes.

#### ADD

Machine cumulates the accounted result.

#### GT

Machine settles accounts during the period which customer sets.

#### MIX/SP/SG/DIR-MF/DIR-MO/DIR-SF/DIR-SO

- MIX: Count all denominations of selected currencies. The counted notes are stacked to the first Pocket in order.
- SP: The first inserted denomination is stacked to the first Pocket and next recognized note is stacked to the next Pocket.
- SG: The selected denomination is stacked to the selected Pocket.
- DIR-MF: By face of the note, a machine sorts the notes to each Pocket.

(Sorts all denominations)

- DIR-MO: By orientation of the note, a machine sorts the notes to each Pocket (Sorts all denominations)
- DIR-SF: By face of the note, a machine sorts the notes to each Pocket.

(Sorts single denomination)

- DIR-SO: By orientation of the note, a machine sorts the notes to each Pocket

(Sorts single denomination)

## 2) Operation Mode 2 (icon & key operation)



Icon& short Key	Change local currency.	
Currency Long Key		Holding Currency key shows local currencies that machine has.
Mode	Icon& short Key	Select Operation Mode, MIX, SP, SG and DIR Mode.
Long Key	Holding Mode key shows drop-down menu of Operation Mode 2.	
Display	Icon& short Key	Shows each denomination counting result.
Display Long Key		
, .	Long Key	Empty
Print	Long Key Icon& short Key	Print the counting result via serial printer or PC.
Print		
Print Start/Clear	Icon& short Key	Print the counting result via serial printer or PC.

#### 3) Pocket Information

By pressing each pocket icon, user can check counting information of banknotes which are in the certain pocket.

#### 4) Others

#### Batch

Set batch number of each pocket.

#### Counting Speed

Set count speed.

#### Menu

Check and Setting machine status.

#### User Information

Select the user who uses the machine. Each user has their own settings and the settings are automatically changed by changing user. Only engineer can add new user to the machine.

#### Language

Select Display Language.

#### Date and Time

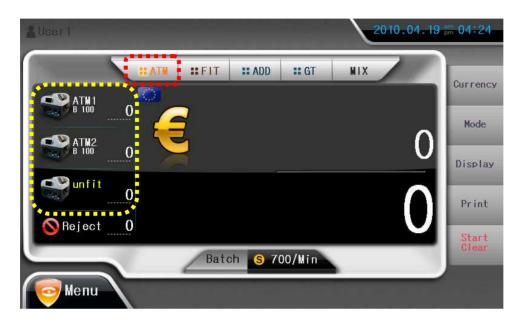
Show current date and time. In System Setting menu, user can set date and time.

#### Operation

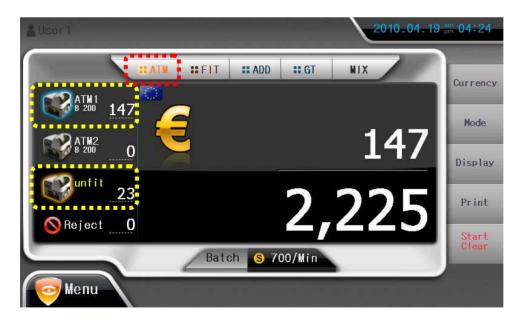
User can select some operations for individual preference.

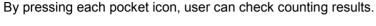
## 2. Operation Mode 1

#### 2-1. ATM



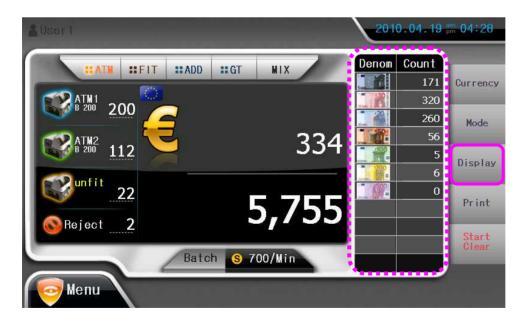
When ATM mode is on, Pocket 1 and 2 are for fit notes and Pocket 3 is for unfit notes.





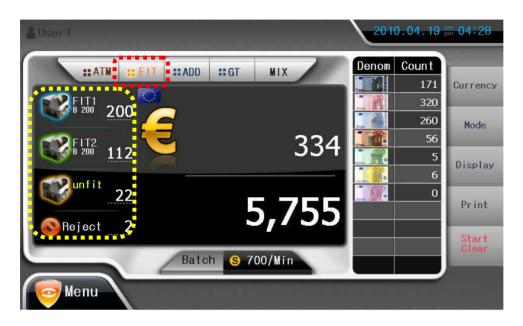


By pressing Display icon or key, total counting result is shown.



