

# VALICHANGER OPERATIONS MANUAL SERIES AC250

**American Changer Corp.**  
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## Specifications

Operating voltage	120 VAC +10/-15 %
Power consumpt.(controller only, add hopper and validator)	10w
Operating temperature	32 - 130 degrees Fahrenheit
Interface to Hoppers	24vdc & 12vdc 1.5 amps max.

## Warranty

### Dispensing System, Keypad and Logic Board

The dispenser and logic board is warranted for one year from date of purchase.

#### COVERED

¥ Defects caused by material or workmanship.

#### NOT COVERED

¥ Damage caused by physical abuse.

¥ Misapplication.

¥ Vandalism.

¥ End Users attempt, on his own to repair.

**A Return material authorization number (RMA#) must be obtained before returning a unit for repair . A copy of invoices must accompany any and all warrantee work.**

**Attention Please:**

To ensure the most trouble-free machine operation, we recommend plugging all our machines into a DEDICATED AC outlet. (This means there are no other machines on location plugged into the same AC line.) A simple way to check if this is true is to turn off the breaker at the fuse box associated with our machine. No other machines on location should lose power or turn off.

American Changer is now building in a Surge Suppressor on every main logic board made after September 1<sup>st</sup>, 1998. This will help eliminate power related noise problems for our customers. It will not protect you from large voltage spikes or lightning strikes over 150VAC.

If this is a concern for your area of business, we recommend purchasing a surge protector locally  
**NOTE: A POWER STRIP IS NOT A SURGE PROTECTOR.**

AC \_\_\_\_\_ S/N# \_\_\_\_\_

Tested By \_\_\_\_\_

Date \_\_\_\_\_

**Thank You,  
American Changer Corp.  
(888) 741-9840**

## UNCRATING AND SET-UP

Remove your AC250 changer from the shipping box. Open the door. *(The T-handle is a screw-in type and therefor, must be turned at least 10 times counter-clockwise until it opens.)* Inspect for any connectors or components that may have been dislodged during shipping. The lock and keys for your changer will be inside the manila envelope along with this manual. To install the lock, insert the cylinder into the round hole in the middle of the T-handle and push until it stops. Now turn the key and lock until you hear it "snap." Turn the key counter-clockwise ¼ turn and remove the keys.

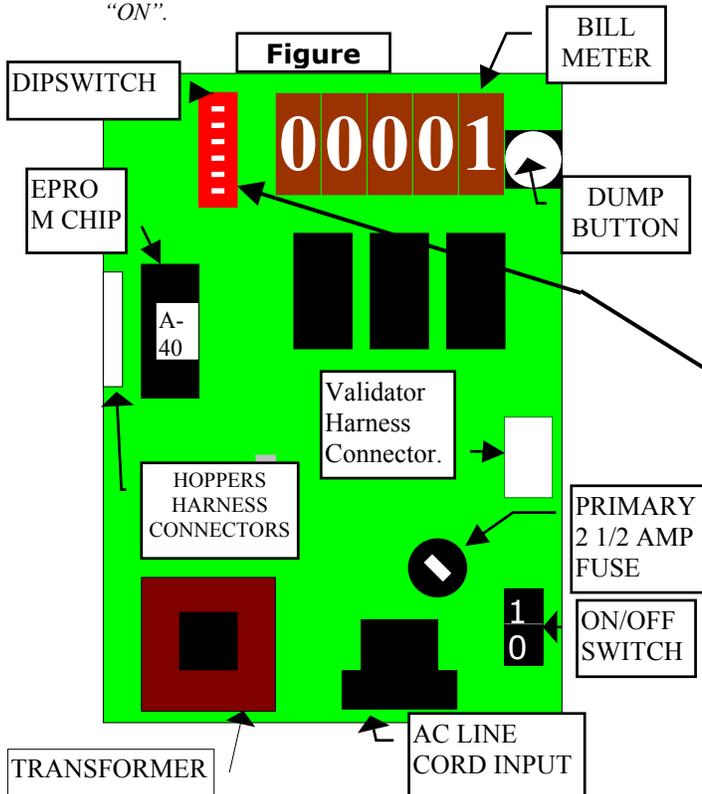
### TEST:

Before permanently installing the changer, do a functional test to verify that there is no shipping damage to your new changer(s).

**NOTE: The only way to get a duplicate set of keys made is to save the red tag that comes between the keys. This ID # starts with ACC ####.**  
**Write your Key # Here ACC \_\_\_\_\_.**  
**ALL KEY ORDERS TAKE 4-6 WEEKS!!!**

Extend the power cord through the hole in the back of the changer or the bottom and plug it into a *grounded 120vac outlet*. The dip switches are already set for a 1 coin per keypad entry pay-out of the hopper.

Fill the hopper with at least 100 coins. On the main logic board turn the switch on the bottom right corner "ON". (SEE FIG. 1 ON PG.3) The rocker switch has a "1" and "0" printed on it. When the "1" is pressed down the changer is "ON".



## THE KEYPAD DISABLE KEYS

The other set of keys are for the Keypad ON/OFF switch in the back of the AC250. These keys will disable the AC250's Keypad if you ever have to leave the counter unattended. Before leaving the machine, turn the keyswitch and remove the keys. Now the keypad is disabled. The machine will not payout by using the keypad.

## FILLING THE HOPPER

When the hopper has less than 80 - 100 coins left in it the red "Empty" LED will light on the front of the changer. Whenever the "Empty" LED is "ON" the validator is disabled and it will no longer accept bills.

1. Turn OFF the power on the main logic board.
2. Slide the hopper out from the cabinet and insert the coins through the opening on the top. *There must be at least enough coins to cover the two gold plates at the bottom of the hopper. (Somewhere between 160 and 1600 coins minimum to maximum.)*
3. Slide the hopper back into the hopper plate. **Do not use excessive force!**
4. Turn "ON" the power switch. The "Empty" LED is now off and the bill validator is ready to accept bills.

## USING THE DUMP MODE TO EMPTY THE HOPPER

1. Open the cabinet door.
2. Turn OFF the POWER switch.
3. Place a suitable container in front of the hopper to catch the coins.
4. Press and hold the "DUMP" button on the upper left corner of the Main Logic Board. Turn ON the Power switch. The red LED on the main logic board will come on then go off. Once the red LED goes off, release the "DUMP" button. If it is not released within two seconds, the "DUMP" mode is canceled as a security feature. The hopper will dispense coins until the POWER switch is turned OFF. If the Red LED on the Main Logic Board is not flashing 3-5 times per second the dump mode was not accessed. Please try again.

## THE DIP SWITCHES

The AC250 series changer is capable of dispensing from 0 to 31 coins per dollar. Setting the coins out per dollar is controlled by which Dipswitches turned "ON." (Refer to figure 1 for their location.) For example, switch #1 is "ON"; therefore the pay out equals 1 coin per coin enter into the keypad.

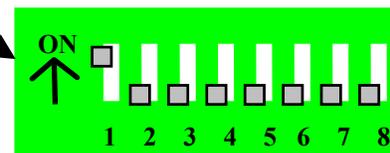


FIGURE 2

The following table shows how to set the dip switches to your desired pay out.

"ON" #1	COINS PER DOLLAR
1	1

*Dip switches #2-#8 should remain in the "OFF" position.*

### KEYPAD HIDDEN COUNTER FEATURE

The remote keypad has a hidden resettable counter kept on the keypad itself. To access this counter hold the keypad and press the #7-#4-#1 keys SIMULTANEOUSLY. The number that appears is your meter count. To clear the counter, press the #9-#6-#3 keys SIMULTANEOUSLY. The meter count has now been reset to zero.

