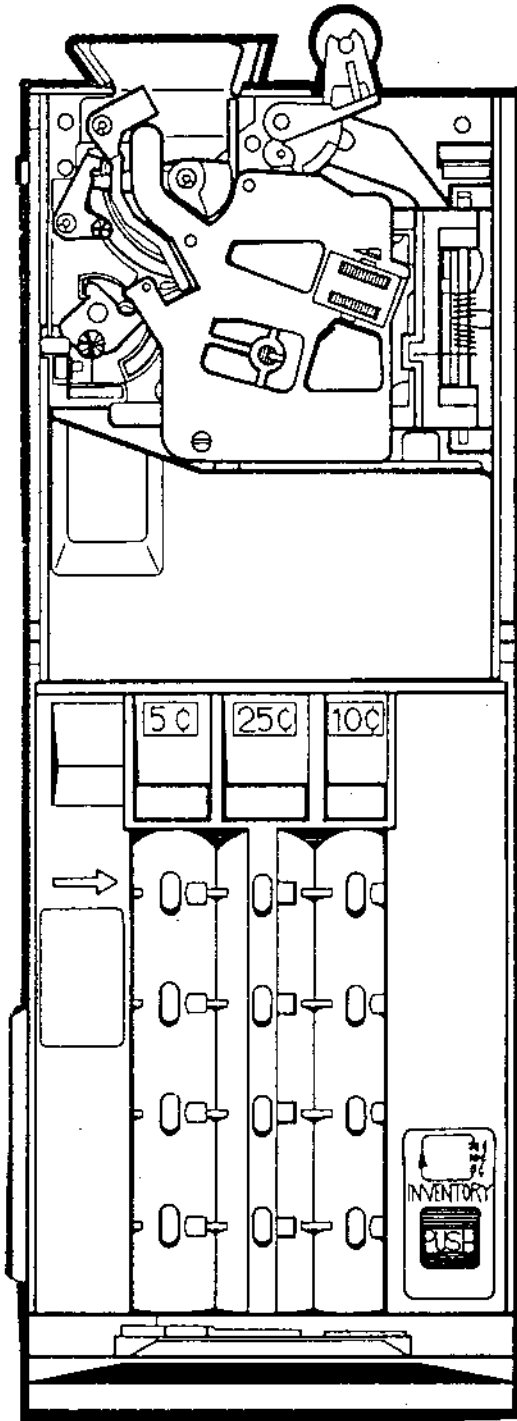


CONLUX 5¢, 10¢, 25¢ 3way Coin Changer

US-1, 2 Series

Service Manual



CONLUX USA CORPORATION

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1. OUTLINE

The US-1, 2 Series is a coin changer which includes a coin changer with a built-in coin storage function which handles 5, 10 and 25¢ U.S. coins and which can be set at vending prices ranging from 5¢ to \$3.15 U.S. The US-121 Series includes a price display adaptor and the US-131 Series includes a coin changer which makes possible the installation of a price display adaptor and a vending price totaling unit. The US-122 Series has a coin changer for cigarette venders.

Warranty

CONLUX USA CORPORATION warrants all new equipment sold by it to be free from defective material and workmanship. Conlux will repair or replace (at its option) any part of the equipment which proves to be defective in materials or workmanship within a period of twelve (12) months from the date of original sale. In addition, printed circuit board assemblies will be warranted for a period of thirty-six (36) months from the date of sale of the equipment containing the printed circuit board.

Other conditions applying to this warranty are as follows:

1. This warranty will not apply to any equipment which has been, in Conlux's opinion, subject to: accident, abuse, misuse, neglect, improper installation, or improper maintenance or repair by unauthorized service personnel.
2. Conlux will not be responsible for any expense incurred by the purchaser incidental to the repair or replacement of equipment covered by this warranty.
3. Freight charges to send the equipment to Conlux or Conlux appointed Independent Authorized Service Center for warranty service will be the responsibility of the purchaser.
4. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES ORAL OR WRITTEN, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY, WARRANTIES OF FITNESS OF PURPOSE, AND ALL OTHER OBLIGATIONS OR LIABILITIES OF CONLUX. CONLUX NEITHER ASSUMES NOR AUTHORIZES ANY PERSON TO ASSUME FOR IT, ANY OTHER OBLIGATION OR LIABILITY IN CONNECTION WITH THIS WARRANTY POLICY.
5. LIABILITY TO CONLUX USA AND ITS APPOINTED INDEPENDENT AUTHORIZED SERVICE CENTER IS LIMITED TO THE REPAIR OR REPLACEMENT, AT THEIR OPTION, OF DEFECTIVE PARTS AND DOES NOT INCLUDE INCIDENTAL AND CONSEQUENTIAL DAMAGES.

2. GENERAL SPECIFICATIONS

Number of prices	US101, 111, 121, 131, 122 series: 1 price
Price setting range	5¢ to \$3.15 (5¢ increment)
Max. amount of coins to be inserted in	\$4.15
Coin discriminator	M-810
Acceptable currency (bills)	5¢, 10¢ and 25¢ coins, \$1 bills (when bill validator is installed)
Change tubes	5¢, 10¢ and 25¢ coins, automatically loaded
Available number of coins	5¢: approx. 65 pcs, 10¢: approx. 95 pcs, 25¢: approx. 70 pcs
Change payout system	DC motor
Power source	117V AC +/-10V, 60 Hz
Operating temperature	+5F ~ +140F
Electric power rating	Approx. 12.5W (stand by position)
Weight	Approx. 2.5 kg
Escrow function	Capability (change tube returning system)
Over price function	Capability

3. DETAILED SPECIFICATIONS

1. Vend signal (US-101, 111, 121, 131)

1-1 The vend signal is output when the amount of money, in coins, which was inserted is equal to or exceeds the set vending price.

1-2 The machine returns to the wait state after the vend signal is output. (It returns to the wait state after returning change if change must be made.)

1-3 Vending when change is not required for the currency inserted

A vend signal is sent each time the coins inserted are of the correct amount.

1-4 Vending when change is required for currency inserted when change is available.

A vend signal is sent each time the coins inserted reaches or exceed vend price, and the correct amount of change for the vend price is returned.

When there is no change or a minimal of 23 5¢ coins

No vend signal is sent for the coins inserted. The maximum amount of currency can be inserted (415¢) you must escrow.

1. Vend signal (US-122)

1-1 The vend signal enables vending to take place when the amount of money, in coins, which was inserted is equal to or exceeds the set vending price.

1-2 After vending has been enabled, the vend signal is output as follows.

When establishing the vending conditions, pulling the vending machine selection lever causes the vend signal to be output, then the machine returns to the wait state when the lever returns to its original position.

(It returns to the wait state after returning change if change must be made.)

2. Empty signal

Empty signal is sent when 5¢ coins are no longer available (less than 23 +/-3 or 8 ± 3 coins remaining)

3. Temporary change storage function

(1) All the change counted is stored in the change tube.

(2) Pressing the money return lever activates the temporary change storage function, causing all the coins which were inserted to be returned in their original quantities.

4. C.R.E.M.

In the following situations, currency inserted will be automatically returned:

(1) Power is cut off

(2) When the value of the currency inserted exceeds the vend price (vending which can be covered by change), the differential value will be returned.

(3) When vending is in operation, or during return operation

(4) When the inserted currency reaches the maximum currency value (\$4.15)

(5) When the C.R.E.M. signal is cut off

(6) When the same type coins are inserted continuously, as follows: 5¢ coins . . . 40, 10¢ coins . . . 20, 25¢ coins . . . 16.

5. Inventory (Push-on type)

- (1) Change is returned first by 25¢ coins, then by 10¢ coins, and then by 5¢ coins, one at a time.
- (2) Turning the inventory ON starts rotation of the change motor.
Turning the inventory ON again stops the change motor at the prescribed position.
- (3) If the coin return lever is pressed, or if more than one vend has been made, the order of change making from the inventory always begins from 25¢ coins.

6. The specifications of \$1 bill validator (NB-10) have been changed as follows.

Item Changed	Before Change	After Change														
1 Money Used	5, 10 and 25¢ coins	5, 10 and 25¢ coins, 1 Dollar bills														
2 C.R.E.M. When the same types of money are inserted continuously	<table border="0"> <tr> <td>5¢ coins</td> <td>40</td> </tr> <tr> <td>10¢ coins</td> <td>20</td> </tr> <tr> <td>25¢ coins</td> <td>16</td> </tr> </table>	5¢ coins	40	10¢ coins	20	25¢ coins	16	<table border="0"> <tr> <td>5¢ coins</td> <td>40</td> </tr> <tr> <td>10¢ coins</td> <td>20</td> </tr> <tr> <td>25¢ coins</td> <td>16</td> </tr> <tr> <td>\$1 Bill</td> <td>4</td> </tr> </table>	5¢ coins	40	10¢ coins	20	25¢ coins	16	\$1 Bill	4
5¢ coins	40															
10¢ coins	20															
25¢ coins	16															
5¢ coins	40															
10¢ coins	20															
25¢ coins	16															
\$1 Bill	4															
3 Temporary change storage function	Refer to Item 3.	(add.) By pressing the return lever, the money is returned as change in combinations of 25, 10 and 5¢ coins.														
4 Change Out	Refer to Item 2.	(add.) When the coin changer has not received any coins, the "no change" signal is output. This disables the \$ bill validator making it impossible for it to accept \$ bills.														

7. Amount indicator

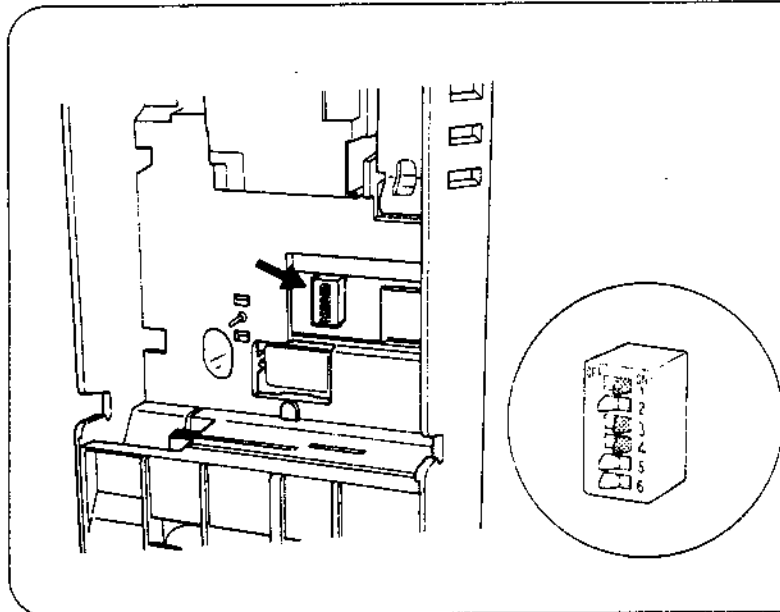
Installation of the optional amount indicator (US-001) permits 3 digit display of the amount of money inserted, or the amount of change after vending.

Determine Failure Condition

The coin changer should be determined failed at times such as the following (noting that the C.R.E.M. is in the OFF condition.

- * When the cancel signal, coin signal, pulse signal, and C.R.E.M. breaking signal continue to be present. In item *, when the signal goes off, there will be an entry into the standby condition.

5-3 How to set the vend price



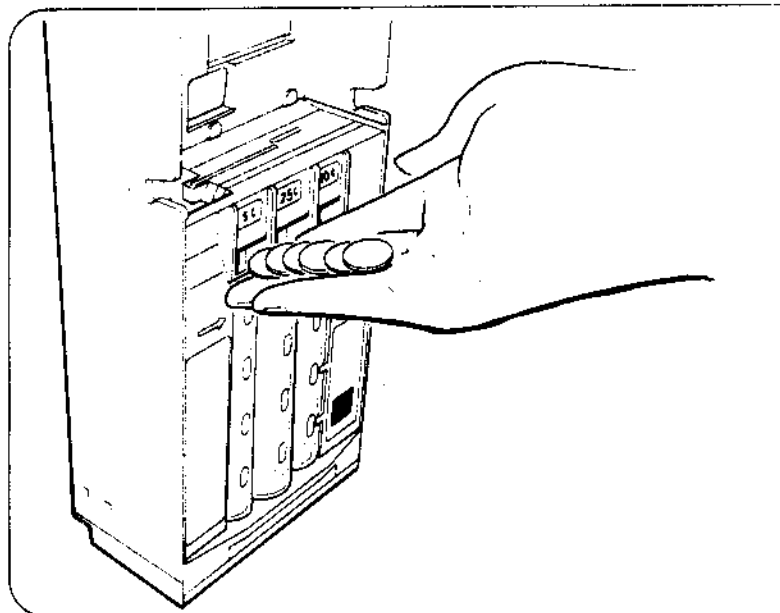
The price setting switch is the slide type. The vend price is determined by the total value of switches 1-6. Switches 1-6 have the following values.