#### 2-2. FIT

When FIT mode is on, Pocket 1 and 2 are for fit notes and Pocket 3 is for unfit notes.



By pressing each pocket icon, user can check counting results.



By pressing Display icon or key, total counting result is shown.



Without removing the notes from Pockets, machine shows warning message as below.



#### 2-3. ATM + FIT

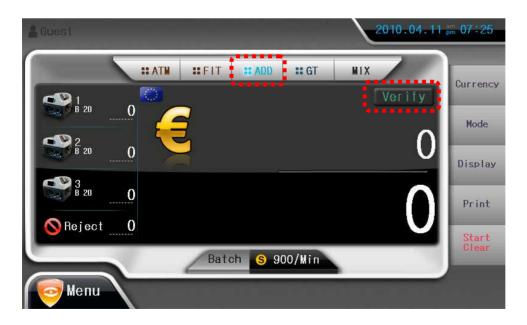
When two functions are turned on together, ATM note is sent to Pocket 1 and FIT note is sent to Pocket 2.

Unfit notes are sent to Pocket 3.

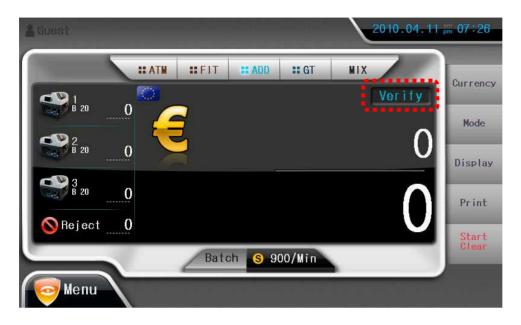


#### 2-4. ADD

When ADD function is operated either with ATM, FIT or both together, the total counting result is accumulated.

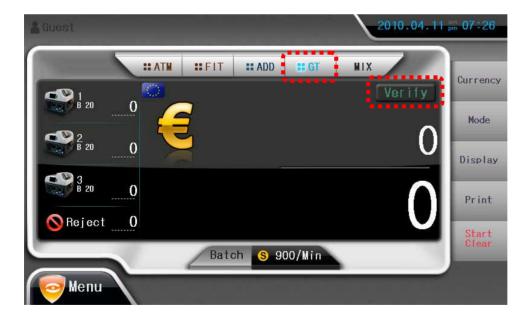


When Verify is on, user can count notes without updating the accumulated memory.

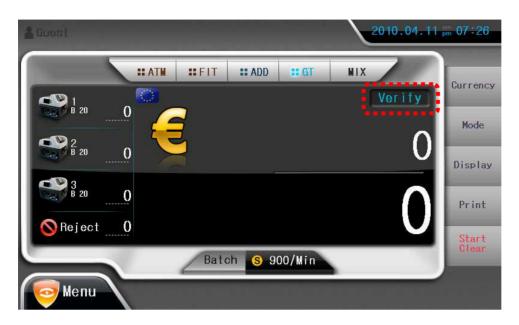


#### 2-5. GT

When GT function is on, machine settles accounts before user clears the accounts.



In GT function, Verify function is available.



Checking accounts are available from System Setting.

(Menu -> System Setting -> Grand Total -> Local Currency -> Select the currency)





By value or ATM/Fit/Unfit, total counting information is shown.



By pressing "?" icon, data and time that the data was saved can be checked.

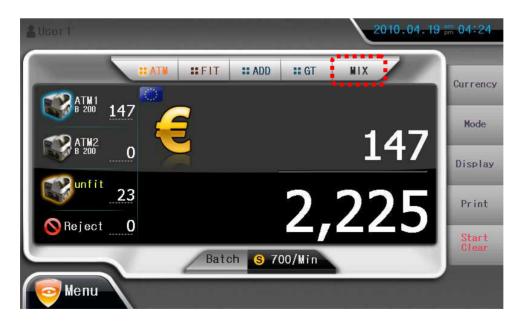


#### 2-6. MIX/SP/SG/DIR-MF/DIR-MO/DIR-SF/DIR-SO

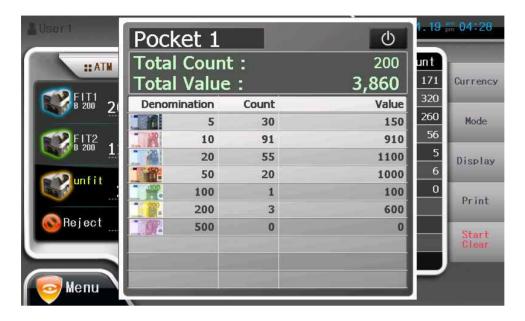
All counting modes can work with ATM and FIT function.

