OLYMPIA

MODEL NC-350A Series
CURRENCY COUNTER

USERS GUIDE

(Version 2.0 - First Edition: May 2001)

CONTENTS

GENERAL INFORMATION

Before you operate the machine, please read this manual carefully. Do not operate the machine until you understand the contents of this document.

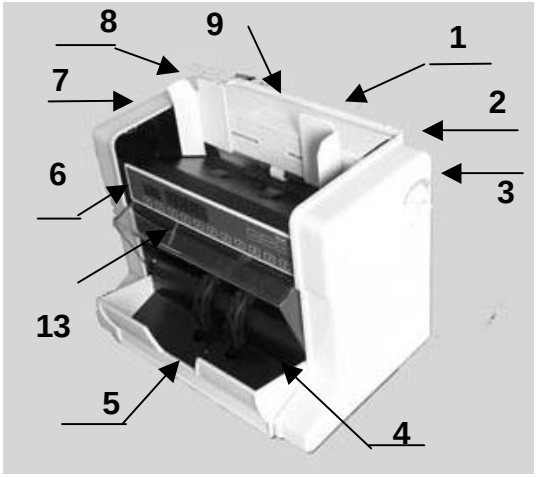
Should you have any doubts, please contact your local distributor, or sales agent, for further advice.

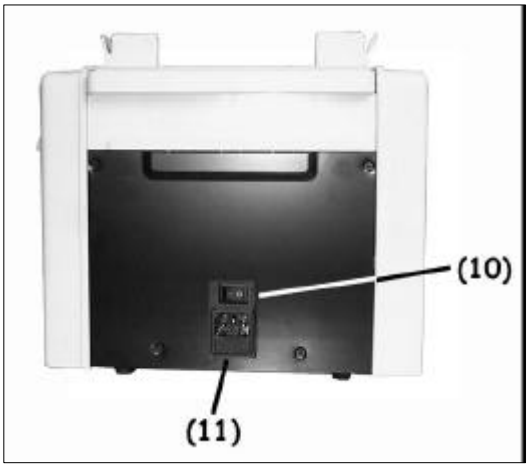
In the NC-350A series, there are three models with various functional options:

- NC-350A The Basic Model
- NC-350A UV With Ultraviolet Counterfeit Detection
- NC-350A 2MG With Magnetic Counterfeit Detection
- NC-350A UV/2MG With Ultraviolet & Magnetic Counterfeit Detection
- NC-350A UV/3D With Ultraviolet & 3D Counterfeit Detection
- NC-350A 2MG/3D With Magnetic & 3D Counterfeit Detection
- NC-350A UV/2MG/3D With Ultraviolet, Magnetic & 3D Counterfeit Detection

MACHINE OVERVIEW

1. Carrying Handle
2. Right Cover
3. Thickness Knob
4. Stacker Vanes
5. Stack Plate
6. Control Panel
7. Left Cover
8. Note Guide Plate
9. Rear Cover





10. Power Switch
11. Power Socket (With Fuse)
13 Dustproof Cover

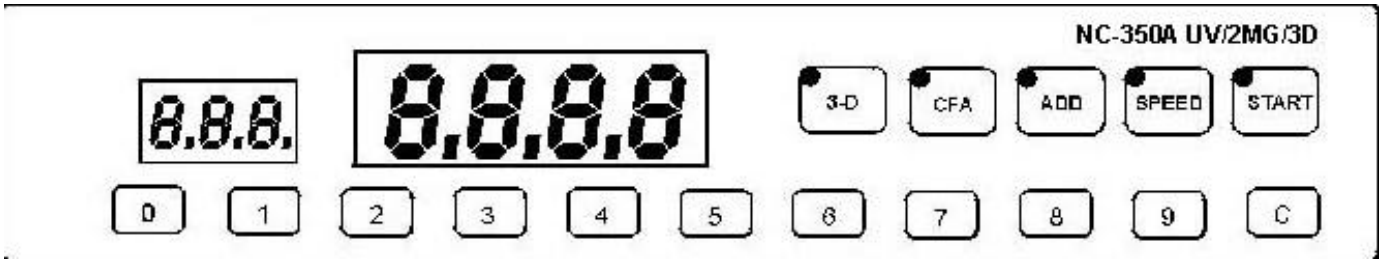
TECHNICAL SPECIFICATION

Counting Speed	1500 pcs/min (High Speed)
	1000 pcs/min (Standard Speed)
	600 pcs/min (Low Speed)
Hopper Capacity	200 pcs
Suitable Note Size	130 x 60~190 x 80mm
Operation Mode	Double Detection Mode
	Accumulation Counting Mode
	Ultraviolet Detection Mode (Option)
	Magnetic Detection Mode (Option)
	Length Detection Mode (Option)
	Width Detection Mode (Option)
	Remote Display (Option)
	RS232 Communication Interface (Option)
Power Consumption	50 Watts (Operating)
Power Requirements	110 or 220 or 240 Volts 50/60Hz
Dimensions	320(L) x 330(W) x 320(H) mm
Weight	7.5 Kg

