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MIB-11V (Value)

Currency Discrimination Counter Service Manual (V1.1)

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This guide covers the installation, operation and troubleshooting of Mib-11V Currency Discriminating Counter. We recommend reading this guide thoroughly before operating the Currency Discriminator. Then, as you become more familiar with Mib-11V, use it as a reference guide to look up information when you need it.

Please read the safety precautions below before operating MiB-11V Currency Discriminator Counter. These safety precautions guideline must be observed to avoid any potential hazards that could resulted in personal injuries or damage to MiB-11V Currency Discriminator Counter.



Electrical Safety Information

Always be careful in operating the Machine. To reduce the risk of fire, electrical shocks, and other injuries, keep these safety considerations in mind when installing, operating, and maintaining of your Machine.

Stability

Place the Machine on a secure and stable surface on a desk. The Machine can seriously get damaged if it falls from the desk or during movement.

Power Supply

Machine should always be connected to correct power as listed on this user manual and on the label located on the rear side of the Machine.

Grounding

Machine must be plugged into a grounded (three-hole) outlet. Grounded plugs and outlets are designed for your safety - do not try to make a three-prong plug fit into a two-prong outlet by modifying the plug or outlet in any way. please contact your service provider or a qualified certified electrician if you are unable to plug the Machine into your electrical outlet or power stripe.

Overload

Do not plug too many electrical Machines into a wall outlet or into a power strip. Do not use an extension cord in any situation. An overloaded outlet could be a reason of a fire and electrical shock hazard, further could damage the Machine severely.

Cleaning

Before cleaning the Machine, unplug the Machine from the power outlet. Clean external surface of Machine with a soft cloth slightly dampened with water. Do not use aerosol cleaners.

Gas Leaks

Never place the Machine close to a gas outlet nor operate the Machine around the outlet. In case of a gas leak, it could spread into electrical part of the Machine causing spark resulting in fire or explosion.

WARNING**Precaution**

1. Never push any objects of any kind onto the Machine side covers or insert any object through any opening of the Machine.
2. Do not operate your Machine in any wet location, or outdoors or if you are wet. Always keep liquid away from the Machine. If water spills occur, turn off and unplug the Machine immediately and contact your service provider.
3. Do not allow anything to rest on the power cord, line cord, or PC interface cable. Do not place the Machine where power cords can be damaged or unplugged by person walking or stepping on them.
4. Do not allow pets near the Machine or to chew on the power cord or PC interface cable.
5. Use supplies or cleaning materials only as directed. Keep all supplies and materials out of the way of children.
6. Make sure that the Machine is installed near an outlet and is easily accessible.
7. Never remove side covers or guards that require a tool for removal. This Machine is not designed for user or operators to service the Machine by themselves. Always refer servicing to authorized service personnel.
8. Never defeats interlock switches. This Machine is designed to restrict operator access to unsafe areas. Covers, guards and interlock switches are provided to ensure that the Machine will not operate with covers opened.
9. Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instruction.

Managing the performance of the Machine

This Machine is equipped with many sophisticated sensors. Without periodical and proper maintenance and servicing, Machine cannot perform well and last long. Please read the '**Maintenance**' section on this User manual and perform basic surface cleaning every day. Contact your service provider or sales representative to sign up with yearly maintenance plan with them.


Hazardous Safety Notes

Your Machine and related accessories included in the original packaging are designed and tested to meet strict safety requirements. Please read the following instructions carefully before operating your Machine and refer to them as needed to ensure the continued safe operation of your Machine.

WARNING

Hazardous moving ports!
Keep fingers and other body parts away



Either the symbol , or a similar symbol, combined with the triangle shaped warning sign from ISO 3864-2, or the following statement or equivalent text shall be used:

WARNING

Keep away Hazardous moving parts from moving Stacker blades.



FCC Compliance Statement

THIS MACHINE COMPLIES WITH PART 15 OF FCC RULES.
OPERATION IS SUBJECT TO THE FOLLOWING CONDITIONS:

THIS MACHINE MAY NOT CAUSE HARMFUL INTERFERENCE, AND THIS
MACHINE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING
INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION.



FCC Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can emit radio frequency energy and, if not installed and used in accordance with the instruction manual may cause harmful interference in radio communications. Operation of this equipment in a residence area is likely to cause harmful interference in which case the users will be required to correct the interference at their own expense.

Changes or modifications of this product not expressly
approved by manufacturer, could void the user's
authority to operate the equipment.

This manual shows user general symbols for safety information and symbols to identify special dangers.

Refer to the below Icons before reading Manual.

Icon	Word	Explanation
	DANGER WARNING	This symbol with the signal word (Danger/Warning) refers to an immediate risk / threat to life or body injury.
	CAUTION	This symbol is to identify safety information. Ignoring this warning can result in damage to the Machine or endanger data consistency.

Recommended Tools

Picture	Name and Spec.	Picture	Name and Spec.
	L Wrench Ø1.5		Hexagonal Screwdriver 5mm
	L Wrench Ø2		Screwdriver(+) 6mm
	Spanner 7mm		Screwdriver(-) 2.5mm
			Screwdriver(-) 1.5mm
	Long-Nose		Multi-Meter
	Nipper		Dust Blower Aerosol
	Anti-Static Gloves Rubber Coated		Dust Air Blower

- **Dust Blower:** Dust may cause to make a short in PCB so periodically clear dust apt to be accumulated inside of machine.
- **Anti-Static Gloves:** In maintenance or repairing, recommended to put it on to protect static caused to make a short.

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Chapter 1. Machine Packing and Handling

Packing List

No.	Part Name	Qty	Remark
1	MiB-11V Machine	1 Unit	
2	AC Power Cord	1 pc.	
3	User Manual	1 pc.	
4	Sensor Cleaning Cloth	1 pc.	

Work Area

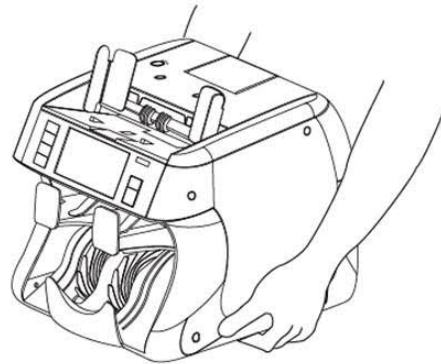
To help ensure trouble-free operation of the Machine, it is strongly recommended that you place the Machine on a flat, stable surface on your desktop or workstation.

Do not place the Machine:

- in direct sunlight
- Near heat sources or air conditioners vent
- In dusty or dirty environment

Handling

When handling or moving the Machine, do not lift the Machine with grasping the Front Area. The picture on the right illustrates how to lift the Machine correctly by holding at the bottom portion of the Machine from rear ends.



Power On / Off

Plug one end of the power cord into the A/C socket at the rear side of the Machine and the other end into a standard AC power wall outlet (properly grounded) or to a power strip.

Turn the Power On or Off by pressing power Switch button located at the rear side of the Machine (See section 2.1 Description of Parts at page 11). After initializing, Machine will enter into main display and ready for operation. Confirm that all of the counting results are saved prior to powering off the Machine (ignore if you decided not to save counting results).

Machine Interface



MICRO SD

[Micro SD]

For optional function

USB Type A

[USB Type A]

Machine firmware can be upgraded with USB Memory Stick (Flash drive) (Preferable method).

LAN

[LAN Port]

1. The counting results can be sent to PC though LAN.
2. PC can be connected to a third-party software via LAN port.
3. The Machine can also be upgraded through LAN.

RJ11

[RJ11 Jack]

External Display for customer [optional] can be connected to these 2 ports. Two Users can attach their own External Displays to these ports to show their individual counting results.

RJ11

RS232C

[RS232C Serial Port]

Machine has a RS232C serial interface port for connecting your Dot matrix or Thermal printer to print out counting result. To connect your printer to the Machine, follow the steps as below:

1. Make sure that both the Machine and the printer are turned off.
2. Connect the end of printer cable to the RS232C Serial port of the Machine.

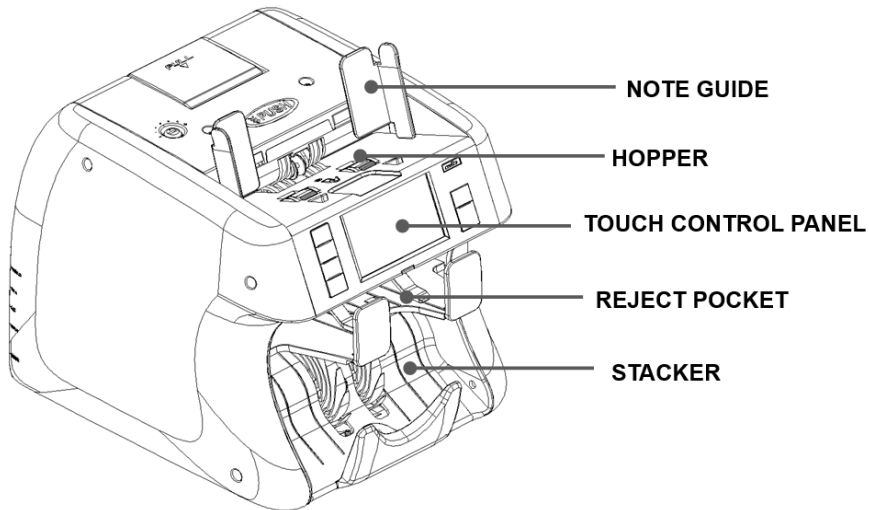
**[Warning]**

If user inserts improper cable terminal into the port, the Machine could get shut off. Please check the right port before inserting cable terminal.

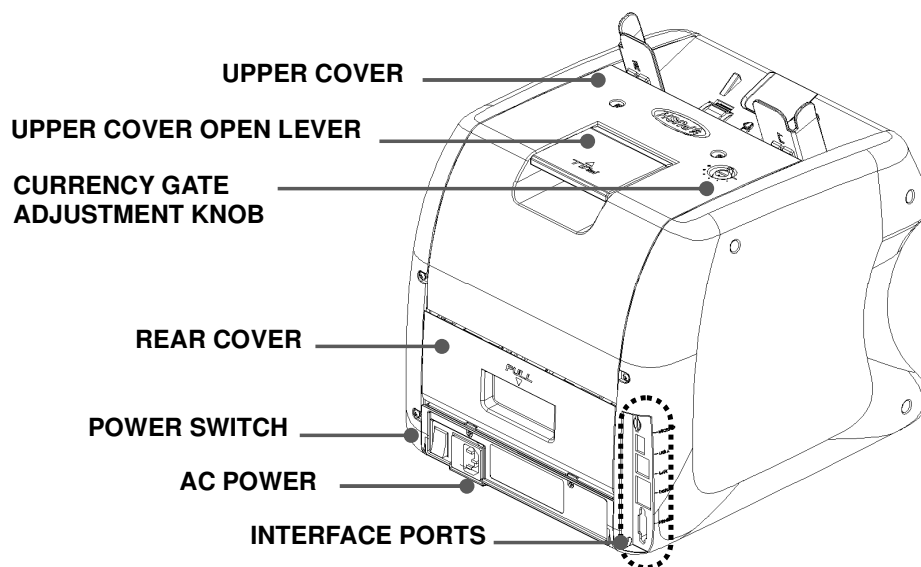
Chapter 2. Machine Description, Control Panel & Display Screen

2-1 Description of the Parts

[FRONT VIEW]









[REAR VIEW]



2-2 Description of Control

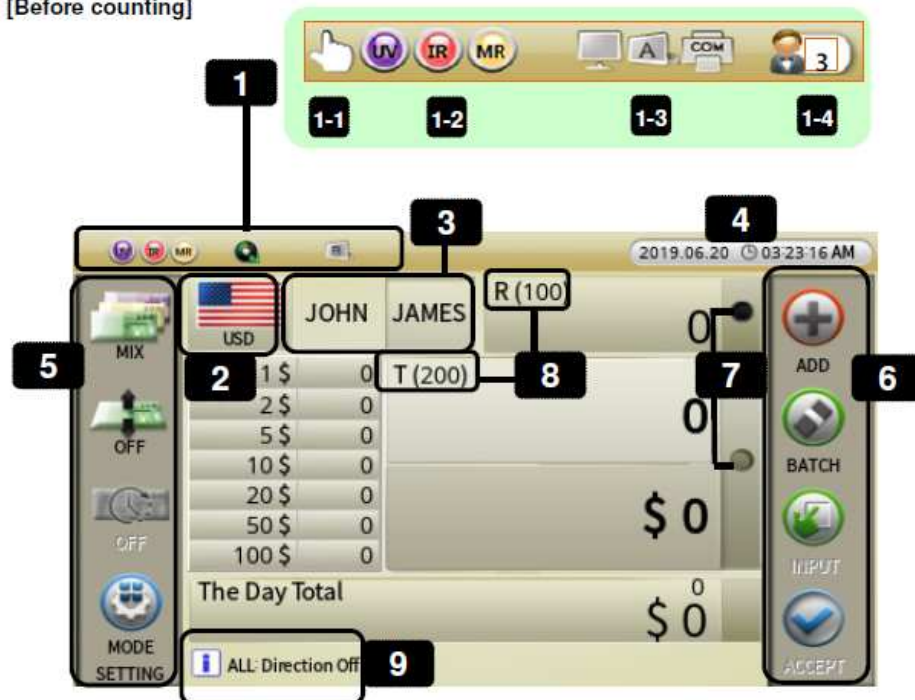
Overview of Control panel (With detail information)



Indication	Description
	<ul style="list-style-type: none">- Manually START the Machine (when Manual Start is set)- Emergency STOP & START during counting.- Save or set any counting or sorting modes or functions.- This key represents 'OK' and 'YES.'
	<ul style="list-style-type: none">- CLEAR the count result or return to previous menu screen.- CANCEL the present setting.- User can remove jammed notes by pressing this key.- This key represents 'Cancel', 'Close' and 'No.'
	<ul style="list-style-type: none">- To change various display screens to see current count result details, rejects reasons and so on.- This Key is also used to change some menu or sub-menus selection
	<ul style="list-style-type: none">- To Enter into User-defined mode. Up to 16 such combination of discriminating and sorting modes can be set by users in advanced and can be easily access from the control panel menu by touch.
	<ul style="list-style-type: none">- To Enter into User-setting Menu (User can set various Parameters). This menu is password projected. Also, to Exit from Setting Menu.
	<ul style="list-style-type: none">- To print each count result if external printer is connected.

2-3 Overview of Touch Screen

[Before counting]



[After counting]



No.	Name	Description
1	Indicators	
1-1	Auto or Manual Icon	To show Auto or Manual start. While Auto start is default, this Icon will appear if manual start is activated.
1-2	Counterfeit Icons	These icons indicate which counterfeit detectors are active (UV/ IR/ MR detectors) or turned on.
1-3	Interface Ports activity	To show Customer display or PC is connected to Machine.
1-4	User Define Mode	To show User Define Mode is activated or not activated.
2	Currency Flag Icon	To show the currency type is set for counting operation. User can change currency by touching this icon (if other currency software is purchased with your Machine).
3	Dual-Users	2 persons can use the Machine having their own settings and count results. To set the user, touch the alternative button. Double Touch can change to another user (Username can be edited)
4	Date & Time	To show Date & Time which can be changed according to your local date and time.
5	Mode Setting Icons	To display various Counting (Discriminating or facing or orient or User-define) modes for selection.
6	Function Setting Icons	To display various functions from ADD, BATCH, Manual Input etc.
7	Pocket LED	To display whether Stacker or Reject pocket is empty or full.
8	Stacker & Reject Pocket capacity, batch setting	To display Pre-set Batch amount or maximum stacker capacity (set to 200) & Reject pocket capacity set (set as 100).
9	Information	To display additional information to user for selected modes.
10	Denomination & number	To display counting results of each denomination banknotes counted. User can remove this section from display if choose to.
11	Reject Bills	To display how many bills are rejected during a count. To see detail view of reject reasons, touch the R Icon on the display.
12	Stacker	To display total quantity and total value of counted bills at Stacker. Touch this section to see Detail view.
13	The Day Total	To display the Day Total amount The user can remove this information from the display if chooses.

Chapter 3. PREPARATION OF MACHINE OPERATION



When Upper or Rear Cover is opened, Machine will display alarm message

How to open and close 'Upper Cover' and 'Rear Cover / Door'

[Upper Cover]

Gently insert your fingers inside the tab and lift-up the Upper cover. Press hard on the "PUSH" area to close the cover. You will hear a locking sound ensuring cover is properly locked in placed and closed.



[CAUTION]



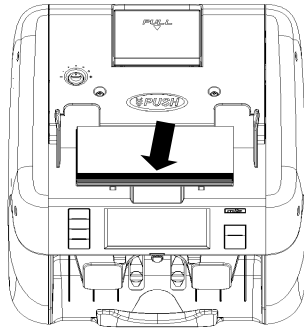
PLEASE MAKE SURE THAT UPPER COVER IS CLOSED PROPERLY. OTHERWISE, MACHINE WILL MALFUNCTION AND SEND MANY NOTES TO REJECT POCKET.

[Rear Door Cover]

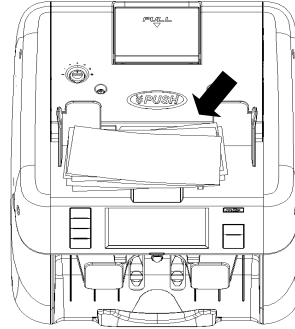


How to place banknotes onto the Hopper

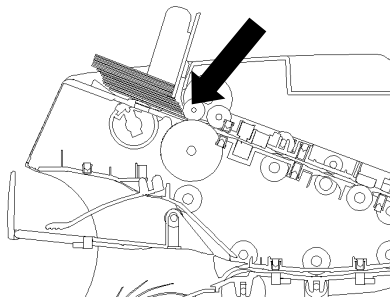
It is very important to place the banknotes on the hopper correctly and towards the end because recognition performance of the banknotes is highly affected by the arrangement of banknotes in a stack. Number of rejected banknotes can increase when banknotes are not placed towards the end and not aligned and arranged properly. Refer to the pictures below for the correct placement of banknotes onto the Machine Hopper.



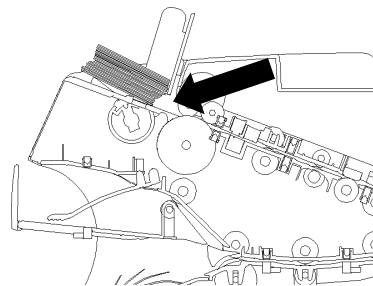
(Good)



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(Good)

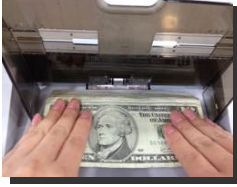



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
PLEASE MAKE SURE THAT THERE ARE NO CLIPS, BANDS OR SIMILAR FOREIGN OBJECTS ATTACHED TO BANKNOTES. FOREIGN OBJECTS CAUSES MACHINE MALFUNCTION AND MAY DAMAGE SENSORS SEVERELY.

Counting




In AUTO mode, Machine starts to count banknotes automatically after it detects the existence of banknotes on the hopper. In MANUAL mode, the Machine will start to count banknotes only if the banknotes are placed onto the hopper and 'START'  key is pressed. While counting, the Machine will display the number of the banknotes on LCD display and it halts operation when it meets one of the below conditions;

- No bills on the hopper
- Stacker Pocket is full.
- Reject Pocket is full.
- The number of counted banknotes reached the preset batch number set in BATCH function.
- Errors have occurred.

If an error or jam occurred during operation and Machine stops as reason, then an error message will be displayed. To clear the error, press 'C'  key. The Machine will try to solve the problem automatically, however, if it fails to clear the error or jam and error message repeats on the display screen, then, user to open the Upper cover door or Rear cover door as instructed by error message that displayed on the screen. Remove jammed banknotes from jammed location and close the cover correctly. Machine will then be able to clear the error message and resume operation when user press "START".



(EMERGENCY Stoppage of the Machine during operation)

While Machine is in operation, Press 'START'  button to stop counting operation immediately in case of an emergency.

To resume counting operation, press 'START'  button.



[CAUTION] EMERGENCY Stop during operation

Please 'START'  button to stop Machine operation while the Machine is counting. To resume operation, press 'START'  button again.

Chapter 4. SPECIFICATIONS

Item	Unit	Specification
Recognition Sensor	Qty	Dual (2) CIS (Contact Image Sensors)
Hopper capacity	Notes	MAX. 300 (optional 1,000 w/Extension)
Stacker capacity	Notes	200 [Max.300 for new banknotes]
Reject pocket capacity	Notes	100 Max
Display Type	Dot	4.3" Color Capacitive Touch Screen
Connectivity interfaces		3 RS232C Port (9 Pin D-SUB & 2 Moduler Jack), 1 USB (Type A), LAN, 1 Micro SD Slot
Currencies available		Up to 40
Banknote size range	mm	W: 100 ~ 185, H: 60 ~ 90
Banknote thickness range	mm	0.08 ~ 0.12
Counting Speed	Notes/min (Approx.)	1500NPM (Piece count) 1200NPM (all Discriminating Modes) (800/1000/1200 NPM)
Working Mode		COUNT/ MIXED/ SINGLE/ FACE/ ORIENT / SORT/ Etc.
Preset Batch Number		1 – 200
Counterfeit Detection		MR-Array, IR-Array, UV
Power Requirements		100-240V~, 50~60Hz,2.0A
Power Consumption	W	Approx. Standby: 12, Operation: 90
Operational requirements		10~40° / 0~85% RH (Non-Condensing)
Size (W x D x H)	Inch mm	11.3" [W] x 13.8" [D] x 12.4" [H] 287 [W] x 348 [D] x 312 [H]
Weight	Lbs. / Kg	Approx. 26.4 lbs. or 12 Kgs

Notes:



- This Machine specifications can be changed without further notice to improve its reliability, function or design.
- The contents of this user's guide can also be changed without prior notice.

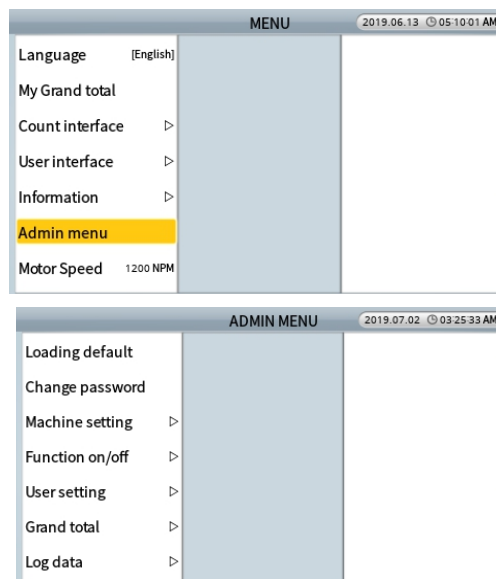
Chapter 5. ADMIN MENU

Admin menu

Administrator or trained operator can make changes to the functions and parameters at this menu with a password.

ADMIN MENU (Administrator Menu)

Administrator or trained operator can make changes to the functions and parameters under this menu with a password. Press  →  key on the Control Panel and Enter [12345] in Password screen or simply touch 'ADMIN MENU' in the [MENU] to access to sub-menus which are described in great details at the below:



MENU	SUB MENU	Description
Loading default		We do not recommend using of this menu item even for trained Uses. Please contact your Sales representative. If this loading default is performed, user will lose all their user-settings.
Change password		We do not recommend changing ADMIN password even for trained Uses.
Machine setting	Station ID	Set the ID number of each Machine
	Ethernet	Set up Ethernet connectivity
	FTP Information	Set up FTP information (not used)
	Blacklist	Manage suspicious banknotes list.
	Printer	Set up External Dot or Thermal Printer
	Customer display	Set up an external customer display purchase from manufacturer.
	Way of Motor stop	Choose how to stop the motor
Function on/off	CF items	Turn on/off CF sensors (Only Reserved for highly trained or Administrator)
	Auto Default Loading	Turn on or off 'Auto Default Loading' function. If select 'On', Machine will go back to default condition when off and on the power.
User setting	Concurrent User	Set up concurrent user function

	Set User Info	Input Username and Password
Grand Total	Auto clear	Set up GT saving period
	Clear Target	Select which total shall be cleared
	Initialize all	Initialize all total data
	Summary	The summary of Day/Grand Total
	Each user	Check GT for each user
Log data	Export log data	Log data can be exported to USB memory stick or screen

[Note: More information included for each function on Machine in each menu]

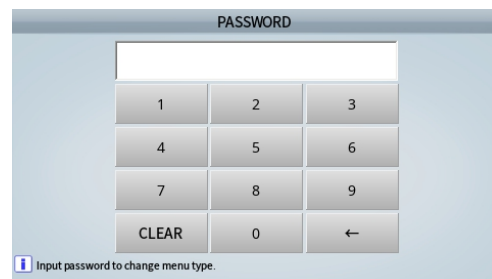
5.1 Loading default: (Not Recommended to change back to factory Default setting)

If for some reasons trained users perform this factory Loading default, all user's pre-set and pre-defined Modes, preferences, and various parameters set will be erased and return to initial setting of factory. The Factory default settings are very standard and very few areas are customized.

Function		Default Value
Speed (NPM)		Approx. 1200 (Discriminating Modes) MAX. 1500 (Count Mode - Piece count)
[Count interface]		
Starting counting		Auto
Pocket capacity	Stacker Pocket	200
	Reject Pocket	100
Accept result	Auto-accept	ON
	After-accept	Only add count-result to grand-total
Report result	Auto-print	off
	Printing Target	Select in printing
[User interface]		
Selection way		In list (On a pop-up menu.)
Sorting order		Ascendant
LCD brightness		90
Beep	Warning on/off	On
	Button on/off	On
Power saving	Waiting time	10 min.
	Saving type	Make the backlight of LCD darker

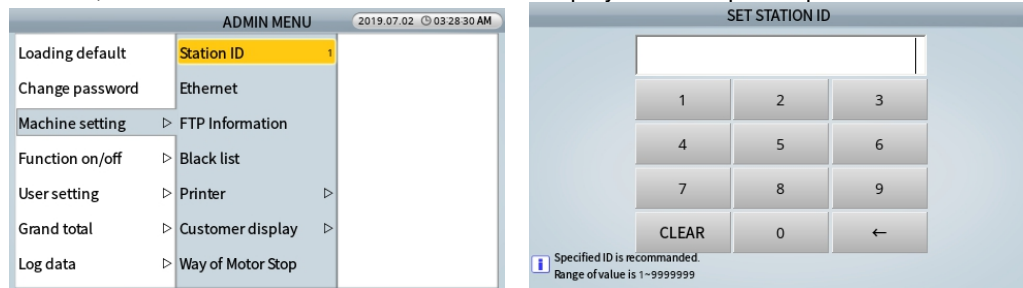
5.2 Change passwords

It is our highly recommendation that only trained users or Administrator of this Machine to access to this menu and change Administrator password.

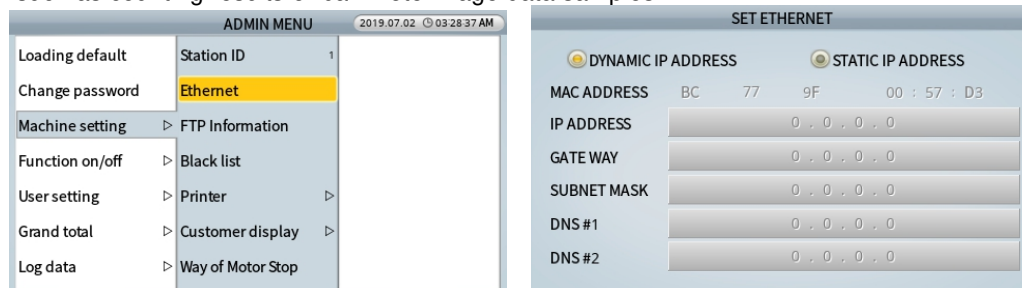


5.3 Machine setting

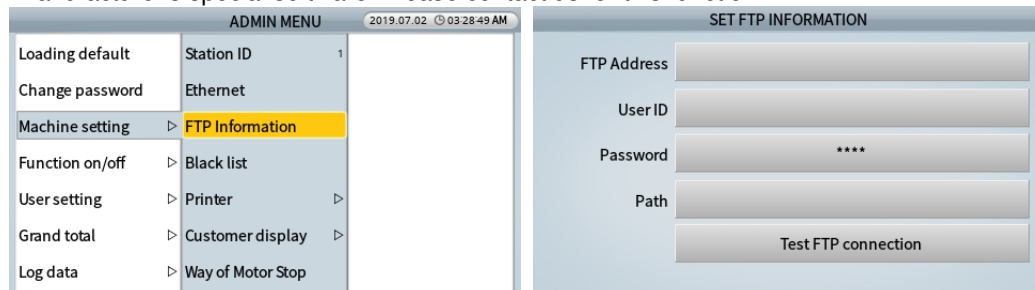
- 5.3.1 Station ID:** If User has multiple machines at a same location and prefer to identify them by an ID number, user will be able to do so. After a unique ID number of the Machine is selected from this sub-menu, that ID number for the machine will be displayed on the print report.



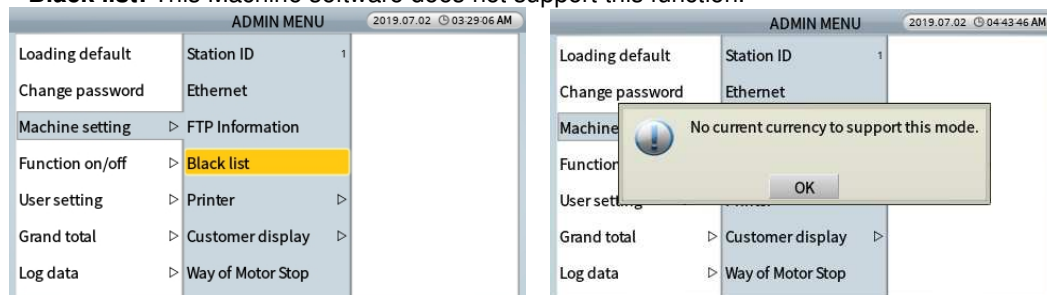
- 5.3.2 Ethernet:** Administrator can set up Dynamic / Static IP address in LAN setting if Administrator wishes to connect one Machine to a PC using LAN port to transfer data from one Machine to PC, such as counting results or banknote image data samples.



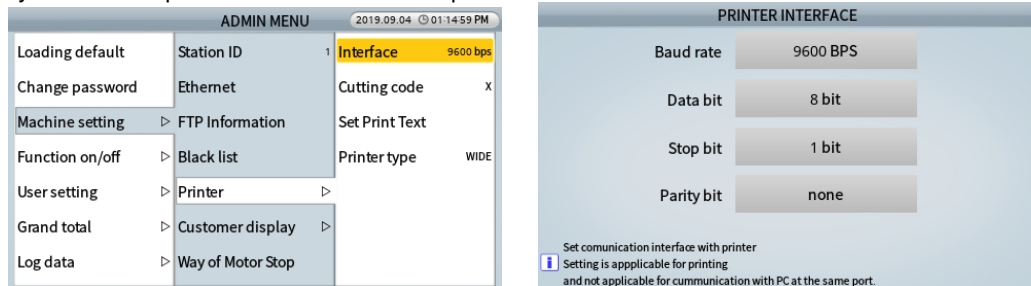
- 5.3.3 FTP Information:** If User owns number of Machines and located at different locations, Machines can be remotely connected by User via User's own FTP server to load software or transfer User's settings to FTP Server. In order to accomplish this task, User must be trained and require manufacturer's special software. Please contact us for this function.



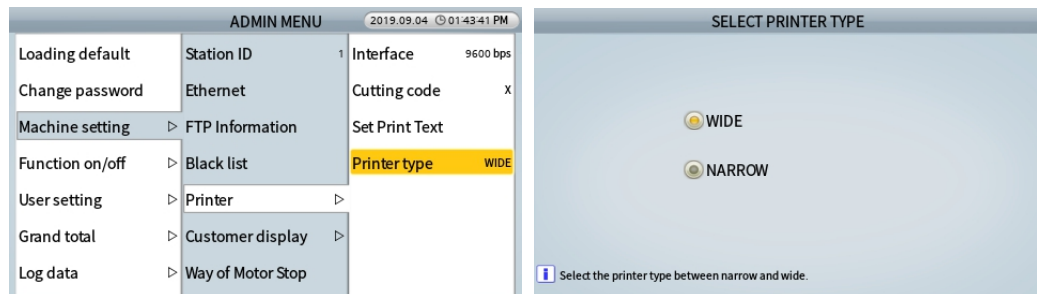
- 5.3.4 Black list:** This Machine software does not support this function.



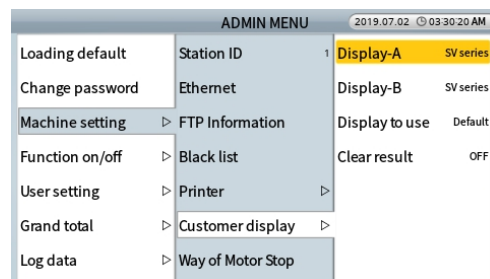
5.3.5 Printer: User can set up an External Dot Matrix or Thermal Printer (Printer Type) using this sub-menu item. Baud rate is set up as 9600BPS (default) for both Dot and Thermal. Check with your Sales representative for available printers for this Machine.



- 1) Printer Interface: Administrator must select various parameter of Printer interface (Baud rate, Data bit, stop bit and Parity bit) The default factory setting for printer interface is shown at the above illustration.
- 2) Cutting code: Contact your printer manufacturer for specific code if applies.
- 3) Set Print Text: Administrator can select 'TEXT' or 'HEX code' for both Header and Footer of Print Receipt using of this sub-menu.
- 4) Printer Type: Printer type as to WIDE and Narrow means how print layout appears on a printing receipt. We recommend using "WIDE" for better appearance of each print receipts.

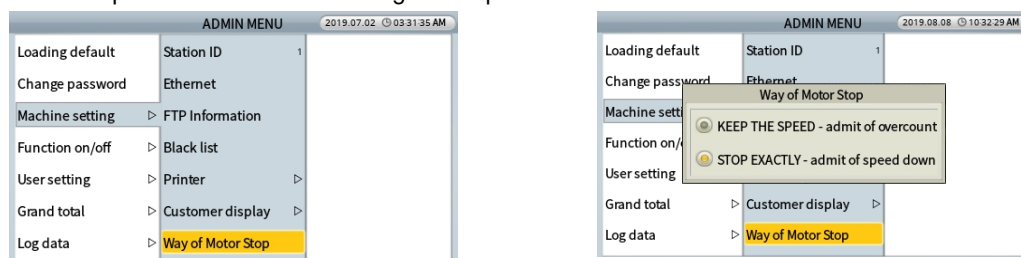


5.3.6 Customer display: Administrator can select customer Display type and connecting Port. For Dual-users uses (concurrent user), two separate external display units can be attached to the Machine as "Display A" which is for the user on the left and "Display B" is for the user on the right.



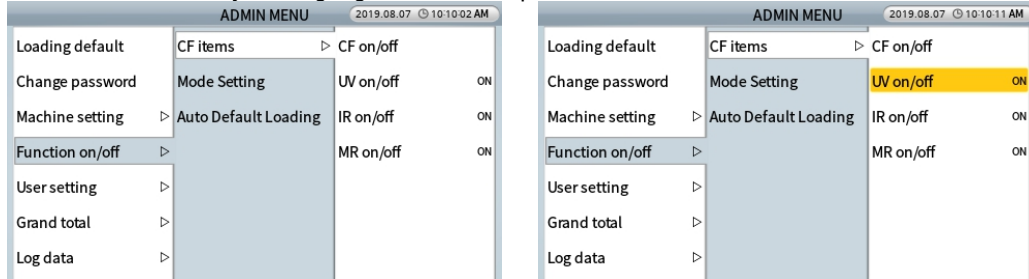
5.3.7 Way of motor stop: Administrator can choose option for 'Motor stop'.

1. 'KEEP THE SPEED': If either pocket is full, some banknotes on the transport path will be sent to Reject pocket and Reject Reason will be shown as "Over count" means banknotes are in the transport path.
2. 'STOP EXACTLY' (Factory Default): If a pocket is almost full, the counting speed will slow down and motor stops after the exact counting is completed.

