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Hyosung NH5050 Manual

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Chapter 1. Introduction

1. Introduction

1.1 About the Model 5050 Win CE

Model 5050 Win CE ATM machine is the most up-to-date system to perfectly meet various customers' needs in your site. This ATM is designed to satisfy customers' demands of withdrawal, balance inquiry and transfer funds for individuals with a compact size to fit in virtually any place. This machine is connected to your network to dispense cash, transfer funds and inquiry balance through the insertion of a customer's card. Model 5050 ATM is easy to use, easy to be service and is able to support customer's demands perfectly.

1.2 Basic Features

Important features of the model 5050 machine is highlighted in the following list:

Mechanical Combination Lock

- Electronic Combination Lock and Cencon Lock (Optional)
- 10.4" TFT LCD with function key compatible with NDC+ style
NDC style refers to the positioning of 8 FDKs compatible to NDC+
- User-friendly arrangement of display interface and each module
- X-scale 520 MHz based on Window CE
- Support 56Kbps Dial-up Modem
- Support multiple serial interface up to 7 ports
- Support 2 USB ports (Standard USB A type, B type)
- Support enough bill capacity (2,000 notes) in cash dispenser

- Support U.S. Dollar and various currencies
- Semi-automated receipt paper loading for the operator's convenience
- Support electronic Journal
- Modular design for easy maintenance
- Quick setup feature
- Front access available for easy service
- Perfectly support the one transaction during power failure (Option)
- UL 291 Business hour listed safe compliance
- Encrypted PIN Pad (VISA compliance)
- Satisfy Americans with Disabilities Act (ADA) regulations for height and access
- Support audio guidance

1.3 What is in this manual

This manual contains all information needed for normal operational use.

This manual contains Unit Specifications, Opening & Closing Procedures, Operator Functions(Supervisor Screen), Error Recovery and etc.

Some of the information in this manual may be subsequently updated by the bank's needs or the improvement by Nautilus Hyosung.

1.4 Terminologies

CE : Control Electronics

PNC : Panel Control Board

MCU : Magnetic Card Reader Unit

VFD : Vacuum Fluorescent Display

SPR : Slip Printer (=Receipt Printer)

JPR : Journal Printer

CDU : Cash Dispenser Unit

P/S : Power Supply

OPL : Operation Panel and Handling Screen for Customer

SPL : Service Panel and Handling Screen for Operator

(=Enhanced Rear Operator Panel)

IDC : Identification Card Device

PTR : Printer (mainly Receipt Printer)

PIN : Encryption Pin Pad

SIU : Sensor and Indications Unit

TTU : Text Terminal Unit (OPL or SPL)

CAM : Camera Unit

ADA : The Americans with Disabilities Act

EMV : Europay, Mastercard, Visa

VDM : Vendor Dependent Mode

BATT : Battery

Earphone Jack : Voice Converter for Visually Disabled Persons

BIN : Bank Identification Number

RMS : Remote Monitoring System

Chapter 2. Precautions for Safety

2. Precautions for Safety

2.1 Overview

Common Precaution for Safety



Precautions outlined in this manual provide information on safe and proper handling of the product. Non-compliance of the precautions may result in injury or damage to the product.

This precaution symbol with sample term tells you safety warnings during equipment handlings.

Please read the following instructions before operating equipment.

- Operate equipment in the order outlined in this manual.
- Follow precautions indicated in this manual, as well as the equipment itself.
Failure to properly address these precautions may lead to injury or damage to the product.
- Avoid operations not addressed in this manual.
- If you cannot remedy system problems using the methods outlined in this manual, please refer to contact information listed in the manual.

2.2 Description of Precaution Symbols

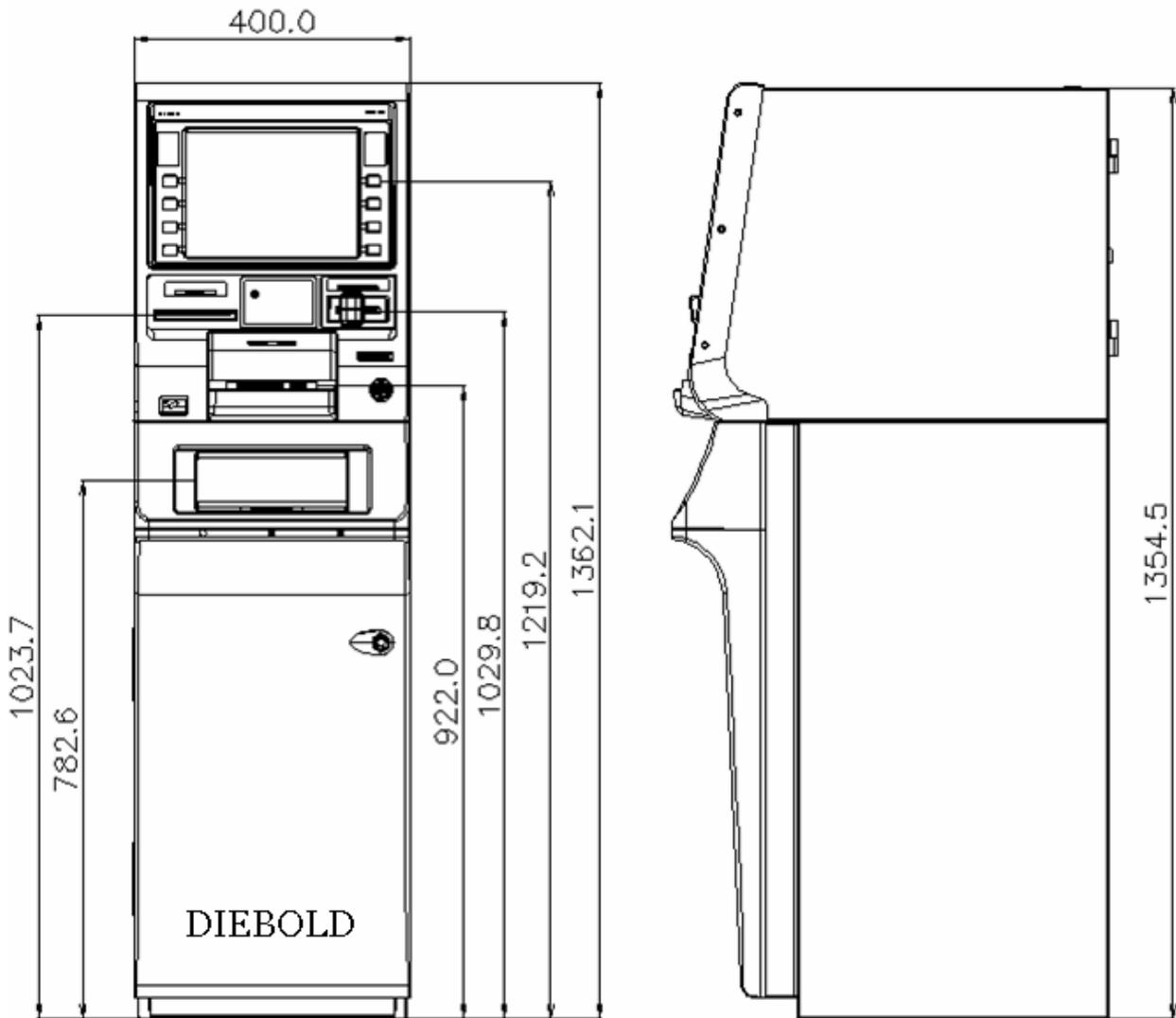
Symbol	Description
	<p>Electrical Shock</p> <ul style="list-style-type: none"> • Do not remove cover. Only a maintenance engineer is allowed to open the cover. • Do not touch. You may receive electric shock. • Make sure to turn off the power when servicing the equipment.
	<p>High Temperature</p> <ul style="list-style-type: none"> • Do not touch the equipment when it is running. • The equipment can get extremely hot and may cause a burn. • Make sure to close the cover before running the equipment.
	<p>Be Careful when Moving</p> <ul style="list-style-type: none"> • The equipment is heavy. Make sure at least 2 people to lift or move the equipment. • Do not attempt to move the equipment alone. You may be injured by dropping the heavy equipment.
	<p>Fire Hazard</p> <ul style="list-style-type: none"> • Place the equipment in an area away from any combustible materials. • The equipment may catch on fire from overheating or short circuit of the power supply unit.
	<p>Disassembly</p> <ul style="list-style-type: none"> • Do not disassemble or modify the equipment unless you are a certified engineer. • Contact the service center for maintenance, adjustments and repairs. • Improper disassembly may cause fire or electrical shock.
	<p>Fall down</p> <ul style="list-style-type: none"> • Do not place the equipment where the floor cannot sustain the weight of the equipment, or on slanted or unstable surface. • Equipment may fall down and cause injury or damage.

Symbol	Description
	<p>Unplug the Equipment</p> <ul style="list-style-type: none">• Stop using the equipment immediately if it smokes, emits an unusual smell, makes abnormal sounds, or if liquids or other foreign materials enter the equipment.• If the above-mentioned abnormalities occur, immediately turn off the power, unplug the equipment and contact the service center.• If you ignore these symptoms, the equipment may catch on fire or cause electric shock.

Chapter 3. Hardware Specifications

3. Hardware Specifications

3.1 Dimensions



Note : All the unit in the dimension is millimeter

Fig. 3.1 Dimensions

3.2 Component Name and Locations



Fig. 3.2 Component Location

- | | |
|---------------------------|---|
| 1. Function Keys | 8. Panel Control Board |
| 2. Liquid Crystal Display | 9. Card Reader |
| 3. Receipt Slot | 10. Supervisor switch (Option) |
| 4. Encrypted Pin Pad | 11. Receipt Printer |
| 5. Cash Dispenser Shutter | 12. Cash Dispenser |
| 6. Surveillance Mirror | 13. Mechanical Combination Lock
(Cencon Lock Optional) |
| 7. Card Slot | |

3.3 Display for customer and Keypad



Fig. 3.3 Display for customer and keypad

Display for customer

- Screen size: 10.4 inch
- Resolution: 640 × 480 pixel
- Brightness : 430 cd/m²
- High contrast ratio, high aperture structure
- TFT (Thin Film Transistor) LCD
- High speed response

Keypad (Encrypted PIN Pad)

- 10 Alphanumeric , ◀ , ▶ , ENTER, CLEAR, CANCEL, BLANK Keypads
- Keypad has integral raised braille symbols
- Encrypted PIN Pad (VISA compliance)

3.4 CDU (Cash Dispensing Unit)

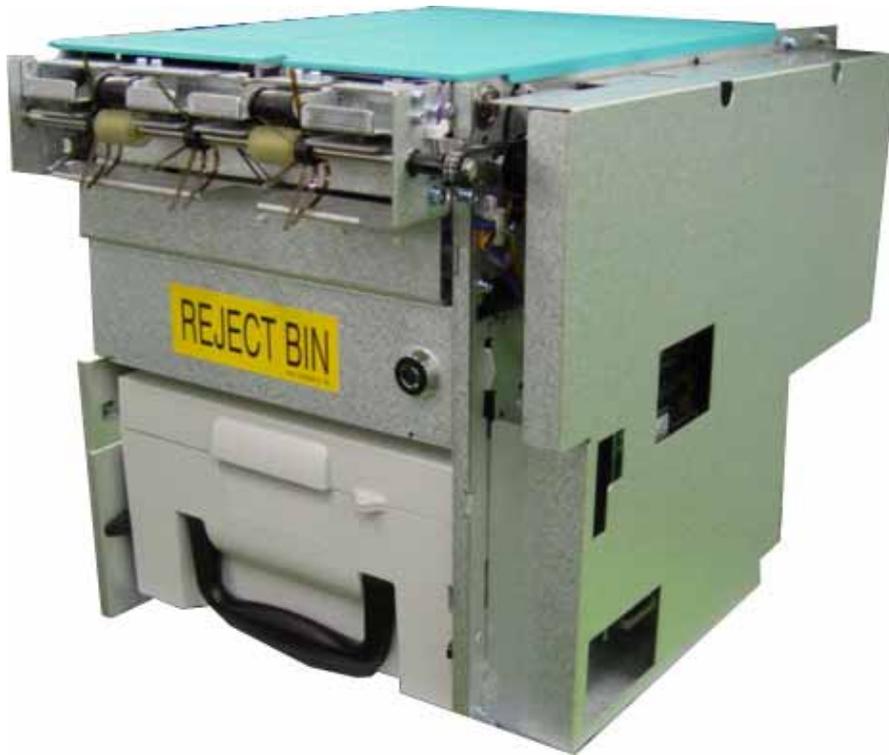


Fig. 3.4 Cash Dispensing Unit

Cash Dispensing Unit

- Manual shutter with window
- Dispensing speed : 4 notes/second
- Capacity of 2,000 new notes
- Reject bin with capacity of 200 notes
- Rejected way : note by note rejection
- Low level cassette detection
- Double note detection module
- Supporting U.S Dollar and various currencies

3.5 SPR (Slip Printer/Receipt Printer)

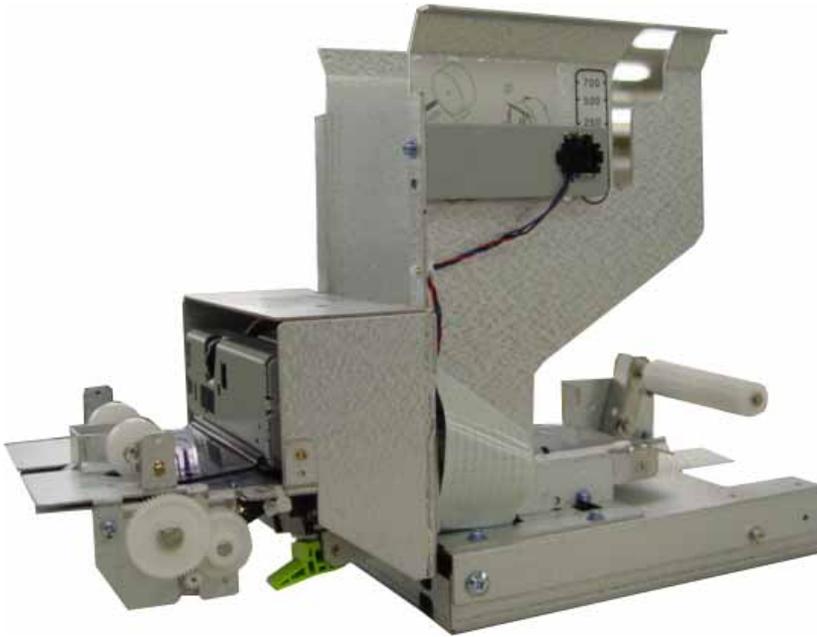


Fig. 3.5 SPR (Receipt Printer)

Receipt Printer

- Thermal line printer with cutter
- 100 mm/second printing speed
- 40 characters/line printing
- 3,400 transactions/roll
- Semi-automatic roll paper setting
- Graphics support
- Printing available within 80.0mm of paper width
- Dark Sensing (option)
- See Appendix C : RECEIPT PAPER SEPECIFICATIONS

3.6 JPR (Journal Printer, Optional)

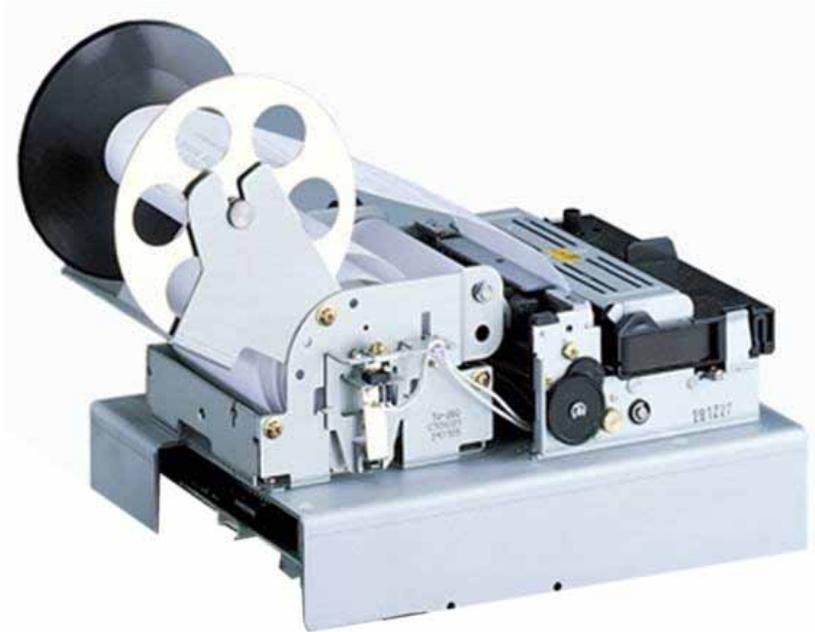


Fig. 3.6 JPR (Journal Printer)

Journal Printer

- Dot impact Printing
- 4 lines /second printing speed
- 138.6 Character/sec
- 5,000 transactions/roll
- Semi automatic roll paper setting
- Printing available within 76mm of paper width
- See Appendix E : JOURNAL PAPER SPECIFICATIONS

3.7 MCU (Magnetic Card Unit)



Fig. 3.7 MCU (Magnetic Card Unit)

Magnetic Card Unit

- Dip type Card Reader
- Supporting the magnetic card with ISO track 1&2
- MTBF : 1 million passes
- See Appendix D : MAGNETIC CARD SPECIFICATIONS

MTBF : Mean Time Between Failures

3.8 CE (Control Electronics)

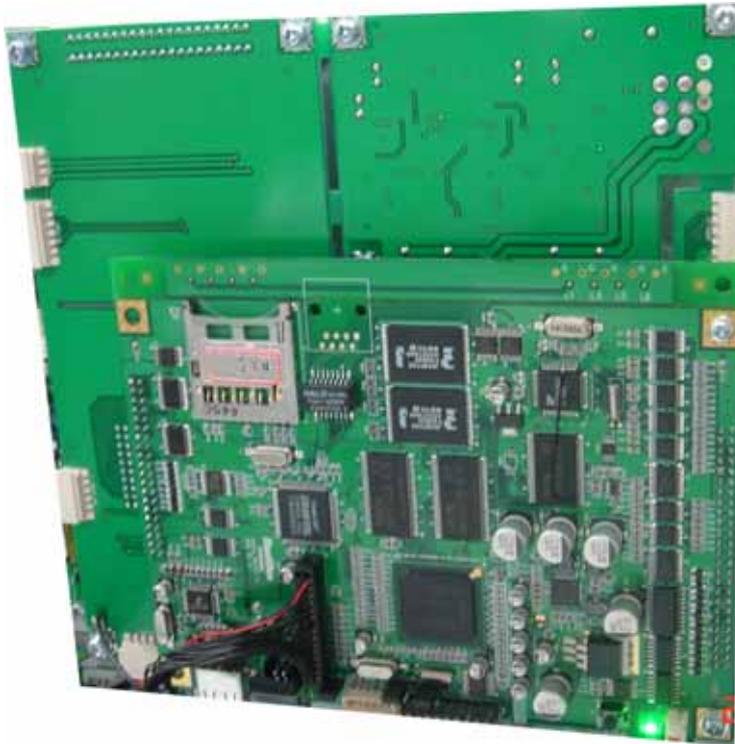


Fig. 3.8 CE (Control Electronics)

Control Electronics

- X-scale 520 MHz CPU, 64MB SDRAM, 64 MB Flash Memory based on Win CE
- Watch dog board included
- Supporting multiple serial interface up to 7 ports
- Supporting USB 1.1 up to 2 ports (Standard USB A type, B type)
(Supports USB flash drives with the capacity of 2Gbytes or below. Does not support MP3 players or portable hard disks)
- 56 Kbps Dial Up modem
- Supporting LAN communication (TCP/IP, Option)
- CD ROM driver 52X speed

3.9 Power Supply

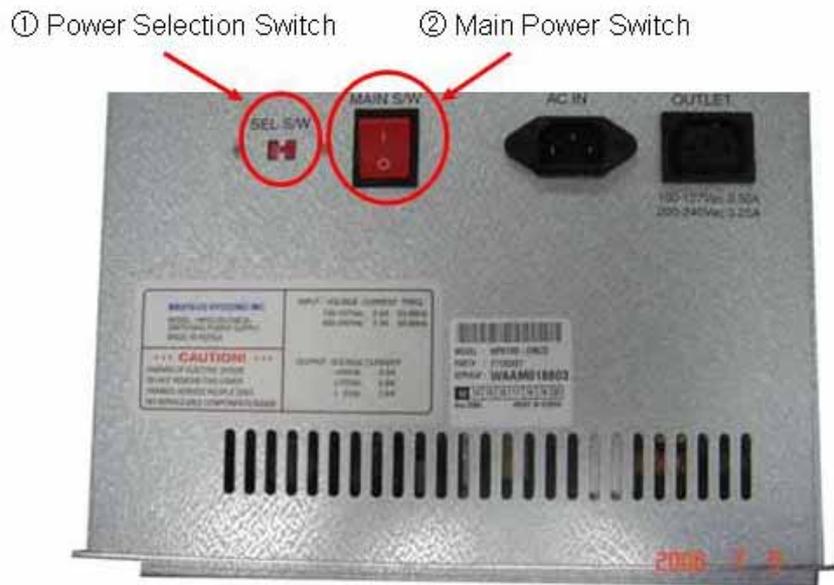


Fig. 3.9 Power Supply

Power Supply

Power Selection Switch

: Power Supply can be selected 110V or 230V by adjusting this switch as installation voltage can be changed

Main Power Switch

3.10 Operating Environment

Power Requirements

115 Vac \pm 10% 2.5A 50~60Hz , 120 W

220 Vac \pm 10% 1.3A 50~60Hz , 120 W

Power Connections

This machine should be connected to a dedicated power circuit. This circuit must consist of **LINE**, **NEUTRAL** and **GROUND** leads connected directly to the power circuit breaker panel. This circuit cannot be shared with any other equipment.

Temperature

- In storage : -5°C ~ 50°C
- While operating : 0°C ~ 40°C

Humidity

- In storage : 10% < RH < 90%, Non-Condensed
- While operating : 25% < RH < 86%, Non-Condensed

Chapter 4. Operating Instructions

4. Operating Instructions

4.1 Opening the Safe Door

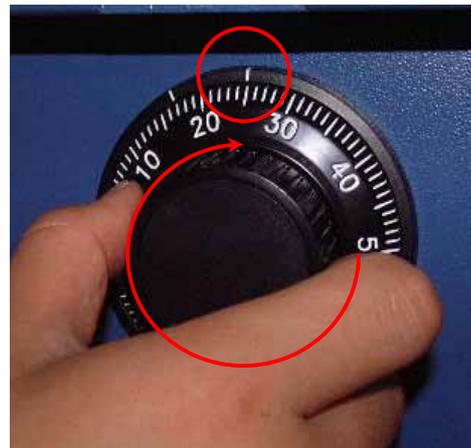
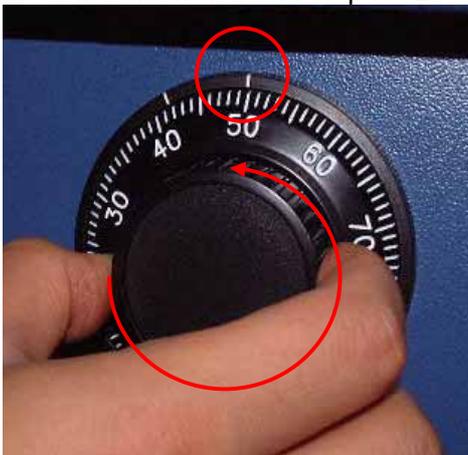
To open the safe door, firstly open the front bezel with key. In case there is only key lock on safe door and then turn another key clockwise to open the key lock (Optional). Next, safe door will open after opening the mechanical combination lock and turning the handle to counterclockwise.



Fig 4.1 Open the front bezel (left) and key lock (right, optional)

4.1.1 How to open the mechanical combination lock

- 1) Turn to the counterclockwise for more than four times and set to "50."
- 2) Turn to the clockwise and stop at "25" at the third times.



- 3) Turn to the counterclockwise and stop at "50" at the second times.
- 4) Turn to the clockwise until the dial does not move any more.



Note: The center scale mark is used to open the safe unit

- 5) The safe door will open when turning the handle to counterclockwise.

4.1.2 How to set the new combination

For example, let's assume that you would like to set the following number (10-50-70)

- 1) Open the safe door as described in the above.
- 2) To close the mechanical lock, turn the handle to clockwise with the door opening
- 3) Turn to the counterclockwise for more than four times and set to "50" at left scale indicator as shown in the Figure 1.
- 4) Turn to the clockwise and stop at "25" at the third time as shown in the Figure 2.
- 5) Turn to the counterclockwise and stop at "50" at the second times as shown in the Figure 3.



<Figure 1>



<Figure 2>



Note: The left scale mark is used to change the combination.

- 6) Push the change bar completely until it is held by the dial change home (Figure 4) inside the safe door and turn to the clockwise by 90 degrees (Figure 5).

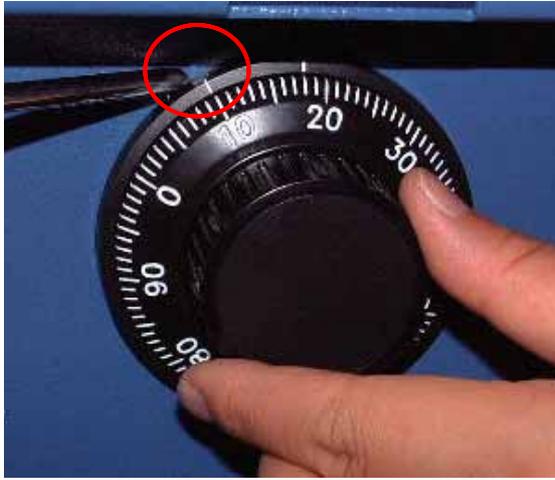


<Figure 4>



<Figure 5>

- 7) Turn to the counterclockwise more than four times and position at left scale indicator to "10" (target number to change).
- 8) Turn to the clockwise for three times and position the scale to "50" (target number to change).
- 9) Turn to the counterclockwise for two times and position the scale to "70" (target number to change).



<Figure 6>



<Figure 7>



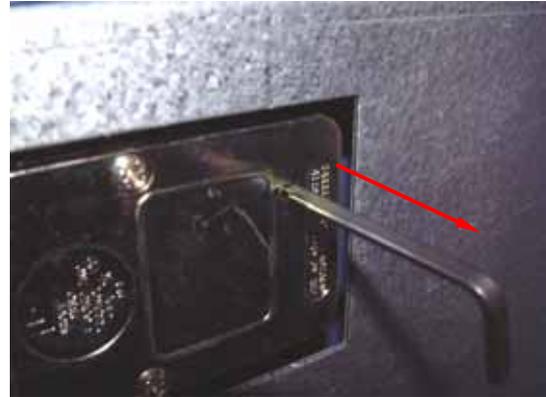
< Figure 8>

Note: Do not use number 25 – 35 as the last combination number.

- 10) When password setting is completed, turn the change bar counterclockwise and remove it from the safe as shown in the Figure 9.



< Figure 9 >



< Figure 10 >

- 11) When password setting is completed, try to turn the dial more than a couple of times while the door is open to see if the door is opened or not. (Make sure to run the open/close test for at least two or three times.)
- 12) When all setting is completed, inform the password to the person in charge while paying attention to password disclosure or lost.

Note: Special attention must be paid and lost dial number cannot be restored.

A. Optional : Cencon System S2000

A-1. Initial Operating Instructions

Each lock is shipped from the factory in Shelved Mode, operating on a standard combination (50-25-50). The “one time only” combination does not function when the lock is in this condition.

The correct opening procedure for a new lock is :

- Turn the Dial left (CCW) until the letters “EC” (Enter Combination) appear on the LCD
- Enter the factory combination of 50-25-50 by sequentially pressing those six buttons. The LCD will display these number as they are entered.
- When the combination has been correctly entered, the LCD will read :OPr” meaning “Open right.”
- Turn the Dial right (CW) until it stops. The lock’s bolt is now retracted and the lock is open.
- Turning the Dial left (CCW) will extend the lock’s bolt

Try this several times until you are comfortable with the operation of the lock.

A-2. Change Shelved Mode Combination

For System 2000 Locks with a code level of 71, or greater, you may change the Shelved Mode combination. You may change the default Factory Combination of 50-25-50 to a new combination to be used while the lock is still in Shelved Mode. Once you have changed the combination for the first time, you may want to change the combination again to a different Shelved Mode combination. You can even change it back to the Factory combination of 50-25-50

Required Items: Change Key, Current Shelved Mode Combination

Note: You can only change the Shelved Mode combination while operating in Shelved Mode. Once a lock is “activated” in any mode, the Shelved Mode combination returns to the Factory Default of 50-25-50

To change the Shelved Mode combination:

1. Power Lock -> EC

Turn the Dial to the left (CCW) until “EC” (Enter Combination) is displayed.

2. EC -> Enter Shelved Mode Combination -> OPr

Enter the current Shelved Mode combination (either 50-25-50 or a changed Shelved Mode combination) by sequentially pressing those digits on the lock keypad. The numbers will be displayed on the LCD as they are entered.

3. OPr -> Retract Bolt

Turn the Dial to the right (CW) to retract the bolt

4. Open Door

5. Insert Change Key

Insert the change key into the change key socket on the back of the lock.

6. Extend Bolt

Turn the Dial to the left (CCW) to extend the bolt. Do not close the door

7. Power Lock -> ㄥ EC

Turn the dial to the left(CCW) until ㄥ EC (the Change Key symbol along with Enter Combination) is displayed

8. ㄥ EC -> Press #8 -> EcF

Press the “#” button followed by the “8” button. EcF (Enter combination, Factory) will be displayed.

9. EcF -> Enter Current Shelved Mode Combination -> EnF

Enter the current shelved mode combination, “EnF” (Enter combination, Factory) will be displayed.

10. EnF -> Enter New Combination -> CnF

Select and enter the new combination. “CnF” (confirm new Factory combination) will be displayed

11. CnF -> Enter New Combination -> POC

Enter new combination again to confirm. POC (Pull Out Change key) will be displayed.

12. POC -> Remove Change Key -> EOP

Remove the change key. EOP (End Operation) is displayed.

13. EOP -> Power Lock -> EC

Turn the dial to the left (CCW)until EC (Enter Combination) is displayed.

14. EC -> Enter New Shelved Mode Combination -> OPr

Enter the new shelved mode combination by pressing those digits on the lock’s keypad. The numbers will be displayed on the LCD as they are entered

15. OPr -> Retract Bolt

Turn the Dial to the right (CW) to retract the bolt.

16. Close Door

17. Extend Bolt

Turn the Dial to the left (CCW) to extend the bolt.

4.2 System Power On/Off

The Power Supply is located on the upper front bezel.



Fig. 4.2 Power Supply

System Power On

Turn on the Main Switch.

System Power Off

Turn off the Main Switch.

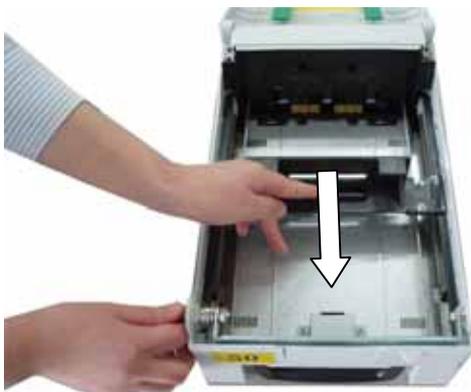
4.3 Replenishing the Cash Cassette



- 1) With one hand holding the cassette handle and the other hand supporting the cash cassette from bottom, pull it up and out carefully.



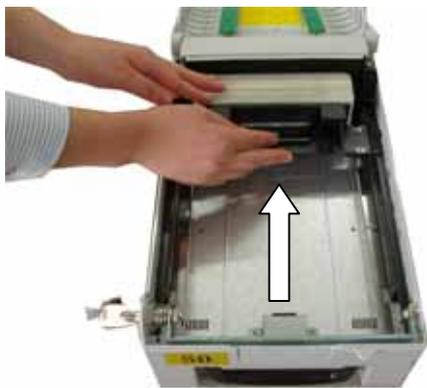
- 2) Place the cash cassette on a flat level platform and turn the cassette key clockwise to unlock the cassette cover. Then lift the cassette cover.



- 3) Pull the cash plate back until it is locked against the cash plate latch.



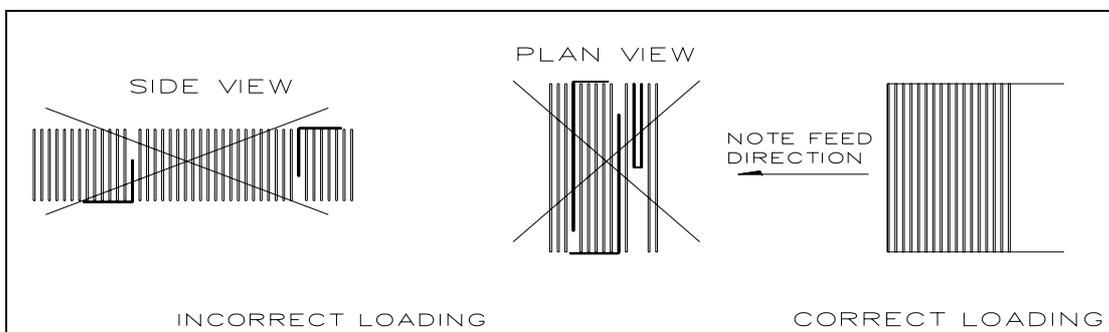
- 4) Replenish the cassette
(Take note as below)



- 5) Unlock the cash plate by pulling it again and move it smoothly.
[Precaution!] Be careful not to hurt your hand when cash plate is unlocked.

NOTE :

1. Fan the notes so that the notes are not sticking together.
2. Remove all notes with holes or notes that are torn.
3. Unfold the folded notes.
4. Place the notes correctly.





6) Close the cassette cover and turn the cassette key counter clock-wise until it is locked. Remove the key when it is locked.



7) With one hand holding the cassette handle and the other hand supporting the cassette from the bottom, place the cassette carefully on the set guide of the CDU and push it in until it is locked in place.

Fig. 4.3 Replenishing the cash cassette

4.4 How to Empty Cassette

Emptying Reject box in Cash Dispenser



1) Insert the reject box key, turn it clockwise



2) Open the lid in reject box



3) Take bills in reject box and turn the key counter clockwise to close the box lid.

Fig. 4.4 Emptying the reject box

4.5 How to Clear Jam

Cash Dispenser



- 1) Pull the rail of CDU outward while pressing the highlighted green button on the bottom of the CDU.



- 2) Lift up the upper cover of CDU .



- 3) Turn the pulley located in left upper in order to move jammed note into a easy position taken out.



4) Take out the jammed note carefully.



5) Remove the cash cassettes



6) Remove the jammed note inside CDU body carefully .

Fig. 4.5 Removing note jam in cash dispenser

Receipt Printer



- 1) Press the green lever down to release the lock.



- 3) Remove the receipt paper jammed inside and then set the receipt paper and lift green lever up again.

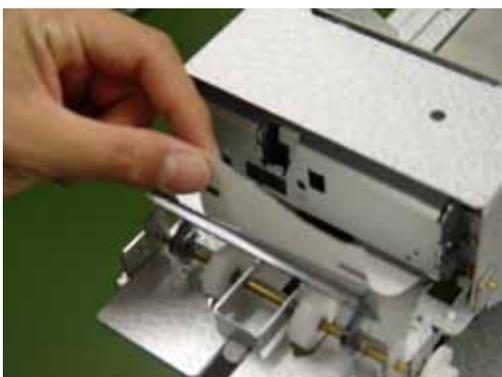


Fig. 4.6 Receipt Paper Jam Removal

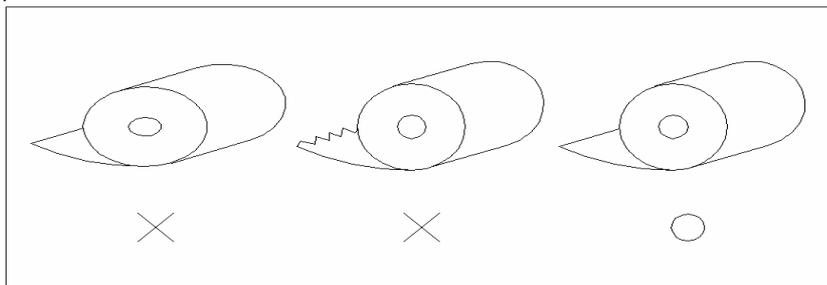
4.6 How to Load the Receipt Paper



- 1) Open the front bezel with key and pull this outward with hands completely.