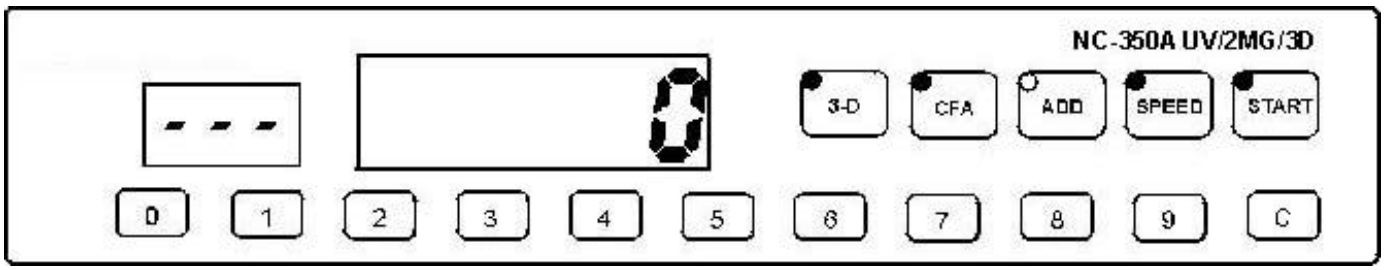
INITIAL OPERATION STEPS

CAUTION: **Before you turn on the machine, please ensure you remove ALL Notes from the Hopper and Stacker areas.**

Turn ON the Power Switch on the rear of the machine. The machine will enter a 'Self-Test' mode whereby the display will show:



The machine Motor systems will run for approximately 1 second and then, if correct, the Motors will stop and the display will change to show:



When the machine leaves the factory, the **Default Functions** are set as follows:

UV Counterfeit Detection (**UVD**)	Uv - - 2 (Only for the model with 'UV')
MaGnetic Counterfeit Detection	Off (Only for the model with 'MG')
Counting **Speed**	As Last User Selection
Double Detection	dd - - 2
Length Detection	Ld - - 5 (Only for the Model with “3D”)
Width Detection	Hd - -5 (Only for the Model with “3D”)
Counting Mode	As Last User Selection
Auto/Manual Start	Auto Start (Switch to AutoStart when turn on the power again)

If the various function settings of the machine were pre-set by the previous operator, the machine will automatically default back to these previous selections when you turn the machine back **ON**.

If you wish to change the default function setting, please see the section headed 'Function Setting' - (See Page 6).

It is vitally important to adjust the distance between the two Note Guides according to the length of the notes you will be counting. Place the notes in the Hopper, ensuring that the lower notes within the bundle are inserted firmly into the rear of the feed area.

The correct Feed Gap setting of the Central Feed Roller assemblies is vitally important to the smooth functioning of the machine. After extremely long-term usage, the urethane components of both the Feed Roller and the Friction Roller may be subject to natural wear. Under this condition, the Feed Gap may become too wide and, as a result, Error Codes will be generated and note feeding will become erratic.

To check and adjust the Feed Gap to counteract this simple wear condition, please use the following procedure:

1. Manually insert a genuine bank note into the Feed Gap and pull it rearwards, if you did not feel any resistance whilst removing the note, this indicates the gap is too wide. If you feel the resistance is very strong, it indicates the Feed Gap is too narrow. (When the machine leaves our factory, the initial setting of the Thickness Dial is 8).

2. If the Feed Gap is found to be too wide, please adjust the Thickness Knob (which is mounted on the right side cover) clockwise to slowly reduce the Feed Gap until the proper slipping- resistance is achieved with your bank note.

3. If the Feed Gap is found to be too narrow, please adjust the Thickness Knob counter- clockwise to increase the feed gap until the proper slipping-resistance is achieved with your bank note.

The machine will start counting automatically.

The machine will stop automatically under the following Conditions:

- All the notes in the Hopper have been counted.

- The machine count has achieved the pre-set batch quantity.

- When an error occurs - An Error Code message will be shown on the display. Please refer to the Troubleshooting 'Error Code' table at the end of this Users Guide.

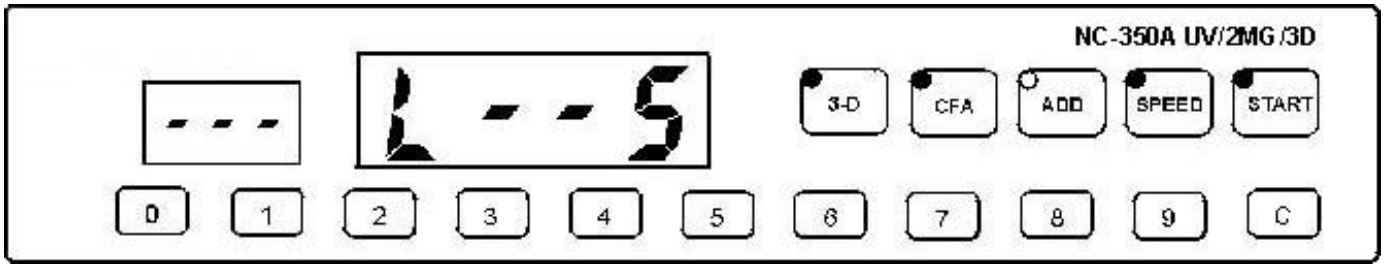
Function Setting

1. LENGTH DETECTION
(Only available for the model with “3D”)

NOTES:

1. Length Detection (LD) is an optional feature of the NC350A series currency counter. It is principally used to identify the denomination of the bank notes being counted where the particular national currency has a significant (+3 mm) difference, in length, between denominations.
2. This system will allow reasonable latitude for bent/missing bill corners, but will not ignore extreme vertical edge errors, or misalignment.
3. Correct equidistant positioning of the Note Guides will greatly assist the machine to feed the bank notes.