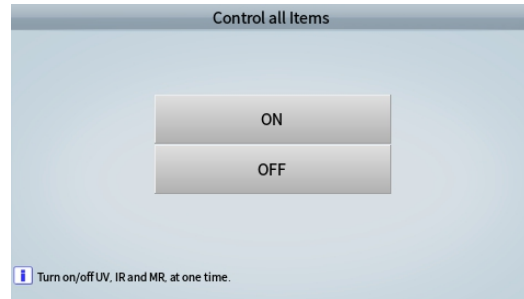


5.4 Function on/off (for Highly Trained Users or Service Professional)

5.4.1 CF Detectors: Although not recommended, Administrator or highly-trained users can access to the below sub-menu under ADMIN MENU → [Password] → Function on/off → CF Items and able to turn on/off any or all CF detector sensors, such as UV, MR, IR individually using this sub-menu. However, turning any of the CF detectors off, Machine will not be effective in suspect detection as it is designed to detect suspect or counterfeit banknotes having all detectors are activated. The indicator shows their status as turned ON if they are highlighted on the top indicator as below:

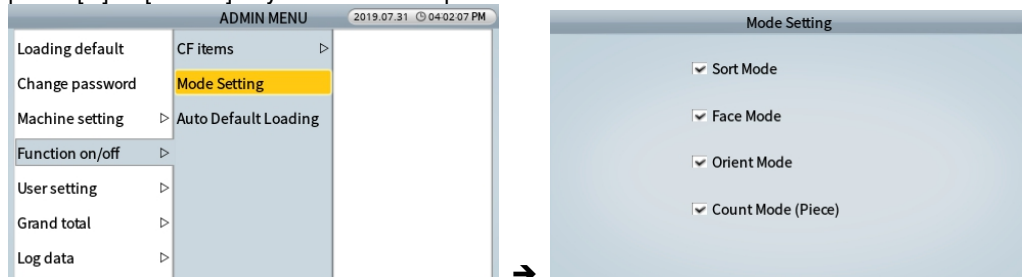


In case User wants to turn off all CF detectors at one time, touch on CF on/off sub-menu item and user will get access to the below menu where they can turn them all OFF or ON (ON being all activated)

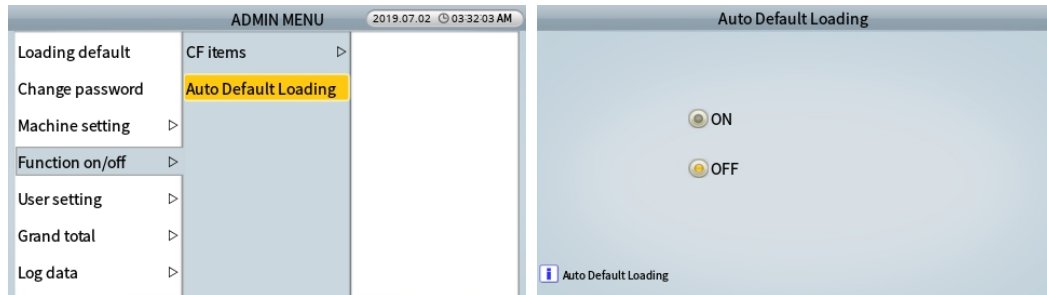


5.4.2 Mode Setting (How to Deactivate or Activate Counting Modes for simplicity)


Under this "Mode Setting: sub-menu item, highly-trained users are able to deactivate certain)operational count mode (Except for MIX and SINGLE Mode) to simplify Main screen [MODE] Key operation. Certain customers many not require SORT mode or FACE or ORIENT mode, so, they can disable these MODE of operation from this 'Mode Setting' sub-menu item under Function On/Off Menu. While by default, all modes are on, user can uncheck those Modes are not needed by unchecking them and press [START/STOP] to save their selection. To Exit, press [C] or [MENU] key on the control panel to return to Main Screen.

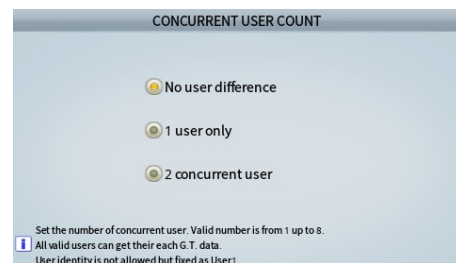



5.4.3 Auto default loading: Administrator or trained users can turn on or off the 'Auto default loading' function from this sub-menu under ADMIN MENU. If Auto Default Loading function is turned ON (default is OFF), then when Machine reboots next, Machine will load the default factory settings automatically which means, users will lose each of their customization and preferred Modes and settings from the Machine software.



5.4.4 User setting

Concurrent User: 2 users can take their turn and able to use Machine at the same time. This function is also known as “Dual-User”. If Dual-User is set up as 2 concurrent users from this sub-menu, then the Main screen will show  or by User's name if set.

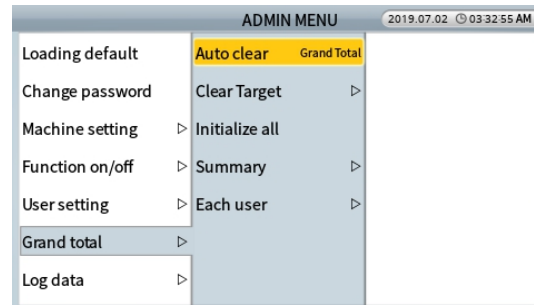


1. Administrator can set up modes and functions individually for each of the Users.
2. One of Dual-User can set up Print Port by entering into **MENU (MENU→ Count interface→ Report result→ Printing Port #1 or #2)** and Customer Display by entering into **ADMIN MENU (ADMIN MENU→ Machine setting→ Customer display)**. Once set up is completed, the allocated Print Port and Customer Display will be shown in upper indicator as .

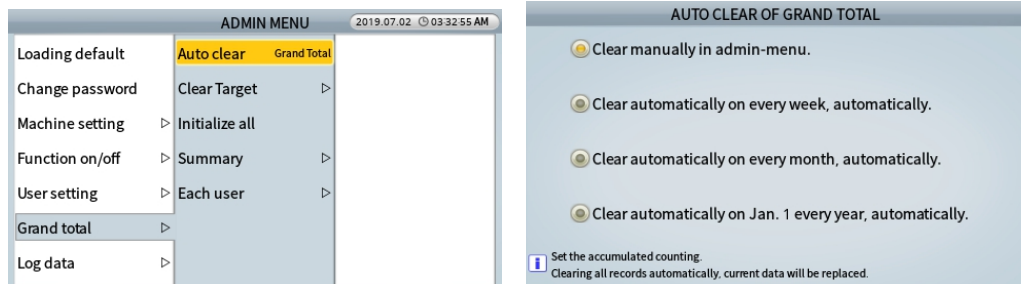


3. Administrator can enter and edit user name and password for each of the users using of “Set User Information” sub-menu.

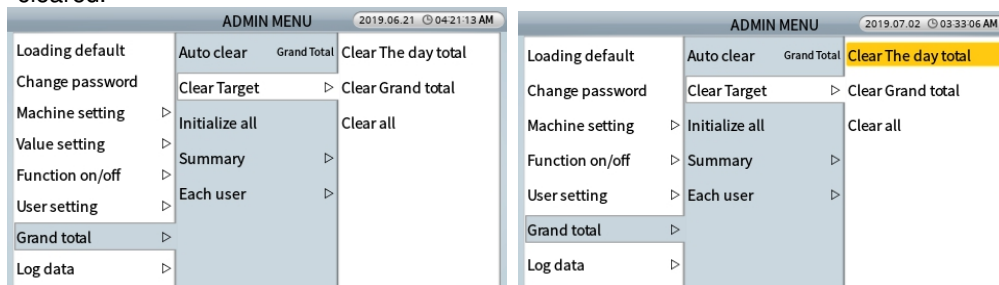
5.4.5 Grand Total



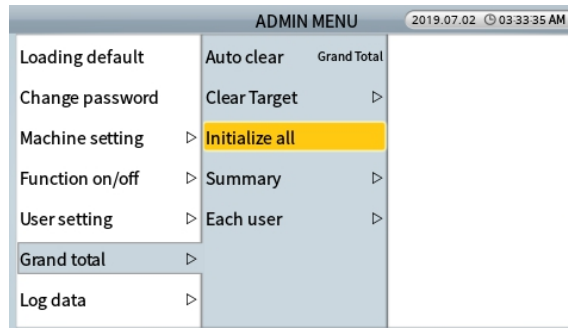
1. **Auto clear:** Administrator or trained users can configure to clear “Grand total” automatically or manually using this sub-menu as illustrated below. Please take extra caution to clear Grand total as it cannot revert once cleared.



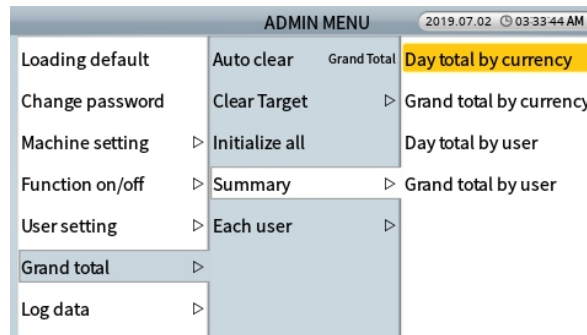
2. **Clear Target:** Administrator or trained user can clear only “The Day Total” or “Grand total” or clear all using of this sub-menu. Please take extra caution to clear Grand total as it cannot revert once cleared.



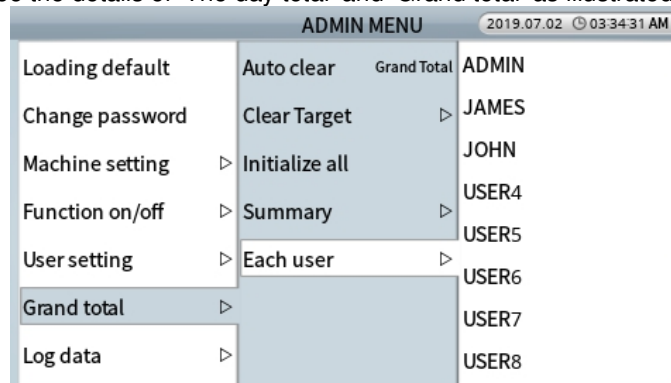
3. **Initialize all:** Administrator or trained user can delete the records and make The Day Total and Grand total zero. Please take extra caution to clear Grand total as it cannot revert once cleared.



4. **Summary:** Administrator or trained user can check, delete and print the summary of 'The Day Total' and 'Grand Total' by each user and by currency (USD default) if other currency software is purchased with this Machine from factory. Press button to change the currency and user during the selection.

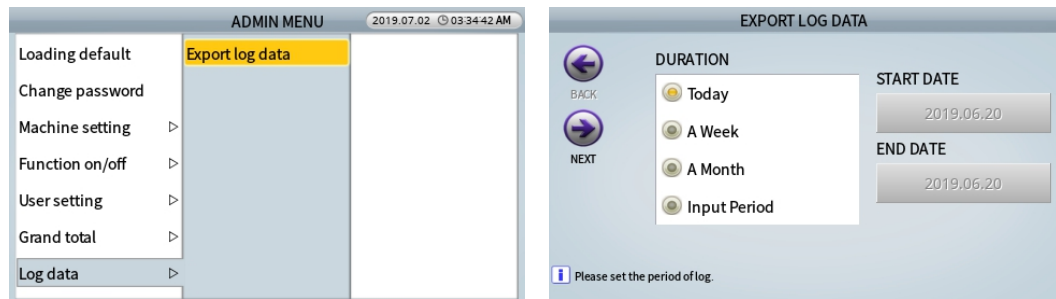




5. **Each user:** Administrator or trained user can read, delete and print the present & previous 'The Day total' and 'Grand total' by each user. After selecting the user followed by pressing button, 'Administrator' can see the details of 'The day total' and 'Grand total' as illustrated below:



5.4.6 Log data

Export log data: Administrator can export all Log DATA; e.g., Count Detail in Currency / Count Detail in User / etc. by the format of EXCEL file. Follow the steps below:



- ① Insert USB flash drive (memory stick) into the USB Port.
- ② Select 'Export log data' in this menu.
- ③ Select the Duration period and touch  icon.
- ④ Select CURRENCY & USER and touch  icon.
- ⑤ In USB flash drive (memory stick), Log DATA file will be created.

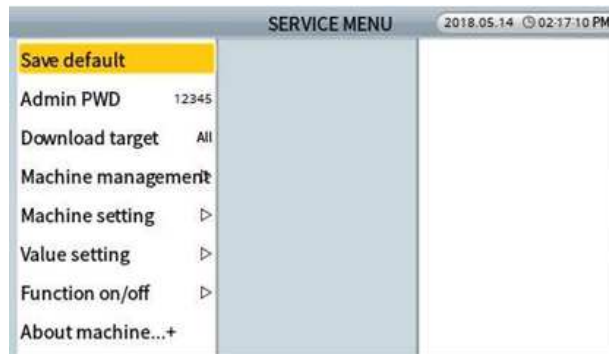


Chapter 6. SERVICE MENU

How to enter SERVICE MENU:

Press 'MENU' → 'MODE' → '55757'

Press 'C' key to return to previous screen. To Exit from the menu entirely and return to Main screen, press 'MENU' key.



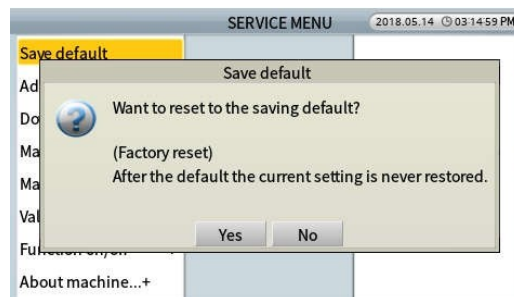
MENU	Sub Menu	Description
Save Default		
Admin PWD 12345		
Download target	From all pockets from stacker pocket From reject pocket Unfit patterns in fitness mode	Download Image data to PC
Machine management	Program update	Software upgrade
	Touch Calibration	Touch screen calibration
	Calibration	Batch processing Tape Calibration CIS Calibration UV Calibration MR (Test) IR.T (Test) Hopper Calibration
	Machine test	Self Test Aging Test Lamp Test Sensor status report Motor test

		Note-path test Solenoid test Key test
	Log data	Export log data
	Counting report	
	Set A/S Alarm	
Machine setting	Set date/time	
	Set A/S call	
	Ethernet	
	Save Image Data	
	Reason View	Reject Reason
Value setting	CF level	Adjusting CF sensor level
	Hopper level	Adjusting hopper sensor level
	Double level	Adjusting double sensor level
Function on/off	CF items	Control all Items UV on/off IR on/off MR on/off
Information	About machine...+	
	Machine environment	

6-1. Save default

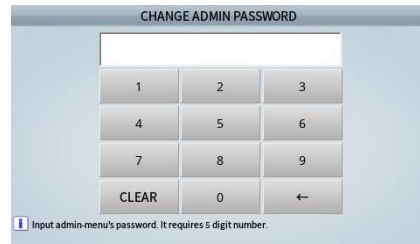
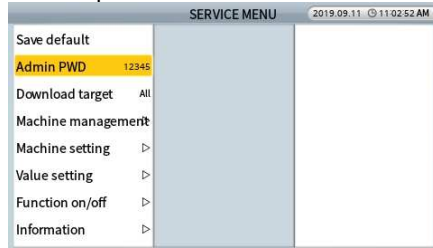
You can reset all the parameters in Service menu to initial factory level.

But you cannot reset 'Log Data'



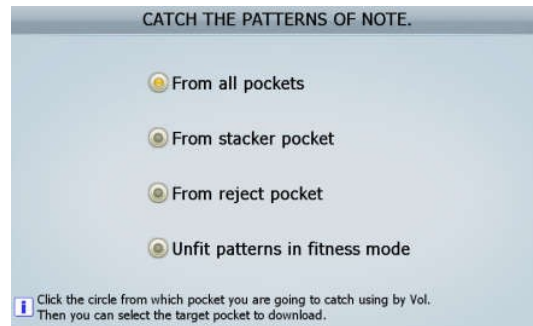
6-2. Admin PWD

Administrator password can be checked and changed at this Menu



6-3. Download target

You can designate the pocket for downloading data and send the data to “Vol” program (special program which ‘AMROTEC®’ provides). Refer to the right picture.



1. From all pockets: You can use when you want to download image data from stacker and rejecter.
2. From stacker pocket: You can use when you want to download image data from stacker only.
3. From reject pocket: You can use when you want to download image data from rejecter only.
4. Unfit patterns in fitness mode: You can use when you want to download unfit data only.

6-4. Machine management

6-4-1. Program update

In this mode, you can simply install new software for upgrade by USB Memory Stick.

The steps for update are as follows.

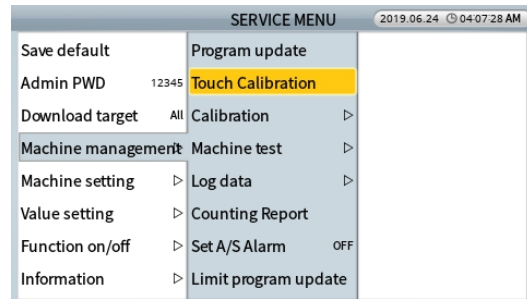
1. With the machine on, insert USB Memory which has the file provided from service provider to the USB A port in the back side of machine.
(Copy the file ‘~.s11’ and paste on the root of USB Stick)
2. Select this menu [SERVICE MENU->Machine management-> Program update]
3. The machine will recognize the programs in USB memory stick automatically.
4. User can choose the program for update by touching screen.
5. Machine will be powered off and on automatically after update is done.



[Caution] Regarding the formatted type of USB memory, ‘FAT32’ is recommended under the Windows environment.

6-4-2. Touch calibration

Touch calibration for screen. (In case touch screen doesn't work, you can use USB type mouse)



6-4-3. Machine test

■ Self-test

: Machine has a self-test mode that motors, sensors, pockets and program can be tested by itself. Test result shows like right picture.



- ① Program: Machine checks the checksum of Image Board.
* If NG, update S/W once again and change the Boards (Image, Option) and test.
- ② On Time: Machine checks the IR transmission sensor.
- ③ Solenoid: Machine checks the position of Solenoid is good position or wrong position.
- ④ Motor: Machine checks Main Motor, Feed motor.
- ⑤ Note Check: Machine checks sensors of Stacker and Reject Pocket.
- ⑥ Sensor: Machine checks the position sensors (RP).

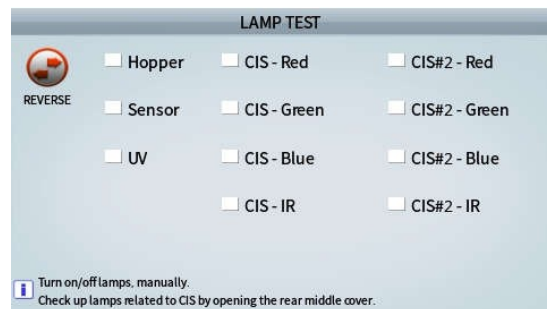
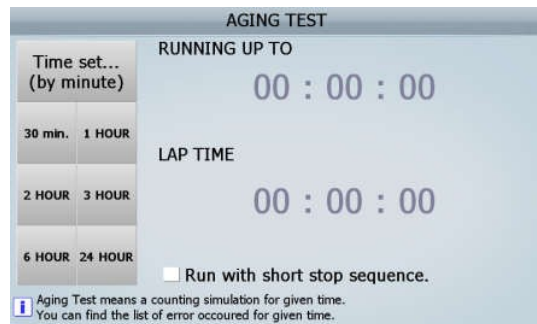
■ Aging test

: Machine runs counting test during the period of set time. If some errors occurred, you can check them after ending this test.

* When you replace SMPS or reassemble mechanical parts of the machine, you can take a running test without real notes counting with this 'Aging test'.

■ Lamp test

: You can light the lamps manually. You can see CIS lamp with your eyes or camera opening the upper cover.



■ Sensor status report

: This report shows the sensor status value by every 500ms.

SENSOR STATUS				
Hopper on	110	RP #1		
Hopper off	55	RP #2		
Cover		RP #3		
Rejector		RP #4		
Stacker		RP #5		
Overflow				
 Sensor status is updated every 500 milliseconds.				

■ Motor test

: You can test motor is working and the speed.

MOTOR TEST

 Stop

 700 NPM

 1000 NPM

 1200 NPM

 1500 NPM


☐ Except feed motor


 The motor is placed on the right side of machine.


■ Note-path test


: If you put some notes on the hopper, you can see the notes are distributed as the choice. If you select 'Notes to all of pockets, automatically', the machine will send each single note to stacker and rejecter.


NOTE-PATH TEST

 Stop

 Notes to stacker pocket

 Notes to reject pocket

 Notes to all of pockets, automatically

 Put notes on hopper, and it will be to an assigned pocket.
In an auto-assignment, the rate is 1:1 for each pocket.

■ Solenoid test

: You can check Solenoid works properly or not.


Test with pressing 'Rejecter' and 'Stacker' button.

The green and red LED should be changed. If not changed properly, it means the sensor solenoid doesn't work properly.


SOLENOID TEST

Test Selector movement

Rejector



Stacker



■ Key test

: You can test keys on Control panel.

BUTTON TEST

CHANGE

MODE

MENU

PRINT

Please push the machine button.

RESET

EXIT

CANCEL

START

6-4-4. Log data

This mode provides exporting Log data to USB Stick (Format is 'csv').

The procedure of Log Data Exporting is here below,

[1] Insert USB Memory Stick into the USB Port of machine.

[2] Select 'Export log data' in this menu

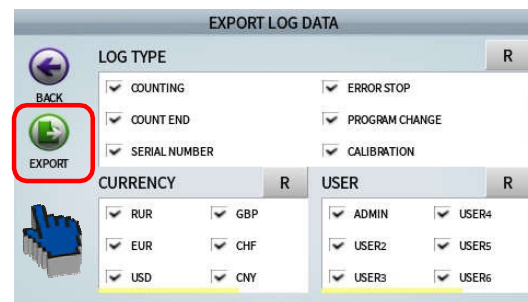
(ADMIN MENU _ Log Data/ Export log Data)

[3] Select the Range of the Period.



[4] Touch on [Next] ICON.

[5] Select Currency and USER and Touch [Export] ICON.



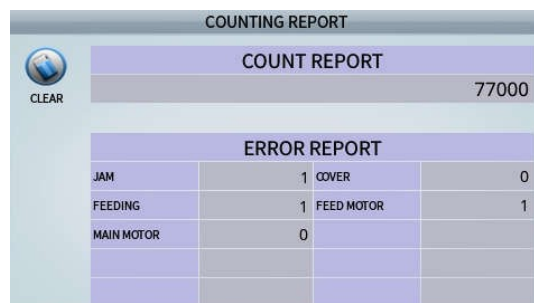
[6] In USB Memory Stick, Log DATA file will be created as right screen.



6-4-5. Counting report

This mode provides the information for how many notes are counted and how many errors are happened.

To clear this report, please input password '35719'



6-5 . Machine setting

6-5-1. Setting of date/ time: User can set up system date and time using this sub-menu according to their country's standard year, date format and local time.

The first screenshot shows the 'SERVICE MENU' with 'Set date/time' highlighted. The second screenshot shows the 'TIME SETTING' screen with a numeric keypad for Year (1906), Month (24), Day (04), Hour (48), Minute (05), and Second (05). It also includes a 'Date Format' section with options: YY.MM.DD (selected), MM.DD.YY, and DD.MM.YY.

6-5-2. Set A/S call: Setting A/S phone number

The first screenshot shows the 'SERVICE MENU' with 'Set A/S call' highlighted. The second screenshot shows the 'SET A/S CALL NO.' screen with a numeric keypad for entering a phone number, including a 'CLEAR' button and navigation arrows.

6-5-3. Ethernet: You can manage LAN here and can set IP address.

The first screenshot shows the 'SERVICE MENU' with 'Ethernet' highlighted. The second screenshot shows the 'SET ETHERNET' screen with options for 'DYNAMIC IP ADDRESS' (selected) and 'STATIC IP ADDRESS'. It displays the MAC ADDRESS as BC 77 9F 00 : 57 : D3 and fields for IP ADDRESS, GATE WAY, SUBNET MASK, DNS #1, and DNS #2, all currently set to 0.0.0.0.

6-5-4. Save Image Data: You can get image data to USB memory stick using this menu.

Please Input folder name in USB Stick and press Start key 2 times. Then count banknotes which you want to download image data.

The first screenshot shows the 'SET IMAGE DATA SAVE PATH' screen with 'USB Storage Path' selected and highlighted by a red box. The second screenshot shows the 'SAVE LOCATION' screen with a numeric keypad for entering a folder name, currently displaying 'REAL US\$100'. It includes a 'MAX 20' indicator and a 'CLEAR' button.

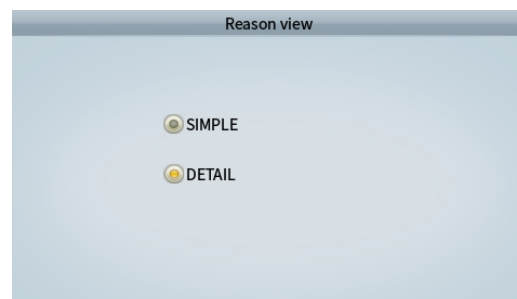
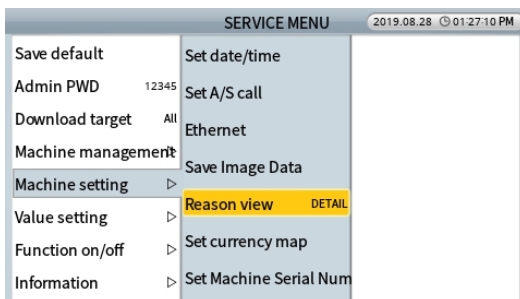
During machine downloading image data, machine will show as next figure.

'AMROTEC®' will modify the software using these image data after we got it from you.



6-5-5. Reason View

User can set how much information to show on the Machine Touch Screen as to reasons for all reject Banknotes. User can choose simple /short view or Detail view of reject reasons and can be set up under this sub-menu [REASONS VIEW].



REJECT REASON (16)

NO.	REASON	DETAIL
1	SUSPECT	-
2	SUSPECT	-
3	SUSPECT	-
4	SUSPECT	-
5	SUSPECT	-
6	SUSPECT	-
7	SUSPECT	-
8	SUSPECT	-
9	SUSPECT	-
10	SUSPECT	-

SIMPLE VIEW

REJECT REASON (11)

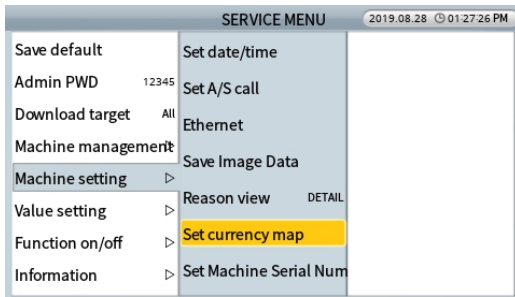
NO.	REASON	DETAIL
1	NO I.D.	BANKNOTE IS NOT RECOGNIZED
2	NO I.D.	BANKNOTE IS NOT RECOGNIZED
3	DOUBLE	DOUBLE
4	DOUBLE	DOUBLE
5	CHAIN	CHAIN
6	CHAIN	CHAIN
7	CHAIN	CHAIN
8	DOUBLE	DOUBLE
9	CHAIN	CHAIN
10	DOUBLE	DOUBLE

DETAIL VIEW

6-5-6. Set Currency Map:

Using this sub-menu, trained users can achieve two things:

1. User can activate or deactivate Currency to be appear on the Main Screen.
2. After User choses currencies to activate, then press 'Start/Stop" key to save the selection. Machine will ask "Choose how to show up the currency order".
=> if user press 'Yes', user can edit the currency order by 'Drag the currency Icon and drop'

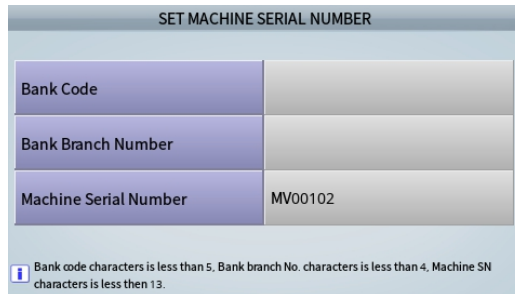
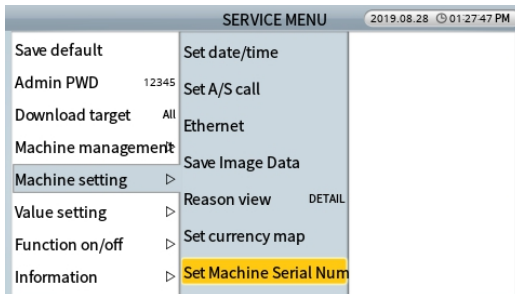


6-5-7. Set Machine Serial Number

Trained User can input information for 'Bank code', 'Bank branch number', 'Machine serial number'.

[In current S/W, 'Machine serial number' will be printed with counting result on your print report if Serial number is inputted here].

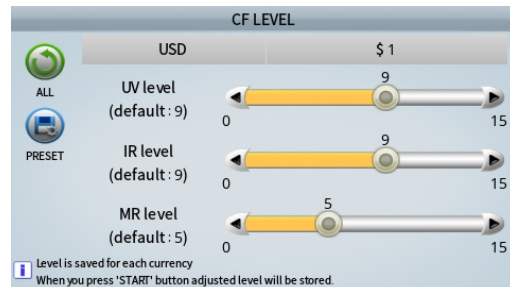
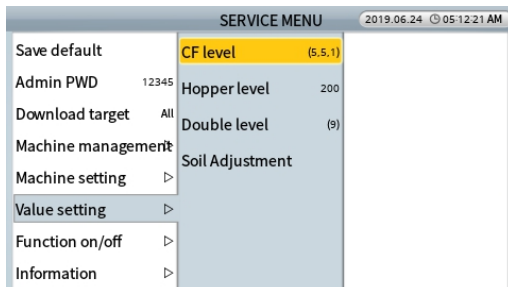
If users have their own bank app S/W connected to MIB-11V machine and if they need to input information such as 'Bank code' and 'Bank branch number', user can input in here.)



6-6. Value setting (CF Level) **[WARNING]**

Only proceed after proper consultation with AMROTEC® and with AMROTEC's approval in writing. Improper adjustment may entirely change the way machine behaves for genuine and suspect / counterfeit banknotes and entire recognition of banknotes can get disoriented.

Under this Value Setting → CF Level, Service professional can set up sensitivity levels for each counterfeit detector, such as UV (Ultra-Violet) Sensors, MR (Magneto-Resistive) Sensor (combined with 9 MG heads) and IR-Array (Infrared) Sensor that are embedded with MIB-11 Series and by specific Currency or by each and every denominations of that Currency.



6-6-1. CF level by Particular Currency Type (i.e USD) **[WARNING]**

In this menu, trained Service professional can make necessary adjustment on the sensitivity level by a currency, such as USD and any settings to this screen would generally apply to all denominations of US banknotes. The setting method is as follows.

[How to set]

Select Currency. USD is Default (a)

- [1] Choose a particular detector to adjust level
- [2] Move each circle using arrow symbol
◀ (lower) / ▶ (Higher) and set your desire sensitivity level. (b)
 - ① Move the circle of the first bar and set UV level.
 - ② Move the circle of the second bar and set IR level.
 - ③ Move the circle of the third bar and set MR level.



(a)

(b)

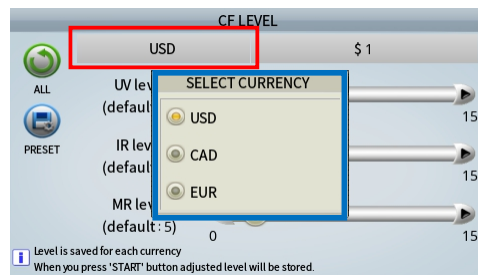
(It is possible to set each CF sensitivity level by using “◀ ▶” key)

- [3] Press **[START/STOP]** Key to save each and every Detector's new sensitivity level.

[The lower the number, it is less sensitive. If the level is '0' (Zero), the sensor is deactivated]

6-6-2. CF level by different Currency Type (USD, Canada etc and if software is loaded)

If MiB-11V machine is equipped with multiple world-currencies software, trained users can select different currencies and make necessary adjustment to counterfeit Detection sensitivity level.



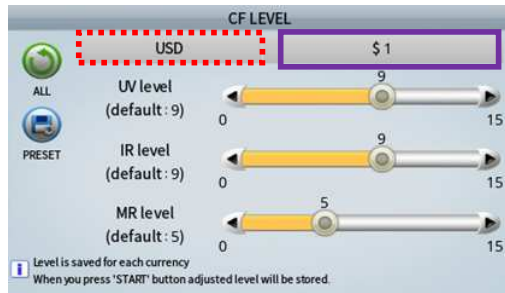
- [1] Touch on red circled box where USD is shown as Default. If machine is equipped with other world-currencies, they will be listed on the new pop-up screen. Select your desire currency by touching it and then, follow the steps described in 4-1-1 section above.

6-6-3. CF level adjustment by denominations of a currency type: **[WARNING]**

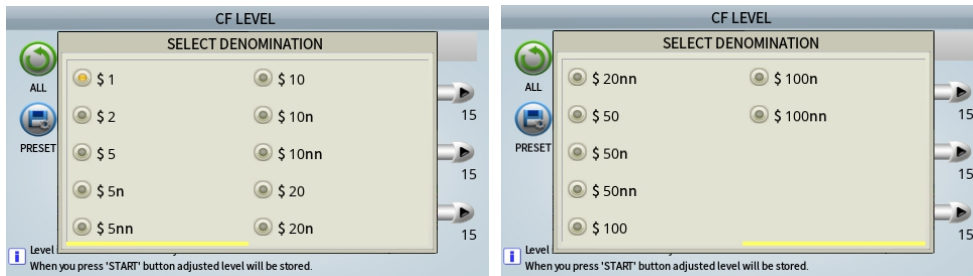
Trained Service professional can make necessary adjustment on the sensitivity level for each detector by selecting a currency type and selecting a denomination of that currency type and make adjustment for each detector. This adjustment is very critical, so, we highly recommend even trained personal to contact with AMROTEC® to make any adjustment to any settings.

The setting method is as follows:

- [1] Assuming USD is default on your machine, touch on denomination box (i.e \$1)

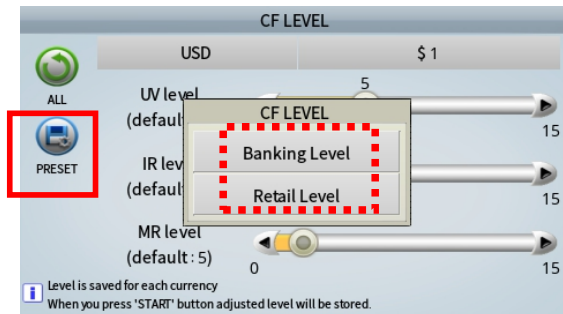


[2] The below screens will appear with selection for all denominations of USD currency and issues. Each of the denominations and their issues have their own CF levels adjustment settings set by factory. Swipe left on the screen to show the next page of denominations selection page.



6-6-4. CF level adjustment by BANKING and RETAIL Version: **[WARNING]**

MIB-11V software is already configured with 2 separate sub-software known as “Banking Level” and “Retail Level”. By touching on PRESET icon on the left, Trained user can get access to the below screen selection.



Banking Level: Banking level software configuration is set as very strict level as to folding corners (dog ear), soil and other variation of conditions of banknotes while detecting highly sophisticated counterfeit bills. Although this software is named as “Banking Level”, it is not for all banks, other than those banks or customers require advanced suspect level detection whereas willing to accept 2 – 3% of reject banknotes on every run. Having said, Trained users could also make little adjustment on UV or MG detectors to allow some folded and soiled banknotes to read through without compromising higher suspect detection.

Retail Level: (FACTORY DEFAULT)

Retail level software configuration is set as bit relax as to reading of folding corners (dog ear), soil and other various conditions of banknotes while still detecting most of highly sophisticated counterfeit bills. Although this software is named as “Retail Level”, it is not for only for Retail market, but also for most of the banks who want to have higher recognition and good counterfeit detection. Trained users are able to make little adjustment on UV or MG detectors to allow folded and soiled banknotes to read through without compromising higher suspect detection.

[1] Once you select Retail or Banking level to adjust, follow the section from 4-1-1 to 4-1-3 make your adjustment.

[2] Please consult with AMROTEC® or your sales representative before making any adjustment in this section.

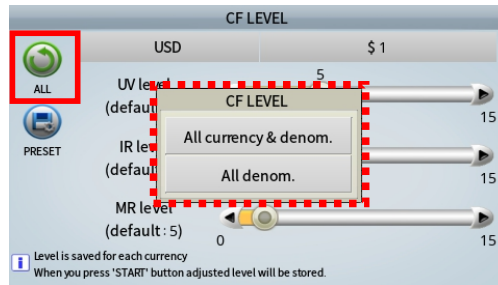
6-6-5. CF Level adjustment by “ALL”: **(WARNING!)**

Trained users could also adjustment CF levels for all currencies and denomination or by all denomination on a particular currency without going through making changes to each currency and each denomination related to that particular currencies.