#### 1) MIX

When ATM mode is on and MIX mode is selected, the counted notes start stacking from Pocket 1.

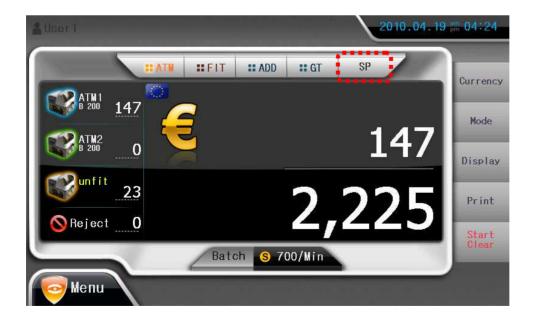


User can confirm that in Pocket 1, all the notes are counted by Mix mode.



#### 2) SP

When ATM or FIT mode is on, the first recognized denomination is sent to Pocket1 and next denomination is sent to Pocket 2.



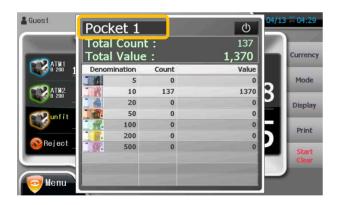
#### ST-350 USER Guide

When ATM or FIT mode is off, the third recognized denomination is sent to Pocket 3.

If Pocket 3 is selected as Multi(Menu -> System Setting ->Operation -> How to use Pocket 3), all unconditional notes are sent to Pocket 3.



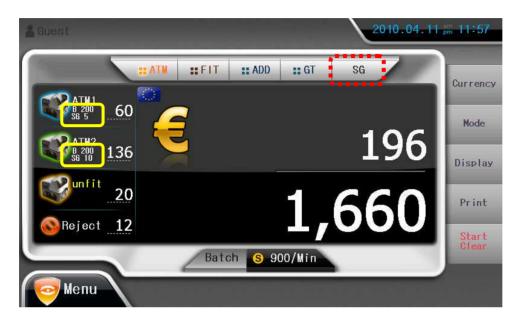
By Pressing the Pocket icon, user can verify the Pocket information which will show the designated denomination.



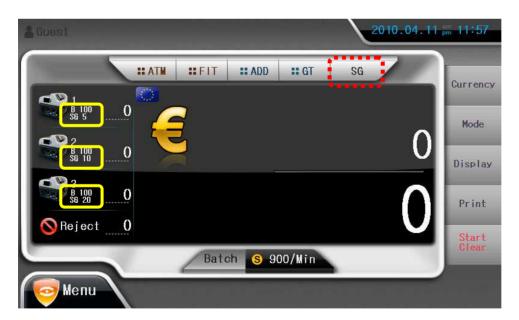


#### 3) SG

When ATM or FIT is on, the appointed denomination is sent to Pocket1 and Pocket 2.



When ATM or FIT is off, the third denomination is sent to Pocket 3.



User can change the appointed denomination for each pocket by pressing SG from menu.

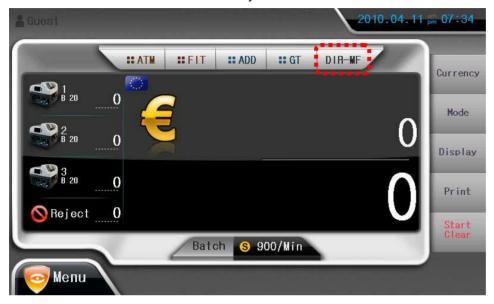


If Pocket 3 is Multi, you cannot select the denomination for Pocket 3.



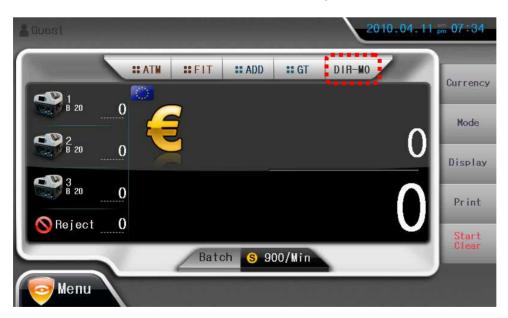
#### 4) DIR-MF

Machine sorts the notes by face of the note. When ATM or FIT is on, the first recognized the face of note is sent to Pocket 1 and the other face note is stacked to Pocket 2. Unfit notes are stacked to Pocket 3 and counterfeits or error notes are sent to Reject Pocket.



