Note Dispenser

NDR Series

Installation Guide

International Currency Technologies Corp.

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1. Introduction

1-1. Features

- Support worldwide currencies through study mode to make sure dispense bills exactly.
- USB pen drive update firmware.
- Large capacity with steady operation.

2. Specification

General

Dispensing Speed	Approx. 2.5 notes per second
Interface	Pulse, RS232(NDR, ICT-DC)

Electrical

Power Source	DC 24V
Power Consumption	**NDR1000** Standby: Approx. 0.1A, Operation: Approx. 0.85A, Maximum: Approx. 1.6A(Normal), Approx. 3A (Move to reject vault) **NDR2000** Standby: Approx. 0.2A, Operation: Approx. 2A, Maximum: Approx. 4.5A(Normal), Approx. 6A (Move to reject vault)

Operation Environment	Operation Temperature: 0°C~55°C Storage Temperature: -30°C~70°C

Mechanical

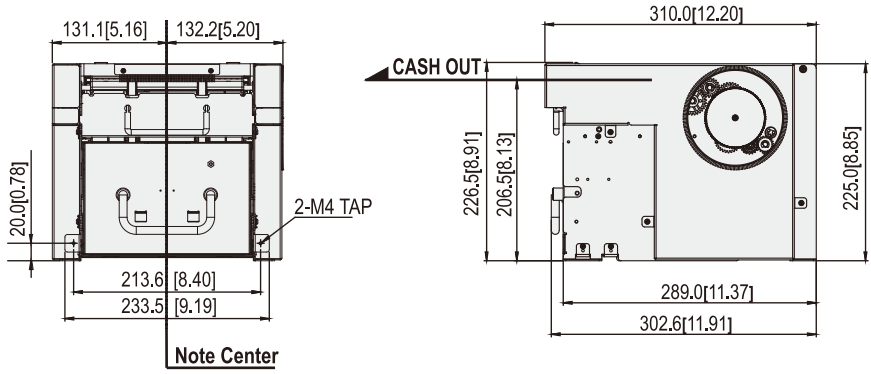
Bill Capacity	Approx. 800~1000 (can be different depending on note thickness)
Bill Accepted Width	(W) 62~77 mm (L) 120~160 mm (T) 0.08~0.125 mm
Outline Dimension	Refer to page.4
Weight	NDR1000 Approx.10kg NDR2000 Approx.16.5kg
Installation	Indoor

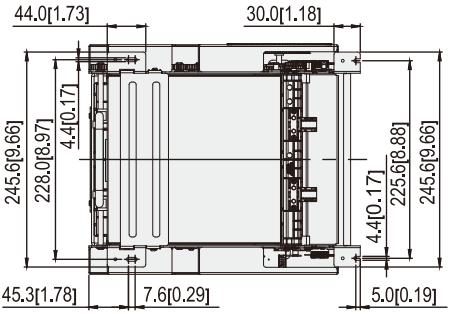
3. Packing List

Main	Note Dispenser
Accessory	Harnesses: Refer to 5-1 NDR series Installation Guide NDR series DIP switch setting guide