- 1. 5¢
- 2. 10¢
- 3. 20¢
- 4. 40¢
- 5. 80¢
- 6. \$1.60

Example:

1.	5¢)	65¢
3.	20¢		
4.	40¢		

5-4 How to load the change coins



Load each coin into the correct change slot on the front tube. Do not load coins above the level marking.

5-5 Vending Test

1. Turn on the power source switch on the vending machine.
2. Insert one coin each of 5¢, 10¢ and 25¢ coins.
3. Push the reject lever. Are the inserted coins returned?
4. If the inserted 5¢, 10¢ and 25¢ coins reach a value that is equal to or higher than the vending price, does the vending lamp on the vending machine appear? If it lights, push the selection button on the vending machine.
Do the change and the product come out properly?

If the above procedure can be continued without the occurrence of irregularities, preparation is completed. If any trouble occurs, reread the operation manual to check for mistakes.

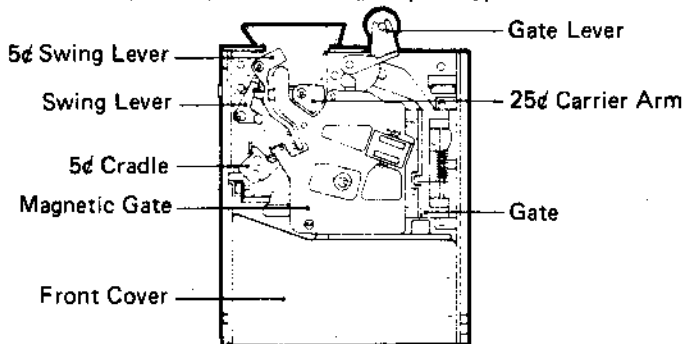
6. CONSTRUCTION AND DESCRIPTION

6-1 DESCRIPTION OF PARTS

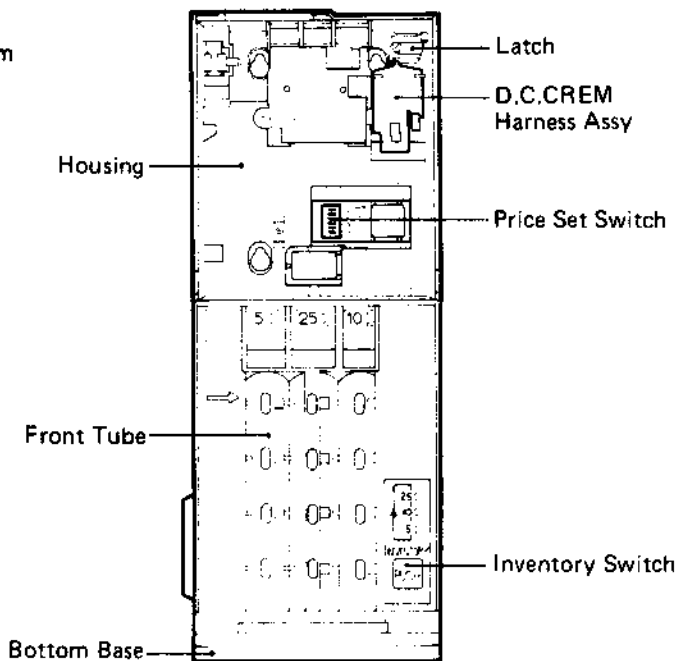
6. CONSTRUCTION AND DESCRIPTION

6-1 DESCRIPTION OF PARTS

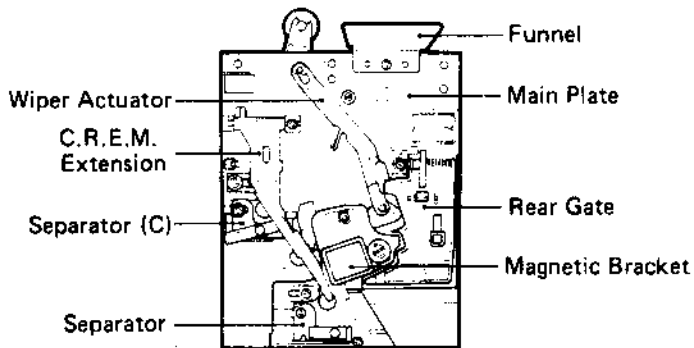
Front Side of Discriminator (M-810)



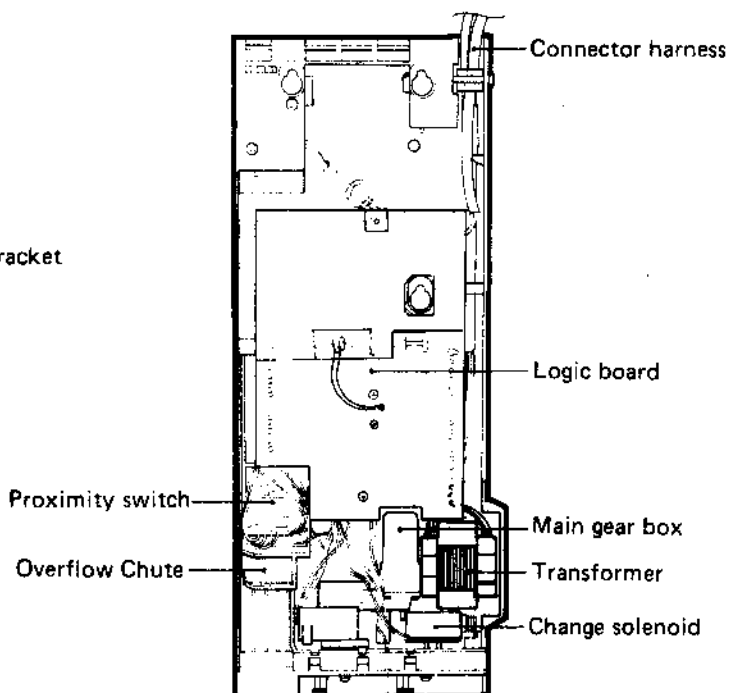
Front Side of Changer



Rear Side of Discriminator (M-810)



Rear Side of Changer



6-2 COIN FLOW

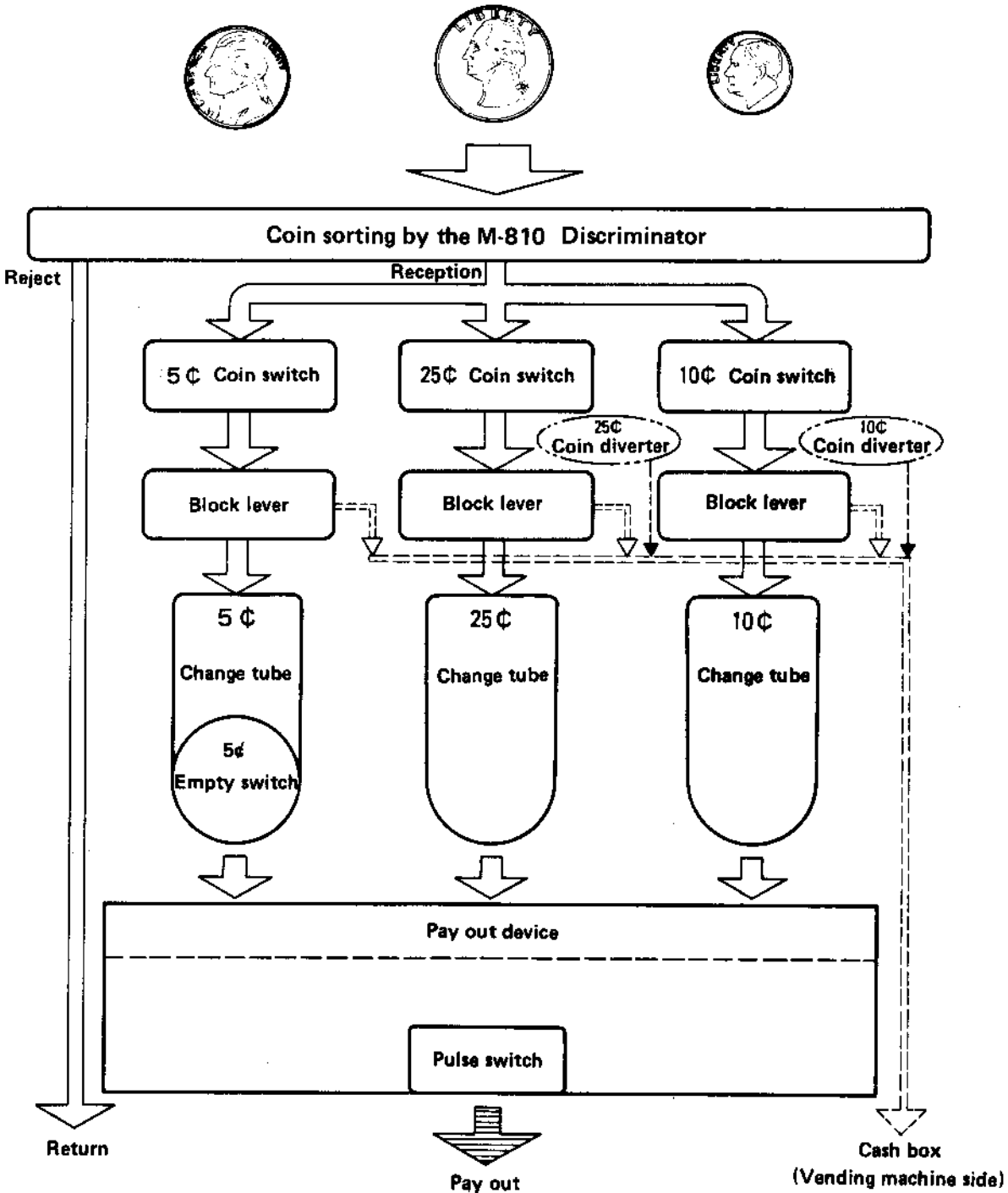
The loaded coins are sorted by the discriminator, the 25¢, 10¢, and 5¢ coins are judged appropriately and pass the coin switches of their respective routes, and then the coins are automatically deferred to the change tubes.

Bad coins are automatically returned and coins that stop part way through, press the return lever and are sent out to the return passage.

When the coin diverter (25¢, 10¢) is used or the block lever operates, the coins are guided to the cash-box at the bending machine side.

At the time of manual return, automatic return, and change pay out, the change device operates and 25¢, 10¢, and 5¢ coins pass the pulse switch and are payed out.

Loading of Coins

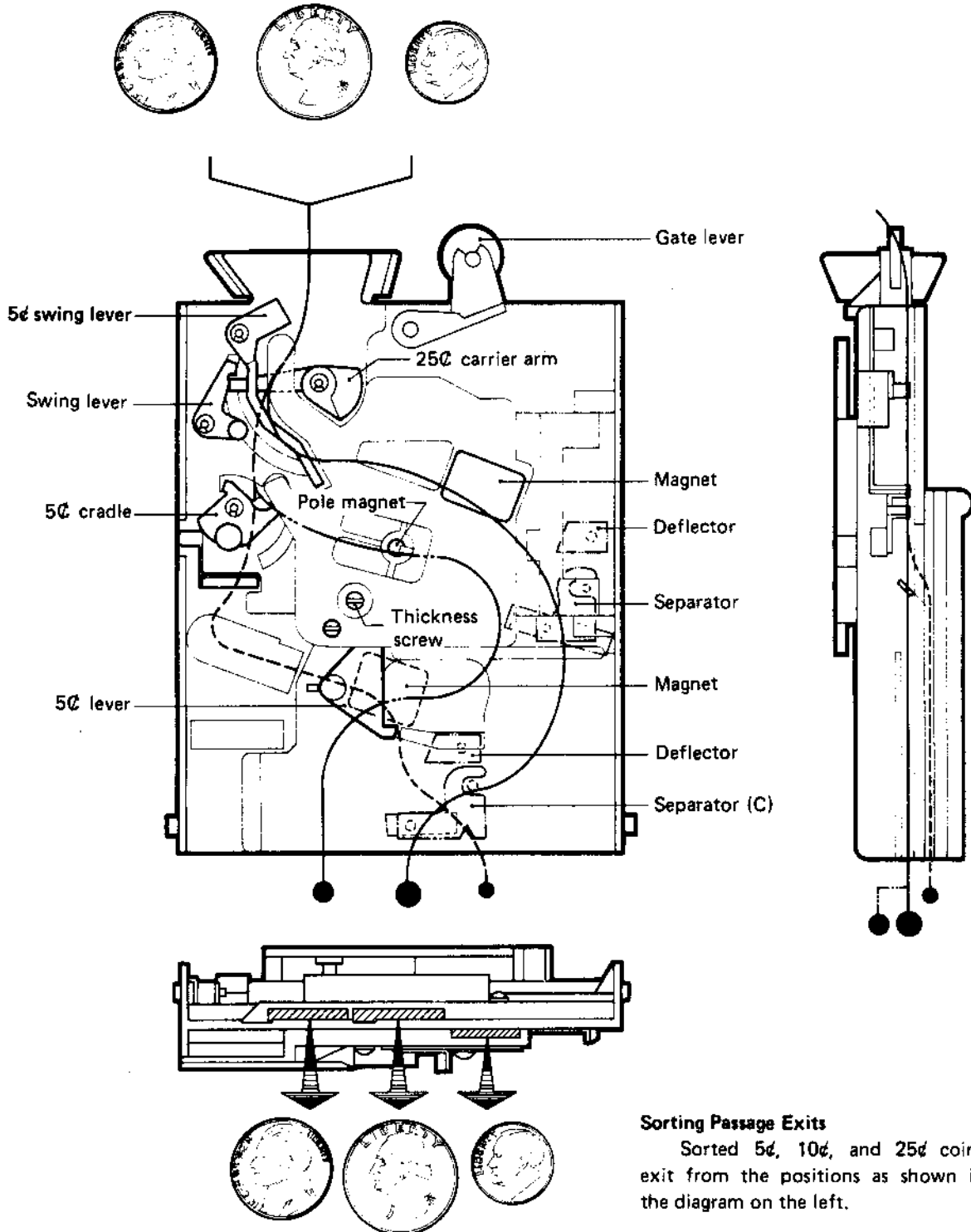


6-3 COIN ROUTES

The loaded 5¢ coin turns the 5¢ cradle and 5¢ swing lever and follows the 5¢ rail where it receives the influence of the pole magnet and strikes the deflector of the 25¢ chute. It then passes between the 5¢ lever and is guided to the 5¢ coin exit.