**NOTE:** THIS COUNTER IS NOT THE METER COUNTER THAT IS NON-RESETTABLE LOCATED ON THE LOGIC BOARD INSIDE THE MACHINE! Please open the door to access that counter.

### FUSE

**High voltage fuse:** This is the primary transformer AC fuse for the main logic board and the validator. Any direct short of the Transformer or validator will cause this fuse to blow. Replace this fuse with a 2-½ amp AS fuse only. **REPLACING THIS FUSE WITH ANYTHING OTHER THAN A 2 ½ AMP “AS” MAY RESULT IN A FIRE OR AN UNSAFE WORKING CONDITION!!** (See fig. 1 for location of this fuse.)

**Low voltage fuse:** This is the secondary transformer fuse for the 5 - 28 vdc sections of the main logic board and hopper. It is located to the left of the transformer. (See fig. 1) Replace this fuse with a 2-½ amp AS fuse only. **REPLACING THIS FUSE WITH ANYTHING OTHER THAN A 2 ½ AMP “AS” MAY RESULT IN A FIRE OR AN UNSAFE WORKING CONDITION!!**

### Functional Description of the Series AC250Changer

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

1. When power is applied the out-of-service LED flashes then goes out. The green LED on the main logic board comes on steady, and the red LED on the main logic board will light then go off then 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). When this relay is not enabled it routes 12vdc ground to the out-of-service LED. Without any 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 the “Enter” button on the keypad is pressed 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 number on the keypad display, i.e. 5 means the ground line was pulsed 5 times.
4. The 5vdc pulse then travels from pins 5 and 15 to the EPROM chip (MONO A-31) pin #25. The EPROM sends a 12vdc pulse to the meter chip (U5) out pins #21 & 22 (one pulse per denomination validated ).The EPROM also multiplies the ground pulse by the DIP switch settings (The EPROM reads the DIP switch settings during the power up mode and stores them into memory.)
5. The EPROM then sends the hopper pulses out pin #23 to pins 6 and 7 of the red 12-pin hopper plug. These pulses travel through the purple and brown wires of the hopper wire harness to the hopper pins 8 and 12.
6. The hopper turns itself on with the first hopper pulse. The hopper counts the hopper pulses sent from the EPROM chip on IN3 (pin 12) while dispensing the coins at the same time. When the amount of hopper pulses in

equals the coins dispensed through the coin counting optical sensor the hopper turns itself off.

7. The Changer returns to the standby mode with the red LED 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 AC250 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 hopper to American Changer.
  - B. Indications for a blocked coin optic or bad hopper logic board are the out-of-service LED on the outside of the changer is lit and the red LED on the main logic board is lit and flickers off once per second.
    1. If two of the 3 green LED’s on hopper logic board are lit then the hopper logic board is bad.
    2. If there is a coin or foreign object caught in the coin exit window LED’s #1 and #3 will be lit on the hopper logic board instead of LED’s #1 and #2.
      - a. Take off the side of the hopper with 5 Philips screws. Pull up on the exit window logic board and look for the jammed item.
      - b. Ensure you have the pins aligned before reconnecting logic board.
3. **Low Coins:** The low coin condition is probably the most common fault. The EPROM on the main logic board is constantly checking for low coins in the hopper. This is done with a low current 5vdc signal on pin #3 of the hopper output connector. The voltage then travels down the hopper wire harness on the white wire to pin #7 of hopper plug. The signal is applied to one of the gold low contact plates at the bottom of the hopper. The 5v travels through the coins through the other contact gold plate to

hopper pin #2. It then goes through the black wire in the hopper harness to pin #10 on the main logic board. Any interruption of more than 1/2 a second will cause an out-of-service condition.

- A. Clean the bottom gold plates of the hopper with steel wool or fine sandpaper. Refill the hopper and try again.
- B. Check continuity, (0 ohms) resistance, from pins 3 (white) and 10 (black) of the red hopper harness. Make sure the hopper full and the changer turned off.
  1. If the continuity is 0 ohms, replace the main logic board.
- C. Pull the hopper out of the changer, then look at the 12 pin black male connector that sticks out of the hopper. Place the continuity checker's leads on pins 2 & 7.
  1. If the continuity is 0 ohms, replace the hopper plate or adjust the hopper plate's female socket's pins so that they are not so spread out.
  2. If the continuity is infinity, then replace the hopper.

#### Indicator Lights

##### Main Logic Board:

1. Green LED on: AC power applied to the logic board. All fuses are good.
2. Red LED
  - A. Heartbeat - 5 and 12vdc present. The changer is in standby waiting for a bill pulse.
  - B. On Steady - Out of service, Hopper error detected.

#### Coin Control Hopper MKIV

Three green LED indicators are fitted on the hopper and are visible in the section where the coins exit the hopper. From left to right these are designated as follows:

1. Logic power supply on (12 & 24vdc present).
2. Security optical obstruction indicator -. Should be "on" when unit is OK.
3. Output indicator, indicates coin passing photo-sensor. This is the optical sensor the coin will obstruct on its way out of the hopper. For normal operation LED # 3 will be off until coins are dispensed.

#### Coin/Token Sizes

The hopper will automatically adjust to dispense coins/tokens in size from 20-30 mm in diameter and 1.25 - 3.5 mm in thickness.

There is an option available to dispense smaller coins.

A nickel is approximately 21 mm, a quarter is approximately 25mm. A Susan B. Anthony is 28mm

#### WIRE HARNESS COLOR AND DEFINITIONS

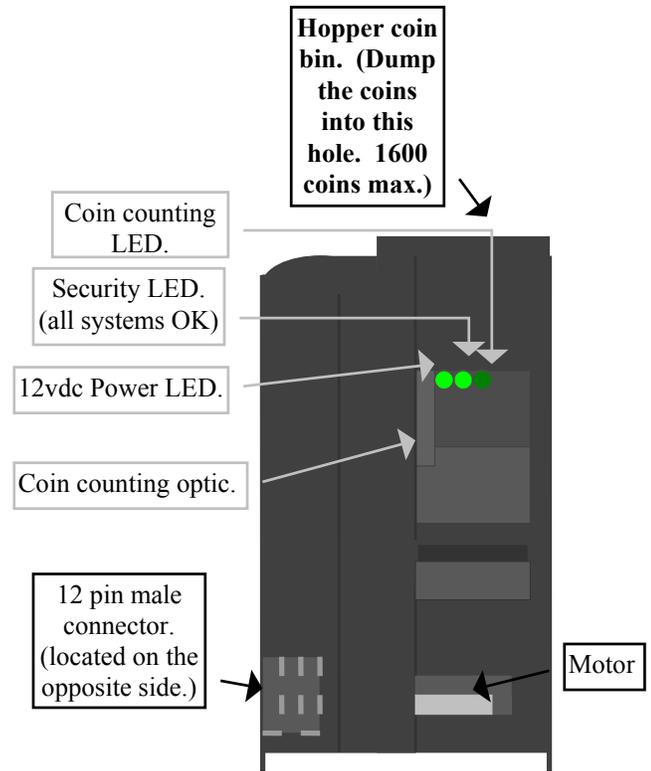
##### Keypad harness:

- Yellow - +5vdc credit pulse line.
- Blue - -5vdc credit pulse line.
- Orange - +12vdc Empty LED.
- Brown - -12vdc Empty LED.