4. Dimension

NDR1000

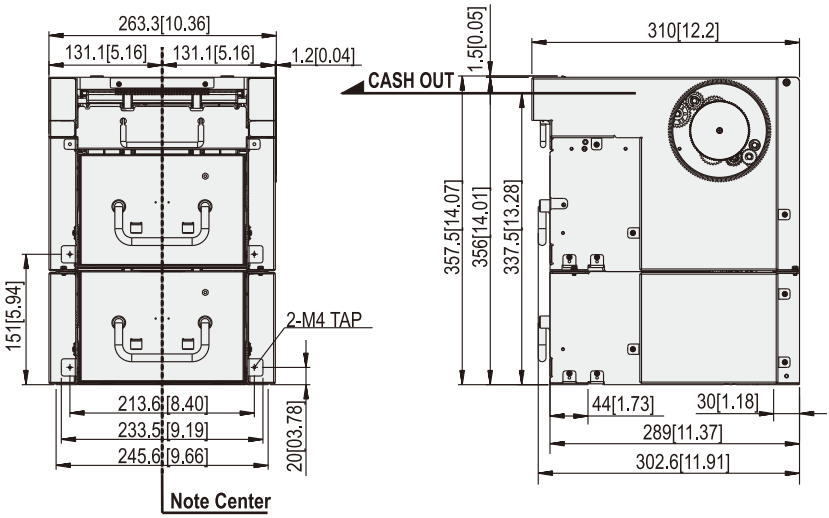


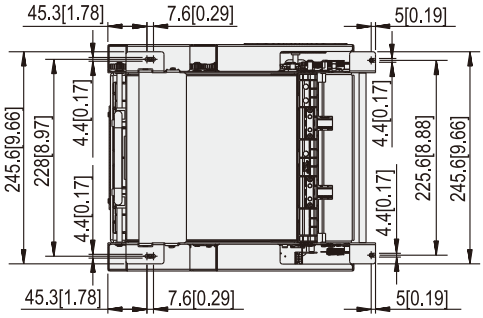


Unit : mm [inch]

4 FIG. 01

NDR2000

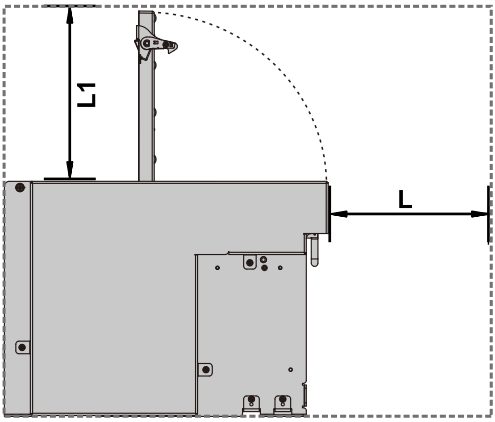




Unit : mm [inch]

4 FIG. 02

Please follow instructions below before installing NDR series:
[L]: the distance from the note mouth: 150mm or above.
[L1]: the distance from NDR series upper: 170mm or above.



4 FIG.03

5. Installation

5-1. Harness Application

5-1 TABLE 01

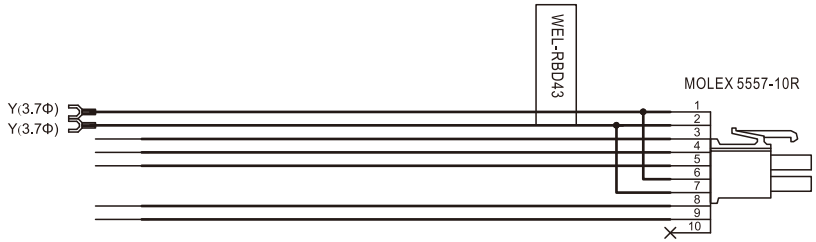
Model	Interface	Used Voltage	Usage	Harness	Page
NDR1000	Pulse	24V DC	Power &*Data Comm.	WEL-RBD43	7
	RS232	NA	*Data Comm.	WEL-R087	8
NDR2000	-	24V DC	Power	WEL-RBD43	7
	RS232	NA	*Data Comm.	WEL-R087	8
Optional	USB	5V DC	*Data Comm.	WEL-RHP57	8

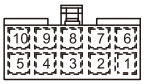
*Data Comm. : Data Communication.

5-1 FIG. 01

Interface	Used Voltage	Usage
Pulse	24V DC	Power &*Data Comm.
-	24V DC	Power

WEL-RBD43





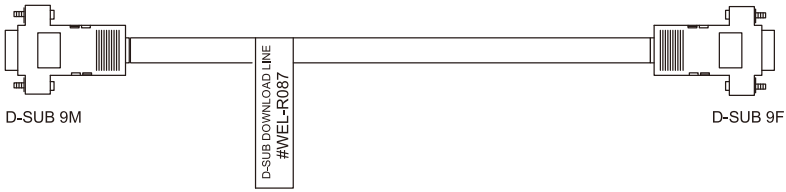
MOLEX 5557-10R
BACK VIEW

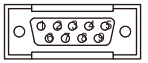
PIN 1- RED.....VIN DC24V
PIN 2- BLACK.....GND
PIN 3- BLUE.....CREDIT_RELAY_NO
PIN 4- GRAY .....ERROR-O
PIN 5- ORANGE.....PAYOUT
PIN 6- RED.....VIN DC24V
PIN 7- BLACK.....GND
PIN 8- GREEN.....CREDIT_RELAY_COM
PIN 9- BROWN.....EMPTY-O
PIN 10- NC

5-1 FIG. 02

Interface	Used Voltage	Usage
RS232	NA	*Data Comm.