Notes:

1. Load a paper roll into the unit with the shape of the roll kept intact. (Deformed roll may cause jamming.)



2. The leading edge of the roll shall neatly be cut prior to loading the roll.

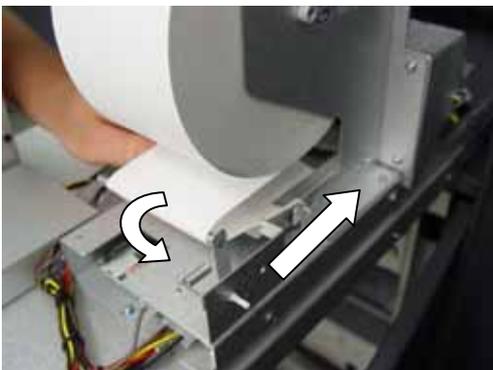
Correct shape of the paper roll



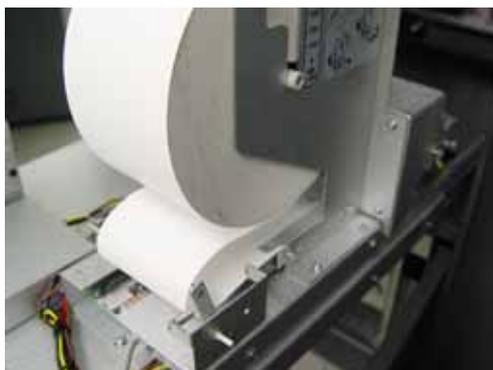
- 2) Insert the white plastic rod into the paper roll.



3) Mount the plastic rod onto the stand.

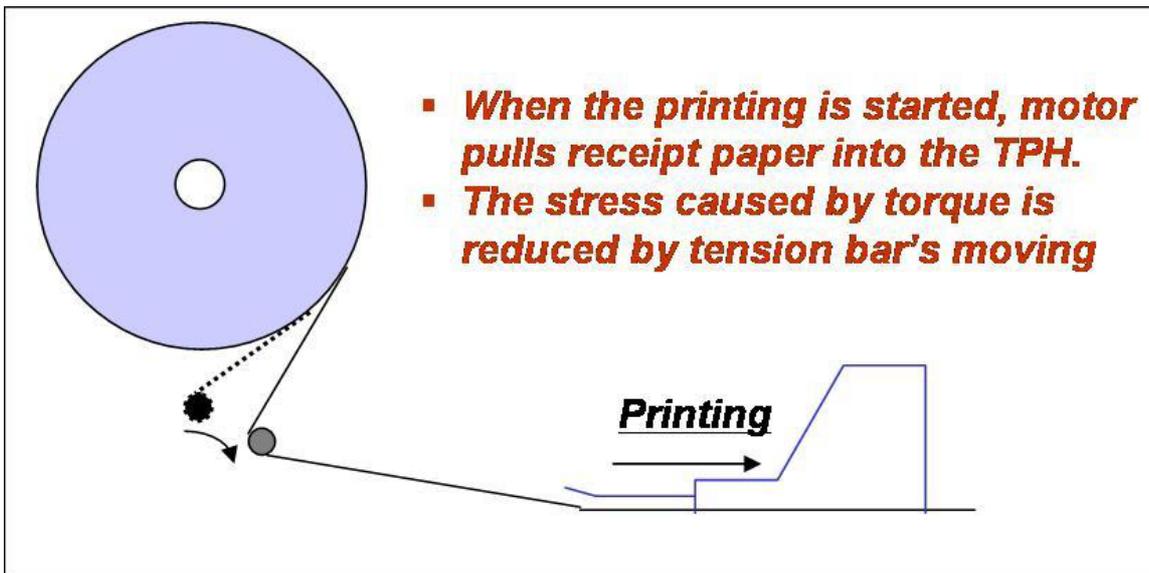
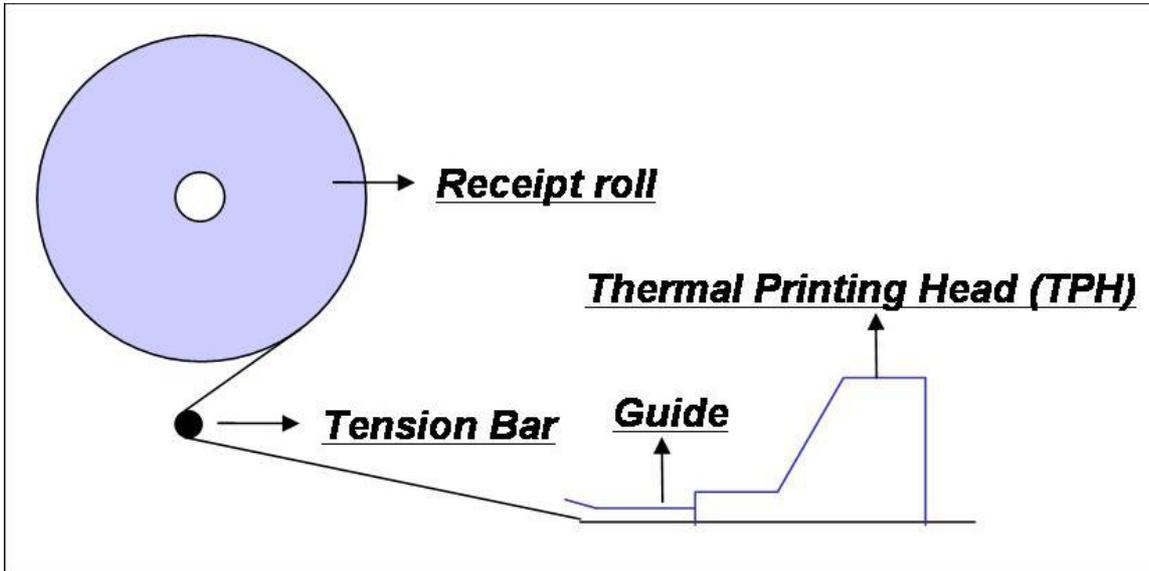


4) Roll up the receipt paper roll backward, as shown in the picture, and then insert the leading edge into bracket guide, pulling it forward.

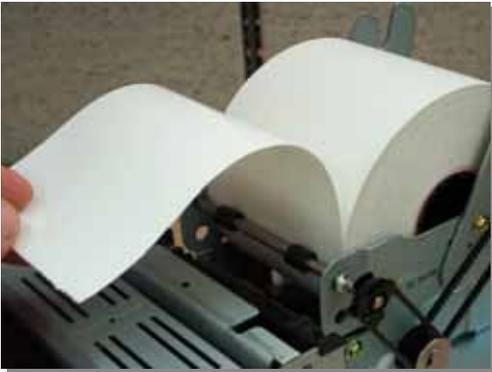


5) Push the receipt paper inside the supporting bracket, as shown in the picture. Receipt printer will then feed the inserted paper into the printer and a test paper will be printed automatically when power is turned on.

Fig. 4.8 Loading the receipt paper



4.7 How to Load the Journal Paper (Option)



- 1) Set the journal paper in the direction shown in the above illustration.



- 2) When you insert the paper into the entrance, the printer settings will be automatically established and will be ready to print .



- 3) If the printer cannot automatically set the paper, press the [FEED] button until the paper is discharged.



- 4) Feed paper until it is pushed out by a distance of 20~25mm (0.8~1.0 inch).



- 5) Remove the side guide of the spool and set paper. Following this procedure, fix the side guide and roll the paper 2-3 times.

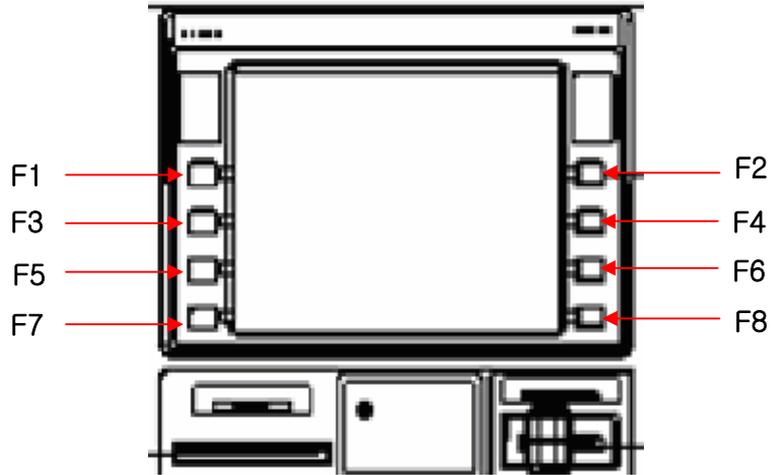


- 6) Set the spool in the frame and press the [FEED] button to complete paper setting procedure.

Fig. 4.9 Loading the journal paper

5. Operator Function

5.1 PASSWORD FOR ENTERING SUPERVISOR MODE

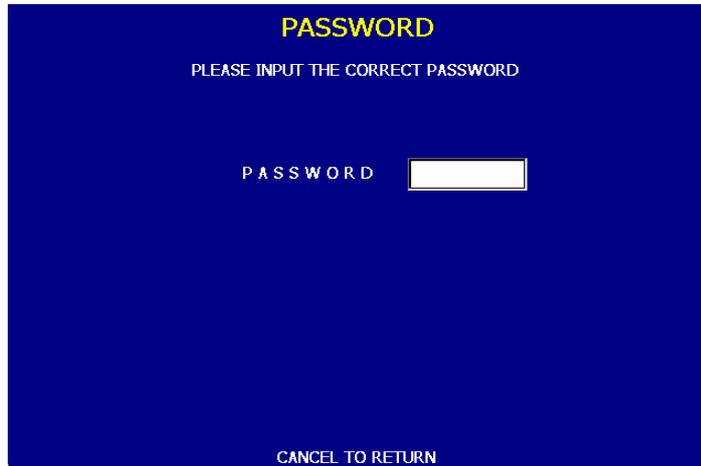


- Function Key Location on ATM -

To enter Supervisor mode press the ENTER, CLEAR, CANCEL, 1, 2 and 3 keys in order. The default password is "555555"(6 digits). The default password is changeable in Supervisor mode. After entering the correct password of 4~6 digits, press <Enter> key in order to enter Supervisor main menu. Pressing <Clear> key erases the entered number and pressing <Cancel> key goes to in-service-mode.

Depending on authority, there are three kinds of default password like below table.

Authority	Default Password
OPERATOR	111111 (6 digits)
SERVICE	222222 (6 digits)
MASTER	555555 (6 digits)



Please make sure that default password should be changed to different password for your security as soon as this machine is installed at field site.

•Authorities for each Mode

NO	Main Menu	Sub1 Menu	Sub2 Menu	Sub3 Menu	Master	Service	Operator
4	REPLENISH	TOTAL	DAT TOTAL	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			TRIAL TOTAL	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			CASSETTE TOTAL	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			TRIAL CASSETTE TOTAL	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		ADD CASH	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		PRINT CASH	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		CLEAR CASH	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	CONFIGURATION	HOST SETUP	TELEPHONE NUMBER	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			HEALTH CHECK MSG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			TERMINAL ID	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
			SERIAL NUMBER	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
			CONNECT TIMER	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

			REMOTE MONITOR	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	X	
			ROUTING ID	<input type="checkbox"/>	<input type="radio"/>	X	X	
			TRIAL DAY TOTAL	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	X	
		TRANSACTION SETUP	DISPENSE LIMIT	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	X	
			LOW CURRENCY CHECK	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	X	
			FAST CASH	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	X	
			DENOMINATION	<input type="checkbox"/>	<input type="radio"/>	X	X	
		CUSTOMER SETUP	CHANGE MESSAGE	<input type="checkbox"/>	<input type="radio"/>	X	X	
			BIN LIST	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	X	
			SELECT HOST	<input type="checkbox"/>	<input type="radio"/>	X	X	
			SURCHARGE MODE	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	X	
		SYSTEM SETUP	SET CLOCK	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
			CHANGE PASSWORD	OPERATOR PASSWORD		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
				MASTER PASSWORD		<input type="radio"/>	X	X
				SERVICE PASSWORD		<input type="radio"/>	<input type="radio"/>	X
			SPEAKER VOLUME	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
			ISO#1#2#3 EN/DISABLE	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	X	
			MODEM SETUP	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
			MODEM TEST	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
6	JOURNAL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
7	DIAGNOSTICS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
8	REPORT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

9	RCOPY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23	REBOOT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33	RESET ALL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44	RESET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
99	INSERVIC E	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5.2 SUPERVISOR MENU

The following screen below is the main screen of Supervisor mode.

Supervisor mode in this machine is largely composed of ATM Status and Function.

A. ATM Status

- 1) Machine name,
- 2) Supervisor mode,
- 3) Door Status
- 4) Connection status to host
- 5) ATM status
- 6) Error code
- 7) 1st Cassette : Remained notes(Denomination)
e.g) if 1000 notes of \$20, 1000(20)
- 8) 2nd Cassette : Remained notes(Denomination)
- 9) 3rd Cassette : Remained notes(Denomination)
- 10) 4th Cassette : Remained notes(Denomination)
- 11) Cash dispenser status(CDU)
- 12) Card reader status(MCU)
- 13) Receipt printer status(SPR)
- 14) Journal printer status(JPR)
- 15) The media status
- 16) The media status of 2nd Cassette
- 17) The media status of 3rd Cassette
- 18) The media status of 4th Cassette
- 19) Reject box status(rejected count)
- 20) Retracted card Count (Only for Motor driven Card Reader)
- 21) The media status of Receipt Printer
- 22) The media status of Journal Printer
- 23) Terminal ID
- 24) Routing ID
- 25) Program version
- 26) Current Date and Time

B. Functions

- 04) REPLENISH
- 05) CONFIGURE
- 06) JOURNAL
- 07) DIAGNOSTICS
- 08) REPORT
- 09) RCOPY
- 23) REBOOT
- 33) RESET ALL
- 44) RESET
- 99) IN SERVICE

In order to move to the in-service mode, press '99' and then <Enter> key in sequence.

5050	CLERK	DOOR CLOSED	ONLINE	NORMAL	[] - [00000(00)]			
CST1	1894(\$20)	CST2	N/A	CDU	NORMAL	MCU	NORMAL	
CST3	N/A	CST4	N/A	SPR	NORMAL	JPR	N/A	
MEDIA	CST1	CST2	CST3	CST4	RETRACT	MCU	SPR	JPR
	NORMAL	N/A	N/A	N/A	0	0	NORMAL	N/A
TERMINAL	12345678			ROUTING ID	000000			
AP VERSION	V01.00.07			DATE AND TIME	10/31/2006 01:51			

04	REPLENISH	SELECT NUMBER <input style="width: 40px; height: 20px;" type="text"/>	23	REBOOT
05	CONFIGURE			
06	JOURNAL		33	RESET ALL
07	DIAGNOSTICS		44	RESET
08	REPORT			
09	RCOPY		99	IN SERVICE

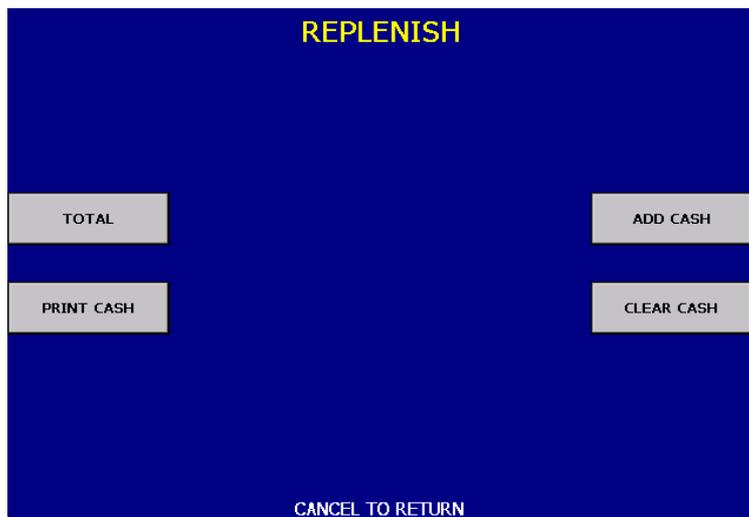
C. Field Values

CLASS	VALUE	Remarks
MACHINE KIND	<u>5050</u>	
ATM STATUS	INIT ERROR <u>CLERK</u> READY CUSTOM TRAN DOWN	
DOOR STATUS	DOOR OPEN <u>DOOR CLOSED</u>	
LINE STATUS	<u>ONLINE</u> OFFLINE	
MESSAGE	<u>NORMAL</u>	
ERROR CODE	<u>[00000(00)]</u>	
HARDWARE STATUS		
CST1	BILLS COUNT <u>(928(\$20))</u> N/A	
CST2	<u>N/A</u>	Not Available
CST3	<u>N/A</u>	Not Available
CST4	<u>N/A</u>	Not Available
CDU	<u>NORMAL</u> ABNORMAL ERROR	
MCU	<u>NORMAL</u> ABNORMAL ERROR	
SPR	<u>NORMAL</u> ABNORMAL ERROR	
JPR	<u>N/A</u>	Not Available

MEDIA STATUS		
CST1	MISSING <u>NORMAL</u> LOW EMPTY FULL	
CST2	<u>N/A</u>	Not Available
CST3	<u>N/A</u>	Not Available
CST4	<u>N/A</u>	Not Available
RETRACT	RETRACT COUNT(CDU) – (0)	
MCU	RETRACT COUNT(MCU) – (0)	
SPR	MISSING <u>NORMAL</u> LOW EMPTY	
JPR	<u>N/A</u>	Not Available

5.3 REPLENISH

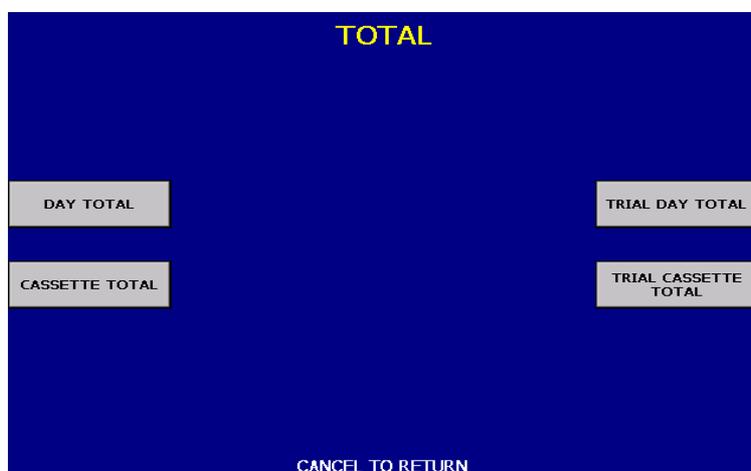
This menu contains TOTAL, ADD CASH, PRINT CASH and CLEAR CASH. Pressing function key beside menu button goes to next screen. To go back to the previous screen, just press the <Cancel> key in pinpad.



5.3.1 TOTAL

This menu contains DAY TOTAL, TRIAL DAY TOTAL, CASSETTE TOTAL and TRIAL CASSETTE TOTAL. Pressing function key beside menu button operates related function. To go back to the previous screen, just press the <Cancel> key in pinpad.

- DAY TOTAL : Clear transaction information. Do settlement with host.
- TRIAL DAY TOTAL : Not clear transaction info. Do settlement with host.
- CASSETTE TOTAL : Clear note count.
- TRIAL CASSETTE TOTAL : Not clear note count. Just show note count.

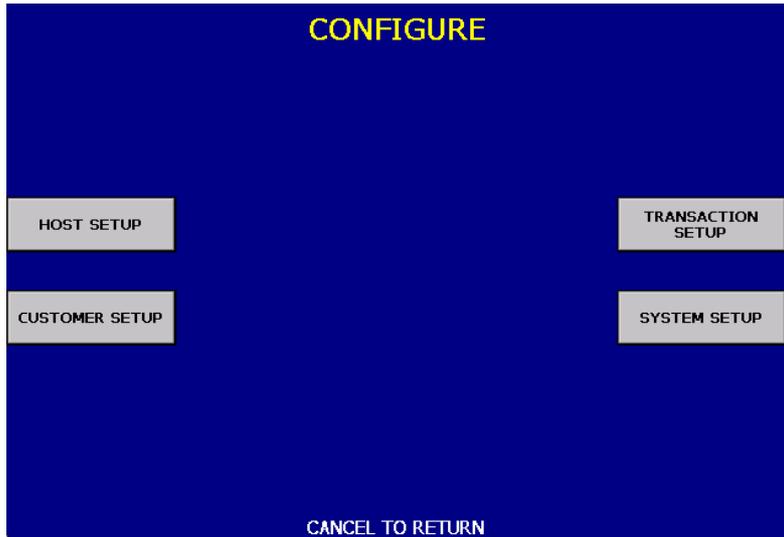


5.3.2 ADD CASH

Pressing function key beside menu button selects cassette to add note count. (Cassette numbers are designated from top to bottom). Enter the note count you want to add. The total note count you enter must not exceed the maximum note count. (Max. count : 2,000/CST)

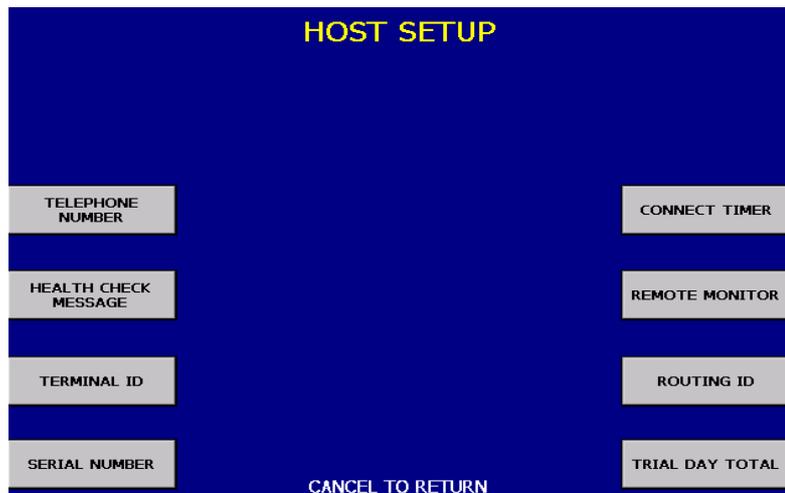
5.4 CONFIGURE

This menu contains HOST SETUP, TRANSACTION SETUP, CUSTOMERSETUP and SYSTEM SETUP. Pressing function key beside menu button goes to next screen. To go back to the previous screen, just press the <Cancel> key in pinpad.



5.4.1 HOST SETUP

This host setup menu contains TELEPHONE NUMBER, CONNECT TIMER, HEALTH CHECK MESSAGE, REMOTE MONITOR, TERMINAL ID, ROUTING ID, SERIAL NUMBER and TRIAL DAY TOTAL. Pressing function key beside menu button goes to next screen. To go back to the previous screen, just press the <Cancel> key in pinpad.



5.4.1.1 TELEPHONE NUMBER

If you press each button on this menu, phone number of host can be input. You can input character, number and special symbol up to 1~20 digits by using '<' or '>'.

This function is used to enter the primary phone number and the back-up phone number of the host. When dialing to host is failure (busy, no answer or etc), ATM switches to other phone number automatically. For more accurate and safer connection, it would be better to get 2 other phone numbers from a host company and input them.

TELEPHONE NUMBER

PLEASE INPUT A HOST PHONE NUMBER 1 OR 2

HOST PHONE #1

HOST PHONE #2

CANCEL TO RETURN

5.4.1.2 CONNECT TIMER

You can input current connect timer and new connect timer up to 3 digits. After inputting the value you want to, this value is finally saved by pressing <ENTER> key. This function is used to set the waiting timer during connecting to the host.

After turning on the machine, the machine will try to connect to the host.

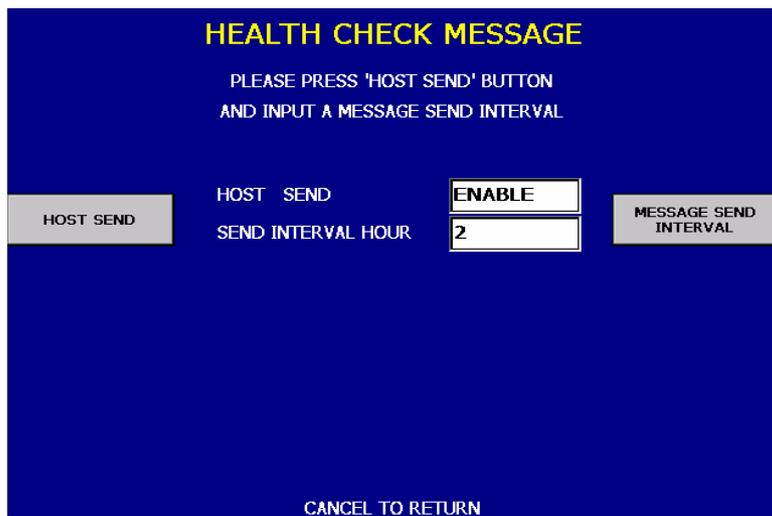
However when the machine fails to connect to the host, it will wait for a while and will attempt to connect again. This function is used to set the waiting time.



5.4.1.3 HEALTH CHECK MESSAGE

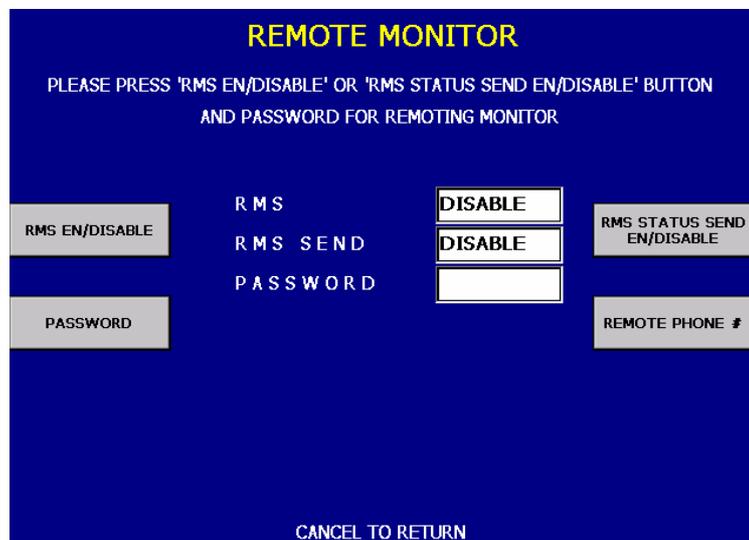
If you press 'HOST SEND' button, either "ENABLE" or "DISABLE" can be selected. ATM sends its status periodically to the host when "Host Send" is set up to "Enable". The interval is dependant on "Message Send Interval".

If you press 'MESSAGE SEND INTERVAL' button, the value of SEND INTERVAL can be adjusted. (0 ~ 24). This value is saved by pressing<ENTER > button.



5.4.1.4 REMOTE MONITOR

- 1) RMS(Remote Monitoring System) is an ATM monitoring and management tool to help increase uptime. The EN/DISABLE function is used to connect to the RMS mode to enable or to disable. The default option is "ENABLE".
- 2) RMS STATUS SEND EN/DISABLE function is used to send status message to RMS in enable or in disable: When "RMS STATUS SEND EN/DISABLE RMS" is enabled, ATM will send the status to RMS if ATM status is changed. ATM will not send the status to RMS even though ATM status is changed if "RMS STATUS SEND EN/DISABLE" is disabled.
- 3) The REMOTE PHONE function is used to input the RMS primary phone number and the back-up phone number.
If you press each button on this menu, phone number of RMS will be input. You can input character, number and special symbol up to 1~20 digits by using '<' or '>'. When dialing to RMS fails (busy, no answer or etc), ATM switches to other phone number automatically.
- 4) The PASSWORD function is used to set the RMS password to connect to ATM from RMS. When RMS host tries to connect to ATM, it sends the password to ATM. ATM then checks the password from RMS host. ATM disconnects the line if the password is not matched.



5.4.1.5 TERMINAL ID

This function is used to set the Terminal Number of ATM.

Character, number or special symbol can be input up to 1~20 digits by using '<' or '>'. This value is saved by pressing<ENTER> button located on the pinpad, Host will identify ATM by looking at terminal ID. Terminal ID will be included in host message and will be printed on the receipt. To go back to the previous screen, press the <Cancel> key in pinpad.

TERMINAL ID

PLEASE INPUT A NEW TERMINAL ID

CURRENT TERMINAL ID

NEW TERMINAL ID

1	2	3	CONFIRM
4	5	6	CLEAR
7	8	9	CANCEL
<	0	>	CAPS

CANCEL TO RETURN

5.4.1.6 ROUTING ID

This function is used to set the Routing ID Number of ATM. Routing ID refers to the Bank ID. This field is contained to Hyosung Format, CSP200 and Triton message format.

Character, number or special symbol can be input up to 1~20 digits by using '<' or '>'. This value is saved by pressing<ENTER> located on the pinpad, on the other hand, To go back to the previous screen, just press the <Cancel> key in pinpad.

The image shows a screen titled "ROUTING ID" with a dark blue background. The text "PLEASE INPUT A NEW ROUTING ID" is centered. Below this, there are two input fields: "CURRENT ROUTING ID" containing "000000" and "NEW ROUTING ID" which is currently empty. At the bottom, there is a numeric keypad with buttons for digits 1-9, 0, and symbols '<', '>', 'CONFIRM', 'CLEAR', 'CANCEL', and 'CAPS'. The text "CANCEL TO RETURN" is at the very bottom of the screen.

5.4.1.7 SERIAL NUMBER

This function is used to set the Machine Serial Number. The Machine Serial Number is used when RMS connects to ATM. RMS sends the Machine Serial Number to ATM and ATM compares it. If it is different, ATM disconnects impromptu. To go back to the previous screen, just press the <Cancel> key in pinpad.

SERIAL NUMBER

PLEASE INPUT A NEW SERIAL NUMBER

CURRENT SERIAL NUMBER 00000000

NEW SERIAL NUMBER

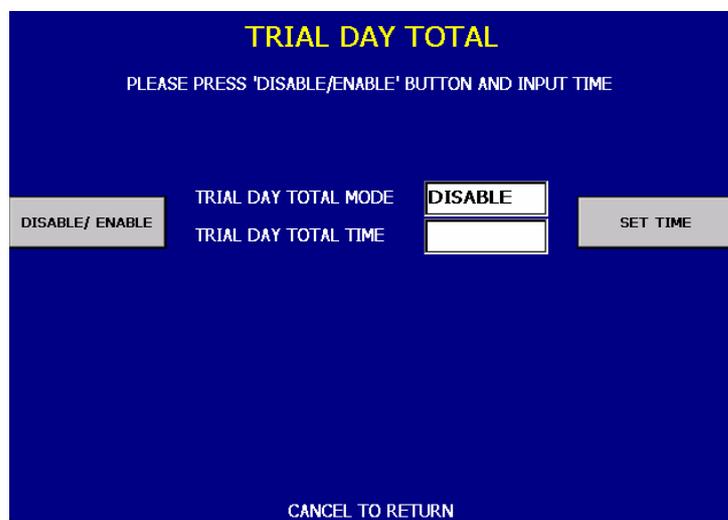
1	2	3	CONFIRM
4	5	6	CLEAR
7	8	9	CANCEL
<	0	>	CAPS

CANCEL TO RETURN

5.4.1.8 TRIAL DAY TOTAL

ATM connects to host to make end of day. When Trial Day Total is submitted, ATM carries out balance but the transaction data will not be reset. If Day Total is submitted, ATM will carry out balance and transaction data will be reset. ATM receives the data from host and prints on the receipt. On the other hand, host database is not updated and business date is not changed.

You can select one of ENABLE or DISABLE in this mode and input the TRIAL DAY TOTAL TIME by pressing SET TIME. (1 ~ 2 digits is available)



5.4.2 TRANSACTION SETUP

This host setup menu contains DISPENSE LIMIT, LOW CURRENCY CHECK, and DENOMINATION. You can enter each sub menu by pressing each button. To go back to the previous screen, just press the <Cancel> key in pinpad.

TRANSACTION SETUP

PLEASE INPUT A DISPENSE LIMIT
AND PRESS 'LOW CURRENCY CHECK' BUTTON

DISPENSE LIMIT \$ 800 LOW CURRENCY CHECK

LOW CURRENCY CHECK DISABLE

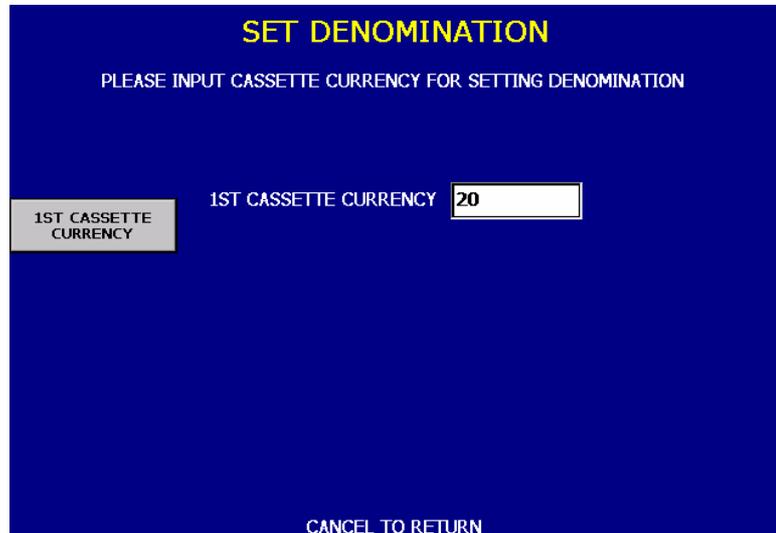
FAST CASH DENOMINATION

CANCEL TO RETURN

1) DISPENSE LIMIT function is used to set the maximum amount of notes that can be dispensed per transaction. The amount must be a multiple of denomination. And the maximum dispensed count a transaction must not be over a total of 40 notes.

2) LOW CURRENCY CHECK function is used to set the detection of cassette low level (60 bills or less). If enabled, hardware will report the low condition to the software and the machine will go to "OUT OF SERVICE" mode under low note condition. To be modified, software has to count the number of dispensed notes after low notes are reported.

3) SET DENOMINATION function is used to set the denomination of note to be set in the cassette. You can set the denomination to 1ST cassette in this menu.



SET DENOMINATION

PLEASE INPUT CASSETTE CURRENCY FOR SETTING DENOMINATION

1ST CASSETTE CURRENCY 20

CANCEL TO RETURN

5.4.3 CUSTOMER SETUP

This customer setup menu contains CHANGE MESSAGE, SURCHARGE MODE, BIN LIST, SELECT HOST and STANDARD OPTION 3. Pressing function key beside menu button operates selected function. To go back to the previous screen, just press the <Cancel> key in pinpad.



CUSTOMER SETUP

CHANGE MESSAGE SURCHARGE MODE

BIN LIST

SELECT HOST

CANCEL TO RETURN

Refer to figure of the Sample Receipt below for the location of the messages. The default receipt format will not include any messages.

Spanish transactions will be printed in English.

TRANSACTION RECORD

Customer Copy
Thank You for Using Us !!

ADDRESS1
ADDRESS2
ADDRESS3
PHONE NUMBER

HEADER 1
HEADER 2

TERMINAL # = 12345678
SEQUENCE # = 0136
AUTH. # = 000000
DATE & TIME = 03/22/2007 20:05:20
BUSINESS DATE = 03/22/2007
CARD NUMBER = *****4443
TRANSACTION = WITHDRAWAL
ACCOUNT = FROM CHECKING

.....
DISPENSED AMOUNT = \$0.00
REQUESTED AMOUNT = \$20.00

ACCOUNT BALANCE = \$0.00
CASH AVAILABLE = \$0.00

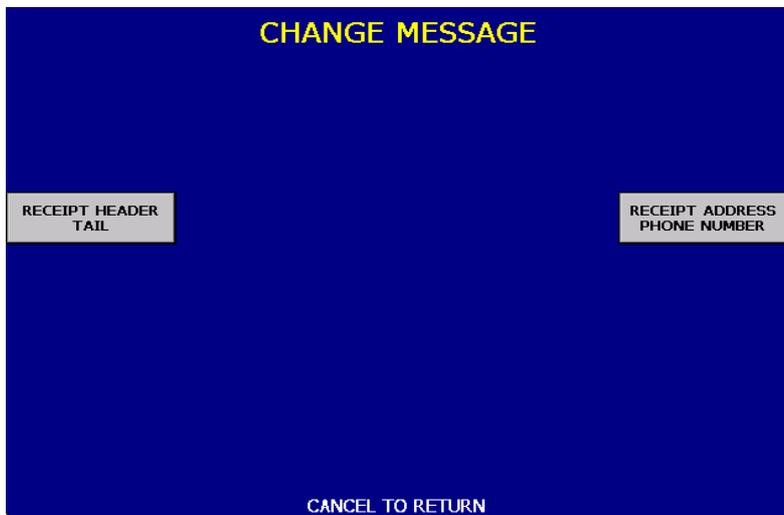
T#: 127421 J#:0264

.....
* ERROR CODE: 6-40047(00)
: CASH DISPENSER ERROR !!!
TAIL

-Location of Messages on Receipt-

5.4.3.1 CHANGE MESSAGE

CHANGE MESSAGE menu has each of three sub menu. If you press the RECEIPT HEADER&TAIL button, the current display will be changed into the RECEIPT HEADER&TAIL. And you can set the message in the HEADER and TAIL button menu of the RECEIPT. Also, If you press the RECEIPT ADDRESS & PHONE NUMBER button, it will be changed the RECEIPT ADDRESS & PHONE NUMBER display. You can set the information about ADDRESS and PHONE NUMBER in the RECEIPT. At last, the display can go back to the previous menu by pushing the <CANCEL> key



1) RECEIPT HEADER & TAIL

RECEIPT has function of guide comment and explanation in the HEADER and TAIL. If you push the HEADER1, you can enter the message on the HEADER 1, As the same as HEADER1, you can push and insert the message on the HEADER 2. And if you press TAIL, you can enter the message on the RECEIPT TAIL. When you want to erase it on currently editing, you can push the CLEAR.