The 10¢ coin passes through the 5¢ cradle, goes around to the rear gate by way of the transfer lever, follows the rail where it receives the influence of the magnet and passes between the deflector and the separator. It is then guided to the 10¢ coin exit.

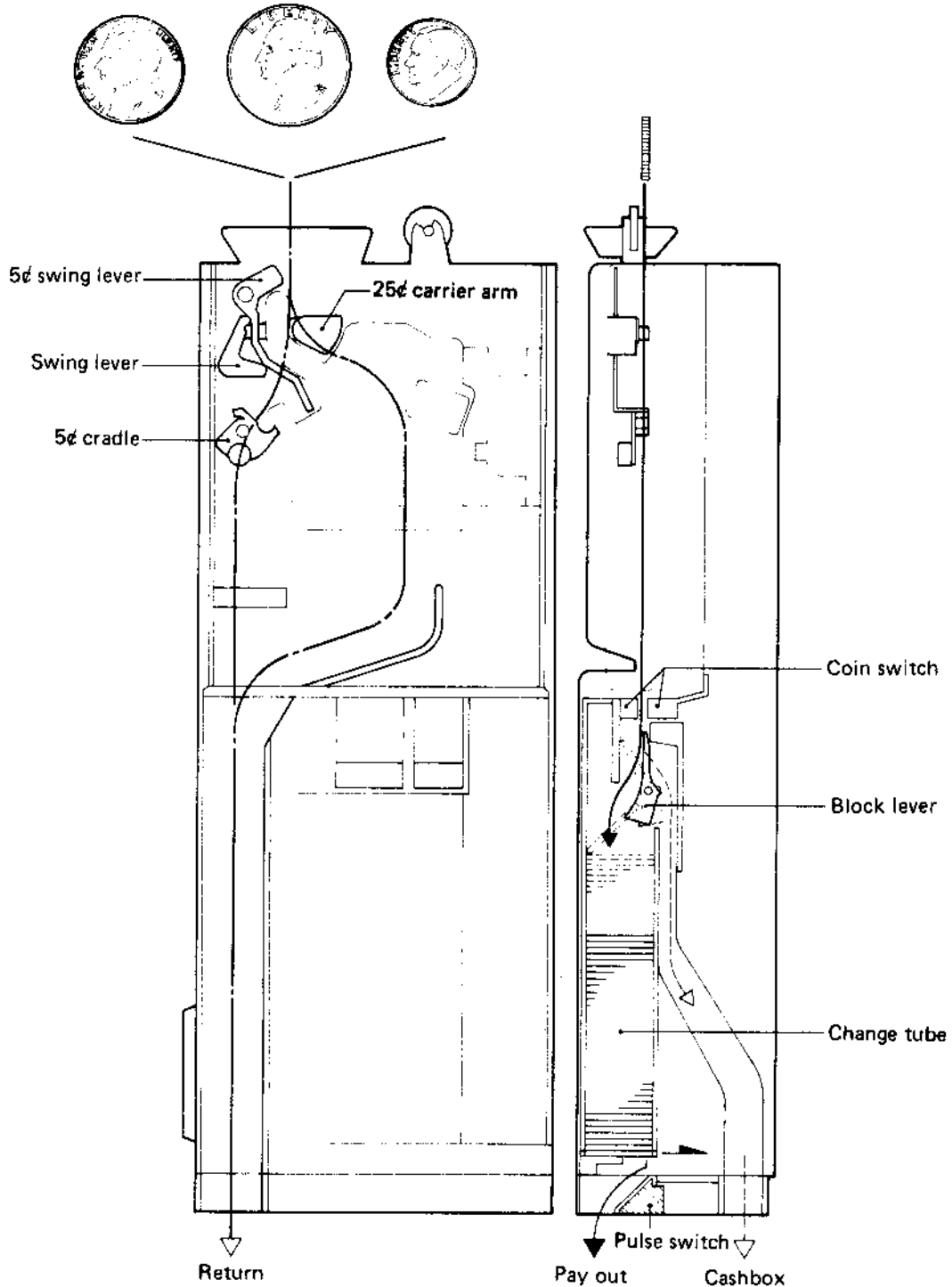
The 25¢ coin turns the 25¢ carrier arm and follows the rail where it receives the influence of the magnet, passes between the deflector and separator (C) and is guided to the 25¢ coin exit.



Sorting Passage Exits

Sorted 5¢, 10¢, and 25¢ coins exit from the positions as shown in the diagram on the left.

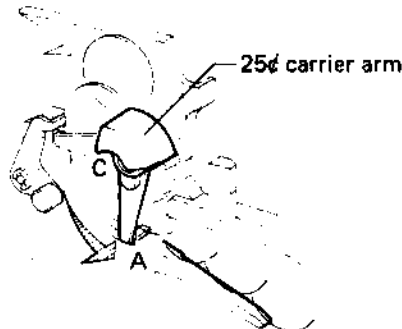
*The sorted 5¢, 10¢, and 25¢ coins pass the respective coin switches and are directed to the change tubes. The 25¢ coins pass above the pulse switch and are paid out. Bad coins (including slugs, etc.) pass between the housing and the front tube and are returned to the return outlet of the vending machine.



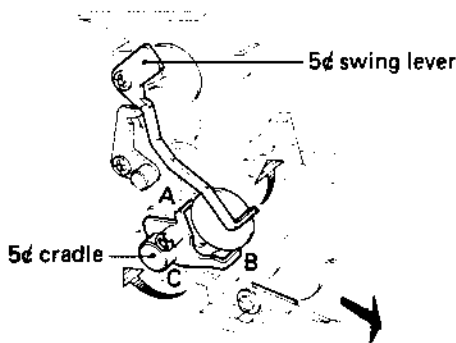
6-4 SORTING METHOD

6-4-1 Diameter Sorting

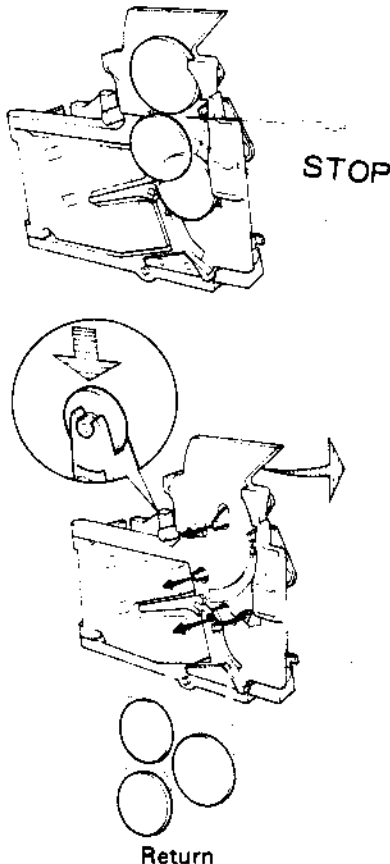
• 25¢ carrier arm



• 5¢ cradle and 5¢ swing lever



• Bad Coins



25¢ Coins

The 25¢ coins mount tip A of the carrier arm and go along to the guide stopper of the gate by their own weight, turn on pivot C, and are carried by the coin rail.

Large coins stop at the gate entrance or stop between the carrier arm and guide stopper X. (Stopped coins push the return lever which opens the gate and they are returned.) Small coins go through and advance to the 5¢ coin sorter.

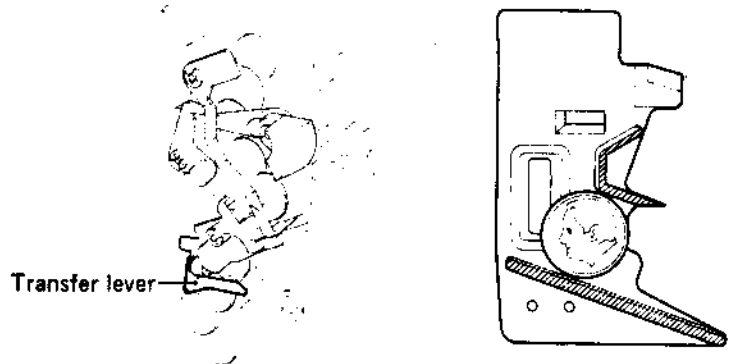
5¢ Coins

The 5¢ coins mount cradle A-B and turn on pivot C by their own weight, then push the swing lever and are carried by the coin rail.

Large coins strike the guide stopper X and stop. Stopped coins push the return lever which opens the gate and they are returned. Coins smaller than the space between A-B go through and advance to the 10¢ coin sorter.

10¢ Coins

The 10¢ coins flow along the 10¢ coin rail and large coins are stopped between the guide stopper. (Stopped coins push the return lever which opens the rear gate and the coins are returned.)



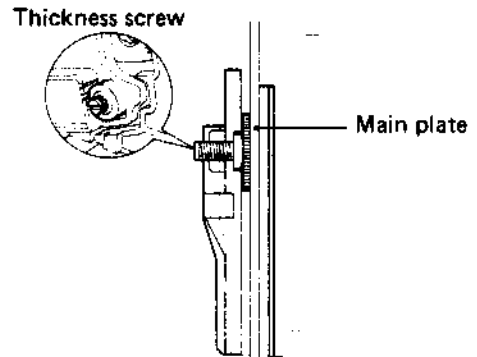
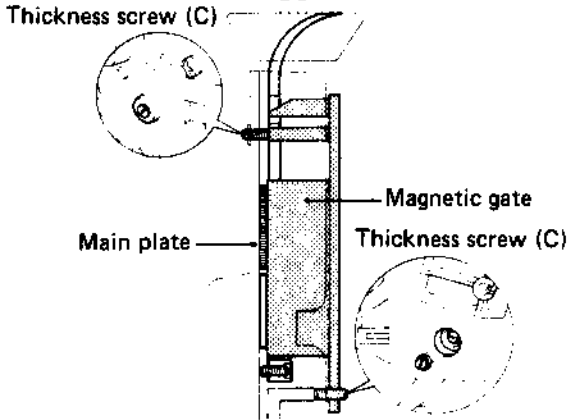
6-4-2 Thickness Sorting

● Thickness Screw (C)

The 25¢ and 5¢ coins go through the coin passage between the main plate and the magnetic gate.

● Thickness Screw (10¢ coins)

The 10¢ coins go through the coin passage between the main plate and the thickness screw.