This can be done only after CF levels are adjusted first for each or any detectors sensitivity settings

level and then, user touch on selecting ALL icon  to access to below pop-up menu to select how they would like the changes to be applied. Once selected, user must press START / STOP to

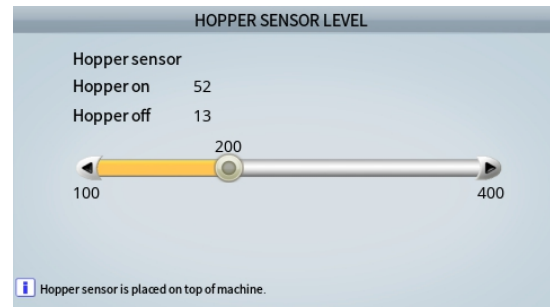
save the settings in the memory to be applied. However, this method is not very effective.



6-6-6. Hopper level

If the machine does not detect banknote, or machine identifies that there is a presence of a banknote, even there are no banknotes on the Hopper, you can adjust the hopper sensor level using this menu.

1. Place banknote on the hopper sensor
2. Check number values for "Hopper on" – "Hopper off"
3. If "Hopper on" is lower than 200, reduce the level by using the (<) (>) icons until the "Hopper on" value is greater than the set value.
 - a. If "Hopper on" is higher than 200 with no banknote placed on the hopper sensor then increase the level by using the (<) (>) icons until the "Hopper on" value is lower than the set value with no banknote placed.



*** If the level is not within acceptance, you can adjust Variable resistor on the OPE board. Please refer 'Chapter15. Adjustment'**

6-6-7. Double level

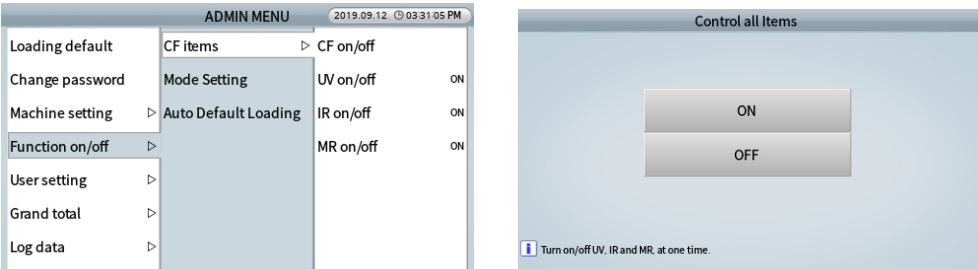
If the machine detects one note as Double, lower the level from (Default-9) by increments of 1 until the problem is resolved. If the machine does not detect Double notes, raise the level from (Default-9) by increments of 1. Double level needs to be set for each currency.



6-7. Function on/off

6-7-1. CF items

Under this menu, administrator or trained users can set any or all the CF detectors (UV, MR, IR) On/Off at the same time and also can also turn them off/on individually.

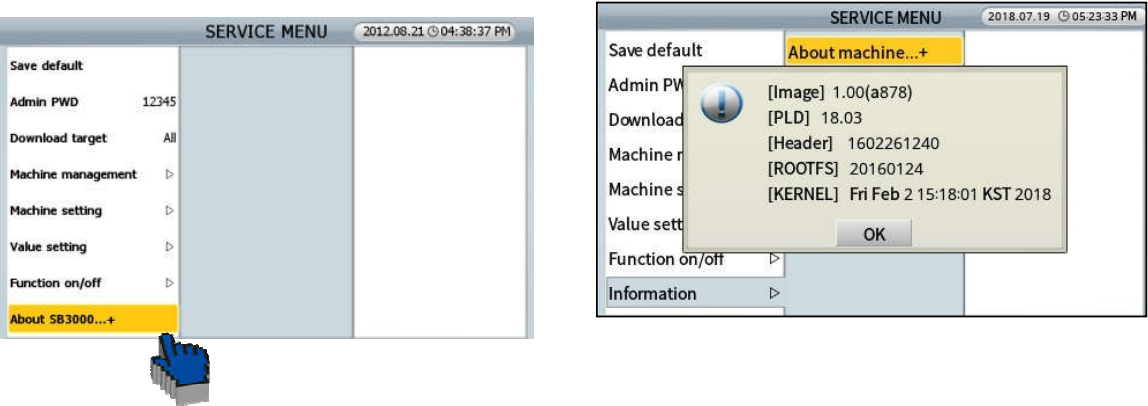


The table below illustrates the top indicator on the Main Screen as to which CF detectors are turned ON / OFF.


No	Sensors status	Indicator	No	Sensors status	Indicator
1	CF on (UV, IR, MR on)		5	MR off UV on, IR on	
2	CF off (UV, IR, MR off)		6	UV off, IR off MR on	
3	UV off IR on, MR on		7	UV off, MR off IR on	
4	IR off UV on, MR on		8	IR off, MR off UV on	

6-8. Information

In this menu, you can check the Program version and Currency and Mode to be offered.



MACHINE ENVIRONMENT				
Max currency num		7		
Max fitness num		3		
CURRENCY	SERIAL	S-OCR	P-OCR	SNC
CURR.1	X	X	O	O
CURR.2	X	X	O	O
CURR.3	X	X	O	O
CURR.4	X	X	X	X
CURR.5	X	X	X	X
CURR.6	X	X	X	X
CURR.7	X	X	X	X

 If you want to display the support mode, press the 'Change' Button.

6-9. Calibration

Calibration is to make a full swing reference waveform to read the full level of a signal.

If the machine rejects too many notes, please calibrate all the sensors such as 'Tape sensors, CIS, UV sensors.

- Batch Progress: Batch
- Tape calibration
- CIS calibration
- UV calibration
- MR (TEST)
- IR (TEST)
- Hopper calibration

WHAT IS THE CALIBRATION?

Calibration is to make a full swing reference waveform to read the full level of a signal. If the machine rejects too many notes in CF Detection Mode, the system might not analyze the input of waveform. It is possible to make a standard waveform for the system.

SERVICE MENU			2018.05.28 01:47:39 PM
Save default	Program update	Batch processing	
Admin PWD 12345	Touch Calibration	Tape Calibration	
Download target All	Calibration	▷ CIS Calibration	
Machine management	Machine test	▷ UV Calibration	
Machine setting ▷	Log data	▷ MR (TEST)	
Value setting ▷	Counting Report	IR.T (TEST)	
Function on/off ▷		Hopper Calibration	
About machine...+			

ATTENTION

Before doing calibration, make sure to clean all sensors.

Then, please carry out 'LOADING DEFAULT' in 'ADMIN MENU' as following order

6-9-1. TAPE Calibration

This Tape Calibration is for Tape Sensors.

[Caution]

**You should use the Tape calibration sheet provided from
AMROTEC® as below**



**<CAP CALIBRATION SHEET(180 x
105 mm)**



[Procedure]

[1] Touch on TAPE Calibration MENU

[SERVICE MENU->

Machine Management /

Calibration / TAPE Calibration]

-> Machine will display right picture.

(This moment, first step is done)



[2] Open the Upper Door.

[3] Put the 'Tape film' in this machine as upper picture

[4] Close the door well



[Caution] If the door is not closed well, or there is dust or foreign material on the tape sensors, machine will not work properly.

[5] Press [START/STOP] Key

[6] Check if TAPE Calibration result is "OK" or "NG"

[7] After doing calibration, Open the upper door, and take out the film.

TAPE SENSOR CALIBRATION					
Calibration result : OK					
Thickness Sensor					
ITEM	No.1	No.2	No.3	No.4	No.5
Note value	581	580	580	577	577
Note Voltage	175	169	172	165	175
Init Voltage	142	138	141	137	145
Diff Voltage	032	031	031	029	031
ITEM	No.6	No.7	No.8	No.9	No.10
Note value	578	577	578	577	576
Note Voltage	170	180	178	179	170
Init Voltage	140	149	147	148	141
Diff Voltage	030	031	031	031	029

[Information for TAPE Calibration's NG]

1. Need to clean Tape sensors
2. Check the condition of Tape module assembly
3. Check the Tape RCV. Board
4. Check whether the calibration film is in place.
5. Check harness cut off or disconnected 'MTU board' and 'Tape Rcv. Board' or 'MTU board' and 'Image Board'
6. Need to check the defect of TAP

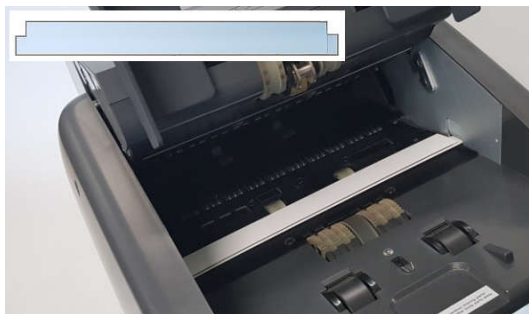
6-9-2. CIS Calibration (IMAGE Calibration)



[Caution] You should use the calibration sheet provided from Hyundai MIB International as below

[Procedure]

[1] Touch on CIS Calibration MENU [SERVICE MENU _ Machine management/ Calibration/ CIS calibration]

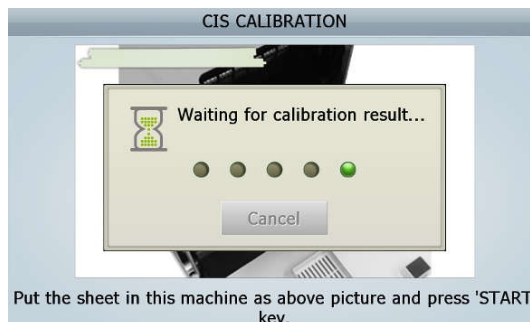


[2] Open the upper door

[3] Put the sheet in this machine as right picture

[4] Close the **upper door**

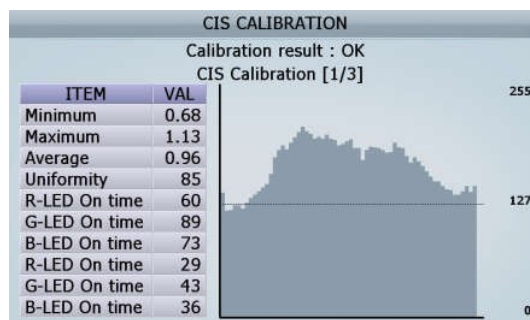
[5] Press [START/STOP] Key



Put the sheet in this machine as above picture and press 'START' key.

[6] Check if CIS Calibration result is "OK" or "NG"

1. The result of CIS Calibration



2. The result of Option CIS Calibration



3. The result of Option CIS IRR Calibration



[7] After doing calibration, Open the upper door, and then take out the sheet.

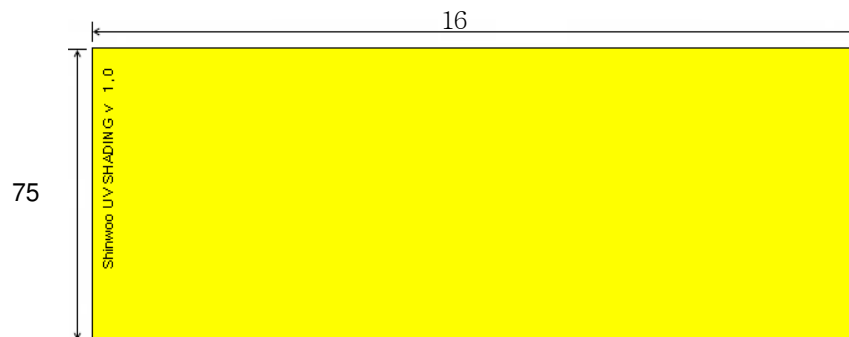
6-9-3. UV Calibration

This UV Calibration is for UV Sensors.



[Caution] You should use the calibration sheet provided from Hyundai MIB International as below

<UV CALIBRATION SHEET >

**[Procedure]**

[1] Touch on UV Calibration MENU

[SERVICE MENU _ Machine management/ Calibration/ UV calibration]

[2] Open the **upper door**

[3] Put the sheet in this machine as
right picture



[4] Close the upper door

[5] Press [START/STOP] Key



[6] Check if UV Calibration result is
“OK” or “NG”

UV SENSOR CALIBRATION	
Calibration result : OK	
RUR Ultraviolet Rays	
ITEM	VAL
UVT on left	029 007 750 729
UVR on left	226 150 580 581
SUVT on left	000 255 850 067
SUVR on left	000 255 800 236
UVT on right	029 027 750 731
UVR on right	224 154 580 579
SUVT on right	000 255 850 076
SUVR on right	000 255 800 254

[7] After doing calibration, Open the upper do and then take out the sheet.

[The detail information for UV Calibration's NG]

If you meet UV NG, clean the UV sensors with soft cloth or check the cable connected with UV sensors.

6-9-4. MR (Test)

This MR test is for MR Sensors.

<MR CALIBRATION SHEET: Real Banknote 'US\$ 1' >



[Procedure]

[1] Touch on MR test MENU

[SEVICE MENU _ Machine management/ Calibration/ MR calibration]

[2] Place 1 ~ 5 bills of US\$ 1 on the hopper with the same direction as shown on the right figure

(The condition of US\$1 should be good!!)



[3] Check if MR test result is "OK" or "NG"

[4] If it is "NG", repeat placing the note several times until "OK" shows up on the display.

[The detail information for MR Calibration's NG]

[The detail information for MR Calibration's NG]

No.	The Cause expected	Action to be taken
1	MR TEST ERROR [Fail to detect the Edge] <input type="checkbox"/> When CIS cannot recognize the calibration sheet (US\$ 1) this error happens	Make sure if the connection is good or not.
2	NG if Noise Empty value is higher than 10 <input type="checkbox"/> Too much Noisy	1. Need to clean MR sensors 2. Check the connection between MR sensors and MTU board 3. Check the MTU board 4. Check the MR sensor defection

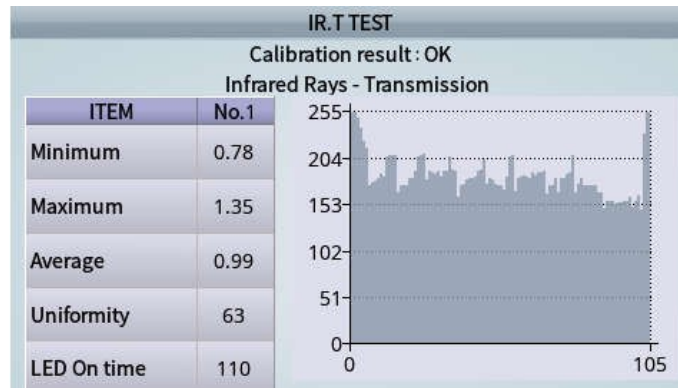
3	NG If Signal Note is lower than 10	1. Check the connection between MTU board and Image Board 3. Check the MTU board 4. Check the MR sensor's defect
	<input type="checkbox"/> No Signal means that Normal level values area not transferred to the Image Board	

6-9-5. IR (Test)

'IR TEST,' this menu is only for checking IR sensor status.

During machine counting, machine automatically calibrated by itself.

Below calibration result shows 'IR Trn. Sensor' and 'CIS1'(Receivers) work well or not.

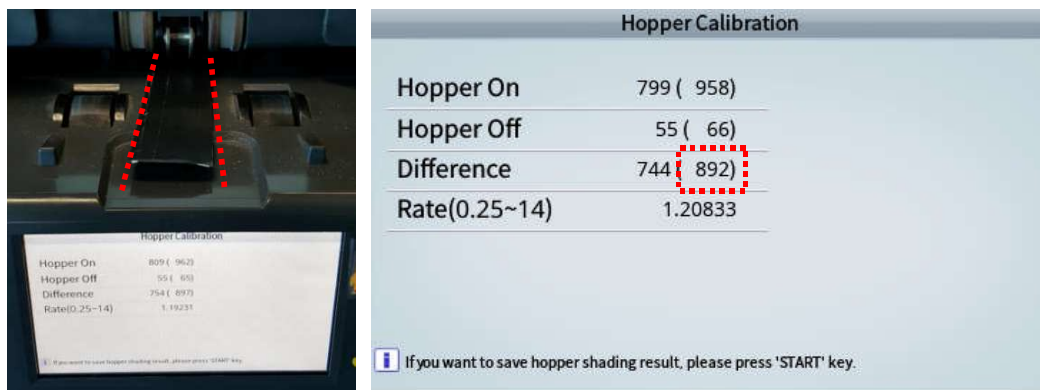


6-9-6. Hopper Calibration

[1] Make Black color reference sheet and attach it to the Hopper sensor as picture.

[2] Press [START/STOP] Key

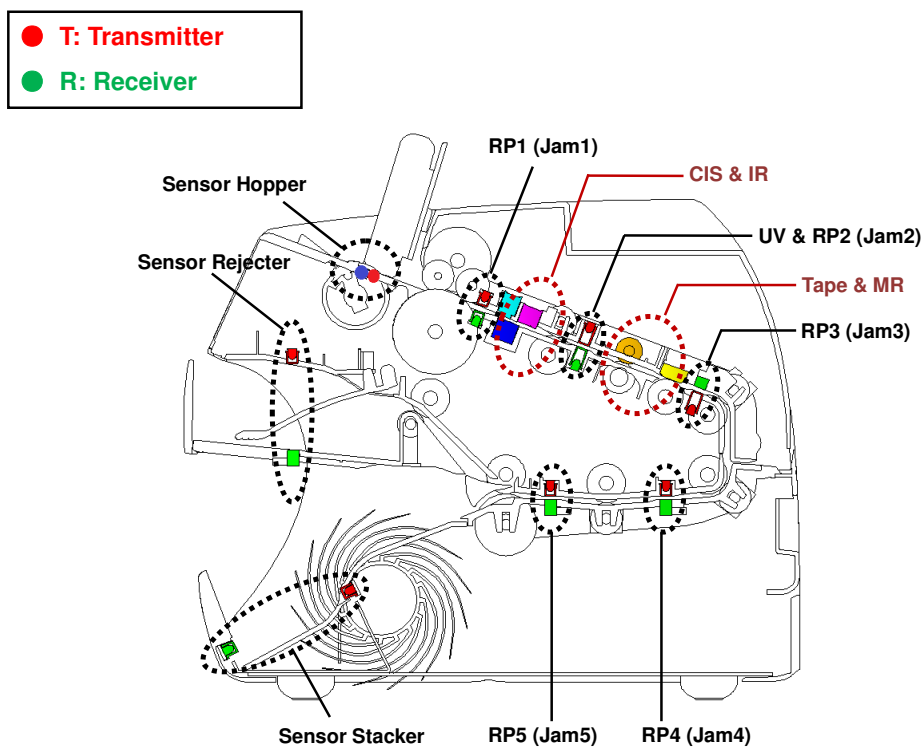
[3] Machine will automatically adjust the sensitivity (Difference) about '900' by itself.



[Caution] We recommend you must do the calibration on the below situation.

1. When you disassemble and assemble the sensors related
2. When you change the parts of Tape/ CIS/ UV/Hopper sensors.
3. When you change the Image Board
4. When you update S

Chapter 7. Sensors



To keep your machine working properly, please clean the sensors, the rollers and the scanning glass once a day. If excess dust can accumulate, the recognition rate can be lower than expected.

1. Open the upper cover and clean inside of the machine.
2. Carefully wipe the scanning glass with a soft, dry cloth.

If the glass is very dirty, first wipe it with a slightly dampened cloth with alcohol, then with a dry cloth. Be very careful not to scratch the glass surface.

3. Close the upper cover until it clicks into place.
4. Open the rear cover and clean inside. (Same roll)

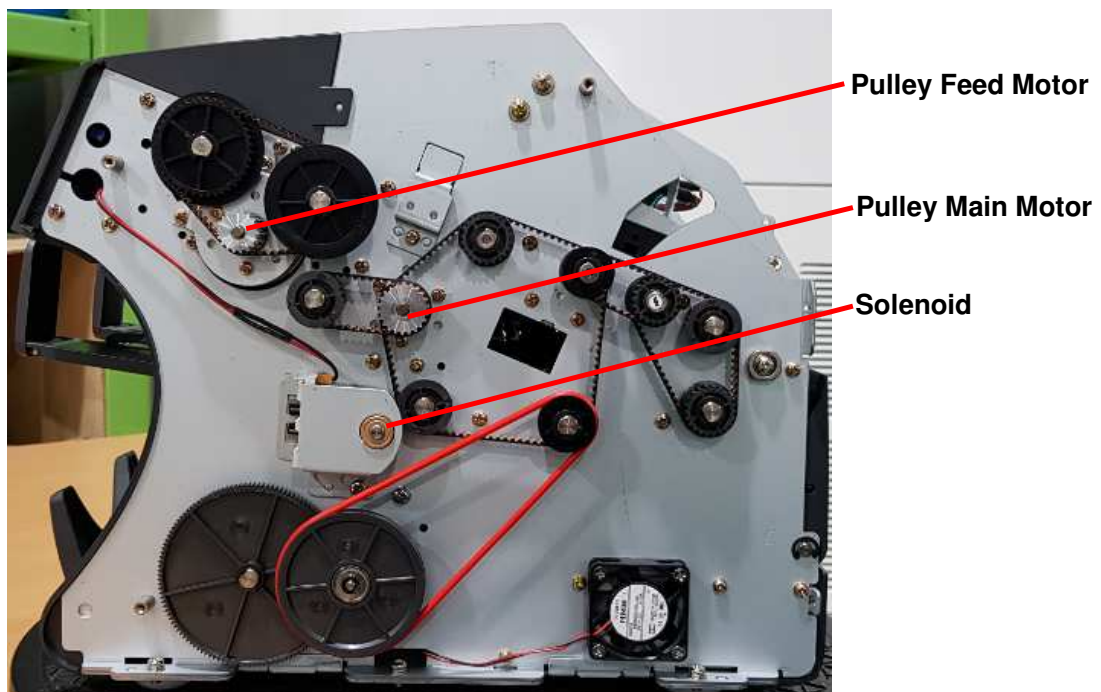
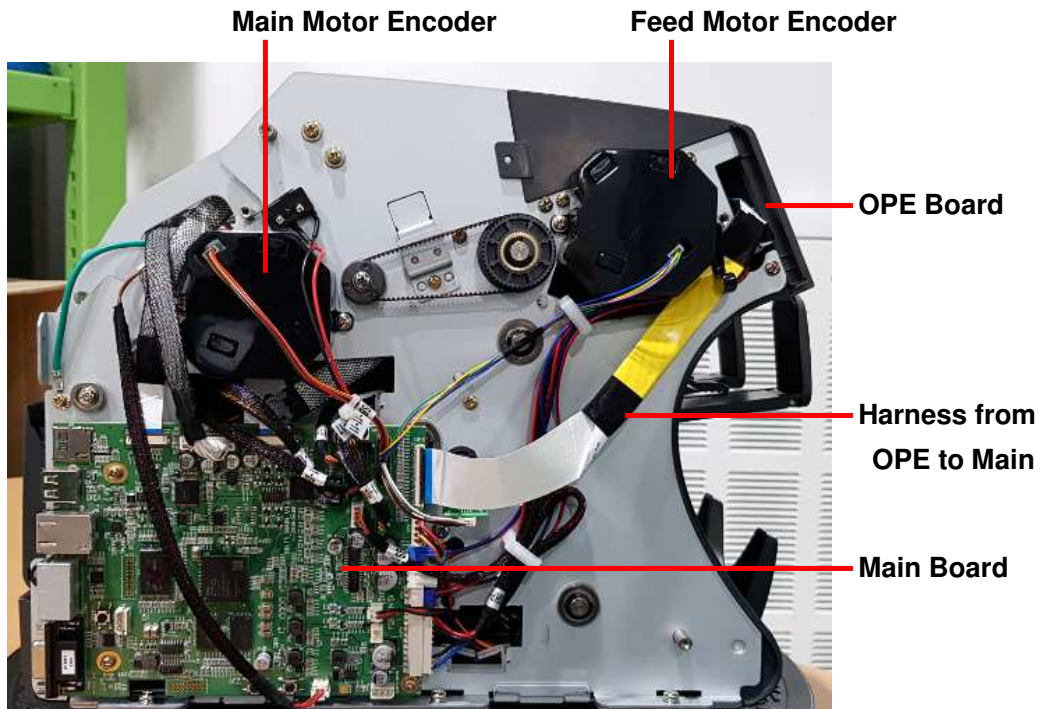
This machine uses various sensors to detect the malfunction of the machine the status of

the notes in the machine and to recognize the denominations of the notes. Also the machine has special sensors for Fitness sorting function. These sensors are very sensitive and if they are not cleaned correctly every day, this may negatively affect the performance of the machine.

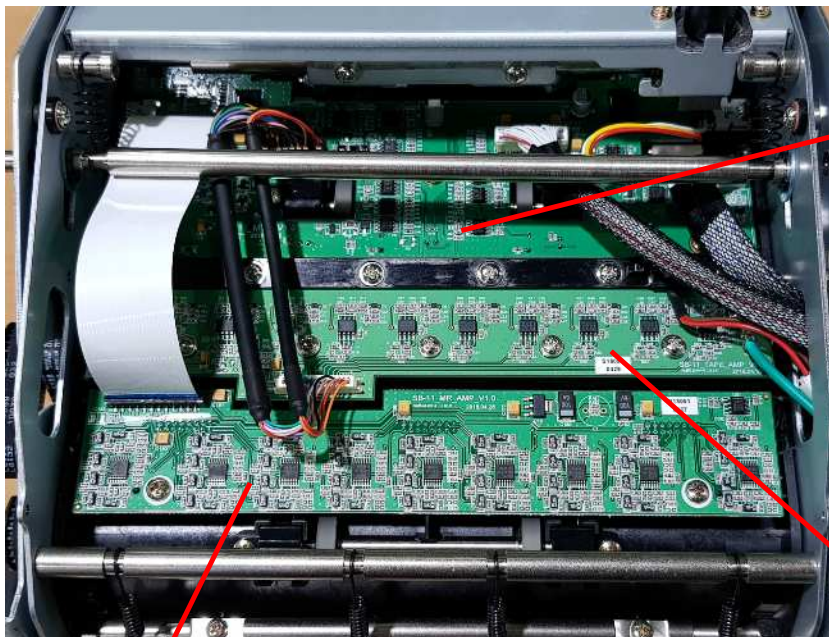
Clean the sensors every day after operating. The power must be turned off before cleaning and please do not use a volatile solvent for cleaning.

Chapter 8. Boards

8-1. Side View of machine



8-2. Rear View of machine



MTU Board
(For UV
Sensor)

Amplifying the
UV sensor signal
and transferring

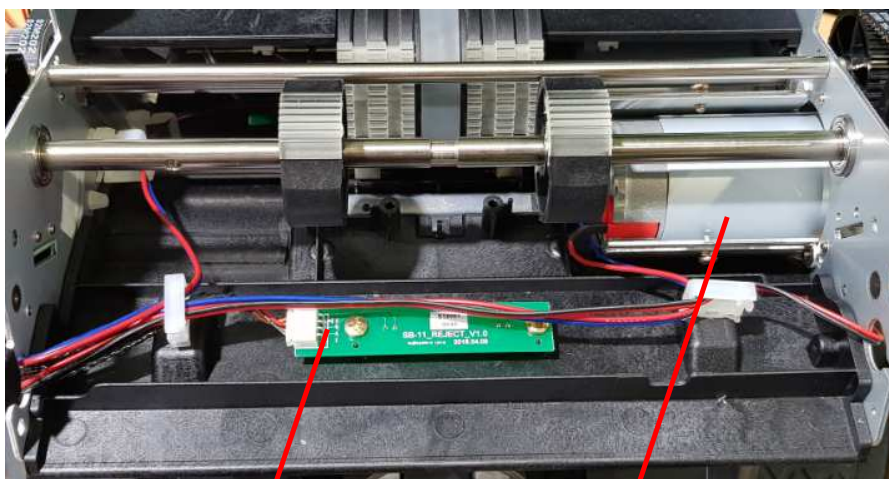
MR Amp.

- Input : MR sensor
- Role & Output : Amplifying MR signal

Tape Amp.

Amplifying the Tape

8-3. Front View of machine

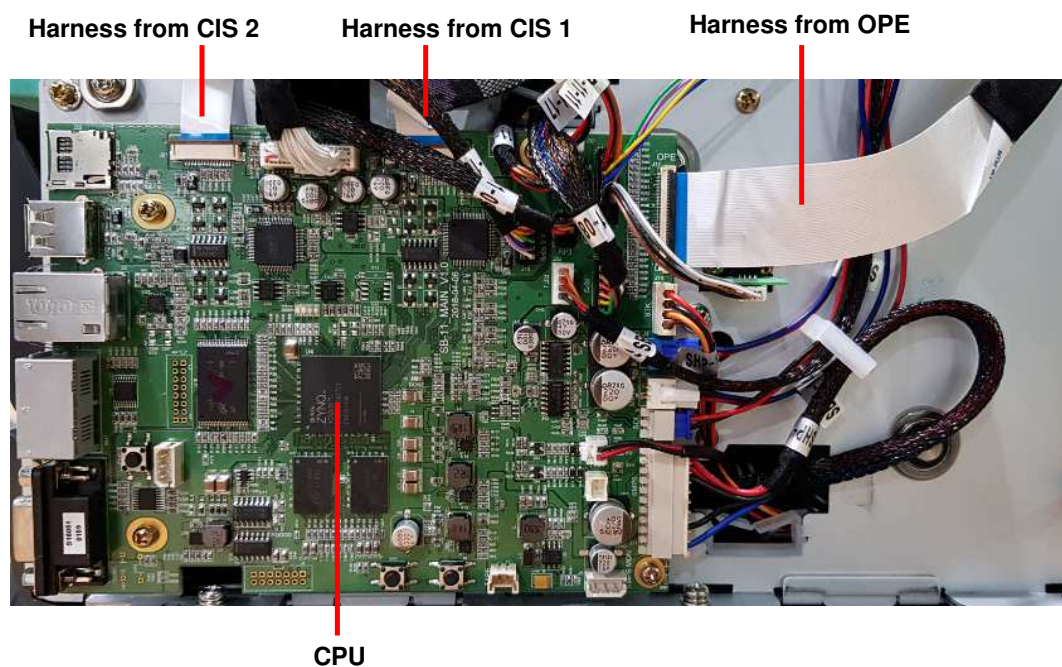


Sensor Rejecter Trn./Rcv.

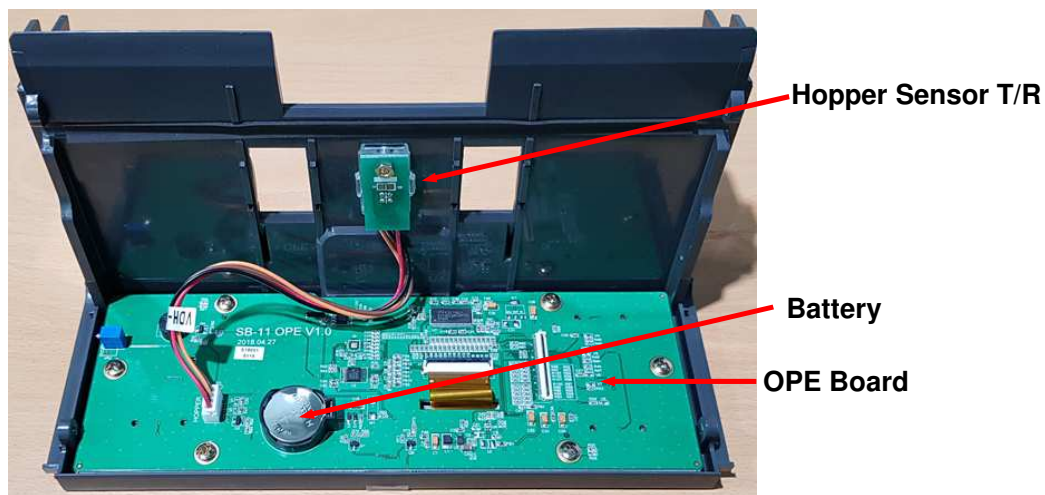
Motor Feed

8-4. Main Board

- The circuit for next.
 - ◆ Sensors: Hopper, RP1 ~ RP5, Reject, Stacker, Micro Switch, Main Encoder, Feed Encoder, SB-7/9 Encoder (Detect Solenoid Direction)
 - ◆ Driver for Main Motor, Feed Motor, Solenoid
 - ◆ Counterfeit Detection: UV, MR Array, IR
 - ◆ Recognition and Fitness function: CIS, Tape
 - ◆ Controlling all items connected PBA Main
 - ◆ Output Port: Serial, LAN, USB, RJ11 (Customer Display), Micro SD

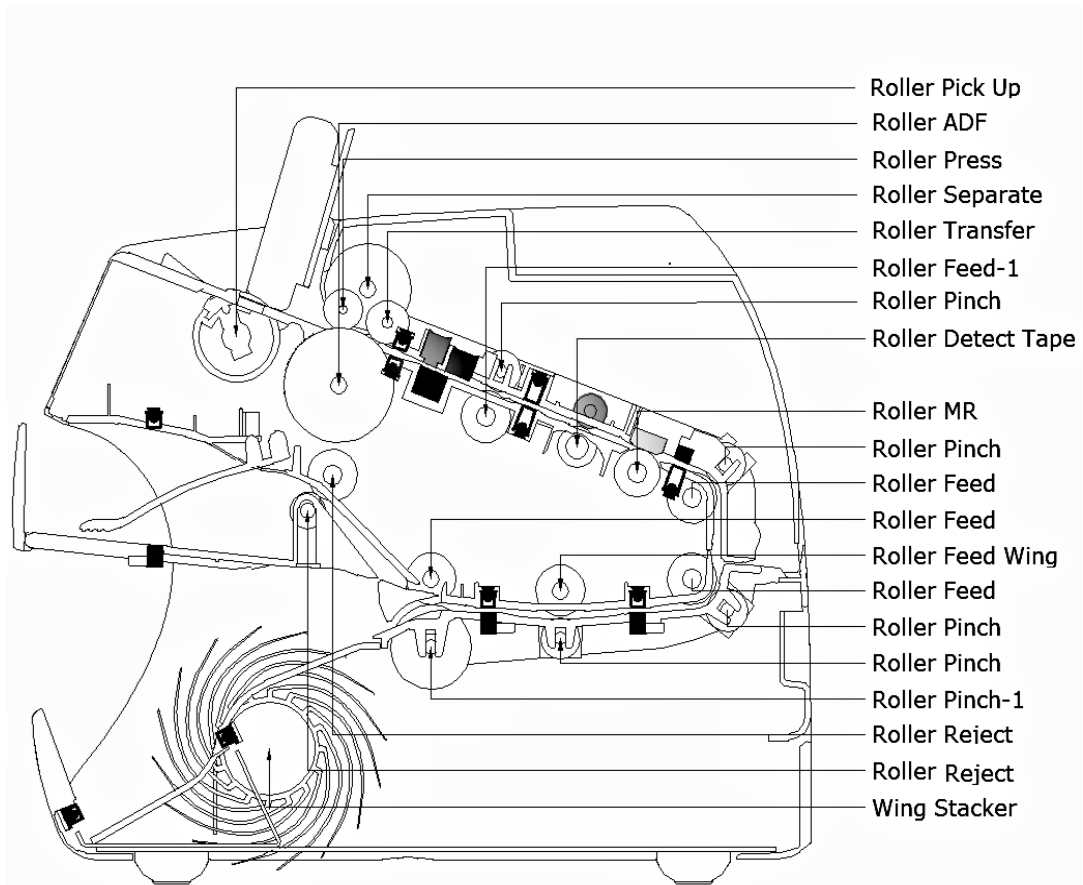


8-5. OPE Board



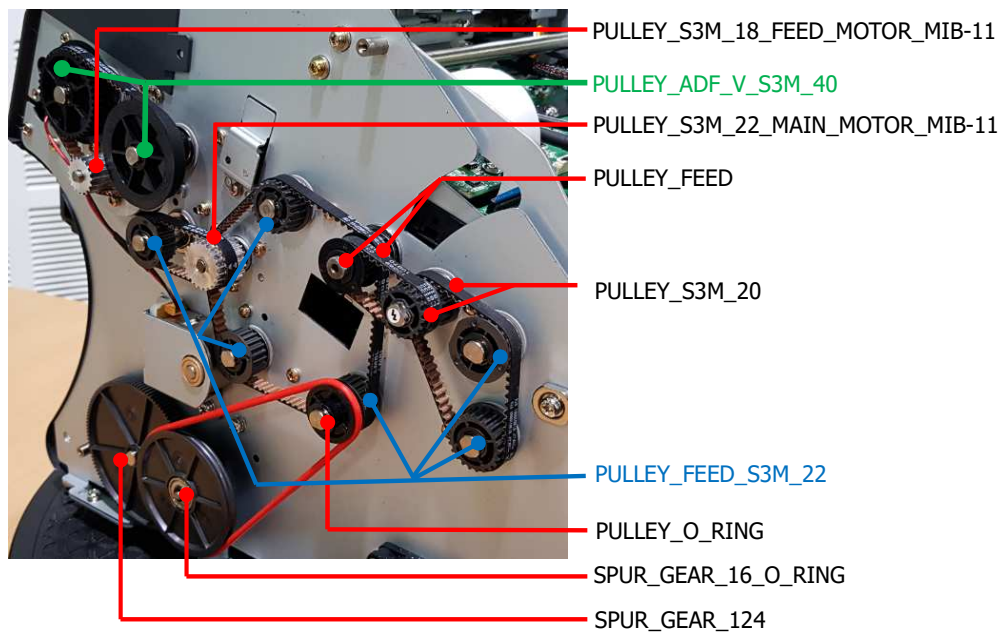
Chapter 9. ROLLERS

Please refer below picture.