This system will be functioned with at least one more message among the three sub items. After entering the message, press ENTER key and the command can be processed. Or, you can push <CANCEL> key if you want to go back to the previous menu.

RECEIPT HEADER & TAIL

PLEASE INPUT HEADERS OR TAIL FOR RECEIPT MESSAGE

HEADER 1

HEADER 2

T A I L

HEADER 1

TAIL

HEADER 2

1	2	3	CONFIRM
4	5	6	CLEAR
7	8	9	CANCEL
<	0	>	CAPS

CANCEL TO RETURN

2) RECEIPT ADDRESS & PHONE NUMBER

RECEIPT function includes setting the information of ADDRESS and PHONE NUMBER. You can enter the message when you push the ADDRESS 1. And in case of pushing ADDRESS 2, you can insert the message in ADDRESS 2. In the same way, you can use ADDRESS 3 and enter the data in ADDRESS 3. Next, if you push the PHONE NUMBER, PHONE NUMBER can be set. While entering the information, if you want to clear it, you can push CLEAR.

This system will be functioned with at least one more message among the three sub items. After entering the message, push ENTER and the command can be processed. Or, You can push <CANCEL> and then you can go back to the previous menu.

RECEIPT ADDRESS & PHONE NUMBER

ADDRESS 1

ADDRESS 2

ADDRESS 3

PHONE NUMBER

ADDRESS 1	1	2	3	CONFIRM	ADDRESS 2
	4	5	6	CLEAR	
ADDRESS 3	7	8	9	CANCEL	PHONE NUMBER
	<	0	>	CAPS	

CANCEL TO RETURN

5.4.3.2 SURCHARGE MODE

The SURCHARGE MODE contains the enable/disable of the surcharge warning screen and setting the surcharge amount and surcharge owner. When the surcharge mode is disabled and also if the swiped card data contains BIN number that was entered during installation, the surcharge warning message will not be displayed. When the surcharge mode is enabled, the surcharge amount and owner name will be displayed in the surcharge warning screen during transaction. The factory default is surcharge enabled, surcharge amount is \$1.50 and the surcharge owner is none.

SURCHARGE MODE

SURCHARGE MODE

SURCHARGE OWNER

SURCHARGE AMOUNT

SURCHARGE MODE	1	2	3	CONFIRM	SURCHARGE OWNER
	4	5	6	CLEAR	
AMOUNT	7	8	9	CANCEL	
	<	0	>	CAPS	

CANCEL TO RETURN

5.4.3.3 BIN(Bank Identification Number) LIST

The "BIN LIST" is used to register the bank list. When the cardholders make transaction with the given BIN code, ATM doesn't request any additional fee. However, it is necessary to confirm the connected host because host will decide whether it uses or not
You can input and edit it by using such as ADD, DELETE, EDIT, RESET, PREV, NEXT button.

BIN LIST

TOTAL COUNT 00 05
INDEX NO 01 06
BIN 02 07
 03 08
 04 09

ADD DELETE
EDIT RESET
PREV NEXT

CANCEL TO RETURN

5.4.3.4 SELECT HOST

You can select one of message type to communicate with a data processing company or bank in this menu. STANDARD #1 is a Tranax message type (HYOSUNG message) and STANDARD #2 is a CSP200 message type and STANDARD #3 is Triton 9600 message type. If Standard 3 is selected, the Standard3 Option Button is displayed on the Customer Setup Screen.

SELECT HOST

PLEASE PRESS EACH BUTTON FOR SELECTING HOST

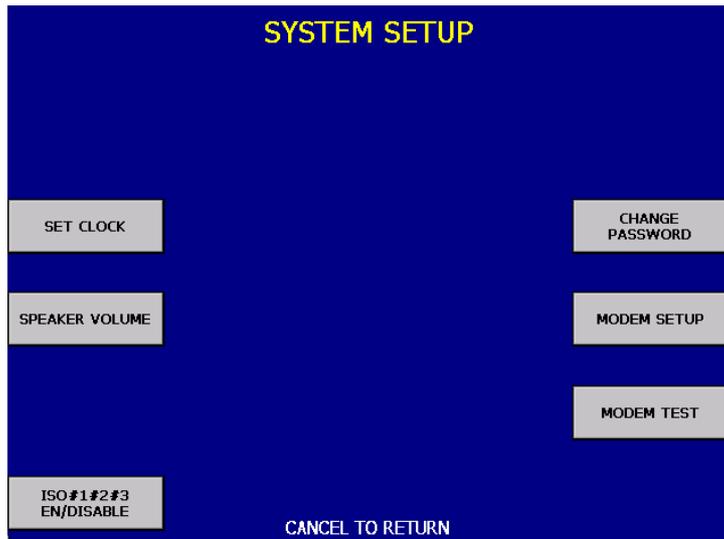
STANDARD

STANDARD 1 (HYOSUNG) STANDARD 2 (CSP200)
STANDARD 3 (TRITON)

OPERATION SUCCESSFUL!
CANCEL TO RETURN

5.4.4 SYSTEM SETUP

This system setup menu contains SET CLOCK, CHANGE PASSWORD, SPEAKER VOLUME, MODEM SETUP, MODEM TEST, ISO #1,#2,#3 ENABLE /DISABLE and RMS RING COUNT. Pressing function key beside menu button goes to next screen. To go back to the previous screen, just press the <Cancel> key in pinpad.

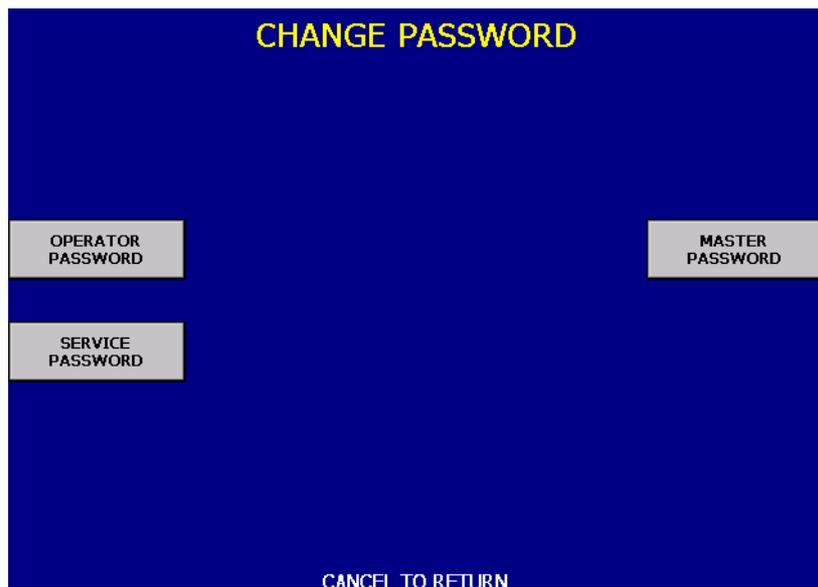


5.4.4.1 SET CLOCK

You can set system date and time by pressing YEAR, HOUR, MONTH, MINUTE, DAY button. If you press each menu, the cursor will be positioned and you can change the value. This value is saved by pressing <ENTER> button, on the other hand, To go back to the previous screen, just press the <Cancel> key in pinpad.



5.4.4.2 CHANGE PASSWORD



1) OPERATOR PASSWORD

This menu enables you to change current operator password as new one. To change the current password, you should input the proper one in current password field. The factory default value of operator password is "111111".

OPERATOR PASSWORD

PLEASE INPUT THE CURRENT OPERATOR PASSWORD
AND A NEW OPERATOR PASSWORD

CURRENT PASSWORD

NEW PASSWORD

CONFIRM PASSWORD

CANCEL TO RETURN

2) MASTER PASSWORD

This menu enables you to change current master password as new one. To change the current password, you should input the proper one in current password field. The factory default value of master password is "555555".

MASTER PASSWORD

PLEASE INPUT THE CURRENT MASTER PASSWORD
AND A NEW MASTER PASSWORD

CURRENT PASSWORD

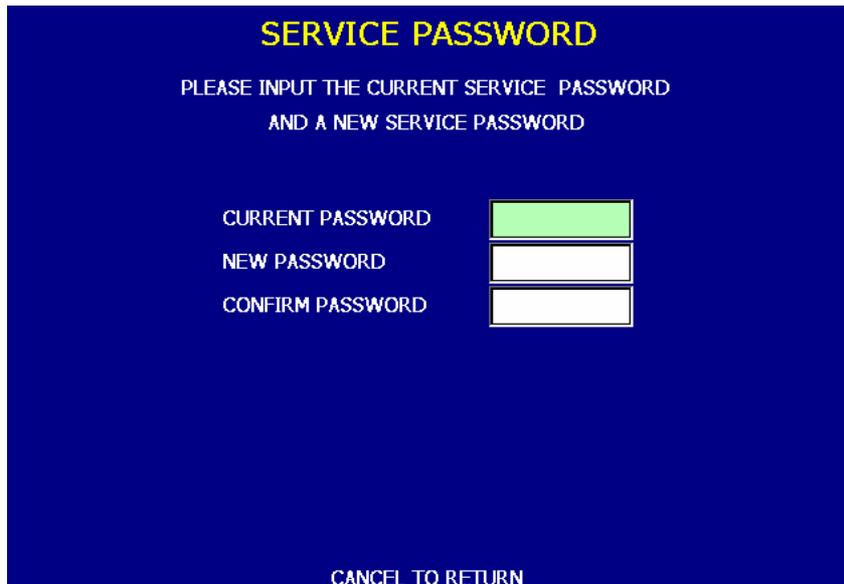
NEW PASSWORD

CONFIRM PASSWORD

CANCEL TO RETURN

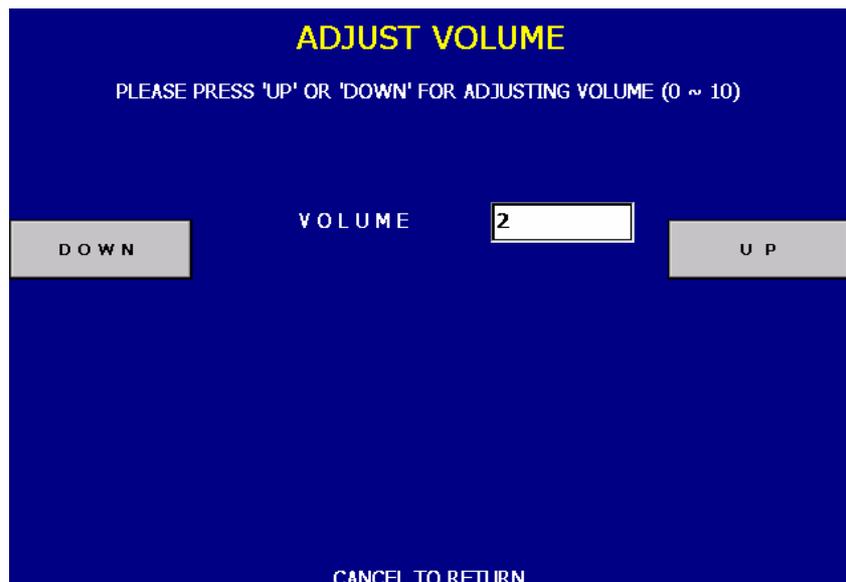
3) SERVICE PASSWORD

This menu enables you to change current service password as new one. To change the current password, you should input the proper one in current password field. The factory default value of service password is "222222".



5.4.4.3 SPEAKER VOLUME

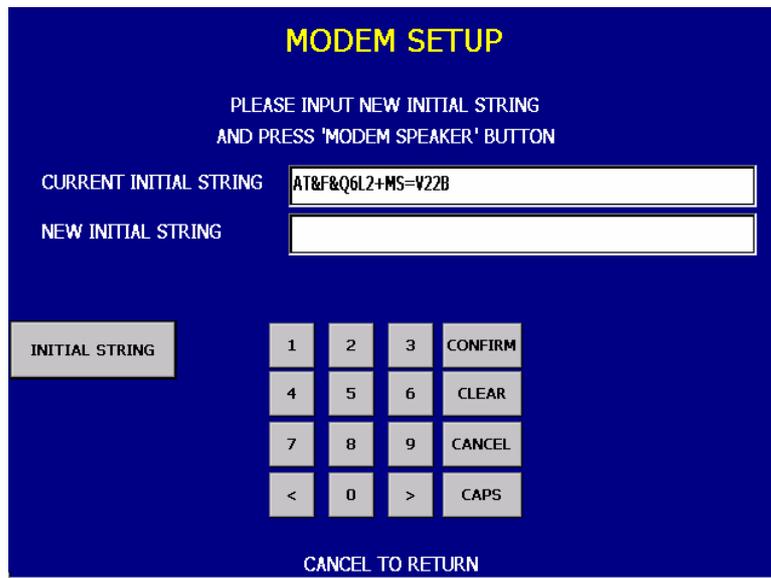
The SPEAKER VOLUME function is used to set speaker volume by using DOWN and UP buttons. Once the button is pressed, ATM beeps.



5.4.4.4 MODEM SETUP

The INITIAL STRING function is used to edit the modem initial string when the special circumstance is required by a nonstandard modem initial string. Before editing the initial string, consult with service personnel.

The MODEM SPEAKER function is used to change the speaker out on or off at the modem dialing connecting. Service personnel can check the dialing if it is normal or abnormal with this function in the speaker out on state. The factory default is "OFF"



5.4.4.5 MODEM TEST

This function is used to set the telephone number and used to perform the modem reset test. Character, number or special symbol can be input up to 1~20 digits by using '<' or '>'. This value is saved by pressing<ENTER> button, on the other hand, To go back to the previous screen, just press the <Cancel> key in pinpad.

MODEM TEST

PLEASE INPUT A TELEPHONE NUMBER
AND PRESS 'MODEM TEST' BUTTON

HOST PHONE #

TELEPHONE NUMBER MODEM TEST

CANCEL TO RETURN

5.4.4.6 ISO #1, #2, #3 EN/DISABLE

This function is used to set the card track to be used in transaction. If you press each button, one of ENABLE/DISABLE will be changed. To save it, press the 'ENTER' button on pinpad. Note that only ISO2 is supported.



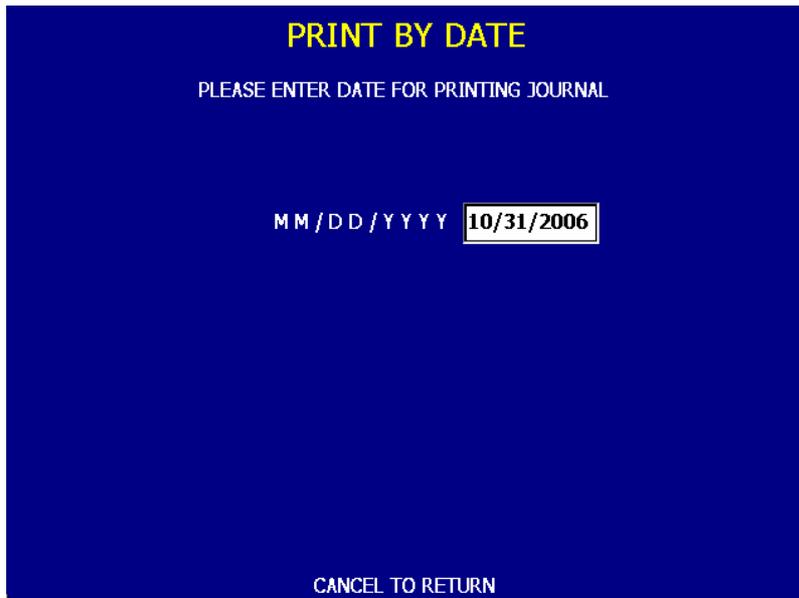
5.5 VIEW JOURNAL

You can see the various kinds of journal date by using each field and button. The VIEW function is used to display the Journal data on the customer screen. The Journal record will be displayed on the screen. Use PREV or NEXT button to show just one record before and after, Besides, you can check up journal data you would try to search by using SEARCH button and just print out the current journal by pressing PRINT THIS button.

The screenshot shows a software interface titled "E-JOURNAL" with a dark blue background. At the top, the title "E-JOURNAL" is displayed in yellow. Below the title, there are six input fields arranged in two columns. The left column contains "TODAY" (10/31/2006), "TOTAL COUNT" (2), and "DATE & TIME" (10/31/2006 01:49:40). The right column contains "START INDEX" (0001), "END INDEX" (0002), and "CURRENT INDEX" (0002). Below these fields is a central area labeled "JOURNAL DATA" which contains the text "2006/10/31 01:49:40" and "[Change into operator mode]". Surrounding this central area are several buttons: "PREV" and "NEXT" are positioned above the data; "PRINT BY DATE", "PRINT BY INDEX", and "PRINT THIS" are on the left; "SEARCH" and "CANCEL" are on the right. At the bottom center, the text "CANCEL TO RETURN" is visible.

5.5.1 PRINT BY DATE

Journal can be printed out to the receipt for record keeping purpose. The PRINT BY DATE function is used to print out during some periods when you want to know journal data. If you want to stop printing, you may stop it by pressing <CANCEL> key.



5.5.2 PRINT BY INDEX

The PRINT BY INDEX function is used to print out journal data within index range you want to know it. Enter the current index, index from, index to and press ENTER key. Then the data you request is printed.

PRINT BY INDEX

INDEX FROM	CURRENT INDEX	0002	INDEX TO
	INDEX FROM		
	INDEX TO		

CANCEL TO RETURN

5.5.3 SEARCH JOURNAL

This is a menu to search journal by inputting date or index. If you want to search by date, press DATE button and input the format like MM/DD/ YYYY. And if you want to search by index, press INDEX NO. button and enter the index.

Searched journal will be transferred to view journal when clicking ENTER button.

If you want to go back the previous screen, just press the <Cancel> key.

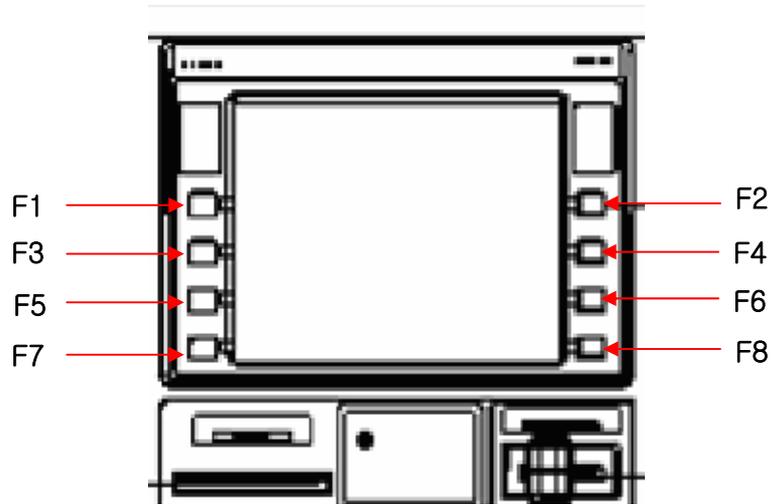
SEARCH JOURNAL

PLEASE INPUT DATE AND INDEX FOR SEARCHING JOURNAL

DATE	DATE(MM/DD/YYYY)	10/31/2006	INDEX NO.
	INDEX NO		

CANCEL TO RETURN

5.6 DIAGNOSTICS



- Function Key Location on ATM -

5.6.1 DIAGNOSTIC MAIN

- From the select menu, press 7(Diagnostics) and press ENTER.
- Wait until diagnostics menu screen appears as the below picture.



- You can easily check the status of each device like cash dispenser, card reader, receipt printer, pinpad, others.

Show the Cash Dispenser Sensor position.

And It will get back upper menu, in other words Cash Dispenser Menu if you Press F8 key.

3) DISPENSE

To Dispense bills from Cash Dispenser , just press F3 in Cash Dispenser TEST.

4) EXIT

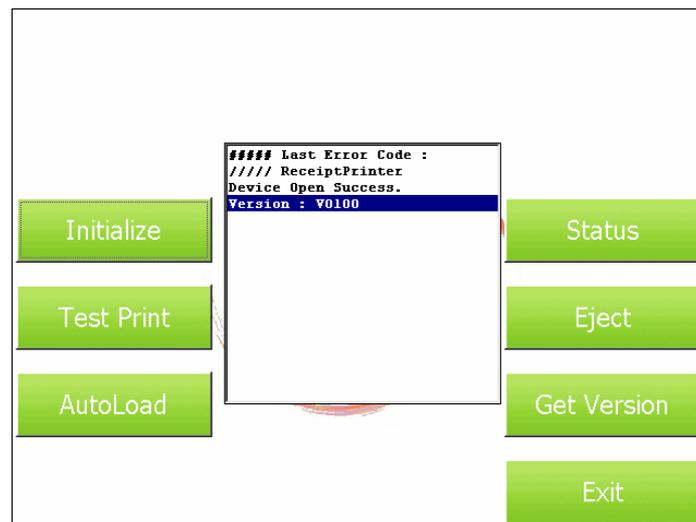
To finish Cash Dispenser , just press F8 in Cash Dispenser TEST.

And It will go back to the Main Screen.

5.6.1.2 TEST RECEIPT PRINTER

- On the diagnostics menu, press F2 "Receipt Printer" button.

Wait until Receipt Printer menu screen appears as the below picture.



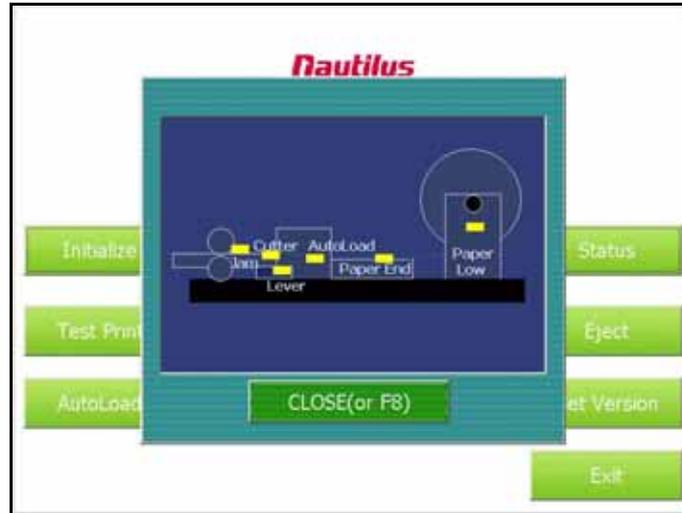
1) INITIALIZE

To initialize Receipt Printer, just press F1 in Receipt Printer TEST.

2) STATUS

To Status Receipt Printer, just press F2 in Receipt Printer TEST.

Wait until Receipt Printer Status screen appears as the below picture.



This screen shows you the position of sensor on Receipt Printer. And It will go back to Receipt Printer Menu if you press F8.

3) TEST PRINT

To Test Print Receipt Printer, just press F3 in Receipt Printer TEST.

4) TEST EJECT

To Eject Receipt Printer, just press F4 in Receipt Printer TEST.

5) TEST AUTOLOAD

To automatically load Receipt Printer, just press F5 in Receipt Printer TEST.

6) TEST GET VERSION

To Get Version about Receipt Printer, just press F6 in Receipt Printer TEST.

7) EXIT

To finish testing about Receipt Printer, just press F8 in Receipt Printer TEST.

And It will get back Main Screen.

5.6.1.3 TEST CARDREADER

On the diagnostics menu, press F3 “Card Reader” button.
Wait until Card Reader menu screen appears as the below picture.



1) TEST READ

To read card on card reader, just press F7 in Card Reader TEST.

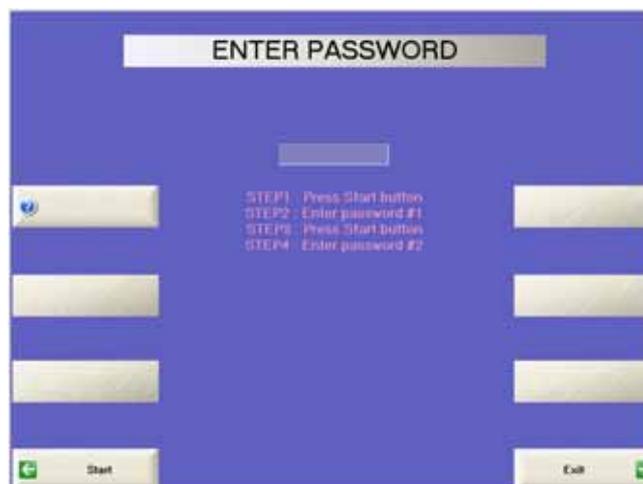
2) EXIT

To finish testing about Card Reader, just press F8 in Card Reader TEST.

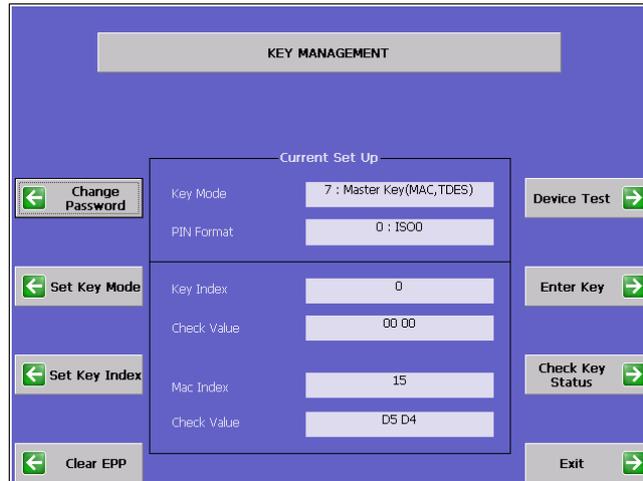
And It will go back to Main Screen.

5.6.1.4 TEST PINPAD

On the diagnostics menu, press F4 “PinPad” button.
Wait until PinPad menu screen appears as the below picture.



- Press 'Start' button and enter the 1st password to execute program.
(Default password is '000000')
- Press 'Start' button and enter the 2nd password to execute program.
(Default password is '000000')
- If you enter 2 passwords correctly, program would start like the screen below.



1) Device Test

To confirm each key is properly working, first enter Device Test mode. You can know easily each value will be displayed by pressing one by one.

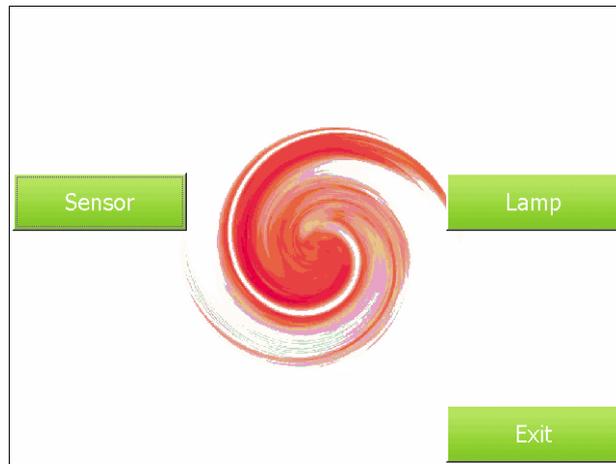
2) EXIT

To finish testing PinPad, just press F8 in PinPad TEST. And It will get back Main Screen.

5.6.1.5 TEST OTHERS

On the diagnostics menu, press F5 "OTHERS" button.

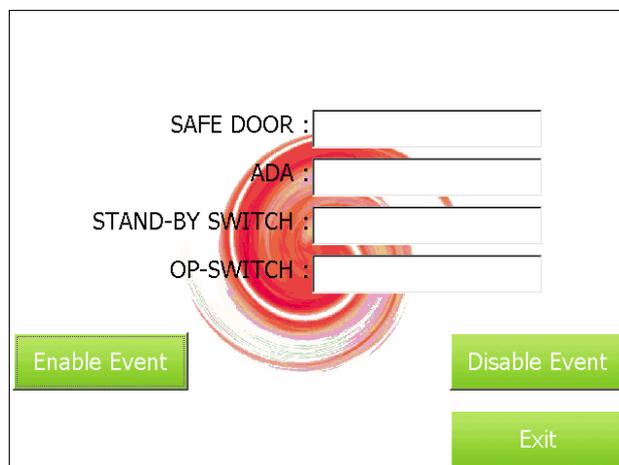
Wait until OTHERS menu screen appears as the below picture.



1) TEST SENSOR

On the OTHERS menu, press F1 "Sensor" button.

Wait until Sensor menu screen appears as the below picture.



1-1) ENABLE EVENT

To check the status of sensor, just press F5 in Enable Event Button.

1-2) DISABLE EVENT

To turn the sensor to be disable, just press F6 in Disable Event Button.

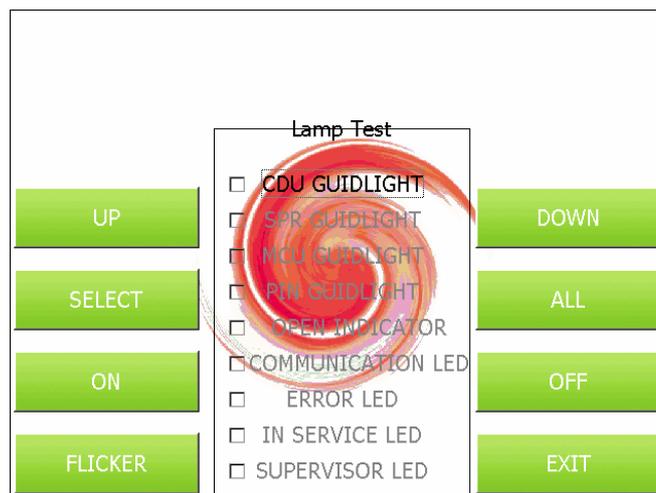
1-3) EXIT

To finish testing sensor, just press F8 in Sensor TEST. And It will get back OTHERS Screen.

2) TEST LAMP

On the OTHERS menu, press F2 "Lamp" button.

Wait until Lamp menu screen appears as the below picture.



2-1) UP.DOWN.SELECT.ALL

To check the status of lamp, It can select just press F1 ~ F4.

2-2) ON

To turn the lamp on, just press F5 in ON Button

2-3) OFF

To turn the lamp off, just press F6 in OFF Button.

2-4) FLICKER

To turn the lamp to blink, just press F7 in FLICK R Button

2-5) EXIT

To finish testing lamp, just press F8 in Lamp TEST. And It will get back OTHERS Screen.

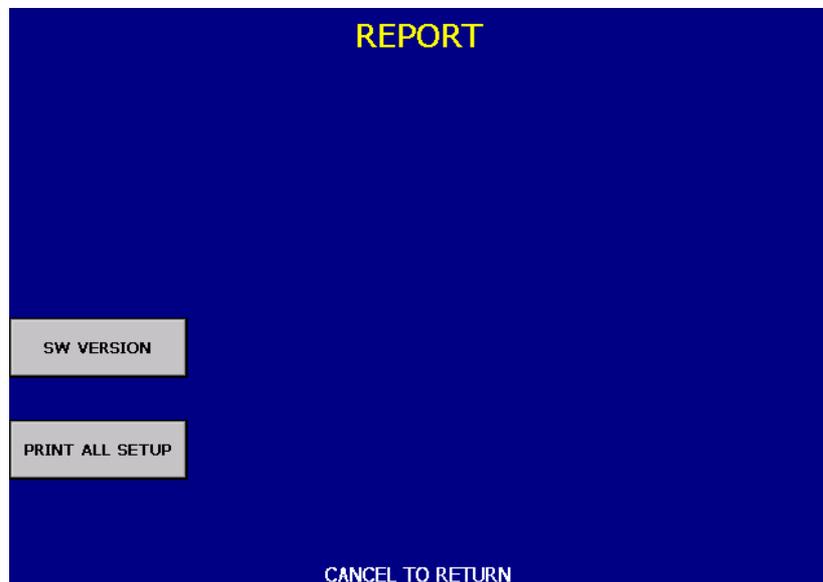
5.6.1.6 EXIT DIAGNOSTIC

On the diagnostics menu, press F8 "EXIT" button to exit this mode completely.

And then ATM will reboot in seconds and welcome screen will be displayed automatically.

5.7 REPORT

This report menu consists of 6 sub-menus. You can print out all information regarding each device as well as system value set up. If you want to go back the previous screen, just press the <Cancel> key.



5.7.1 SW VERSION

This menu shows each software version. Application, SPR ROM, CDU ROM, SPR SP, CDU SP, MCU SP and PIN SP's versions will be displayed.

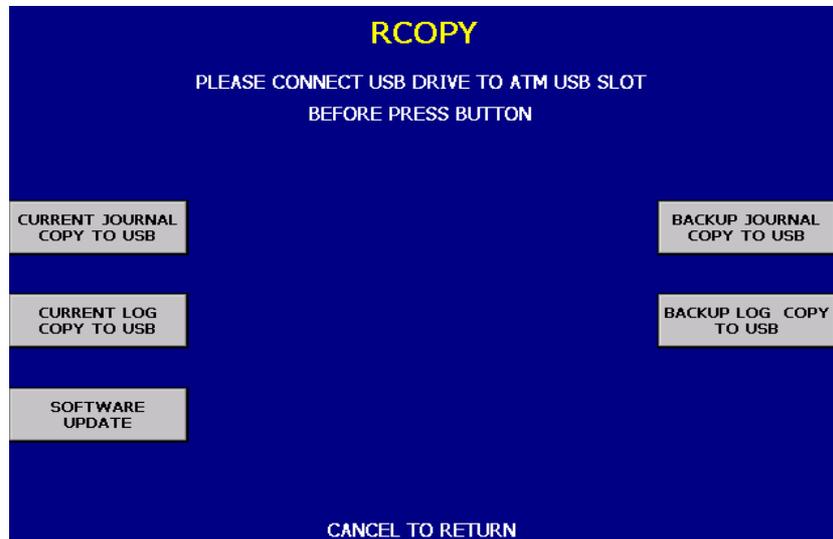
SW VERSION		
		DATE
		10/31/2006
AP/OS	SP	EP
AP	CDU	CDU
V01.00.07	V 05.02.24	CDUU1;V010206
MWI	JPR	JPR
V06.00.03	N/A	N/A
VDM	SPR	SPR
N/A	V 05.00.20	V010003
RMS	MCU	MCU
N/A	V 05.00.05	V 01.00.00
OS	PIN	PIN
V01.00.01	V 05.00.12	V03.02.01
	CAM	CAM
	N/A	N/A
	SIU	SIU
	V 05.00.08	N/A
	UPS	UPS
	N/A	N/A
	VFD	VFD
	N/A	N/A
PRINT		CANCEL TO RETURN
		CANCEL

•PRINT ALL SETUP List

NO	ITEM	DESCRIPTION	REMARKS
1	Date	CURRENT DATE & TIME	
2	HOST PROCESSOR	HOST PROTOCOL TYPE	
3	EOT CUSTOMER DEFINED	EOT CHECK MODE	
4	FORMAT OPTION	MESSAGE FORMAT OPTION	
5	VERSION INFORMATION	AP / SP / EP VERSION	
6	SYSTEM SETUP	CURRENT CASSETTE REJECT	
		CURRENT BILLS	
		SERIAL NUMBER	
		SPEAKER VOLUME	
		ISO#1 READ OPTION	
		ISO#2 READ OPTION	
		ISO#3 READ OPTION	
		LANGUAGE MODE	
7	CUSTOMER SETUP	RECEIPT HEADER INFO	
		RECEIPT ADDRESS INFO	
		RECEIPT PHONE INFO	
		SURCHARGE OWNER	
		SURCHARGE MODE	
		SURCHARGE AMOUNT	
		BIN LIST	
8	TRANSACTION SETUP	DISPENSE LIMIT	
		DENOMINATION	
		FAST CASH	
		LOW CURRENCY CHECK	
		NON CASH OPTION	
9	HOST SETUP	KEY MODE	
		MASTER KEY INDEX	
		MKEY LIST	
		HOST PHONE NUMBER	
		RMS OPTION	
		TERMINAL ID	
		ROUTING ID	
		MESSAGE SEND INTERVAL	
		TRIAL DATA TOTAL INTERVAL	
		MODEM INITIAL STRING INFO	

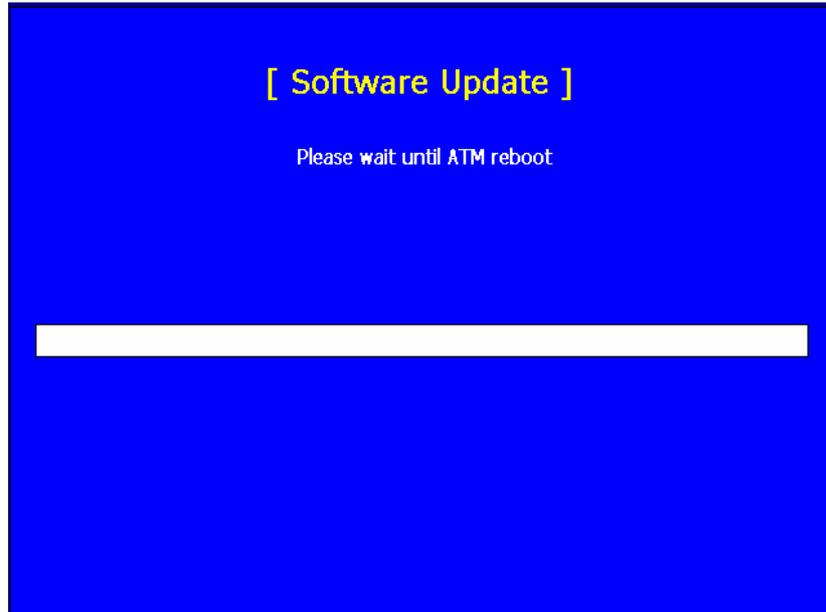
5.8 RCOPY(Remote Copy)

You can back up a various kinds of journal data and log data you want in this menu. Please make sure that USB driver is connected into USB slot before pressing the button. When CURRENT JOURNAL RCOPY or LOG RCOPY button is selected, this data will be sent into USB flash drive. In the same way, you can get the data you want about BACKUP RCOPY or LOG RCOPY. When SOFTWARE INSTALLATION is entered, it will change to the screen of SOFTWARE INSTALLATION. This is because Software Update functionality is supported at RCOPY menu. When RCOPY is submitted the files in USB flash drive will be copied to the ATM. If you want to go back to the previous screen, just press the <Cancel> key.