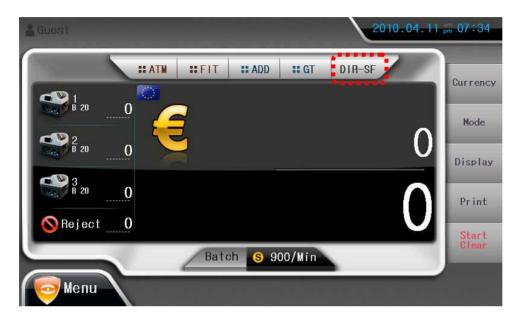
#### 5) DIR-MO

Machine sorts the notes by orientation of the note. When ATM or FIT is on, the first recognized orientation note is sent to Pocket 1 and the second direction note is stacked to Pocket 2. Unfit notes are stacked to Pocket 3 and the other direction notes are sent to Reject Pocket.



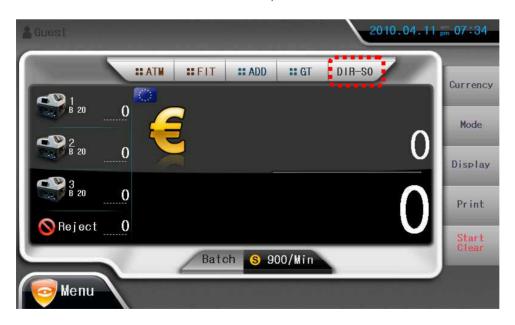
#### 6) DIR-SF

Machine sorts the notes by both note denomination and face. When ATM or FIT is on, the first recognized note is sent to Pocket 1 and the next recognized note is stacked to Pocket 2. Unfit notes are stacked to Pocket 3 and unconditional note, counterfeits or error notes are sent to Reject Pocket.



#### 7) DIR-SO

Machine sorts the notes by both note denomination and orientation. When ATM or FIT is on, the first recognized note is sent to Pocket 1 and the next recognized note is stacked to Pocket 2. Unfit notes are stacked to Pocket 3 and unconditional note, counterfeits or error notes are sent to Reject Pocket.

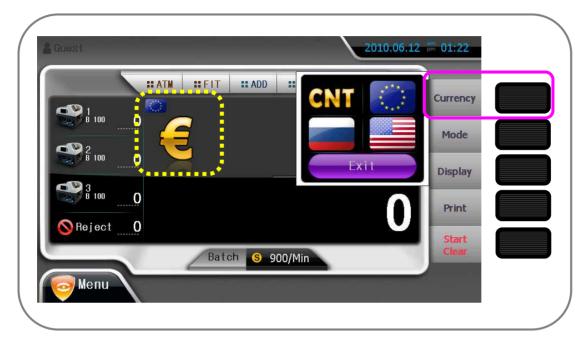


## 3. Operation Mode 2

#### 3-1. Currency

By holding Currency key, local currencies that machine have is shown.

By touching national flag, the currency can be selected.



By pressing Currency icon or Currency key shortly, local currency is changed in order.

#### 3-2. Mode

By holding **Mode key**, drop-down menu of Operation Mode 2 is shown.

By this key, Operation Mode can be selected directly.



#### 3-3. Display

By pressing Display key or icon, total counting result is shown as below.



#### 3-4. Print

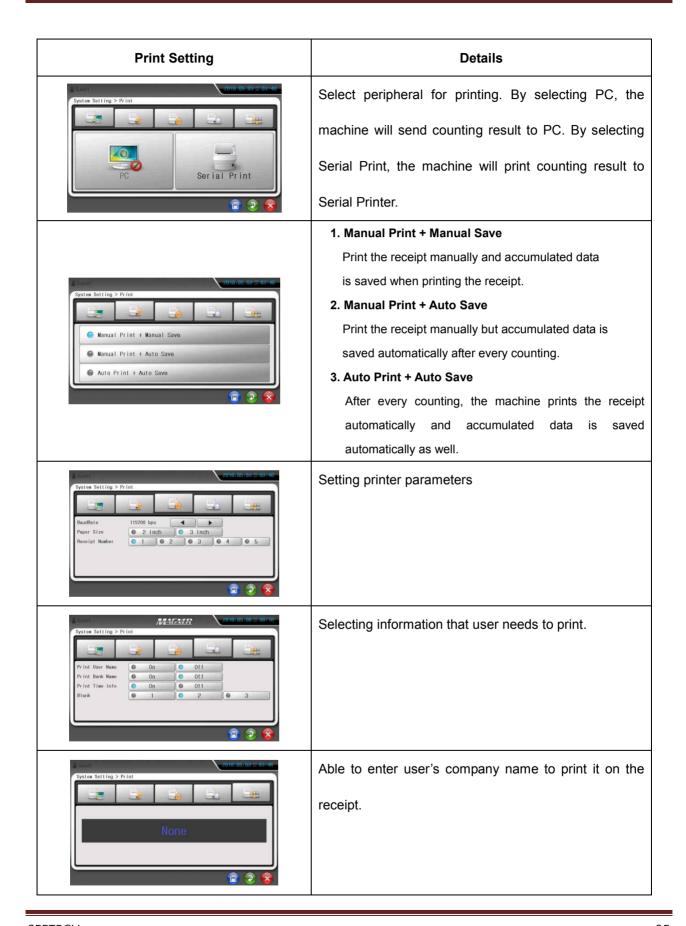
Holding Print key will print information that is shown on display.