By pressing the **3-D** key, the machine will enter into the Length Detection Setting. The display will show:



The selectable range of the Length Detection Accuracy is 3mm, 5mm, 7mm, 9mm and off. You can select the Length Detection Accuracy simply by pressing the corresponding numeric keys. Turn off this function by pressing the key “0”. After selecting the desired leve l, press the **START** key to save the setting and exit from the setting mode.

2. WIDTH DETECTION
(Only available for the model with “3D”)

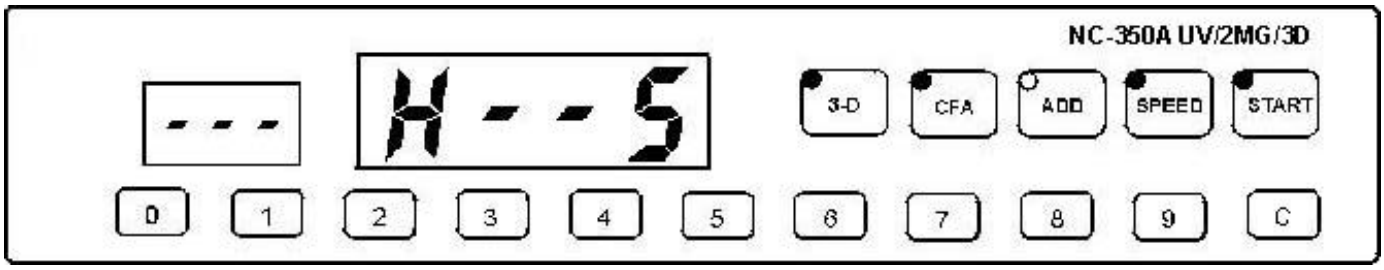
NOTES:

The Width Detection (WD) is measuring the smaller dimension of the bank note. It then compares this information with preceding bills in the present count run, in order to largely eliminate the possibility of smaller denominations being included in the count, in error. This usually happens when small notes are ‘hidden’ within a bundle of larger ones (Although the WD fe ature will also cause the machine to STOP if the bill is larger).

1. When opting to use this feature, from the H - - 0 (OFF) position, there are many available settings to choose from:- H - - 3, H - - 5, H - - 7 and H - - 9. These numbers indicate the millimetre (mm) difference, in the narrow dimension size, between the denominations of your bank notes. It is important to know that you should measure the difference beforehand, and set the machine to detect to the nearest of your differential. Your local Distributor will readily provide guidance on domestic currency settings.

By pressing the **3-D** key two times, the machine will enter into the Width Detection Setting. The

display will show:



The selectable range of the Width Detection Accuracy is 3mm, 5mm, 7mm, 9mm and off. You can select the Width Detection Accuracy simply by pressing the corresponding numeric keys. Turn off this function by pressing the key “0”. After selecting the desired level, press the **START** key to save the setting and exit from the setting mode.

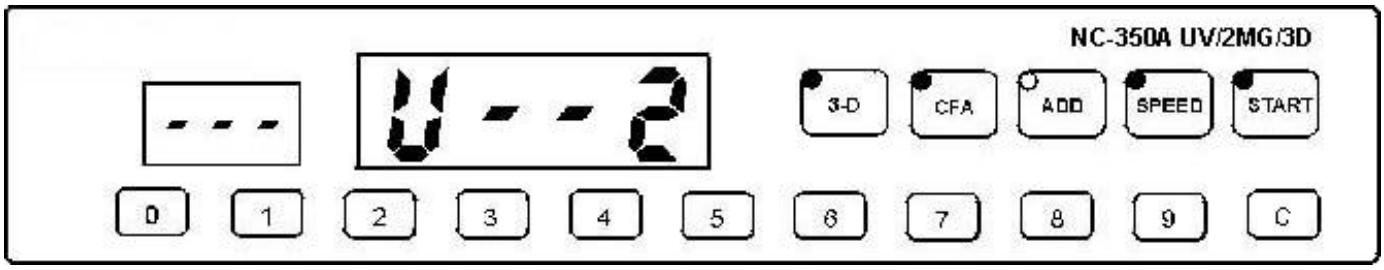
When both the Length Detection Function and the Width Detection Function are turned off, the red LED indicator on the **3-D** key will be off.

3. UV COUNTERFEIT DETECTION SETTING (Only available for the model with “UV”)

NOTES:

1. The vast majority of the world's bank notes are printed on a quality of paper designed to withstand frequent handling and extend the time in circulation. This specification normally means that they are printed on a high quality, linen-based paper, which has low fluorescence characteristics. Because the majority of counterfeit bank notes are printed on poorer quality papers, which have been bleached and therefore fluoresce, UV detection is normally the most useful method of helping to find forged bills at the speed at which a currency counter operates.
2. As the machine has stopped, because of the possibility of a counterfeit being present, you should then remove the last (top) note to have arrived in the Stacker area in order to make a decision on the validity of the bill by closer visual examination.
3. Most users will find the default position of U - - 2 (Standard) to be correct for their requirements. Some experimentation using a lower, or higher setting may, in exceptional circumstances, be necessary. Your local Distributor will be able to provide guidance, if required.