6-4-3 Quality Sorting

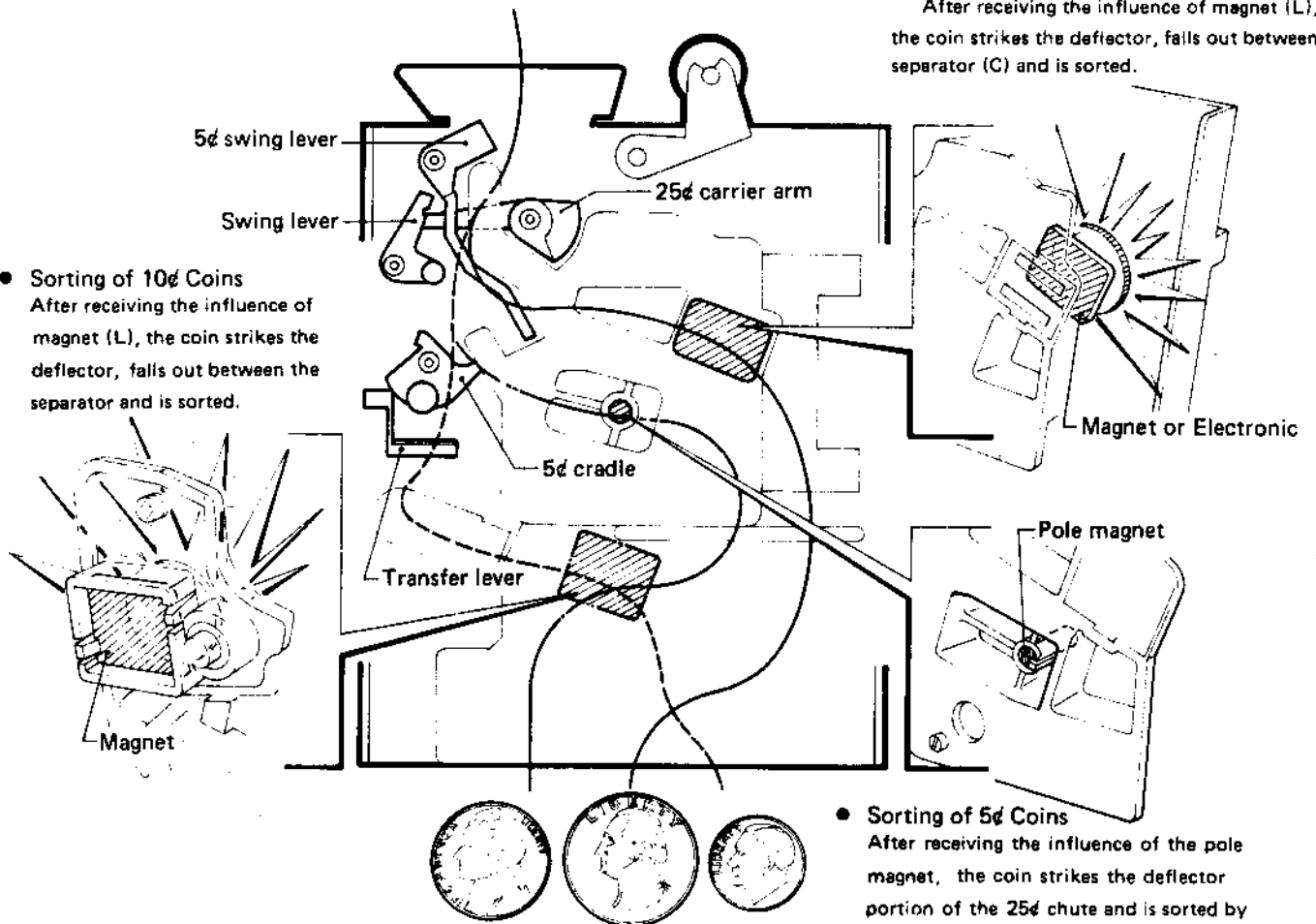
When the coin passes the magnetic area (between the magnet and main plate), the degree of influence (braking) received differs depending on the material and this is used for sorting (by the magnetic method). Furthermore, according to the quality (hardness) of the coin, the dropped coin strikes the deflector and the repulsive force is used for sorting (by the deflector method).

● Sorting of 25¢ Coins

After receiving the influence of magnet (L), the coin strikes the deflector, falls out between separator (C) and is sorted.

● Sorting of 10¢ Coins

After receiving the influence of magnet (L), the coin strikes the deflector, falls out between the separator and is sorted.



● Sorting of 5¢ Coins

After receiving the influence of the pole magnet, the coin strikes the deflector portion of the 25¢ chute and is sorted by way of the repulsive force.

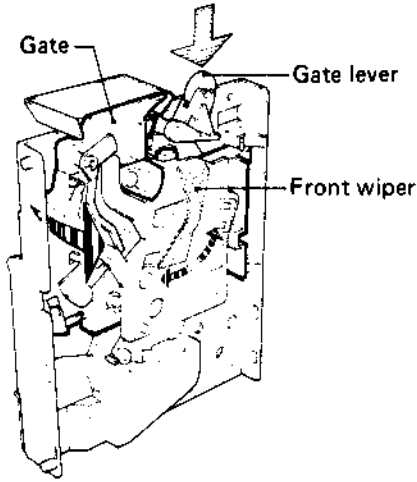
6-5 OPERATION OF SWITCHES AND PARTS

6-5-1 Gate Lever Ass'y and Related Parts

6-5-2 C.R.E.M and Extension

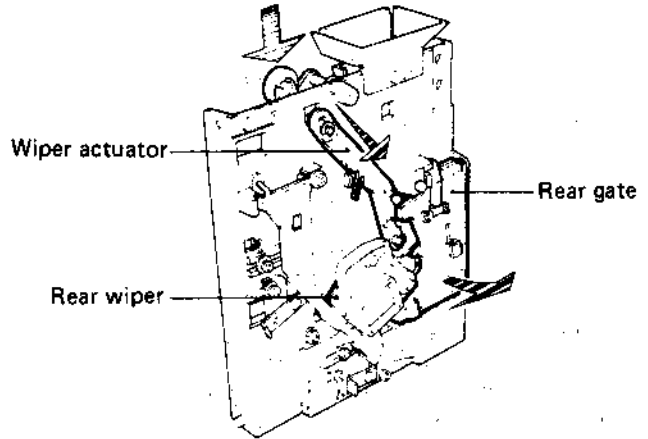
6-5 OPERATION OF SWITCHES AND PARTS

6-5-1 Gate Lever Ass'y and Related Parts

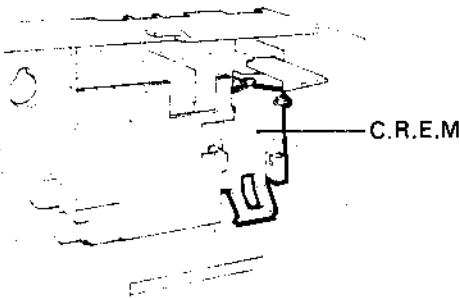


Operation of the vending machine return lever causes the gate lever to be pushed, each wiper and wiper actuator to move, and the gate and rear gate to open.

Bad coins and other objects that are stopped are guided to the return passage by this operation. Furthermore, the switch lever is pushed by the rear gate and the cancel switch is operated.

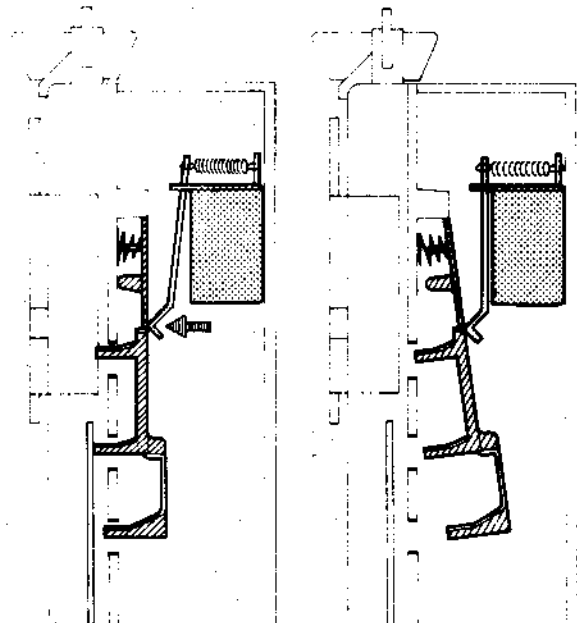
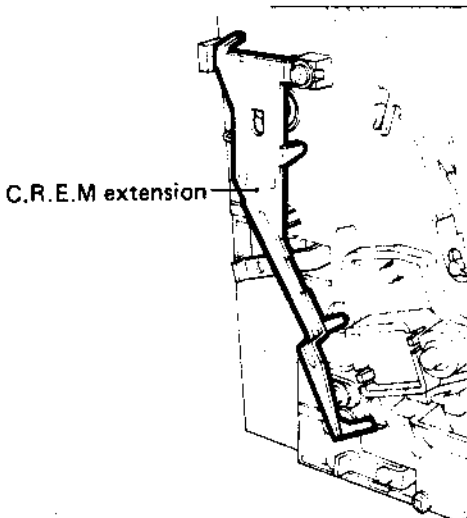


6-5-2 C.R.E.M and Extension



This device guides the loaded coins automatically to the return passage.

The C.R.E.M is usually conducting (ON), but when a coin must not be accepted, conduction is cancelled. When not conducting (OFF), the moveable iron piece on the C.R.E.M returns, the C.R.E.M extension is pushed, the coin passage is protected, and the inserted coin is returned automatically.



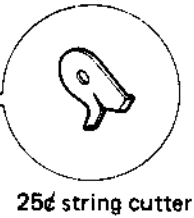
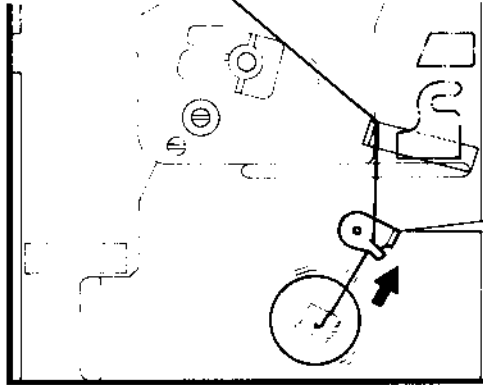
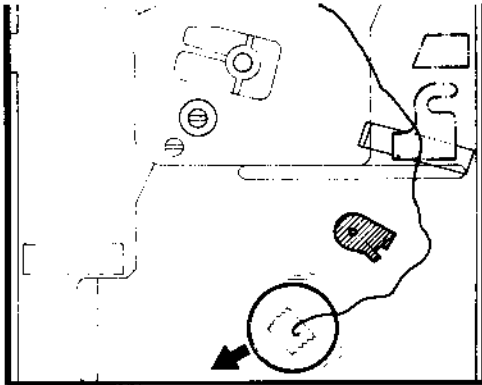
Breaking (C.R.E.M OFF)

Conducting (C.R.E.M ON)

6-5-3 String Cutter

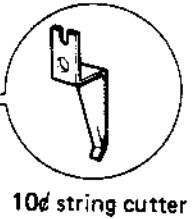
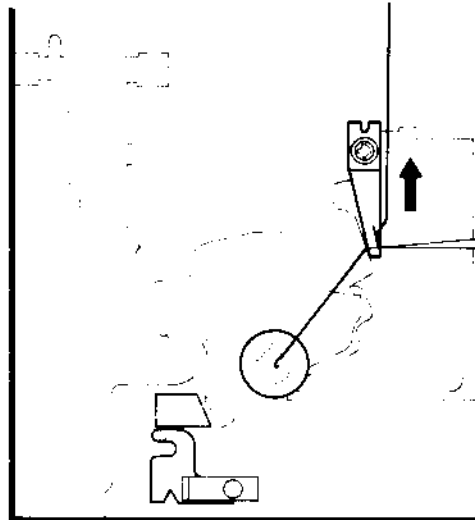
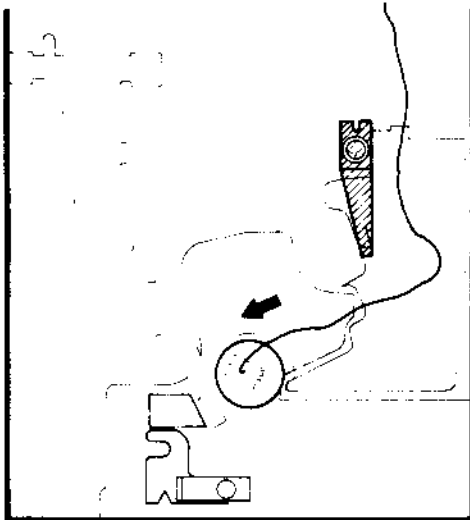
This device prevents pranks with thread and coins. The string cutter catches and cuts the thread when the thread is pulled.