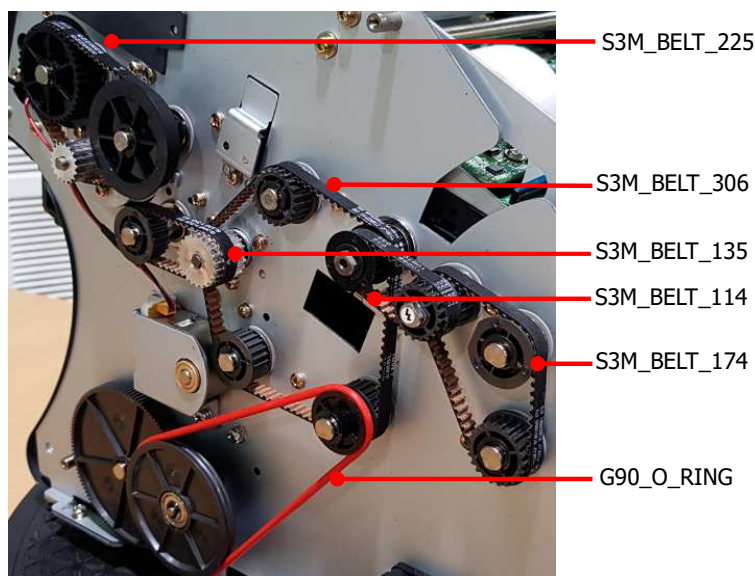


Chapter 10. Pulley & Belt

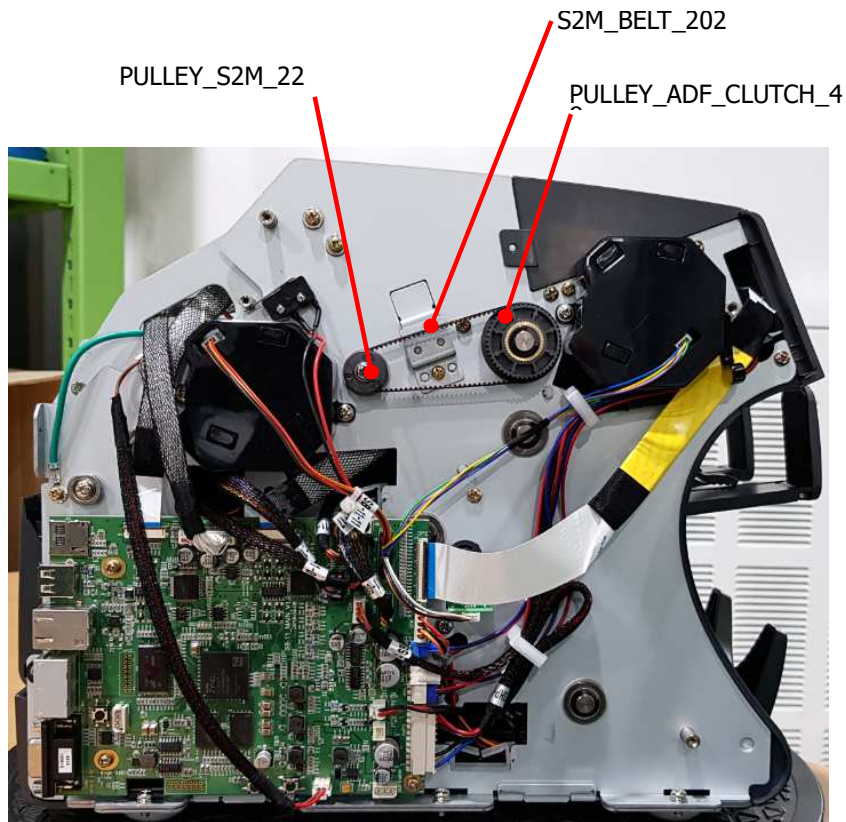
10-1. Right side - Pulley



10-2. Right side - Belt



10-3. Left side – Pulley and Belt

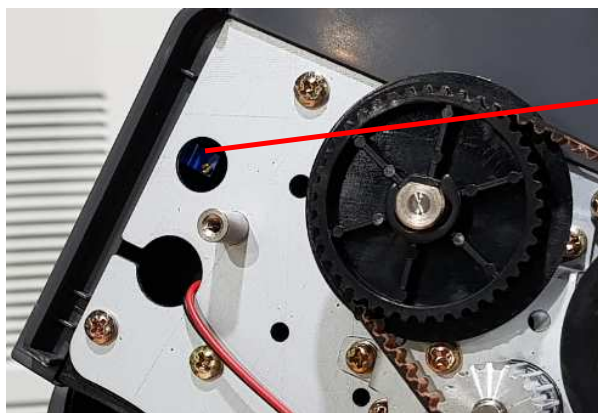


Chapter 11. Adjustment

11-1. Hopper Sensor

The right side of 'PBA OPE', there is 'Variable resistor' for Hopper sensor sensitivity.

Basically you can use 'HOPPER CALIBRATION' menu in the Service menu(Chapter 14), but just in case you want to adjust manually.



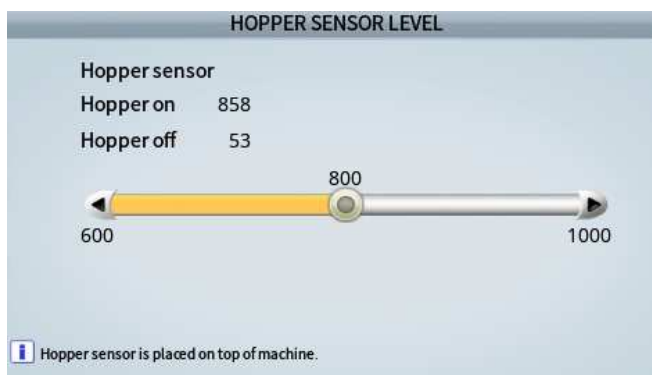
**Variable Resister for
Hopper sensor sensitivity**

[1] Make Black color reference sheet and attach it to the Hopper sensor as picture.

[2] Select Service menu -> 'Value setting' -> Hopper Level

[3] Please check and adjust 'Variable Resister'
'Hopper on' - 'Hopper off' = 800 ~ 900

[4] After this adjustment, machine (Hopper sensor) will recognize the bill on the hopper even the bill color is dark (black).



11-2. Timing for 'Bracket Solenoid'

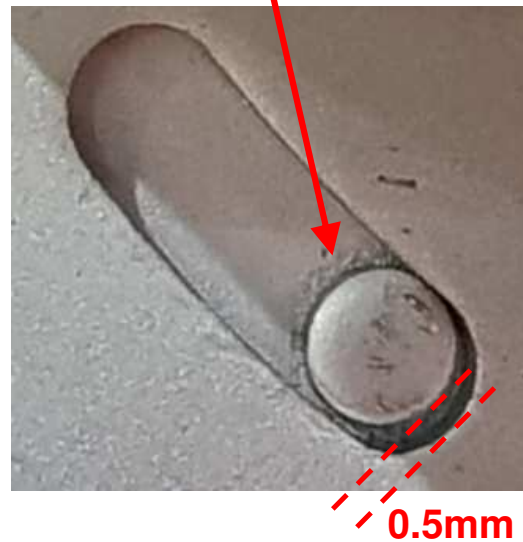
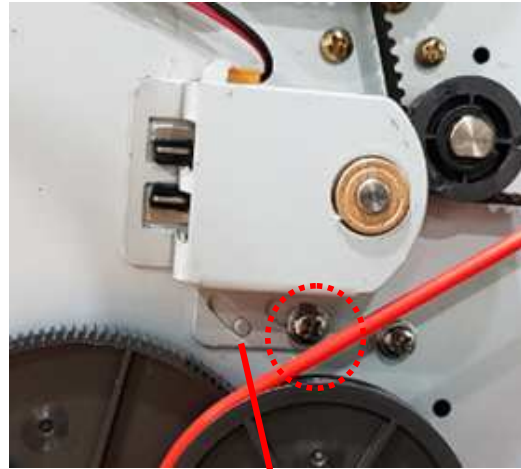


If the notes are damaged by 'Guide Selector', 'Selector Timing' may be not properly adjusted.

[1] Loosen SCREW slightly

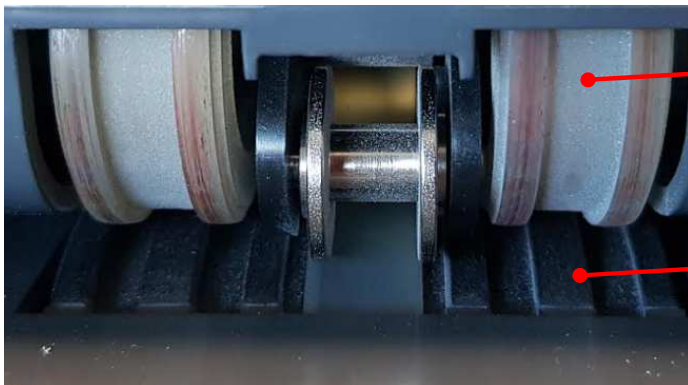
[2] Adjust 'the Bracket Solenoid' as picture.

[3] Tighten the Screw



0.5mm

11-3. Gap between Separator and ADF Roller



Roller Separator

Roller ADF

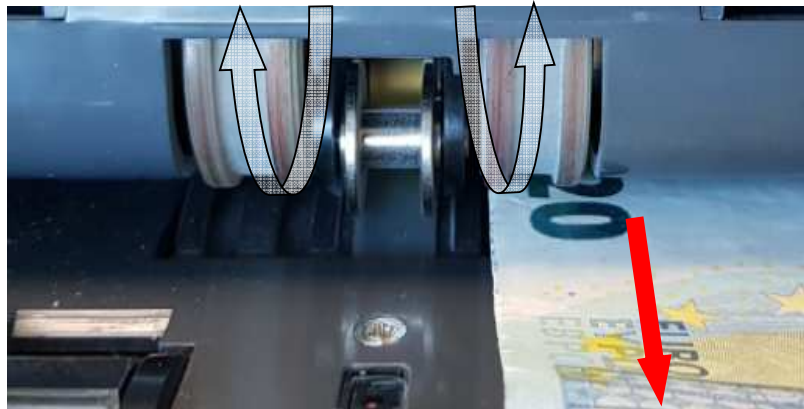
[1] Fix one of the pick-up rollers with one hand.

[2] Grasp a note with another hand as picture, and insert it between gap of 'Roller ADF' and 'Roller Separator'



The Gap should allow it.

During pull out the note, Separate roller should turning.



[3] If it is too tight, please turn the 'Screw'

'Direction +' : Loosening the gap

'Direction -' : Tightening the gap



[4] Please insert 2 notes into the gap. (It should not be allowed)

If two notes are passed through, it is NG and required to adjust the gap narrower.

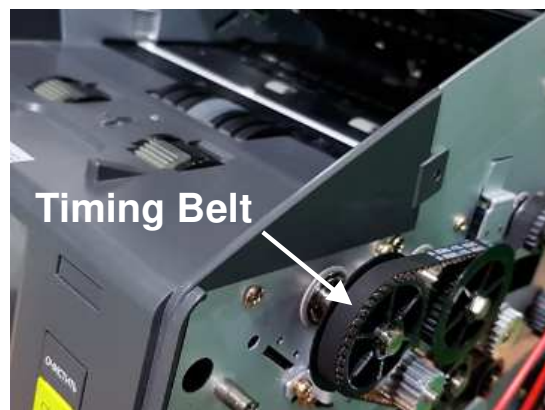
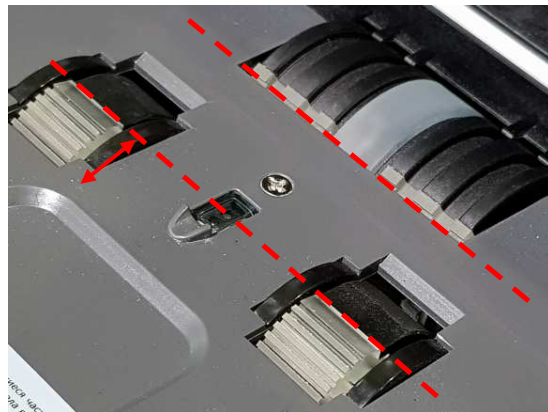
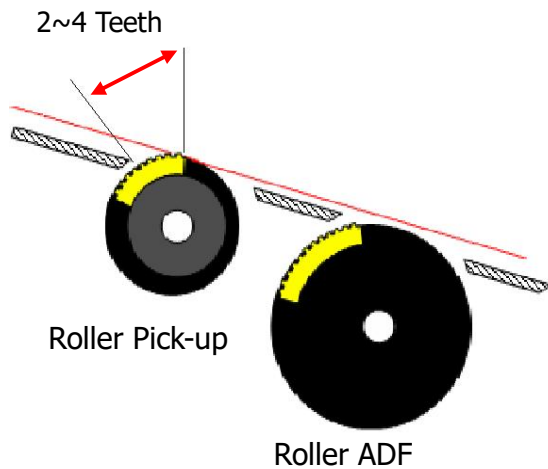




If the gap is too wide, Machine will reject more Double, Over run, Chain.
If the gap is too narrow, Machine will make more 'Feeding error', 'Jam1'.

11-4. Timing between ADF and Pick-up Roller

The Belt timing between 'Roller Pickup' and 'Roller ADF' should be adjusted as below figure.
Please make the timing first, then tighten the timing belt.

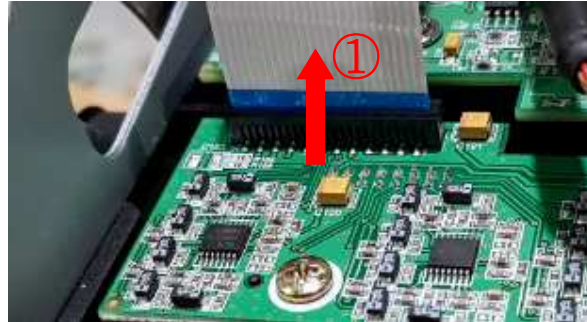


11-5. Information that requires your attention

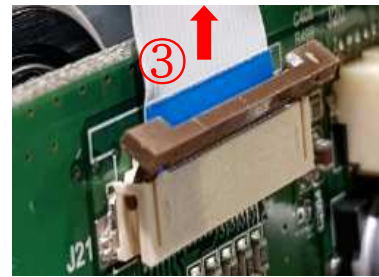
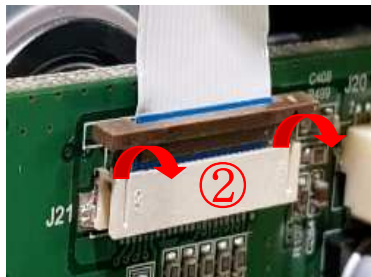
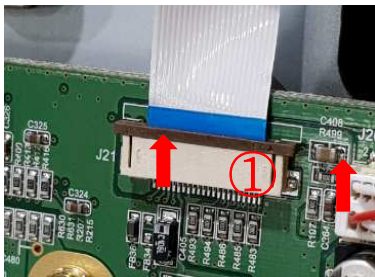
11-5-1. Connector

For the prevention of fractures of connector, please follow below separation rule.

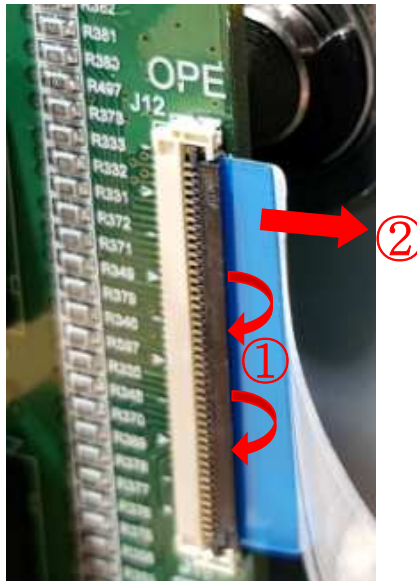
1. 'MR_AMP' Board and 'MTU' Board



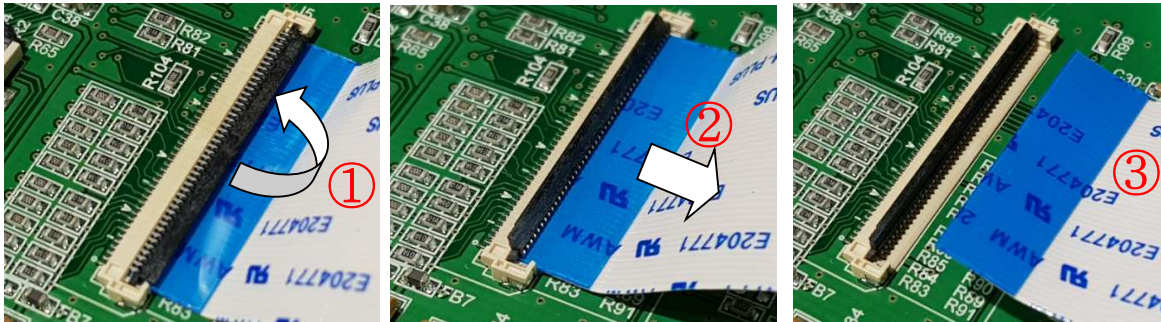
2. 'Main' Board -1



3. 'Main' Board -2

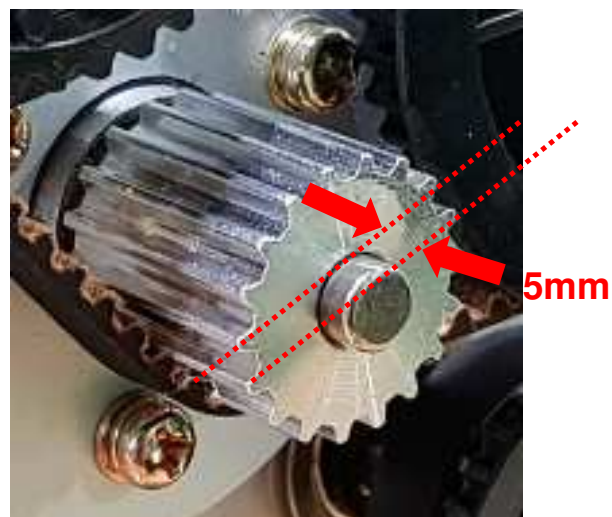
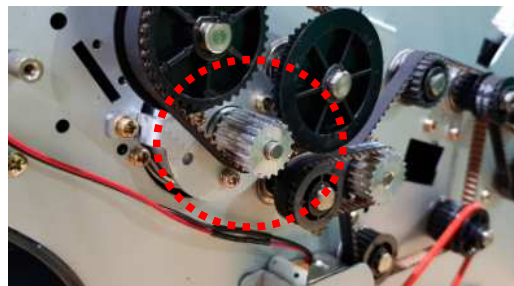


4. 'OPE' Board



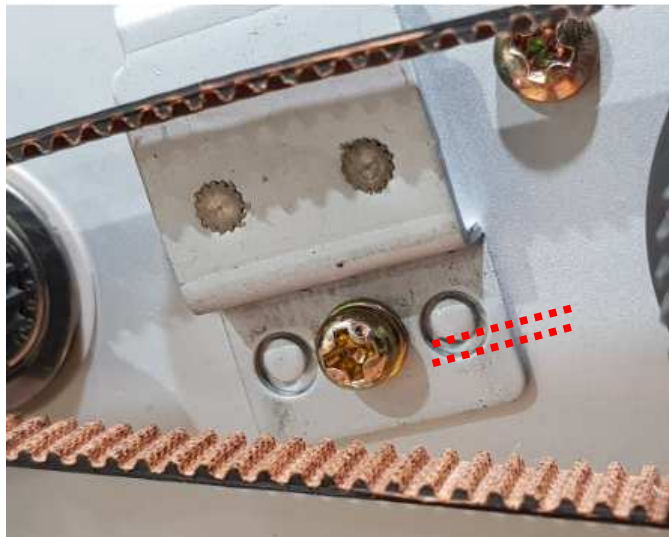
11-5-2. Pulley Motor

To prevent 'the Cover Side Right' touch 'Pulley Motor', please follow below rule.



11-5-3. Bracket_CIS

To prevent jam error, 'CIS' should be assembled most lower location.
are jam error, please follow below rule.

Right side**Left side**

Chapter 12. S/W Upgrade and Image Data Downloading

12-1. Software Upgrade

You can simply install new software for upgrade by USB Memory Stick.

*Regarding the formatted type of USB Memory, 'FAT32' is recommendable under the Windows environment

The steps for upgrade are as follows.

[1] Insert USB Memory Stick which has the file (*.sb11) provided from service provider to the machine.

[2] Go to 'service menu' -> 'Machine management' -> 'Program upgrade'

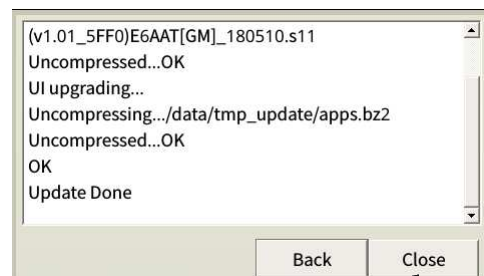
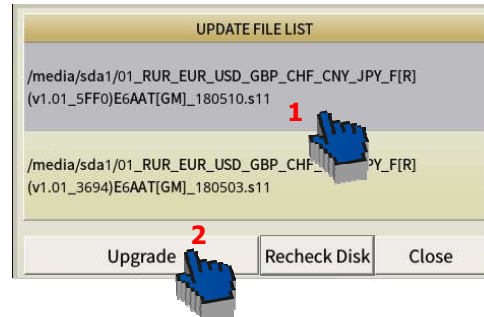
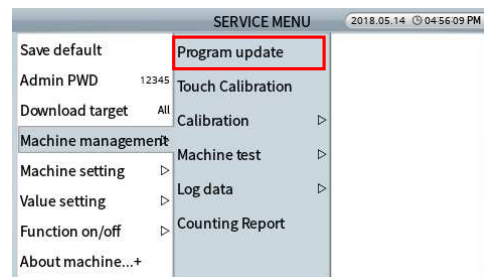
[3] Machine will detect files in the USB memory stick.

1. Select file
2. Press 'Upgrade'

[4] Please Wait 40 seconds.....'

[5] After machine display 'Update Done', press 'Close' button.

The machine will be powered off and on automatically.



12-2. Image Data Downloading

Using of LAN Port connection:

[1] Connect Machine and PC using the LAN port.

[2] On your PC, search by 'cmd' -> input 'ipconfig' -> check the 'ip address' (i.e. 169.254.50.50) 'subnet mask' (i.e. 255.255.0.0)

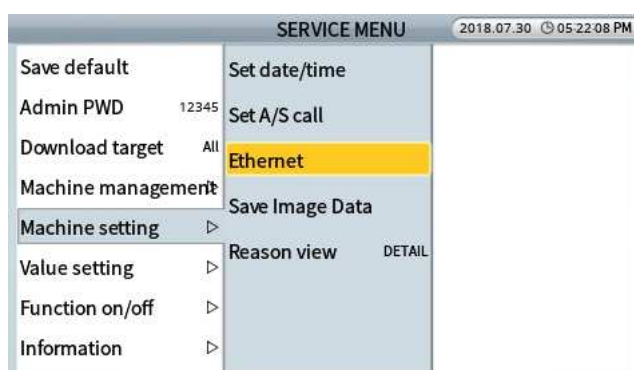


[3] Set the 'Ethernet'. Go to 'SERVICE MENU' -> Machine setting->

Ethernet ->

Input IP address: Input same numbers with PC IP, but last number should be different (i.e. 169.254.50.51)

Input 'subnet mask' number (i.e. 255.255.0.0)

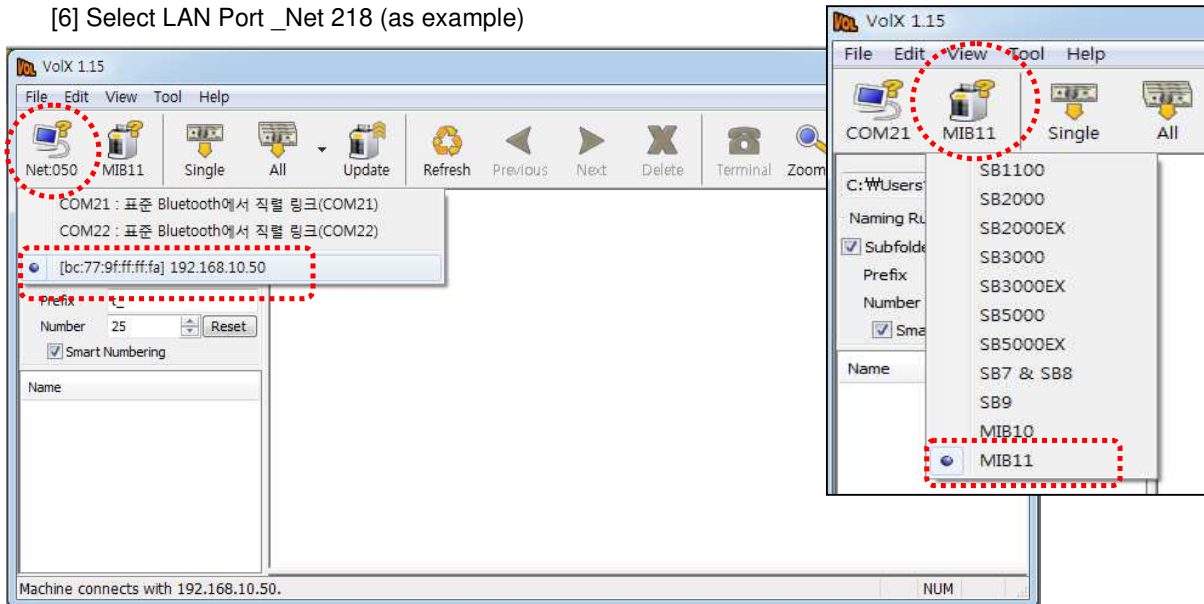


[4] Execute 'VolX.exe'

USBDriver	2018-07-03 오전 ...	파일 폴더	
VolX.exe	2018-06-19 오후 ...	응용 프로그램	778KB
VolX.INI	2018-07-30 오후 ...	구성 설정	7KB

[5] You can see the IP address. Select Model 'MIB11' on top menu

[6] Select LAN Port _Net 218 (as example)

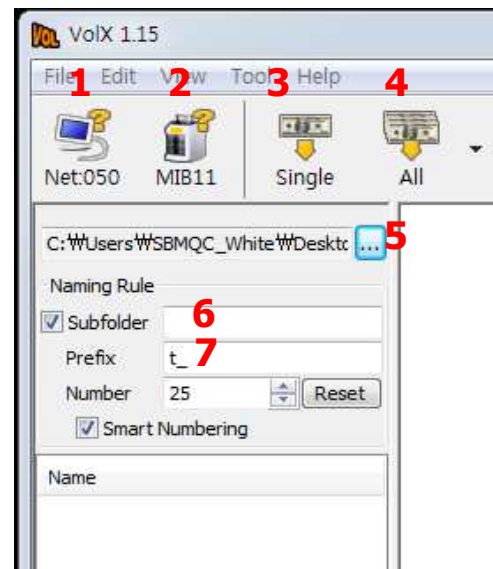


[7] Select the location of folder to save. (Right figure # 5)

[8] You should make sub folder name as "Image sample" as an example; and for the prefix input (Right figure # 6 and #7)

please name it whether it is 'real note' or 'fake note' data samples for factory.

[9] **Single (Right figure # 3)** -> You can download single image. .



All (Right figure #4) -> You can download a stack of banknotes samples data / images all together.

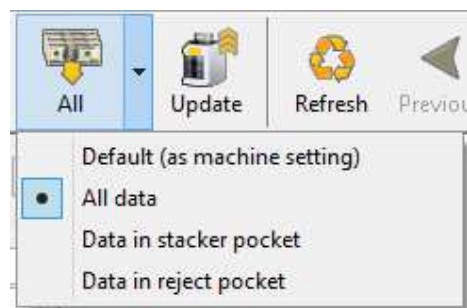
When you select this "ALL" options, you will be provided with number of options to choose from, such as

(1) All data: Capture image data of all passing banknotes.

(2) Data in stacker pocket: Only capture data of passing banknotes that are recognized and stacked.

(3) Data in reject pocket: Capture all banknotes data of those are rejected for various reasons.

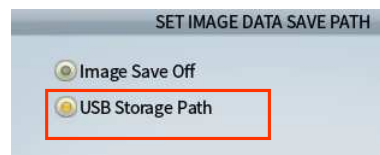
Select your option and proceed.



Using of USB Stick:

Download image data through 'USB memory stick.

- (1) Insert USB stick into the machine USB slot
- (2) Enter into "Service Menu" -> Menu + Mode -> 55757 ->



Machine setting -> save Image data -> Select 'USB Storage path' -> input file name -> press 'Enter' -> press 'Menu'

(3) Count banknotes that you want to have samples data. Once counting is completed, machine will save data automatically. The file "~~~.mib" will be saved onto the USB drive / USB stick.

<The name of direction>

FU (Face Up) Direction:



FD (Face Down) Direction:



BU (Back side Up) Direction:



BD (Back Down) Direction:



< Prepare notes >

Sort the notes by each denomination and version and arrange with same direction.

**<Note> Please do not mix.**

Do not mix different denomination.

Do not mix different version (old and new version)

Do not mix different face and orientation.

Do not mix real notes and counterfeit notes.

< Set up the machine >

Adjust the bill guide wider than actual note width (around 10mm from both side)

**< Note > Position of note**

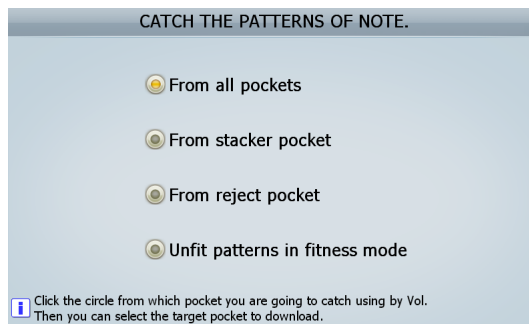
When you put on the money, place a bundle of notes on the each 3 position (Left, middle, right position) inside of the bill guide. We can get various and substantial data in this way.

[10] Set '**Download Target**'

if you move to 'Service menu' you can see 'Download target'.

The Default is 'From all Pocket', but you can set as you wish.

Refer to the below examples, and you can select on the menu.

**1) From all pockets.**

Generally, in order to download large amount of images for new development.

- When a lot of banknotes are detected as counterfeits.
- When a lot of banknotes are not recognized.
- When a lot of counterfeit notes are recognized as real notes.

2) From stacker pocket.

With counterfeit notes,

- When some counterfeits are detected, and others are not detected.
- When miss-recognition happens.

3) From reject pocket

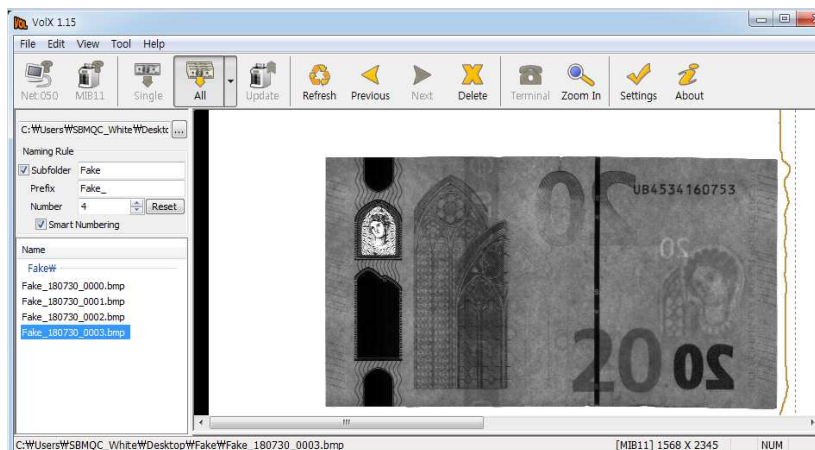
When some real banknotes are recognized as counterfeits or not recognized (NO ID).

4) Unfit patterns in fitness mode (Only available with MIB-11F Fitness version model)

You can download the note images from Unfit Pocket.

[11] Count target money

[12] You can see below picture.



It will be downloaded automatically after each counting is completed.

Scanned images will be saved in the designated folder automatically.

< Note > How many banknotes images do we need for analyzing?

The more the data, the more chances of better results from engineering analyzing as to identifying an issue or improve recognition of a particular denominations of banknotes or particular issues or particular type of counterfeit banknotes. Depending on the issues, we ask that you take image samples of 30 pcs if reject issues concern or about 200 banknotes if require software recognition improvement.

Please make sure to scan four different directions, FU, FD, BU and BD of each banknotes (See page 67).

If your central bank issues new version of note, S/W should be upgraded.

To develop new software for a new released note, we would require more than 2400 number of 'Image data' at least.

(200 pcs X 4 directions X 3 positions (right, middle, left) = 2,400

Chapter 13. Maintenance

Machine is built in various sensors to detect the malfunction of the machine the status of the notes in the machine and to recognize the denominations of the notes. The sensors are very delicate and if they are not cleaned correctly everyday, this may take negative effect on the performance of the machine as well as cause the machine to malfunction

Clean the sensors as described below everyday after working.

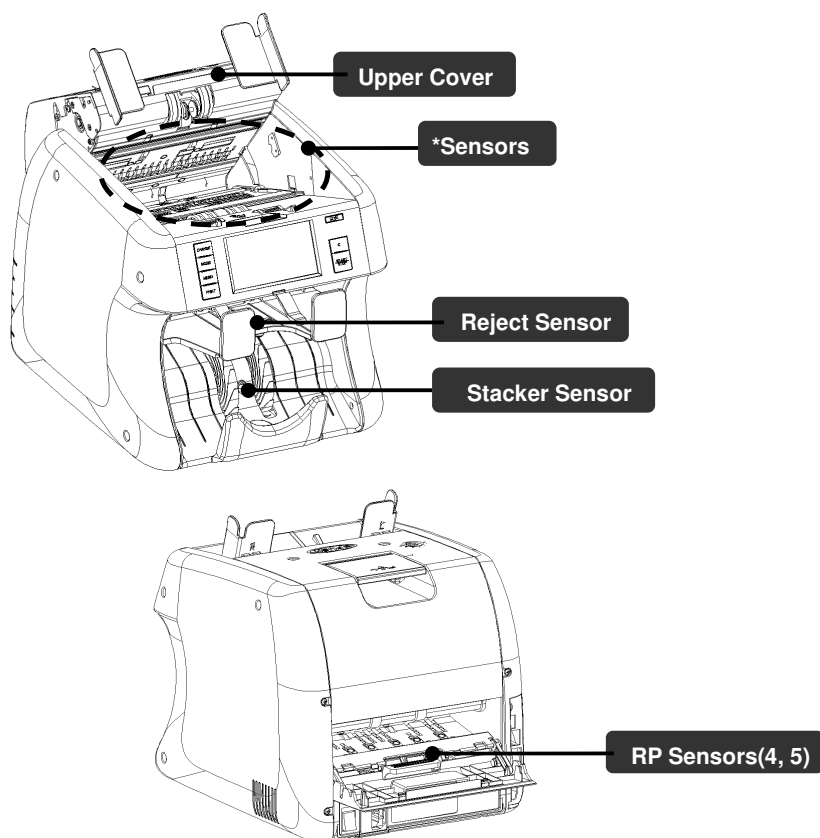
**[WARNING]**

Turn off the power and unplug the power cord before cleaning.

Do not use a volatile solvent for cleaning.

**[CAUTION]**

Recommended to use a electronic vaccum cleaner or electronic sucker to prevent flying a lot of dust and having a negative effect on health.