By pressing the **CFA** key, the machine will enter into the UVD system feature. The display will show:



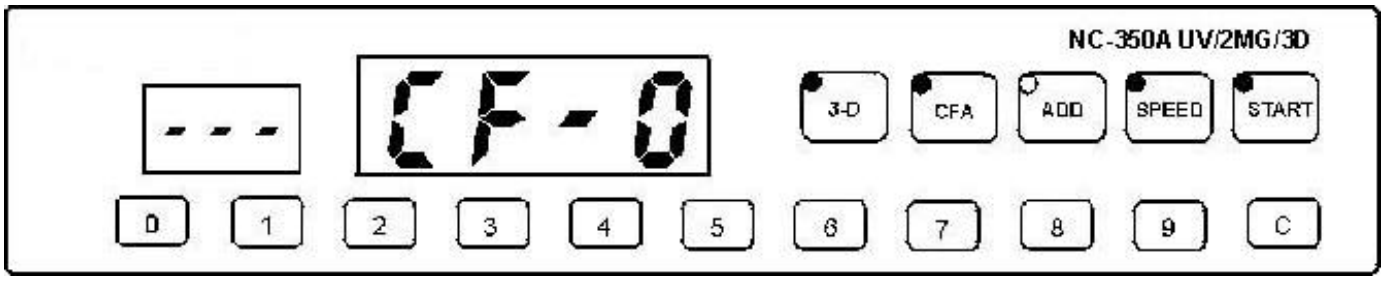
Press the **UVD** keys to change the default UVD detection level setting, if required. The indicated **U - - 2** will now change through **U - - 3**, **U - - 0**, **U - - 1** and **U - - 2**, then recycle sequentially. The **0** indicates **OFF**, the **1** indicates a LOW detection level, the **2** indicates a STANDARD level, and the **3** indicates a HIGH detection level. After selecting the desired level, press the **START** key to save the setting and exit from the setting mode.

4. MAGNETIC COUNTERFEIT DETECTION SETTING (Only available for the model with "2MG")

NOTES:

Magnetic is a device that is useful in detecting forgeries only when the currency being counted is printed with magnetic ink as a security feature. (Most commonly found on USA$'s and Italian Lira). This feature will examine specific areas of the bank note surface for the presence of a magnetic field, and where this is low, or absent, the machine will 'STOP', the Batch Display will show "CF", and an audible Buzzer Alarm to indicate that a possible forgery is present. As the machine has stopped only because of the possibility of a counterfeit being present, you should then remove the last (top) note to have arrived in the Stacker area for detailed examination.

Press the CFA key two times to select the Magnetic Counterfeit Detection on or off, the display will show:



When the Display shows "CF – 1", the Magnetic Counterfeit Detection is on. Press the MAG key again, the display will show "CF – 0", the Magnetic Counterfeit Detection is off and the red LED indicator on the MAG key will be off. After selecting the desired level, press the **START** key to save the setting and exit from the setting mode.

5. DOUBLE DETECTION SETTING

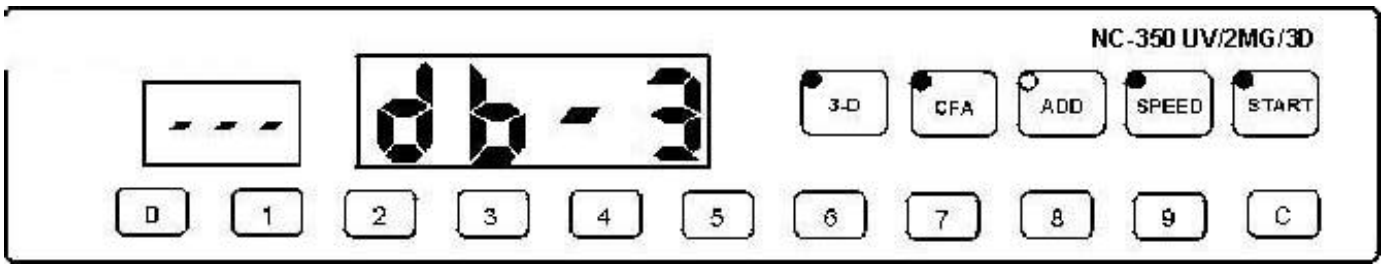
NOTES:

1. Detecting that two bank notes have passed through the machine, one on top of the other, and therefore suggesting a possible miscount, is the function of the Double Detection (DD) system. This feature operates by measuring the amount of light that penetrates each bill, as it is being counted, and compares this measurement with the known signal from a single note. If the signal is significantly reduced, the machine will STOP, an Audible Alarm will sound and the Batch Display will show "db". **All bills must be removed and recounted. The machine will force a recount because, by definition, the count displayed cannot be assumed as accurate. This also applies in the case of a suspected ' Chained' note – (Chaining is where only part of a following bank note overlaps the one being counted).**

2. Correctly setting the Thickness Control Knob will eliminate unnecessary cases of these incidents.

3. The DD system defaults to d - - 3 at switch-on. This is the standard setting recommended for use when the quality of the bank notes is consistent. Very dirty currency and/or where the bills being counted vary widely in their condition, are provided for by the following pre-set DD levels to enable the machine to run smoothly without frequent false, or 'nuisance' stops. These positions are d - - 1 (LOW), d - - 3 (STANDARD) and d - - 5 (HIGH). Your local distributor will be aware of the prevailing conditions and can advise you of the optimum settings for your area, in conjunction with your own experimentation.