● 25¢ Coin and the String Cutter



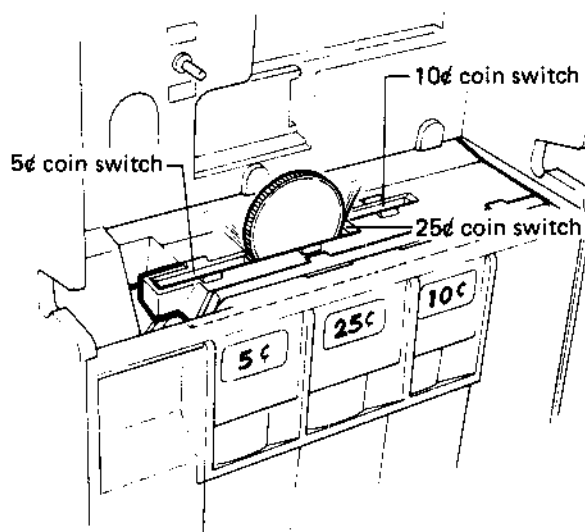
25¢ string cutter

● 10¢ Coin and the String Cutter



10¢ string cutter

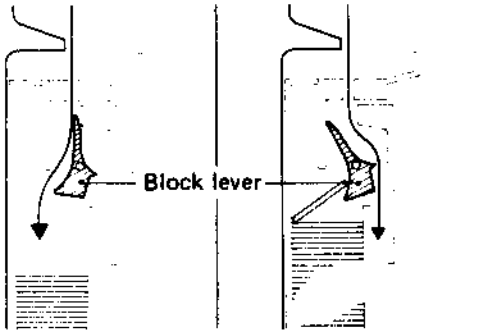
6-5-4 Coin Switches



When the coins pass the respective coin switches for 5¢, 10¢, and 25¢ coins the coin switches are activated (ON), return (OFF) and the coin signal is sent.

If a coin activates any of the coin switches for more than 200 to 400 msec (as would be the case in a prank), the coin signal will not be counted.

6-5-5 Coin Diverter and Block Lever



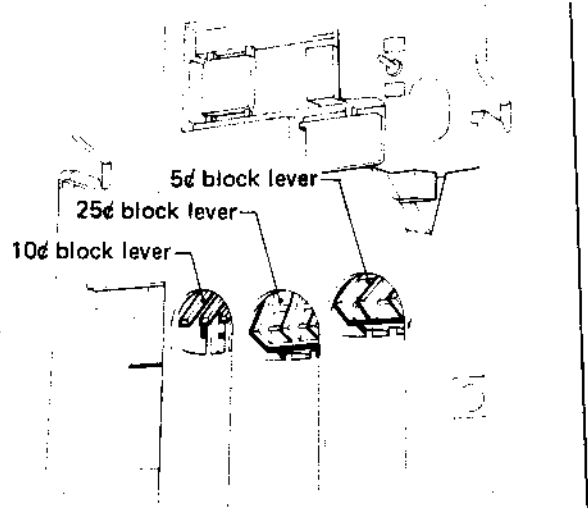
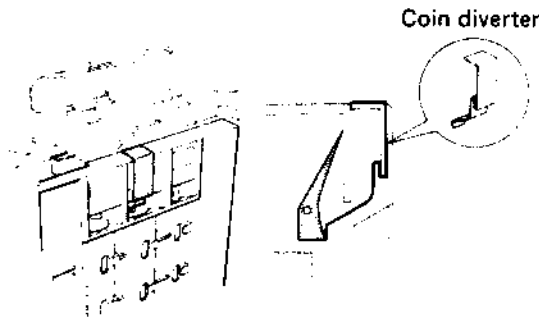
Block Lever in the Standby Condition

Block Lever in the Activated Condition

This is a route control mechanism that automatically supplies coins to the change tube side or diverts them to the cashbox (vending machine) side.

When the bottom end of the block lever is pushed by the coin diverter or a coin, the block lever falls to the front side and the coin coming down from above is guided to the cashbox.

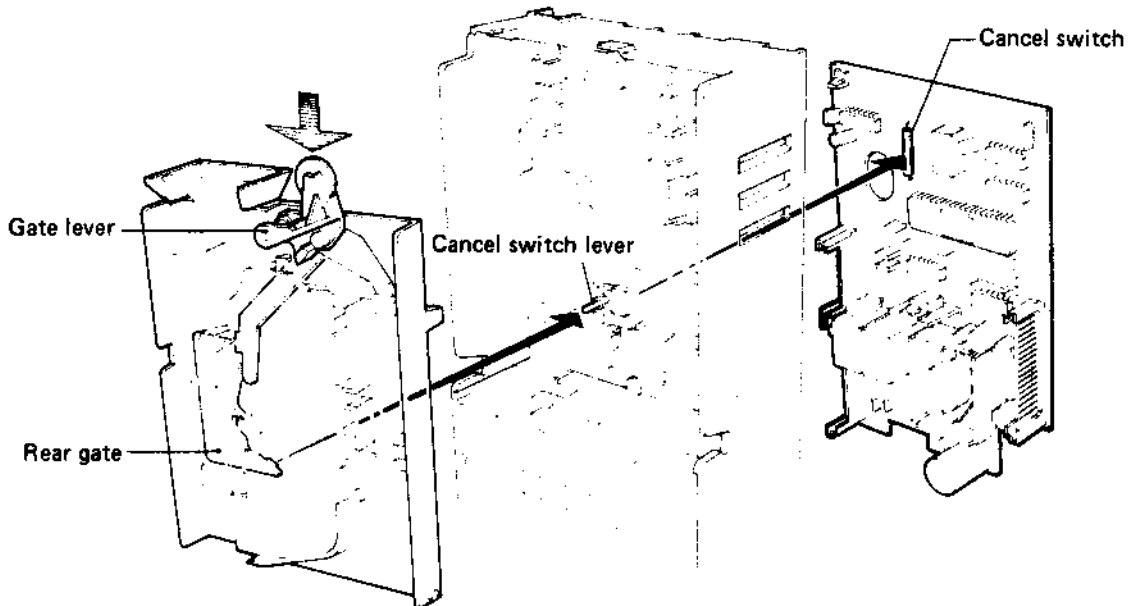
When the coin diverter is not in use and the coins are being diminished, the block lever returns to the standby position and the coins are guided to the change tube.



6-5-6 Cancel Switch

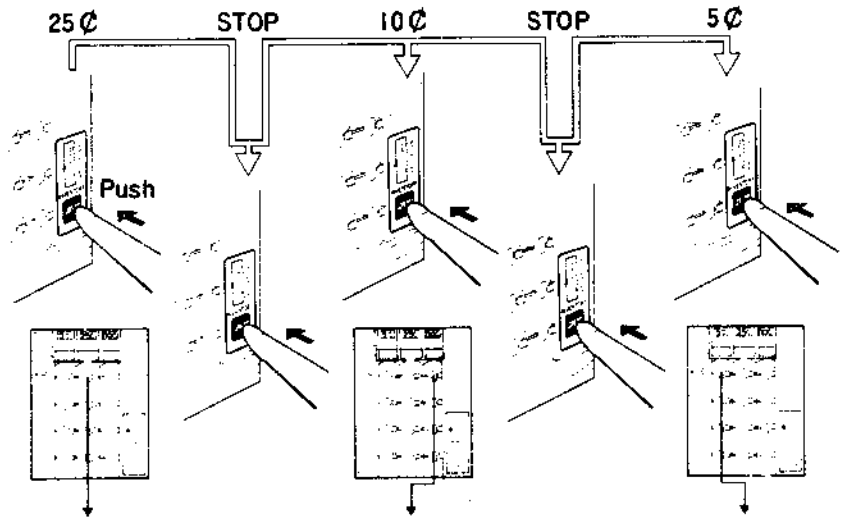
Activation of this switch causes the C.R.E.M to go OFF and the return action to (return all of the coins).

Operation of the return lever causes the rear gate to push the switch lever and the cancel switch on the logic board is activated (ON).

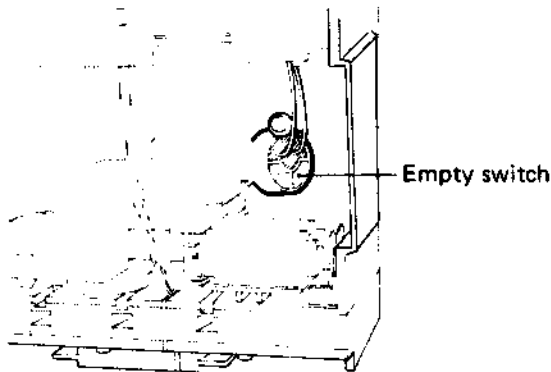


6-5-7 Inventory switch

Pushing the inventory switch causes the coins in the front tubes to be collected at the cashbox side. The order of collection is 25¢, 10¢, and then 5¢ as shown in the diagram.

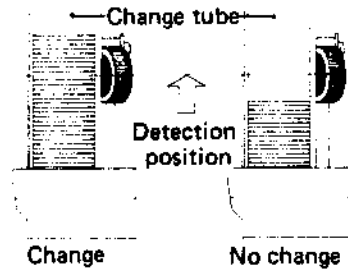


6-5-8 Empty Switch

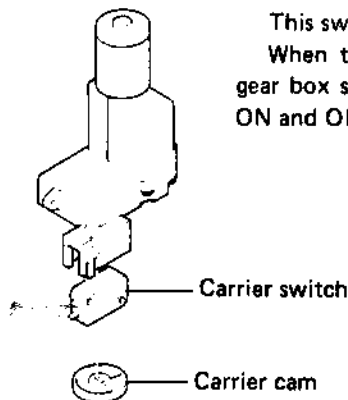
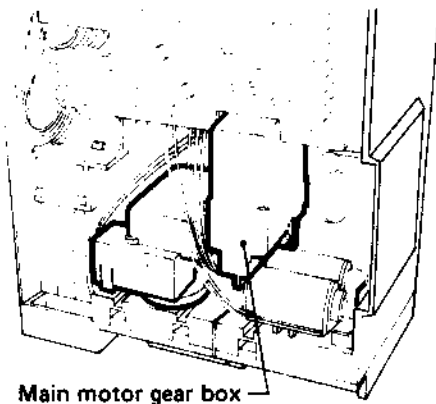


This switch detects the existence of coins in the change tube.

It is installed in the 5¢ change tube and when there are about 2 or 3 coins remaining in the tube, "change" will be detected, but fewer than this number of coins will result in a "no change" detection.

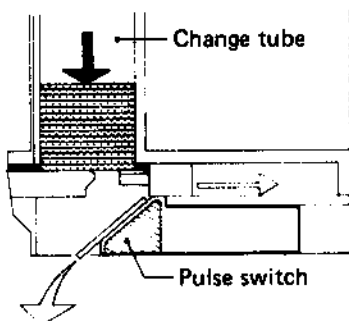


6-5-9 Carrier Switch and Carrier Cam

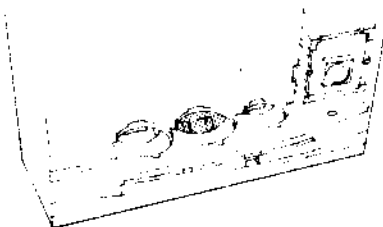


This switch controls the action of the motor. When the motor revolves, the carrier cam on the gear box shaft causes the carrier switch to be turned ON and OFF, and the carrier signal to be sent.

6-5-10 Pulse Switch



This switch detects the coins that are paid out. When the paid out 5¢, 10¢, and 25¢ coins pass, the switch is turned ON and OFF and the subtraction signal is



6-6 PAY OUT DEVICE

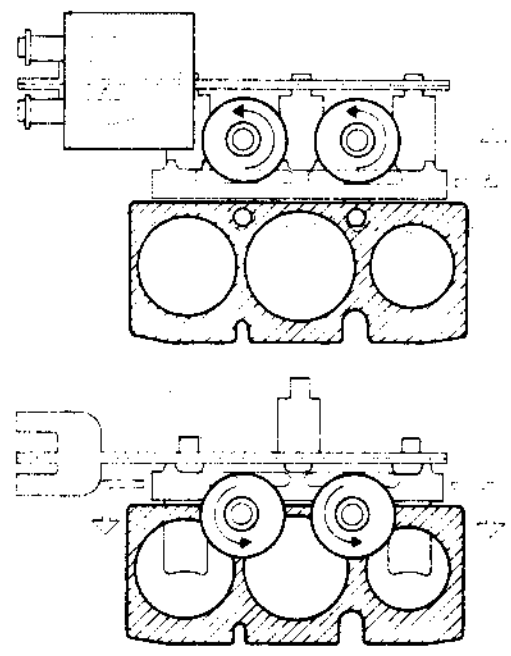
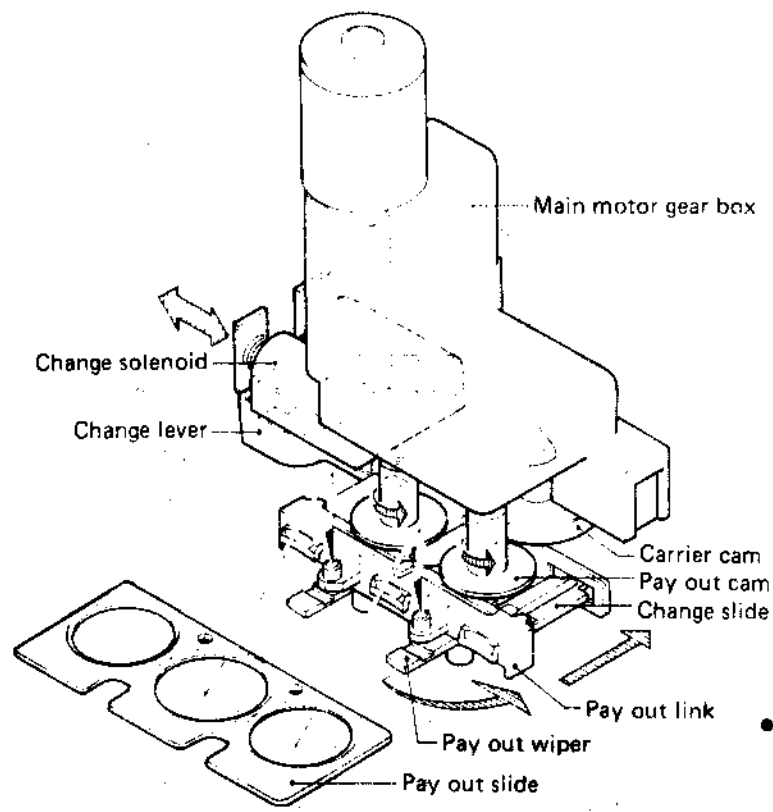
6-6-1 Change Device System Diagram

When the revolutions of the motor are transmitted to the pay out link through the gear box and pay out cam, the pay out link which is coupled to the pay out slide goes through a forward-and-back return movement. At this time, the carrier cam revolves and the pay out wiper moves.