5.8.3 SW UPDATE

This is a menu to update software. Please make sure that new software is included in USB driver and is connected into USB slot before implementing it. When SW UPDATE button is selected, new software in USB driver is transferred to a directory of ATM and ATM will start to reboot automatically. If you want to go back the previous screen, just press the <Cancel> key.



5.9. KEY MANAGEMENT

5.9.1 Start Screen

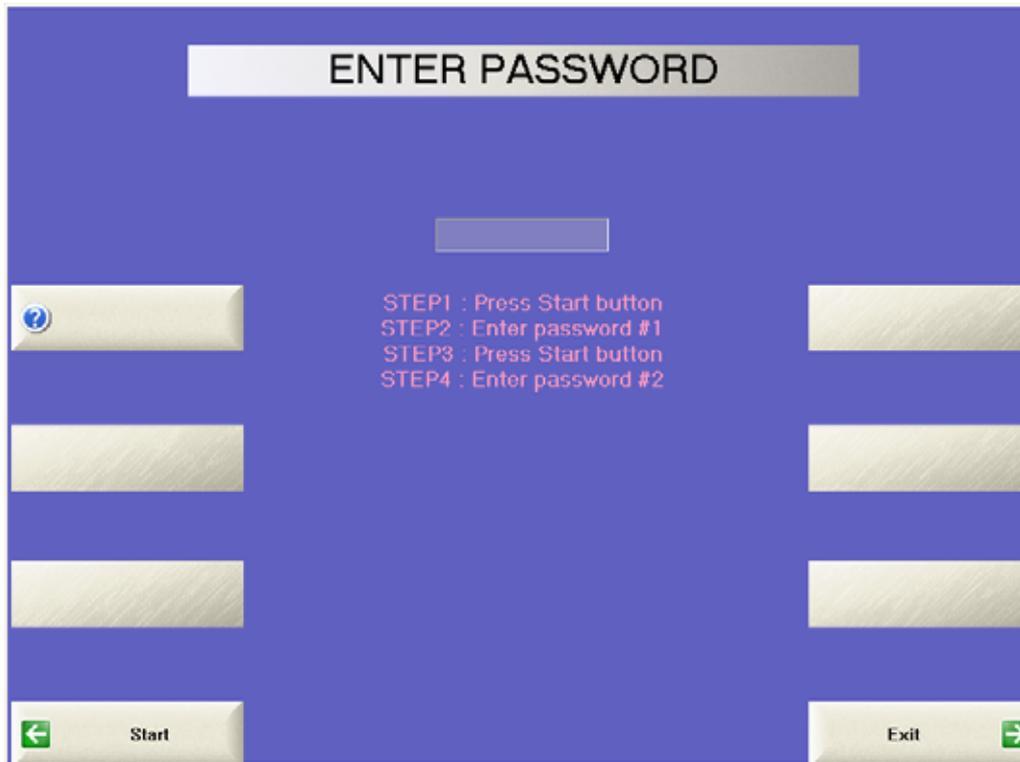


Fig. F.1 Start Screen (Enter Password)

- From the Supervisor Menu press Diagnostics. From Diagnostics select Pinpad
- Press 'Start' button and enter the 1st password to execute program.
(Default password is '000000')
- Press 'Start' button and enter the 2nd password to execute program.
(Default password is '000000')
- If you enter 2 passwords correctly, program would start like below screen.

5.9.2 Main Screen

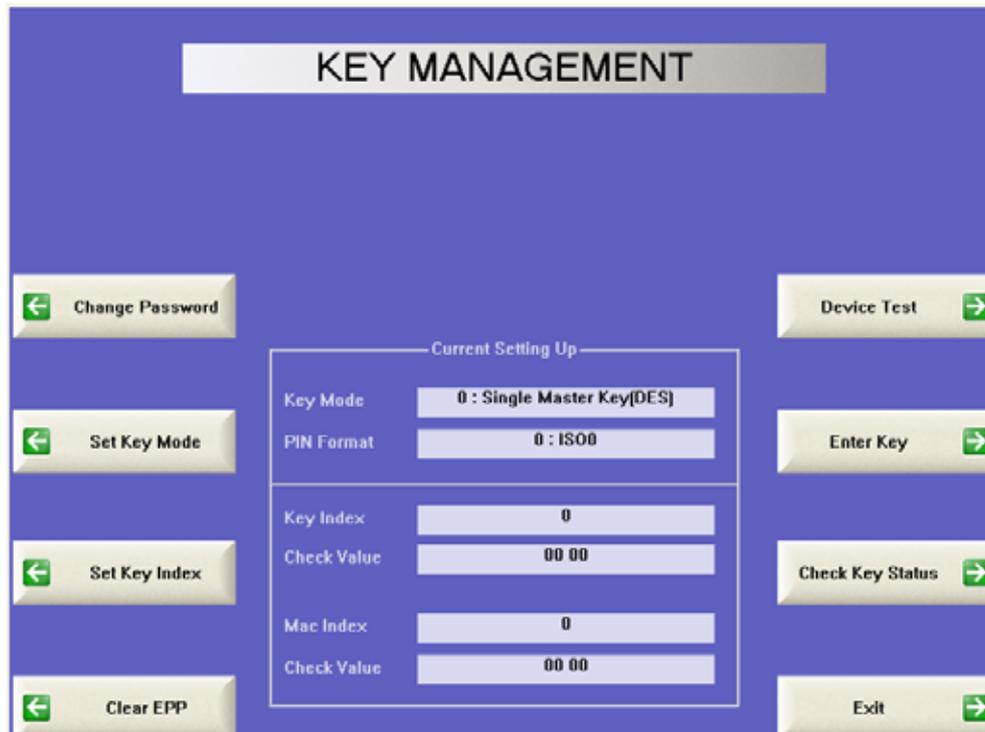


Fig. F.2 Main Screen

- Change Password
Change the password by executing “Change Password”;
- Set Key Mode
This ATM supports the capability for DES (Single-DES, Dual-DES, Triple-DES, MAC, and Unique Key). You can select DES mode by entering this function.
- Set Key Index
You can enter multiple master keys and have to select one of them. For security issue, DP(Data Processor) may change key index when they need to change master key.
- Enter Key
The authorized persons by bank or DP(Data Processor) will enter the master key(s) with this menu.
- Clear EPP
Initialize all data in the EPP device. Injected all keys are deleted, and key mode becomes 0.
- Check Key Status
The authorized persons can verify the injected key(s) with this menu after key entry.

5.9.3 Setting the Key Mode

☞ Mapping table to enter DES keys

Number	Customer Keyboard (EPP)	DES Key
1	0	0
2	1	1
3	2	2
4	3	3
5	4	4
6	5	5
7	6	6
8	7	7
9	8	8
10	9	9
11	◀	A
12	▶	B
13	Space (Blank)	C
14	Cancel	D
15	Clear	E
16	Enter	F

Table. H-1 Key Mapping Table

☞ There are 2 kinds of customer keyboard(EPP). The difference is the position of 'Enter', 'Clear' and 'Cancel' keys. The memory is efficient that 'Enter' key is always mapped to 'F'.



Fig. F.3 Set Key Mode Screen

1. Enter mode number(See “Key Mode Information” on screen)

Mode No.	Mode Information
0	Singel Master Key(DES)
1	Dual Master Key(DES)
2	Unique Key(DES)
3	Master Key(TDES)
4	Unique Key(TDES)
5	Single Master(Mac, DES)
6	Unique Key(Mac, DES)
7	Master Key(Mac, TDES)
8	NDC(DES)
9	NDC(TDES)
10	T-DES, T-MAC

2. Enter "PIN Format" (Default is "0")
 - 0: ISO0
 - 1: NCR/DIEBOLD
 3. Enter 'Part Number" (Default is "0" and do not need consider this field.)
 4. Enter "PIN Pad Data" (0~F)
 5. Submit by touching "EXECUTE". If submission is successful, "EXECUTION SUCCESS" message will be displayed on the screen. If not, "EXECUTION FAILURE" message will be displayed.
 6. If you want to see help, press 'Help" button.
-  To move the field after entering data, touch "Move Field"

5.9.4 Key Entry



Fig. F.4 Enter Master Key Screen

1. Enter "1" at "Part number" field. (Part A : 1, Part B : 2)
 - ⇒ The cardholders can not make the financial transaction until the entry of Part A and Part B is finished.
 - ⇒ The way how to enter Part B data is same to Part A except Part number "2"
2. Enter the Key Index(0~11).
3. Submit by touching "Execute" button.
4. "Input Key" field will be activated on the screen with a cursor blinking. Enter the left half of the Part A key.
5. The message, "PART A Key (LEFT) input finished! Please press execute button to verify." will be displayed on the screen. Submit by touching "Execute" button.
6. The message, "Verify Key" will be displayed on the screen with a cursor blinking. Enter the left half of the Part A key again.
7. The message, "Part A Key (LEFT) input success!" will be displayed on the screen followed by "Press the execute button to input Part A key (RIGHT)". Submit by touching "Execute" button.
8. "Input Key" field will be activated on the screen with a cursor blinking. Enter the right half of the Part A key.
9. The message, "PART A Key (RIGHT) input finished! Please press execute button to verify." will be displayed on the screen. Submit by touching "Execute" button.
10. The message, "Verify Key", will be displayed on the screen with a cursor blinking. Enter the right half of the Part A key again.
11. The message, "Part A Key (RIGHT) input success!" will be displayed on the screen. Submit by touching "Execute" button.
12. Exit by touching "Exit" button.

5.9.5 Confirmation of the entered keys

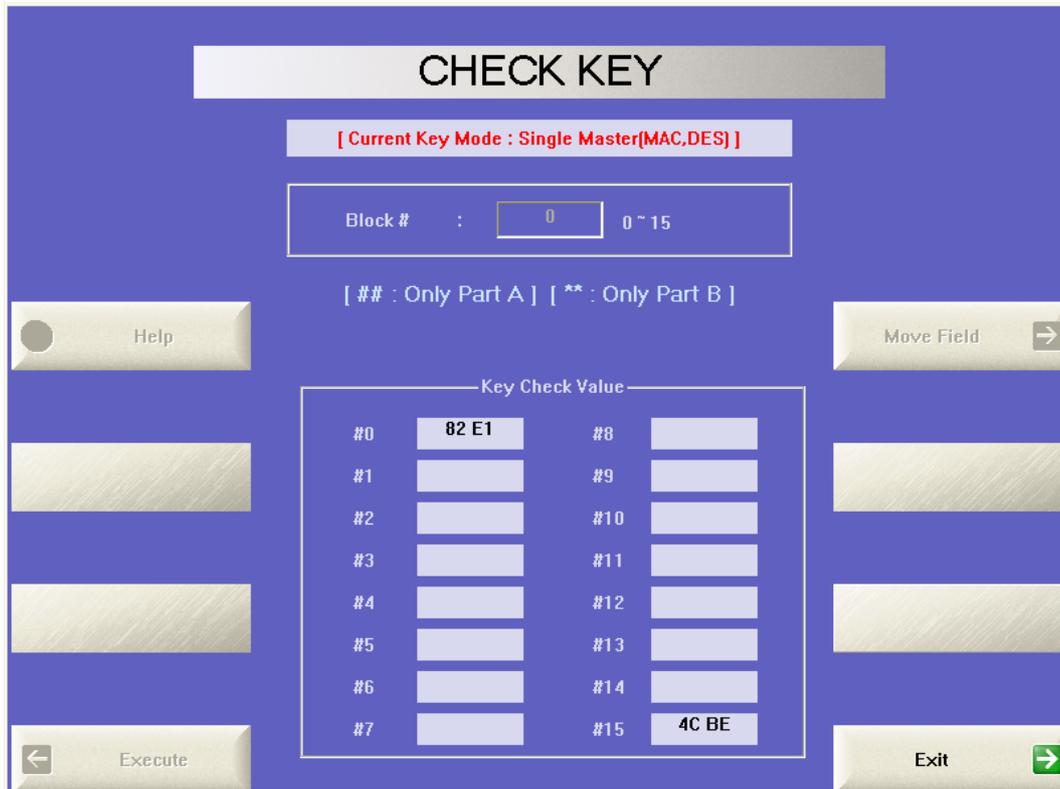


Fig. F.5 Check Key Screen

From KEY MANAGEMENT select CHECK KEY STATUS.

Use the Check Key menu to determine which index keys (or partial keys) have been installed on. As shown above, there are full keys installed on positions #0 and #15. Only the index which has been set in the Key Index menu will be used, the other keys are only stored.

If an authorized person has entered a partial key (only his/her half) then the ##### or **** is used to tell you which partial key was entered. Once both keys have been properly entered a check digit will be assigned to the index to let you know both halves have been installed.

5.9.6 Change password for execution program

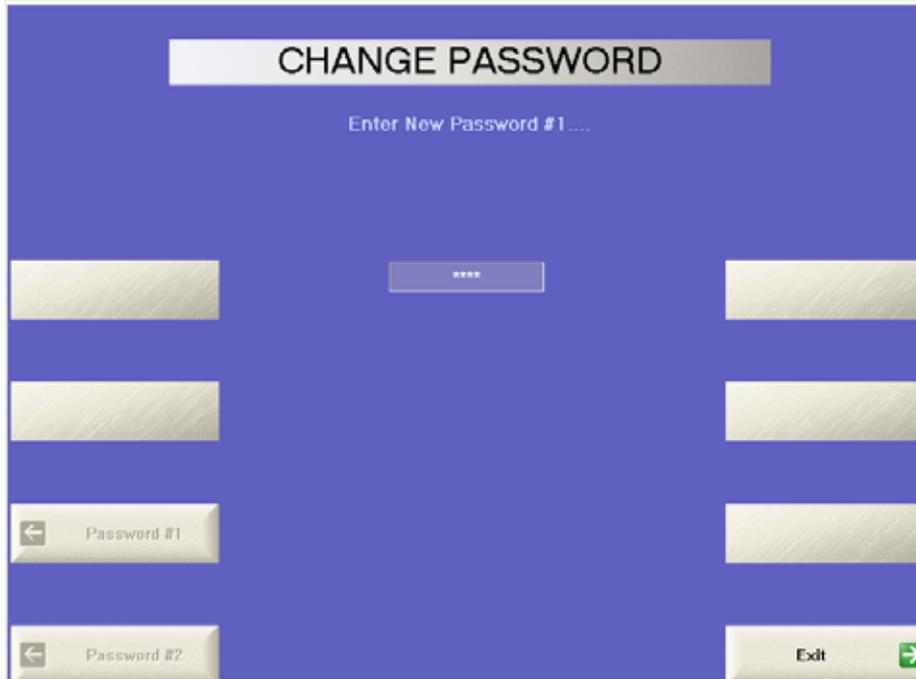


Fig. F.6 Change Password Screen

If you want to change password for Key Management, press 'Change password' button in the main screen. And press 'Password #1' and "Password #2" button to change password;.

1. DES Key Entry

To make card holder's transaction, DES key entry is necessary.

- **Entering DES Key**



1) Press "Key Management" button.
Key Management Starting Screen will be displayed. Enter 2 passwords (Default password is '000000')

Fig. H-14 Key Management Starting Screen

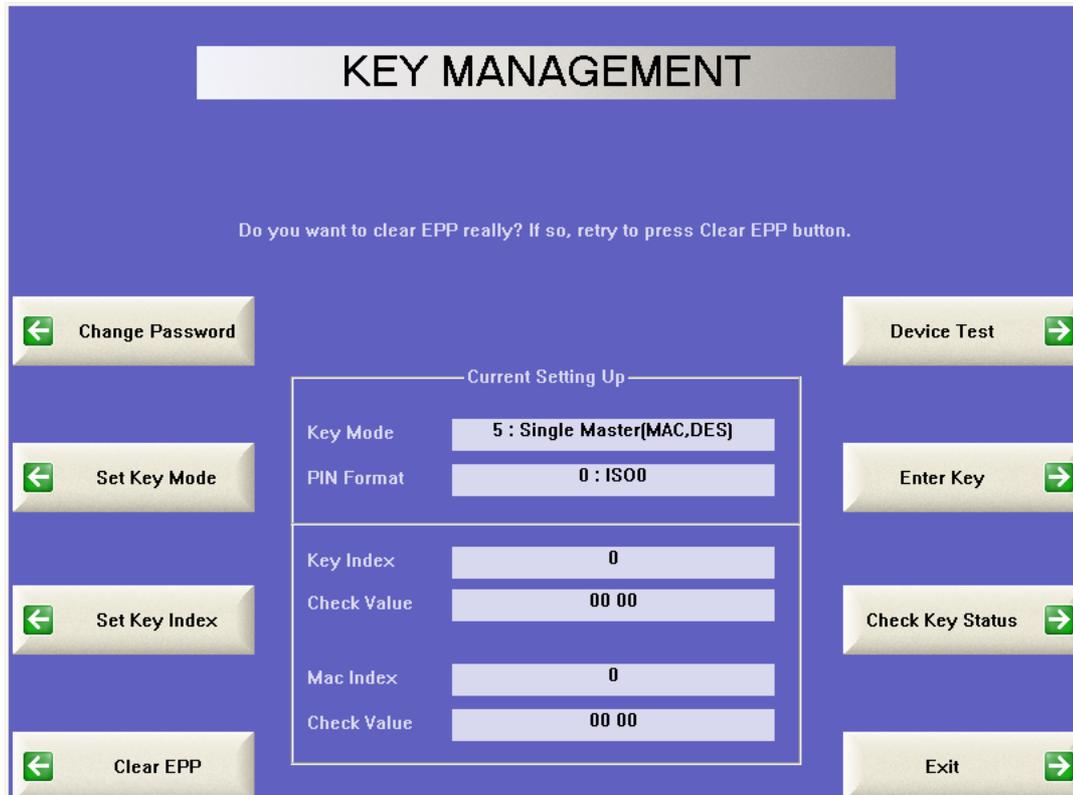


Fig. H-15 Key Management Main Screen

- ☞ Device Test : You can test the normal state of customer keyboard (EPP) by pressing keys. The key value will be displayed on screen whenever you press a key.
- ☞ Set Key Mode : Before DES key entry, you have to enter some values (key mode and PIN format) at this screen.
- ☞ Set Key Index : You can enter multiple master keys and have to select one of them. For security issue, DP(Data Processor) may change key index when they need to change master key.
- ☞ Enter Key : After key mode setting at Set Key Mode, the only authorized persons can enter keys
- ☞ Check Key Status : The authorized persons can verify the key enter after key entry
- ☞ Clear EPP : All data in EPP will be cleared.

- DES Key Mode Setting

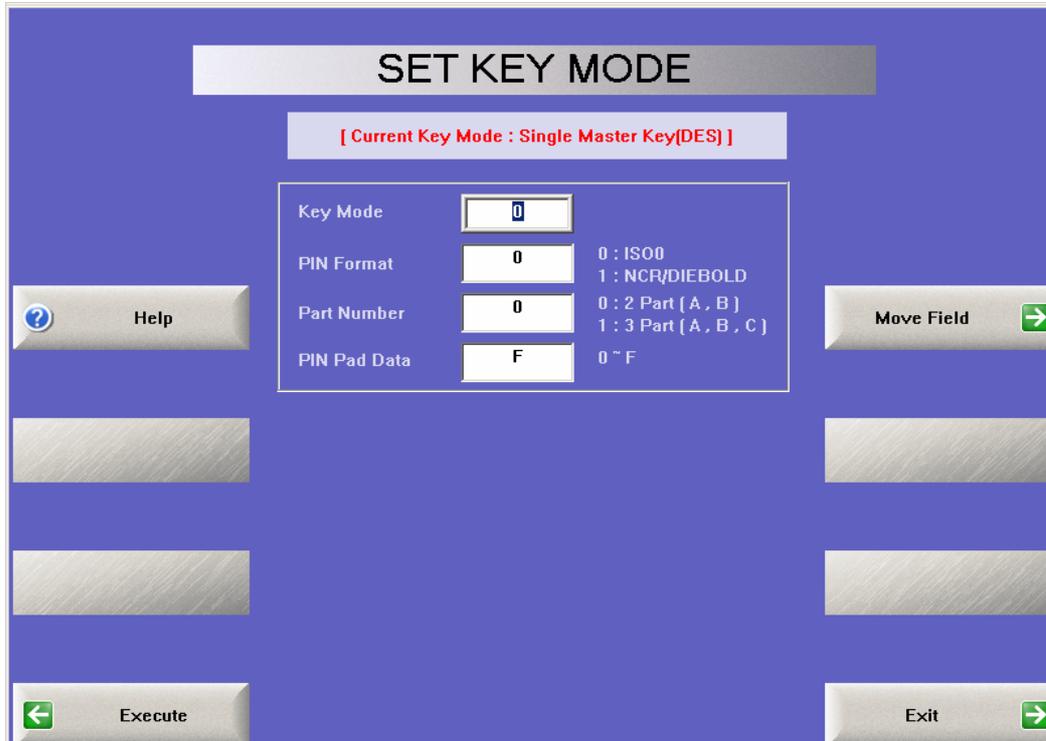
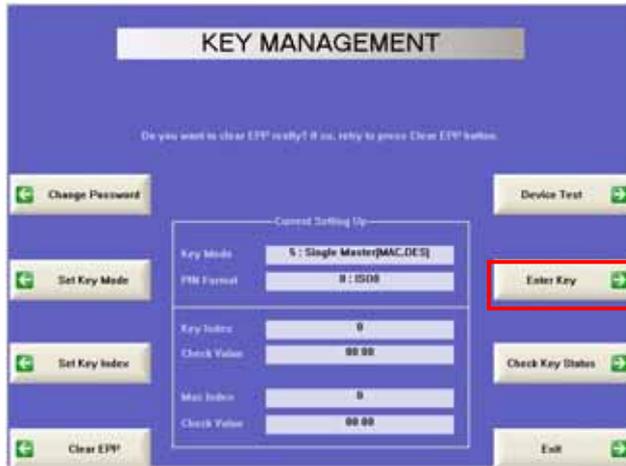


Fig. H-16 DES Key Mode Setting Screen

- 1) Enter Key Mode, PIN Format and PIN Pad Data.
- 2) Submit by pressing “Execute” button
- 3) Return to main screen by pressing “Exit” button

- ☞ “Key Mode” defines the type of DES key (8 : Single DES, 9 : Triple DES).
- ☞ “PIN Format” defines the type of algorithm (0 : ISO-0, 1 : Diebold). Nautilus Hyosung recommends strongly no changes. Default value is “0”.
- ☞ “PIN Pad Data” is a padding data in EPP itself. Nautilus Hyosung recommends strongly no changes. Default value is “0”.

● DES Key Entry



1) Select “Enter Key”, “Master Key”, “Unique Key”, “Mac Key sequentially

☞ Master Key : Single DES
 Unique Key
 Mac Key

☞ Master Key (Triple) : Triple DES
 Unique Key (Triple)
 Mac Key (Triple)



2) Enter “Part Number”, “Block #”, “Key Index” and “Execute” button following Part number “1” or “2”.

☞ ‘1’ : Part A
 ☞ ‘2’ : Part B



Fig. H-17 DES Key Entry Screen

3) Enter 16 left half digits for Part A using customer keyboard(EPP) and press “Execute” button to submit.

☞ Re-entering of the same values will be requested to verify that you entered correctly.

4) Enter 16 right half digits for Part A using customer keyboard(EPP) and press “Execute” button to submit.

5) Enter Part B keys with same manner to Part A.

● Verification of DES Key Entry



Fig. H-18 Verification Screen of Key Entry

1) Go into Verification screen by pressing “Check Key Status” button on Key Management Main Screen.

The setup data will be displayed.

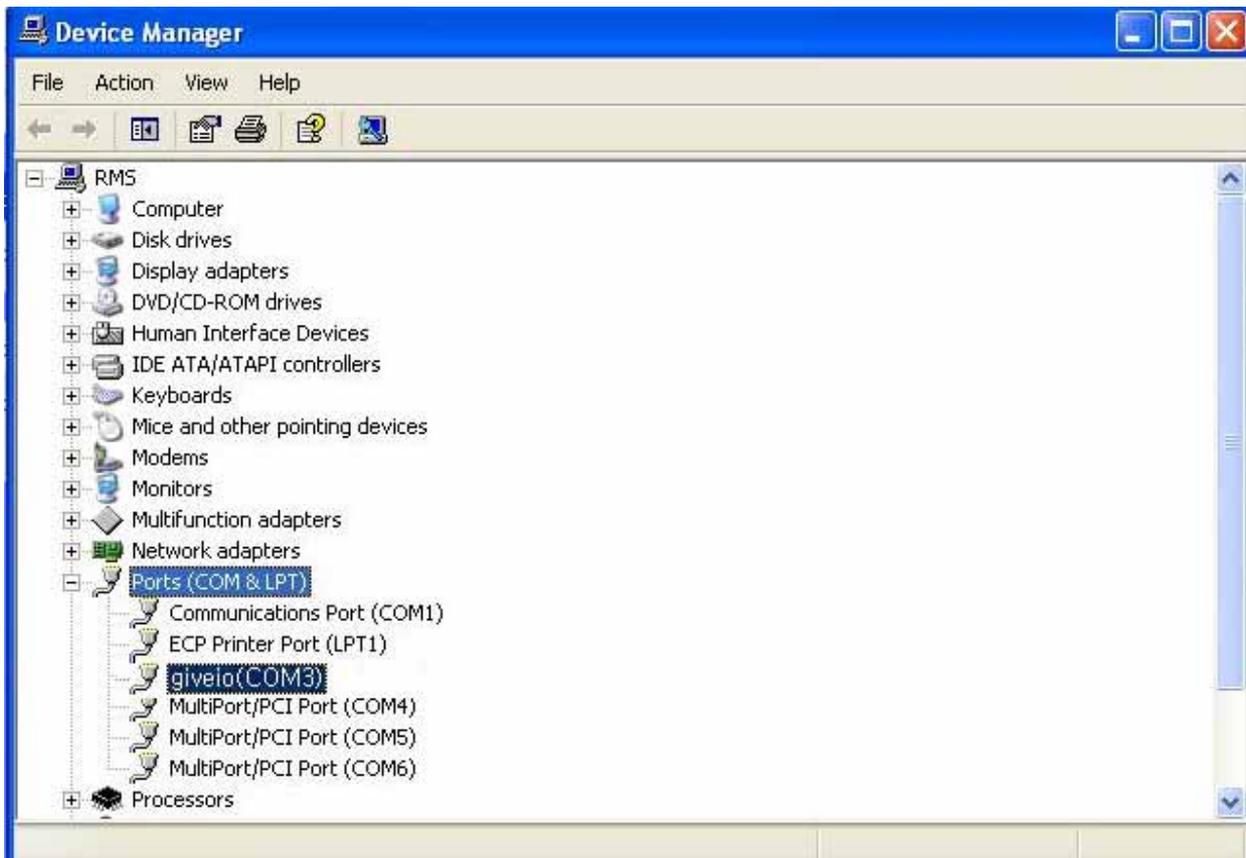
5.10. Software Installation

5.10.1 How to download Boot-Loader and OS

5.10.1.1 Boot-Loader Clean Install & Upgrades Download

1) COM Port Setup for connecting ATM system Port to Your PC

- a. Copying "giveio.sys" file in "GiveIO" folder to inside of Window Operating system directory C:\WINNT\system32\drivers. (Reference : RelNote_JFlashmm.htm)
- b. Designating giveio.inf file by the execution of new hardware and completing giveio port installation on Control Panel menu of Windows.
- c. After completion of giveio port installation & opening of equipment controller, it is identified that giveio port is



2) Boot-Loader Downloading by WinCE Device

- a. Moving Boot eboot.nb0 file to attached folder (It is okay when extension is nb0 regardless of file name.)
- b. Connect JTag cable in order to download and power on the machine.
JTAG Emulators are real-time, transparent in-circuit emulators based on the JTAG boundary scan port. JTAG is used solely for fast data transfer purposes. See appendix about JTAG circuit.
- c. Execute "armdos" on DOS command windows.
- d. Input the arrangement command "mm" on armdos command window.

File Name	Size
armdos	2KB
eboot.nb0	128KB
Flash_18_2_32.dat	4KB
flash_891c_1_16.dat	4KB
Flash_891c_2_32.dat	4KB
Flash_8810_2_32.dat	4KB
jflashmm.exe	92KB
mm.bat	1KB
pxa272.dat	54KB

```

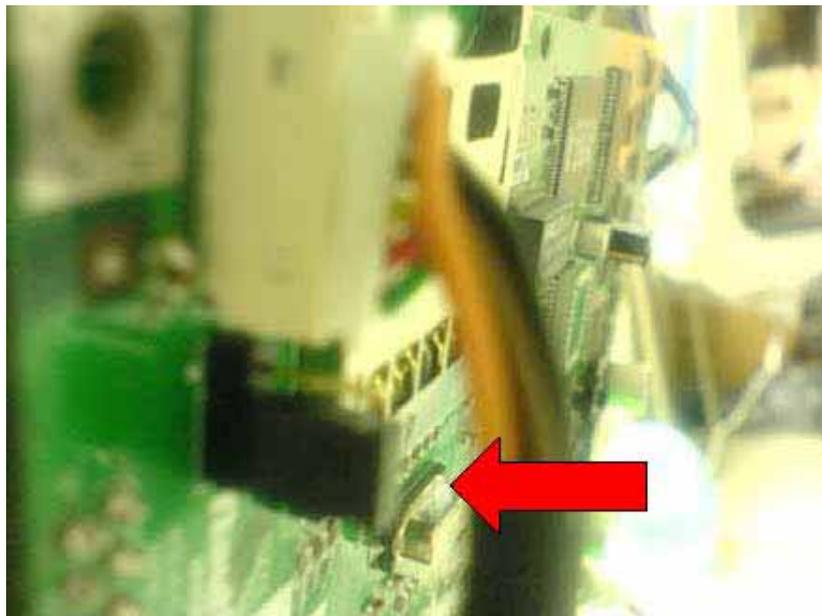
C:\WINCE500\PLATFORM\Nh270bsp\Src\Boot loader\Image>armdos
failed to read device ID for this Platform
C:\WINCE500\PLATFORM\Nh270bsp\Src\Boot loader\Image>mm
C:\WINCE500\PLATFORM\Nh270bsp\Src\Boot loader\Image>jflashmm pxa272 eboot.nb0
JFLASH Version 5.A1.007
COPYRIGHT (C) 2000 - 2003 Intel Corporation
COPYRIGHT (C) 2006 Nautilus Hyosung
PLATFORM SELECTION:
Processor=          PXA27x
Development System= Mainstone
Data Version=      1.00.001
error, failed to read device ID
check cables and power
ACT: 1111 1111111111111111 1111111111 1
EXP: **** 1001001001100101 00000001001 1
failed to read device ID for this Platform
C:\WINCE500\PLATFORM\Nh270bsp\Src\Boot loader\Image>

```

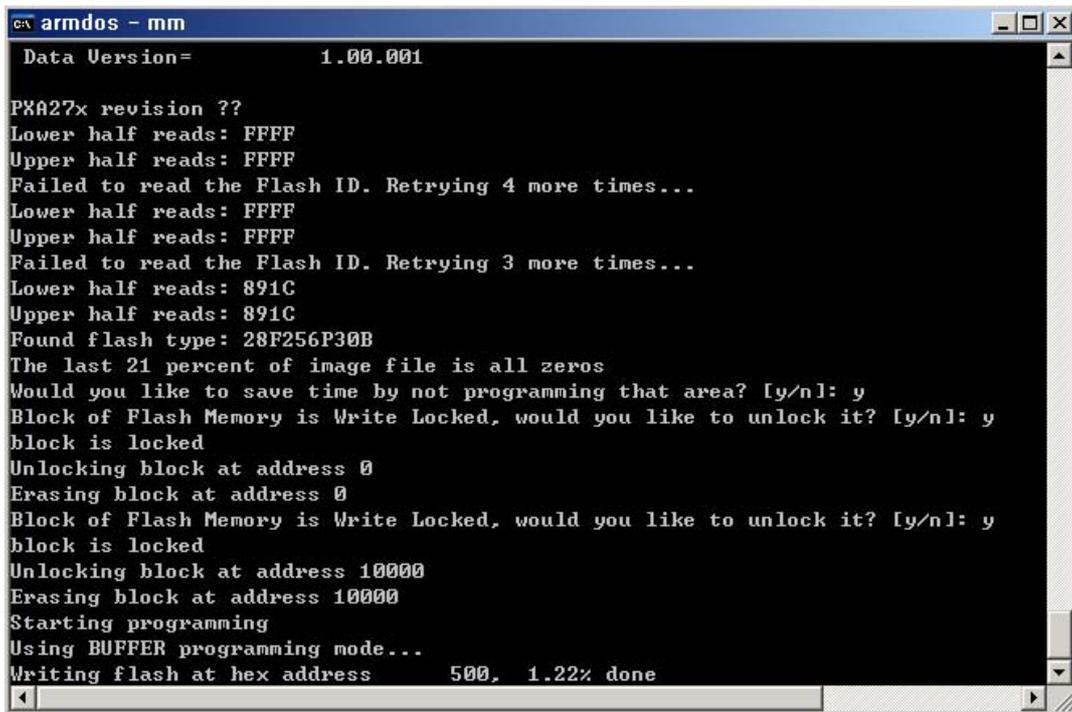
Picture) Failed case

-The reasons of execution failure message is mainly caused by cable disconnection or wrong connection of JTag entry's bottom jumper. (The successful Boot-Loader of download is executed when two jumpers are connected in the bottom.)

- e. If failed to connect, after rerunning of "mm" command, "Y" is correct answer of Y/N selecting one alternative.
- f. Confirmation of successful message displayed. In case of failure message showed after download, the retry of download should be followed.(The time required is around 6 ~ 8 minutes.)



(Jumper switch image)



```
cx armdos - mm
Data Version=      1.00.001

PKA27x revision ??
Lower half reads: FFFF
Upper half reads: FFFF
Failed to read the Flash ID. Retrying 4 more times...
Lower half reads: FFFF
Upper half reads: FFFF
Failed to read the Flash ID. Retrying 3 more times...
Lower half reads: 891C
Upper half reads: 891C
Found flash type: 28F256P30B
The last 21 percent of image file is all zeros
Would you like to save time by not programming that area? [y/n]: y
Block of Flash Memory is Write Locked, would you like to unlock it? [y/n]: y
block is locked
Unlocking block at address 0
Erasing block at address 0
Block of Flash Memory is Write Locked, would you like to unlock it? [y/n]: y
block is locked
Unlocking block at address 10000
Erasing block at address 10000
Starting programming
Using BUFFER programming mode...
Writing flash at hex address 500. 1.22% done
```

Picture) Succeeded case

(The above black screen shows downloading in progress.)

After completion of Boot-Loader's download, OS Image downloading is required by machine restarting.