##### Hopper Harness

- Gray - Coin counting optic status line.
- White - Low coin sense (+5vdc).
- Green - Coin counting optic pay out feedback line.
- Yellow - Raw sensor output line.
- Purple - Hopper pay out line from main logic board (+).
- Brown - Hopper pay out line from main logic board (-).

- Red - +12vdc logic board supply voltage.
- Black(s) -12v, 24v low coin sense ground.
- Orange - +24vdc Motor supply voltage.



#### HOPPER ERROR CODES



With the digital display the logic board is now able to convey exactly why the "Empty" LED is lit. Press the "Dump" button **while the "Empty" LED is lit**. On the Light-up display the meter count will go away while holding the button down. These are the error code definitions:

1---- - Hopper was shut down completely.

-2--- - Hopper Exit Window LED is blocked.

--3-- - Low Coin Failure.

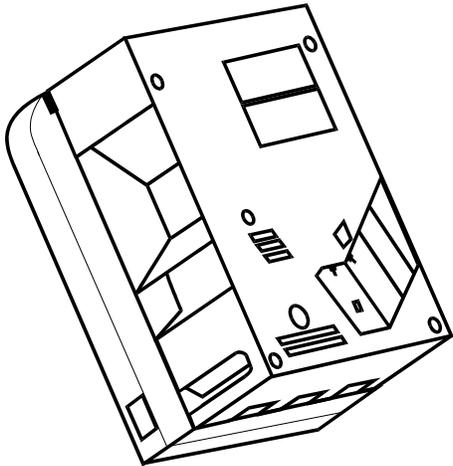
-23-- - Hopper is not Plugged into the Hopper Harness.

---4- - Hopper is Jammed.

----5 - Hopper Overpaid 2 Coins and was shut down.

Refer to the Troubleshooting section of this manual to repair these failures.

# MKIV UNIVERSAL HOPPER



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## SERVICE MANUAL

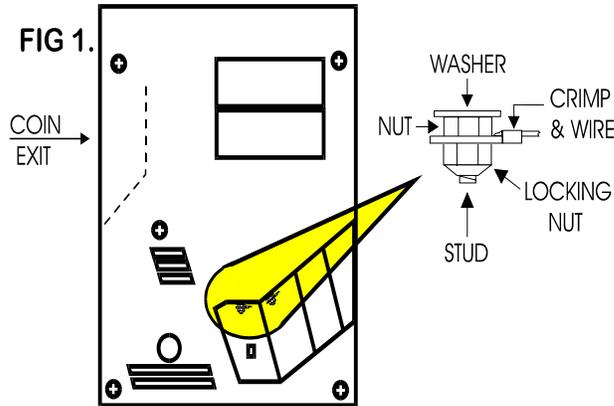
***To un-jam a hopper start with “End Plate Removal”, page 10.***

## 1. COIN BOX REMOVAL

1. Place the hopper in front of you as shown, (looking at the outside of the 'coin box').

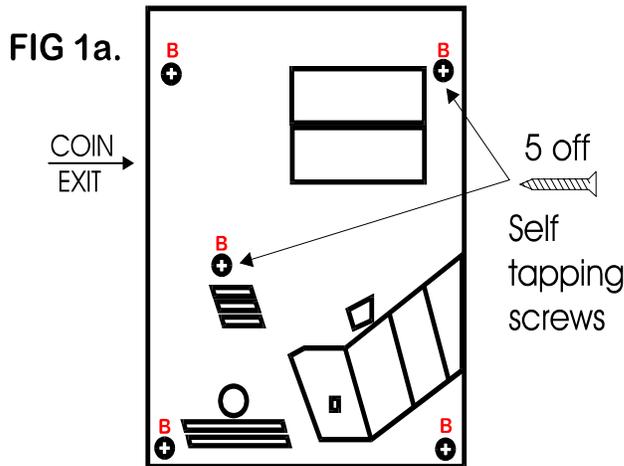
Refer to FIG 1.

2. Remove the 2 locking nuts, which hold the 'low level sense plate' wires to the studs.
3. Remove the crimp & wire from the studs.



Refer to FIG 1a.

4. Remove the 5 screws indicated (B), which hold the 'coin box' to the 'center plate'.

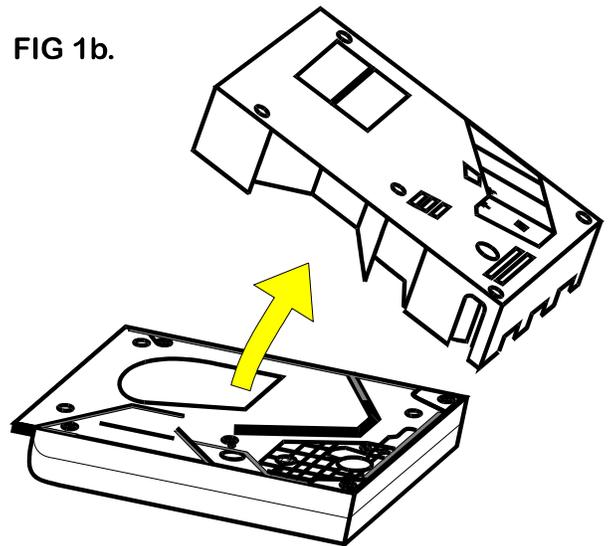


Refer to FIG 1b.

6. Gently lift the 'coin box' away from the rest of the hopper.

**NOTE:-** The 'logic board' & 'stirrer' are located in the 'coin box'.

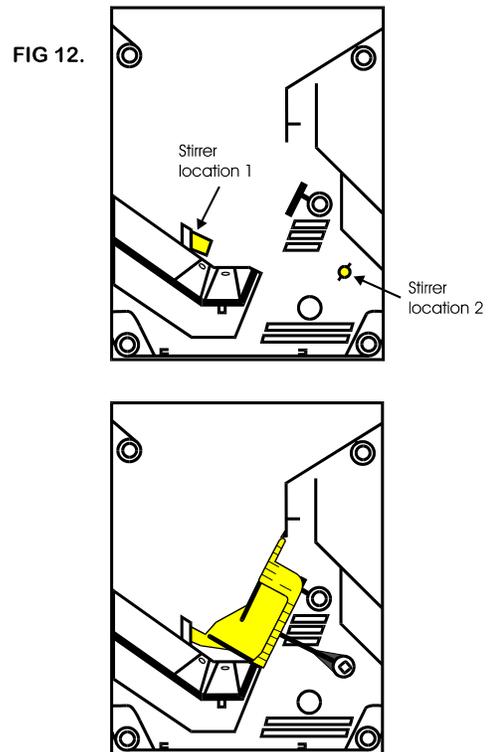
7. As the 'coin box' is being removed, carefully slide the 'logic board' out. The stirrer may stay with the 'coin box' or fall onto the center plate.



**ACCESS IS NOW AVAILABLE TO THE 'LOW LEVEL' SENSE PLATES, THE MAIN PCB, THE EXIT WINDOW, THE MOTOR TERMINALS & PART OF THE WIRING LOOM.**

## 1a. COIN BOX ASSEMBLY

1. Firstly, locate the 'stirrer' in the 'coin box' as shown in FIG 12.

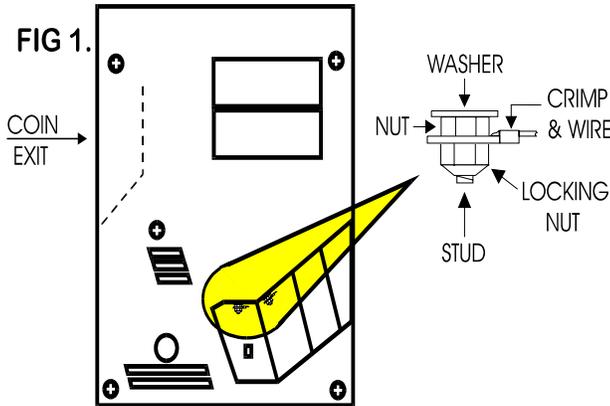


# 1. COIN BOX REMOVAL

- Place the hopper in front of you as shown, (looking at the outside of the 'coin box').