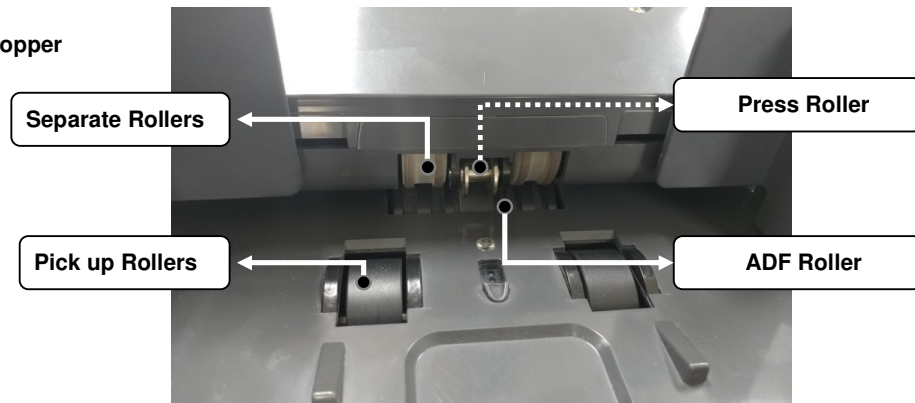


13-1. Clean all sensors and Rollers

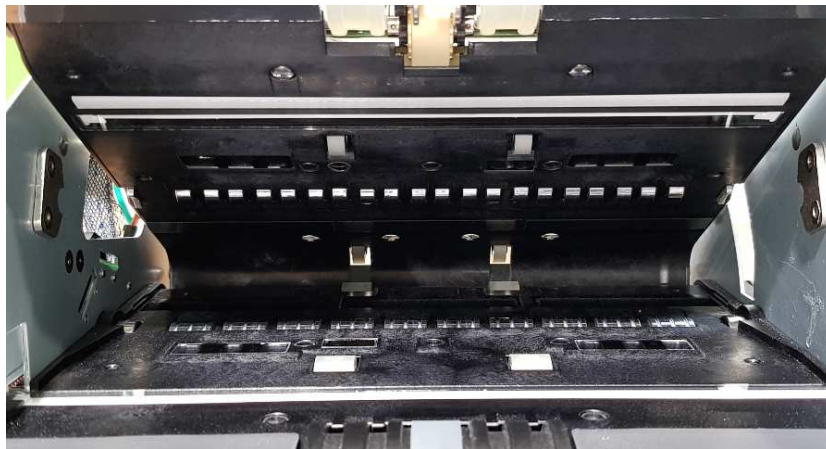
In case of feed roller, wipe with slightly dampened cloth with alcohol. While rotating one side of the roller manually, stick the cloth into the other side of the roller.

Clean the rollers as described below everyday after working

Hopper



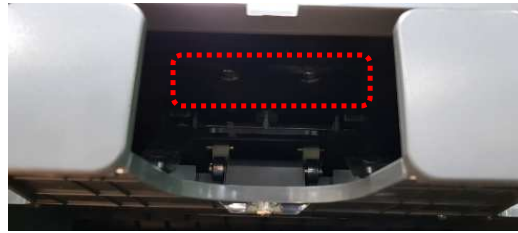
Upper Door



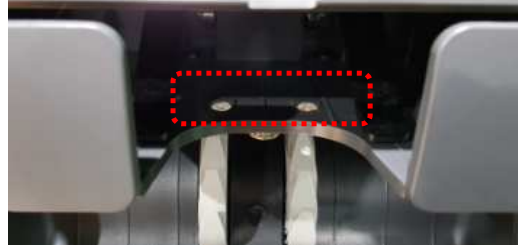
Rear Door



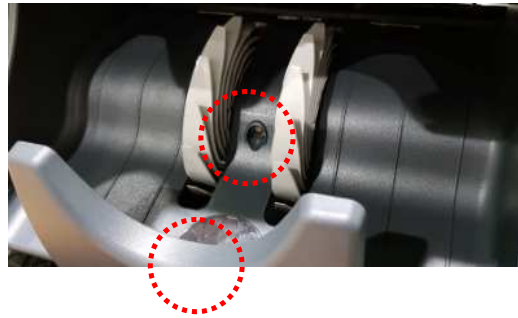
Clean 'Reject Sensors'



Clean 'Reject Sensor prism'



Clean 'Stacker Sensors'

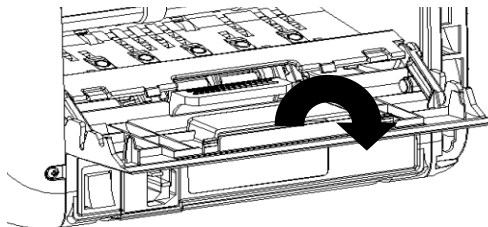


13-2. Dust Tray Cleaning

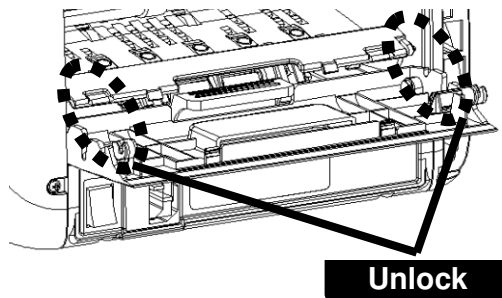
Machine has "Dust tray" at the locations on below figure. it collects dust when the machine is running.

How to clean

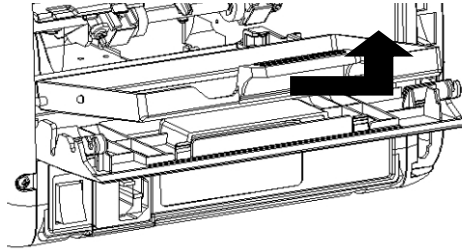
[1] Open the rear cover



[2] Unlock the door link



[3] Take the tray out & clean

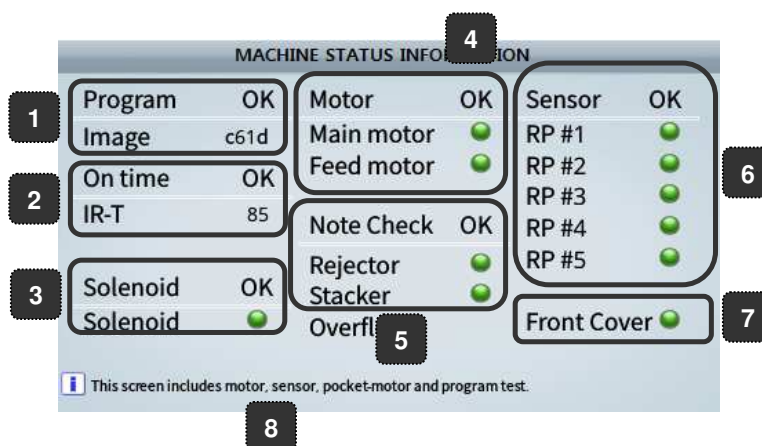


Chapter 14. LCD Error Message

This chapter shows how to solve errors when the messages are on the operational window.

14-1. Initializing Running Error

When MACHINE Power On, if there is any trouble at the sensors, motors and stackers and so on, it shows below figure **[MACHINE STATUS INFORMATION]**. Green color means "OK", Red color means trouble or suspect then required check sensors described following table.

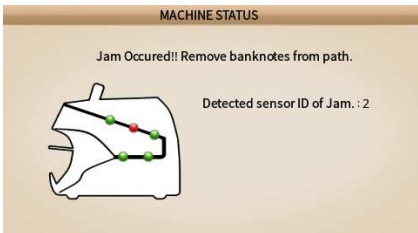








No.	Error Messages	Action to be taken
1	Program NG	Reinstall Software
2	On time NG	1. Check Rear (Top, Middle, and Bottom) Cover. 2. Check CIS(s) and its vicinity. 3. Move to Service menu > Value setting > Fitness > Soil adjustment > Adjust 'IR T' 4. Change 'IR T' sensor
3	SOLENOID NG	1. Move to Service menu > Machine management > Machine test > Solenoid test > Check if it works good 2. Check the connection for solenoid and solenoid sensor 3. Change main board
4	Motor NG	1. Move to Service menu > Machine management > Machine test > Motor test > Check if it works good 2. If you can't hear motor sound at all, please check encoder sensor for Feed & Main motor 3. Check the connection for Feed & Main motor 4. Change main board
5	Note Check NG	1. Check whether note(s) not.

		2. Cleaning required, in case of covering dust.
6	Sensor NG	1. Check 'RP sensor #1' to 'RP sensor #5'. 2. Check each RP sensor with opening its door. 3. Cleaning required, in case of covering dust. 4. Check the connection for each RP Sensors
7	Front Cover	1. Check front cover is opened 2. Check front cover switch (inside of 'Cover side left')
8	Press 'Start' key to test machine again	

14-2. Error on counting

It shows following Error Message, when any error occurs on counting

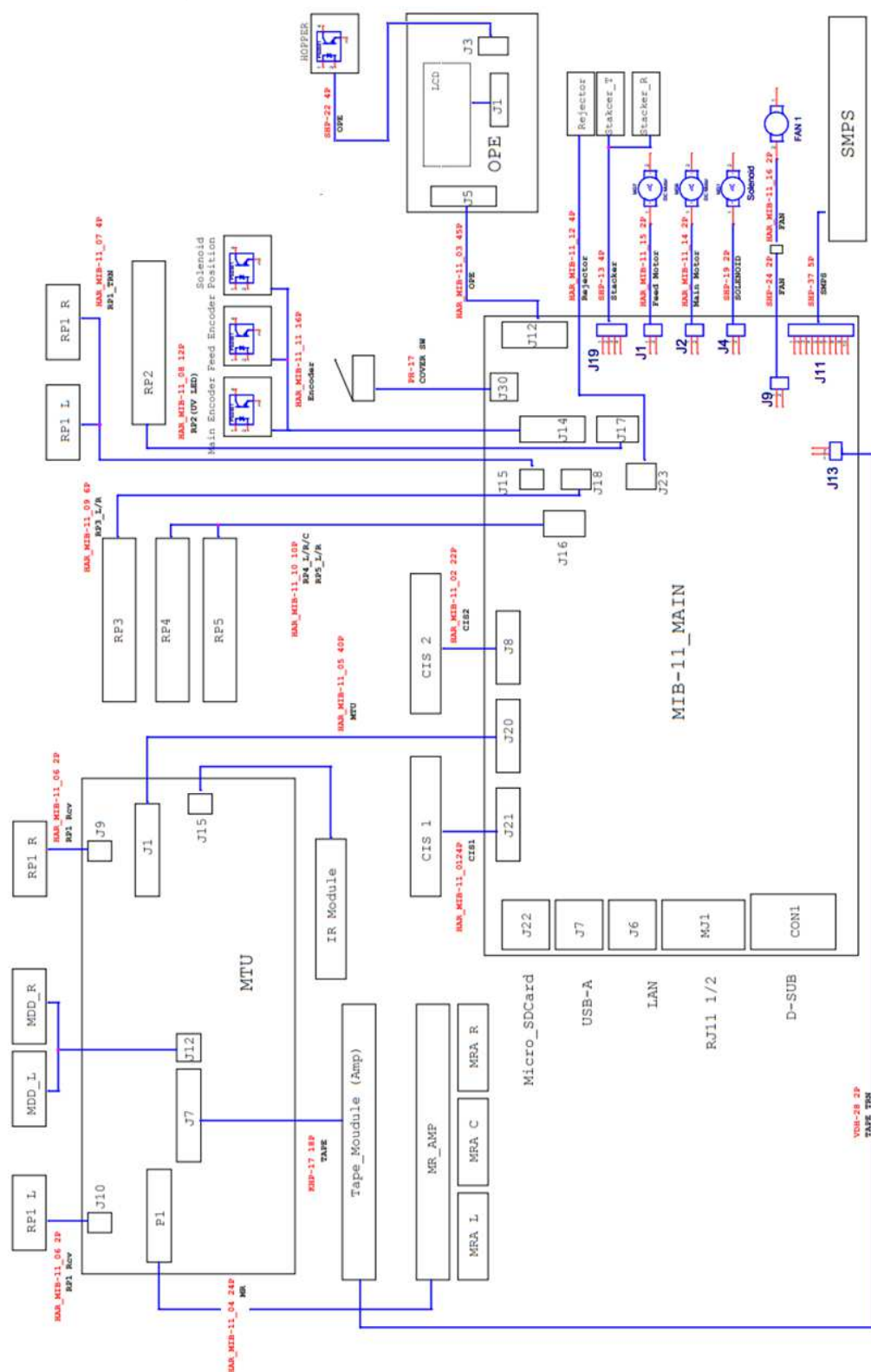
Error Messages	Action to be taken
<p>Jam Occurred!! Remove banknotes from path.</p> <p>-Detected sensor ID of Jam: '1' ~ '5'</p> 	<p>Jam 1~3, open upper cover and remove the banknotes in the path.</p> <p>2 Press  button</p> <hr/> <p>Jam 4~5, open rear cover and remove the banknotes in the path.</p> <p>2 Press  button</p>
<p>Cover Opened! Please Close Cover</p> <p>- Upper cover</p> <p>- Rear cover</p>	<p>1 Close The Cover</p> <p>2 Press  button</p>
Feeding error!! Remove notes from the hopper	<p>1 Press  button</p> <p>2. Check the gate gap is too tight or not</p> <p>3. Check the feed motor run or not</p>
Main motor error!! Press 'Cancel' button	1 Press  button
Feed motor error!! Press 'Cancel' button	
Solenoid Error!! Please Empty pocket.	1 Press  button



[Notice] Please refer to the figures on 'Chapter 8' to see the position of the sensors and jam

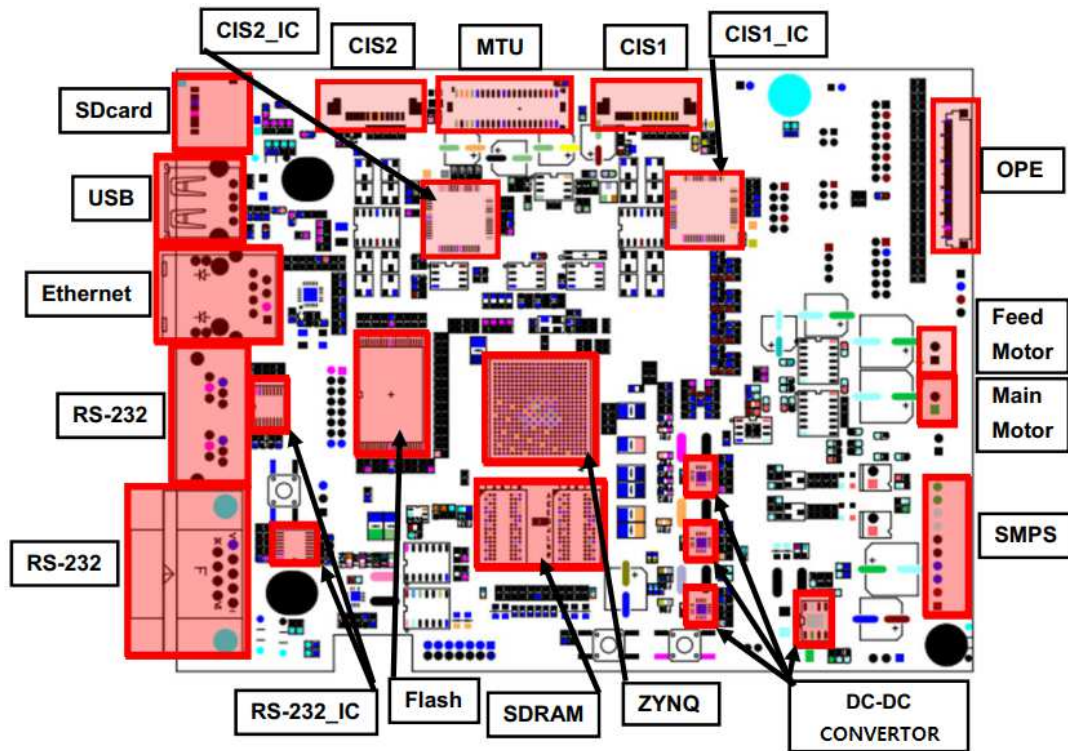
Chapter 15. Board & Component

15-1. Connection Diagram

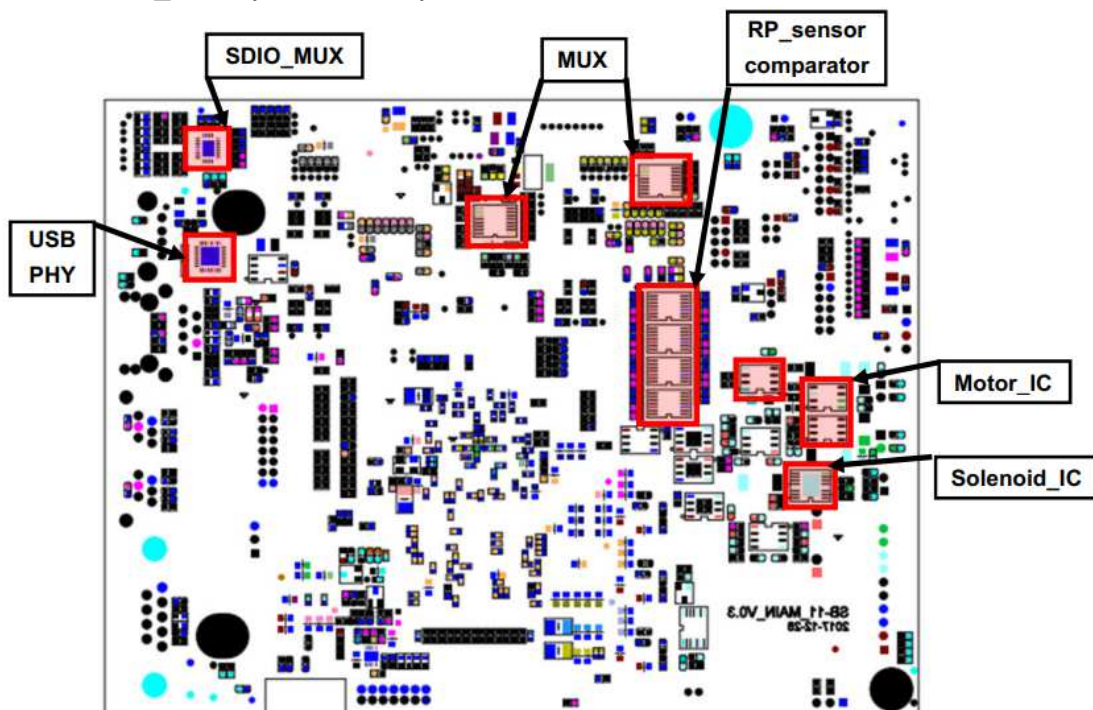


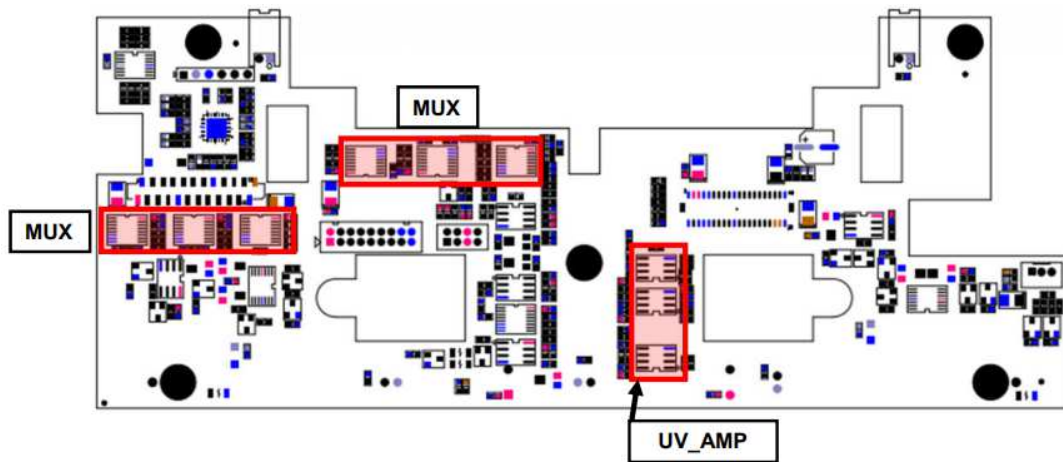
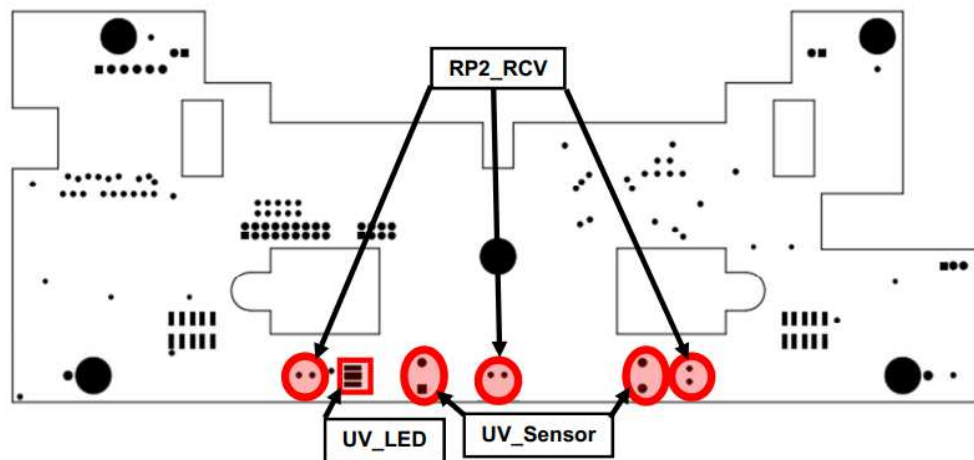
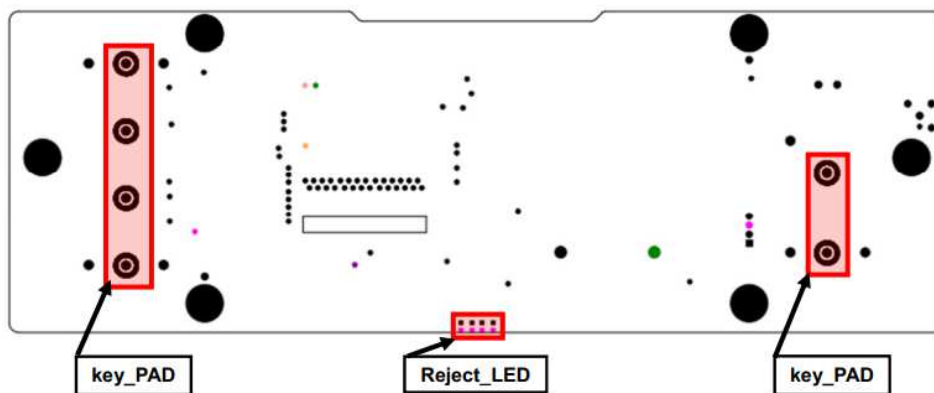
15-2. Board Descriptions

15-2-1. PBA_MAIN (Top Side)

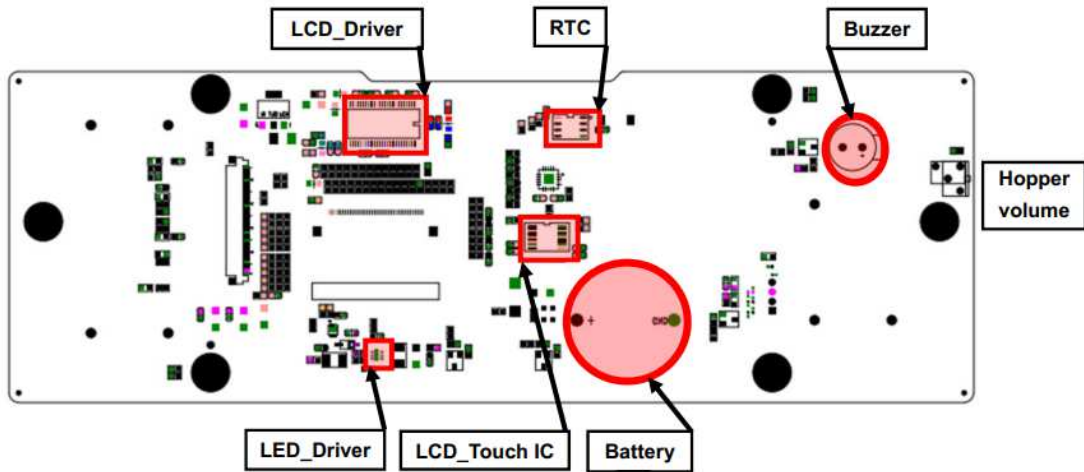


15-2-2. PBA_MAIN (Bottom Side)

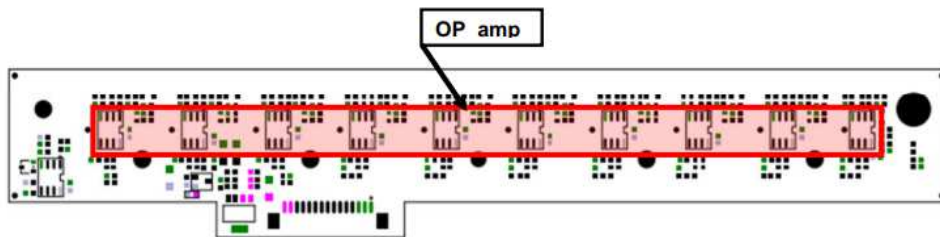


15-2-3. PBA_MTU (Top Side)**15-2-4. PBA_MTU (Bottom Side)****15-2-5. PBA_OPE (Top Side)**

15-2-6. PBA_OPE (Bottom Side)



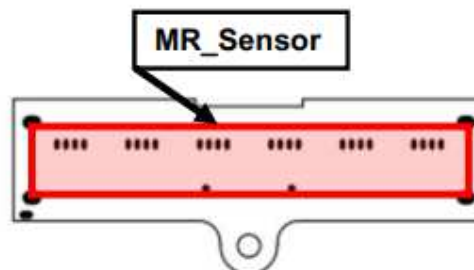
15-2-7. PBA_TAPE_AMP (Top Side)

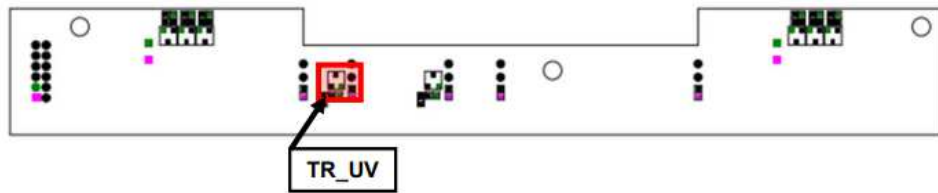
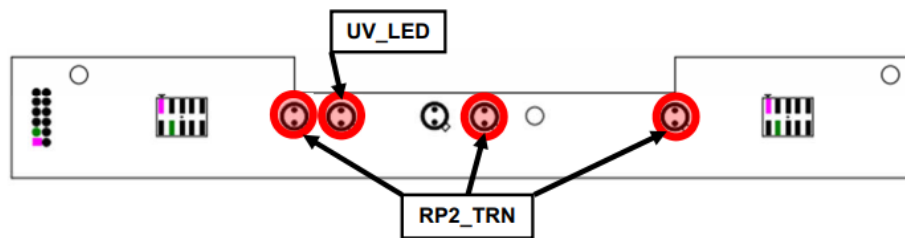
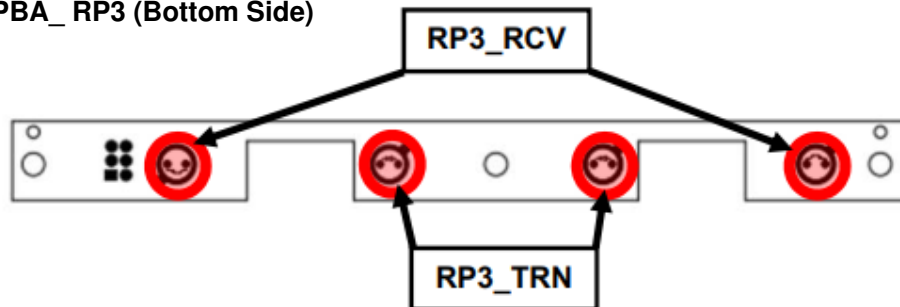
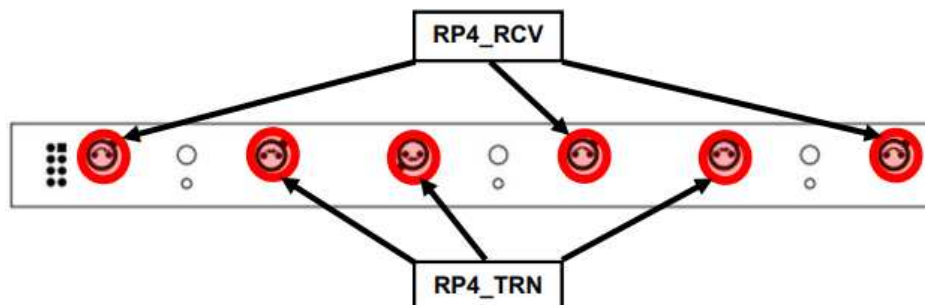


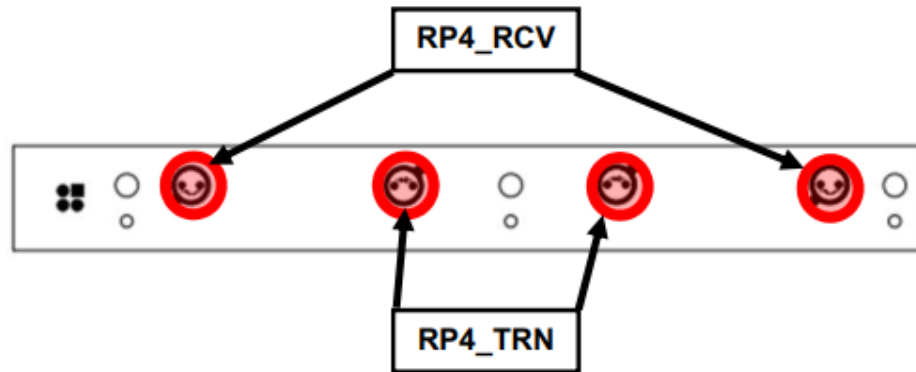
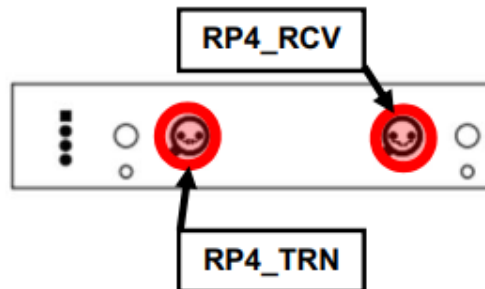
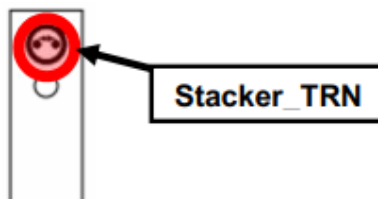
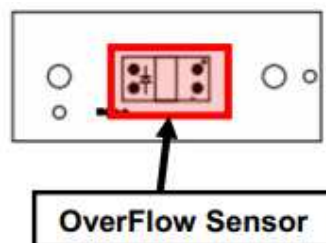
15-2-8. PBA_MR_AMP (Top Side)



15-2-9. PBA_MRA (Bottom Side)



15-2-10. PBA_RP2 (Top Side)**15-2-11. PBA_RP2 (Bottom Side)****15-2-12. PBA_RP3 (Bottom Side)****15-2-13. PBA_RP4 (Bottom Side)**

15-2-14. PBA_RP5 (Bottom Side)**15-2-15. PBA_REJECT (Bottom Side)****15-2-16. PBA_STACKER (Bottom Side)****15-2-17. PBA_REJECT_O.F (Bottom Side)**

Chapter 16. Assembly Drawings

1	COVER SIDE OPEN	26	ASS'Y_POCKET-1
2	ASS'Y_COVER_TOP	27	ASS'Y_POCKET-2
3	COVER_TOP_ASS'Y	28	SELECTOR ASS'Y_1
4	ADJUST_UPPER_ASS'Y	29	SELECTOR ASS'Y_2 / SOLENOID ASS'Y
5	ADJUST_SEPORATOR_ASS'Y	30	ASS'Y_REINFORCE-1
6	BKT_SEPORATOR_ASS'Y	31	ASS'Y_REINFORCE-2
7	TRANSFER_ROLLER_ASS'Y	32	REJECT_BAR_ASS'Y
8	ASS'Y_CASE_DETECT_UPPER	33	ASS'Y_GUIDE_LOWER_TOP-1
9	DETECT_CASE_UPPER_ASS'Y	34	ASS'Y_GUIDE_LOWER_TOP-2
10	CASE_DETECT_UPPER_1	35	ASS'Y_SMPS_BOTTOM and COVER
11	CASE_DETECT_UPPER_2	36	BRAKET_SMPS_BOTTOM_ASS'Y
12	TAPE_DETECT_MODULE/MR ARRAY	37	ROLLER ASS'Y_1
13	ASS'Y_CASE_DETECT_UPPER	38	ROLLER ASS'Y_2
14	LEFT PLATE, PULLEY, ENCODER, BELT	39	ASS'Y, MAIN_MOTOR and FEED_MOTOR
15	LEFT PLATE, ENCODER, MICRO SWITCH	40	BKT_MOTOR
16	RIGHT PLATE, BELT and O_RING	41	ASS'Y MOTOR SHIELD
17	RIGHT PLATE, PULLEY and GEAR	42	MOTOR_SHIELD
18	ASS'Y_COVER_OP	43	BKT_DUST_ROLLER/SHAFT_SUPPORTER
19	COVER_OP_ASS'Y	44	BKT_DUST_ROLLER_ASS'Y
20	CIS(1) AND BLOCK STOPPER	45	ASS'Y_SMPS_TOP
21	ASS'Y_CASE_DETECT_LOWER	46	ASS'Y_STACKER_SB11
22	ASS'Y_CASE_DETECT_LOWER	47	SIDE PLATE ASS'Y
23	COVER REAR DOOR and DUST TRAY		
24	ASS'Y_GUIDE_LOWER_BOTTOM		
25	GUIDE_LOWER_BOTTOM_ASS'Y		

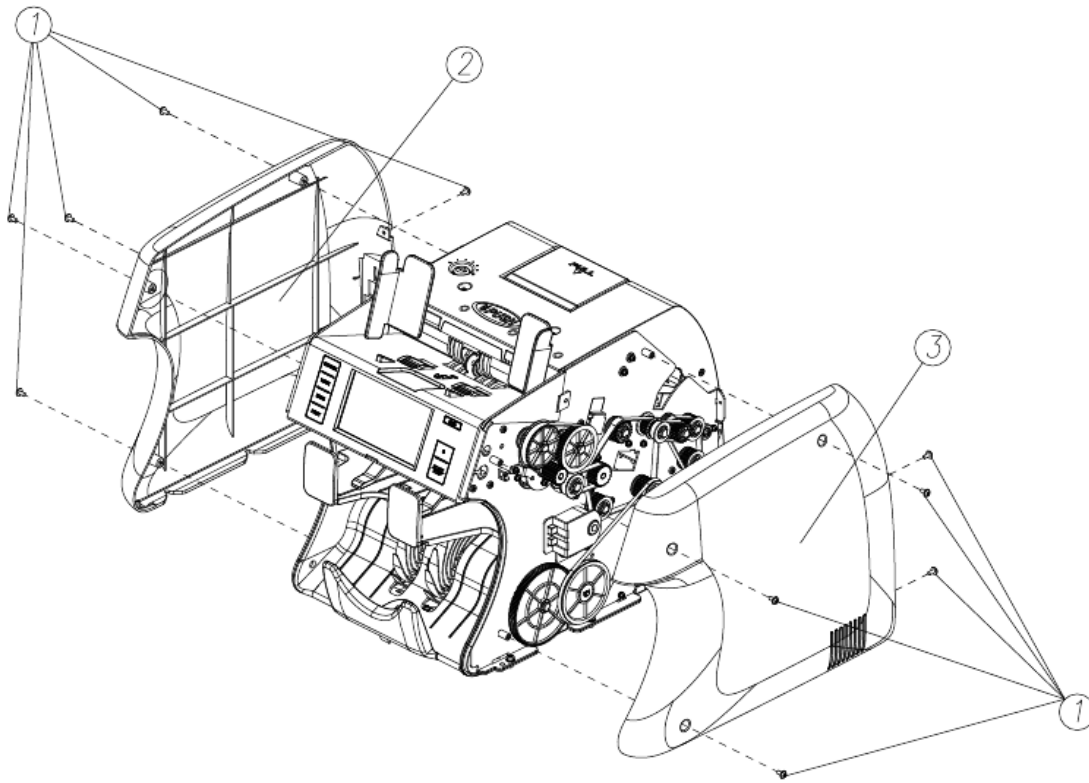


Parts required handling with care.