By pressing the **ADD** key for five seconds, the machine will enter into the Double Detection Setting. The display will show:



Press the **LEVEL** key to sequentially change the Double Detection (DD) level. The default **d - - - 2** setting will change through **d - - - 1** (LOW), **d - - - 2** (STANDARD) and **d - - - 3** (HIGH). After selecting the desired level, press the **START** key to save the setting and exit from the setting mode.

6. SPEED SETTING

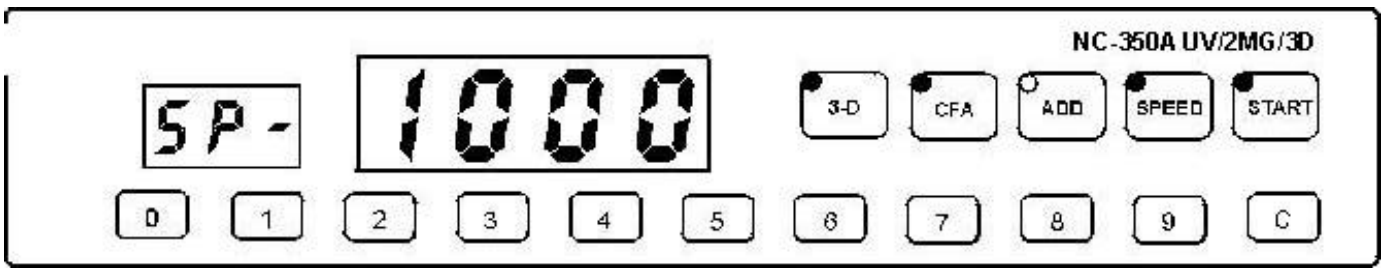
NOTE:

It is most important to appreciate that the counting speed you select is crucial when processing bank notes, and that the speed should be varied according to condition. The simple rule is that the better the quality, the faster you can count currency, without nuisance stops.

When the bank notes being counted are in a distressed condition, and lacking in dimensional stability, the low speed of 600 notes per minute should be selected.

Counting at the highest speed of 1,500 notes per minute should only be used for bank notes in new, to very good, condition.

By pressing the **SPEED** key, the machine will enter into the SPEED system feature. The display will show:

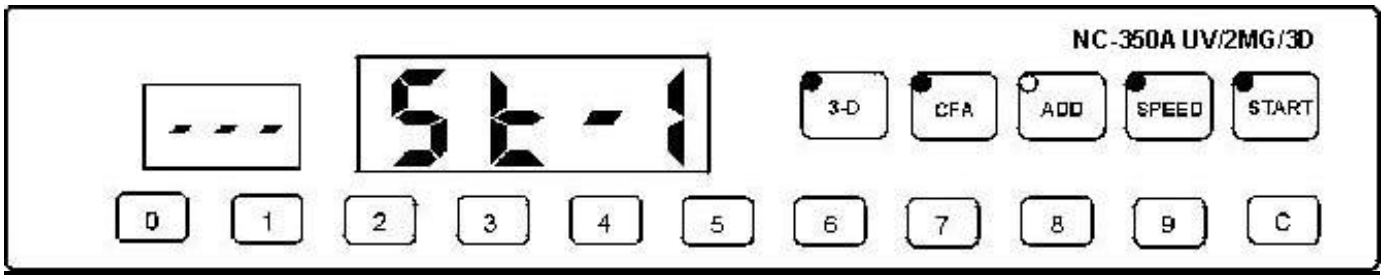


Press the **SPEED** key to change the default SPEED setting, if required. There are three selectable speed: 600pcs/min(Low), 1000pcs/min(Standard) and 1500pcs/min(High). After selecting the desired speed, press the **START** key to save the setting and exit from the setting mode.

7. COUNTING MODE SETTING

Auto/Manual Start Mode

By pressing the **START** key for five seconds, the machine will enter into the START system feature. The display will show:



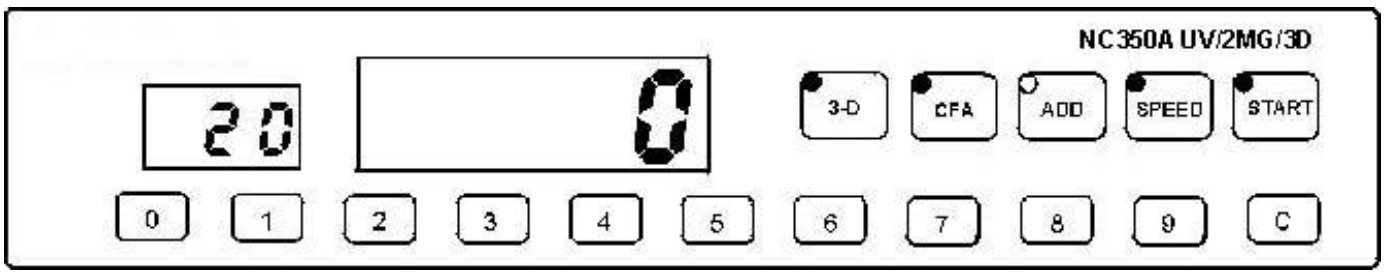
Press the two numeric keys “0” & “1” to select the Auto/Manual Start Mode. Select “1” to enter into the Auto Start Mode. Select “0” to enter into the Manual Start Mode. After selecting the desired level, press the **START** key to save the setting and exit from the setting mode.