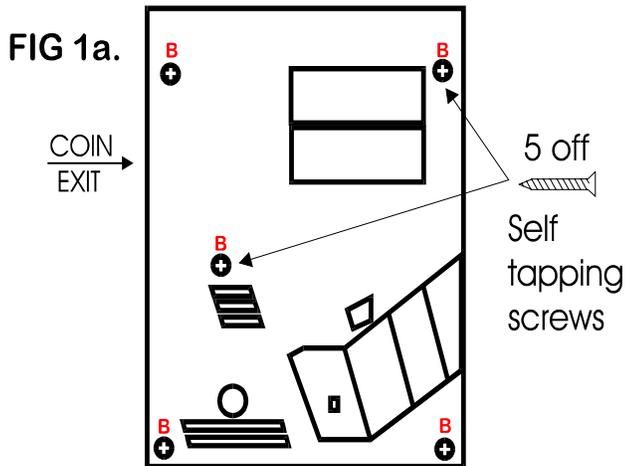
Refer to FIG 1.

- Remove the 2 locking nuts, which hold the 'low level sense plate' wires to the studs.
- Remove the crimp & wire from the studs.



Refer to FIG 1a.

- Remove the 5 screws indicated (B), which hold the 'coin box' to the 'center plate'.



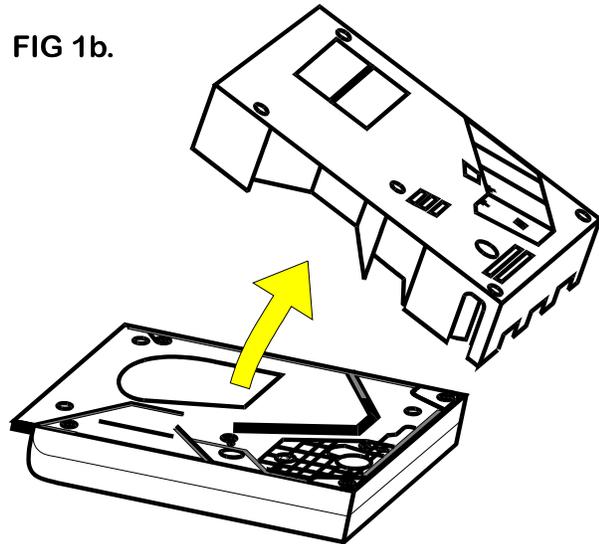
Refer to FIG 1b.

- Gently lift the 'coin box' away from the rest of the hopper.

**NOTE:- The 'logic board' & 'stirrer' are located in the 'coin box'.**

- As the 'coin box' is being removed, carefully slide the 'logic board' out. The stirrer may stay with the 'coin box' or fall onto the center plate.

FIG 1b.

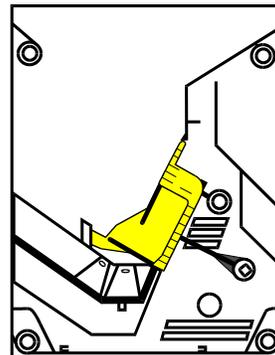
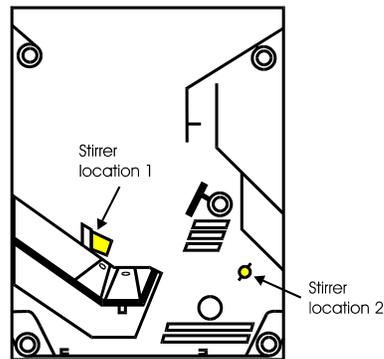


**ACCESS IS NOW AVAILABLE TO THE 'LOW LEVEL' SENSE PLATES, THE MAIN PCB, THE EXIT WINDOW, THE MOTOR TERMINALS & PART OF THE WIRING LOOM.**

## 1a. COIN BOX ASSEMBLY

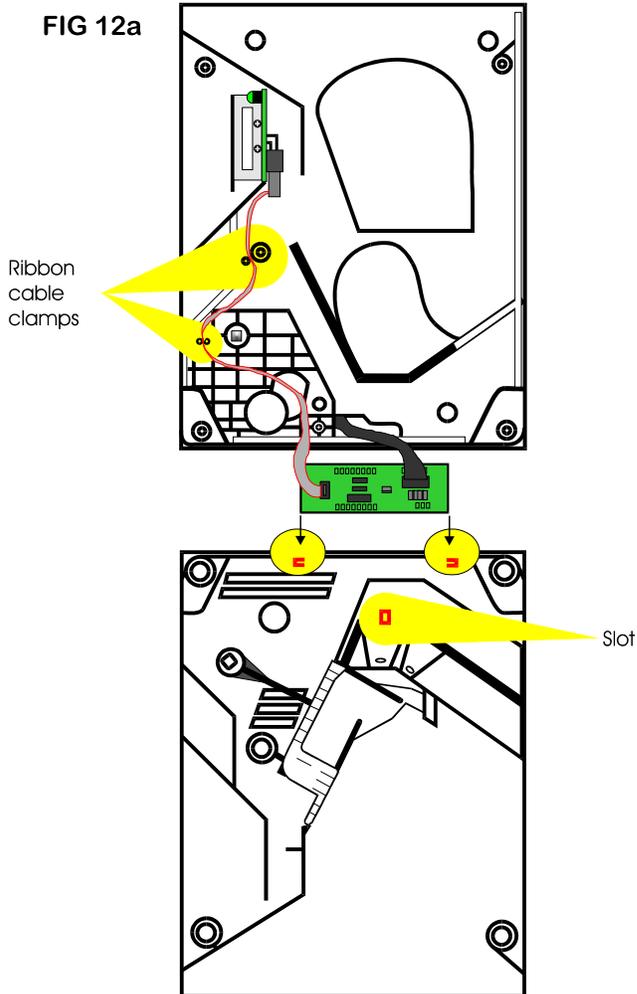
- Firstly, locate the 'stirrer' in the 'coin box' as shown in FIG 12.

FIG 12.

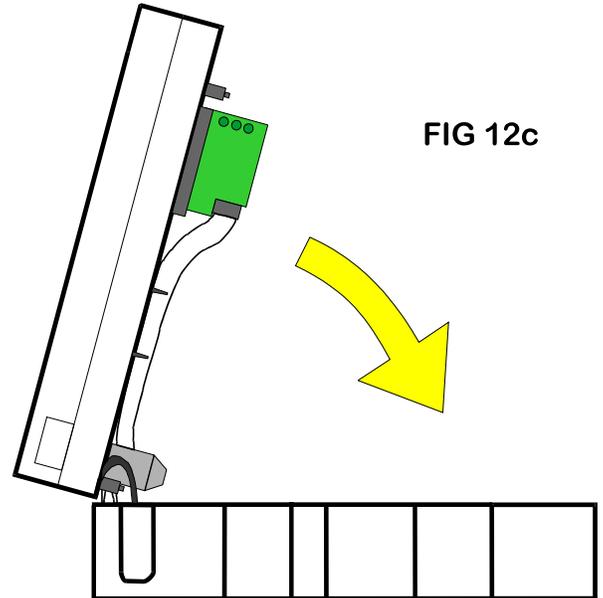
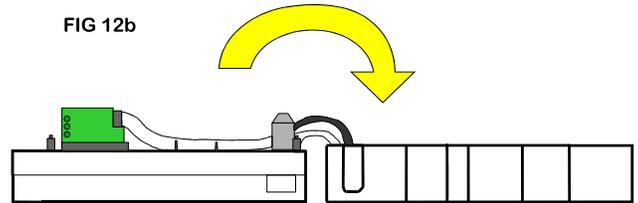


## COIN BOX ASSEMBLY (cont.)

- Line up the 'centre plate' & 'coin box' as shown below. FIG 12a.
- Route the ribbon cable as shown below.
- Fit the 'logic board' into slots shown below.
- Feed the level sense wires through the slot shown below.