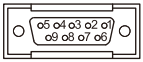
WEL-R087





D-SUB 9M TOP VIEW

PIN 2- PC_RXD
PIN 3- PC_TXD
PIN 5- GND



D-SUB 9F TOP VIEW

PIN 2- PC_RXD
PIN 3- PC_TXD
PIN 5- GND

5-1 FIG. 03

Interface	Used Voltage	Usage
USB	5V DC	*Data Comm.

WEL-RHP57

USB-A-TYPE

USB-A-TYPE

USB-A BACK VIEW

PIN 1- Vbus
PIN 2- USB_DM
PIN 3- USB_DP
PIN 4- GND

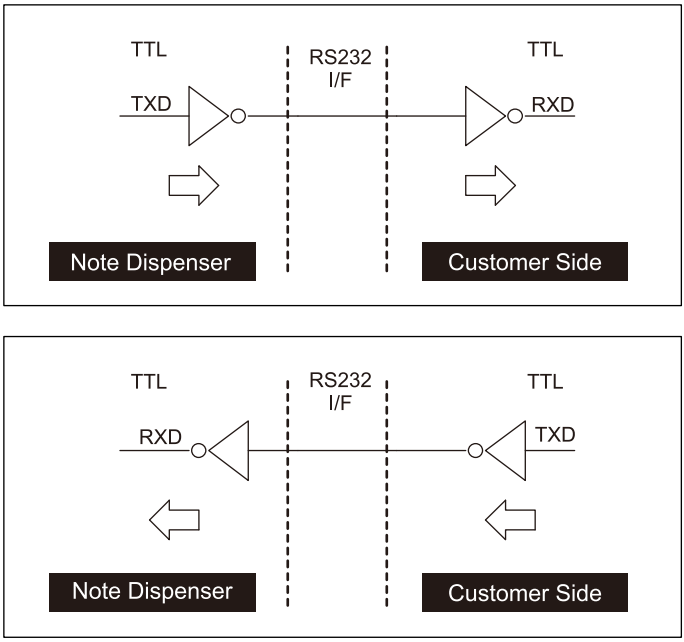
USB-A BACK VIEW

PIN 1- Vbus
PIN 2- USB_DM
PIN 3- USB_DP
PIN 4- GND

5-1-1. I/O Circuit

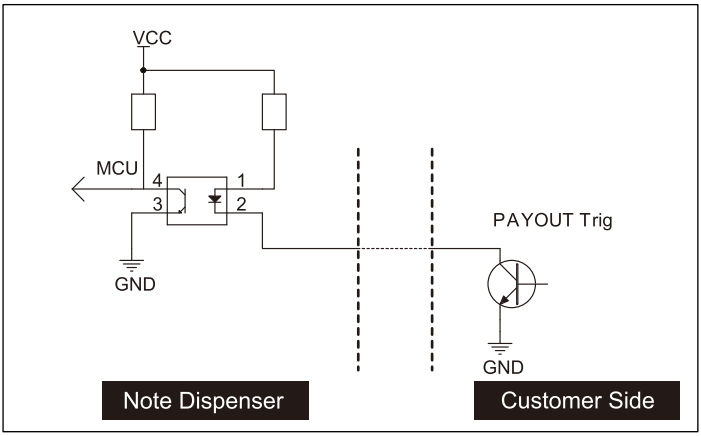
RS232 Interface.

