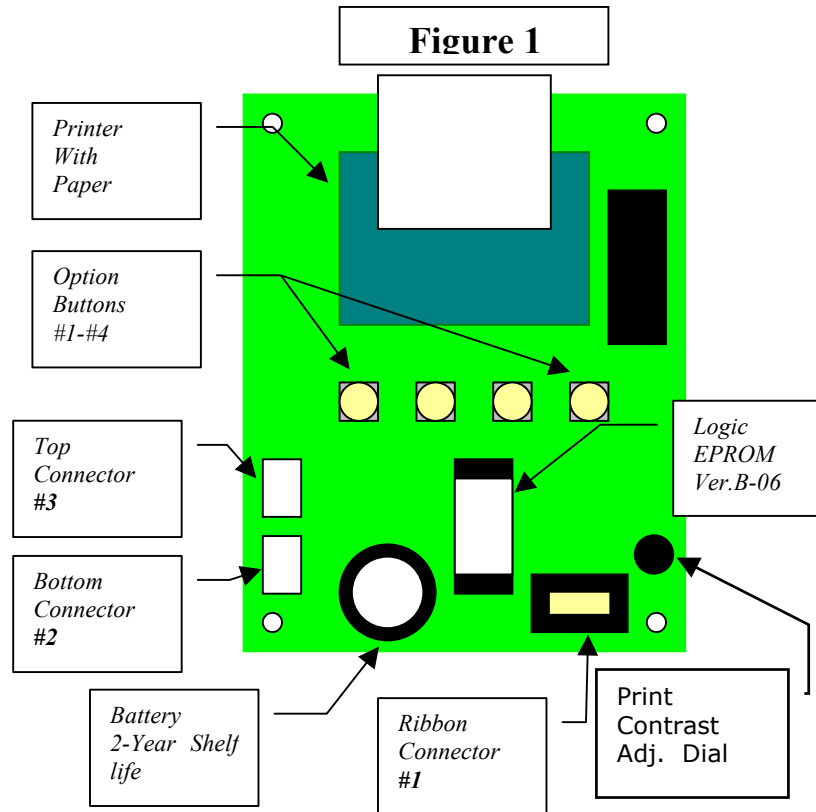


THE (AC7070) PRINTER OPTION UPGRADE Installation & programming instructions

SECTION A. – General Information

*All AC7070 Printer Boards (PB) are
year 2000 compliant.*



FAST FACTS:

1. Replace battery every 2-years with a 3V-Lithium #CR2320, Positive side UP. It is a very common battery and can be found just about everywhere, even Radio Shack. Replace battery with the power on so not to lose the existing programming.
2. Replace paper with:
 - A. Nippon TP50KS-E2C **or** TP50KS-A
 - B. Honshu FH65BU-2 **or** FH65BX-14N
 - C. Mitsubishi F-200U9W3 **or** F-200U7N5

Using any other paper than the type specified will dramatically cut down the life of the printer. Office Depot should carry at least one of these paper types..
3. Change the paper with power on at the printer board. Feed the paper into the back of the printer until it stops. Press and hold the #3 paper feed button until the paper comes into view.
4. The dial in the lower right corner of the print board is to set print contrast. **DO NOT MAKE THE CONTRAST to dark.** It will cause the print head to burn up. It should be set to be just legible.

5. **THE PRINTER IS MAINTENANCE FREE!!!** Do not try to mechanically adjust, lubricate or pry on the printer. **ANY PRINTER MAINTENANCE VOIDS THE WARRANTY!!!** Blowing the dust out of the printer with canned air every 6-monthes is recommended and required by the warranty.

SECTION B. – Installation

INSTALLATION OF THE AC7070 PRINTER BOARD ON INDIVIDUAL MACHINES.

If the Printer was installed at the factory skip to Section C

1. Remove power from the machine.
2. Remove the hoppers from the machine.
3. Remove the hopper plates and disconnect the harnesses from the Main Logic Board.
4. Remove the original validator harness.
5. Install the new plates and connect the harnesses to the Main Logic Board. (Right plate to the bottom hopper connector.)
6. Make sure the inside left wall of the AC2000 series cabinet is free of dirt and oil.

7. Peel the covers off the 4 stick pads at each corner of the board.
8. Attach the board firmly onto the side of the cabinet by pressing firmly in each of the Four Corners of the board simultaneously.
9. Connect the RIBBON CABLE to the AC2000 series on the Printer Board.
10. Attach the RIBBON CABLE to the pigtailed of the hopper plates.
11. Attach the new validator harness. Connect it to the lower plug on the Main Logic board, the Empty LED, and to the Bottom Connector #2 on the Printer Board.
12. Reinstall the hoppers onto the hopper plates.