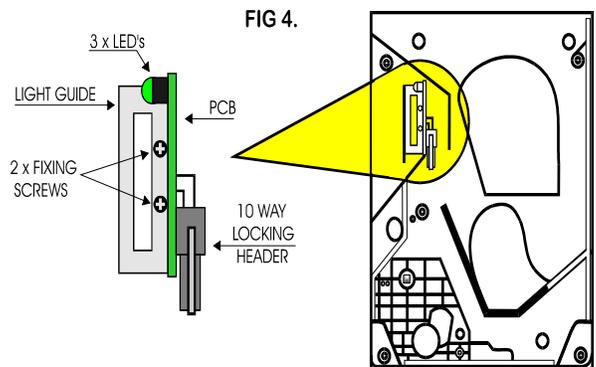
- Lift the 'centre plate' to meet the 'coin box'. FIG 12b & c.



- Align the 'center plate' & 'coin box' & push together.
- Turn the hopper over & refit the screws.
- Refit the level sense wires.

## 2. EXIT WINDOW REPLACEMENT

- First, remove the 'coin box', section 1.  
**This will then enable access to the 'exit window'**
- Unscrew & remove the 2 fixing screws. FIG 4.
- Remove the 'exit window' from the 'center plate'.
- Unclip & remove the 10-way ribbon cable header.

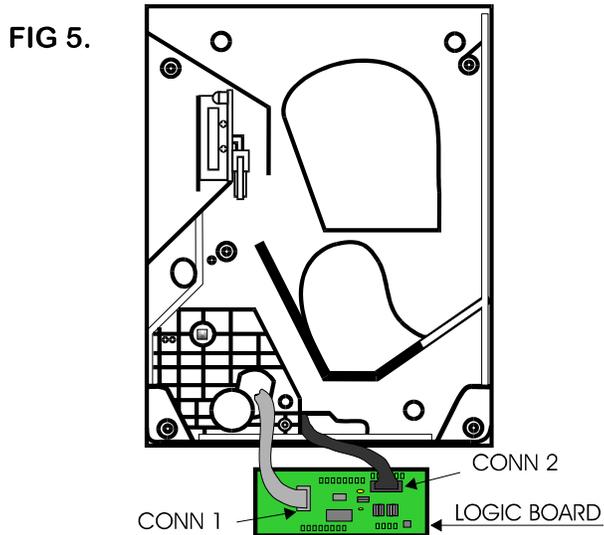


- To re-assemble, follow the above steps in reverse.

### 3. LOGIC BOARD REPLACEMENT

1. First, remove the 'coin box', section 1.

*This will then enable access to the 'logic board'.*



10-way ribbon IDC socket (CONN 1).

2. Move the two ejector arms at right angles to & away from the connector, if fitted.
3. This should release the socket from the header.
4. Clasp the connector between thumb & forefinger, pull away from pin header.
- 14-way crimp socket (CONN 2).
5. Gently, unclip the "friction lock" from the connector housing.
6. Clasp the connector between thumb & forefinger, pull away from pin header.
7. The Logic Board is now released.
8. To re-assemble, follow the above steps in reverse.

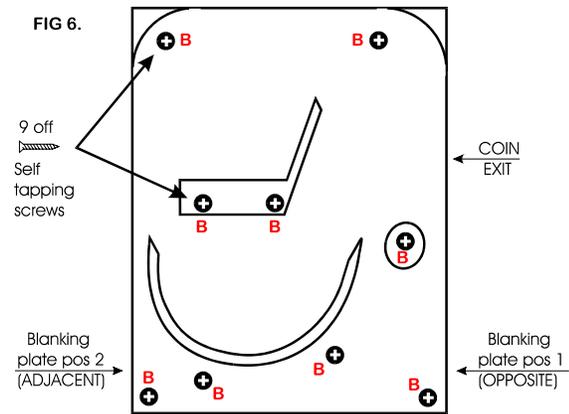
### 4. END PLATE REMOVAL

1. Place the hopper in front of you as shown, (looking at the outside of the 'end plate').

Refer to FIG 6.

2. Remove the 9 screws indicated (B), which hold the 'end plate' to the 'center plate'.
3. Locate the position of the 'connector blanking piece'.

4. Holding the 'connector blanking plate' gently lift the 'end plate' away from the rest of the hopper.



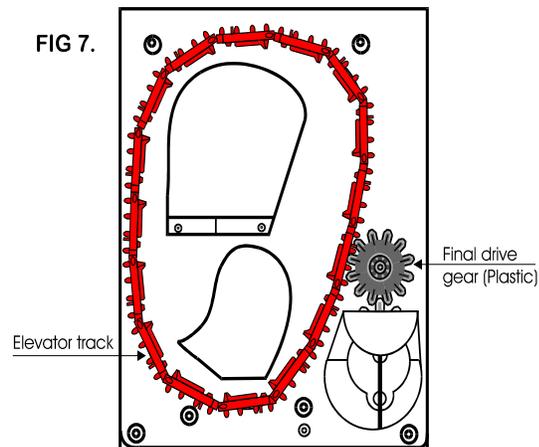
5. To re-assemble, follow the above steps in reverse.

### 5. TRACK PLATE REMOVAL

1. First, remove the 'end plate', section 6.

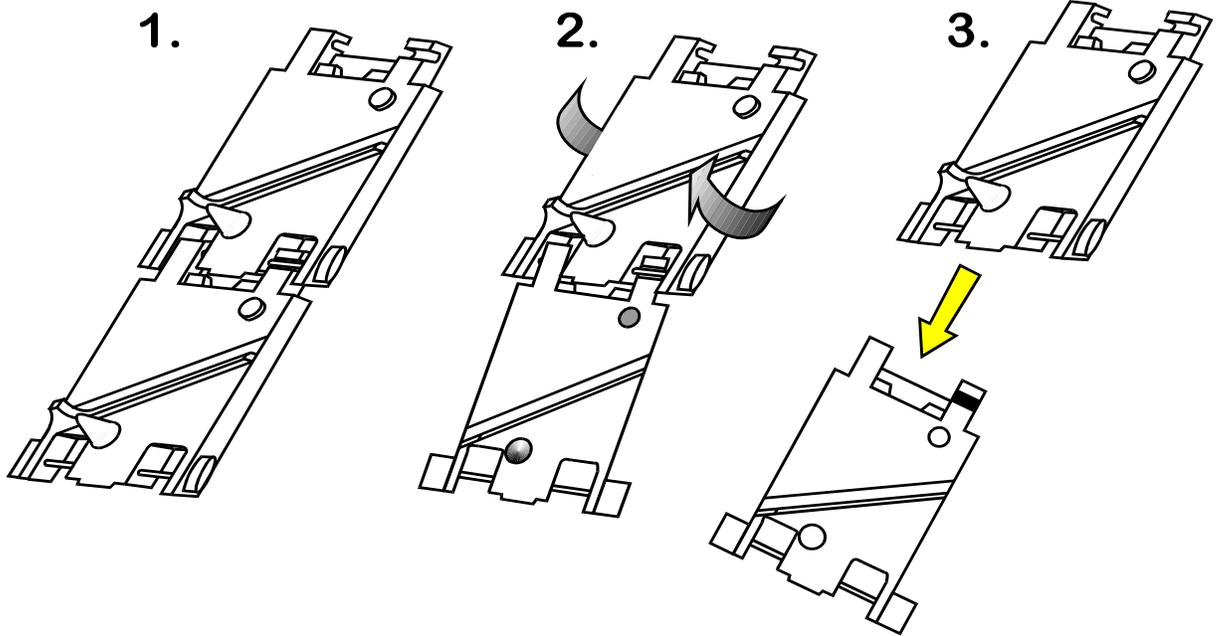
See FIG 7.