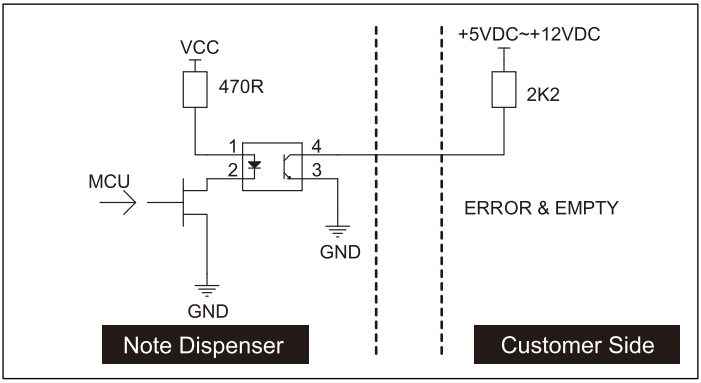
5-1-1 FIG. 01

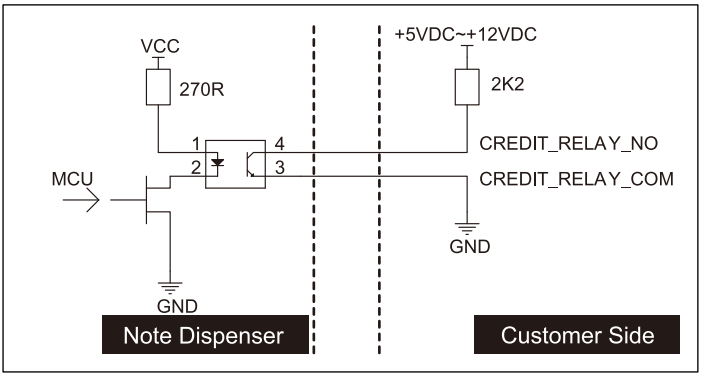


PULSE I/F Interface.

5-1-1 FIG. 02



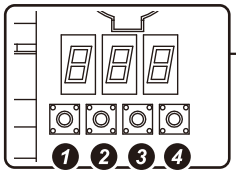


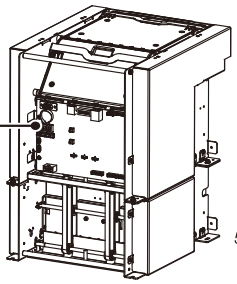


5-2. Key Function

1. Reset
2. FAC
3. Start
4. Clear

5-2 FIG. 01-1





5-2 FIG. 01

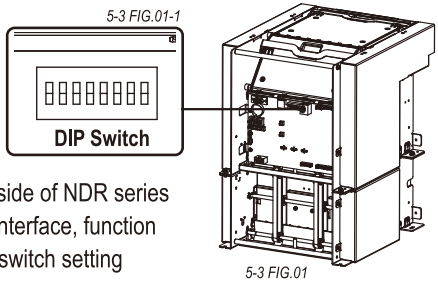
5-2 TABLE 01

Key Setting	Function
Standby Mode / Setup mode Click **Reset**	Machine Reset / Leave Setup mode
While NDR boot and display Version (version example: 0.05→00.4→002.) Double click **FAC**	Enter Setup mode
Enter into [Set up] Mode Pressing **FAC** Key select item Pressing **Start** Key setting(+) Pressing **Clear** Key setting(-)	Enter first item **rc** . Click Start button to remove Cleaning reminder
	Enter second item Credit width setup: cr1~cr4(50ms,100ms,150ms,200ms)
	Enter third item Pulse active low width check or not: Pc0~Pc1 Pc0: Don't check Pc1: Need to check
	Enter fourth item Pulse active low width setup: PL1~PL3 PL1: 50ms PL2: 100ms PL3: 150ms
	Enter fifth item Pulse and bill out ration: r01~r50 r01: 1pulse/1bill r50(maximum): 1 pulse/50 bill

5-2 TABLE 01-1

Key Setting	Function
Enter into [Set up] Mode Pressing **FAC** Key select item Pressing **Start** Key setting(+) Pressing **Clear** Key setting(-)	Enter sixth item Upper case box dispend mode: Ub0~Ub1 Ub0: Normal mode Ub1: Dispend banknote with window mode
	Enter seventh item lower case box dispend mode: Lb0~Lb1 Lb0: Normal mode Lb1: Dispend banknote with window mode
	Enter eighth item RS232 parity ： Ptn ~ PtE ~ Pto Ptn: NONE PtE: EVEN Pto: ODD
	Enter ninth item Setup save: S Click start to save setup .
	Return to first item.
Pressing **FAC** Key **3 seconds**	Let upper cash box dispend 5 bills to recycle box and learn bill. After learning display will show “rCE” remind user to empty recycle box.
Standby Mode Pressing **Start** Key **3 seconds**	Let lower cash box dispend 5 bills to recycle box and learn bill. After learning display will show “rCE” remind user to empty recycle box.
Standby Mode Pressing **Clear** Key **3 seconds**	Remove error message on Display
Standby Mode Pressing **FAC** and **Start** Key **3 seconds**	Let upper and lower cash box both dispend 5 bills to recycle box and learn bill. After learning display will show “rCE” remind user to empty recycle box.
After clearing of fault Pressing **Clear** Key 2 times	Clear error code .