CONTINUOUS COUNTING MODE

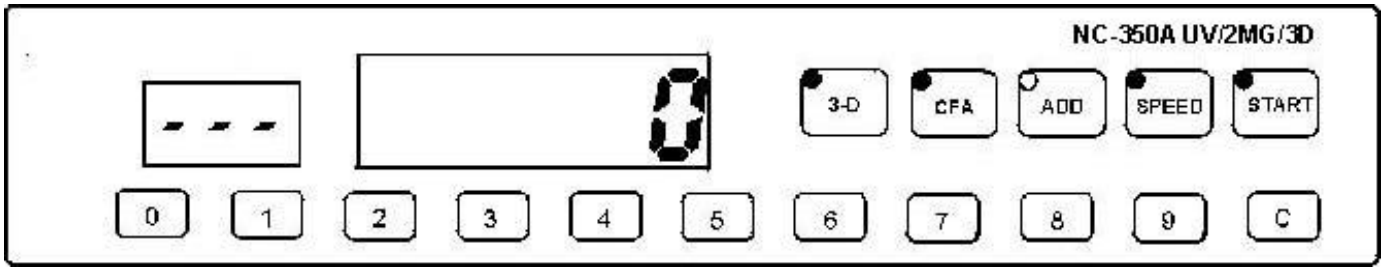
When the 3 digits of small LED Display shows ‘ **- - -** ‘, the machine is in the Continuous Counting Mode. If you place some notes in the Hopper, the machine will count the notes until the Hopper is either empty, or stops whenever an Error occurs during the process.

BATCH COUNTING MODE

Input your desired batch number by using the ten numeric keys.
For example, if you want to set the batch number to **20**, just first press the numeric key **2**, and then press the numeric key **0**. The display will show:

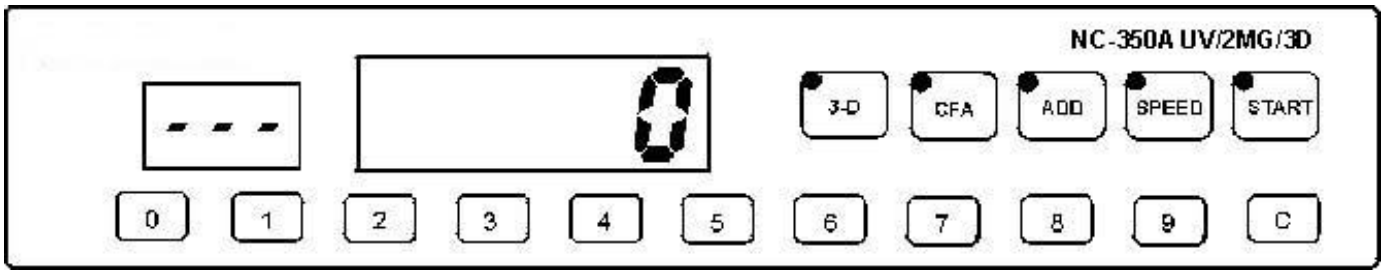


If you want to clear the batch setting and switch to the **Continuous Counting Mode,** press the **C** key. If there is counting number on the counting display, the counting number will be first cleared. The machine is switched to the **Continuous Counting Mode**. The display will show:



ACCUMULATION COUNTING MODE

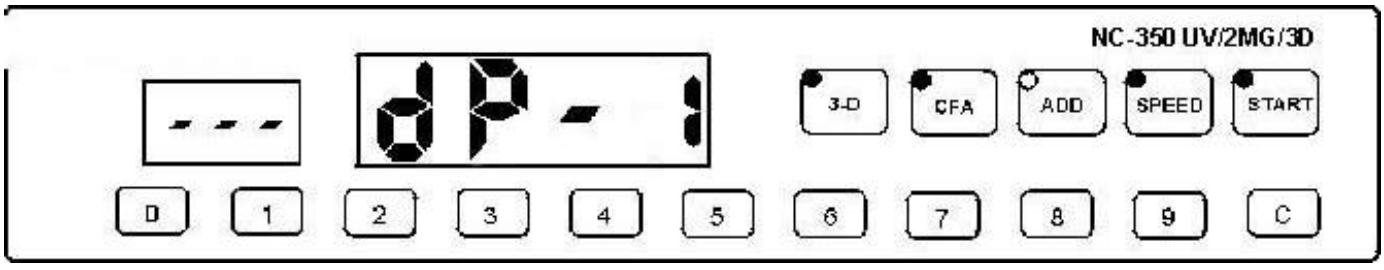
By pressing the **ADD** key, you can select the Accumulation Mode ON, or OFF. When the machine is in the Accumulation Mode, the LED indicator on the **ADD** key will be on and the counting number will be accumulated on the last counted number. The display will show:



After the above customizing steps, you can start counting now. When there is any error occurs, press the **START** key to continue counting. After the counting is finished, you can clear the counting number by pressing the **C** key. In **Accumulation Counting Mode**, press the **C** key first time to clear the last counting number. Press it second time to reset the counting display to zero.