2. The 'elevator track' & 'final drive gear' can now be removed by lifting up & away from the 'center plate'.

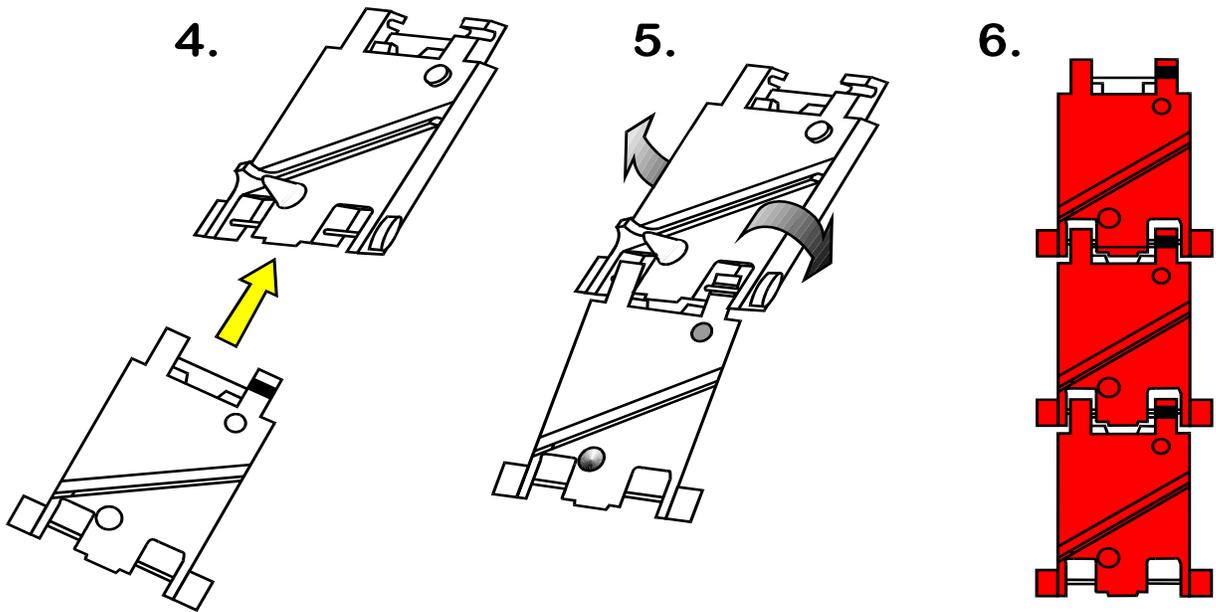


## 5a. TRACK PLATE ASSEMBLY

The following 3 sketches show how to take the 'track plate' apart.



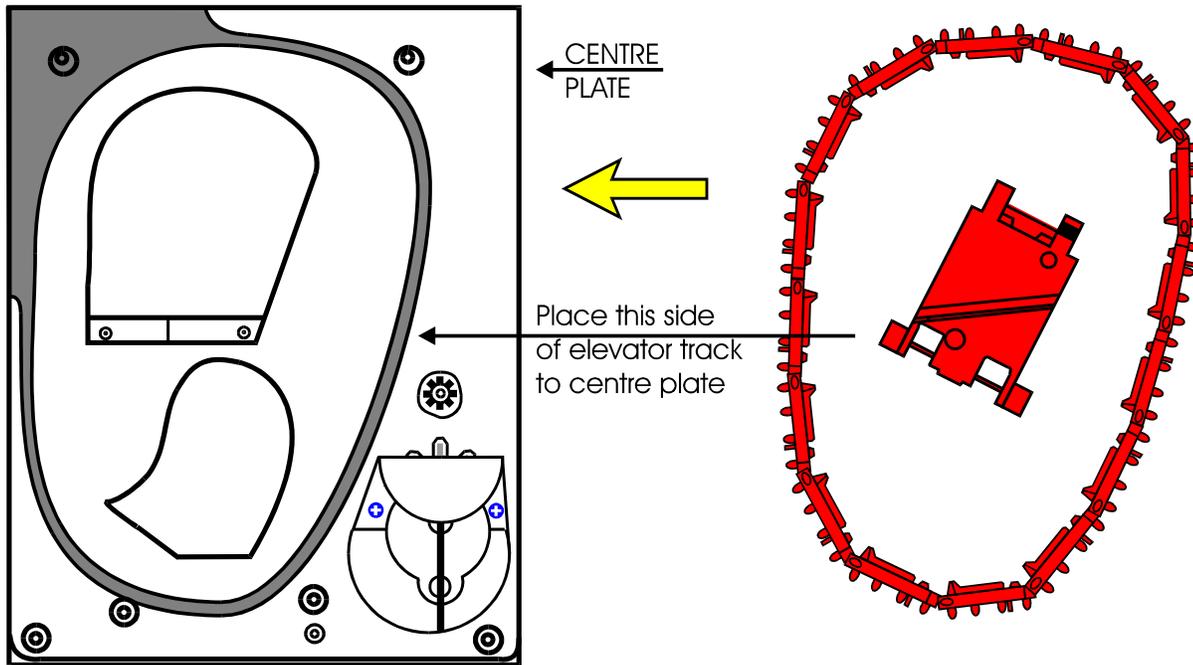
The following 3 sketches show how to assemble the 'track plate'.



## 5b. TRACK PLATE REPLACEMENT

1. The gray shaded area, in FIG 7b, is the 'track plate' guide path.

FIG 7b.

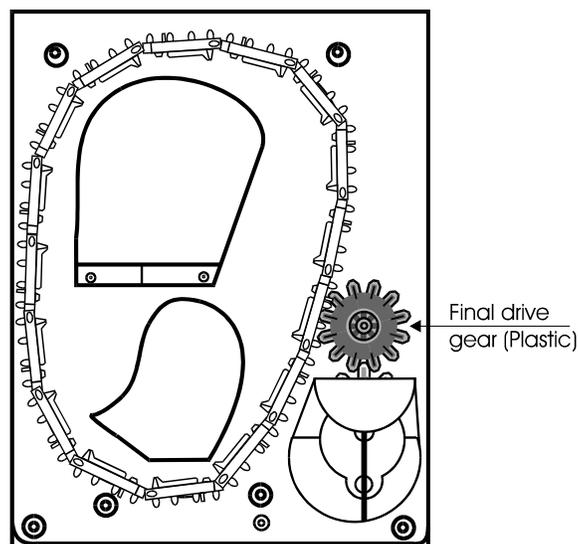


2. Once the 'track plate' is in position, turn the track through  $720^{\circ}$  to ensure it is seated in the guide path correctly.