By entering System Setting menu, user can select printing options.



#### ST-350 USER Guide



### 4. Others

#### 4-1. Batch

User can select Batch number for each pocket.

By pressing Batch icon, following menu is shown.



User can change all the batch number at once or separately.

After new batch number is entered and press "Save", the batch number will be changed.

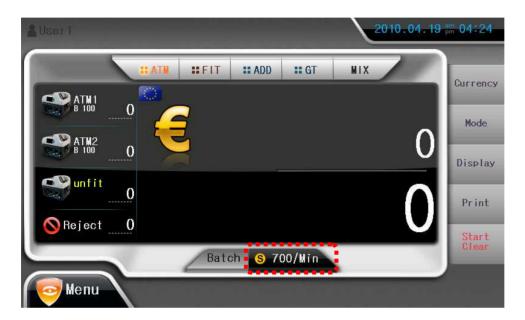




# 4-2. Counting Speed

When ATM or FIT mode is on, then counting speed is 700 notes/min.

When ATM or FIT is off, counting speed is 900 notes/min and user can change the speed from Machine Setting. But Pincode is needed.



### 4-3. User Information

By pressing \(^{\textstyle \text{Guest}}\), available user name is shown.

By selecting a user name, all machine information of the user is loaded.



# 4-4. Language

User can select Display Language from System Setting.





### 4-5. Date and Time

In System Setting menu, user can set date and time.





### 4-6. Sound

In System Setting menu, user can change volume and sound for machine operation.

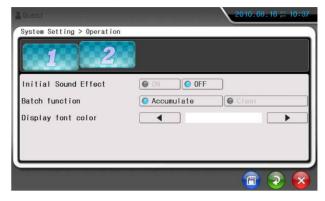




### 4-7. Operation

User can select several operations for individual preference.





#### 1) Manual Start/Stop

By pressing Start/Stop icon or key, machine will start or stop counting.

#### 2) Counterfeit Stop

When counterfeit is detected, machine stops counting.

#### 3) Batch Warning Message

When Batch is not complete and the user removes the notes from Stackers then error message will show.

#### 4) How to use Pocket 3

In SP, SG and DIR mode, if the user selects Pocket 3 as Multi, the unconditional notes are sent to Pocket 3 not to Reject pocket.



#### 5) Screen Saver Time

Set Screen Save time.

#### 6) Initial Sound Effect

Turn on or off Start Sound when turn on the power.

#### 7) Batch function

- Accumulate When next Batch is started, the displayed value is started from the previous counting result..
- Clear When next Batch is started, the displayed value is started from 0.

#### 8) Display font color

Select Display font color. (BabyBlue, Blue, Green, Pink, Red, White and Yellow)

#### 9) GT Automatic Turn-On (Fitness) - Pincode is needed.

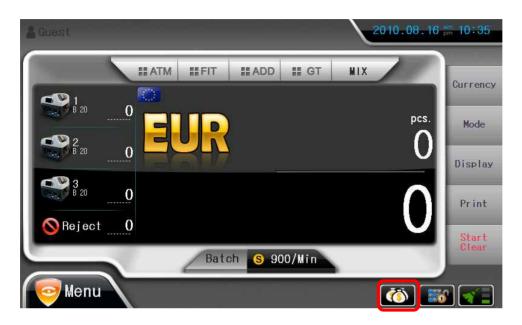
When enter Pincode, "5" tab is shown as below.

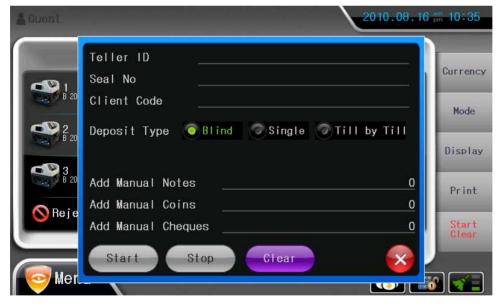


When enter FIT or ATM mode, GT is turned on automatically.