Dustproof cover setting

By pressing the '**C**' key for five seconds, the machine will enter into the Dustproof Cover Setting. The display will show:



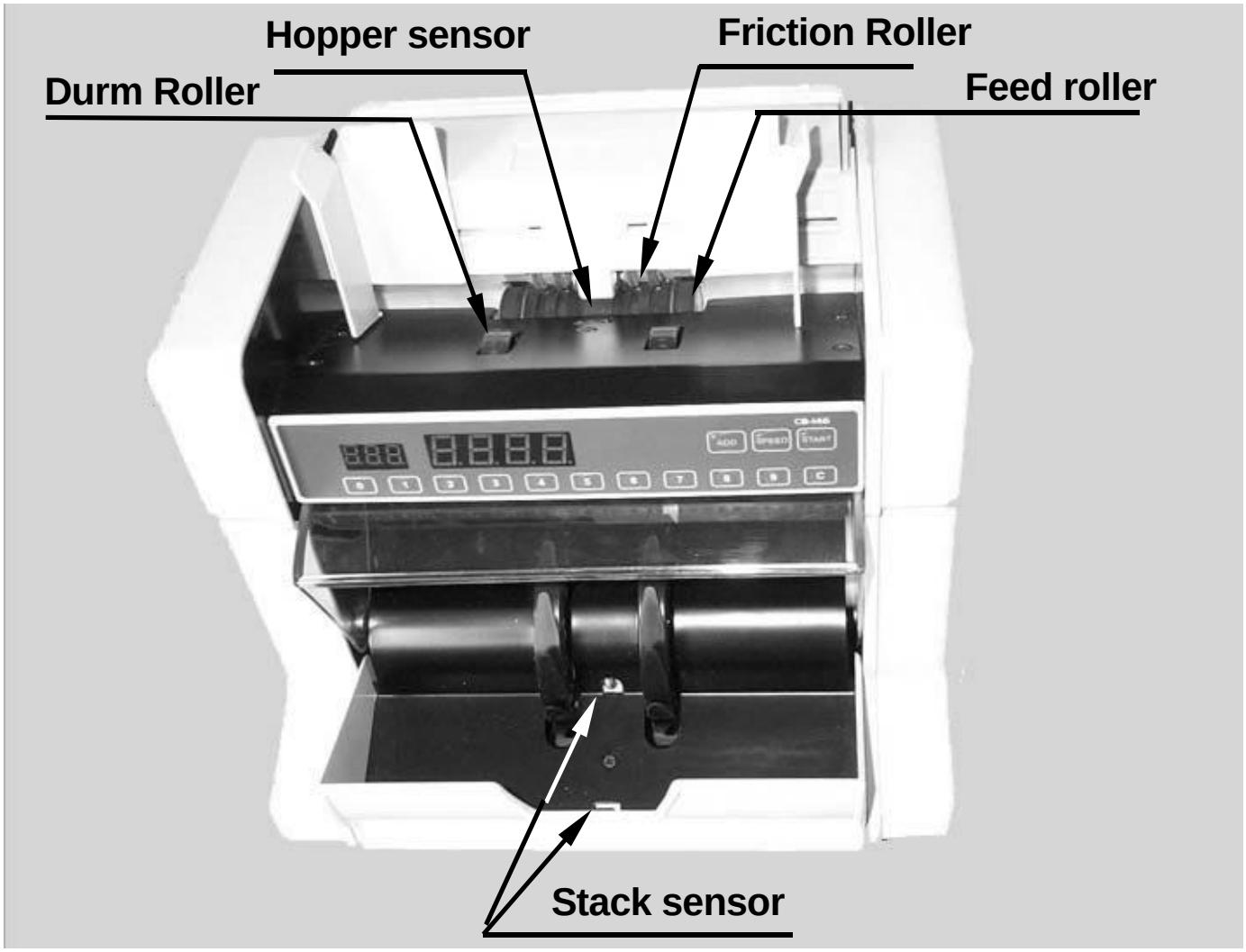
The dustproof cover will automatic be closed while counting notes and be opened when counting ends

By pressing the '**C**' key for five seconds again, the display will show '***dp-0***'. The automatic function will be turned off.