5.10.1.2 BOOT LOADER DOWNLOAD USING USB PORT

- a. If previously Boot-Loader exists, downloading boot loader image is possible with USB Cable connected to your PC.
- b. ESHELL.EXE File should be executed for pointing file, "EBOOT.bin".
See 5.10.1.4 section to know how to use the program.

*** Downloading Boot-Loader to the current system requires USB cable hardware detection on
Subject 5.10.1.4**

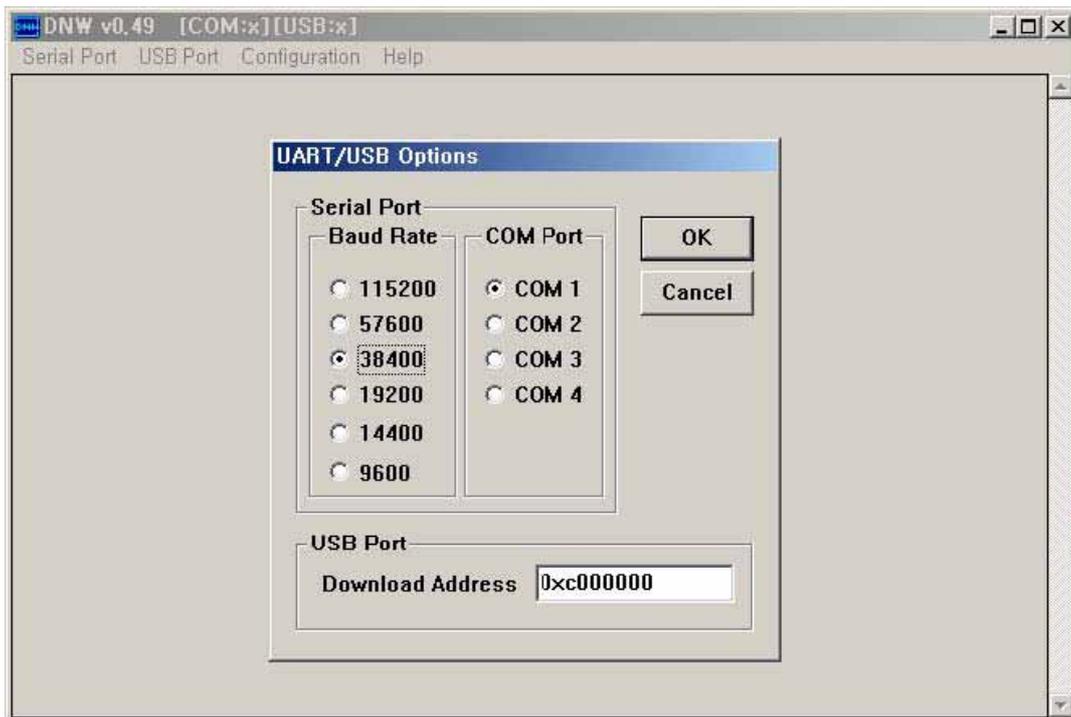
5.10.1.3. OS Image Download (SD: Secure Digital card)

- a. Copy OS Image file, nh270nk.bin, to SD card.
- b. Insert SD card into SD card slot on the board.
- c. Switch on the power. Push the two buttons located under the left bottom function key simultaneously.
- d. Choose SD card to download after the execution of Boot-Loader menu
- e. OS installation is automatically processed.
(The duration time is approximately 12 minutes.)

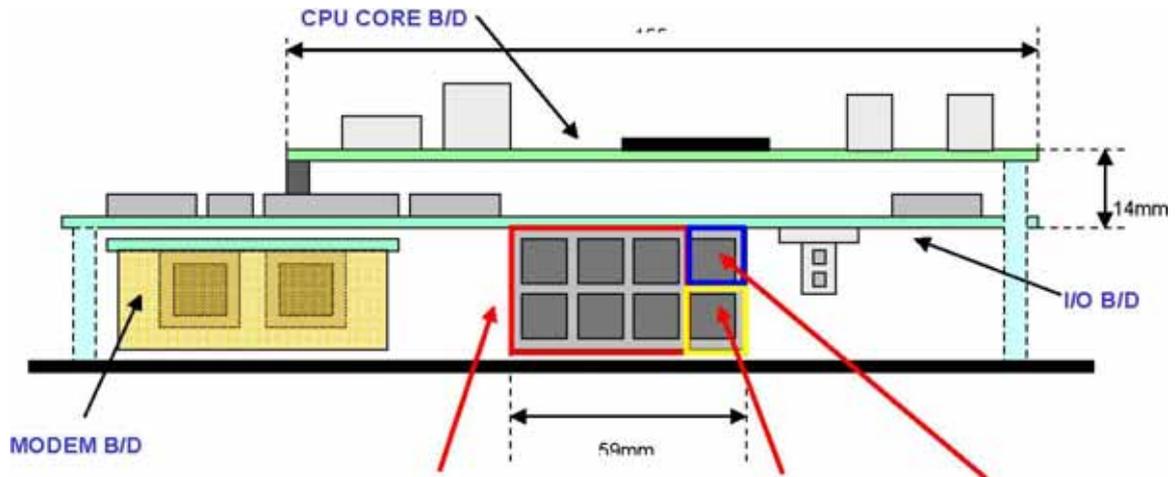
*** SD Card should be formatted in FAT type and memory size of the card must be less than 512 Mb.**

5.10.1.4. OS Image Download (In Case of Download Failure)

- a. Run terminal program.
- b. Set the option as below settings.
- c. Go to Serial Port menu and execute "Connect" command.



d. Connect Debug port in machine and PC. Debug port feature is as follows.



COM0 ~ COM5 COM6 : Debug Port LAN Front Panel

* RJ-45 CONNECTOR BOX PIN ASSIGN

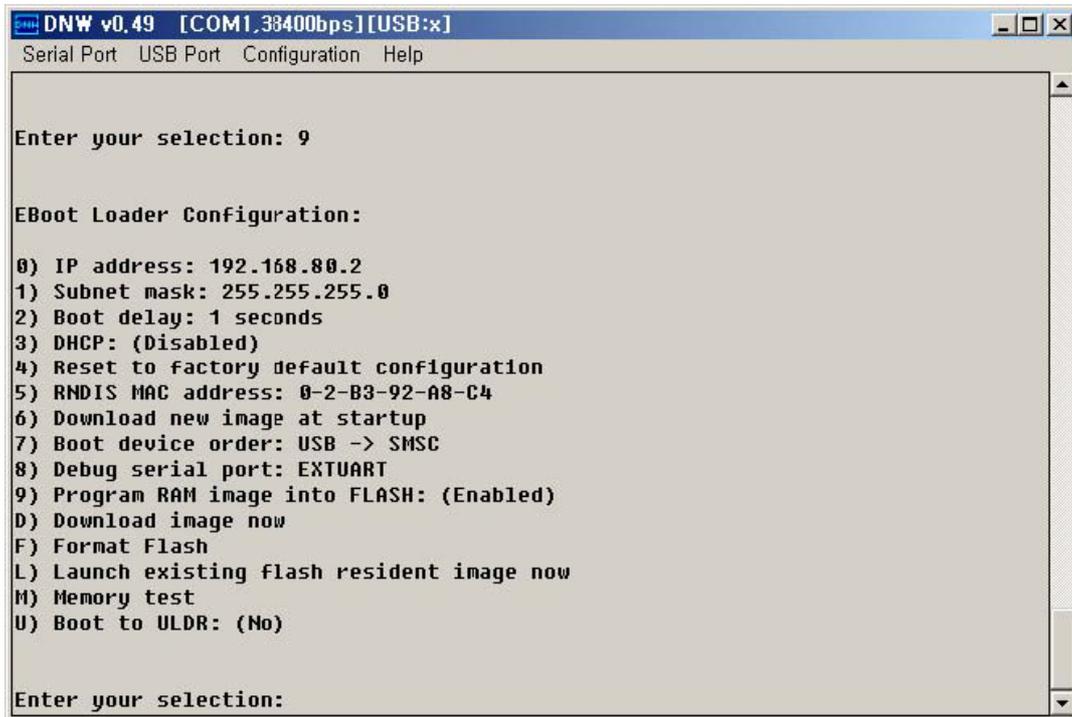
COM1	COM3	COM5	LAN
COM0	COM2	COM4	COM6

※ COM0 ~ COM2 : CPU Internal SERIAL ※ COM3 ~ COM6 : Extended SERIAL (ST16C654, 64byte FIFO)

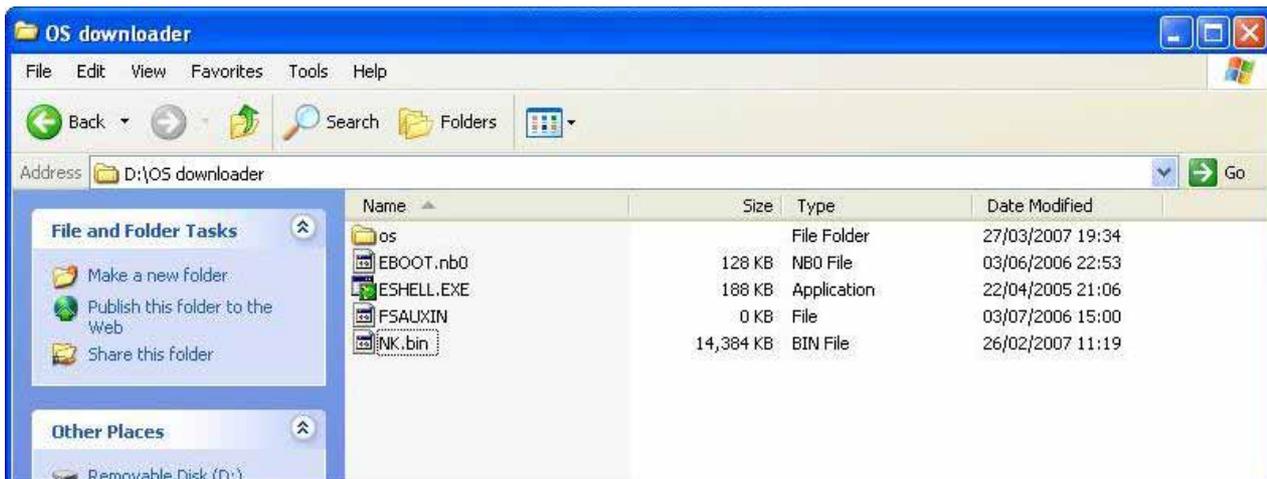
- Ⓐ COM0 : SPR
- Ⓑ COM1 : MCR
- Ⓒ COM2 : EPP
- Ⓓ COM3 : Reserved (Full Function UART)
- Ⓔ COM4 : Reserved (Full Function UART)
- Ⓕ COM5 : CDU
- Ⓖ COM6 : Debug Port

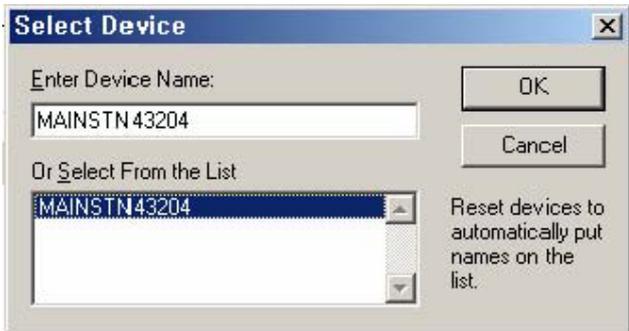
e. Get into main screen of Boot-Loader by pressing spacebar.

f. (6)download image & save (9)Enabled to be toggled as the menu is toggle format.

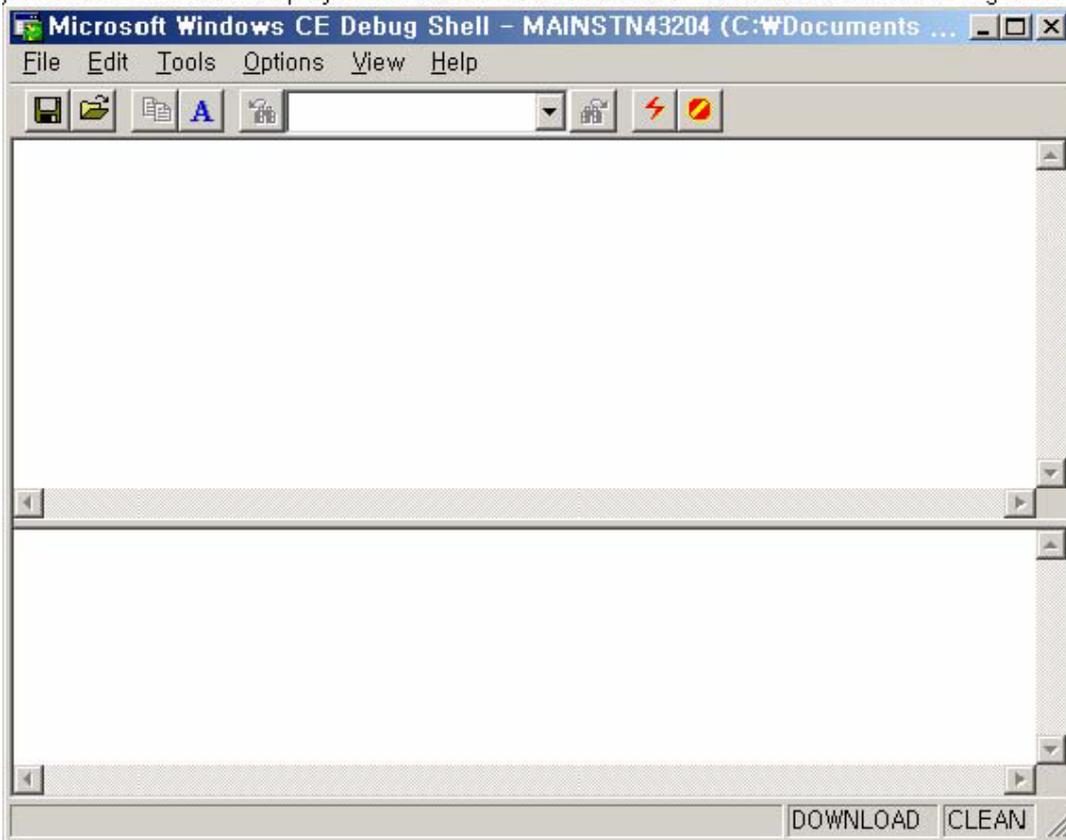


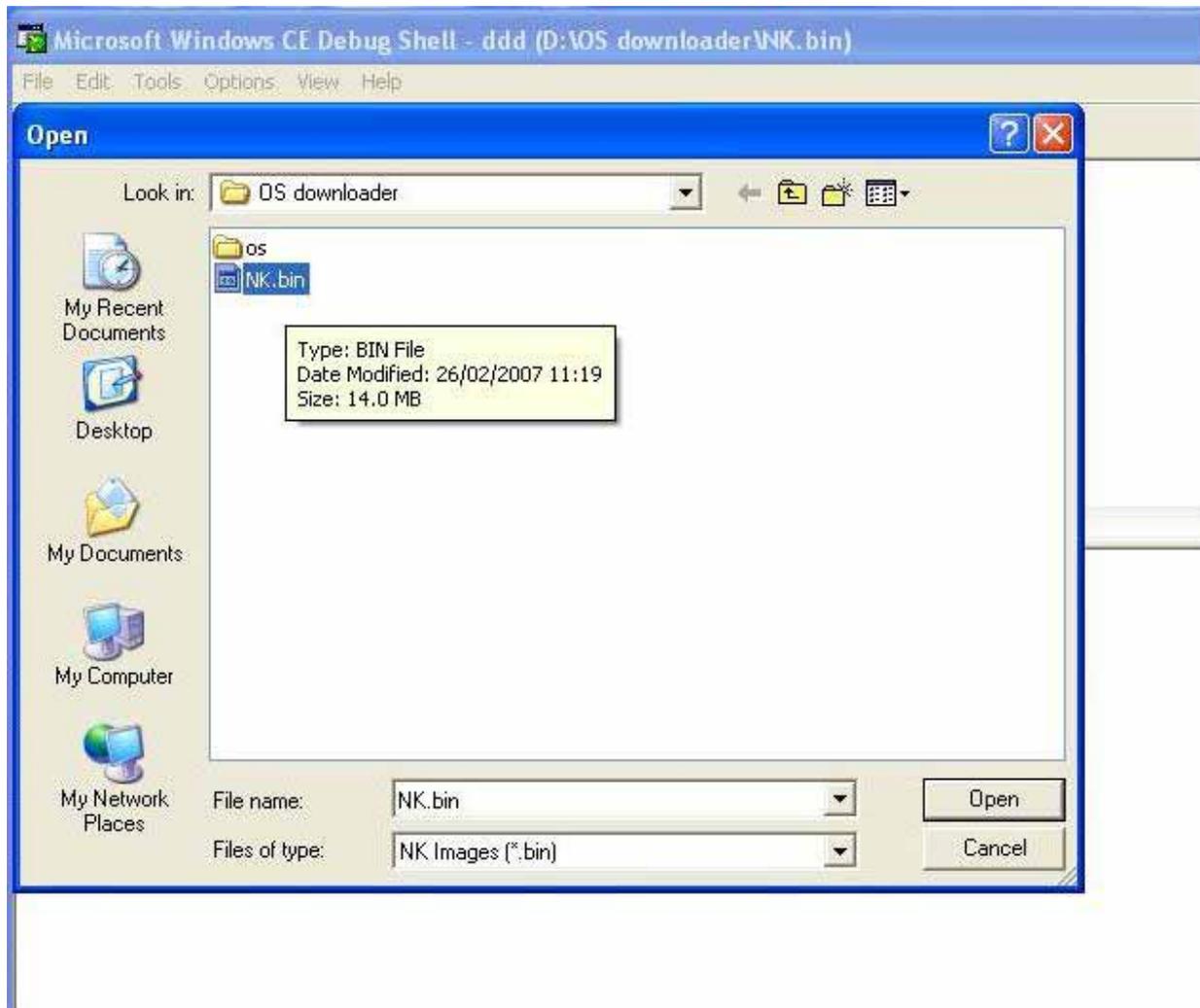
- g. Open Nexfield folder and copy NK.bin file to the folder
(File name can be any but extension should be named bin.)
- h. Execute the file ESHELL.exe.
- i. Press OK button to continue.
- l. Return to first terminal main window and enter command "D".
- m. **Connect USB cable to the ATM system**
(If cable is not detect, plug out and in again.).





j. After main screen is displayed as below. Pull down menu File and execute Select Image command.





-> If USB cable is initially connected to the system from your PC, You need to install USB driver for newly found hardware.

- n. The completion and status of Download can be viewed in ESHELL.
- o. Once downloading is completed Window screen is displayed.
- p. Reboot the system and return to Boot-Loader menu by pressing space bar in terminal window
- q. Delete download toggle menu and Create launch in the menu.
- r. Execute "L" command for automatically Windows booting.

```
2) Boot delay: 1 seconds
3) DHCP: (Disabled)
4) Reset to factory default configuration
5) RNDIS MAC address: 0-2-B3-92-A8-C4
6) Launch existing flash resident image at startup
7) Boot device order: USB -> SMSC
8) Debug serial port: EXTUART
9) Program RAM image into FLASH: (Enabled)
D) Download image now
F) Format Flash
L) Launch existing flash resident image now
M) Memory test
U) Boot to ULDR: (No)

Enter your selection: 1
INFO: FlashErase: erasing flash BAA40000 to BAA7FFFF. Please wait...
-
INFO: FlashWrite: writing to flash...

INFO: FlashWrite: verifying the data written to flash...
INFO: FlashWrite: flash programmed successfully!
Loading RAM image from flash (Flash=0xBAC00000 RAM=0xA0100000
Length=0x2000000).
```

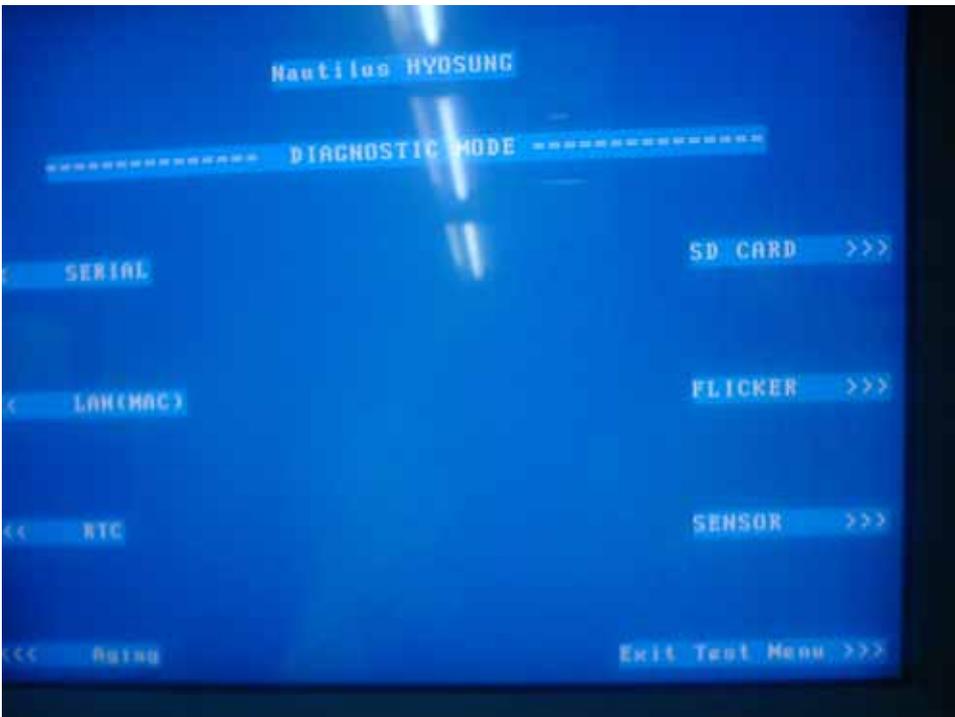
J.1.5. OS Image Download (In Case of Upgrade using SD memory card)

- a) Put nh270nk.bin file into root directory of SD memory card.
- b) Put SD memory card into SD memory card slot on the main panel.



- c) Power on ATM machine.

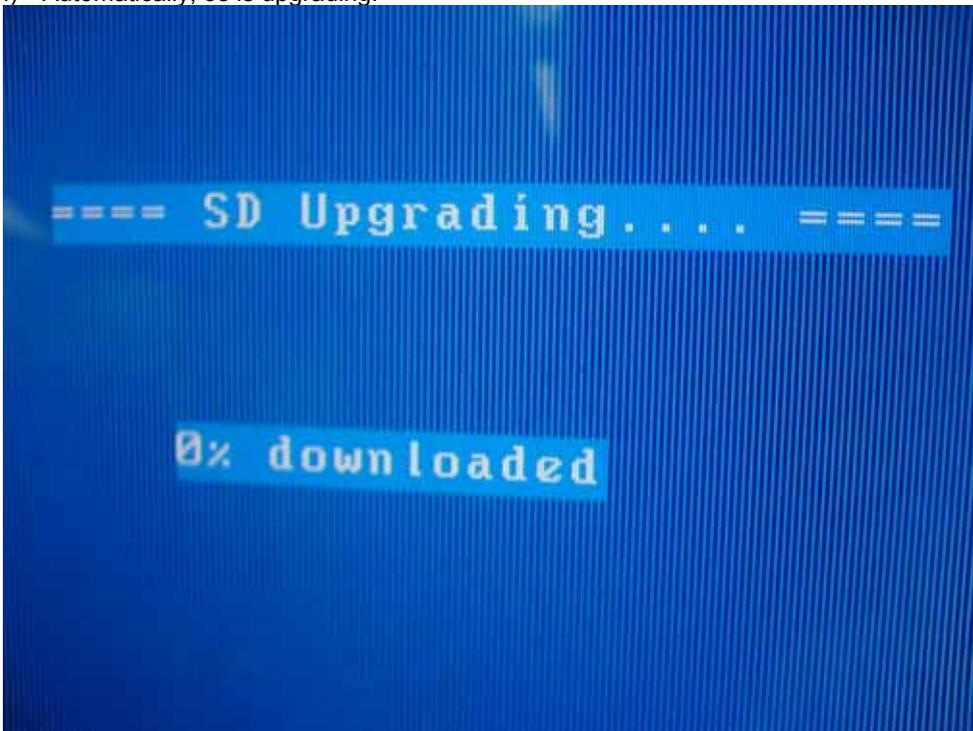
d) Push two buttons on the left-bottom side.

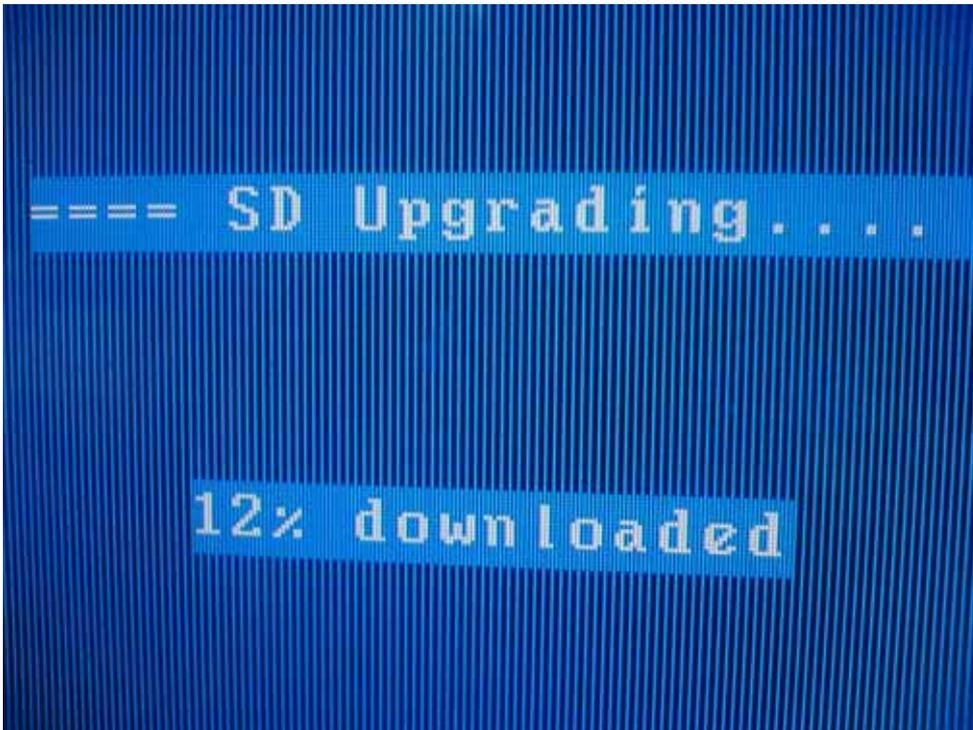


e) Choose SD update menu.

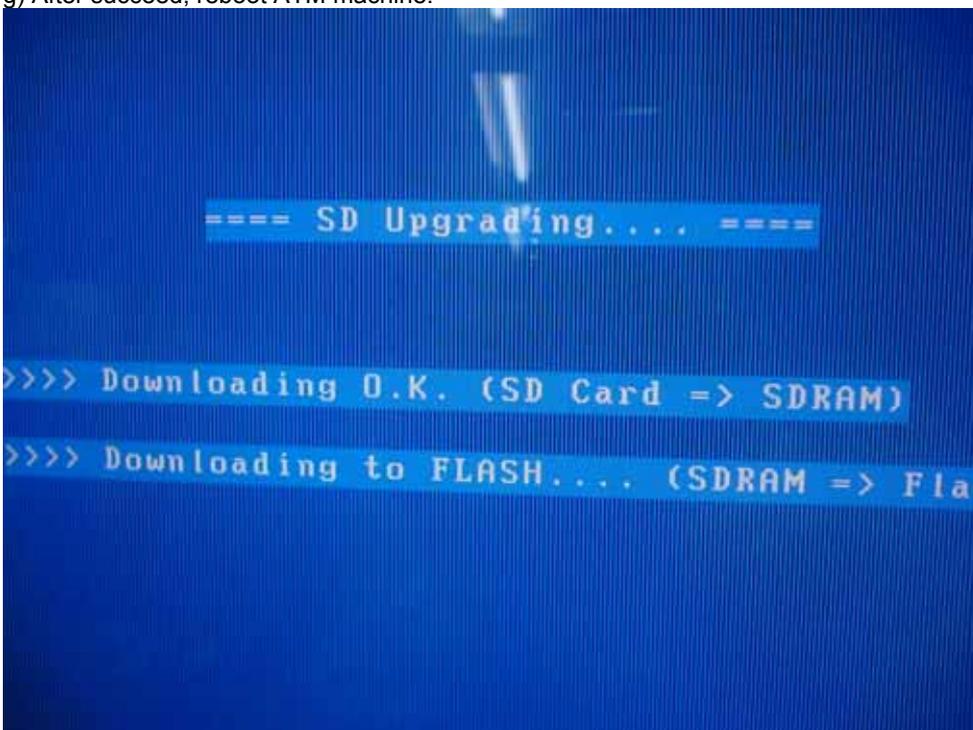


f) Automatically, os is upgrading.





g) After succeed, reboot ATM machine.



5.10.2. Application Software Installation Process Manually

510.2.1 When would manual install be used. General

If necessary to upgrade application file from USB memory stick, in case of flash memory failed to be read or system boot image was reloaded, following process is required.

5.10.2.2 What to prepare

Mouse 1 Each Master USB memory stick. (Recognized up to **2GB**) Windows CE ATM
Software Installation Manual

5.10.2.3 Software Installation Subject

1) USB Memory Connection 2) Automatic Execution 3) USB Memory Recognition 4)
Manual Execution Formatting 5) Manual Execution AP Copy 6) Manual Execution
NVRAM clear 7) Manual Execution Sound test 8) Manual Execution Ping test 9)
Summary

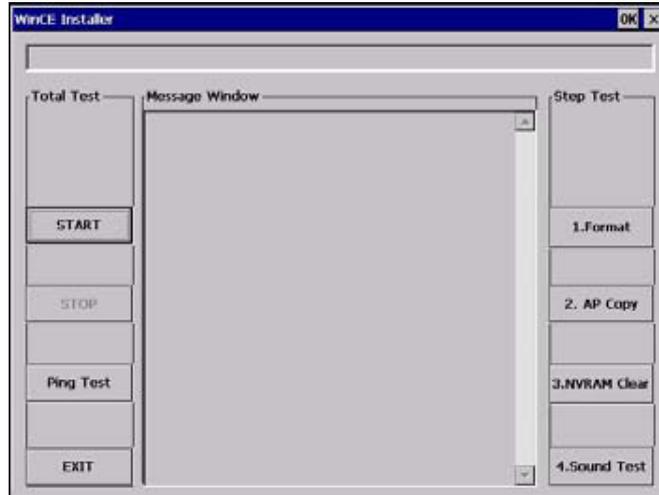
5.10.2.4 Installation Flow

1) USB memory Connection

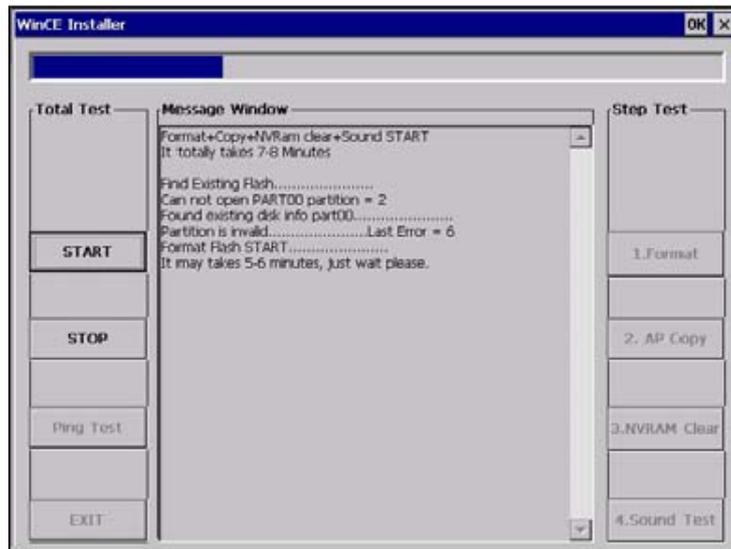
-Plug in USB memory stick into USB slot when Windows Screen is displayed after power on. -If Windows operating system recognizes USB memory inner 15 seconds, installation is started automatically.

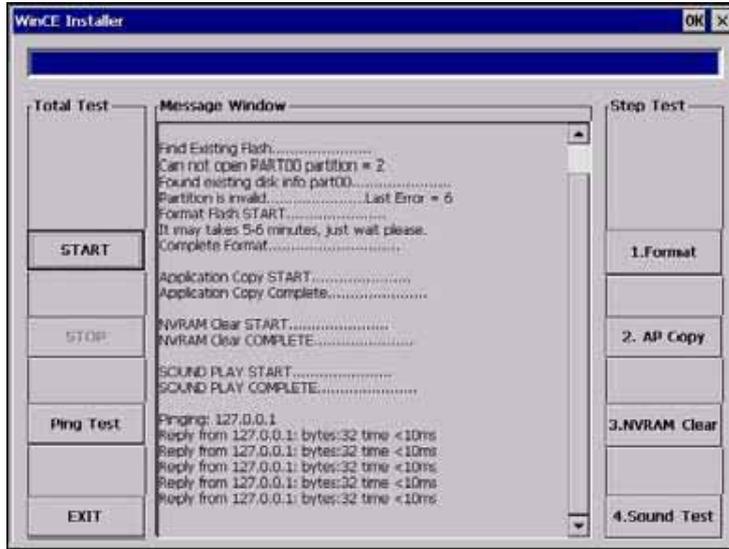
2) Automatic Execution

-Next diagram picture is automatically executed installation start menu.



- There are two ways to start installation from this screen.
- a. Press left function key button beside of "START" button
- b. Or move mouse cursor over the button to start installation.
- c. Total installation duration is about 7~8 minutes and below screen is displayed after completion.
- d. After completion of installation, all processes are done and operator needs to reboot the system to start updated application.

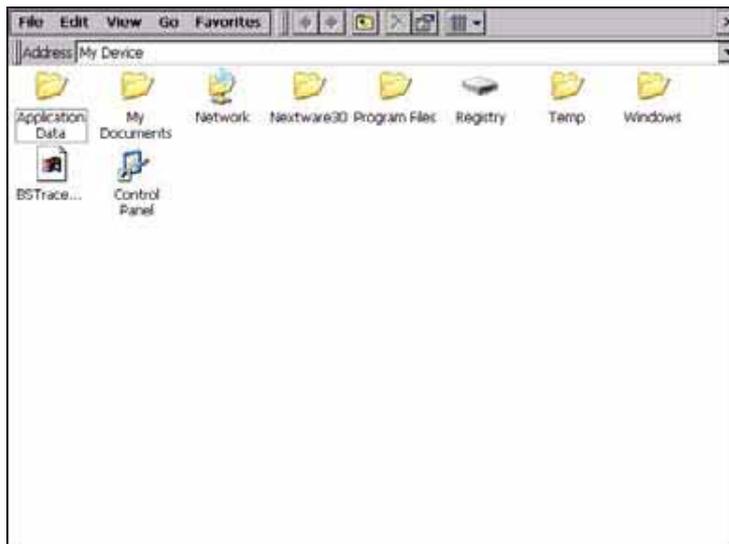


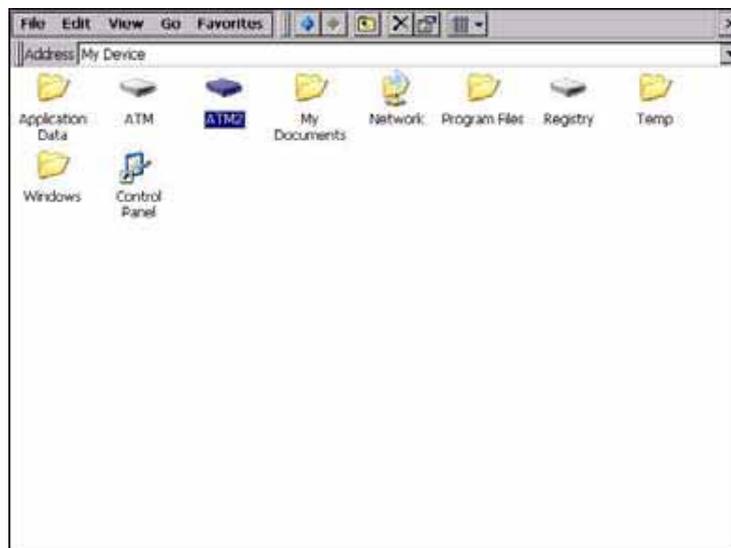
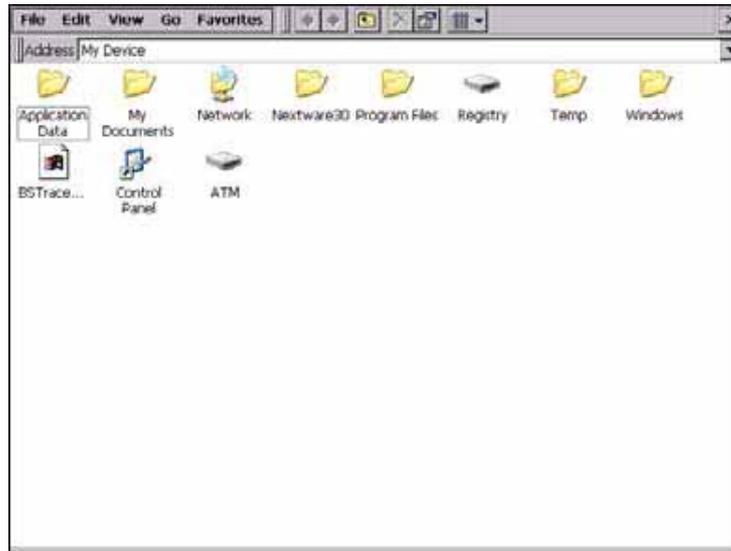


* If installation fails on any steps, operator must follow next steps to recover.(^{*} 1.Format -> 2. AP Copy -> 3.NVRam Clear-> 4.Sound Test -> Ping Test)

3) Manual Execution (Mouse connection is required)

- a. Next screen is a picture containing several folders before USB memory stick is recognized.
- b. This screen is my folder structure picture after USB memory stick.
- c. This screen is after formatting
(You will see there is ATM2 memory area is created.)