5-3. DIP Switch Setting



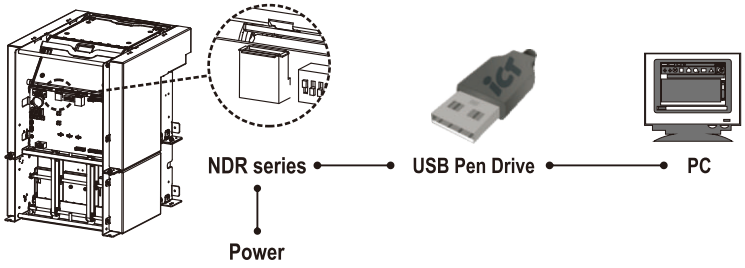
5-3 FIG.01-1

5-3 FIG.01

You can see a DIP-SW at the backside of NDR series for you to set up, for example, the interface, function settings, etc. Please check the dip-switch setting manual for details.

5-4. Software Download and Upgrade

5-4-1. USB Pen Drive Firmware Upgrade



Please turn off the power of NDR series before connecting the USB pen drive.

Step 1.

Please load the software**(NDRX#SAAAAIBBBBCCCCC(VXX.X_dddd).bin)** into USB pen drive through PC.

Step 2.

Turn on the power after connecting the USB pen drive to the USB Port of NDR.

Step 3.

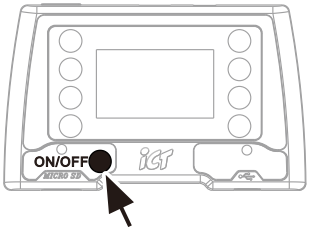
NDR search and upgrade program.

It will flash LED

Program upgrade finish will show

And remove Pen driver to work.

5-4-2. ICT MTB Firmware Upgrade

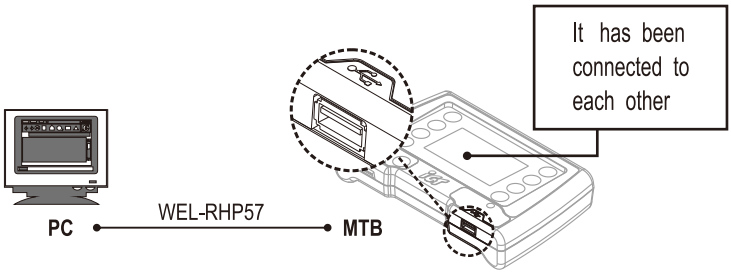


Step 1.

Turn on the power of MTB.

Step 2.

Use the download cable WEL-RHP57 connecting to PC.

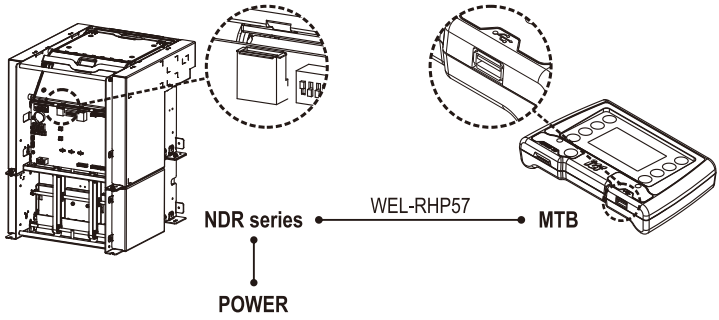


Step 3.

Please load the software**(NDRX#SAAAAIBBBBCCCCC(VXX.X_dddd).bin)** into MTB through PC.

Step 4.

Turn on the power after MTB is connected with NDR.



Please turn off the power of NDR before connecting the MTB.

Step 5.

NDR search and upgrade program.