## 5c. FINAL DRIVE GEAR REPLACEMENT

1. Once the 'elevator track' is in place, the 'final drive gear' can be fitted by placing the gear over its mounting spindle, while lining the teeth up with the secondary drive gear, adjust the 'elevator track' so that the gear falls into place. FIG 7c.
2. The end plate can now be re-fitted. See section 6.

FIG 7c.



## 6. GEAR BOX ASSEMBLY

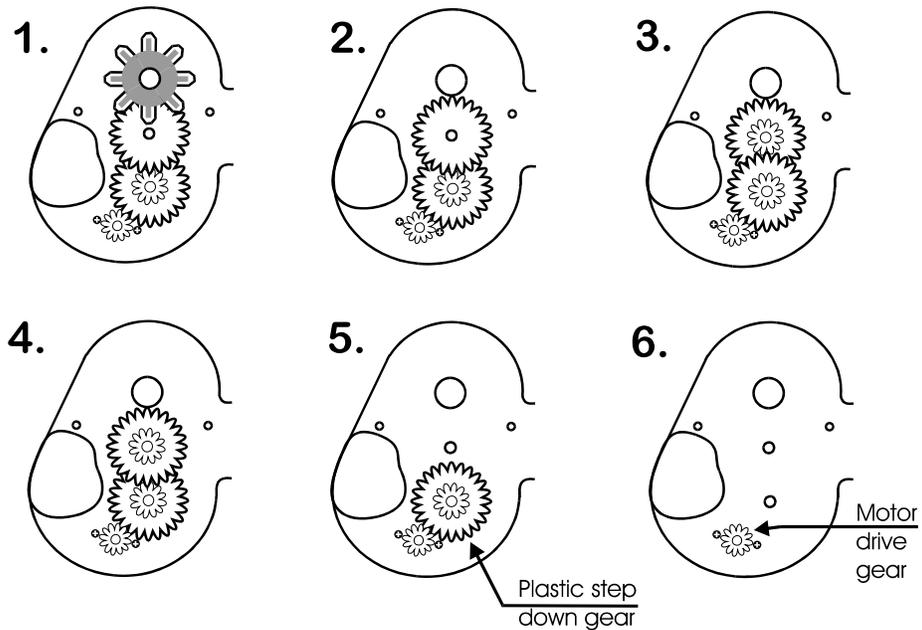
1. Remove the end plate. Section 6.
2. Remove the 'elevator track' & 'final drive gear'. Section 7.
3. Remove the gearbox cover. Section 8.

4. Remove the gears in the order as shown in FIG 9.

**Access to the motor fixing screws is now possible.**

5. To re-assemble, follow the above steps in reverse.

**FIG 9.**



## 7. MOTOR REPLACEMENT

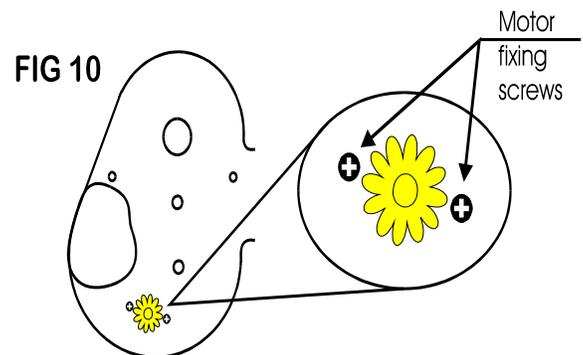
1. Remove the 'coin box'. Section 1.
2. Unsolder the red & black wires from the motor.

**NOTE: The black wire connects to the terminal marked with a RED dot.**

3. Remove the 'end plate'. Section 6.
4. Remove the 'track plate' & final drive gear. Section 7.
5. Remove the gearbox cover. Section 8.
6. Disassemble the gearbox. Section 9.

7. Unscrew the 2 motor fixing screws. FIG 10.

8. To re-assemble, follow the above steps in reverse.



## TROUBLESHOOTING GUIDE

**TO USE THE TROUBLESHOOTING GUIDE, MATCH UP THE PROBLEM, THEN FOLLOW THE SOLUTION SUGGESTIONS. After every step try operating the changer to see if the problem has been solved.**

<i>Problem:</i>	<i>Solution:</i>
<p><b>A. The changer is completely dead.</b> (The green LED on the main logic board is not lit.)</p>	<ol style="list-style-type: none"> <li>1. Ensure the changer is plugged in.</li> <li>2. Ensure the on/off switch is rocked to the (1) position (down) .</li> <li>3. Unplug the female end of the line cord from the main logic board AC connector and plug it in again tightly.</li> <li>4. Measure the AC voltage at the outlet or check the breaker/fuse box. You can also plug another item into the AC wall outlet to ensure there is power present at the outlet.</li> <li>5. Inspect the AC line cord for cuts or abrasions.</li> <li>6. Check both fuses on the Main Logic Board.</li> <li>7. Replace the main logic board.</li> <li>8. Replace the line cord.</li> </ol>
<p><b>B. The “Empty LED is lit.</b> When the red LED on the main logic board is observed, the LED is <b>flickering on briefly once per second.</b></p>	<ol style="list-style-type: none"> <li>1. Ensure the hopper is not out of coins. (There should be enough coins in the hopper to cover the gold low-level contact plates. These plates are located at the bottom of the hopper where you pour the coins.)</li> <li>2. Check the hopper wire harness that extends from the back of the plate that the hopper slides in and out on for chipped pieces or other damage. (Pay close attention to pins # 2 &amp; 7.)</li> <li>3. Clean the gold contact plates with steel wool.</li> <li>4. Replace the hopper.</li> <li>5. Replace the hopper wire harness.</li> </ol>
<p><b>C. The “Empty LED is lit.</b> When the red LED on the main logic board is observed, the LED is <b>on Steady.</b></p>	<ol style="list-style-type: none"> <li>1. Ensure the hopper is pushed into the hopper harness on the back of hopper plate tightly.</li> <li>2. Ensure that left and center green hopper LED’s are lit only. Not the left and right LED’s. If this is the case go to pg. 19 to unjam the hopper exit window.</li> <li>3. Replace the hopper.</li> <li>4. Replace the hopper plate.</li> </ol>
<p><b>D. The green LED on the main logic board is lit but the red LED never lights.</b></p>	<ol style="list-style-type: none"> <li>1. Bad 5 or 12vdc regulator on the main logic board.</li> <li>2. The hopper is shorted.</li> <li>3. Replace main logic board.</li> <li>4. Replace hopper.</li> </ol>
<p><b>E. The Keypad displays the requested token payout but the meter never counts up.</b></p>	<ol style="list-style-type: none"> <li>1. Check continuity and for pin damage to the blue and yellow wires on the validator harness.</li> <li>2. Replace the validator wire harness.</li> <li>3. Replace the validator.</li> </ol>
<p><b>F. The Keypad displays the requested token payout, the meter counts up, but the hopper does not pay out.</b></p>	<ol style="list-style-type: none"> <li>1. Ensure the dip switch settings are still correct. (#3 “ON” only)</li> <li>2. Check the continuity of the brown and purple wires on the hopper wire harness.</li> <li>3. The hopper is jammed. Go to pg. To unjam the hopper.</li> <li>4. Replace the hopper wire harness.</li> </ol>