### 10) Customer Deposit - Pincode is needed.

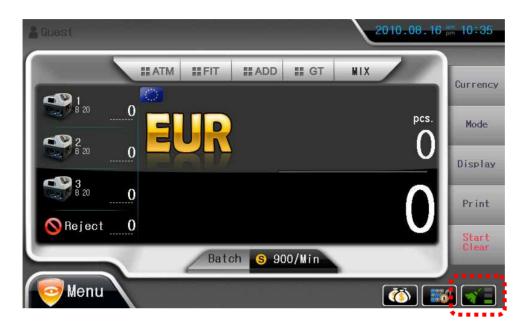
Enter the client information, account no, type of deposit and keep and print value of the deposit.





### 11) Cleaning Cycle [Notes - 30~1000 thousands] - Pincode is needed.

If Cleaning Cycle is set, machine informs clean time periodically.



As time goes, the icon is changed as below.



# 5. Menu

By pressing the hidden menu is shown as below. User can change operation setting and check machine state.



## **Entering Pincode**

To enter some menus, Pincode is needed.

Pincode is only for engineers, others are prohibited.



#### 5-1. Machine Model

By pressing Machine Model, user can check product information, software version, serial number and etc.



### 5-2. Help

Show Helpful information to use the machine.





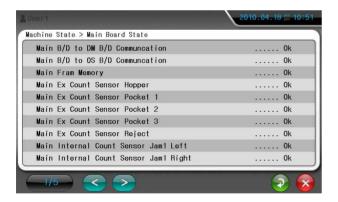
#### 5-3. Machine State

The machine has 3 parts for operating and user can check each part's condition from the menu.

But for checking Tachometer information, Pincode is needed.



#### Operation Board State screen



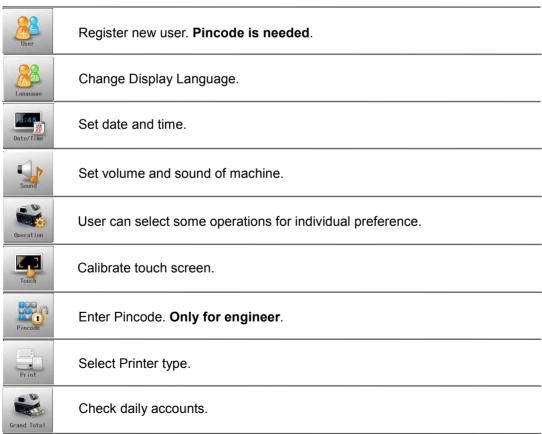




# 5-4. System Setting

In System Setting menu, user can set or change operation circumstances.





## 5-5. Upgrade

Upgrade firmware of machine. This menu is only available for engineer and Pincode is needed.

## 5-6. Machine Setting

Set ATM and FIT ability and calibrate all sensors of machine.

To enter this menu except Fitness Setting, Pincode is needed.





# 6. Specification

	F. II I M		
Counterfeit Detection	Full Line Magnetic Sensor		
	IR Transmission Full Image		
	UV Reflection x 4		
	Fluorescence x 4		
Dimensions (mm)	534(W) x 454(D) x 481(H)		
Weight	47 Kg		
Power Supply	100 ~ 240V AC, 50/60Hz		
Capacities	Hopper	600 notes	
	Stacker x 3	200 notes	
	Reject Pocket	100 notes	
Operation Speed	Piece Counting	1,000 notes/min	
	Value Counting	1,000 notes/min	
	Fitness Sorting	700 notes/min	
	Serial Number Print Out	500 notes/min	

# 7. Error Code

HI CODE	LOW CODE	DESCRIPTION	
12	1	Chain Error	
	2	- G.	
	3	Skew Error	
	4		
	5	Conditional Error	
	6	Size Error	
	7	Size Life	
	8	Skew Error	
	9	Jam Error	
	10	Communication Error	
	11	Conditional Error	
	12-14	Communication Error	

HI CODE	LOW CODE	DESCRIPTION	
	15	Double Error	
	20	Communication Error	
	21	ATM POCKET FULL	
	22	FIT POCKET FULL	
	23	UNFIT POCKET FULL	
	24	POCKET FULL	
12	25	BATCH FULL	
	26	REJECT POCKET FULL	
	27	Different Denomination	
	28	Different Face	
	29	Different Orientation	
	30	Different Case	
	DEFAULT	Err-Main12	
13	1-9	Таре	
15	DEFAULT	Err-Main13	
	1-9	MG Error	
14	10-19	UV Error	
14	20-24	Таре	
	DEFAULT	Err-Main14	
	1	Different Denomination	
15	2	Different Orientation	
15	3	Different Case	
	DEFAULT	Err-Main15	
32	1	Ckow Error	
	2	Skew Error	
	3		
	4	Value Error	
	5		
	6	Skew Error	
	7		