- ASS'Y_BLOCK_TAPE_DETECT (Be careful to prevent deformation)
- ROLLER_DETECT_TAPE (Do not drop or apply severe shock)
- PLATE_SPRING_DETECTOR (Required Not Folded)

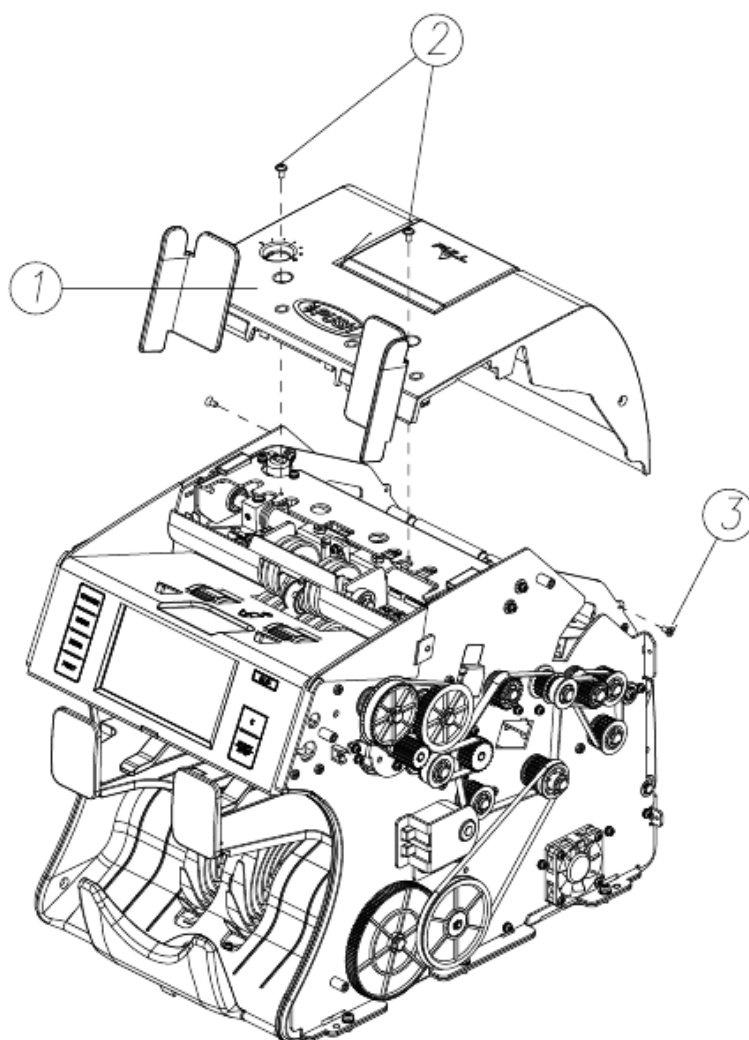
16-1. COVER SIDE OPEN

COVER SIDE OPEN		
NO.	PART NAME	Q'TY
1	SCREW_M/C_PWH_M3X6_Fe_Ni	10
2	COVER_LEFT_SB11	1
3	COVER_RIGHT_SB11	1



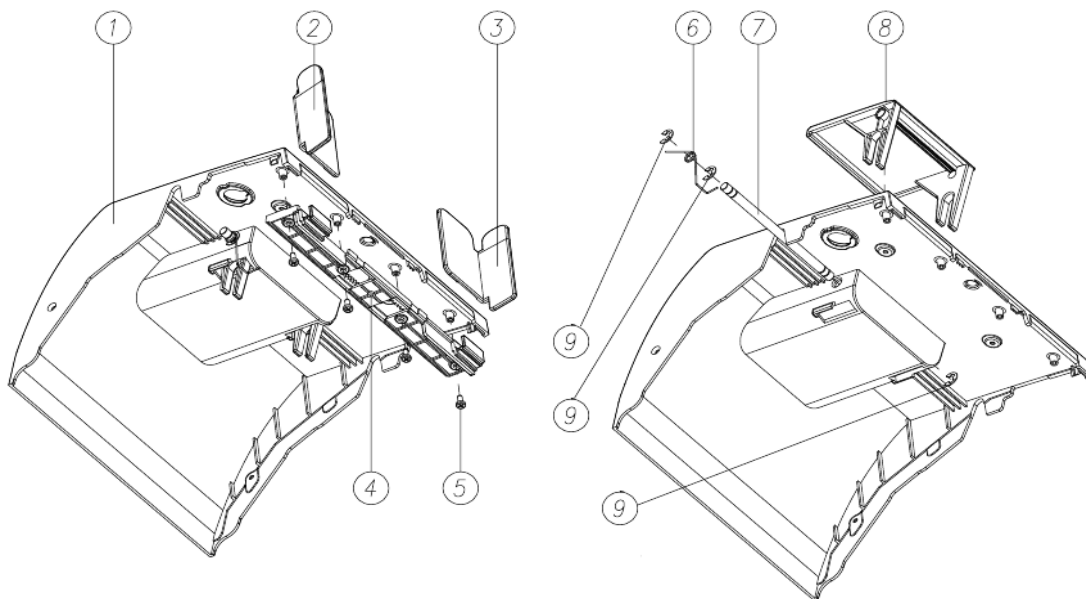
16-2. ASS'Y_COVER_TOP

ASS'Y_COVER_TOP		
NO.	PART NAME	Q'TY
1	ASS'Y_COVER_TOP	1
2	SCREW_M/C_PWH_M3X6_Fe_Ni	2
3	SCREW_M/C_FH_M3X6_Fe_Ni	2



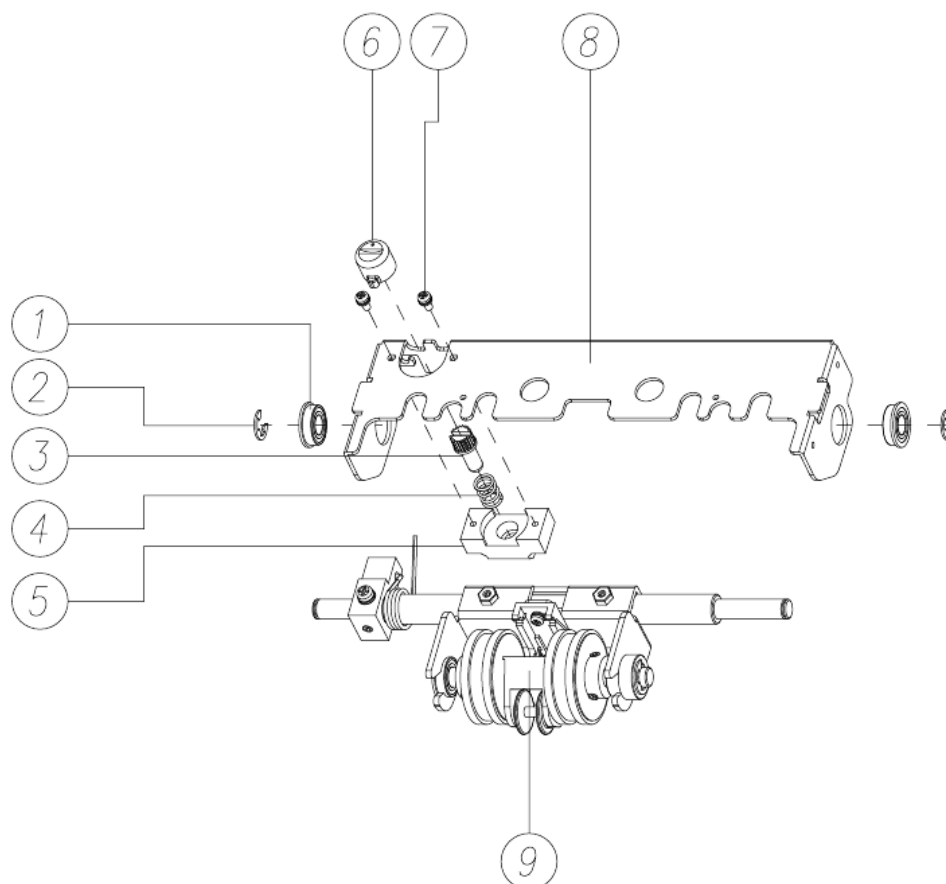
16-3. COVER_TOP_ASS'Y

Cover_Top_Ass'y		
NO.	PART NAME	Q'TY
1	COVER_TOP_DOOR_UPPER	1
2	HOPPER_GUIDE_L_DG	1
3	HOPPER_GUIDE_R_DG	1
4	ASS'Y_HOPPER_GUIDE_RACK	1
5	SCREW_T/P_PH_T2-Ø3X6_Fe_Zy	4
6	TORSION_SPRING_DETECT_HANDLE	1
7	SHAFT_HANDLE_SB11	1
8	HANDLE_DETECT_SB11	1
9	E_RING_Ø5(5x11x0.6)_Fe_ZB	3



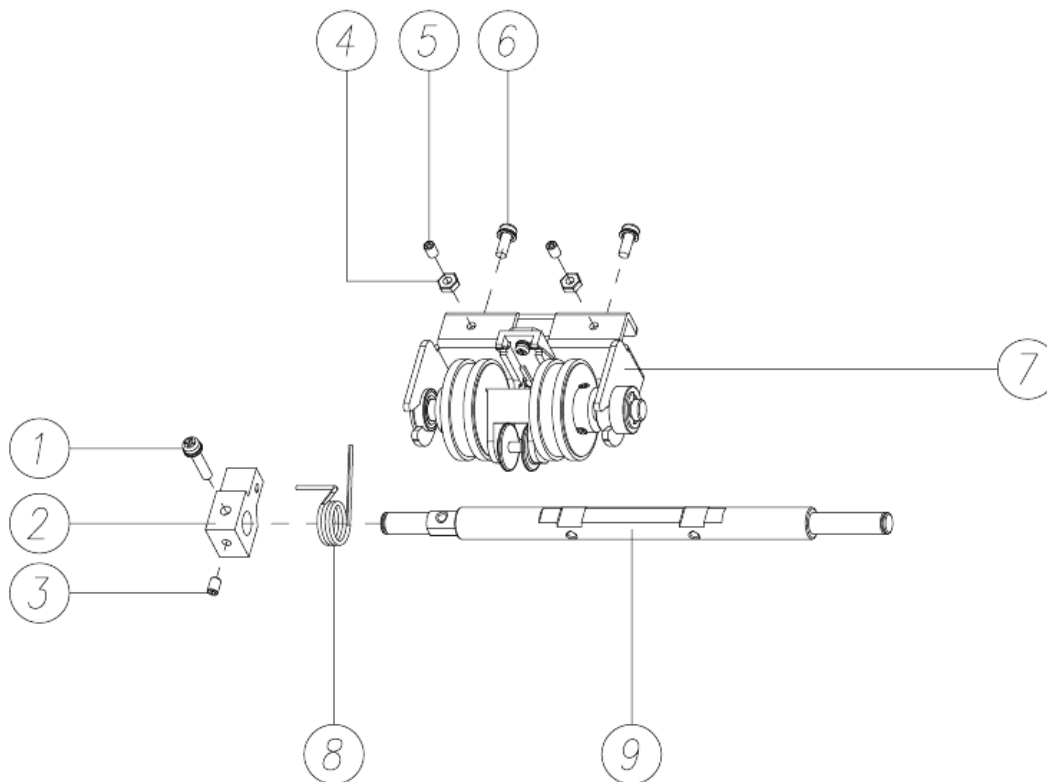
16-4. ADJUST_UPPER_ASS'Y

Adjust_Upper_Ass'y		
NO.	PART NAME	Q'TY
1	BEARING_LF_1680ZZ	2
2	E_RING_Ø6(6x12x0.8)_Fe_ZB	2
3	SPECIAL_SCREW_ADJUST	1
4	COIL_SPRING_ADJUST	1
5	ARM_ADJUST_UPPER	1
6	SPECIAL_SCREW_COVER	1
7	SCREW_M/C_PH/SWW_M3X6_Fe_Zy	2
8	BKT_COVER_TOP_SB11	1
9	ASS'Y_ADJUST_SEPARATOR	1



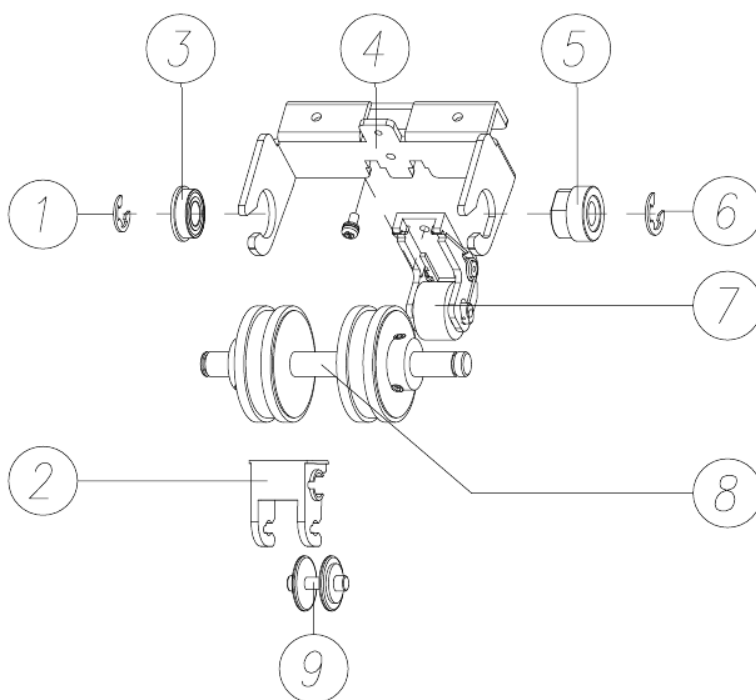
16-5. ADJUST_SEPORATOR_ASS'Y

Adjust_Separator_Ass'y		
NO.	PART NAME	Q'TY
1	SCREW_M/C_PH/SWW_M4X20_Fe_Ni	1
2	ARM_ADJUST_LOWER	1
3	SCREW_SET_SIH_FP_M4x6_Fe_ZB	1
4	HEX_NUT_M4X0.7_Fe_Zy	2
5	SCREW_SET_SIH_FP_M4x12_Fe_ZB	2
6	SCREW_M/C_PH/SWW_M4X10_Fe_Ni	2
7	ASS'Y_BKT_SEPARATOR_SB11	1
8	TORSION_SPRING_ADJUST	1
9	SHAFT_ADJUST_SB11	1



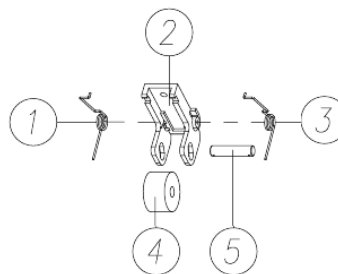
16-6. BKT_SEPORATOR_ASS'Y

BKT_Separator_Ass'y		
NO.	PART NAME	Q'TY
1	E_RING_Ø6(6x12x0.8)_Fe_ZB	1
2	GUIDE_PRESS_ROLLER_P	1
3	BEARING_LF_1680ZZ	1
4	BKT_SEPARATOR_P	1
5	ASS'Y_BUSH_ONEWAY_BEARING_P	1
6	E_RING_Ø7(7x14x0.8)_Fe_ZB	1
7	ASS'Y_GUIDE_TRANS_ROLLER	1
8	ASS'Y_ROLLER_SEPARATE	1
9	SHAFT_PRESS	1

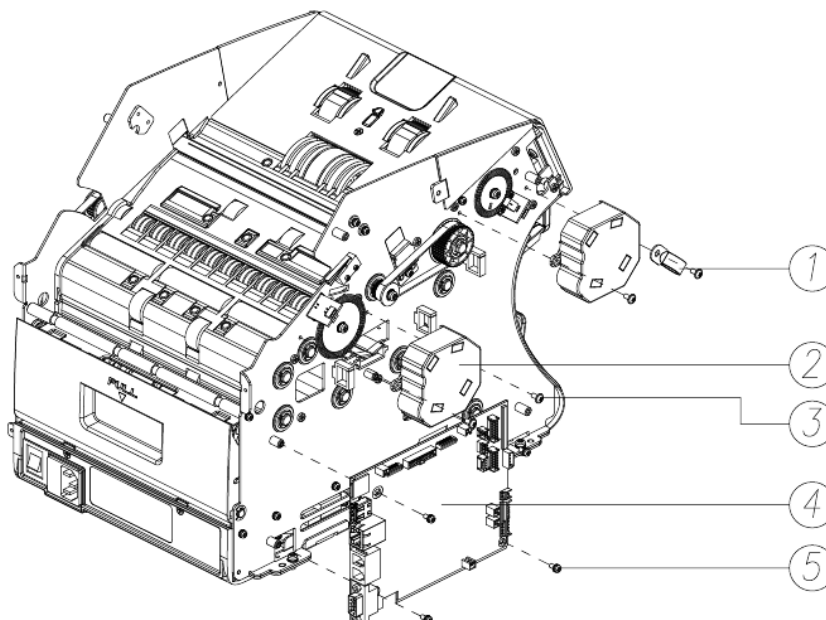


16-7. TRANSFER_ROLLER_ASS'Y

Transfer_Roller_Ass'y		
NO.	PART NAME	Q'TY
1	TORSION_SPRING_TRANSFER_L	1
2	GUIDE_TRANS_ROLLER_SB11	1
3	TORSION_SPRING_TRANSFER_R	1
4	ROLLER_TRANSFER_P_BLACK	1
5	SHAFT_TRANSFER_ROLLER	1

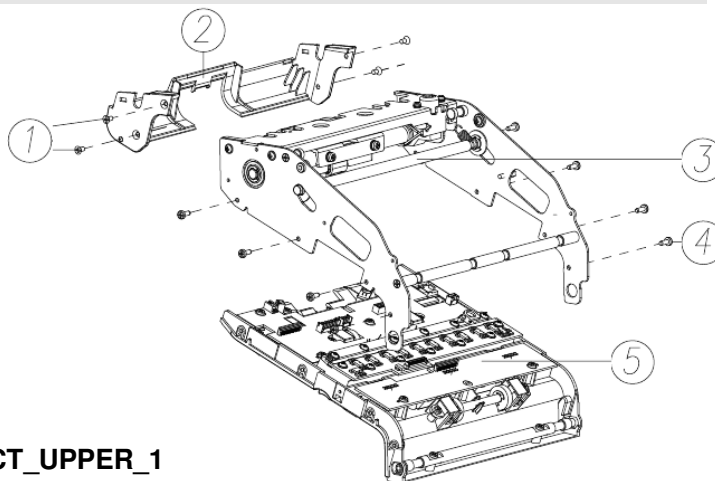
**16-8. ASS'Y_CASE_DETECT_UPPER**

ASS'Y_CASE_DETECT_UPPER		
NO.	PART NAME	Q'TY
1	ASS'Y_CASE_DETECT_UPPER	1
2	SCREW_M/C_PH_SWW_M4X15_Fe_Ni	2
3	PIVOT_BUSH	2
4	SUPPORT WASHER	2
5	COIL_SPRING_DETECT	4

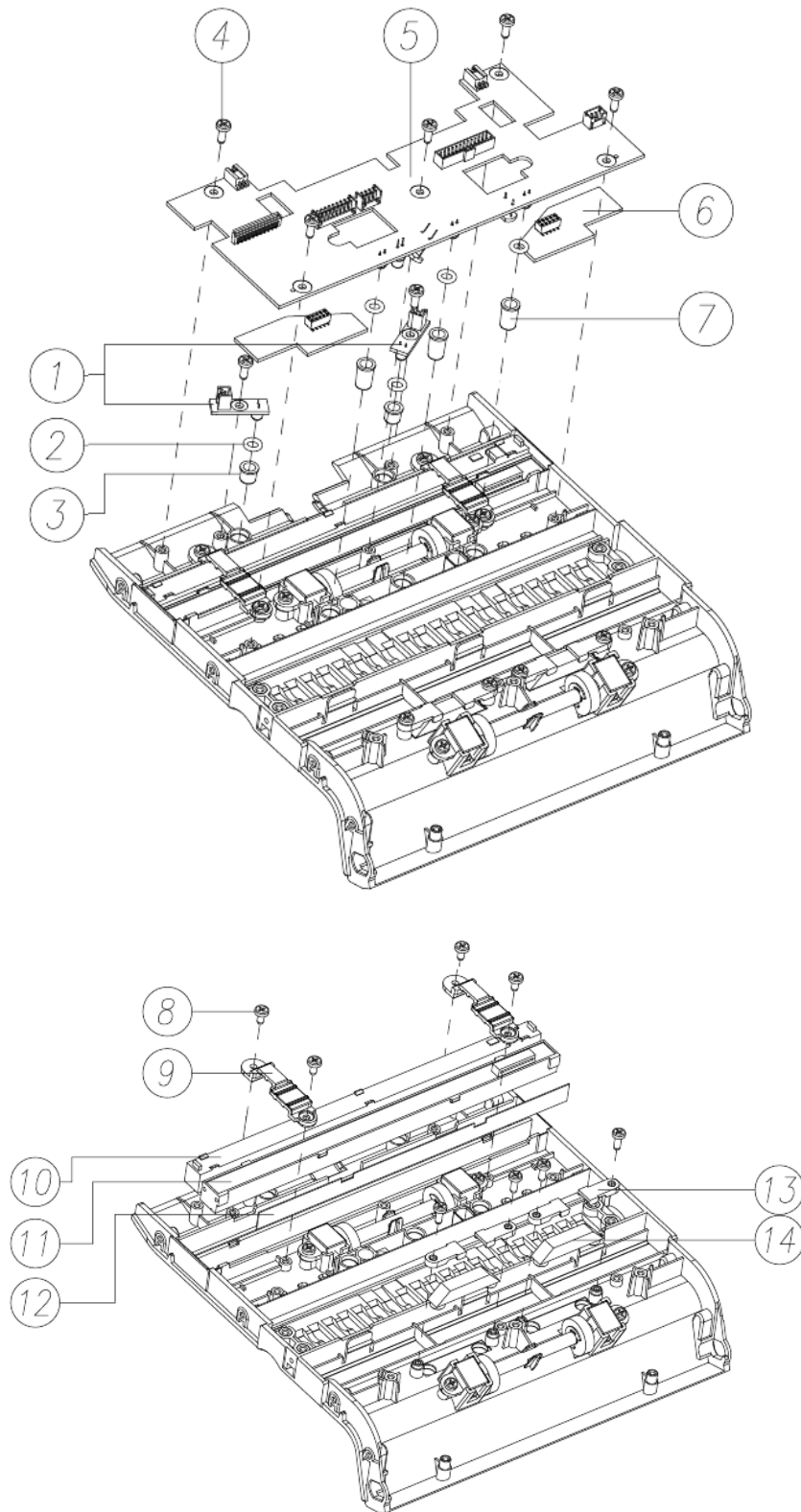


16-9. DETECT_CASE_UPPER_ASS'Y

Detect_Case_Upper_Ass'y		
NO.	PART NAME	Q'TY
1	SCREW_M/C_FH_M3X8_Fe_Ni	4
2	COVER_TOP_GUIDE_SB11	1
3	ASS'Y_ADJUST_UPPER + BKT_DTECT_CASE_TOP_L,R	1
4	SCREW_T/P_PH_T2_Ø3X6_Fe_Zy	8
5	ASS'Y_CASE_DETECT_UPPER	1

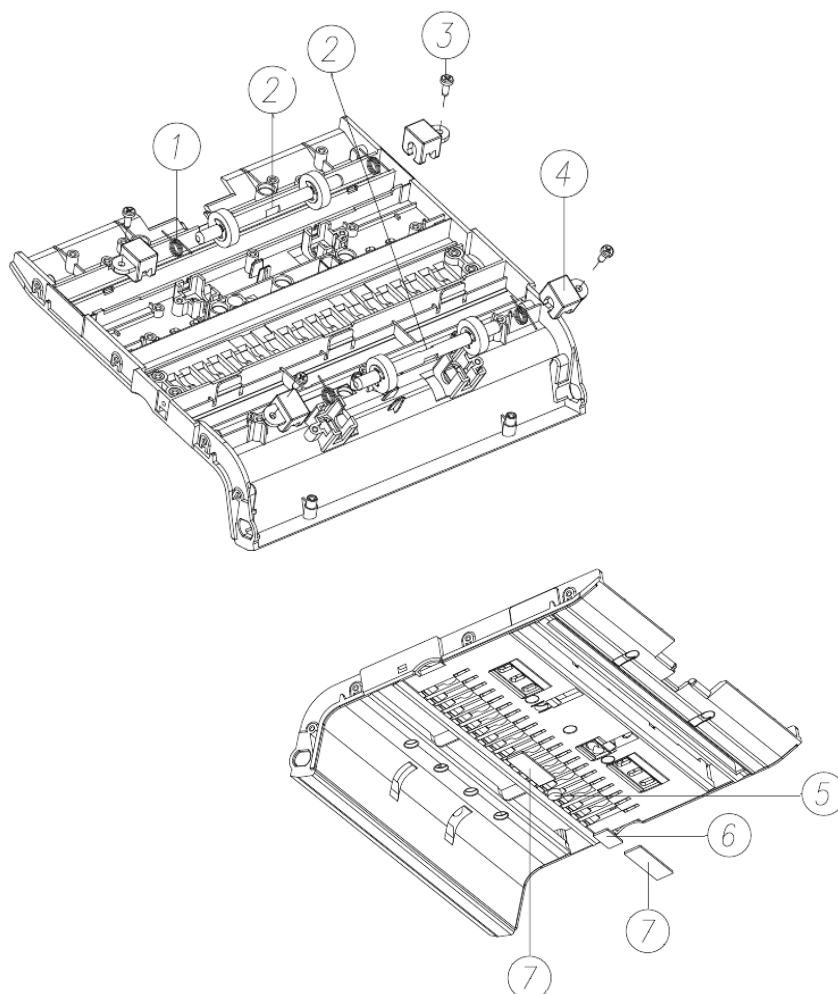
**16-10. CASE_DETECT_UPPER_1**

CASE_DETECT_UPPER_1		
NO.	PART NAME	Q'TY
1	PBA_JP_SP_R	2
2	AN008_O_RING	5
3	CAP_RP1_V	2
4	SCREW_T/P_PH_T2_Ø3X6_Fe_Zy	7
5	PBA_SB-11_MTU_V0.6	1
6	ANTI_STOCKS	2
7	CAP_RP2_V	3
8	SCREW_T/P_PH_T2_Ø3X6_Fe_Zy	8
9	LOCKER_IR_CIS_SB11	2
10	PBA_IR_TRN_MODULE(2CIS)-01E 01	1
11	SML1R183X-170302B (6ch)	1
12	CIS_SHEET_SB11	1
13	GUIDE_LENS_STACKER-A	2
14	LENS_TRASFER	2



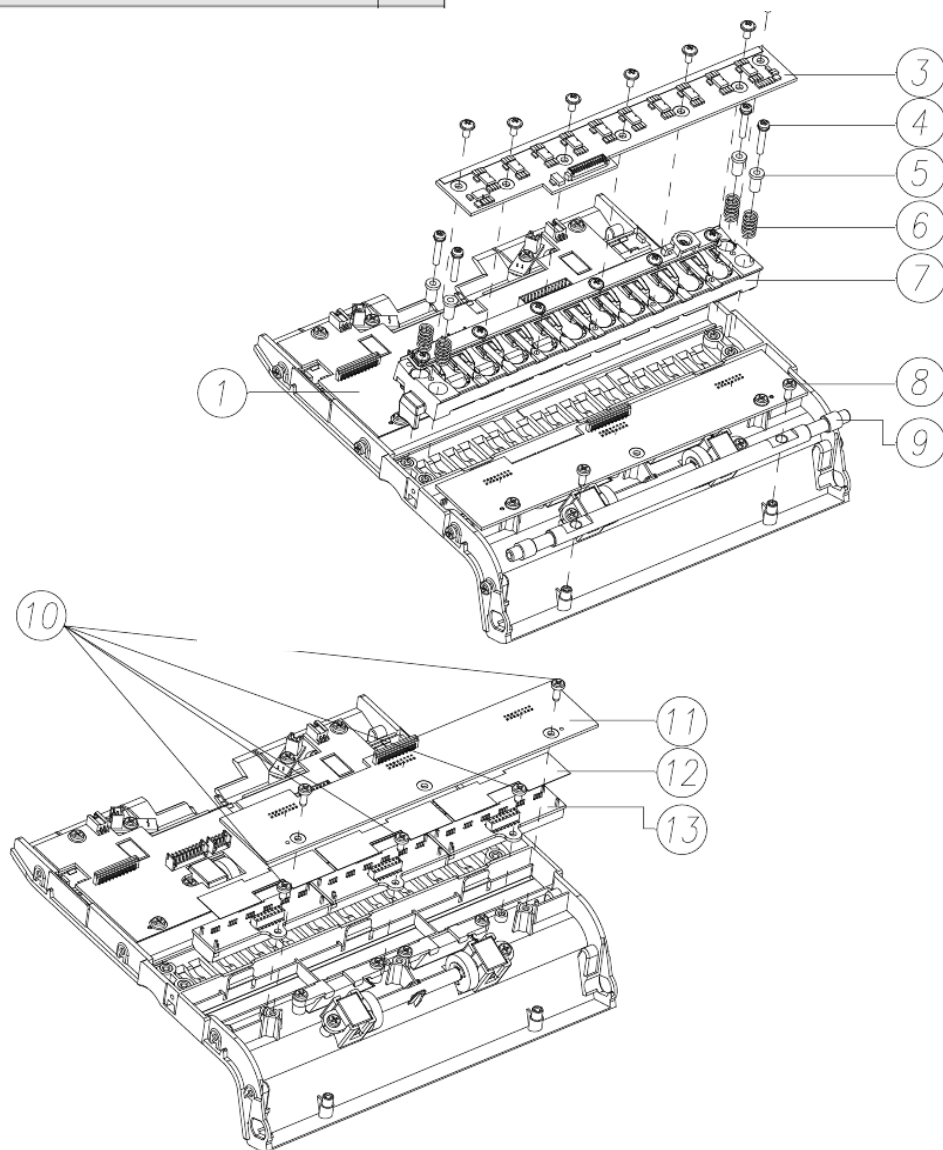
16-11. CASE_DETECT_UPPER_2

CASE_DETECT_UPPER_2		
NO.	PART NAME	Q'TY
1	TORSION_SPRING_PINCH	4
2	ASS'Y_ROLLER_PINCH_SB11	2
3	SCREW_T/P_PH_T2_Ø3X6_Fe_Zy	4
4	PINCH_ROLLER_GUIDE_SB11	4
5	UV_FILTER(N)	1
6	GLASS_UV_REFLECT	1
7	GLASS_ANTI	2



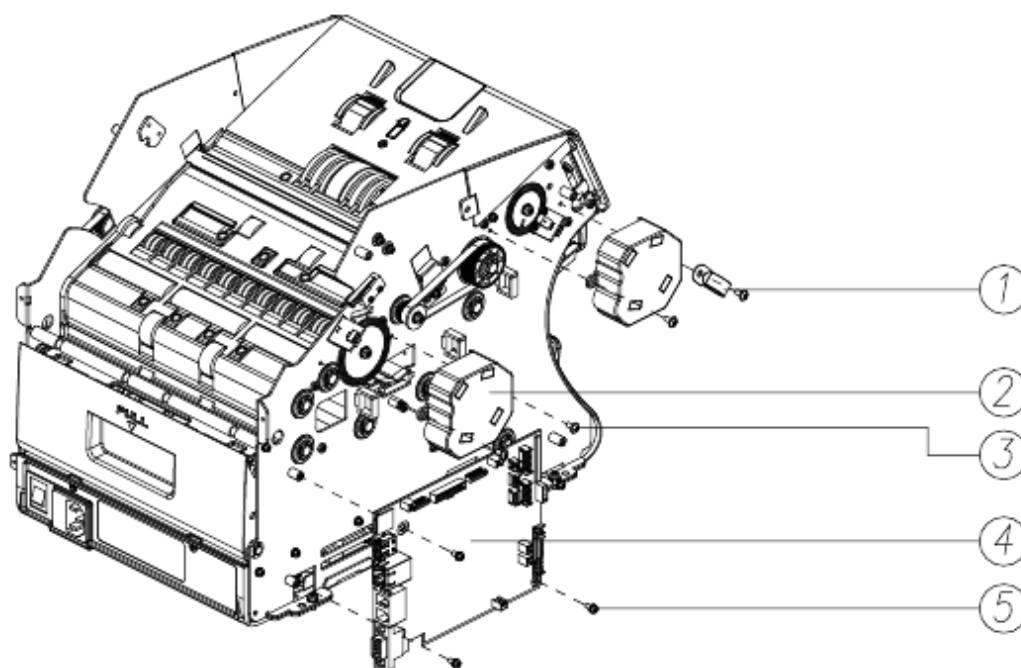
16-12. TAPE_DETECT_MODULE and MR ARRAY

Tape Detect Module and MR Array			Tape Detect Module and MR Array		
NO.	PART NAME	Q'TY	NO.	PART NAME	Q'TY
1	CASE_DETECT_UPPER	1	8	SCREW_T/P_PH_T2_Ø3X6_Fe_Zy	2
2	SCREW_M/C_PWH_M3X6_Fe_Ni	7	9	SHAFT_COVER_TOP_SB11	1
3	PBA_SB-11_TAPE_AMP_V0.3	1	10	SCREW_T/P_PH_T2_Ø3X6_Fe_Zy	5
4	SCREW_M/C_PH/SW_M3X16_Fe_Zy	4	11	PBA_SB-11_MR_AMP_V0.2	1
5	BUSH_SCREW	4	12	TAPE_PBA_MR_ARRAY	3
6	COIL_SPRING_TAPE_DETECT	4	13	PBA_SB-11_MRA_V0.2	3
7	ASS'Y_BLOCK_TAPE_DETECT_SB11	1			



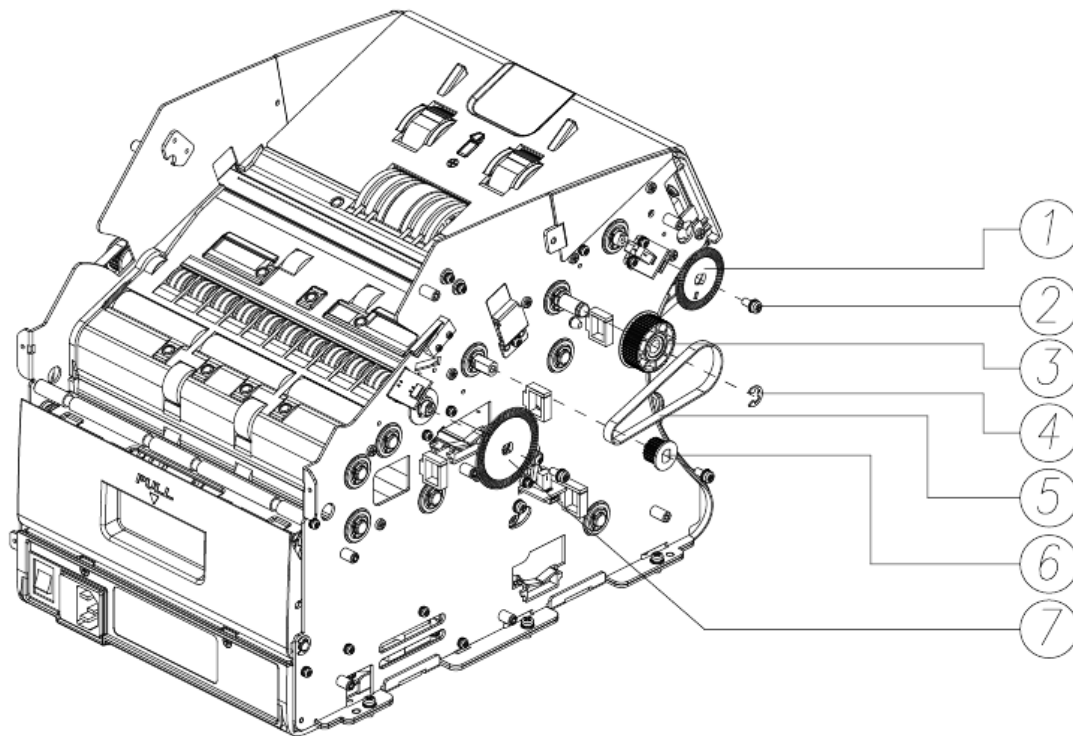
16-13. ASS'Y_CASE_DETECT_UPPER

ASS'Y_CASE_DETECT_UPPER		
NO.	PART NAME	Q'TY
1	ASS'Y_CASE_DETECT_UPPER	1
2	SCREW_M/C_PH_SWW_M4X15_Fe_Ni	2
3	PIVOT_BUSH	2
4	SUPPORT WASHER	2
5	COIL_SPRING_DETECT	4