## TROUBLESHOOTING GUIDE

**TO USE THE TROUBLESHOOTING GUIDE, MATCH UP THE PROBLEM, THEN FOLLOW THE SOLUTION SUGGESTIONS. After every step try operating the changer to see if the problem has been solved**

<i><b>PROBLEM:</b></i>	<i><b>SOLUTION:</b></i>
J. The red “empty” LED on the outside of the changer is on, the red status LED on the main logic board is flickering on and off normally, and the hopper is full of coins.	<ol style="list-style-type: none"><li>1. Ensure the hopper is not out of coins. (There should be enough coins in the hopper to cover the gold low-level contact plates. These plates are located at the bottom of the hopper where you pour the coins.)</li><li>2. Check the hopper wire harness that extends from the back of the plate that the hopper slides in and out on for chipped pieces or other damage. (Pay close attention to pins # 2 &amp; 7.)</li><li>3. Clean the gold contact plates with steel wool.</li><li>4. Replace the hopper.</li><li>5. Replace the hopper wire harness.</li></ol>
M. The red “Empty” led on the outside of the changer is flashing once per second.	<ol style="list-style-type: none"><li>1. The hopper is jammed.</li><li>2. The hopper did not pay out what it was told.</li><li>3. Service the hopper Pg. 21-24.</li><li>4. Replace the Hopper wire harness.</li></ol>
<b>FOR TECHNICAL SERVICE OR TO OBTAIN A RETURN AUTHORIZATION NUMBER CALL (888)741-9840</b>	<b><u>ANY REPAIR RETURNED WITHOUT A RETURN AUTH. # WILL BE REFUSED!!</u></b>

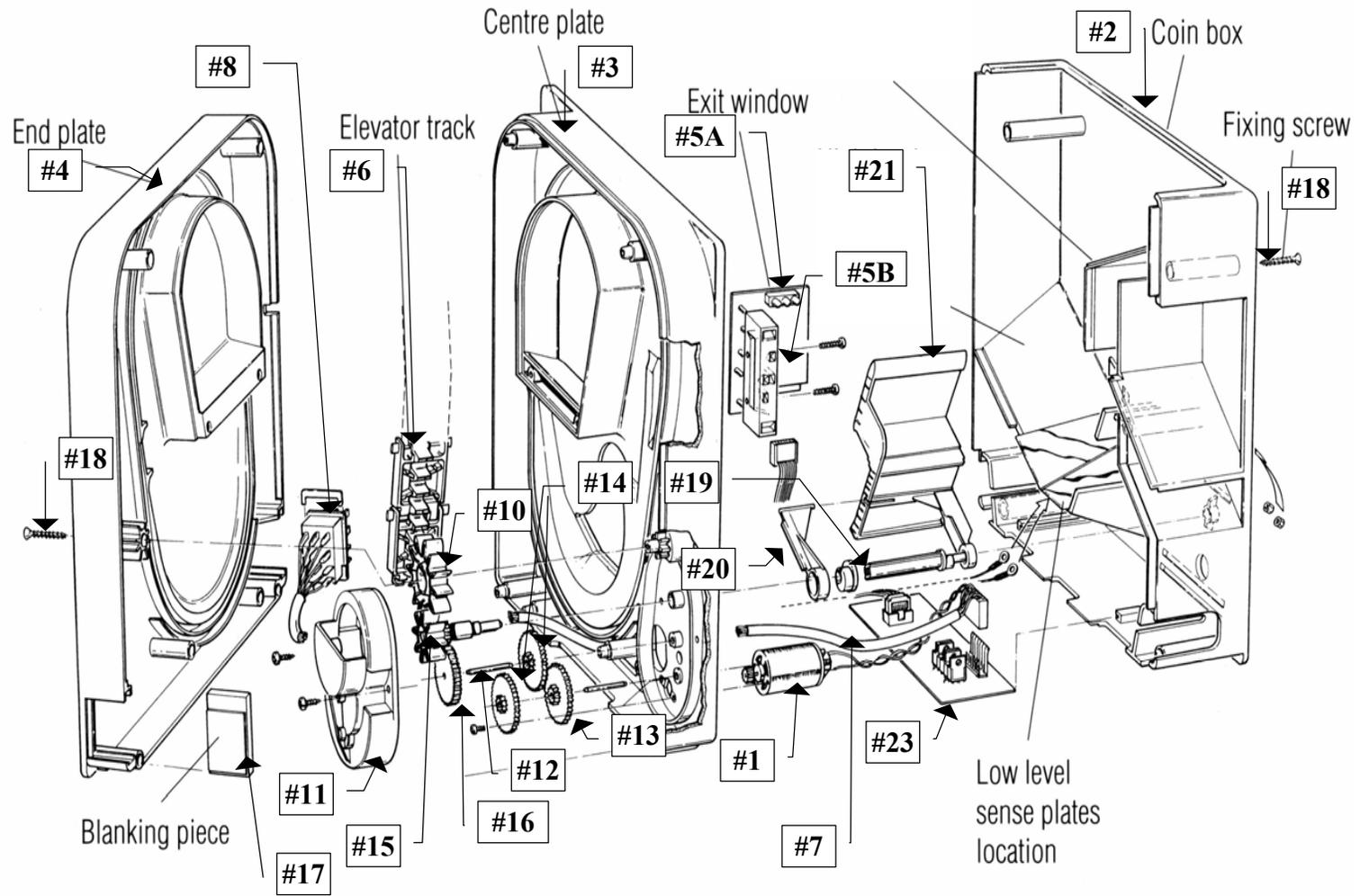
- #1 - 1041-24-01  
Motor
- #2 - 1041-24-02  
Motor Side Cover
- #3 - 1041-24-03  
Center Plate
- #4 - 1041-24-04  
End Plate
- #5A- 1041-24-05  
Counting Optic Board
- #5B- 1041-24-06  
Optic ribbon cable.
- #6 - 1041-24-07  
Red track plates (16 per belt)
- #7 - 1041-24-08  
Logic board wire harness
- #8 - 1040-24-113  
Male 12 pin connector
- #9 - 1040-24-112  
Female 12 pin connector
- #10 -1041-24-12  
Idler gear
- #11 -1041-24-13  
Gear Box
- #12 - 1041-24-14  
Gear Shaft
- #13 - 1041-24-15  
Gear #1 Plastic
- #14 - 1041-24-16  
Gear #2 & #3 Metal
- #15 - 1041-24-17  
Output gear
- #16 - 1041-24-18  
Gear #4 Thick Metal

- #17 - 1040-24-22  
Blanking Plate.
- #18 - 1040-24-25  
Fixing screw.

- #19 - 1041-24-19  
Cam Shaft.  
1041-24-20  
Cam shaft bearing.

- #20 -1041-24-21  
Cam Agitator.
- #21 - 1041-24-22  
Agitator.

- #22 - 1040-24-291  
Low level contact plate.
- #23 - 1041-27-373  
Mark IV PC logic board.



## **CABINET PARTS LIST**

AC9020	- KEYPAD W/HARNESS
AC1061	- MAIN LOGIC BOARD
AC1041	- MK4 COIN HOPPER
AC1040.3	- HOPPER PLATE WITH HARNESS
AC5080	- SCREW-IN T-HANDLE (NO LOCK OR KEYS)
AC1093	- LOCK & KEYS
1093-01	- SPARE KEYS
AC2210	- CABINET COMPLETE, AC250
2050	- MANUAL FOR AC250
AC1088	- FULL FRONT STICKER FOR AC250
1010-01	- COIN CUP FOR AC250
AC2210.1	- DOOR FOR AC250