Section C. – Printout Description.

DESCRIPTION OF THE PRINTER'S PRINT-OUT

When you first receive your Printer, you will see a printout on the tape sticking out of the Printer. Below is the description line by line:

Machine # - This will be programmed by the user later. It is the programmable number designation assigned for this machine.

Sequence # - This is the audit number assigned to the receipt. The printer will print out 2 receipts per sequence.

Date & Time - Date and time the printout occurred.

Quarters through Hundreds - The amount of each currency accepted since the printer was last reset.

Sum - The amount in dollars the printer has accumulated since it was last reset.

Total - The amount in dollars the printer has accumulated in it's lifetime. THIS TOTAL CAN NEVER BE RESET!!!

Hopper 1 & Hopper 2 - The amount of coins given out of each hopper since the printer was last reset. In a 1-hopper machine only, Hopper 1 will accumulate.

THE DENOMINATIONS AT THE BOTTOM OF THE PRINTOUT REPRESENT THE LAST 3 BILLS ACCEPTED BY THE BILL ACCEPTOR(S).

Section D. – Programming the Printer.

How to Program the AC7070 Printer Option

There are 4 programming modes associated with the Printer: Machine #, Time, Date, and the ability to make the "SUM" on the printer printout resettable or non-resettable.

To enter the programming mode, turn the main logic board of the machine off. Press and hold down the #2 & #3 while turning on power to the main logic board. Release the #2 & #3 pushbuttons as soon as the printer head move, (Approx. 1 second).. The Printer prints out "****Set up Mode****" and you're ready to start!

Now that we're in the set up mode let's press #1 to set machine number. This number represents this machine. This way if you have multiple printers and receipts scattered on your desk, the machine number will tell you which machine the receipt is for. This number has three digits. Right now the

machine is number "000". Follow the directions on the printout. Every time you press the # button the red light will flash and the digit associated with that digit counts up by one. DO NOT RUSH!!! IF YOU DID NOT SEE THE RED LIGHT ON THE PRINTER BOARD FLASH YOU COUNT DID NOT INCREMENT!!! If you made a mistake, press OK (#4), then #2 to restart the operation. For a sample we'll assign #358 as our machine number.

1. Press the #1 button 3 times to set the "hundred's" digit.. (Try to press once per second. This is a good rhythm. Ensure the red light on the printer board also flashed three times.)
2. Press the #2 button five times to set the "ten's" digit.
3. Press the #3 button 8 times to set the "one's" digit.
4. Press #4 OK. (If the printer does not show the desired machine number press#2, and go back to step #1)
5. Press #4.

The printer will now print a receipt showing the new machine number at the top of the paper.

Time - Reenter the program mode and this time press #2 for the 24-hour clock. In the sample below I will use 9:52 AM. (For those of you unfamiliar with this type of time setting here is a sample. 1:00 AM = 0100 hours, Noon = 1200 hours, 1:00 PM = 1300 hours, 6:00 PM = 1800 hours, Midnight = 0000 hours.)

1. Press #3 for the TENS setting on the 24-hour clock. (Since the sample time is 9:52 AM or 0952 hours DO NOT PRESS#3. Just hit #4 to move on.)
2. Press #3 9 times to set the hour, then press #4.
3. Press #3 5 times to set the hour, then press #4.
4. Press #3 2 times to set the hour, then press #4.
5. Press #4 OK. (If the printer does not show the desired machine number press#2, and go back to step #1) .
6. Press #4.

The printer will now print a receipt showing the new time at the top of the paper.

Date - Reenter the program mode. The sample will be May 15th 2000.

1. Press #3 for the date mode.
2. Press #2 for 2000 then press enter.
3. The printout shows 2000, if it is correct press #4.
4. Press #4 for the "ten's" digit of the year.
5. Press #3 to set the "one's" digit of the year. For the example press #3 2 times.
6. The printer now shows the completed year., if it is correct press #4.
7. To set the month "ten's" digit press #3. In the example the month is '05' so press #4 .

8. Set the "one's" digit of the month, in the example press #3 5 times. Press #4.
9. Press #4 if printout matches the month.
10. Set the "ten's" digit of the date by pressing #3.
11. Press #3 to set the "one's" digit of the date.
12. Press #4 if date printout is correct.

The printer will now print a receipt showing the new date at the top of the paper.