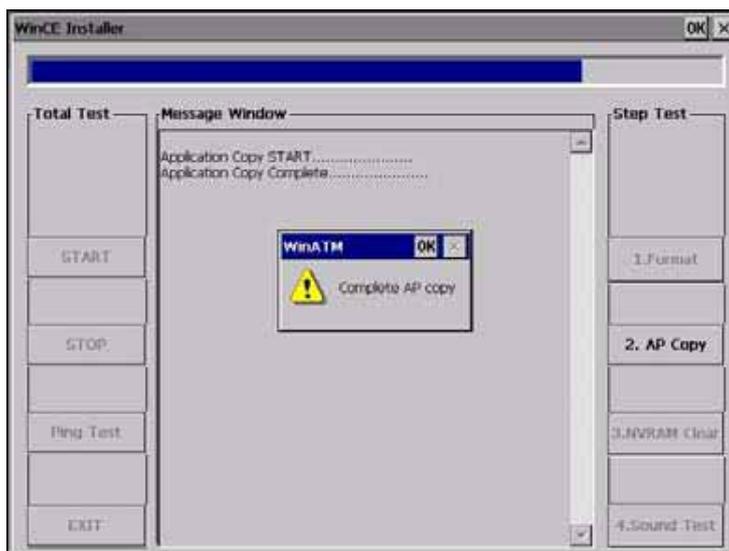
4) Manual Execution : Formatting

- By pressing “1.Format” button, it will start formatting flash memory.



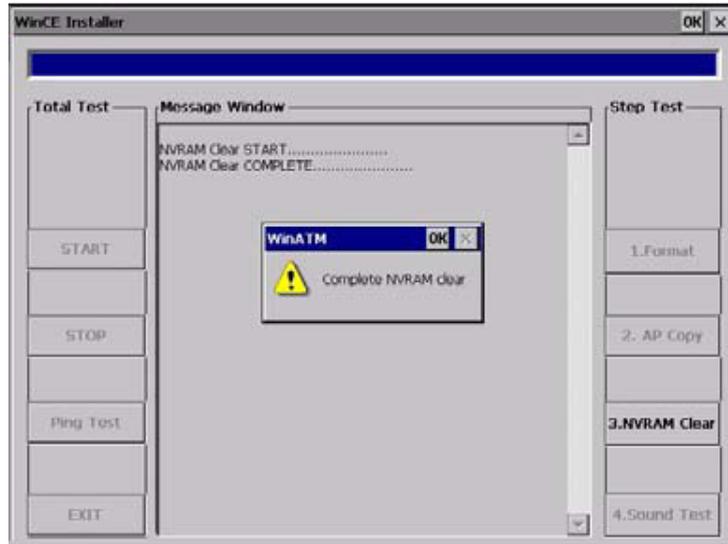
5) Manual Execution: AP copy

- The next step is executing application copying with “2.AP Copy” button.



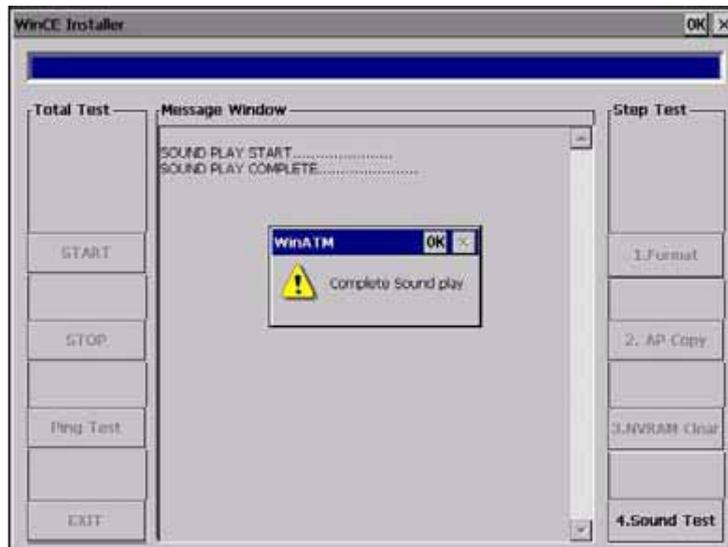
6) Manual Execution: NVRAM Clear

- NVRAM clear is executed by pressing "3.NVRAM Clear" button for clearing data.



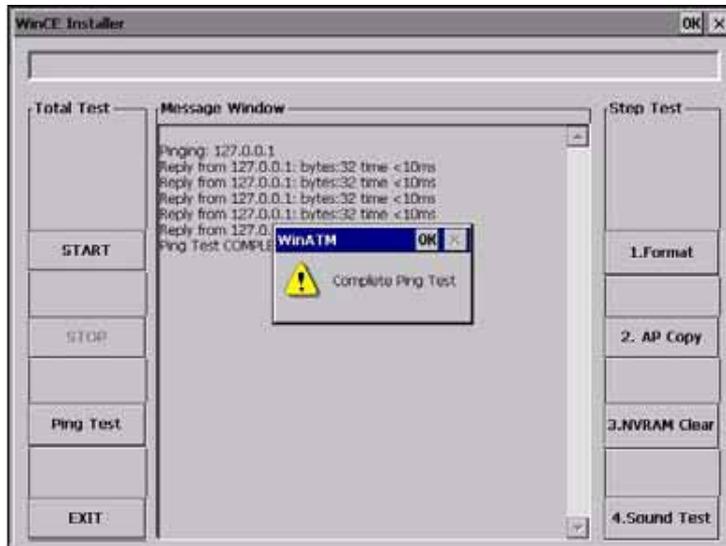
7) Manual Execution: Sound Test

- Sound Test is required to test whether current image is making sound.



8) Manual Execution: Ping Test

- Followed Ping Test to check LAN card connectivity.



*** After all installation processes, operator needs to restart ATM.**

9) Summary

Following information explains how software installation works:

1. Windows CE Operating System's start up program will search file "WinATM.exe" under folder "ATM" after power on and execute automatically.
2. However, if initial boot image and Windows CE system files are loaded, there is no application file existed. Therefore, even if start up program search file inside of "ATM" folder, there is no change after booting.
3. At this time, if USB memory stick is connected and USB memory stick is recognized as "ATM" folder. Instead of system "ATM" folder, startup program will try to find "WinATM.exe" file from USB memory stick's "ATM" folder and execute.
4. When formatting memory, USB memory stick is set as "ATM" and flash disk is named as "ATM2" (Windows CE OS is recognizing the first media as "ATM" and the following recognized media as "ATM2".)
5. AP Copy process is copying files from AP folder of USB memory stick to "ATM2" folder which is flash memory area.
6. After copying all files and removing USB memory stick from the slot, it will restart the system and the first recognized folder previously named "ATM2" will be "ATM".
7. After all, startup program will find "WinATM.exe" file and execute for ATM running..

5.10.3. Application Software Downloading from Supervisor Menu

-After C procedure is done, you are able to enter Supervisor menu and ATM is ready to run.

-Normally on supervisor menu, you are able to upgrade software application files using RCopy menu.

-In order to perform Software installation, you need to include "UpdateProf.dat" file which is containing list of files to be copied to the system.

Refer to 5.8.3 Software update.

Chapter 6. Appendix

6. Appendix

A. SUMMARY OF SPECIFICATION

Item		Standard Features	Remarks (Optional)	
Control Electronics	CPU	X-Scale PXA270 520MHz	-	
	Memory	SDRAM	64 MB	128 MB Optional
		Flash Memory	64 MB	128 MB Optional
		NV-RAM	512 KB	-
	Operating System		Windows CE	-
	Serial Ports		7 Ports	-
	USB Ports		2 Ports	1 Host, 1 Client
	MODEM		56Kbps Dial Up MODEM	-
LAN		TCP/IP	10 Mbps (On-Board)	
Customer Display	Display	Type	10.4" TFT LCD, 640 x 480 pixels	-
		Brightness	430 cd/m ²	-
	Privacy Filter		None	Optional
	Guide Light	Flicker	SPR/CDU/MCU Flicker	High Bright LED
		PIN Light	PIN PAD Light	High Bright LED
	Pin-Pad		Metal Key Cap EPP	T-DES, VISA Certified
	Function Key		4X2 (NDC style: 8 FDKs compatible with NDC+)	-
Input Method		KEY PAD	-	
Cash Dispenser	Dispense type		Spray type	
	Sutter type		Manual Shutter with Window	-
	Denomination		US dollar	-
	Maximum Dispense		40 Notes/1transaction	-
	Number of cassettes		1 Cassette	Add 1or 2 cassette Optional
	Cassette Capacity		2,000 notes per cassette	
	Dispensing Speed		4 notes/sec	-
	Reject Type		Note by Note Reject (200 bills Max)	Reject BIN
Retract		N/A		
Card Reader	Type		Dip type	
	Magnetic Stripe		ISO 1, 2 Read	

Item		Standard Features	Remarks (Option)	
Receipt Printer	Printing Type	Thermal Line Printing		
	Printing speed	100mm/sec	-	
	Printing Width	80mm Max	-	
	Paper Specification	Type	Thermal Roll Paper	Inside heat sensing Method
		Width	Max. 80mm	-
		Outer Diameter	Max. 180Φ	-
	Paper Roll Capacity	3,400 Transaction/Roll	375m (In case 110mm/transaction)	
	Black Mark Paper Support	Available		
Paper Setting Method	Semi-Automatic			
Journal	Electronic Journal	Available	Dot Journal printer Optional	
Safety	Specification	UL 291 Business hour		
	Locking device	Dial Lock	Electronic Lock Optional	
Additional function	Audio guidance	Available	Speaker	
	ADA Audio guidance	Available	Ear phone jack	
	System Heater	N/A		
Dimension & Environment	Dimension (HXWXD)	1,360 X 400 X 631	(unit:mm)	
	Weight	200 Kg	-	
	Main Power	120W Power consumption	110V/220V selection	
	Battery	Non available		
	Operational Temperature	Operating	0°C ~ 40°C / 32 ~ 104	-
		Storage	-5°C ~ 50°C / 23 ~ 122	-
	Operational Humidity	Operating	25% ~ 86%	-
Storage		10% ~ 90%	-	

B. BILL CONDITIONS

B.1 Acceptable condition

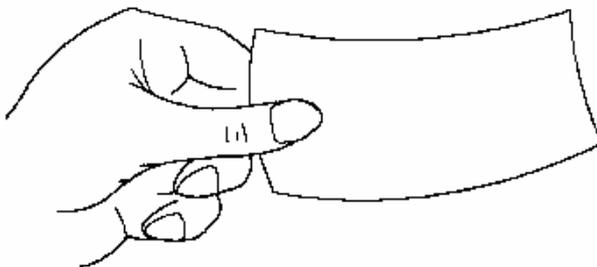
- Bill which is very clean and can readily be recognized as a true bill



- Bill that has sufficient life or sizing to be handled easily

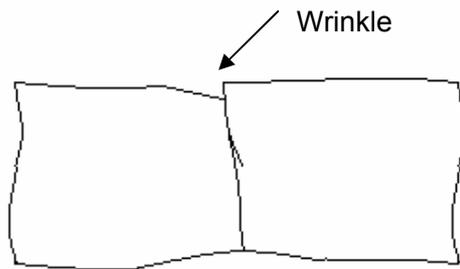


- Bill which can be manually held straightly when one end is held by a hand and the bill is slightly curved vertically

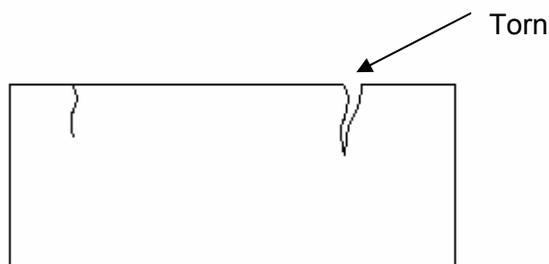


B.2 Unacceptable condition

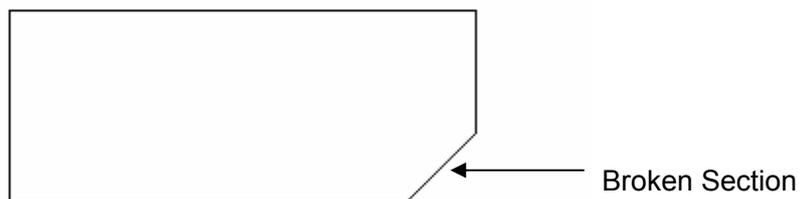
- Bill having serious wrinkles, torn or broken section wherein paper fiber is broken and separation begins
 - ✓ Wrinkle



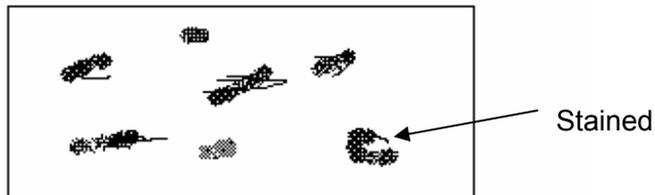
- ✓ Torn



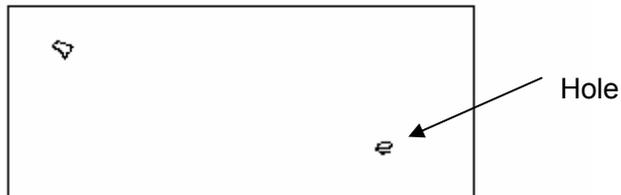
- ✓ Broken section



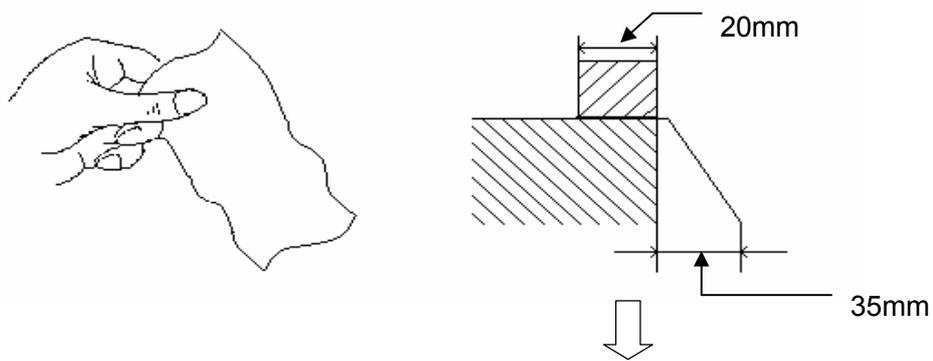
- Bill having adequate life or sizing, but stained seriously



- Bill with holes (Perforated bill)

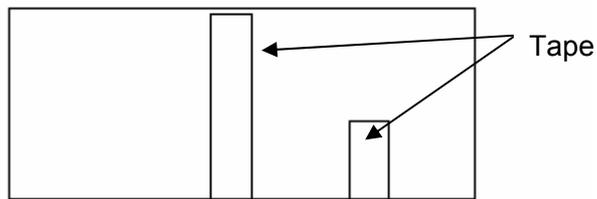


- Bill ragged and cannot be held straightly when one end is supported by a hand

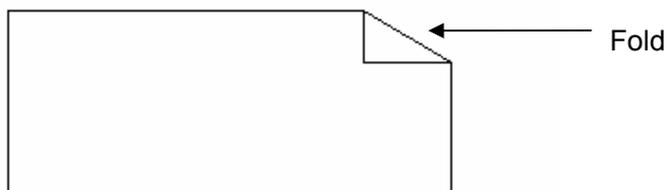


When the bill is held by 20mm and the straightness of the bill is 35mm or less, it cannot be used

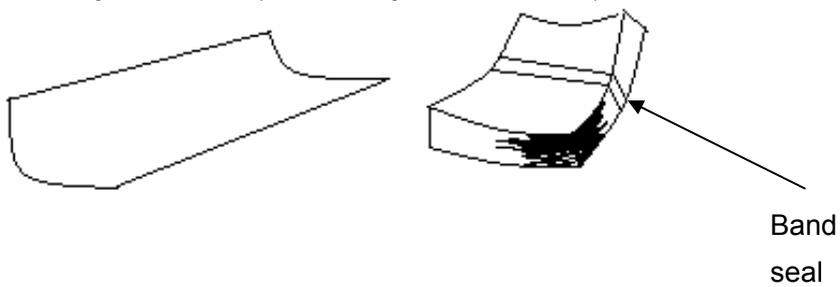
- Bill with cellophane tape, scotch tape, etc



- Bill with folds

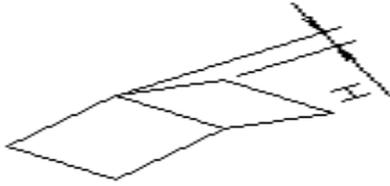


- Gradually curved bill (bills tied by hand seal, etc)



- Bill with folded lines

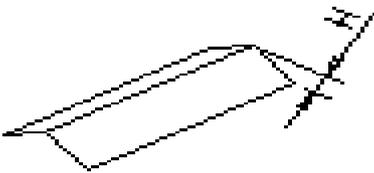
- ✓ Case 1



- ✓ Case 2



- ✓ Case 3



Bill distortion should not exceed 10 mm

C. RECEIPT PAPER SPECIFICATIONS

C.1 Applicable Product

This purchase specification applies to the receipt paper of 5050.

C.2 Specification (P/N: 56790601)

C.2.1 Paper type: Thermal roll paper

C.2.2 Print color: Black

C.3 Specification of the Receipt Paper

C.3.1 Paper type: Thermal roll paper

C.3.2 Print color: Black

C.3.3 Specification: Paper detects heat.

C.3.4 Paper basis weight : $55 \pm 3 \text{ g/m}^2$

C.3.5 Paper thickness : $58 \pm 4 \text{ }\mu\text{m}$

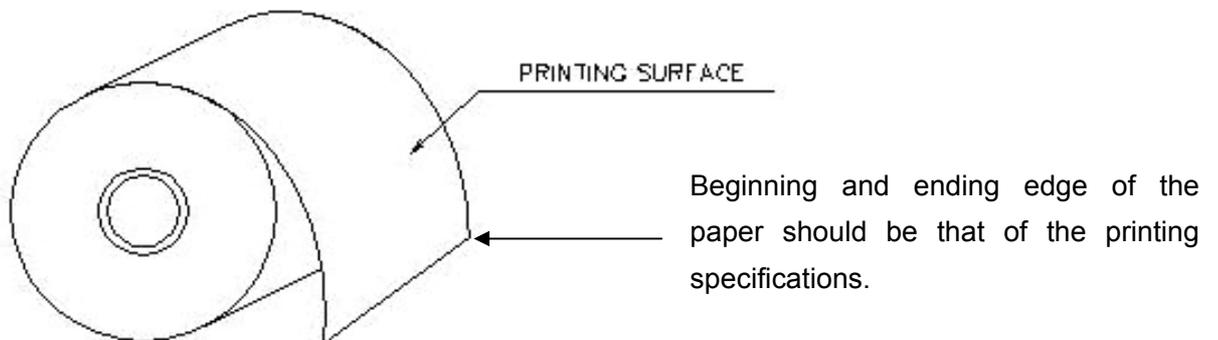


Fig. C.1 Receipt Paper Specifications

C.4 Roll appearance

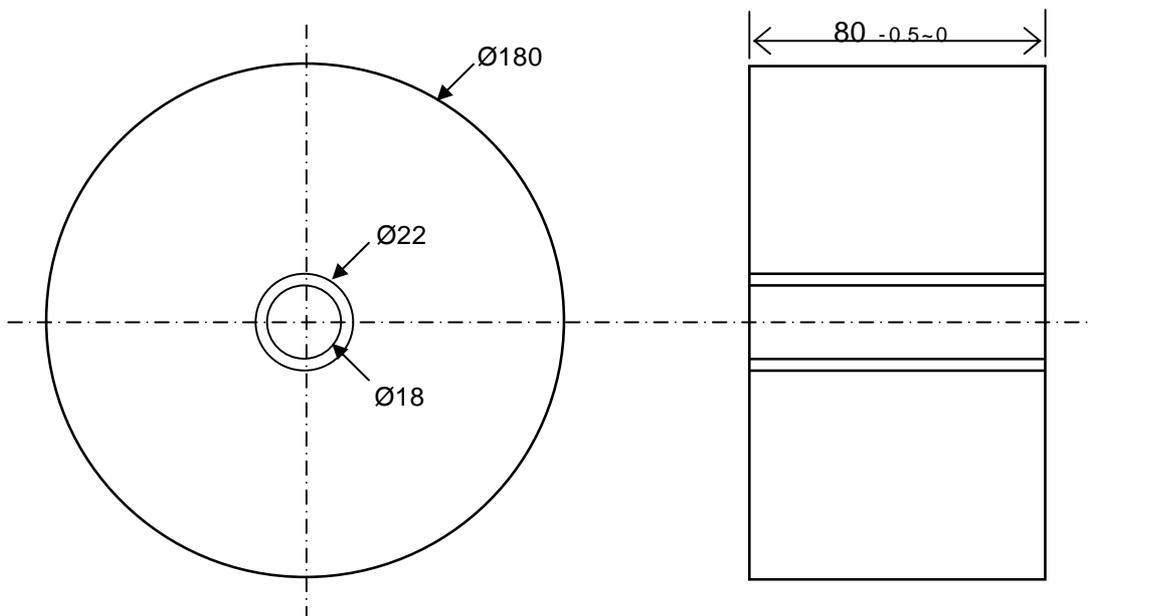


Fig. C.2 External roll dimension

Note 1) Store the paper roll separately to prevent damage to the paper.

Note 2) Do not connect the papers with tape.

Note 3) Make sure the paper end is not attached to the paper pipe.

Note 4) Make sure the paper is rolled evenly.

C.5 Paper Handling Precautions

1) Store it away from high temperature and humidity

If the paper is stored in a place where temperature is above 50 or humidity is above 90% RH, the coloring capability may deteriorate or the paper surface may inflate.

2) Refrain from exposing to direct sunlight

The paper surface can be inflated if you expose it to direct sunlight or leave it under the fluorescent lamp for a long time.

3) Keep it away from the organic solvents

Paper color may change if the paper comes in contact with organic solvents or glues containing organic solvent.

4) Keep it away from plastics

If the paper comes in contact with materials containing plastics, its coloring capability may deteriorate or de-coloring of the paper may occur.

5) Miscellaneous

If the paper comes in contact with carbon copy paper or if the paper surface is scratched with a metallic object, de-coloring may occur.

C.2.3 Specification:

D. MAGNETIC CARD SPECIFICATIONS

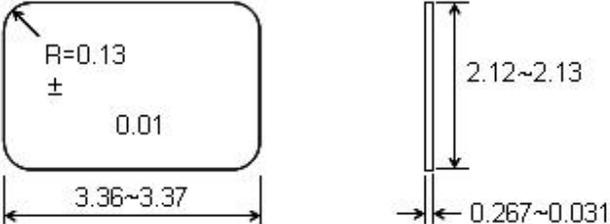
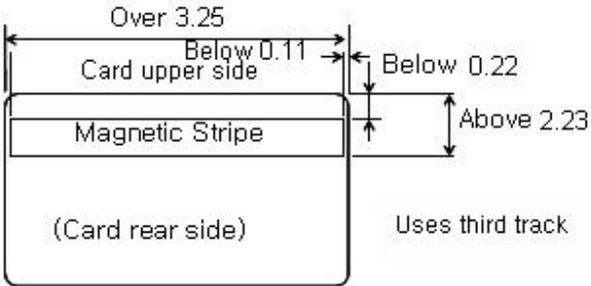
Item	ISO Card (Unit : Inch)
Length	
Card Bending	
Magnetic Stripe Position	

Fig. D.1 Magnetic Card Specifications

E. Journal Paper (Option)

E.1 Applicable Product

This purchase specification applies to the receipt paper of 5050.

E.2 Roll Manufacturing Specifications

E.2.1 Paper

DOT journal paper, 52.3~ 64g (1.155~1.413 lb)/m²,

Paper thickness: 0.06mm (0.0024 inch)

E.2.2 Paper length (Roll shape)

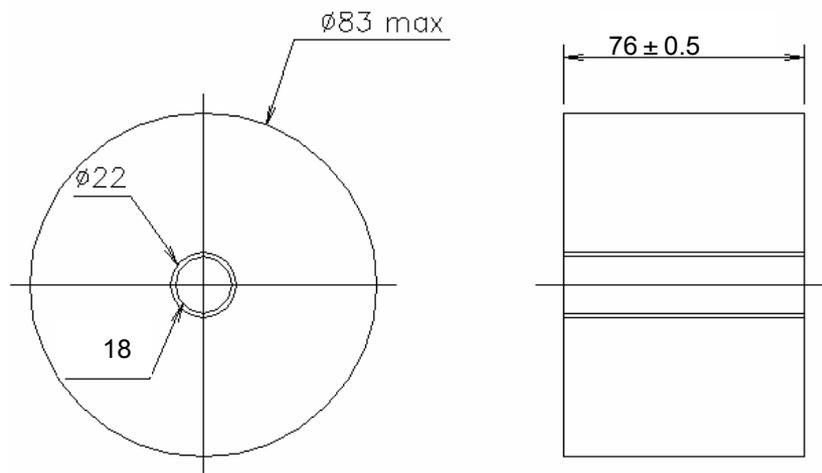


Fig. E.1 Roll shape and dimensions

E.2.3 Printing area of the dot journal paper

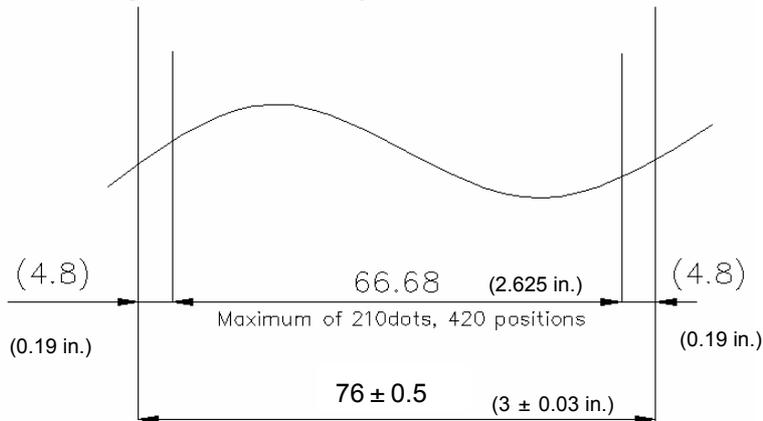


Fig. E.2 Printing area

E.3. Ribbon Cassette

E.3.1 Ribbon Cassette Specifications

Item		specifications	
Cassette	Feeding Method		Gear Feeding Method
	Material	Case	ABS
		Part	Acetal
Ribbon	Material		Polyamid 66 Nylon 4 MIL
	Yarn	Warp	40 Denier 34 filaments
		Weft	40 Denier 34 Filaments
	Thread Count	Warp	173± 5 (Threads/Inch)
		Weft	116± 4 (Threads/Inch)
	Thickness		0.10 ± 0.01 mm (0.004 ± 0.0004 inch)
	Weight		56 ± 3 g (0.03 ± 0.007 lb)/m ²
	Length		4 ± 0.2 m (157.5 ± 7.8 inch)
	Width		13 ± 0.3 m (511.8 ± 11.8 inch)/m
INK	Ink Type		Dot Matrix Black Ink
	Ink Number		IMO 5008
	Color		Purple
	Viscosity		900 ± 100 CPS (at 21 °C)
	Coating Weight		13.5 ± 0.5 g (0.03 ± 0.01 lb)/m ²
	Ink Life		MIN. 2,000,000 character (LQ Mode)
	Concentration of Ink	Initial	MIN. 0.7 PCS
Final		MIN 0.2 PCS	

F. ERROR CODE TABLE

F.1 Journal Printer (Option)

CODE	Error Cause and Handling	
9721111	Cause	Off line status (Journal Printer)
	Handling	Check communication cable and the connectors Check power connection
9721112	Cause	On busy
	Handling	Check whether printer is printing or not at that time - If printing, it is normal. After printing is finished, then try again. - If not, check PCB on printer
9721121	Cause	Hardware Error
	Handling	Check printing header movement Check paper jam and feeding status by pressing feed button Reboot ATM
9721122	Cause	Recoverable Error
	Handling	Recover printer's Error Reboot ATM
9721123	Cause	Unrecoverable Error
	Handling	Reboot ATM Replace printer
9721124	Cause	Paper jammed
	Handling	Remove jammed paper

F.2 Card Reader

CODE	Error Cause and Handling	
9723010	Cause	Failed to open device
	Handling	Reboot ATM Test with diagnostics in supervisor mode Check communication cable and connectors of card reader Check card reader driver version
9723016	Cause	Time out to receive data
	Handling	Reboot ATM Test with diagnostics in supervisor mode Check communication cable and connectors of card reader Check card reader driver version
9723019	Cause	Polling down
	Handling	Reboot ATM Test with diagnostics in supervisor mode Check communication cable and connectors of card reader Check card reader driver version

F.3 Cash Dispenser

CODE	Error Cause and Handling	
4003000	Cause	Failed in checking the main motor echo
	Handling	Initialize Check Main Motor Encoder Slit Initialize after Power On/Off Check Encoder Sensor CS8 BRKT Check CS8 Sensor Cable Change Main Motor Encoder Slit Sensor CS8
4003100	Cause	Failed in checking the reject gate solenoid echo
	Handling	Listen to "click" sound during cash dispenser initializing - If that sound occurs in 2 seconds after motor was turned, it is normal - If there is delayed, replace PCB on cash dispenser
4003200	Cause	Failed in checking the present gate solenoid echo
	Handling	Listen to "click" sound during cash dispenser initializing - If that sound occurs in 2 seconds after motor was turned, it is normal - If there is delayed, replace PCB on cash dispenser
4003300	Cause	Check sum error (No information is set)
	Handling	Replace PCB on cash dispenser
4003400	Cause	Error of double notes detecting sensor(CS5_1) for initializing
	Handling	Check CS5_1 Sensor Cable Check second Dip Switch in CDU B/D Change CS5_1 Sensor
4003600	Cause	Error of CS 2, CS13 sensor during initialization
	Handling	Check note jam at CS2 and CS13 sensor Clean CS2 and CS13 sensors Reconnect CS2 and CS13 sensors Replace CS2 and CS13 sensor
4003700	Cause	Error of 2 sheets detecting sensor(CS5_1/CS5_2) for dispensing
	Handling	Check note jam at CS5 sensor Clean CS5 sensor Reconnect CS5 sensors Replace CS5 sensor
4003800	Cause	Error in checking SRAM
	Handling	Reboot ATM Replace PCB on cash dispenser

CODE	Error Cause and Handling	
4003900	Cause	Gate operation sensor (CS3) error before initial recovery
	Handling	Initialize after removing notes or dust over Gate Check CS3 Sensor BKRT Check CS3 Sensor Cable Exchange Sensor after abnormal operating CS3 Gate detecting Sensor Exchange Reject Solenoid 1
4003A00	Cause	More than 5 notes of cash dispensing is required during a test
	Handling	Check command that CDU is received Check CDU EP ROM Version or specification
4003B00	Cause	CS15A or CS 15B sensor is detected as dark after initial recovery
	Handling	Remove notes or dust in existence CS15A Sensor Check CS15A Sensor Cable Exchange Sensor after abnormal operating CS15A Sensor
4004000	Cause	Cassette is removed during separate rejection
	Handling	Push the cassette until making "click" sound Check the catcher inside cassette guide
4004100	Cause	Error if re-driving is over 5 times during separated rejection
	Handling	Check notes in Reject Box Rearrange notes in Cassette Remove dust in CS15AB, CS31AB, CS41AB CS1AB Sensor Check dust existing in CS5 Sensor Guide Check dust existing in Main Motor Encoder Slit Check index value of notes each cassette
4004200	Cause	In case the number of notes detected outlet sensor(CS13) is less than the number of required notes
	Handling	Check notes dispensed and rejected Remove notes jammed in CDU Remove dust in CS13 Sensor Exchange sensor after abnormal operating CS13 Sensor
4004300	Cause	Error if total reject is more than 20 sheets
	Handling	Check notes in Reject Box Rearrange notes in Cassette Remove dust in CS1AB, CS15AB, CS31AB, CS41AB Sensor Check dust in existence CS5 Sensor Guide Check notes index value

CODE	Error Cause and Handling	
4004400	Cause	Error if continuous 7 times are rejected continuously
	Handling	Check notes in Reject Box Rearrange notes in Cassette Check dust in Main Motor Encoder Slit Remove dust in CS15AB, CS31AB, CS1AB Sensor Exchange CS8 Encoder Slit Sensor
4004500	Cause	In case the number of notes detected outlet sensor(CS13) is more than required notes
	Handling	Check notes dispensed and rejected Remove dust in CS13 Sensor Exchange sensor after abnormal operating CS13 Sensor
4004600	Cause	Program error(Separated rejection)
	Handling	Initialize after Reset Power Upgrade CDU Firmware or Re-download Exchange CDU B/D
4004700	Cause	1 cassette misfeed error (Separated rejection)
	Handling	Check notes in 1 Cassette Check Sensor(CS6) Poll Check jam in 1 cassette and reload Remove dust in CS1A, CS1B Sensor Exchange 1 cassette box when there are many error
4004800	Cause	Error if the number of dispensed notes is not matched to the requested
	Handling	Check CS13 sensor (note jam and dust) Replace CS13 sensor
4004900	Cause	Zero note dispensing is requested
	Handling	Check cash dispenser driver version (CDM SP)
4004A00	Cause	Error of note jam (Separated rejection)
	Handling	Remove jammed notes on CDU return path Remove dust in CS1~CS4 sensor Install after rearranging notes in cassette
4004B00	Cause	Notes are rejected more than 4 times continuously during note dispensing
	Handling	Check state of notes in reject box Rearrange notes in cassette Check cash dispenser configuration Check foreign objects in the main motor encoder slit. Replace the CS8 encoder slit sensor Check and replace cassette

CODE	Error Cause and Handling	
4004C00	Cause	In case the number of notes detected outlet sensor(CS13) is more than that of notes detected on CS1A,B sensor
	Handling	Check CS1 sensor Reconnect CS1 sensor
4004D00	Cause	No cassette #1 detected before note dispensing
	Handling	Set cassette #1 correctly Check the catcher inside cassette #1 guide
4004E00	Cause	No cassette #2 detected before note dispensing
	Handling	Set cassette #2 correctly Check the catcher inside cassette #2 guide
4005100	Cause	Received a request for over 121 notes dispensing on the CDU from the upper unit.
	Handling	Check cash dispenser driver version (CDM SP)
4005200	Cause	The remaining notes at the sensor in front of the CST after dispense operation (CS1A, CS1B)
	Handling	Remove the remaining notes at a sensor in front of the CST Realign notes in the cassette Check abnormal clutch. Check abrasion of the cassette box pick unit.
4005400	Cause	CDU EP Program Error during dispense operation (failed table search)
	Handling	Initialize after resetting the power Upgrade the CDU firmware or re-download software Replace the CDU B/D
4005500	Cause	Timeout due to note's length error passed through the CS13 during dispensing
	Handling	Remove a jammed note between the tray and CDU Remove a jammed note at the position of the CS13 sensor Remove a dust on the CS13 sensor
4005600	Cause	Abnormal operation of the gate solenoid during dispensing
	Handling	Remove a jammed note on the gate Remove notes in the reject box and remount the reject box Check if the CS3 sensor bracket is bended. Check if the CS3 sensor cable is disconnected (CN10 #9~10) Exchange a sensor after abnormal operating CS3 Gate detecting sensor. Replace the reject solenoid 1