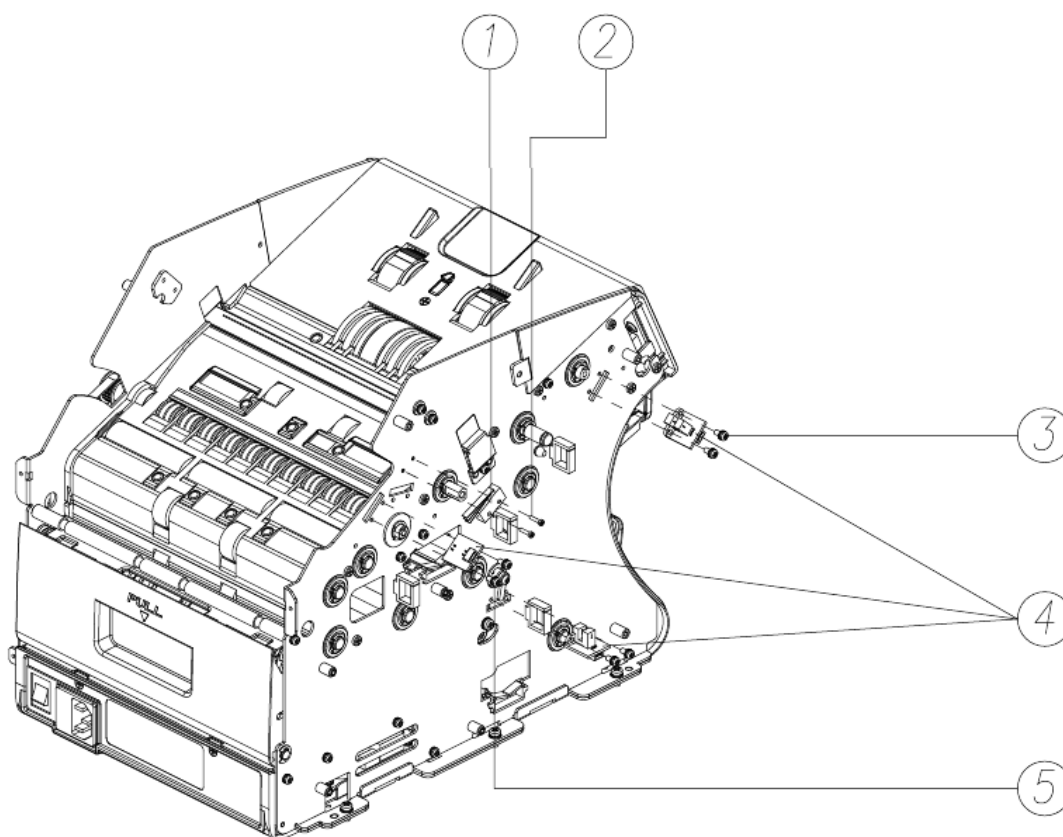
16-14. LEFT PLATE, PULLEY and ENCODER and BELT

LEFT PLATE, PULLEY and ENCODER and BELT		
NO.	PART NAME	Q'TY
1	ENCODER_WHEEL	1
2	SCREW_M/C_PH/SWW_M4X8_Fe_Ni	3
3	PULLEY_ADF_CLUTCH_48	1
4	E_RING_Ø6(6x12x0.8)_Fe_ZB	1
5	BELT_S2M_202	1
6	PULLEY_S2M_22	1
7	ENCORDER_80	1



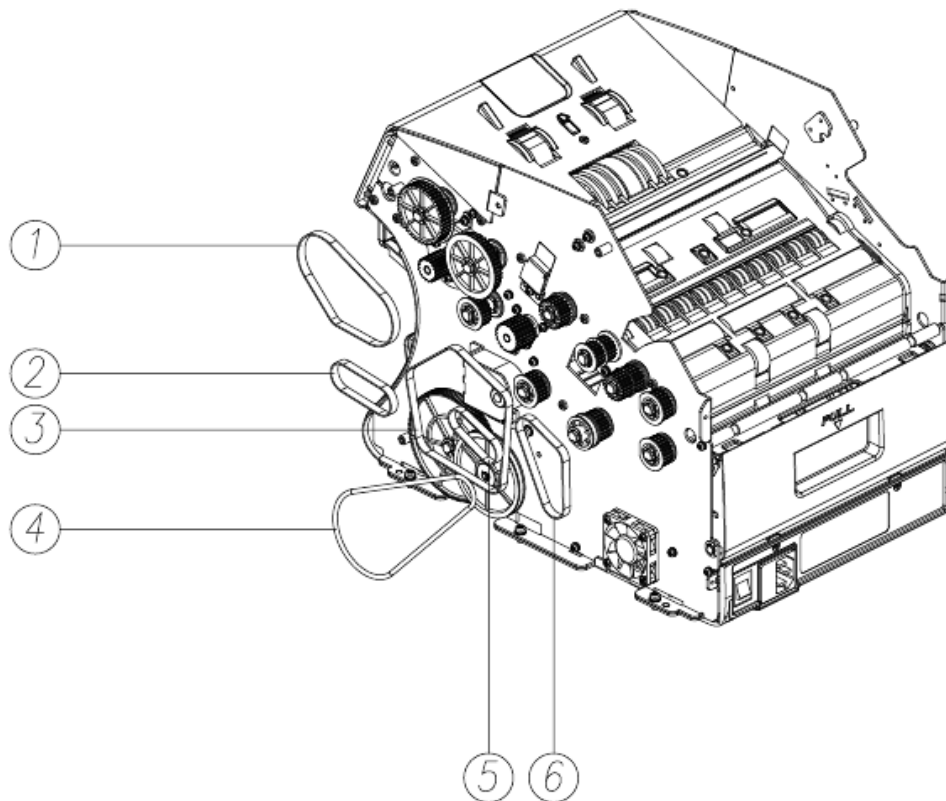
16-15. LEFT PLATE, ENCODER SENSOR and ASS'Y MICRO SWITCH

<i>LEFT PLATE, ENCODER SANSOR and ASS'Y MICRO SWICH</i>		
<i>NO.</i>	<i>PART NAME</i>	<i>Q'TY</i>
1	ASS'Y_MICRO_SWITCH(SB3000)	1
2	SCREW_M/C_PH_M2X8_Fe_Zy	2
3	SCREW_M/C_PH/SWW_M3X6_Fe_Zy	4
4	SB-2000_ENCODER_V1.0	1
5	SCREW_M/C_FH_M3X6_Fe_Ni	2



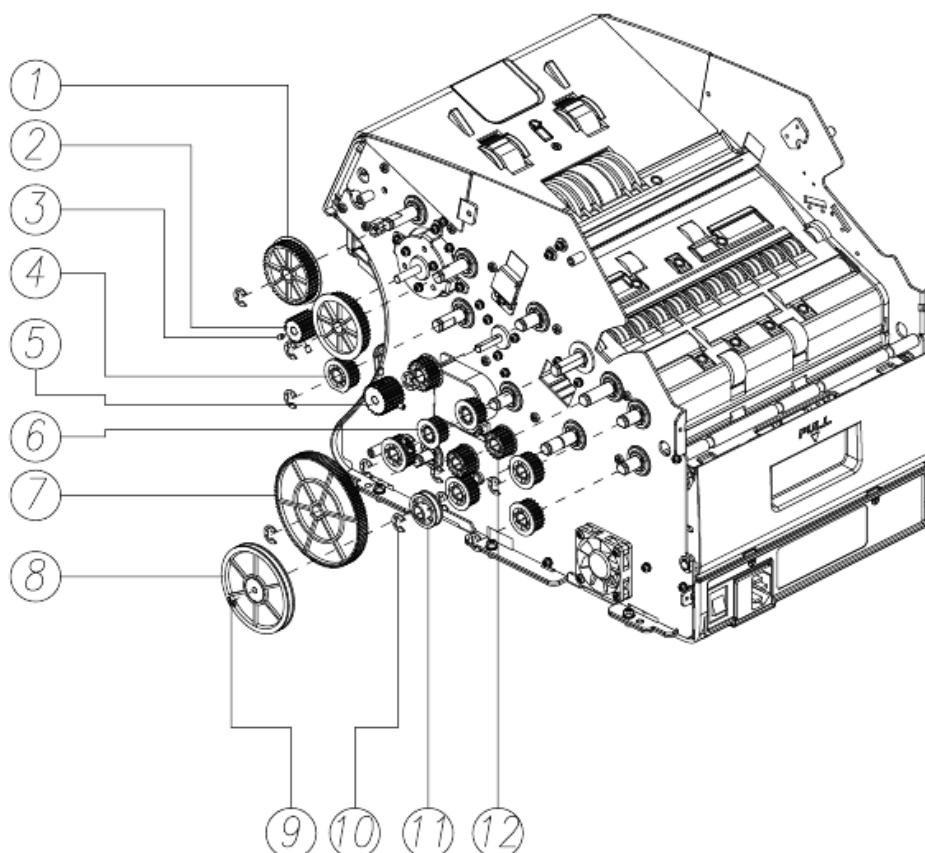
16-16. RIGHT PLATE, BELT and O_RING

<i>RIGHT PLATE, BELT and O_RING</i>		
<i>NO.</i>	<i>PART NAME</i>	<i>Q'TY</i>
1	BELT_S3M_225	1
2	BELT_S3M_135	1
3	S3M_BELT_306	1
4	G90_O_RING	1
5	BELT_S3M_114	1
6	BELT_S3M_174	1



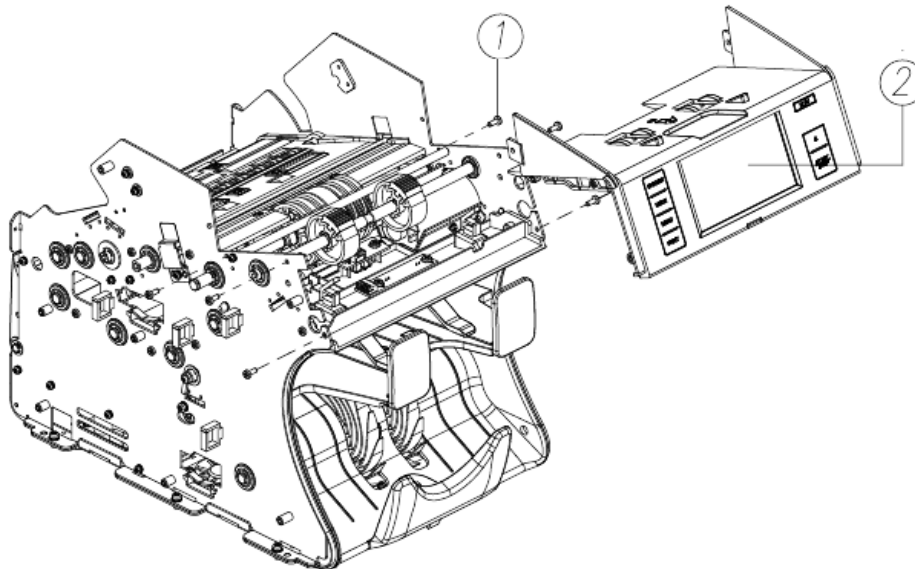
16-17. RIGHT PLATE, PULLEY and GEAR

<i>RIGHT PLATE, PULLEY and GEUR</i>		
<i>NO.</i>	<i>PART NAME</i>	<i>Q'TY</i>
1	<i>PULLEY_ADF_V_S3M-40</i>	2
2	<i>PULLEY_S3M_FEED_MOTOR</i>	1
3	<i>SCREW_SET_SIH_FP_M3x4_Fe_ZB</i>	4
4	<i>PULLEY_FEED_S3M_22</i>	6
5	<i>PULLEY_S3M_22_MAINMOTOR</i>	1
6	<i>PULLEY_FEED_S3M_18</i>	2
7	<i>SPUR_GEAR_124</i>	1
8	<i>SPUR_GEAR_16_O_RING</i>	1
9	<i>E_RING_Ø4(4x11x0.6)_Fe_ZB</i>	1
10	<i>E_RING_Ø6(6x12x0.8)_Fe_ZB</i>	12
11	<i>PULLEY_O_RING</i>	1
12	<i>PULLEY_S3M_20</i>	2



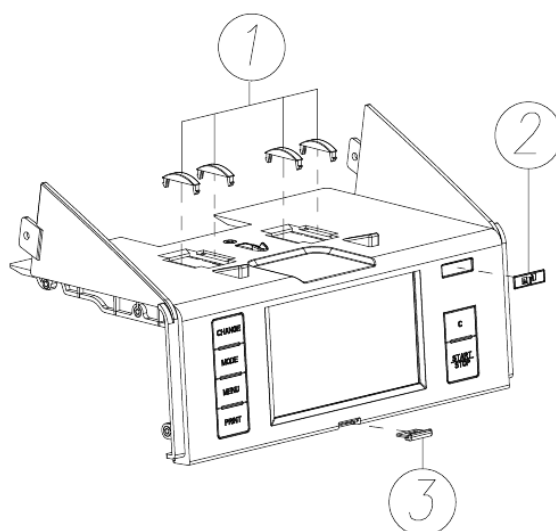
16-18. ASS'Y_COVER_OP

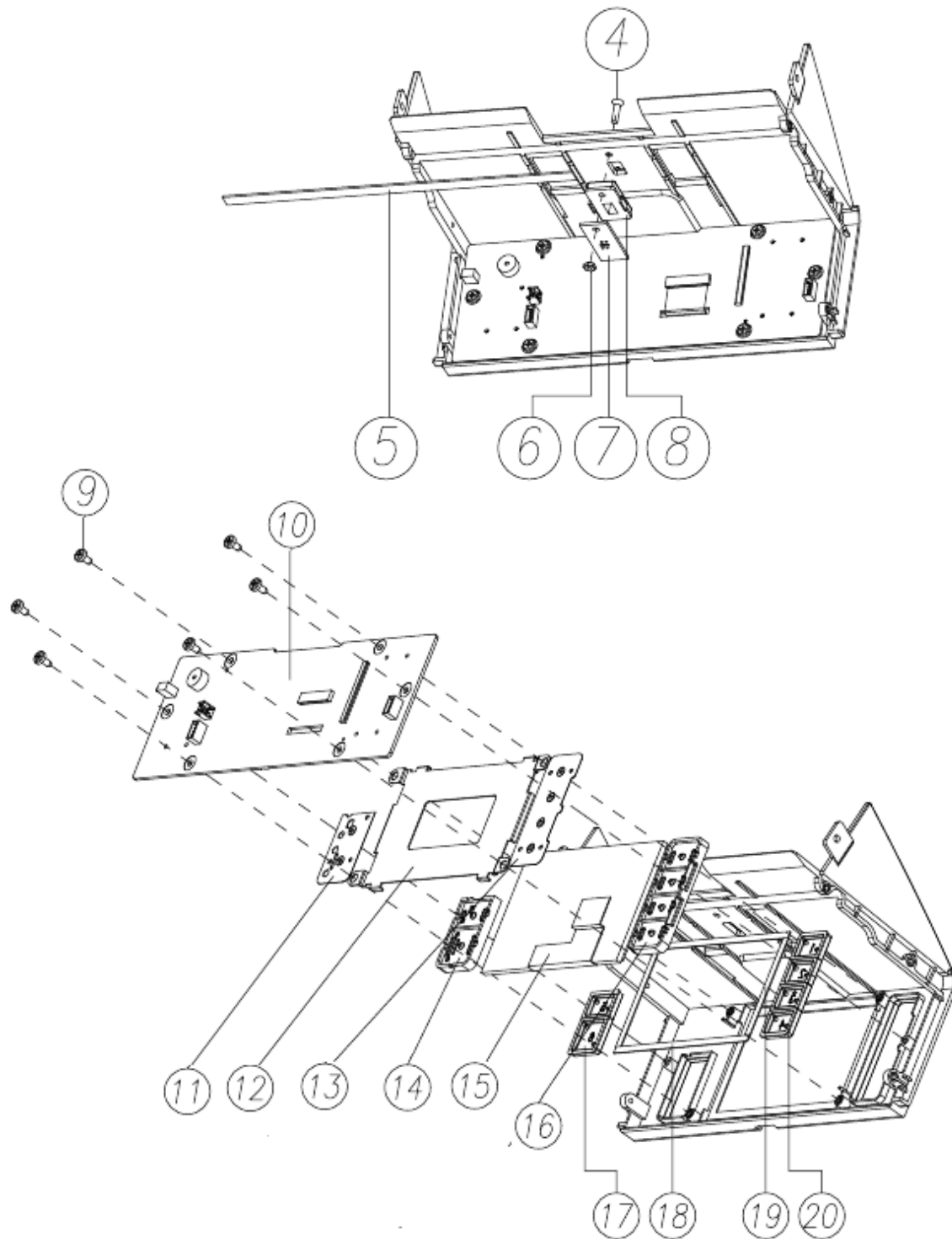
ASS'Y_COVER_OP		
NO.	PART NAME	Q'TY
1	SCREW_T/P_PH_T2_Ø3X6_Fe_Zy	6
2	ASS'Y_COVER_OP	1



16-19. COVER_OP_ASS'Y

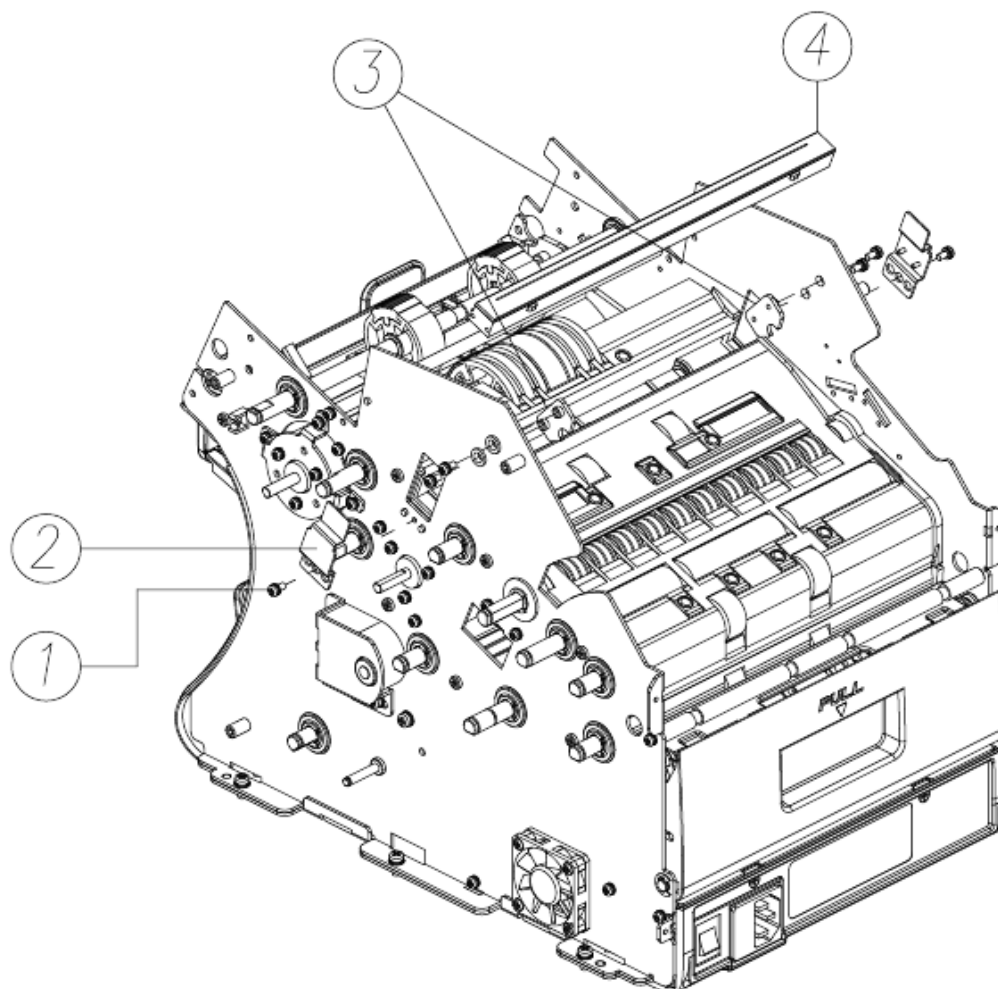
Cover_OP_Ass'y		
NO.	PART NAME	Q'TY
1	PICK_UP_SUPPORT	4
2	ELECTRO_FORMING_BADGE	1
3	COVER_LED_SB11	1
4	SCREW_M/C_FH_M3X12_Fe_Ni	1
5	CUSHION_SUPPORTER	1
6	HEX_NUT_M3X0.5_Fe_Zy	1
7	SB-7 PBA_HOPPER_1	1
8	WINDOW_HOPPER	1
9	SCREW_T/P_PH_T2_Ø3X6_Fe_Zy	6
10	PBA_SB-11_OPE_V0.4	1
11	METAL_DOME_SHEET_2KEY	1
12	BKT_LCD_SB11	1
13	METAL_DOME_SHEET_4KEY	1
14	RUBBER_BUTTON_2KEY	1
15	LCD_MODULE	1
16	RUBBER_BUTTON_4KEY	1
17	BUTTON_CRADLE_2KEY	1
18	CUSHION_LCD_H_SB11	2
19	CUSHION_LCD_V_SB11	2
20	BUTTON_CRADLE_4KEY	1





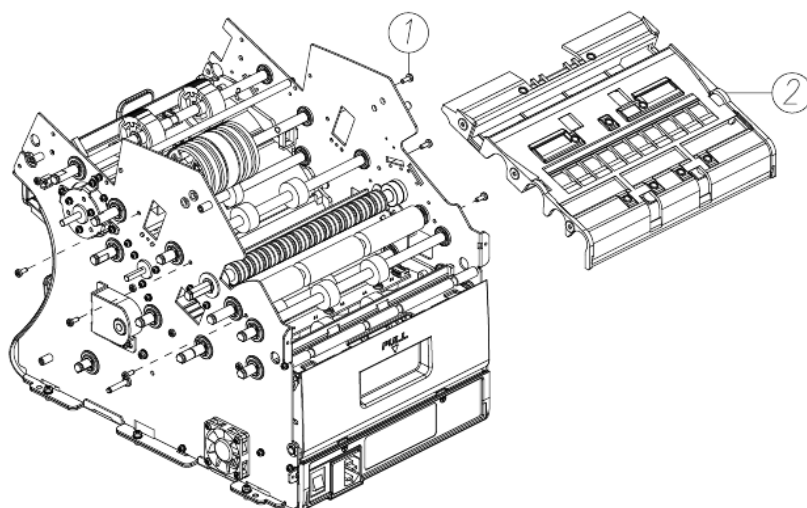
16-20. CIS(1) AND BLOCK STOPPER

<i>CIS(1) AND BLOCK STOPPER</i>		
<i>NO.</i>	<i>PART NAME</i>	<i>Q'TY</i>
1	SCREW_M/C_PH_SWW_M3X6_Fe_Zy	4
2	BKT_CIS_SB11	2
3	BLOCK_STOPPER	2
4	SML1R201X-170303B (6ch)	1

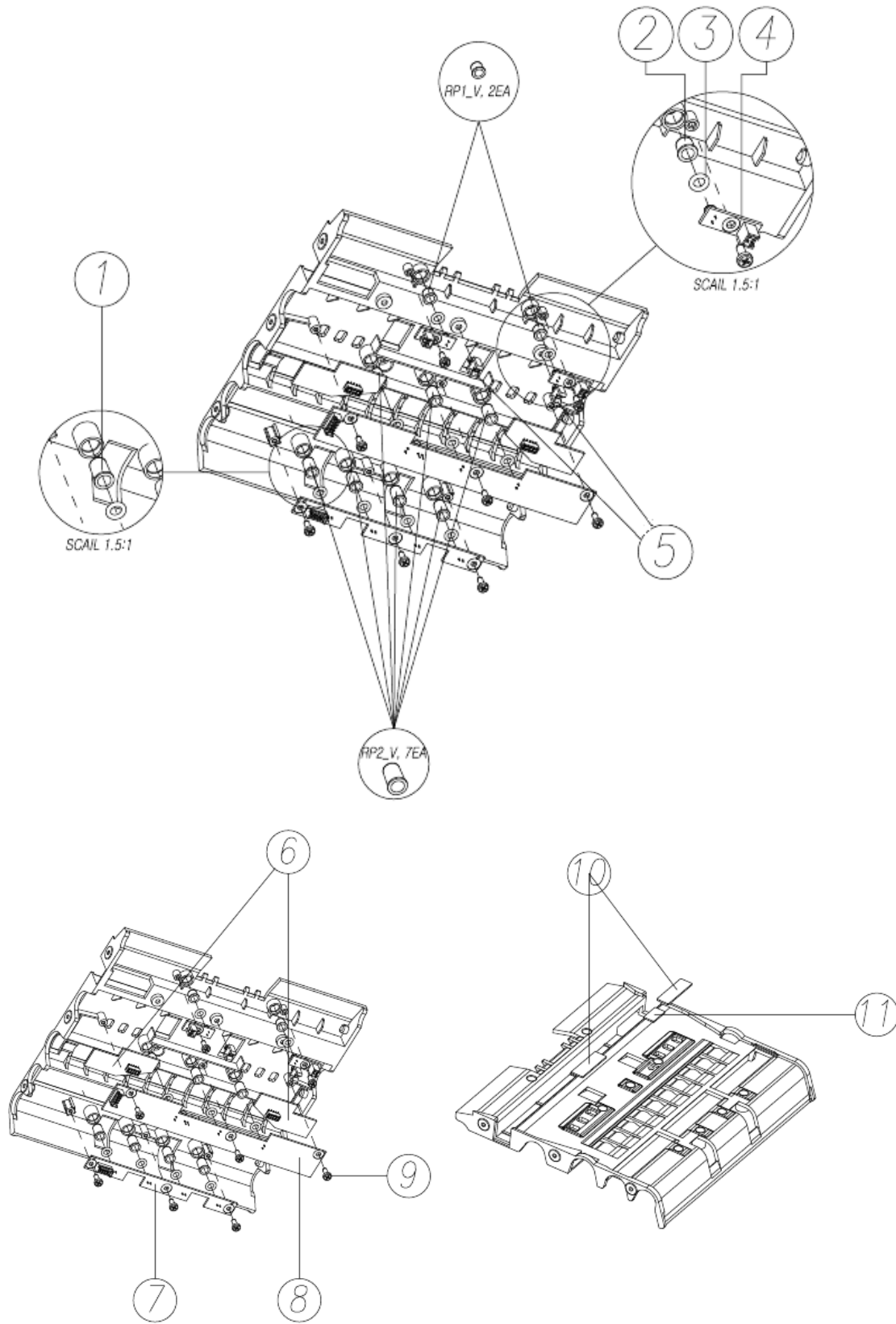


16-21. ASS'Y_CASE_DETECT_LOWER

ASS'Y_CASE_DETECT_LOWER		
NO.	PART NAME	Q'TY
1	SCREW_T/P_PH_T2_Ø3X6_Fe_Zy	6
2	ASS'Y_CASE_DETECT_LOWER	1

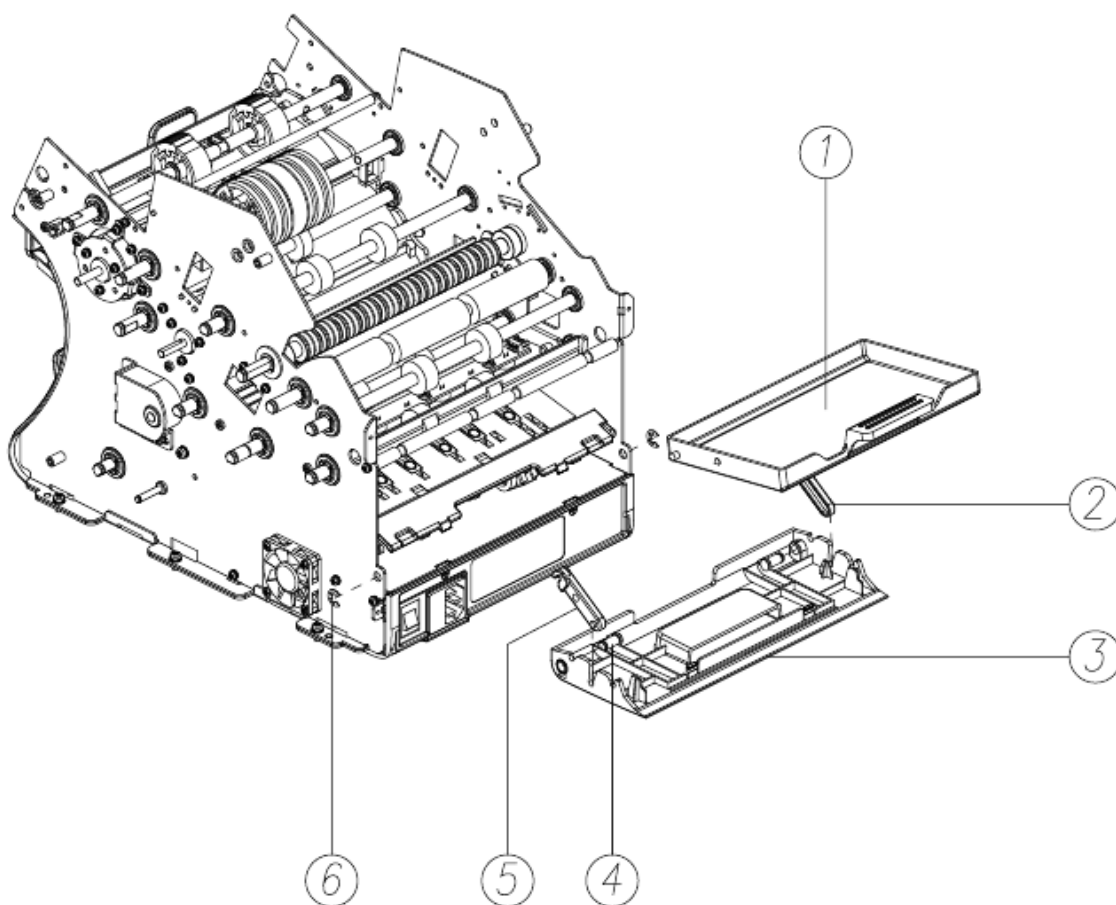
**16-22. ASS'Y_CASE_DETECT_LOWER**

Pocket_Ass'y		
NO.	PART NAME	Q'TY
1	CAP_RP2_V	7
2	CAP_RP1_V	2
3	AN008_O_RING	9
4	PBA_JP_SP_T	2
5	WIRE_SADDLE_SMALL	2
6	ANTI_STOCKS	2
7	PBA_SB-11_RP3_V0.3	1
8	PBA_SB-11_RP2_V0.3	1
9	SCREW_T/P_PH_T2_Ø3X6_Fe_Zy	8
10	GLASS_ANTI	—
11	GLASS_UV_REFLECT	1



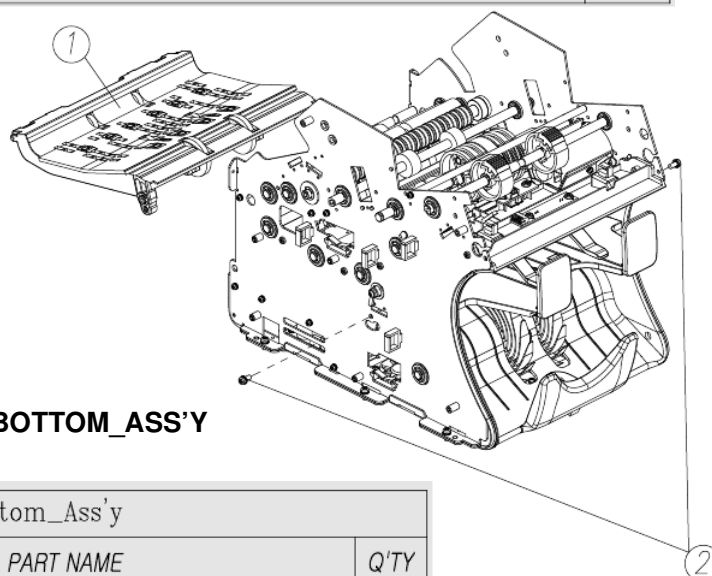
16-23. COVER REAR DOOR ASS'Y and DUST TRAY

COVER REAR DOOR ASS'Y and DUST TRAY		
NO.	PART NAME	Q'TY
1	DUST_TRAY_SB11	1
2	LINK_COVER_REAR_L	1
3	COVER_REAR_DOOR_SB11	1
4	PIVOT_HINGE_COVER_REAR	2
5	LINK_COVER_REAR_R	1
6	E_RING_Ø5(5x11x0.6)_Fe_ZB	2

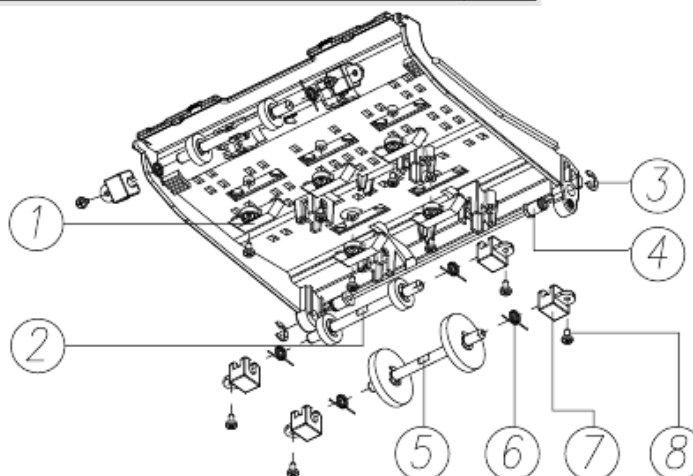


16-24. ASS'Y_GUIDE_LOWER_BOTTOM

ASS'Y_GUIDE_LOWER_BOTTOM		
NO.	PART NAME	Q'TY
1	ASS'Y_GUIDE_LOWER_BOTTOM	1
2	SCREW_M/C_PH/SWW_M4X8_Fe_Ni	2

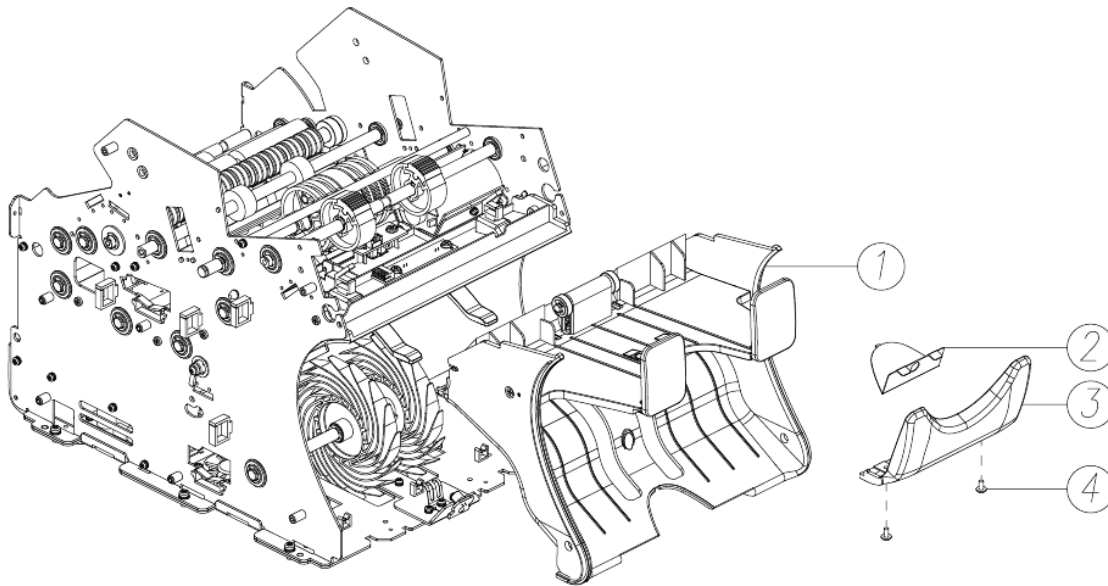
**16-25. GUIDE_LOWER_BOTTOM_ASS'Y**

Guide_Lower_Bottom_Ass'y		
NO.	PART NAME	Q'TY
1	LENS_REJECT_SB11	5
2	ASS'Y_ROLLER_PINCH-1_SB11	2
3	E_RING_Ø6(6x12x0.8)_Fe_ZB	2
4	PIVOT_HINGE_LOWER	2
5	ASS'Y_ROLLER_PINCH_SB11	1
6	TORSION_SPRING_PINCH	6
7	PINCH_ROLLER_GUIDE_SB11	6
8	SCREW_T/P_PH_T2-Ø3X6_Fe_Zy	11