HI CODE	LOW CODE	DESCRIPTION
32	8	Skew Error
	9	Size Error
	10	Chain Error
	11	Double Error
	DEFAULT	Err-DM32
	6	Value Error
	7	
	8	
33	9	
33	10	
	11	
	20	Old Version
	DEFAULT	Err-DM33
	1	
	2	
	3	IR Error
	4	
	5	
34	6	
	7	
	8	
	9	<u>-</u>
	10	
	DEFAULT	Err-DM34
	1	Tear, DogEar, Hole
35	2	Tear, DogEar
	3	Tear, Hole
	4	DogEar, Hole
	5	Tear
	6	DogEar

HI CODE	LOW CODE	DESCRIPTION
35	7	Hole
	8	Composed
	9	Multitation
	DEFAULT	Err-DM35
36	1	Soil, Deinked, Crumple
	2	Soil, Deinked
	3	Soil, Crumple
	4	Deinked, Crumple
	5	Soil
	6	Deinked
	7	Deinked, Mark
	8	Crumple
	9	Stain
	10	Graffiti
	DEFAULT	Err-DM36

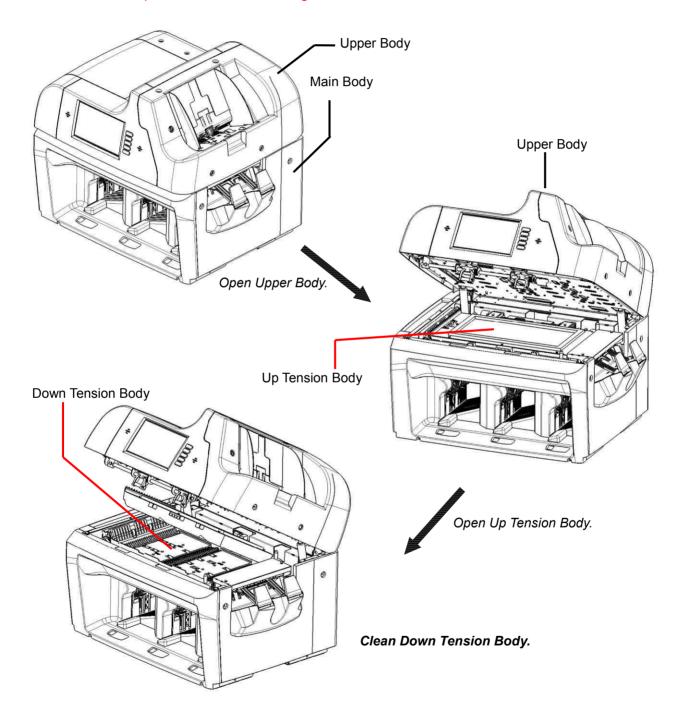
# 8. Maintenance

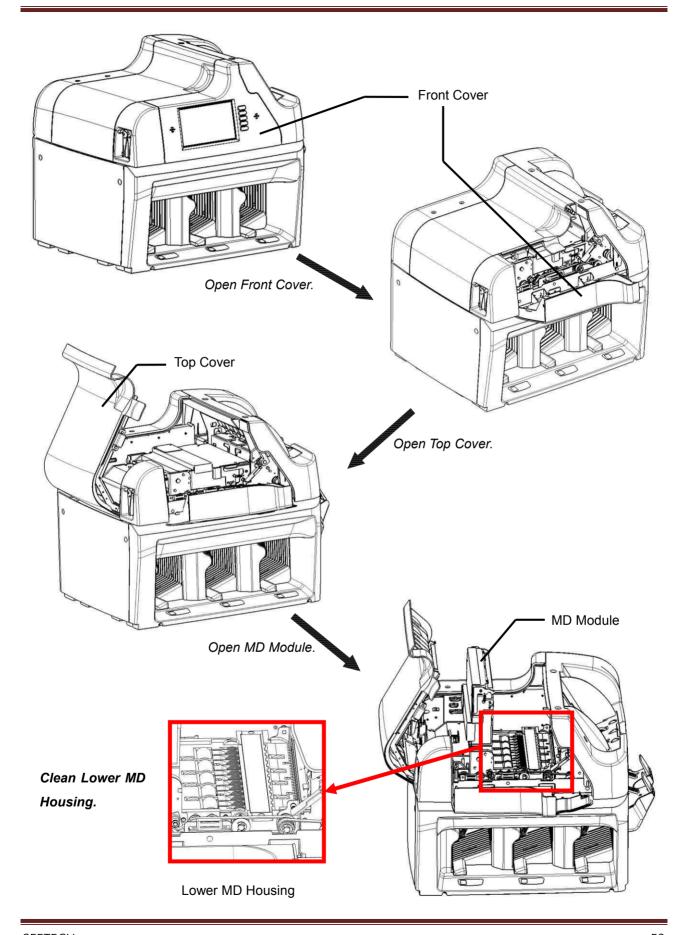
The machine has many sensitive sensors to perform high technology functions.