CODE	Error Cause and Handling	
4005700	Cause	Cash dispenser configuration error
	Handling	Replace cash dispenser PCB Reconfigure cash dispenser setup data
4005800	Cause	Retract box position error during command reserved operation
	Handling	Mount the retract box or open the box cover Check if CS62 sensor poll is abnormal Check if the CS62 sensor cable is disconnected (CDU Board CN10 #5~2).
4005900	Cause	Note jam during initializing
	Handling	Remove jammed notes Clean the sensors (CS1~CS15) in cash dispenser
4005D00	Cause	Continuously detected double notes for three times or more during dispensing
	Handling	Check notes' status in the reject box Realign notes in the cassette Check foreign objects at the position of the CS5 Sensor Guide Check if the CS5 cable is disconnected (CS5_1:CDU B/D CN10 #11~12, 25~28//CS5_2:CN12)
9712000	Cause	Failed to create file
	Handling	Reboot ATM Reinstall software Replace hard disk drive
9712100	Cause	Failed to read file
	Handling	Reboot ATM Reinstall software Replace hard disk drive
9712200	Cause	Failed to write file
	Handling	Reboot ATM Reinstall software Replace hard disk drive
9712300	Cause	Failed to close file
	Handling	Reboot ATM Reinstall software Replace hard disk drive
9712400	Cause	Failed to delete file
	Handling	Reboot ATM Reinstall software Replace hard disk drive

CODE	Error Cause and Handling	
9712500	Cause	Failed to copy file
	Handling	Reboot ATM Reinstall software Replace hard disk drive
9712600	Cause	Failed to create directory
	Handling	Reboot ATM Reinstall software Replace hard disk drive
9719000	Cause	Failed to execute an extra command in the status of Cash Unit Exchange
	Handling	Reboot ATM Reinstall software Replace hard disk drive
9719100	Cause	In case of not being the status of Cash Unit Exchange out of End Exchange
	Handling	Reboot ATM Reinstall software Replace hard disk drive
9719200	Cause	In case of carrying out Cash In Start command at two times
	Handling	Reboot ATM Reinstall software Replace hard disk drive
9719300	Cause	In case of not being the status of Cash In out of End Cash In
	Handling	Reboot ATM Reinstall software Replace hard disk drive
9719400	Cause	Invalid Cash Unit ID
	Handling	Reconfigure cash dispenser setup data
9719500	Cause	Invalid Cash Unit number
	Handling	Reconfigure cash dispenser setup data
9719600	Cause	The abnormal of the number of Cash Unit
	Handling	Reconfigure cash dispenser setup data
971A000	Cause	Invalid denomination
	Handling	Reconfigure denomination at supervisor mode
971A100	Cause	Invalid currency
	Handling	Reconfigure currency at supervisor mode

CODE	Error Cause and Handling	
971A200	Cause	Not dispensable from cassette
	Handling	Reconfigure denomination Reconfigure currency
971A300	Cause	In case the number of bills dispensed exceeds the maximum dispensing bill
	Handling	Check cash dispenser driver (CDM SP) version Reconfigure the maximum dispensable count
971A400	Cause	In case the number of coins dispensed exceeds the maximum dispensing coin
	Handling	Check coin dispenser driver version Reconfigure the maximum dispensable count
971A500	Cause	Invalid mix number
	Handling	Reconfigure cash dispenser at supervisor mode
971B000	Cause	No notes in stacker during rejecting or retracting notes
	Handling	Check a dust in stacker Reconfigure the maximum dispensable count
971C000	Cause	Undefined command is received
	Handling	Reinstall software
971D100	Cause	Partial dispense from cassette #1
	Handling	Check the replenished amount and replenish Check the notes in cassette #1
971D200	Cause	Partial dispense from cassette #2
	Handling	Check the replenished amount and replenish Check the notes in cassette #2
971D300	Cause	Partial dispense from cassette #3
	Handling	Check the replenished amount and replenish Check the notes in cassette #3

F.4 Receipt Printer

CODE	Error Cause and Handling	
2010100	Cause	Receipt printer lever opened before printing
	Handling	Close the lever of print head completely
2010200	Cause	TPH (Thermal Printing Head) overheated before printing
	Handling	Wait the time until the temperature of head adequately slow down and try to initialize
2010300	Cause	Paper jam before printing, cutting paper or discharging paper
	Handling	Remove jammed paper between printer head and rollers Check and clean sensor Replace sensor
2010400	Cause	Detecting no paper before printing (No paper)
	Handling	Replenish receipt paper Check the status of sensor and its connector
2010500	Cause	Detecting paper setting error before printing
	Handling	Check the status of paper setting Check the sensor status and its connector
2010600	Cause	Command is received while doing self-test
	Handling	After terminating self-test and initialize receipt printer
2010700	Cause	Detecting paper low (near end) before printing
	Handling	Replenish receipt paper Check the status of Near End sensor and its connector
2010800	Cause	Paper cutting error
	Handling	Check the Cutter module Check if printer head lever is properly close
2010900	Cause	Dark sensing error before printing
	Handling	Check the status of dark sensor(black mark sensor) Check whether dip switch # 6 is set or not (Dip switch # 6 has to be turned on for not using dark sensing)
2010A00	Cause	The size of image print data is abnormal while printing image
	Handling	Check the AP version and initialize
2080100	Cause	Receipt printer lever opened after printing
	Handling	Close the lever of print head completely

CODE	Error Cause and Handling	
2080200	Cause	TPH (Thermal Printing Head) overheated after printing
	Handling	Wait the time until the temperature of head adequately slow down and try to initialize
2080300	Cause	Paper jam after printing, cutting paper or discharging paper
	Handling	Remove jammed paper between printer head and rollers Check and clean sensor Replace sensor
2080400	Cause	Detecting no paper after printing (No paper)
	Handling	Replenish receipt paper Check the status of sensor and its connector
2080500	Cause	Detecting paper setting error after printing
	Handling	Check the status of paper setting Check the sensor status and its connector
2080600	Cause	Command is received while doing self-test
	Handling	After terminating self-test and initialize receipt printer
2080700	Cause	Detecting paper low (near end) after printing
	Handling	Replenish receipt paper Check the status of Near End sensor and its connector
2080800	Cause	Paper cutting error
	Handling	Check the Cutter module Check if printer head lever is properly close
2080900	Cause	Dark sensing error after printing
	Handling	Check the status of dark sensor(black mark sensor) Check whether dip switch # 6 is set or not (Dip switch # 6 has to be turned on for not using dark sensing)
2080A00	Cause	The size of image print data is abnormal while printing image
	Handling	Check the AP version and initialize
9720000	Cause	Communicate fail during opening printer driver (PTR SP)
	Handling	Check if communication cable or com port is not connected
9722010	Cause	Communicate fail during opening printer driver (PTR SP)
	Handling	Check if communication cable or com port is not connected
9722DN0	Cause	Failed to connect communication between Receipt printer and SP
	Handling	Check if communication cable or com port is not connected

F.5 Modem

CODE	Error Cause and Handling	
D030000	Cause	No response from the modem controller within a specified time after issuance.
	Handling	Check modem cable Contact technical support team
D030100	Cause	The target call address has call blocking enabled.
	Handling	Check modem cable Contact to technical support team
D030200	Cause	The specified terminal identifier is invalid.
	Handling	Check modem cable Contact technical support team
D030300	Cause	All call appearances on the specified address are currently in use.
	Handling	Check modem cable Contact technical support team
D030400	Cause	The dialable address parameter contains dialing control characters that are not processed by the service provider.
	Handling	Check modem cable Contact to technical support team
D030500	Cause	The specified country/region code is invalid.
	Handling	Check modem cable Contact host and phone company
D030600	Cause	The operation failed for an unspecified or unknown reason.
	Handling	Contact technical support team
D030700	Cause	Insufficient resources to complete the operation
	Handling	Contact technical support team

F.6 Miscellaneous

CODE	Error Cause and Handling	
1030100	Cause	Key data error from host
	Handling	Contact to host
2000400	Cause	Vault door opened
	Handling	Close door Check whether dip switch # 6 is set or not
2001300	Cause	Paper empty
	Handling	Replenish receipt paper
9701010	Cause	Communication fail between PIN driver (PIN SP) and pinpad
	Handling	Check communication cable or com port is not connected
9701012	Cause	Command sending fail to pinpad
	Handling	Check communication cable or com port is not connected
9701016	Cause	Data receiving fail from pinpad (EPP)
	Handling	Check if communication cable or com port is not connected
9701017	Cause	Data sending fail from pinpad (EPP)
	Handling	Check if communication cable or com port is not connected
9701031	Cause	Pinpad (EPP) configuration data reading error
	Handling	Reboot ATM Re-install software
9701040	Cause	Failed to produce Thread for pinpad (EPP)
	Handling	Reboot ATM Re-install software
9701060	Cause	Failed to create buffer for pinpad (EPP)
	Handling	Reboot ATM Re-install software
9701111	Cause	BCC error from pinpad (EPP)
	Handling	Reboot ATM Replace pinpad
9701150	Cause	Pinpad (EPP) is down when it receives an 'Initializing' command
	Handling	Reboot ATM Replace pinpad

CODE	Error Cause and Handling	
9701151	Cause	Pinpad (EPP) is down when it receives an 'Get Status' command
	Handling	Reboot ATM Replace pinpad
9701152	Cause	Pinpad (EPP) is down when it receives an 'Clear Func Key' command
	Handling	Reboot ATM Replace pinpad
991@@91	Cause	Power off during transaction
	Handling	Check power supply
C101000	Cause	Out of Cash
	Handling	Replenish notes
D000100	Cause	Modem initializing error. An error is received from the modem controller after Modem Initialize command is issued.
	Handling	Check modem Reboot ATM
D000200	Cause	Reversal transaction failure. Cancellation of the transaction due to an error having occurred while notes were dispensed was notified to the host, however, the host did not receive this notification.
	Handling	Contact to bank to refund
D000300	Cause	PIN ERROR
	Handling	Transaction was denied by host
D000400	Cause	INVALID PIN
	Handling	Transaction was denied by host
D000500	Cause	BANK UNAVAILABLE
	Handling	Transaction was denied by host
D000600	Cause	CARD NOT SUPPORTED
	Handling	Transaction was denied by host
D000700	Cause	INSUFFICIENT FUNDS
	Handling	Transaction was denied by host
D000800	Cause	INELIGIBLE TRANSACTION
	Handling	Transaction was denied by host
D000900	Cause	INELIGIBLE ACCOUNT
	Handling	Transaction was denied by host
D001000	Cause	DAILY LIMIT EXCEEDED
	Handling	Transaction was denied by host

CODE	Error Cause and Handling	
D001100	Cause	UNABLE TO PROCESS
	Handling	Transaction was denied by host
D001200	Cause	AMOUNT TOO LARGE This error code means "Invalid Transaction" at ATM connected to RBS-LYNK.
	Handling	Transaction was denied by host
D001300	Cause	ACCOUNT CLOSED This error code means "Invalid Amount" at ATM connected to RBS-LYNK.
	Handling	Transaction was denied by host
D001400	Cause	PIN TRIES EXCEEDED This error code means "Invalid Card Number" at ATM connected to RBS-LYNK.
	Handling	Transaction was denied by host
D001500	Cause	UNABLE TO PROCESS
	Handling	Transaction was denied by host
D001600	Cause	WITHDRAWAL LIMIT ALREADY REACHED
	Handling	Transaction was denied by host
D001700	Cause	INVALID AMOUNT
	Handling	Transaction was denied by host
D001800	Cause	EXTERNAL DECLINE
	Handling	Transaction was denied by host
D001900	Cause	SYSTEM ERROR
	Handling	Transaction was denied by host
D002000	Cause	CONTACT CARD ISSUER. This error code means "Surcharge screen should have been displayed" at ATM connected to RBS-LYNK.
	Handling	Transaction was denied by host
D002100	Cause	ROUTING LOOKUP PROBLEM
	Handling	Transaction was denied by host
D002200	Cause	UNABLE TO PROCESS
	Handling	Transaction was denied by host
D002300	Cause	TRANSACTION NOT SUPPORTED
	Handling	Transaction was denied by host

CODE	Error Cause and Handling	
D002400	Cause	Exceeds Issuer Withdrawal Limit
	Handling	Transaction was denied by host
D003900	Cause	No Credit Account
	Handling	Transaction was denied by host
D005100	Cause	Insufficient Funds
	Handling	Transaction was denied by host
D005200	Cause	No Checking Account
	Handling	Transaction was denied by host
D005300	Cause	No Savings Account
	Handling	Transaction was denied by host
D005400	Cause	Expired Card
	Handling	Transaction was denied by host
D005500	Cause	Incorrect Pin
	Handling	Transaction was denied by host
D005700	Cause	Transaction not Permitted – Card
	Handling	Transaction was denied by host
D005800	Cause	Transaction not Permitted – Terminal
	Handling	Transaction was denied by host
D006100	Cause	Exceeds Withdrawal Limit
	Handling	Transaction was denied by host
D007500	Cause	PIN Tries Exceeded
	Handling	Transaction was denied by host
D007800	Cause	No Account
	Handling	Transaction was denied by host
D008000	Cause	Invalid Date
	Handling	Transaction was denied by host
D008300	Cause	Can not Verify PIN
	Handling	Transaction was denied by host
D008600	Cause	Can not Verify PIN
	Handling	Transaction was denied by host
D009100	Cause	Bank Unavailable
	Handling	Transaction was denied by host

CODE	Error Cause and Handling	
D009200	Cause	System Unavailable
	Handling	Transaction was denied by host
D009300	Cause	Transaction Serial Number mismatched
	Handling	Transaction was denied by host
D009400	Cause	Record Format Mismatched. Check if a proper AP for the host has been loaded.
	Handling	Transaction was denied by host
D009500	Cause	Routing Identification Mismatched. Check the routing Identification.
	Handling	Transaction was denied by host
D009600	Cause	Terminal Identification Mismatched. Check the terminal Identification.
	Handling	Transaction was denied by host
D009700	Cause	Response Type Mismatched (Reversal)
	Handling	Transaction was denied by host
D009800	Cause	Response Type Mismatched (Day Close)
	Handling	Transaction was denied by host
D009900	Cause	Response Type Mismatch (Config.)
	Handling	Transaction was denied by host
D009A00	Cause	Response Type Mismatch (Withdrawal/Balance/Transfer)
	Handling	Transaction was denied by host
D009B00	Cause	STX missing
	Handling	Check modem cable Contact to host
D009C00	Cause	ETX missing
	Handling	Check modem cable Contact to host
D009D00	Cause	FS missing (next to Response Code)
	Handling	Check modem cable Contact to host
D009E00	Cause	FS missing(next to Retrieval Reference Number)
	Handling	Check modem cable Contact to host
D009F00	Cause	FS missing(next to System Trace Audit Number)
	Handling	Check modem cable Contact to host

CODE	Error Cause and Handling	
D00A000	Cause	FS missing (next to Account Balance)
	Handling	Check modem cable Contact to host
D00A100	Cause	FS missing (next to Available Balance)
	Handling	Check modem cable Contact to host
D00A200	Cause	FS missing (next to Surcharge Amount)
	Handling	Check modem cable Contact to host
D00A300	Cause	FS missing (next to Authorization Response Text)
	Handling	Check modem cable Contact to host
D00A400	Cause	ETX position is not correct.
	Handling	Check modem cable Contact to host
D00A500	Cause	FS missing (next to Total Cash Dispense Amount in the Day Close message)
	Handling	Check modem cable Contact to host
D00A600	Cause	FS missing (next to Total Non Cash Dispense Amount in the Day Close message)
	Handling	Check modem cable Contact to host
D00A700	Cause	FS missing (next to Total Surcharge Amount in the Day Close message)
	Handling	Check modem cable Contact to host
D00A800	Cause	FS missing (next to Surcharge Amount in the Configuration message)
	Handling	Check modem cable Contact to host
D00A900	Cause	ETX missing (in the Configuration message)
	Handling	Check modem cable Contact to host
D011100	Cause	REVERSAL DECLINED
	Handling	Check modem cable Contact to host

CODE	Error Cause and Handling	
D022200	Cause	PIN CHANGE DECLINED
	Handling	Check modem cable Contact to host
D100000	Cause	No connection
	Handling	Check modem cable Contact to host and phone company
D110000	Cause	ENQ was not received from the host.
	Handling	Contact to phone company Contact to host
D120000	Cause	Transmission error : Failed to receive the whole data within 5 seconds after requesting the modem to send the data.
	Handling	Contact to phone company Contact to host
D130000	Cause	NAK has been sent three times or more. Failed in receiving the data due to parity or LRC error. Therefore, sent NAK to the host and requested to send the data again three times or more.
	Handling	Contact to phone company Contact to host
D150000	Cause	Modem dial connection time-out (while dialing the modem) No response from host for 60 seconds.
	Handling	Try later Contact to host and to phone company
D170100	Cause	No carrier before sending data after modem connection
	Handling	Check phone line status Check ground of AC power and noise between modem cable and power cable
D170200	Cause	No carrier before receiving ENQ from host
	Handling	Check phone line status Check ground of AC power and noise between modem cable and power cable
D170300	Cause	No carrier before sending transaction request data to host
	Handling	Check phone line status Check ground of AC power and noise between modem cable and power cable

CODE	Error Cause and Handling	
D170400	Cause	No carrier after sending transaction request data to host
	Handling	Check phone line status Check ground of AC power and noise between modem cable and power cable
D170500	Cause	No carrier before receiving ACK from host
	Handling	Check phone line status Check ground of AC power and noise between modem cable and power cable
D170600	Cause	No carrier after receiving ACK from host
	Handling	Check phone line status Check ground of AC power and noise between modem cable and power cable
D180000	Cause	No dial tone
	Handling	Check modem
D190000	Cause	No Answer
	Handling	Check phone number Contact to telephone company and host
D200000	Cause	Dial(Line) busy
	Handling	Make a transaction later Check ground phone line status
D210000	Cause	Response time-out (30 seconds) for Modem Initialize command before the modem was connected.
	Handling	Check modem
D220000	Cause	EOT was not received from the host.
	Handling	Check phone line status Contact to host
D320000	Cause	Dial connecting time-out (60Sec) or dial connection error Host response message time-out (60Sec).
	Handling	Check phone line status Contact to host
POWERA B	Cause	UPS ABNORMAL
	Handling	Check UPS
POWERA C	Cause	POWER OUT OR AC OFF
	Handling	Check AC power status and environment Check UPS
POWERB A	Cause	BATTERY LOW
	Handling	Check AC power status and environment Check UPS

G. Installation Guide

G-1 Installation Requirements and Necessary Tools

- Installation condition and space
 - Following conditions should be met before installing equipment.
 - 1) Temperature while operating should be between 40°F - 95°F
 - 2) Relative humidity while operating should be between 15% < RH < 85%, Non-Condensed
 - 3) Avoid locations where intense direct light is reflected off the LCD screen.
 - 4) Avoid locations where strong static electricity can occur.
 - 5) Avoid placing the product next to equipment that produces electromagnetic waves. It could interfere with data transfer.
 - 6) The floor must allow easy wheelchair access from the front or the side.
 - 7) Space required for servicing the machine should be considered before installation.

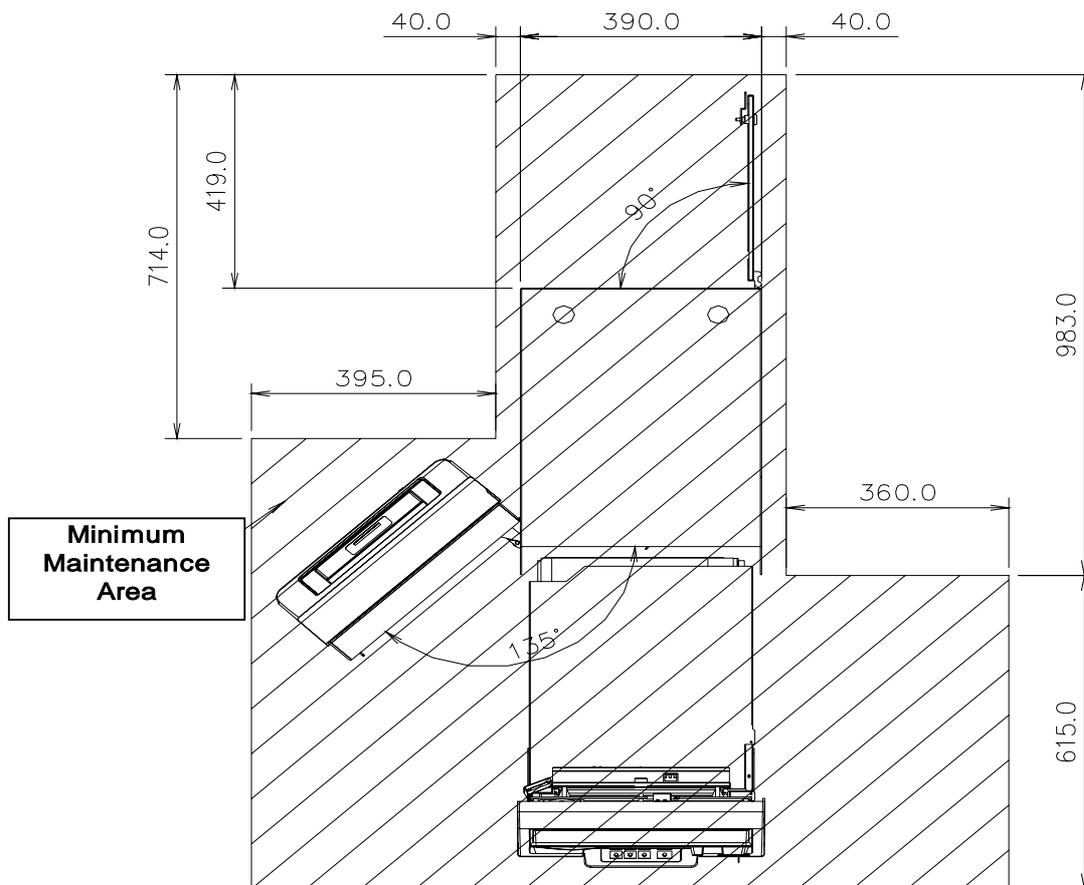


Fig. H.1 Installation space #1 (Plane view)

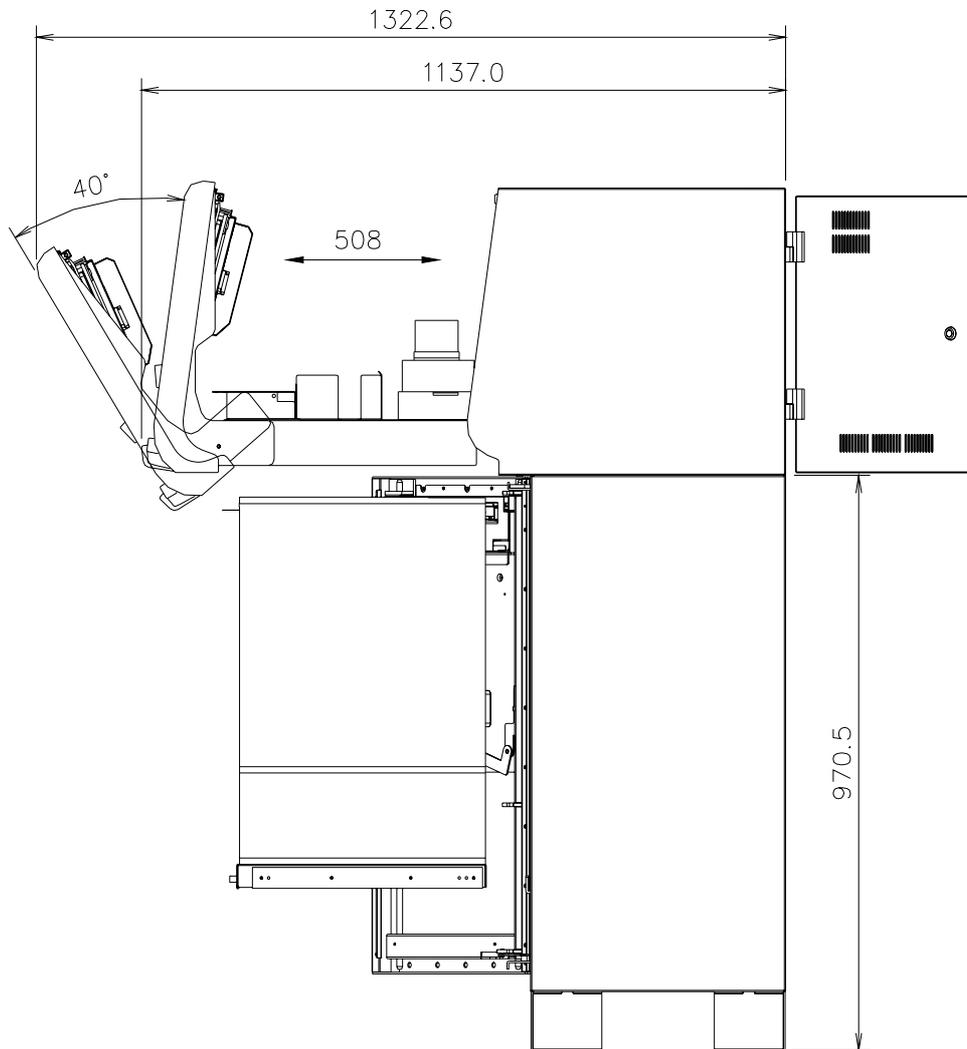


Fig. G.2 Installation space #2 (Side view)

- Tools required for installation

In order to move the machine and place it in a proper location, you should seek the help of professionals trained in moving heavy equipment.

Following tools are needed to install the machine.

- Wire cutter
- Lifter
- Screw driver (Flat, Phillips)
- Wrench (Spanner)
- Leveling tool

G-2 How to Install this ATM at Customer Site

● Unpacking

- 1) Unpack the machine on top of the palette.
- 2) Cut the straps that are fastened around the box with a knife.
(Be careful when cutting the straps.)
- 3) Use an appropriate tool to remove the nails from the palette.
- 4) Remove the lid, then box from the top. Do not discard the packaging materials until you have verified any shipping damage claim. Contact your distributor immediately if you see any shipping damage. Store the box in a safe place to re-use or discard of appropriately.
- 5) Verify the contents carefully with the packing list to be sure all items listed are included. Notify your distributor of any shortages.
- 6) If only the palette needs to be removed, lift the whole machine from the bottom and set it aside.

● Physical Installation

To install the Model 5050 ATM, perform the following steps.

- 1) Place the “Anchor bolts locate sheet” at the place where the machine is to be installed.
(refer to Fig. H.3)
- 2) Place the system on a flat surface, the system has a tendency to tip over if the surface is over 5 degrees. (refer to Fig H.4) Be careful when opening the top or bottom of the machine s it will be off balance
- 3) Place the Anchor nuts into the ground according to the anchor bolts locate sheet.
(4 places)
- 4) Place the Model 5050 ATM on top of the sheet.
- 5) Open the Security cover with the key provided.
- 6) Using the supplied combination (factory preset at 50-25-50) open the Security Door. This combination should be changed as soon as possible. Refer to Appendix B for instructions on changing the lock combination.
- 7) After the anchor nuts are in place according to the anchor holes on the bottom of the 5050 ATM, tighten the anchor bolts tightly. (refer to H.3)

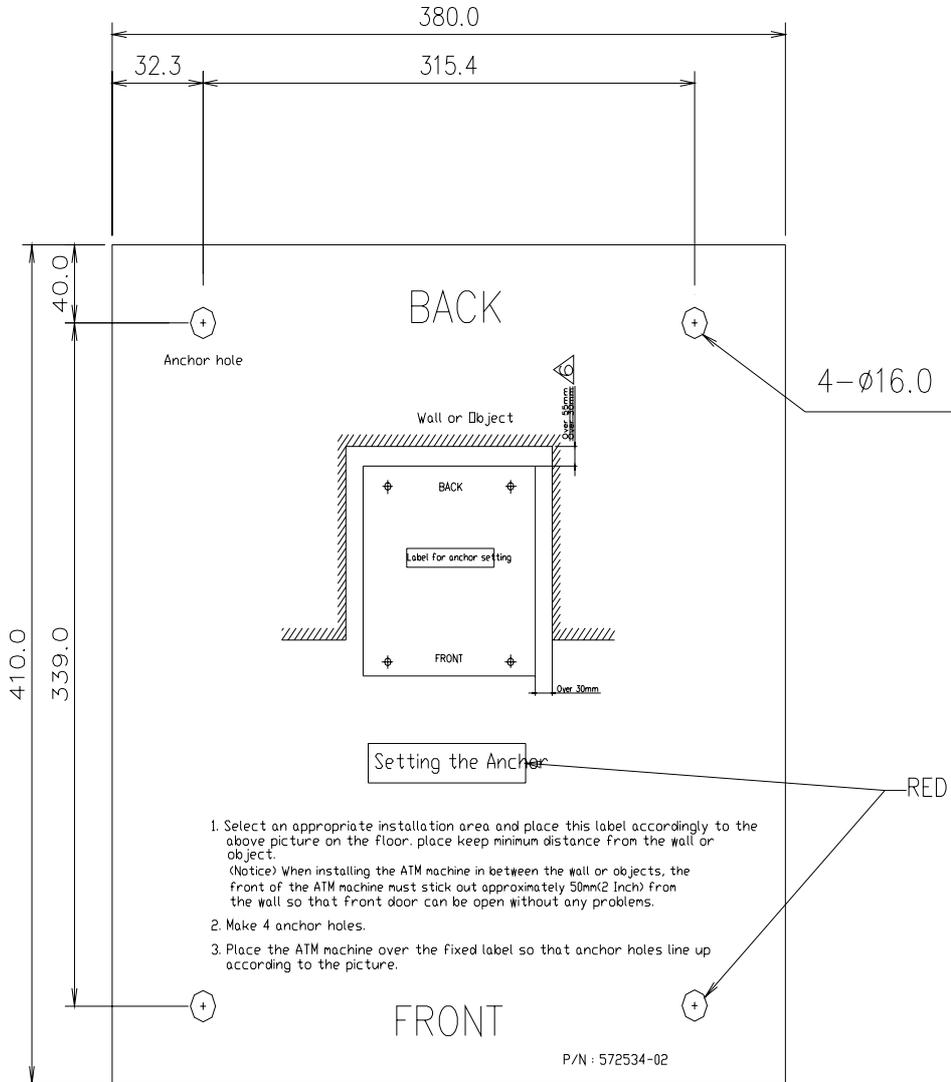


Fig. G.3 Anchor diagram of 5050 ATM

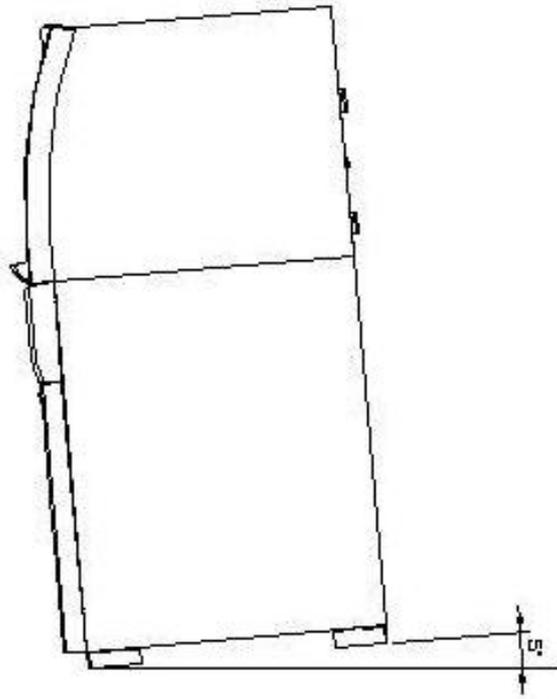


Fig. G.4 Making a surface level of ATM

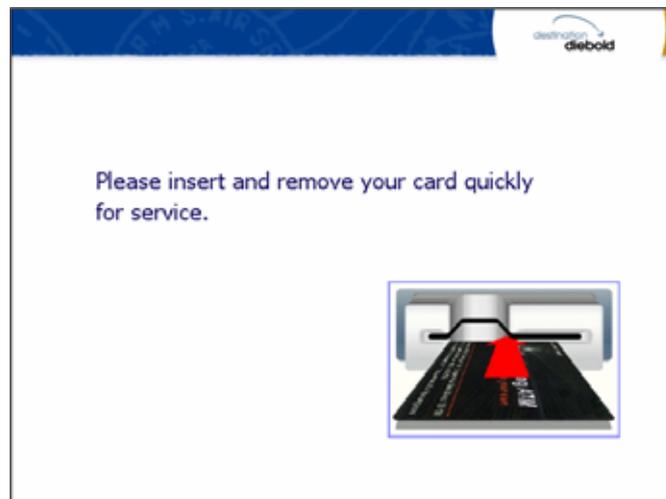
H. Demonstration Screen

This chapter shows you the demonstration screen to test 5050 ATM without connecting to host for your information.

H.1 DEMO TRANSACTION PROCESS

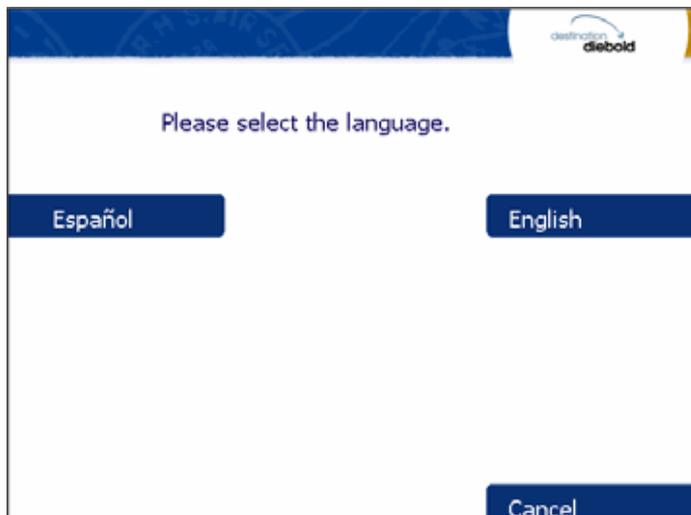
H.1.1 AP MAIN

This is a main AP screen and you can start to do transaction after inserting and quickly removing the card on card reader.



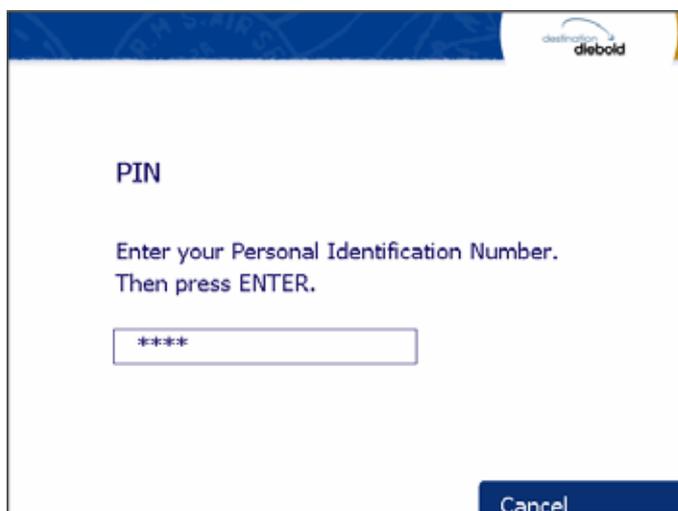
H.1.2 SELECT LANGUAGE

Language a customer would like to use in transaction can be selected in this screen.



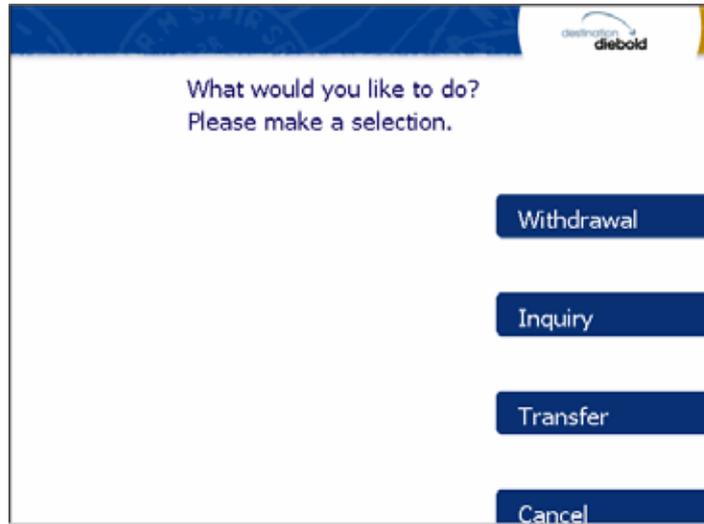
H.1.3 INPUT PASSWORD

This is a screen to enter the password of customer's card



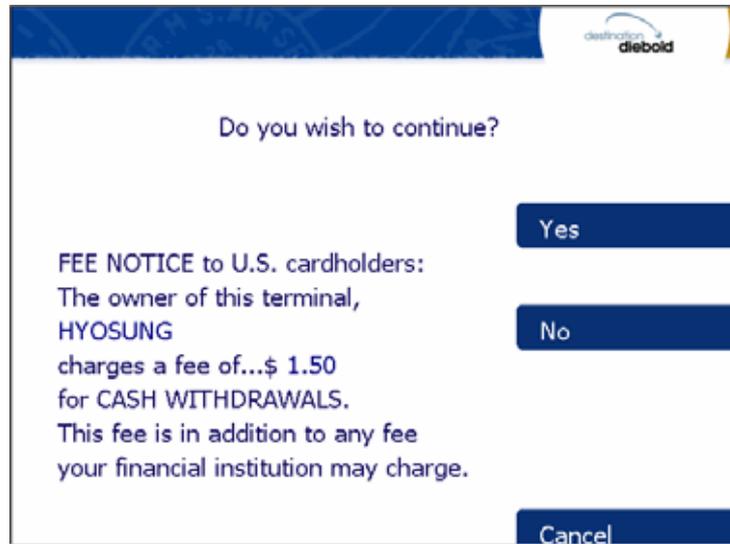
H.1.4 SELECT TRANSACTION - English

Any transaction type customer wants to transact such as withdrawal, balance inquiry and transfer is selected in this screen.