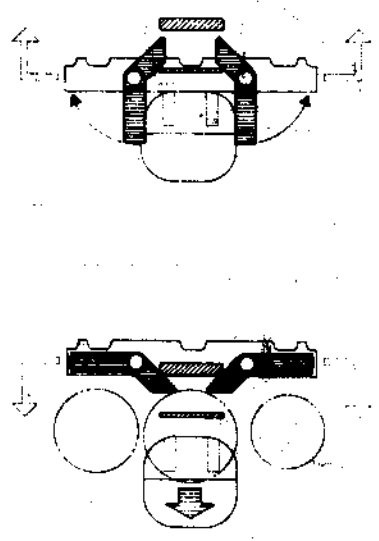
The change lever is geared to the combined movement of the two solenoids and controls the movement of the three change slides.

The coins are carried by the pay out slide. Coins that are in the planes where the change slides operate will fall and be payed out by the wipers.

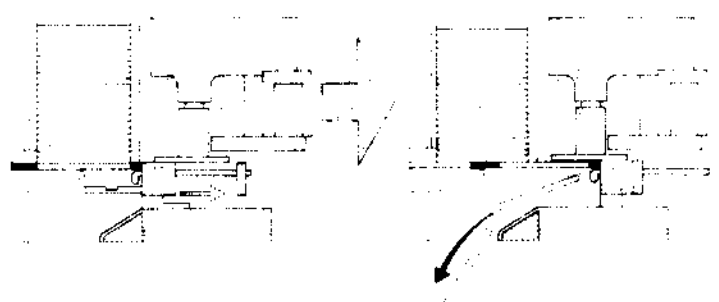
● **Movement of the Pay Out Cam and Pay Out Slide**



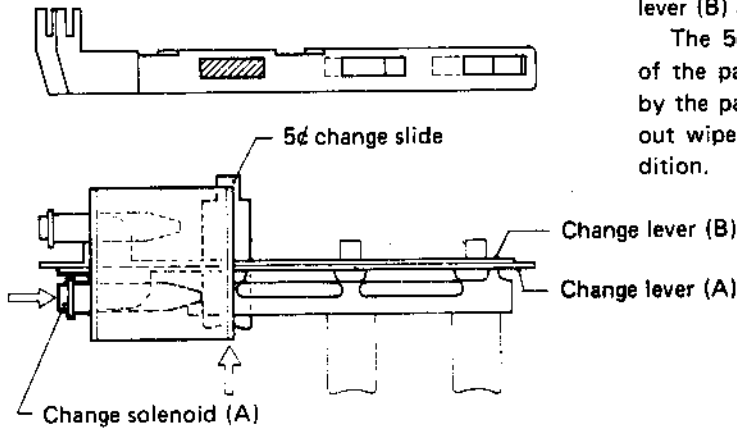
● **Movement of the Pay Out Wipers**



● **Coin Pay Out**



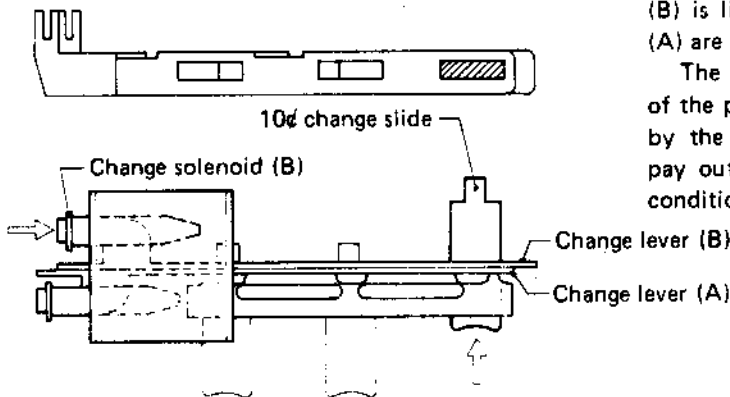
6-6-2 5¢ Coin Change Tube



Change solenoid (A) is activated and change lever (A) is linked. (Change solenoid (B) and change lever (B) are in the standby condition.)

The 5¢ change slide moves along with the action of the pay out link and the 5¢ coin which is carried by the pay out slide falls and is payed out by the pay out wipers. Related parts return to the standby condition.

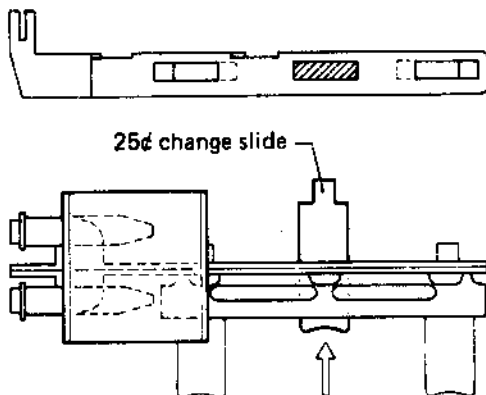
6-6-3 10¢ Coin Change Tube



Change solenoid (B) is activated and change lever (B) is linked. (Change solenoid (A) and change lever (A) are in the standby condition.)

The 10¢ change slide moves along with the action of the pay out link and the 10¢ coin which is carried by the pay out slide falls and is payed out by the pay out wipers. Related parts return to the standby condition.

6-6-4 25¢ Coin Change Tube



Change solenoid (A), (B) and change lever (A), (B) are in the standby condition.

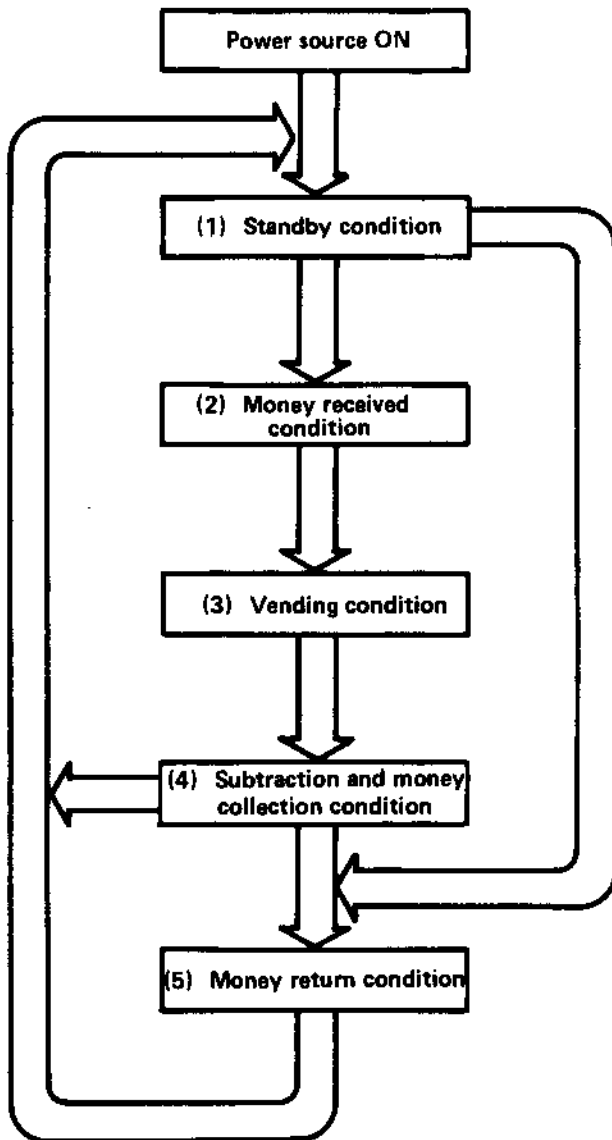
The 25¢ change slide moves along with the action of the pay out link and the 25¢ coin which is carried by the pay out slide falls and is payed out by the pay out wipers. Related parts return to the standby condition.

6-6-5 Action of the Change Solenoid and Coin Pay Out

Control of coin pay out is by the action of change solenoids (A) and (B) and the combination of change levers (A) and (B).

Change solenoid Change lever	Change tube		
	5¢ Tube	25¢ Tube	10¢ Tube
Change solenoid (A) Change lever (A)	Activation (ON)	Standby (OFF)	Standby (OFF)
Change solenoid (B) Change lever (B)	Standby (OFF)	Standby (OFF)	Activation (ON)

6-7 TRANSITION OF OPERATING CONDITION



Power source ON

The transition of the operating condition of the coin changer is as follows:

(1) Standby Condition

The condition in which the power is being supplied, the contents of the counter is zero, the C.R.E.M is drawn in, and the coins can be received at any time.

(2) Money Received Condition

Addition of the coin signals.

(3) Vending Condition

Sending of the vend signal.

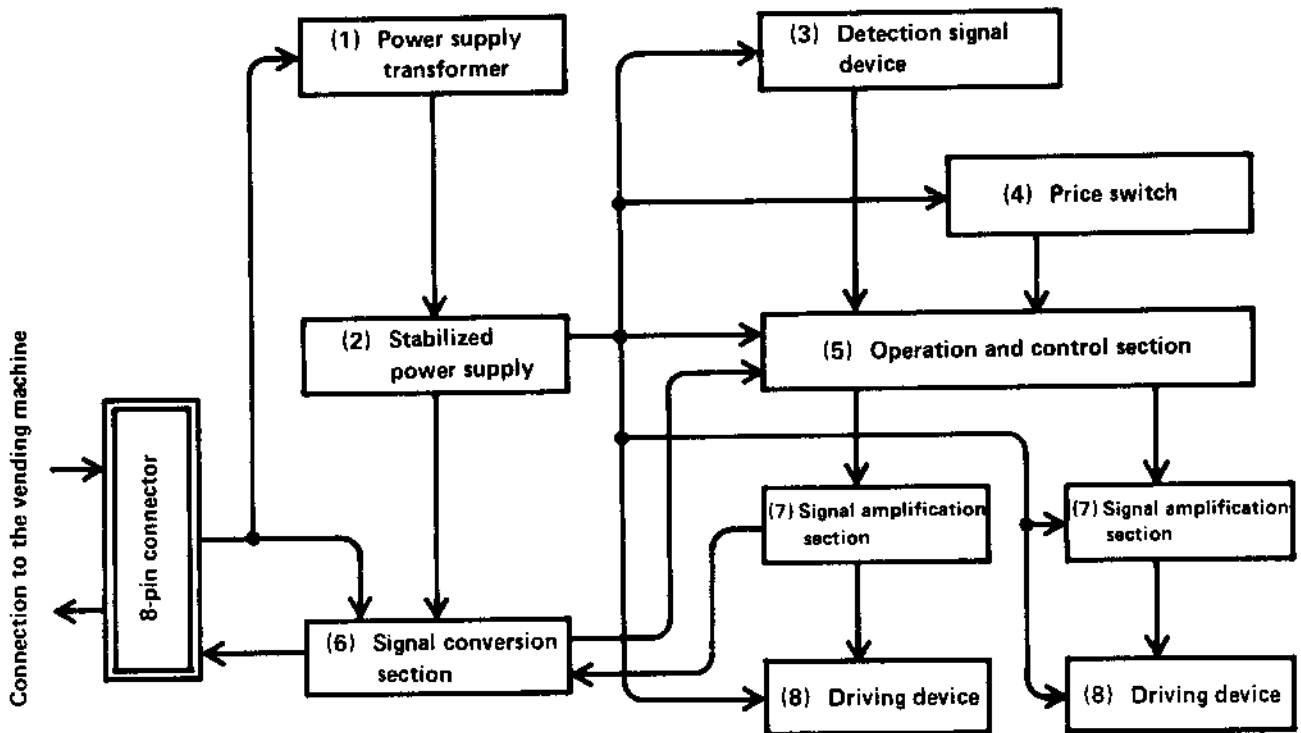
(4) Subtraction and Money Collection Condition

The condition in which the operation contents are processed by the vending signal.