Resettable Counter – This feature either locks the "Sum" total on the printout, or allows it to be reset each time you increment the sequence number.

1. Enter the program mode.
2. Press #4.
3. Locked – YES or NO.

The printer will now print a receipt.

Section E. – Printer Operation

The Printer operation is fairly simplistic. The Printer gets its input pulses from the bill validator and sorts them into the categories such as "quarters" and "twenties". For the "hopper" category, each hopper's exit window is monitored and each coin is counted as it's dispensed.

Using the Printer – Once installed the printer should be used as any normal accounting device. THE PRINTER WILL NOT LOSE ANY ACCOUNTING INFORMATION WHEN POWER IS LOST! A printout can be obtained by pressing the "PRINT" (#2) button. This action will not reset the accounting features. It is a monitoring printout only! Another helpful feature of the Printer is the printout of the last 3 bills entered. This feature was installed to double check customers that say they lost money in the machine.

Every accounting period the Printer will need to dump it's information and start over. This is accomplished by pressing the #1 and #4 buttons simultaneously. The printout will have *Reset Count Receipt* at the top. There are 2 receipts printed, then the counters are reset to 0.

THE "TOTAL" COUNT CAN NEVER BE RESET!!!

(End Printer Description Section)

Functional Description of the Series AC6000-6003 Changer

To follow along with this walk-through of your changer, fill the hoppers with coins and turn the changer on.

1. When power is applied the validator will cycle twice, the out-of-service LED flashes then goes out, the green LED on the main logic board comes on steady, and the decimal point on the main logic board number display will flicker on once per second in the standby mode.
2. During the power-up mode the main logic board relay clicks twice enabling power (120vac) to the validator. When this relay is not enabled it routes 12vdc ground to the out-of-service LED. Without power to the validator the changer cannot accept bills. Since we are not in the error mode, the red LED on the validator logic board is on steady.
3. When a bill is inserted into the validator bill slot, the bill will be pulled inside. The validator then compares what the

bill looks like to its memory. After the bill is validated it grounds the 5vdc lines causing a pulse along the yellow and blue validator harness wires to pins 5 and 15 of the main logic board. Each pulse stands for the amount of the denomination validated. (i.e. 1 pulse for \$1, 5 pulses for \$5).

4. The 5vdc pulse then travels from pins 5 and 15 to the EPROM chip (DBCG-1) pin #25. The EPROM sends a 12vdc pulse to the meter chip (U5) out pins #21
5. & 22 (one pulse per denomination validated).The EPROM also multiplies the bill pulse by the DipSwitch settings (The EPROM reads the DipSwitch settings during the power up mode and stores them into memory.)
6. The EPROM then sends the hopper pulses out pin #23 to pins 6 and 7 of the red 12 pin hopper plugs. These pulses travel through the purple and brown wires of the hoppers wire harness to the hoppers pins 8 and 12.
7. The hopper turns itself on with the first hopper pulse. The hoppers counts the hoppers pulses sent from the EPROM chip on IN3 (pin 12) while dispensing the coins at the same time. When the amount of hoppers pulses in equals the coins dispensed through the coin counting optical sensor the hopper turns itself off.
8. The Changer returns to the standby mode with the decimal point flashing once per second until another bill is inserted.

NOTE: THE METER ON THE MAIN LOGIC BOARD CANNOT BE RESET TO ZERO!!!

Functional Descriptions of Out-of-Service Conditions

Out-of-Service conditions occur for the Series AC6000-6002 changer for the following reasons: low coins, hopper fault error, validator fault, or a blown fuse.

1. **Blown Fuse:** an AC power spike in line voltage or a bad transformer on the main logic board can cause A blown fuse on the main logic board. If either fuse blows the indication is the green LED on the main logic board will not light.
 - A. Replace the fuse. If the green LED now lights then there was a spike.
 - B. If it does not and the fuse blows again the power transformer is shorted. To test the transformer use a voltmeter set for ohms and measure across the primary (40ohms) and the secondary (1.5ohms).
2. **Hopper Fault:** A hopper fault can either be a jammed hopper, a blocked coin counting optic or a bad hopper logic board.
 - A. Indications for a jammed hopper are the changer accepts bills, the meter counts up, but nothing or not enough coins are paid out.
 1. After 2 minutes the EPROM shuts off the validator if the coins are not paid out correctly. The "Empty" LED will flash once per second.
 2. At this point the three options open are to attempt repair on your own, call your distributor, or return the defective hopper to American Changer.
 - B. Indications for a blocked coin optic or bad hopper logic board are the out-of-service LED on the