H.1.4.1 WITHDRAWAL: DISPLAY FEE

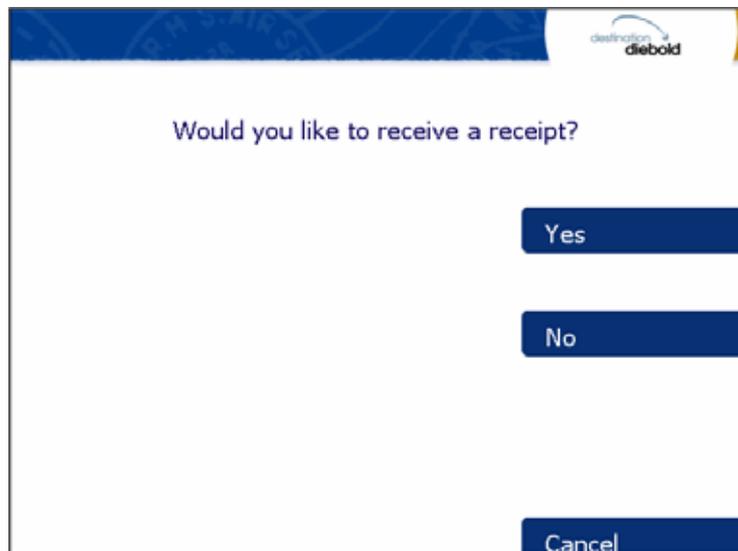
This screen is to show a customer the information of surcharge.



The screenshot shows a terminal screen with a blue header bar containing the "destination diebold" logo. The main text asks "Do you wish to continue?". Below this, a "FEE NOTICE to U.S. cardholders:" is displayed, stating that the terminal owner, HYOSUNG, charges a \$1.50 fee for cash withdrawals, in addition to any fee from the financial institution. Three blue buttons are visible on the right side: "Yes", "No", and "Cancel".

H.1.4.2 WITHDRAWAL: SELECT TO RECEIVE RECEIPT OR NOT

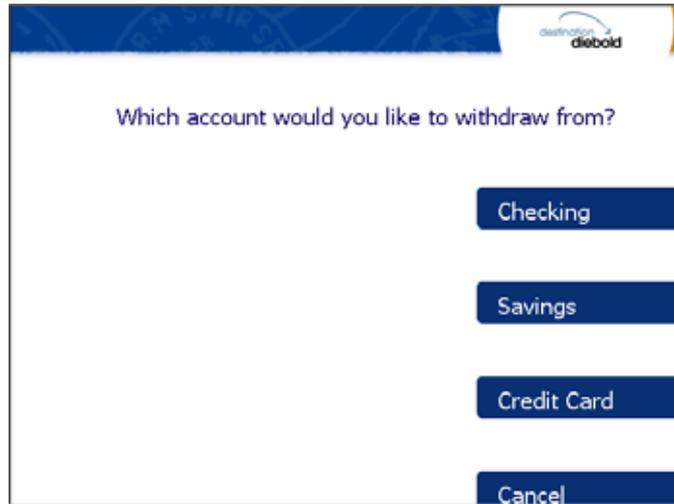
This screen is to ask a customer if he gets the receipt or not.



The screenshot shows a terminal screen with a blue header bar containing the "destination diebold" logo. The main text asks "Would you like to receive a receipt?". Three blue buttons are visible on the right side: "Yes", "No", and "Cancel".

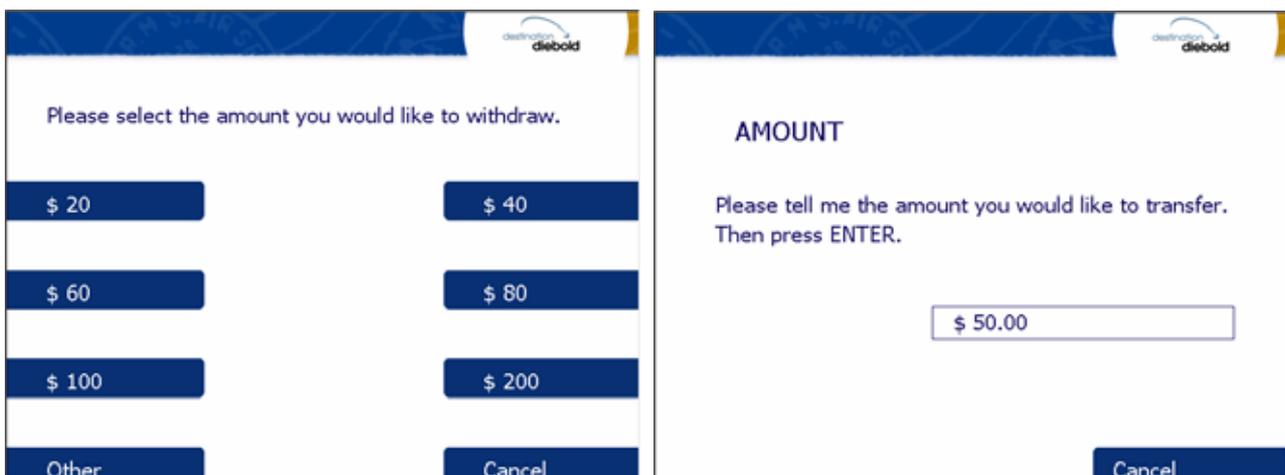
H.1.4.3 WITHDRAWAL: SELECT TO WITHDRAW FROM

This screen is to ask a customer where he wants to withdraw in checking, saving, credit card



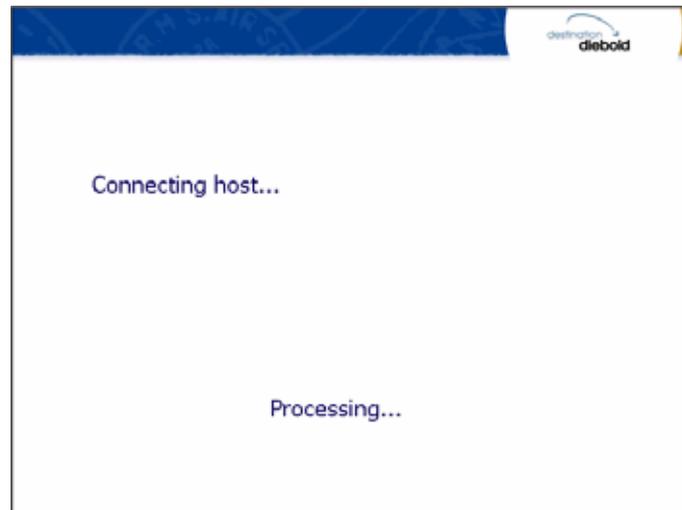
H.1.4.4 WITHDRAWAL: SELECT THE AMOUNT OF WITHDRAWAL

This screen is to select the amount of withdrawal. If there is not any amount to withdraw, please select the OTHER key and can input the amount you would like to withdraw.



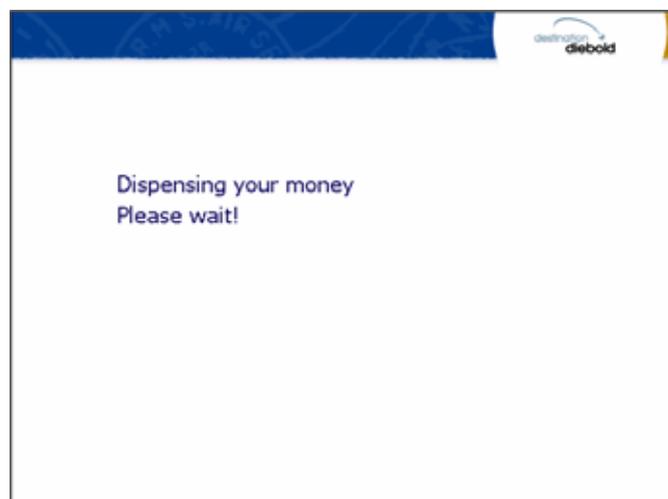
H.1.4.5. WITHDRAWAL: CONNECTING HOST

This screen is to show the customer that the transaction is in progress.



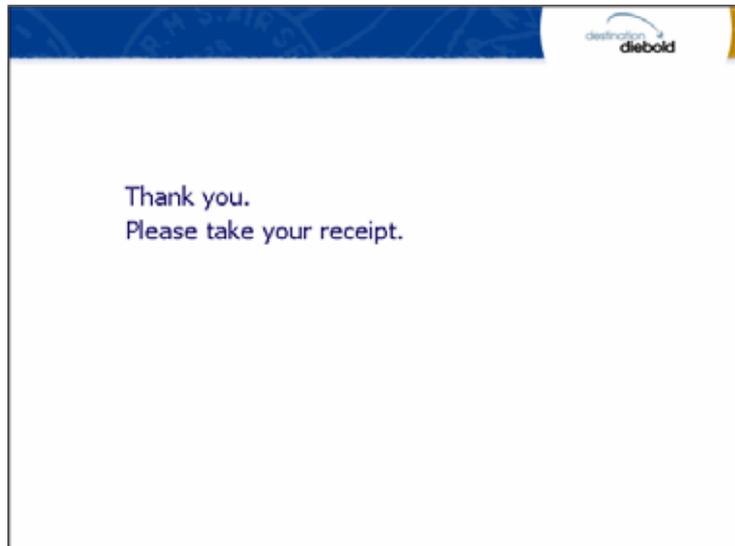
H.1.4.6. WITHDRAWAL: DISPENSING MONEY

This screen is to show the customer that your request amount is being dispensed



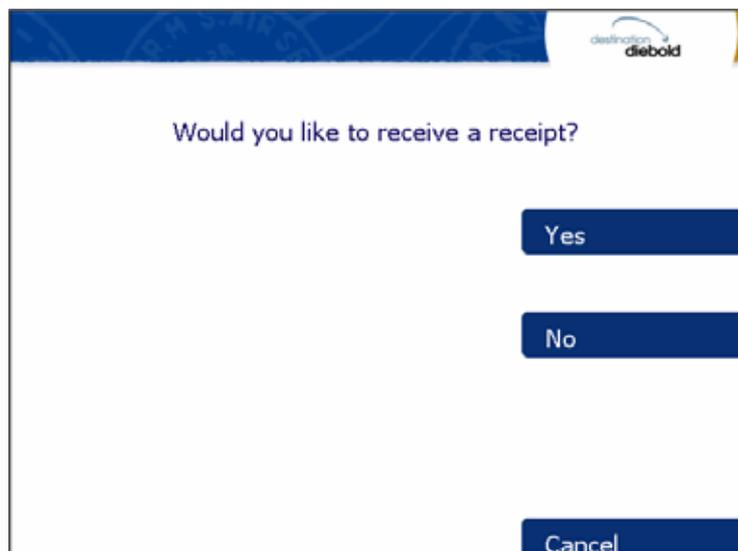
H.1.4.7. WITHDRAWAL:PLEASE TAKE RECEIPT

This screen is to show the customer that the transaction has been successfully completed and to notify the customer to take their receipt.



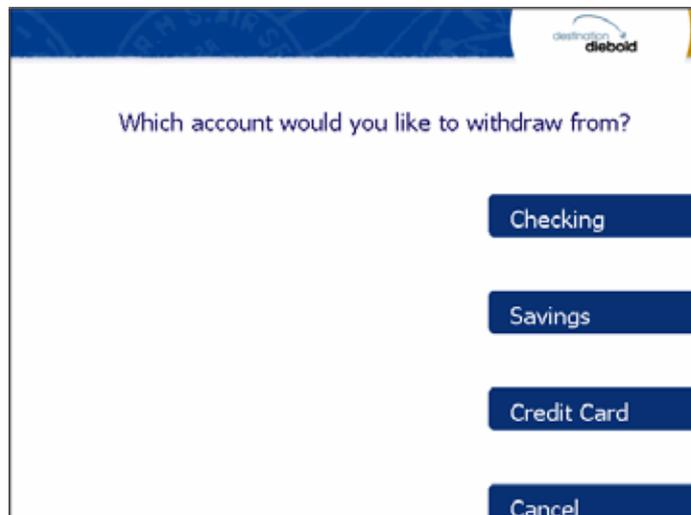
H.1.4.8. TRANSFER: SELECT TO RECEIVE RECEIPT OR NOT

This screen is to ask a customer if he gets the receipt or not.



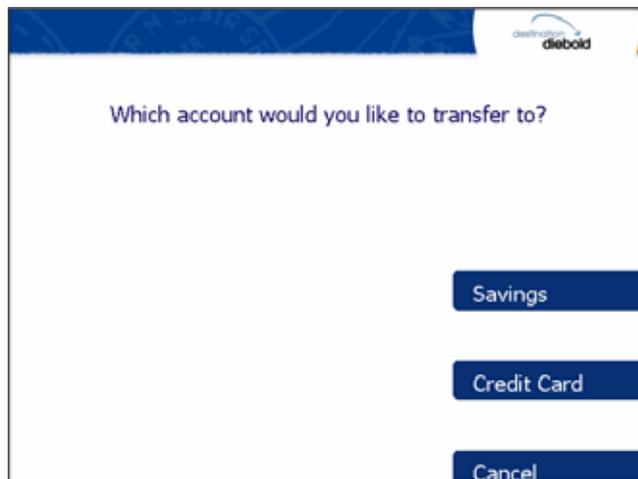
H.1.4.9 TRANSFER: SELECT ACCOUNT TO TRANSFER FROM

This screen is to ask a customer where he wants to transfer from; checking, saving, credit card



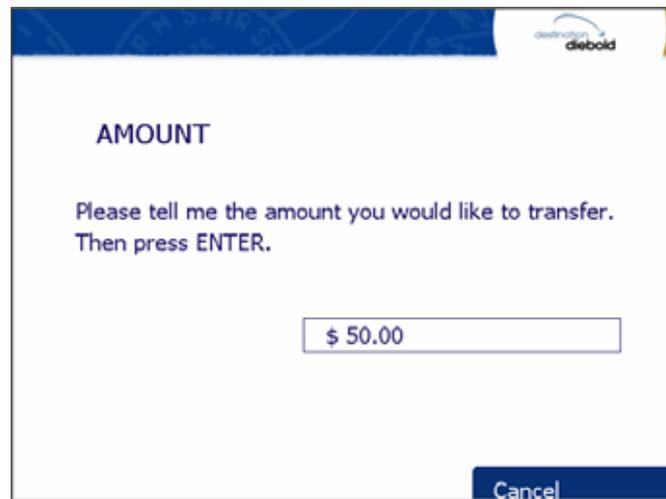
H.1.4.10 TRANSFER: SELECT ACCOUNT TO TRANSFER TO

This screen is to ask a customer where he wants to transfer to; checking, saving, credit card



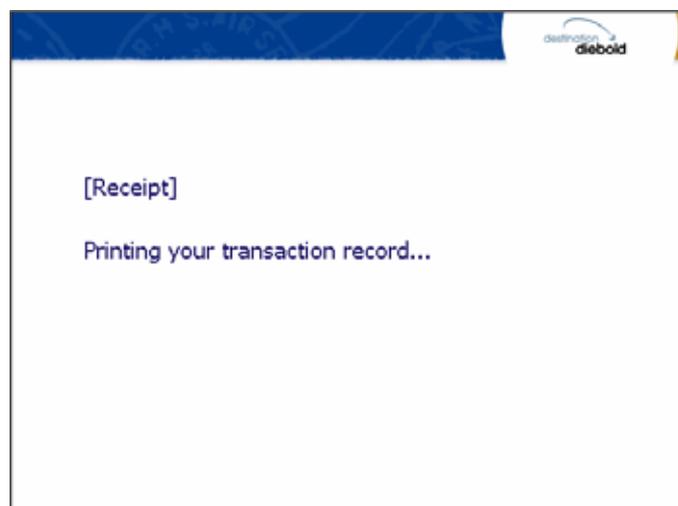
H.1.4.11 TRANSFER: SELECT THE AMOUNT OF TRANSFER

This screen is to select the amount of transfer. I



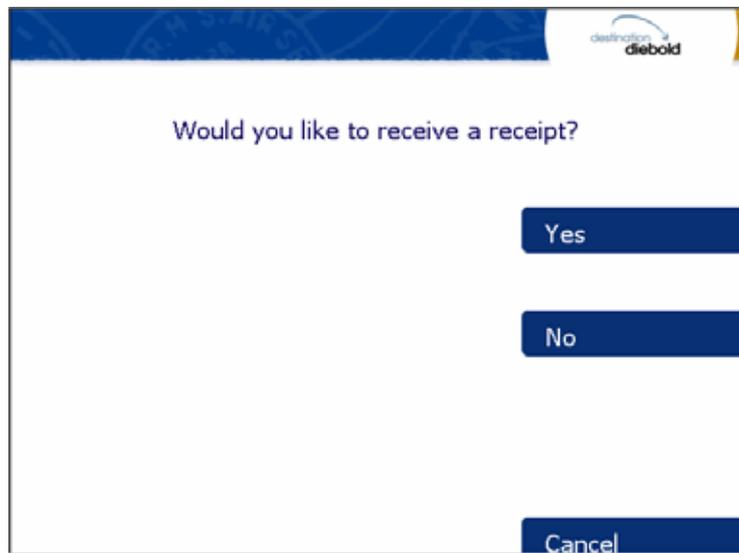
H.1.4.12 TRANSFER: PRINTING TRANSACTION

This screen is to show the customer that it is printing transaction results.



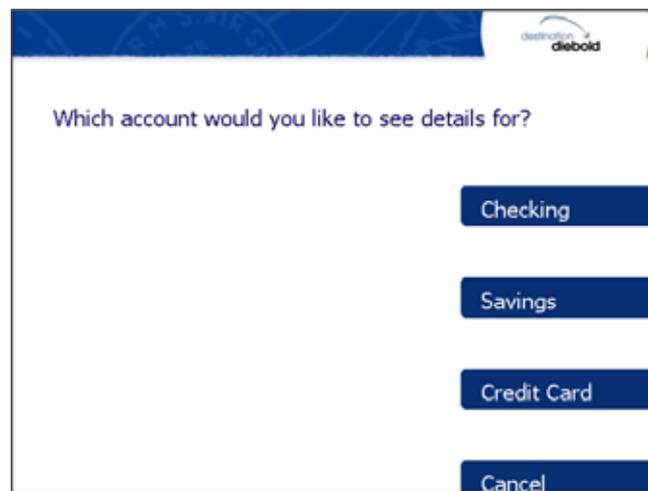
H.1.4.13. INQUIRY: SELECT TO RECEIVE RECEIPT OR NOT

This screen is to ask a customer if he gets the receipt or not.



H.1.4.14 INQUIRY: SELECT ACCOUNT TO INQUIRE

This screen is to ask a customer which account he wants to inquire



H.1.4.15. INQUIRY: PRINTING TRANSACTION

This screen is to show the customer that it is printing transaction results.



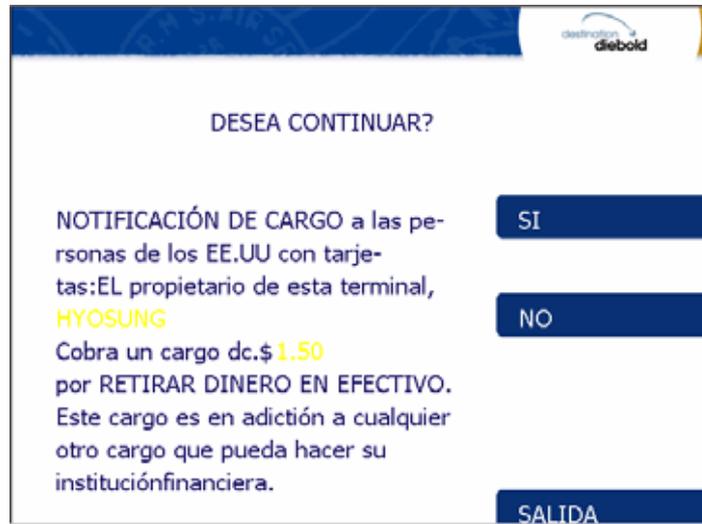
H.1.5. SELECT TRANSACTION - SPANISH

Any transaction type customer wants to transact such as withdrawal, balance inquiry and transfer is selected in this screen.



H.1.5.1 WITHDRAWAL: DISPLAY FEE

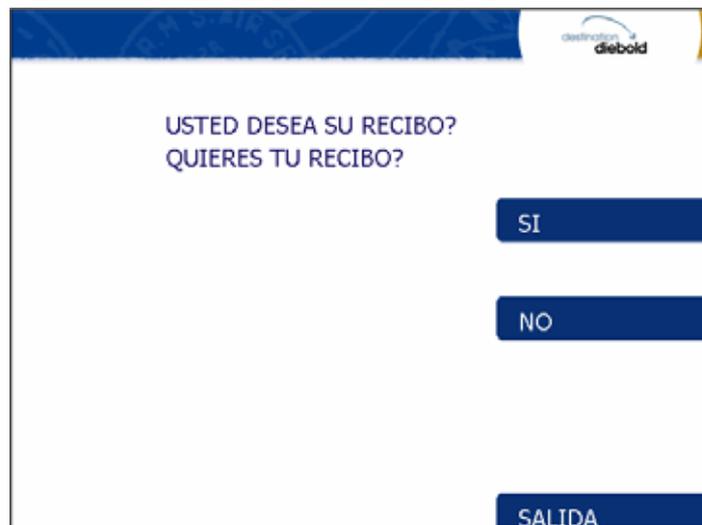
This screen is to show a customer the information of surcharge.



The screenshot shows a terminal screen with a blue header bar containing the "destination diebold" logo. The main text asks "DESEA CONTINUAR?" (Do you want to continue?). Below this, it displays a surcharge notification: "NOTIFICACIÓN DE CARGO a las personas de los EE.UU con tarjetas: EL propietario de esta terminal, HYOSUNG. Cobra un cargo de \$ 1.50 por RETIRAR DINERO EN EFECTIVO. Este cargo es en adición a cualquier otro cargo que pueda hacer su institución financiera." To the right of the text are three blue buttons: "SI" (Yes), "NO" (No), and "SALIDA" (Exit).

H.1.5.2 WITHDRAWAL: SELECT TO RECEIVE RECEIPT OR NOT

This screen is to ask a customer if he gets the receipt or not.



The screenshot shows a terminal screen with a blue header bar containing the "destination diebold" logo. The main text asks "USTED DESEA SU RECIBO? QUIERES TU RECIBO?" (Do you want your receipt? Do you want your receipt?). To the right of the text are three blue buttons: "SI" (Yes), "NO" (No), and "SALIDA" (Exit).

H.1.5.3 WITHDRAWAL: SELECT TO WITHDRAW FROM

This screen is to ask a customer where he wants to withdraw in checking, saving, credit card



SELECCIONE EL TIPO DE RETIRAR

Cuenta Corriente

Cuenta de Ahorros

Tarjeta de Credito

SALIDA

H.1.5.4 WITHDRAWAL: SELECT THE AMOUNT OF WITHDRAWAL

This screen is to select the amount of withdrawal. If there is not any amount to withdraw, please select the OTHER key and can input the amount you would like to withdraw.



SELECCIONE EL TIPO DE RETIRAR

\$ 20

\$ 40

\$ 60

\$ 80

\$ 100

\$ 200

Otra

SALIDA

AMOUNT

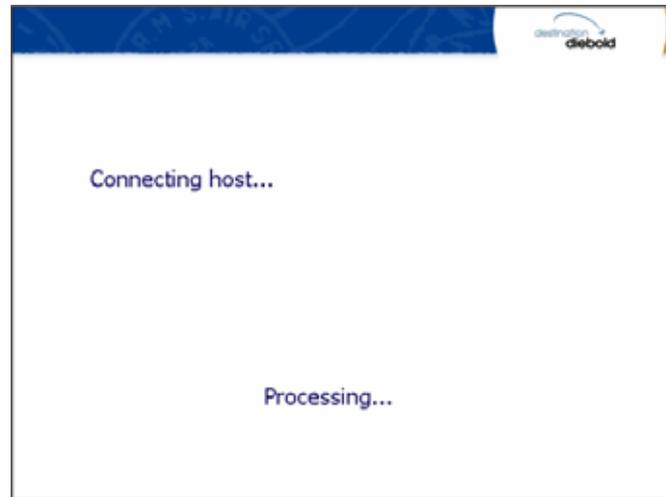
INGRESE LA CANTIDAD
OPRIMA ENTER

\$ 50.00

SALIDA

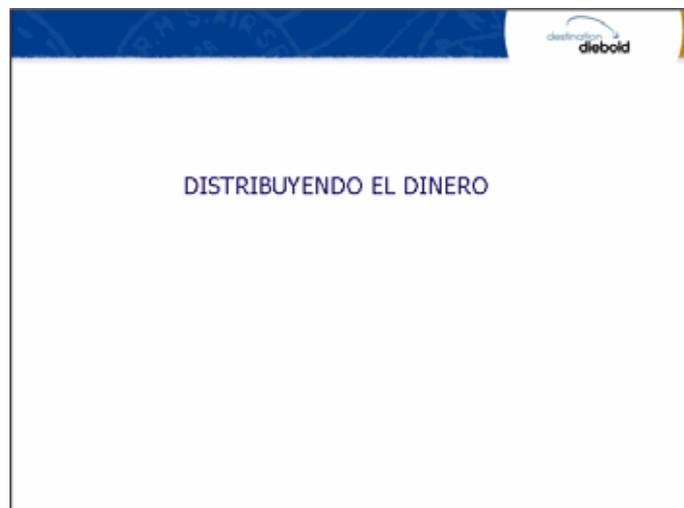
H.1.5.5. WITHDRAWAL: CONNECTING HOST

This screen is to show the customer that the transaction is in progress.



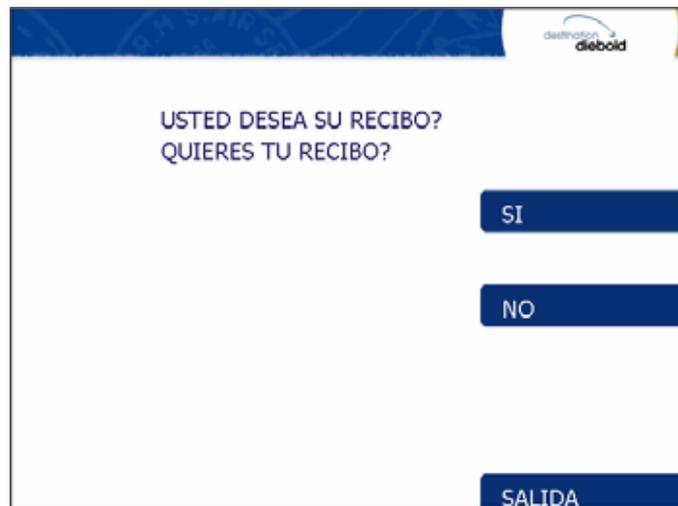
H.1.5.6. WITHDRAWAL: DISPENSING MONEY

This screen is to show the customer that your request amount is being dispensed



H.1.5.7. TRANSFER: SELECT TO RECEIVE RECEIPT OR NOT

This screen is to ask a customer if he gets the receipt or not.



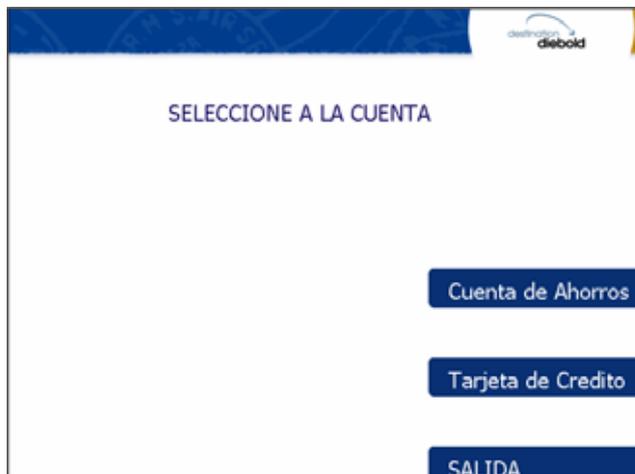
H.1.5.8 TRANSFER: SELECT ACCOUNT TO TRANSFER FROM

This screen is to ask a customer where he wants to transfer from; checking, saving, credit card



H.1.5.9 TRANSFER: SELECT ACCOUNT TO TRANSFER TO

This screen is to ask a customer where he wants to transfer to; checking, saving, credit card



H.1.5.10 TRANSFER: SELECT THE AMOUNT OF TRANSFER

This screen is to select the amount of transfer.



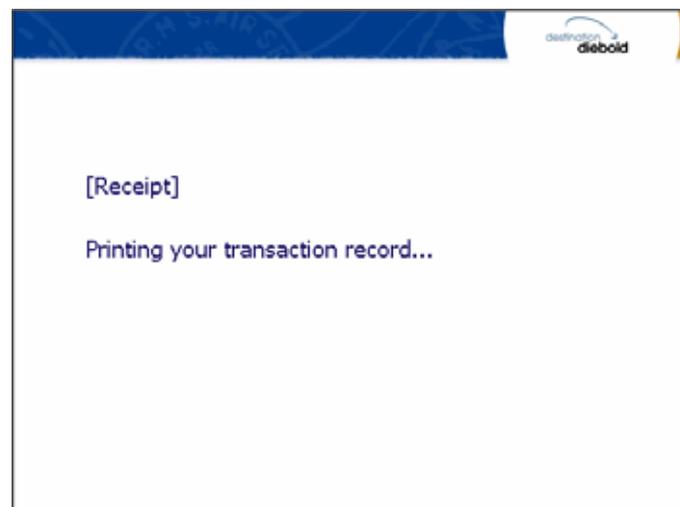
H.1.5.11 INQUIRY: SELECT ACCOUNT TO INQUIRE

This screen is to ask a customer which account he wants to inquire



H.1.5.12. INQUIRY: PRINTING TRANSACTION

This screen is to show the customer that it is printing transaction results.



H.1.6. THANK YOU

This screen shows the customer that the customer request has been successfully completed.

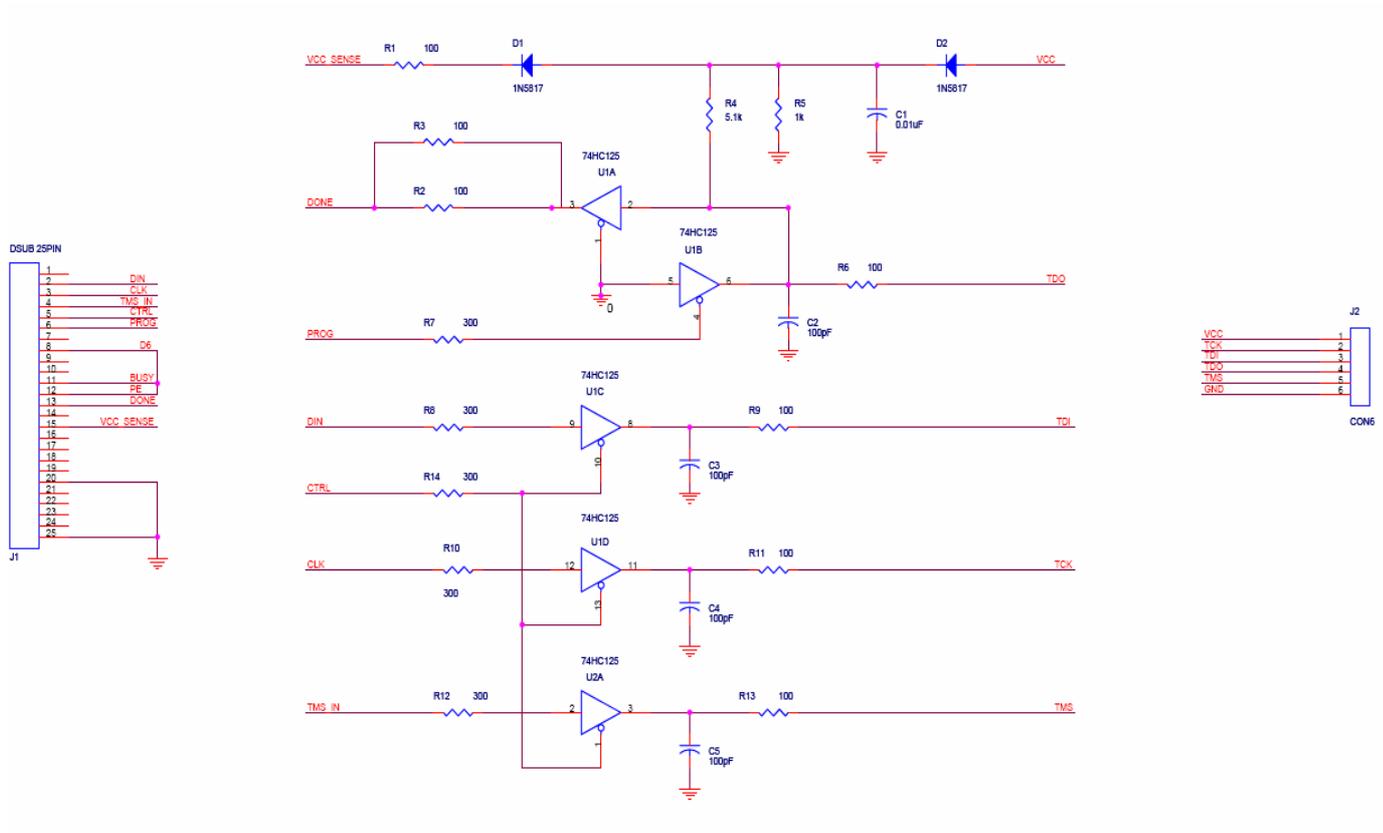


H.1.7. OUT OF SERVICE

This screen notifies the customer the ATM is currently out of service and can not perform customer requests and transactions.



I. J-TAG Circuit



J. Supported USB Memory and HUB

J.1 USB Memory

J.1.1 Supported USB Memory

No.	Vendor	Modem Model	Memory	Remarks
1	Sony Corporation (VID:0x054C)	Storage Media (PID:0x0243)	512MB	
2	SMI Corportation (VID:0x090C)	USB Disk (PID:0x1000)	512MB	
3	Kingston (VID:0x0951)	Data Traveler (PID:0x1603)	512MB	
4	pq1 (VID:0x3538)	USB Mass Storage Device (PID:0x0042)	512MB	
5	LEXAR Media (VID:0x05DC)	JD FIREFLY (PID:0A560)	1GB	
6	LG (VID:0x090C)	USB Driver (PID:0x1000)	1GB	
7	Memorex (VID:0x12F7)	TD Classic 003B (PID:0x1A00)	1GB	

VID : Vendor ID, PID : Product ID

J.1.2 Supported Memory Specifications

- 1) File System: FAT
- 2) Number of supported drivers: 1
- 3) Memory: 2GB or below

Example 1) SANDisk 512MB is not supported because it has 2 file systems.

(CDFS and FAT)

2) Sony Storage Media is supported because it is FAT, 1 driver and 512 MB size.

J.2 Supported USB HUB Types

No.	Vendor	Modem Model	VID(HUB CHIP Vendor)	PID
1	Macsense Connectivity	UH-Mini4i	0x05E3(Genesys Logics inc)	0x0606
2	INLAND	Inland USB2.0 HUB	0x0409(NEC Corporation)	0x005A
3	VAKO International Inc	USB 2.0 Aluminum HUB	0x05E3(Genesys Logics inc)	0x0606
4	PPA Int'l	I.Connector(PPA 4Port HUB)	0x05E3(Genesys Logics inc)	0x0606
5	ZIO	USB 2040 Mini	0x05E3(Genesys Logics inc)	0x0606
6	DSP Inc	E-Star QU24WR	0x05E3(Genesys Logics inc)	0x0606