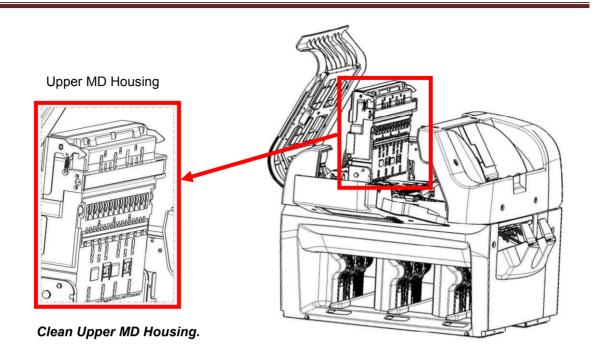
So users are recommended to clean the machine sensors at least once a day.

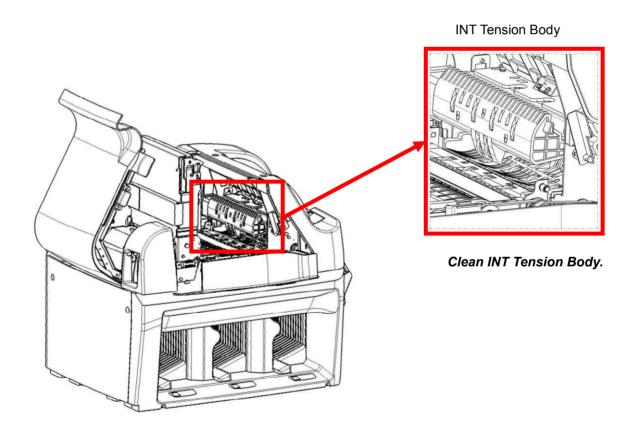
Refer to following section, clean the machine regularly.

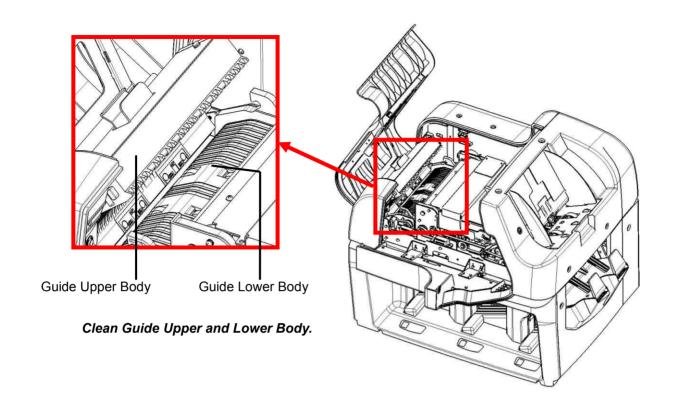
\* Please turn the power off before cleaning the machine.

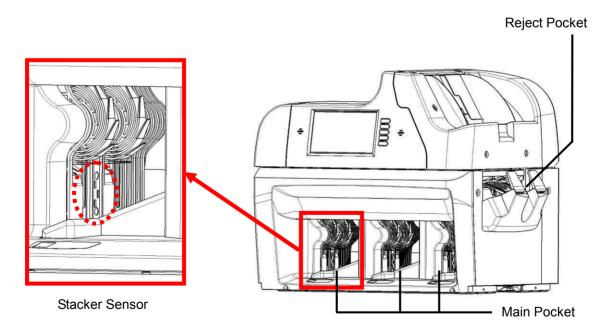




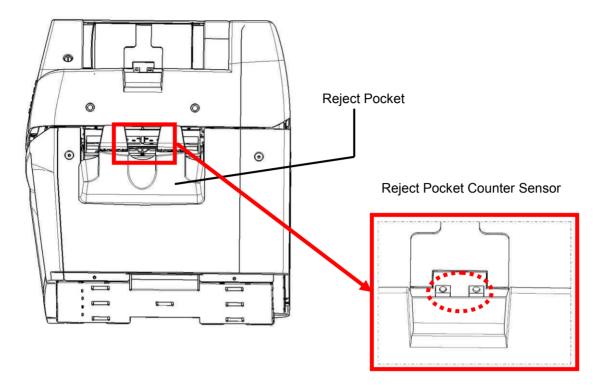








Clean Stacker Sensor of each Main Pocket.



Clean Reject Pocket Counter Sensor.