It will flash LED

Program upgrade finish will show

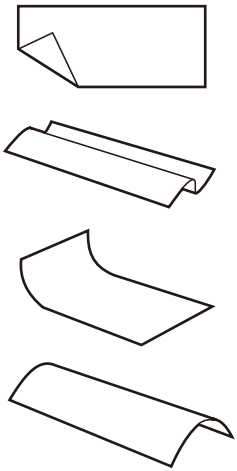
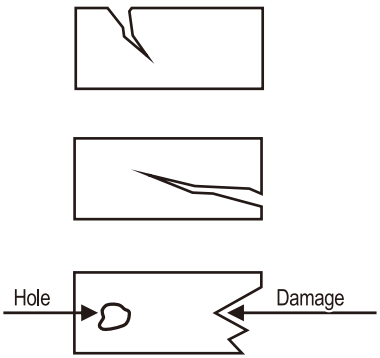
And remove MTB to work.

6. Operation

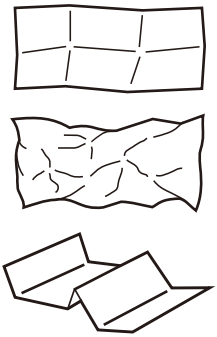
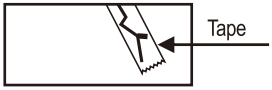
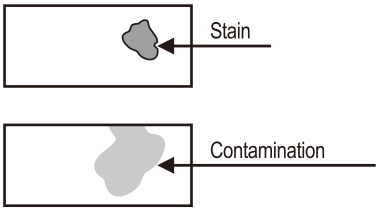
6-1. Unusable Note

Mixing up different denominations or currencies may cause double banknotes output due to different banknote form and material. In addition, the following type of notes are prohibited.

6-1 TABLE. 01

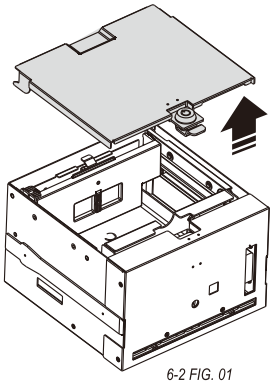
Type	Diagram	Solution
Curled or wrinkled notes		Unfold the note
Broken notes		Prohibited

6-1 TABLE. 01-1

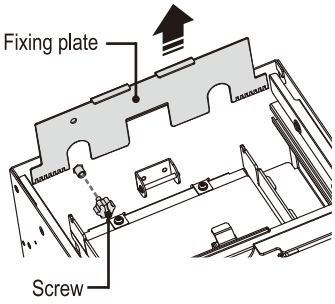
Type	Diagram	Solution
Curled or wrinkled notes		Prohibited
Taped notes		Prohibited
Dirty notes		Prohibited