MAINTENANCE ROUTINES

Please maintain the machine via this simple **daily** procedure:

1. Turn the Main Power Switch OFF and disconnect the Mains Power Cord from the rear of the machine.
2. Using the brush provided, clean the central Hopper Sensor, the two Stack Sensors, Hopper area and the Stacker area. The photograph below shows the location of these devices:

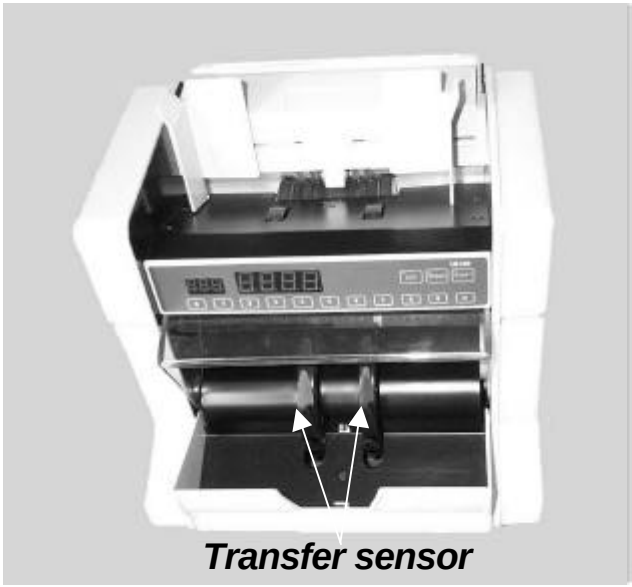


Additionally, please maintain the machine using this relatively simple **monthly** routine:

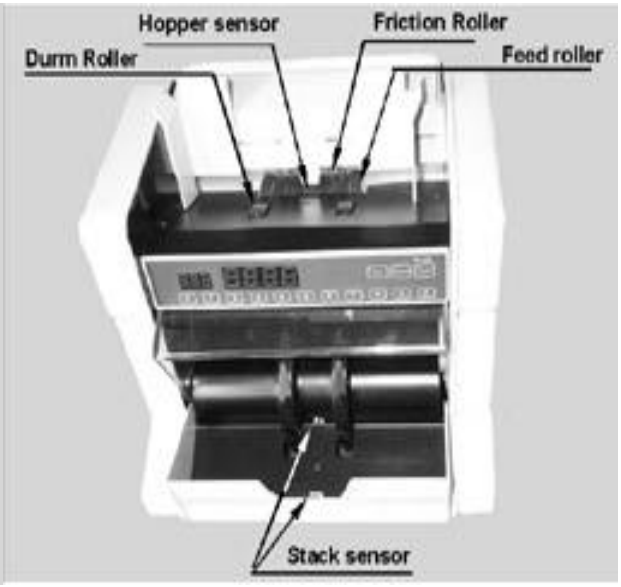
1. Turn the Main Power Switch OFF and disconnect the Mains Power Cord from the rear of the machine.

2. Using a piece of clean, lint-free cloth and an approved non-toxic solvent fluid, carefully clean the surfaces of the following parts, which are identified in the two photographs below. **Do not allow any fluid to come in contact with ANY electrical parts**.

   Transfer Rollers, Friction Rollers, Feed Rollers, Drum Rollers, Stacker Sensor, Central Hopper Sensor and the Outer Plastic Covers.



Transfer Rollers - Locations



Component Locations

Troubleshooting

Error Code	Reason	Remedy
JA	Incorrect Feed Gap setting There is a jammed note in the feed passage	Adjust the Feed Gap for the correct setting Remove the jammed note by pressing the **START** key
HF1 **(HF2)**	A partial, or folded note, has been detected Notes in the Hopper are misaligned	Remove the partial, or folded note, and press the **START** key to continue the count Realign the notes in the Hopper
Hd1 **(Hd2)**	Abnormal width note(s) have been detected	Remove the abnormal note(s) Press the **START** key to continue the count
CH1 **(CH2)**	A chained, or abnormal, note has been detected.	Remove the chained/abnormal note(s) Adjust the Feed Gap for the correct setting
Ld1 **(Ld2)**	Abnormal length note(s) have been detected	Remove the abnormal note(s) Press the **START** key to continue the count
Ud1 **(Ud2)**	Suspect counterfeit note has been detected by the **U**ltra**v**iolet detection sensor Incorrect UV light sensitivity setting	Remove the suspected counterfeit note, and press the **RS** key to continue the count Adjust the UV detection level according to the note characteristics
CF1 **(CF2)**	Suspect **C**ounter**f**eit note has been detected by the magnetic sensor	Remove the suspected counterfeit note, and press the **RS** key to continue the count Adjust the MG level according to the characteristics
db1 **(db2)**	Double, or overlapped notes, have been detected Incorrect Feed Gap setting Incorrect Double Detection level setting	Take out all the notes from the Stacker, remove the double, or overlapped note from the bundle, put the bundle back into the Hopper to recount Adjust Feed Gap to proper setting Adjust the Double Detection level according to the note characteristics of ink and thickness properties
E1	Notes still in/on the machine when switched on. Dirty Hopper or Stacker sensor(s);	Remove notes; Clean all sensors;
Uv bad	The detection system, comprising the UV lamp, UV Sensor, or the Main CPU PC Board, are suspect NOTE: Counting is still possible under this condition, but the UV Counterfeit Detection system is inoperative.	Replace the UV lamp, the UV Sensor, or the CPU PC Board (Maintenance engineer tasks)

* The error code of “xx1” means that the suspicious note is on the top of the bundle in the stacker.
The error code of “xx1” means that the suspicious note is the second one of the bundle in the stacker.

*** In the interests of our ongoing policy of continual product improvement, specifications are subject to change without prior notice. ***