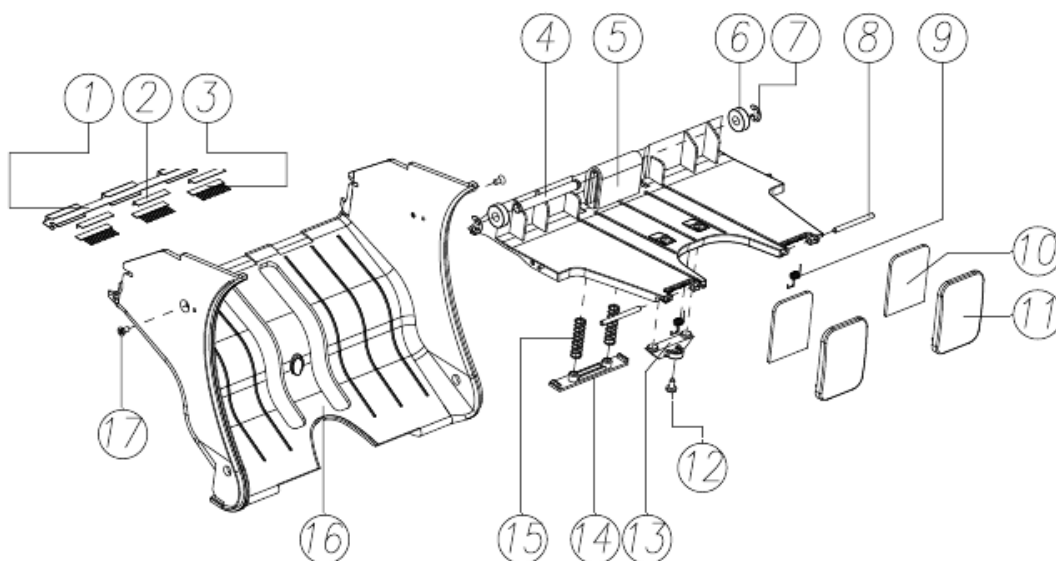
16-26. ASS'Y_POCKET-1

ASS'Y_POCKET		
NO.	PART NAME	Q'TY
1	ASS'Y_POCKET	1
2	CAP_STACKER_SENSOR_N	1
3	GUIDE_STACKER_N_DG	1
4	SCREW_M/C_PWH_M3X6_Fe_Ni	2



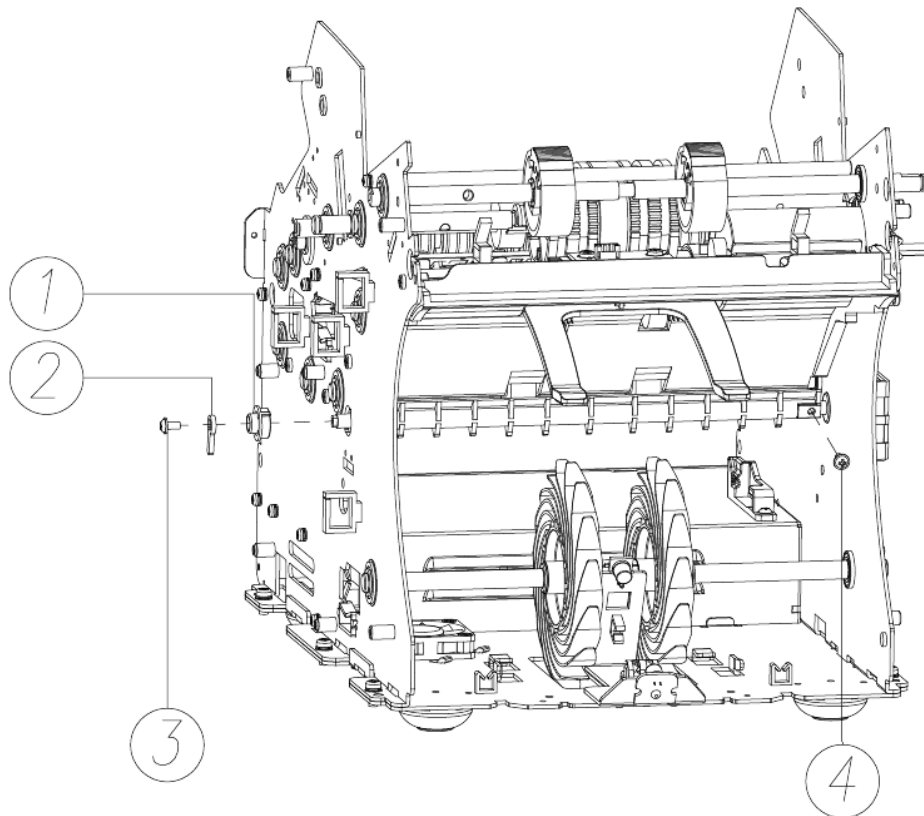
16-27. ASS'Y_POCKET-2

Pocket_Ass'y					
NO.	PART NAME	Q'TY	NO.	PART NAME	Q'TY
1	BKT_E_BRUSH_N	1	10	CUSHION_COVER_REJECT_POCKET	2
2	TAPE_E_BRUSH	3	11	COVER_REJECT_POCKET	2
3	ELECTRO_BRUSH_N	3	12	SCREW_T/P_PH_T2-Ø3X6_Fe_Zy	1
4	SHAFT_PINCH_REJECT	1	13	LENS_REJECT_SB11	1
5	REJECT_PLATE_SB11	1	14	REJECT_COVER_PINCH	1
6	BEARING L_1560ZZ	2	15	SPRING_PINCH_REJECT_SB11	2
7	E_RING_Ø5(5x11x0.6)_Fe_ZB	2	16	HOUSING_POCKET_N_DG	1
8	PIN_REJECT_BAR_SB11	2	17	SCREW_T/P_FH_Ø3X6_Fe_Ni	2
9	SPRING_COVER_REJECT	2			



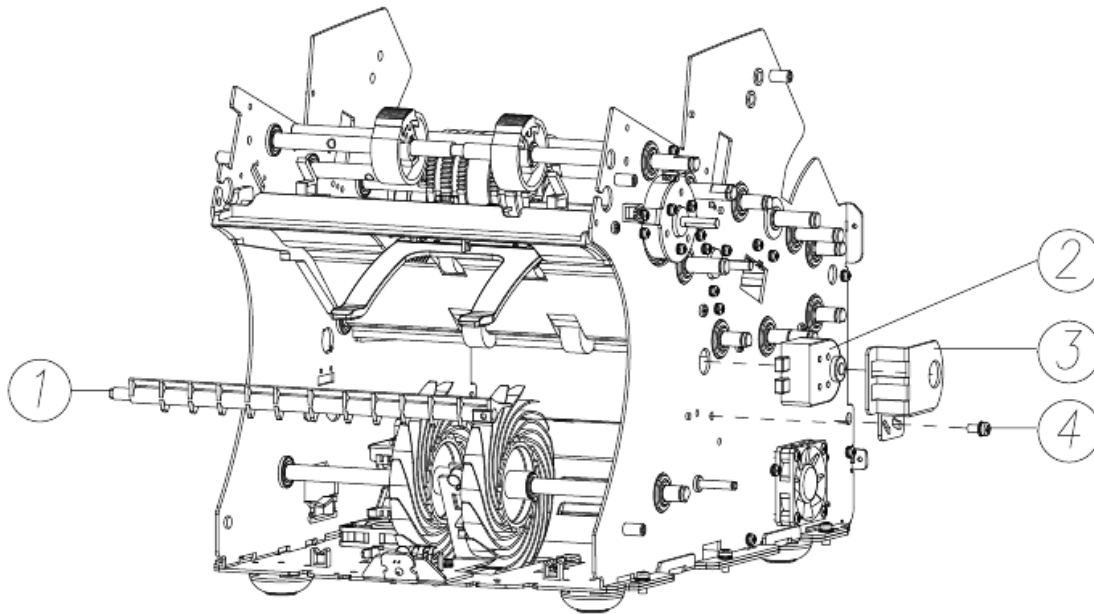
16-28. SELECTOR ASS'Y_1

SELECTOR ASS'Y_1		
NO.	PART NAME	Q'TY
1	BUSH_SELECTOR	1
2	LINK_SELECTOR	1
3	SCREW_M/C_PH/SWW_M3X6_Fe_Zy	1
4	SCREW_M/C_PWH_M3X6_Fe_Ni	1



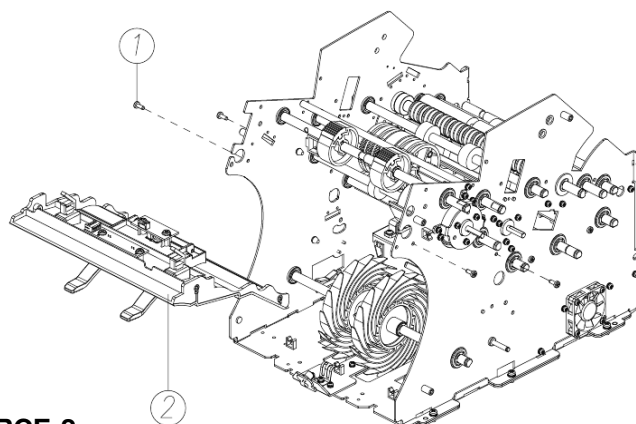
16-29. SELECTOR ASS'Y_2 and SOLENOID ASS'Y

SELECTOR ASS'Y_2 and SOLENOID ASS'Y		
NO.	PART NAME	Q'TY
1	GUIDE_SELECTOR_N	1
2	SOLENOID	1
3	BKT_SELECTOR_P	1
4	SCREW_M/C_PH/SWW_M4X8_Fe_Ni	1

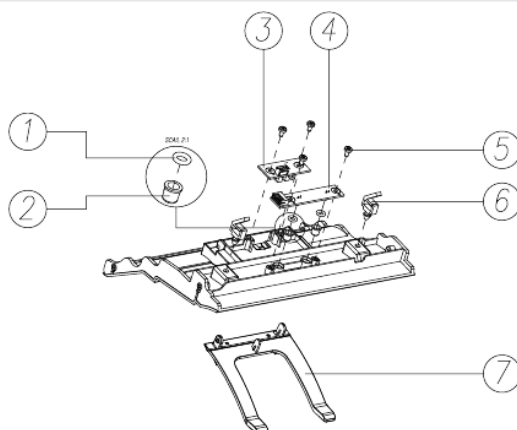


16-30. ASS'Y_REINFORCE-1

ASS'Y_REINFORCE		
NO.	PART NAME	Q'TY
1	SCREW_T/P_PH_T2_Ø3X6_Fe_Zy	4
2	ASS'Y_REINFORCE	1

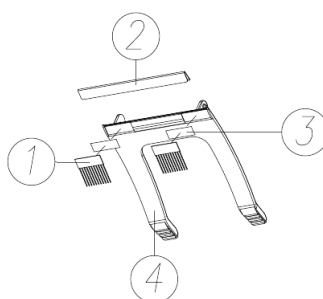
**16-31. ASS'Y_REINFORCE-2**

Reinforce_Ass'y		
NO.	PART NAME	Q'TY
1	AN008_O_RING	2
2	CAP_RP1_V	2
3	OVER FLOW SENSOR (가칭)	1
4	PBA_SB-11_REJECT_V0.3	1
5	SCREW_T/P_PH_T2_Ø3X6_Fe_Zy	4
6	SIDE_LOCKING_SADDLE_DS-110	2
7	REJECT_BAR_ASS'Y	1

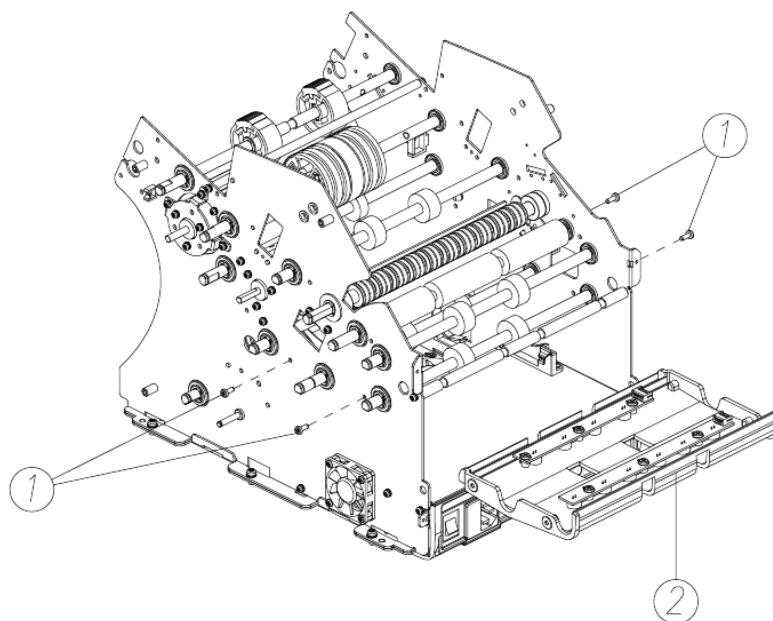


16-32. REJECT_BAR_ASS'Y

Reject_Bar_Ass'y		
NO.	PART NAME	Q'TY
1	ELECTRO_BRUSH_P2	2
2	BKT_E_BRUSH_BAR	1
3	TAPE_E_BRUSH	2
4	REJECT_BAR_SB11	1

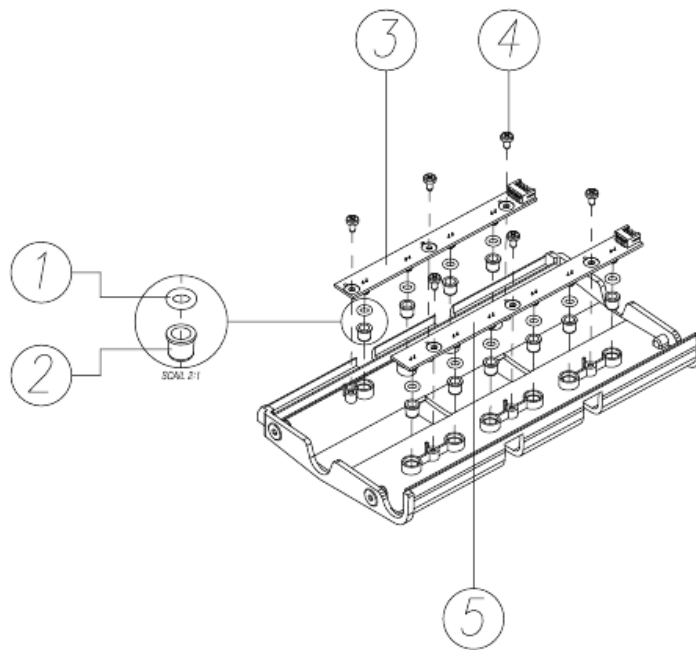
**16-33. ASS'Y_GUIDE_LOWER_TOP-1**

ASS'Y_GUIDE_LOWER_TOP		
NO.	PART NAME	Q'TY
1	SCREW_T/P_PH_T2_Ø3X6_Fe_Zy	4
2	ASS'Y_GUIDE_LOWER_TOP	1



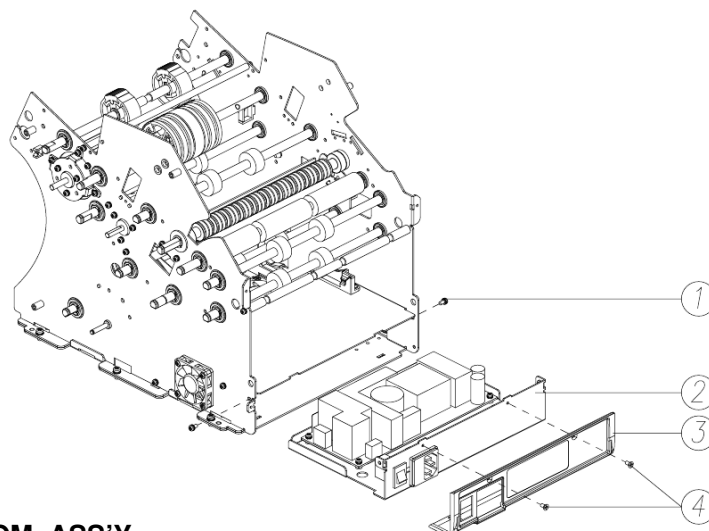
16-34. ASS'Y_GUIDE_LOWER_TOP-2

Guide_Lower_Top_Ass'y		
NO.	PART NAME	Q'TY
1	AN008_O_RING	10
2	CAP_RP1_V	10
3	PBA_SB-11_RP5_V0.3	1
4	SCREW_T/P_PH_T2_Ø3X6_Fe_Zy	6
5	PBA_SB-11_RP4_V0.3	1

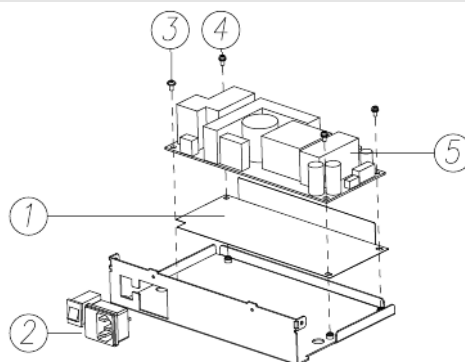


16-35. ASS'Y_SMPS_BOTTOM and COVER

ASS'Y_SMPS_BOTTOM and COVER		
NO.	PART NAME	Q'TY
1	SCREW_M/C_PH/SWW_M3X6_Fe_Zy	2
2	ASS'Y_SMPS_BOTTOM	1
3	COVER_REAR_SB11	1
4	SCREW_M/C_FH_M3X8_Fe_Ni	2

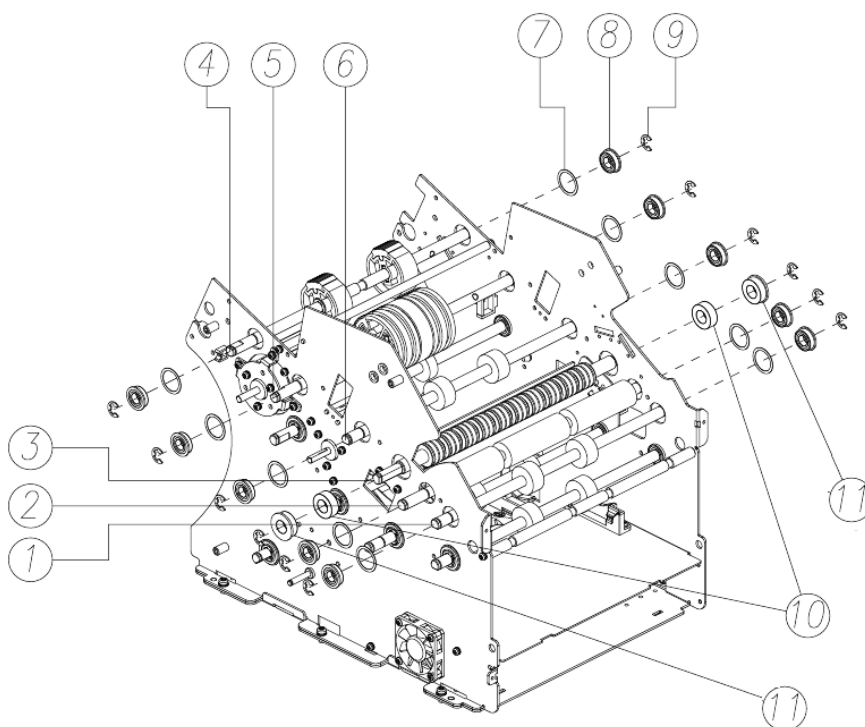
**16-36. BRACKET_SMPS_BOTTOM_ASS'Y**

BKT_SMPS_BTM_Ass'y		
NO.	PART NAME	Q'TY
1	FILM_SMPS_SHN	1
2	HAR_SB11_13 2P(SMPS-AC INLET)	1
3	SCREW_M/C_PWH_M3X6_Fe_Ni	1
4	SCREW_M/C_PH/SWW_M3X6_Fe_Zy	3
5	PBA_SMPS_SB11	1



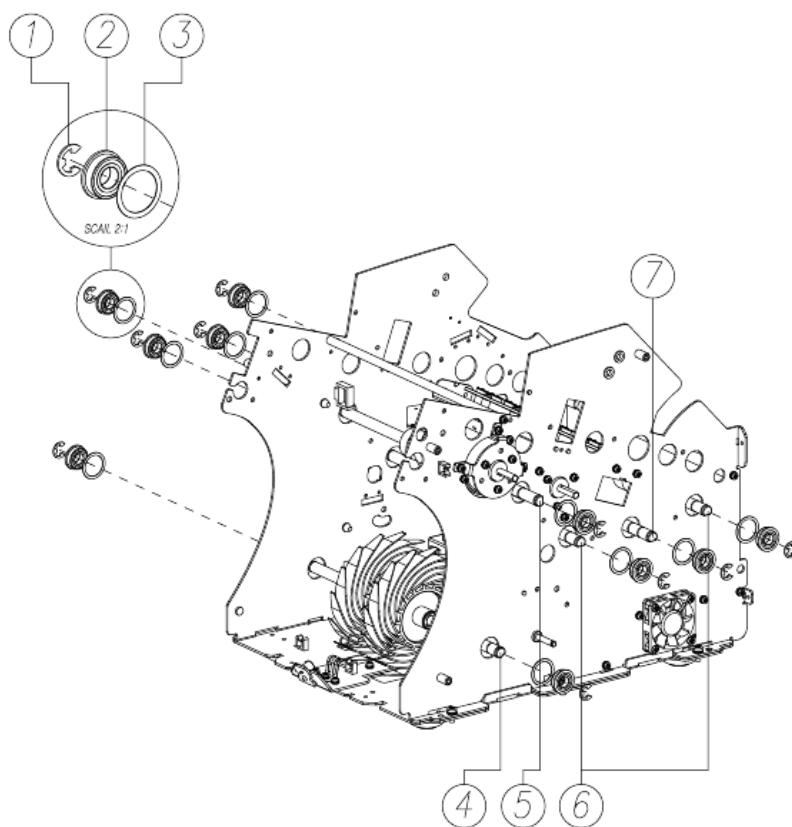
16-37. ROLLER ASS'Y_1

ROLLER ASS'Y_1		
NO.	PART NAME	Q'TY
1	ROLLER_FEED_SB11	1
2	ROLLER_MR_SB11	1
3	ROLLER_DETECT_TAPE_SB11	1
4	ROLLER_PICK_UP_SB11	1
5	ROLLER_ADF_SB11	1
6	ROLLER_FEED_1_SB11	1
7	RUBBER_WASHER_1680	10
8	BEARING_LF_1680ZZ	10
9	E_RING_Ø6(6x12x0.8)_Fe_ZB	12
10	BEARING_L_1910ZZ	2
11	BEARING_F63800ZZ	2



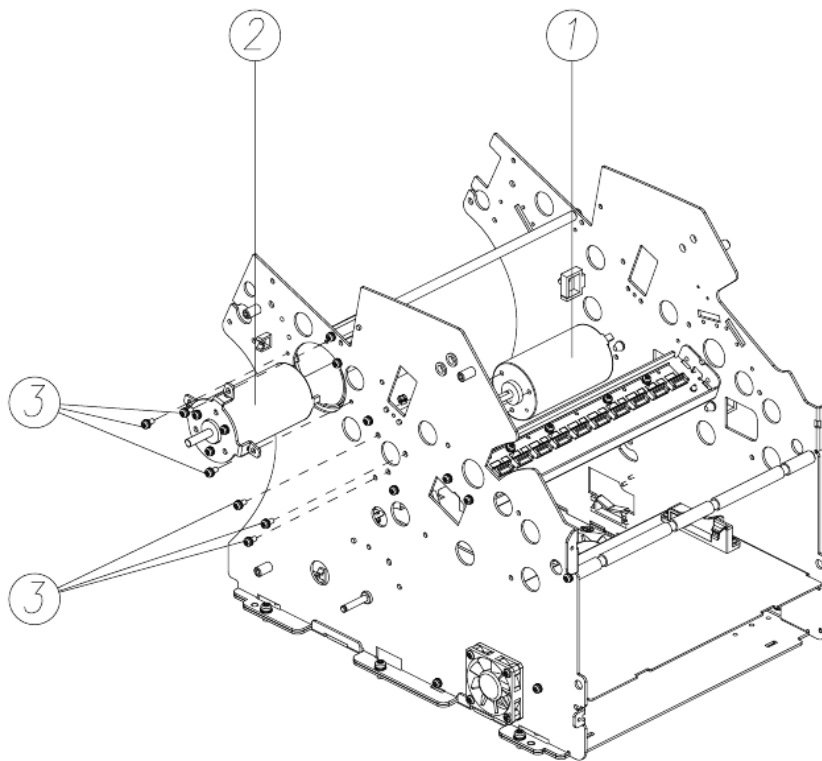
16-38. ROLLER ASS'Y_2

ROLLER ASS'Y_2		
NO.	PART NAME	Q'TY
1	E_RING_Ø6(6x12x0.8)_Fe_ZB	10
2	BEARING_LF_1680ZZ	10
3	RUBBER_WASHER_1680	10
4	ASS'Y_WING_STACKER_SB11	1
5	ROLLER_REJECT_SB11	1
6	ROLLER_FEED_SB11	1
7	ROLLER_FEED_WING_SB11	1



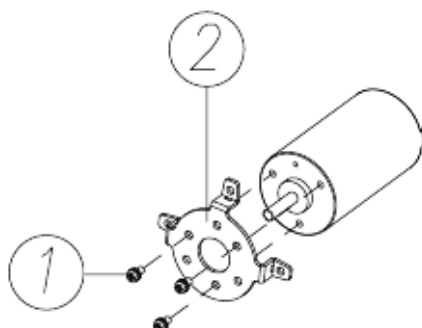
16-39. ASS'Y, MAIN_MOTOR and FEED_MOTOR

ASS'Y, MAIN_MOTOR and FEED_MOTOR		
NO.	PART NAME	Q'TY
1	ASS'Y_MAIN_MOTOR	1
2	ASS'Y_FEED_MOTOR	1
3	SCREW_M/C_PH_SWW_M3X6_Fe_Zy	6

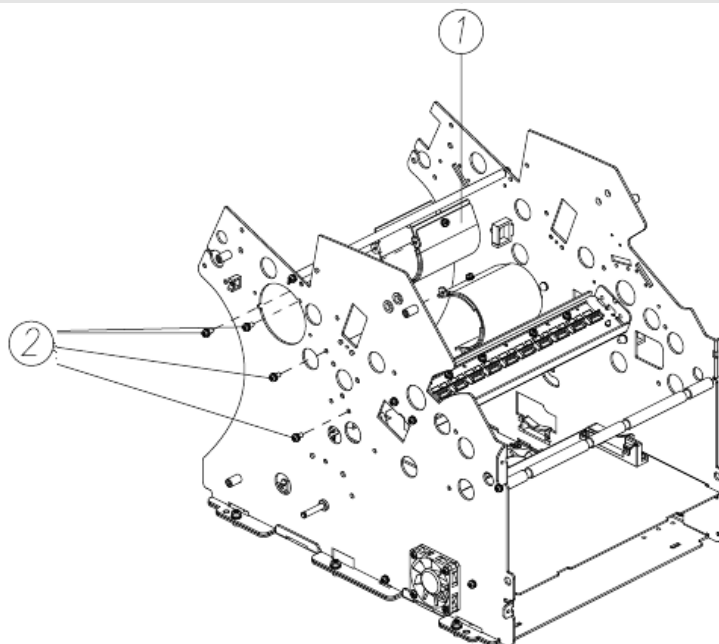


16-40. BKT_MOTOR

Motor stuff_1		
NO.	PART NAME	Q'TY
1	SCREW_M/C_PH_SWW_M3X6_Fe_Zy	3
2	BKT_MOTOR_SB11	1

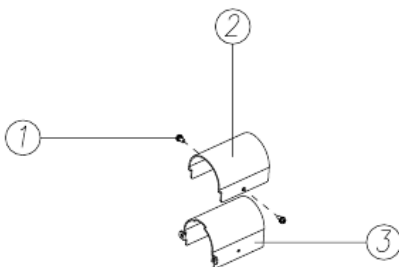
**16-41. ASS'Y MOTOR SHIELD**

ASS'Y MOTOR SHIELD		
NO.	PART NAME	Q'TY
1	MOTOR_SHIELD	2
1_1	MOTOR_SHIELD_P2	2
2	SCREW_M/C_PH_SWW_M3X6_Fe_Zy	4

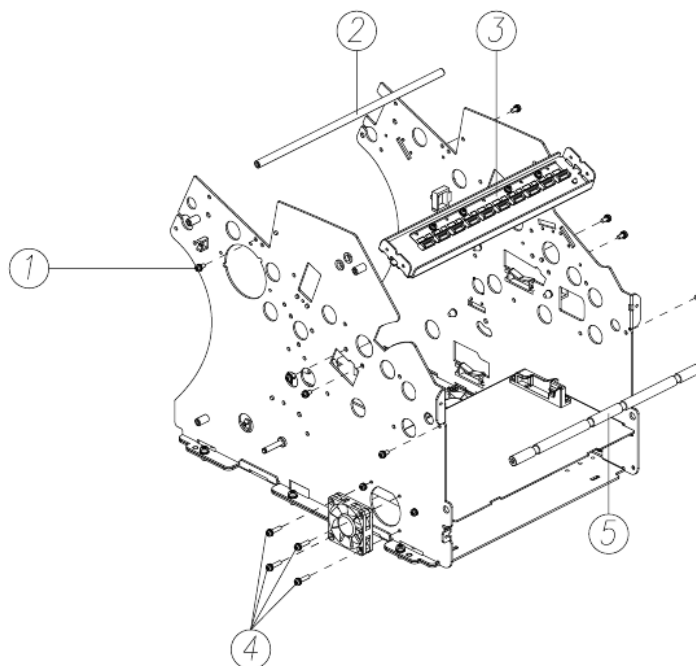


16-42. MOTOR_SHIELD

Motor stuff_2		
NO.	PART NAME	Q'TY
1	SCREW_M/C_PH_SWW_M3X6_Fe_Zy	2
2	MOTOR_SHIELD	1
3	MOTOR_SHIELD_P2	1

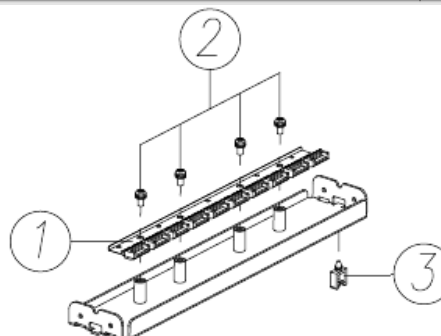
**16-43. ASS'Y BKT_DUST_ROLLER and SHAFT_SUPPORTER**

ASS'Y BKT_DUST_ROLLER and SHAFT_SUPPORTER		
NO.	PART NAME	Q'TY
1	SCREW_M/C_PH_SWW_M3X6_Fe_Zy	8
2	SHAFT_SUPPORTER-1	1
3	ASS'Y BKT_DUST_ROLLER	1
4	SCREW_M/C_FH_M3X12_Fe_Ni	4
5	SHAFT_SUPPORTER	1

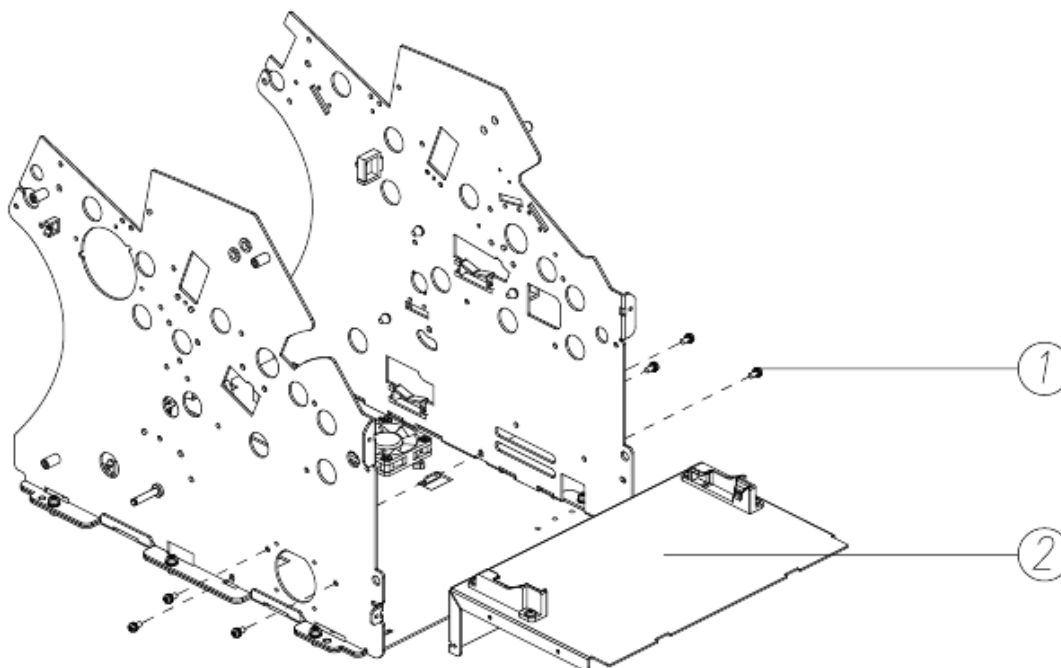


16-44. BKT_DUST_ROLLER_ASS'Y

BKT_Dust_Roller_Ass'y		
NO.	PART NAME	Q'TY
1	DUST_ROLLER	1
2	SCREW_M/C_PH/SWW_M3X6_Fe_Zy	4
3	WIRE_SADDLE_SMALL	1

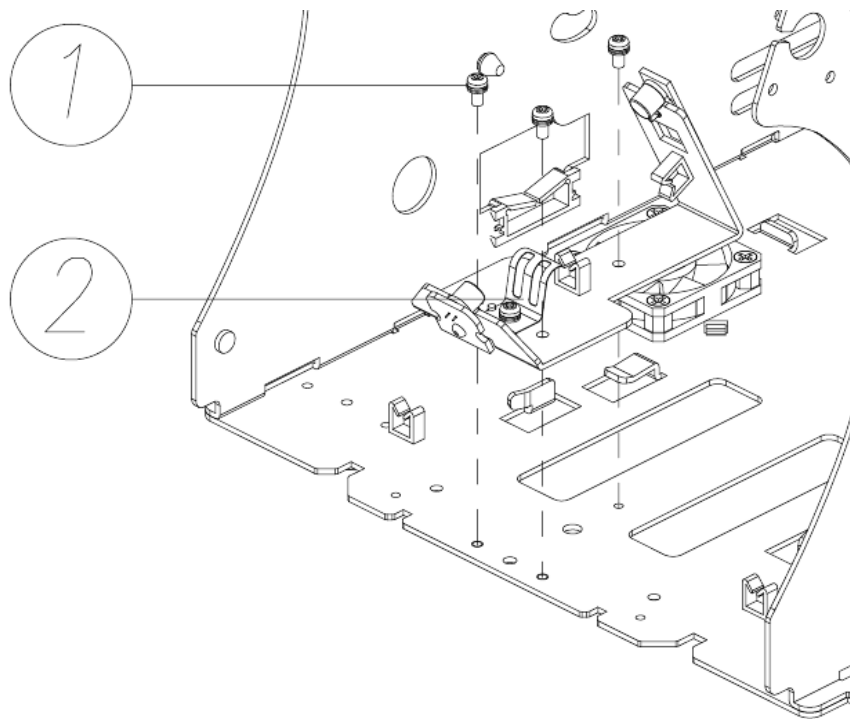
**16-45. ASS'Y_SMPS_TOP**

ASS'Y_SMPS_TOP		
NO.	PART NAME	Q'TY
1	SCREW_M/C_PH/SWW_M3X6_Fe_Zy	6
2	ASS'Y_SMPS_TOP	1



16-46. ASS'Y_STACKER_SB11

ASS'Y_STACKER_SB11		
NO.	PART NAME	Q'TY
1	SCREW_M/C_PH/SWW_M3X6_Fe_Zy	3
2	ASS'Y_STACKER_SB11	1



16-47. SIDE PLATE ASS'Y

SIDE PLATE ASS'Y		
NO.	PART NAME	Q'TY
1	SCREW_M/C_PH/SWW_M4X8_Fe_Ni	6
2	PLATE_LEFT_SB11	1
3	PLATE_RIGHT_SB11	1
4	ASS'Y_PLATE_BASE	1