(5) Returned Money Condition

The condition in which the remaining money corresponding to the vend and the change is returned.

6-8 SIGNAL DEVICE AND ITS MOVEMENT (US-1 series)

**Block Wiring Diagram**

The (1) power supply transformer changes 117 V AC to 34 V AC.

The (2) stabilized power supply changes 34 V AC to 24 V DC as well as 5 V and 0 V.

The (3) detection signal device consists of the pulse switch, empty switch, 5¢, 10¢, and 25¢ coin switches, inventory switch, carrier switch, and cancel switch.

The (4) price switch sets the vending price.

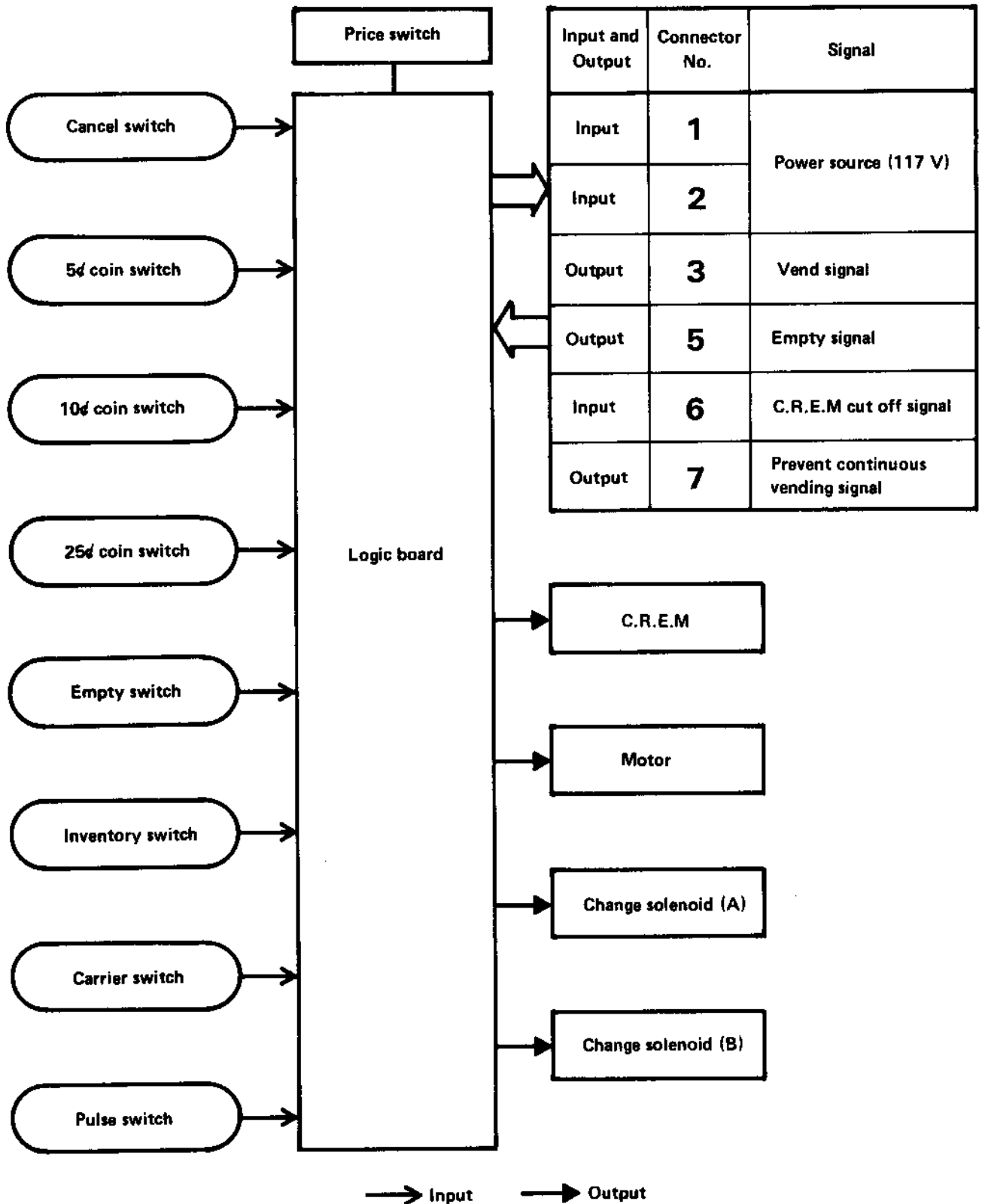
The (5) operation and control section processes the condition of (4), and the signals from (3) and (6). It sends out the operating signals from (6) and (8).

The (6) signal conversion section converts the (7) signal (DC) to the signal (AC) that goes to the vending machine side. Furthermore, it converts the signal (AC) from the vending machine side to the signal (DC) that goes to (5).

The (7) signal amplification section amplifies the signal from (5).

The (8) driving device operates the C.R.E.M, motor, and solenoid by the signal from (7).

6-9 INPUT AND OUTPUT RELATIONSHIPS AS SEEN FROM THE LOGIC BOARD (US-1 series)



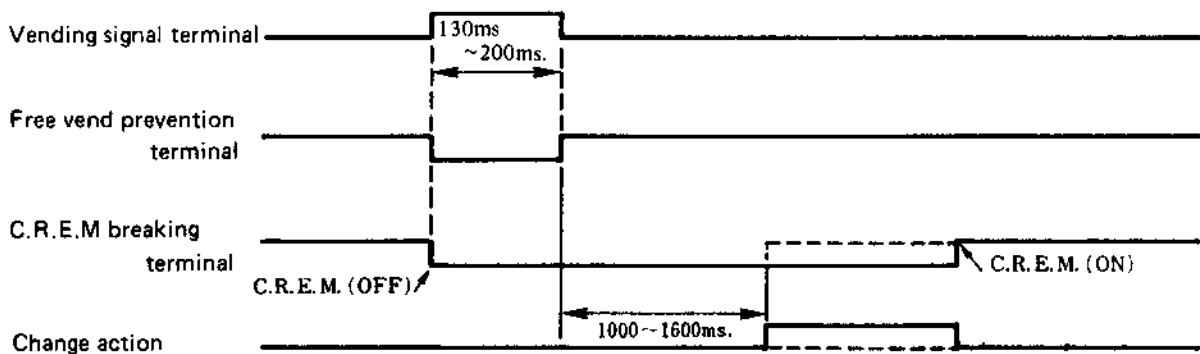
7. SIGNAL CONDITIONS AND WIRING DIAGRAM

• CONNECTION TERMINAL SIGNAL CONDITIONS (US-1 series)

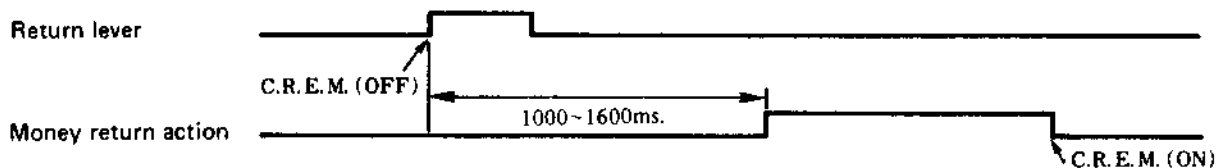
Terminal Number and Phase Relationship		Item	Input/Output	Power Supply Condition and Input/Output Signal Conditions	Notes
1	2		Input (power supply)	The vending machine side shall be always be supplied with 117 V AC \pm 10 V at 60 Hz.	Terminals for the power supply
3			Output	When the loaded coins reach the set vending price, the power supply on the number 1 terminal side is sent out as a signal.	Terminals for the vending signal
	5		Output	The power supply on the number 2 terminal side is used as a signal and is sent out in the following cases: <ul style="list-style-type: none"> • When coin reception is blocked. • When there is no change remaining. 	Terminals for "No change" indication
6			Input	The signal of the power supply on the number 1 terminal side is normally supplied from the vending machine side, but it is damped in the following cases: <ul style="list-style-type: none"> • When the goods are sold out. • When a signal is put out from the number 3 terminal. • When the vending action is continuous. 	Terminals for C.R.E.M breaking
7			Output	The signal of the power supply on the number 1 terminal side is normally sent out, but it is damped when the vending signal is put out.	Prevent continuous vending signal

TIME CHART

1. Vending action



2. Return action

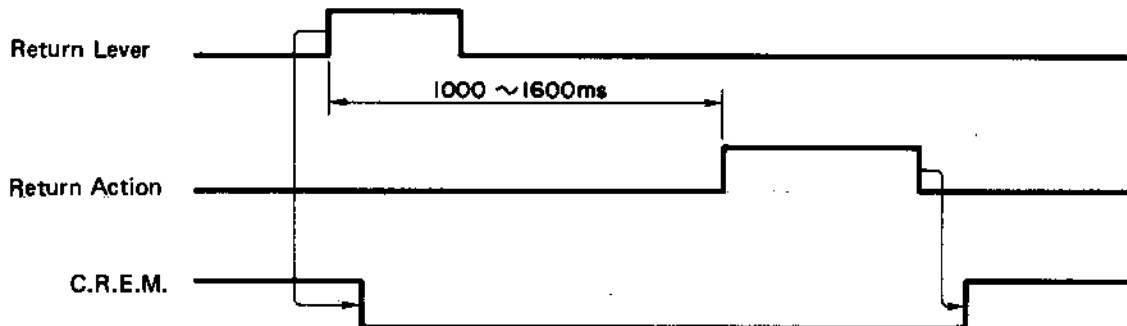


● CONNECTION TERMINAL SIGNAL CONDITIONS (US-2 series)

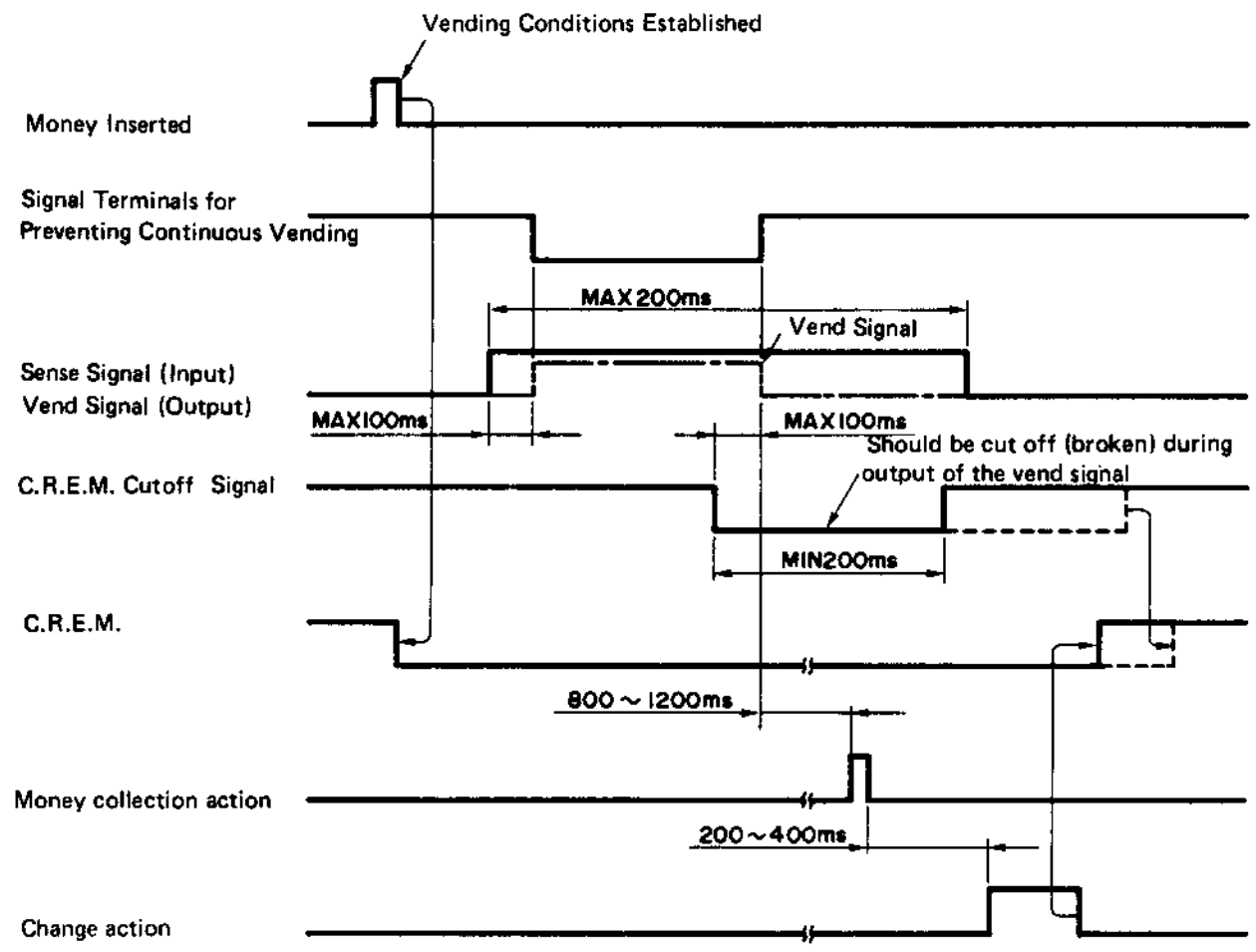
Terminal No. and Phase Relationship	Item	Input/Output	Power Supply Condition and Input/Output Signal Conditions	Remarks
1	2,6	Input (power supply)	117 V AC at 60 Hz should be supplied continuously to the vending machine.	Power supply terminals
3,8	3,8	Input ↓ Output	When the amount of the inserted coins reaches the set vending price, the terminal No. 2 side power supply should be supplied as a polarity load to the vending machine for a minimum of 200 ms. The impedance of the polarity load should be $80\Omega - 2K\Omega$ (input mode). Within 100 ms after the signal is supplied to this terminal, the coin changer should output the terminal No. 1 side power supply from this terminal (output mode) as a signal.	Sense signal terminal (input) Vending signal terminal (output)
5		Output	In the following cases the No. 2 terminal side power supply should be output as a signal. (1) When out of 5¢ coins (2) When coins cannot be received (in machines with circuit board classification "1" only)	Terminals for "No Change" indication.
6		Input	Normally power is supplied to terminal No. 1 of the vending machine side as a signal, but the supply for power should be cut off when a vending operation has been carried out during the time power is output by the No. 1 side from terminal No. 3 (No. 8). This signal should also be cut off (broken) when desiring to prevent the receiving of coins by the coin changer.	C.R.E.M. cutoff (braking) terminals
7		Output	Normally power is sent by terminal No. 1 as a signal, but it should be cut off (broken) when the No. 1 side is outputting power from terminal No. 3 (No. 8).	Terminals for preventing continuous vending