6-2. How to Fill Notes

1. Open the upper cover, loosen a screw and take the fixing plate out.

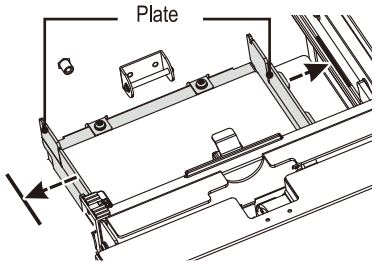


6-2 FIG. 01

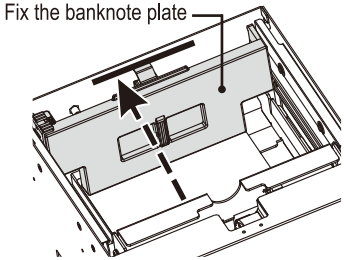


6-2 FIG. 01-1

2. Move the plates to the both sides, and fix the banknote plate on the back side.

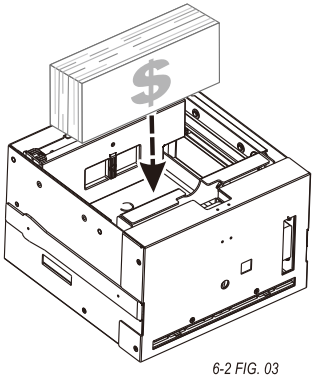


6-2 FIG. 02



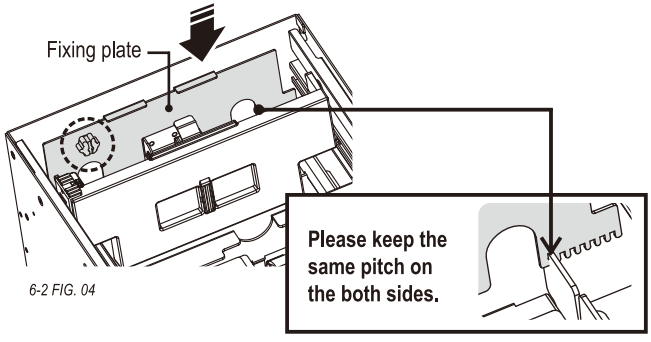
6-2 FIG. 02-1

3. After filling into the banknotes, please adjust the plates to close to the wide-size edge of banknotes.



6-2 FIG. 03

4. Plug in the fixing plate and fasten a screw.



6-2 FIG. 04

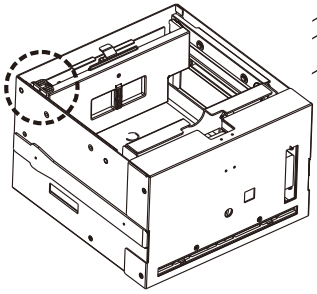
6-2 FIG. 04-1

6-3. Low Level Adjustment

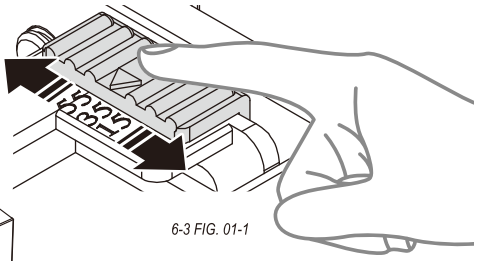
To open the cover, you can set up the shreshold of low capacity with the number of 15/35/55.

Ex.

Adjust the plate to select **"35"** of the threshold value, and the display would show **E07 or E08** for low-level alert when banknotes lowe than approx.35 notes.



6-3 FIG. 01



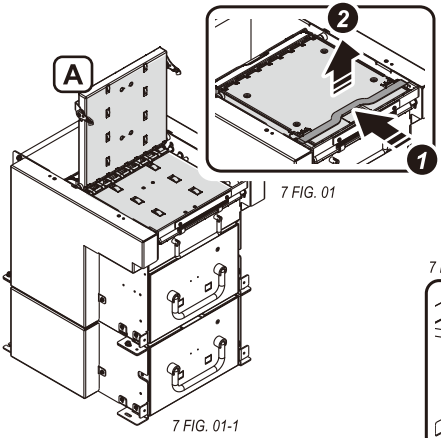
6-3 FIG. 01-1

7. Maintenance

To make sure the machine works normally, please be sure to clean up NDR series after some period of time.

Please follow the steps below:

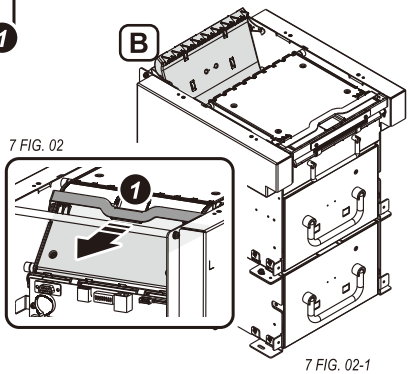
1. Open the upper cover(A) and using the air gun or brush to wipe out the dust inside NDR.



7 FIG. 01

7 FIG. 01-1

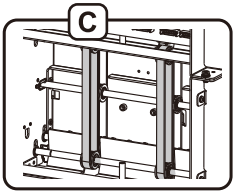
2. Open the upper cover(B) and using the air gun or brush to wipe out the dust.



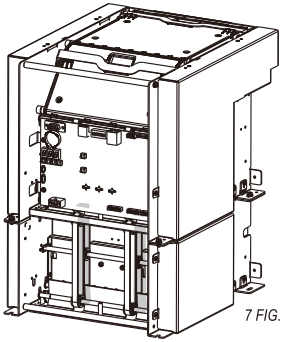
7 FIG. 02

7 FIG. 02-1

3. Using the air gun or brush to wipe out the dust inside (C).

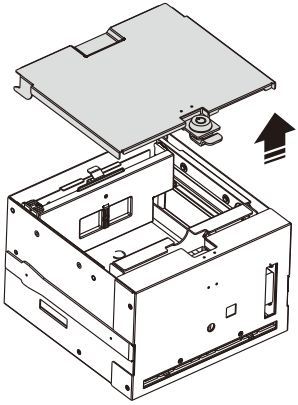


7 FIG. 03-1

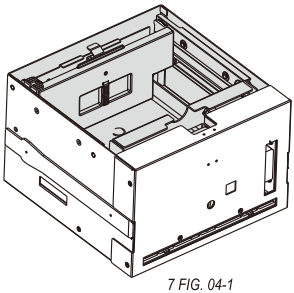


7 FIG. 03

4. Unlock the upper cover plate and using the air gun or brush to wipe out the dust inside NDR.

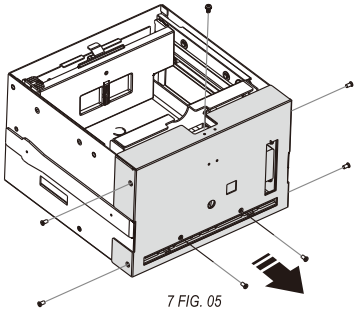


7 FIG. 04

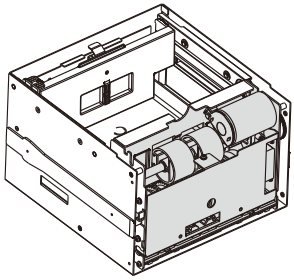


7 FIG. 04-1

5. Use a screwdriver to loose 7 screws and disassemble the front cover.
Be sure to secure the cables connections during cleaning up the device.



7 FIG. 05



7 FIG. 05-1

Maintenance Notice
(Any improper maintenance will result invalid warranty.)

Recommended	**Mild, non-abrasive, soap water.**
DO NOT USE	**Organic solvent , Alcohol, Volatile liquid.**

8. Troubleshooting

8-1. Error Messages

8-1 TABLE 01

Code	Status	Solution
rCE	Remind to empty reject box after banknote learning.	Empty reject box and back in place.
dPE	Wrong dipsw setting.	Correct dipsw setting. (ref dipsw table)
E39	Raster singal abnormal.	Contact ICT for further assistance.
E42		
E43		
E29~30	Can not dispend Banknote.	Make sure pressing plate in correct position and clear error code.
E05~06	Bill Jam.	Please remove banknote and clear error message.
E16~21		
E23~27		
E31~34	Reject valve can not open.	Remove banknote and clear error message, then try again if still have problem please send machine back to to the factory maintenance.
E71		
E63	Learning error.	Clear error message and Banknote learning again.
E35~36	Bill box not in place while banknote dispending.	Place box back to correct place and clear error message.
E37	Reject box not in place while banknote dispending.	Reject box back in place and clear error message.
E57~61	Judge Sensor issue.	Contact ICT for further assistance.
E44~46	Purge fail.	Clean sensors or click clear button let machain check again. If still have problem, please send manchine back to factory for maintenance.
E52~56	Sensor calibration fail.	
E09~10	Bill box is not in correct position.	Place box back to correct place.
E14	Reject box not in position.	Place reject box back to correct place.

8-1 TABLE 01-1

Code	Status	Solution
E02~04	Something is blocking detection sensor or cover is open.	Inspect the foreign object on sensor or bill path and repleace the cover.
E17		
E20~21		
E01	Something block Judge sensor.	Remove foreign object and click purge button in the tools to reset NDR.
E16	Something is blocking detectio sensor.	
E18		
E19		
E13	Reject valve solenoid problem or sensor problem.	Pleas clean solenoid sensor. If the problem continues, please send the machine back to factory for maintenance.
E07	Upper box Low Level.	Fill banknotes or clean upper box low sensor. If the problem continues, please send the machine back to factory for maintenance.
E08	Lower box Low Level. (Only for NDR2000)	Fill banknotes or clean lower box low sensor. If the problem continues, please send the machine back to factory for maintenance.
E62	Reject box is full.	Empty reject box and back in place.

If the error can not be solved after corrective actions or happen again, please contact ICT for technical support.

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