TIMING CHART

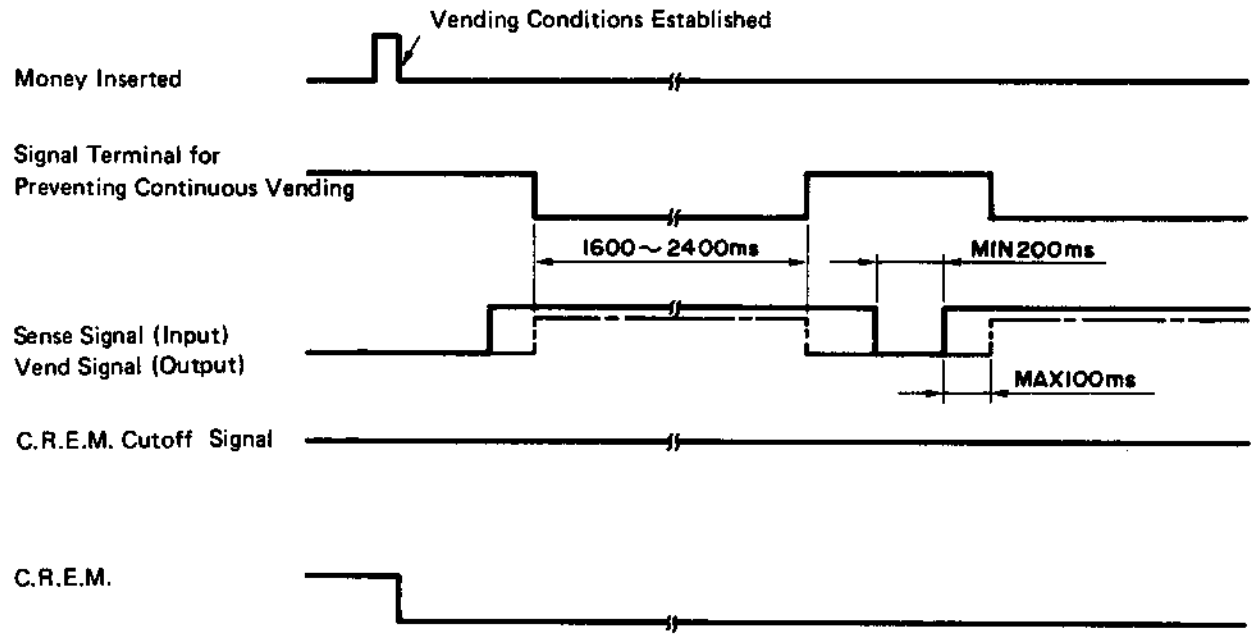
3 Money Return Action



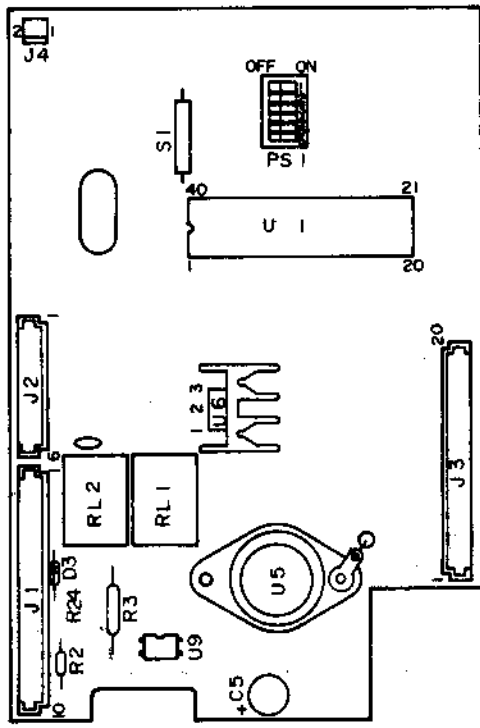
1. Vending Operation



2. Vending Operation (When the C.R.E.M. cutoff (breaking) signal is not cut off (broken)).



7. SIGNAL CONDITIONS AND WIRING DIAGRAM (US-101, 111)



J1, 10-pin post

Pin No.	Wire color	Input and output as seen from the logic board	Signal	Phase	Voltage (V) during standby position	Voltage (V) during operation position
1	Green	Input	C.R.E.M breaking	1	AC 117	At time of breaking 0
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	Yellow	Output	Vending signal	1	0	AC 117
7	Purple	Output	Prevent continuous vending signal	1	AC 117	0
8	Brown	Output	No change	2	0	When there is no change AC 117
9	Red	Input	Power supply	2	AC 117	AC 117
10	Blue	Input	Power supply	1	AC 117	AC 117

J2 5-pin connector

Pin No.	Wire color	Input and output as seen from the logic board	Signal	Phase	Voltage (V) during standby position	Voltage (V) during operation position
1	Blue	Output	Power supply	1	AC 117	AC 117
2	Red	Output	Power supply	2	AC 117	AC 117
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	Black	Input	Power supply transformer secondary side	-	AC 34	AC 34
6	Black	Input	Power supply transformer secondary side	-	AC 34	AC 34

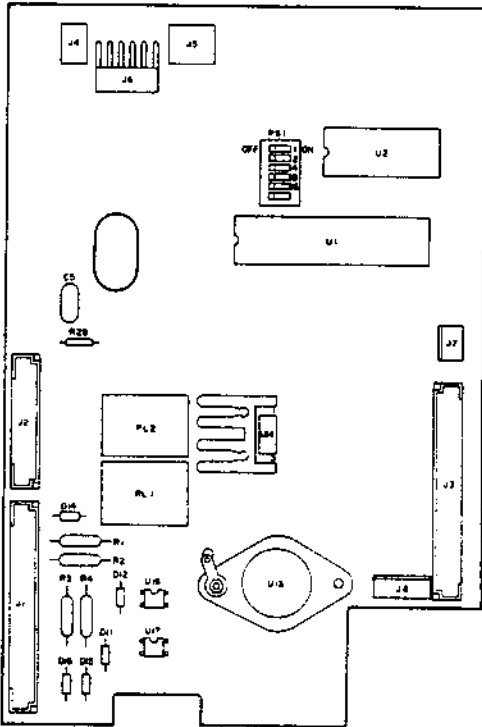
J3 20-pin modular post

Post	Pin No. Connector	Wire color	Input and output as seen from the logic board	Signal	Voltage (V) during standby position	Voltage (V) during operation position
20	2	Yellow	Output	Change motor	0	24
19	1	Red	Output	0 V DC	0	0
18	2	Yellow	Output	C.R.E.M	0	24
17	1	White	Output	24 V DC	24	24
16	2	Orange	Output	Solenoid A P1	24	0
15	1	Grey	Output	24 V DC	24	24
14	2	Green	Output	Solenoid B P2	24	0
13	1	Grey	Output	24V DC	24	24
12	2	Red	Output	0 V DC	0	0
11	1	White and blue	Output	Carrier switch	5	0
10	2	Red	Output	0 V DC	0	0
9	1	White	Input	Inventory switch	0	5
8	8	Grey	Output	Power supply 24 V DC	24	24
7	7	Black	Input	25¢ coin switch	24	0
6	6	White	Input	10¢ coin switch	24	0
5	6	White and red	Input	5¢ coin switch	24	0
4	4	Red	Output	Power supply 0 V DC	0	0
3	3	Blue	Input	Empty switch	Change 24	No change 0
2	2	Pink	Input	Pulse switch	0	24
1	1	-	-	-	-	-

J4 2-pin post

Post	Pin No. Connector	Wire color	Input and output as seen from the logic board	Signal	Phase	Voltage (V) during standby position	Voltage (V) during operation position
1	1	Black	Input	AUTHENTIC BILL signal	-	0	+24V
2	2	White	Output	Power supply	-	+24V	+24V

SIGNAL CONDITIONS AND WIRING DIAGRAM (US-121, 131, 122)



J1 10-pin post (US-121, 131)

Pin No.	Wire color	Input and output as seen from the logic board	Signal	Phase	Voltage (V) during standby position	Voltage (V) during operation position
1	Green	Input	C.R.E.M. breaking	1	AC 117	At time of breaking 0
2	—	—	—	—	—	—
3	—	—	—	—	—	—
4	—	—	—	—	—	—
5	—	—	—	—	—	—
6	Yellow	Output	Vending signal	1	0	AC 117
7	Purple	Output	Prevent continuous vending signal	1	AC 117	0
8	Brown	Output	No change	2	0	When there is no change AC 117
9	Red	Input	Power supply	2	AC 117	AC 117
10	Blue	Input	Power supply	1	AC 117	AC 117

J1 10-pin post (US-122)

Pin No.	Wire color	Input and output as seen from the logic board	Signal	Phase	Voltage (V) during standby position	Voltage (V) during operation position
1	Green	Input	C.R.E.M. breaking	1	AC117	At time of breaking 0
2	—	—	—	—	—	—
3	—	—	—	—	—	—
4	Black	Input - output	Vend/sense signal	1/2	0 / AC117	AC117 / 0
5	White	—	—	—	—	—
6	Yellow	Input - output	Vend/sense signal	1/2	0 / AC117	AC117 / 0
7	Purple	Output	Prevent continuous vending signal	1	AC117	0
8	Brown	Output	No change	2	0	When there is no change AC117
9	Red	Input	Power supply	2	AC117	AC117
10	Blue	Input	Power supply	1	AC117	AC117

J2 20-pin modular post

Pin No.	Wire color	Input and output as seen from the logic board	Signal	Voltage (V) during standby position	Voltage (V) during operation position
20	Yellow	Output	Change motor	0	24
19	Red	Output	0 V DC	0	0
18	Yellow	Output	C.R.E.M.	0	24
17	White	Output	24 V DC	24	24
16	Orange	Output	Selenoid A P1	24	0
15	Gray	Output	24 V DC	24	24
14	Green	Output	Selenoid B P2	24	0
13	Gray	Output	24V DC	24	24
12	Red	Output	0 V DC	0	0
11	White and blue	Output	Center switch	0	0
10	Red	Output	0 V DC	0	0
9	White	Input	Inventory switch	0	0
8	Gray	Output	Power supply	24	24
7	Black	Input	25¢ coin switch	24	24
6	White	Input	10¢ coin switch	24	0
5	White and red	Input	5¢ coin switch	24	0
4	Red	Output	Power supply 0 V DC	0	0
3	Blue	Input	Empty switch	Change 24	No change 0
2	Pink	Input	Pulse switch	0	24
1	—	—	—	—	—

J6 12-pin post

Pin No.	Wire color	Input and output as seen from the logic board	Signal	Phase	Voltage (V) during standby position	Voltage (V) during operation position
1	Red	Output	Timing signal (T0)	—	—	Dynamic signal 5
2	Blue	Output	Timing signal (T1)	—	—	Dynamic signal 5
3	White	Output	Timing signal (T2)	—	—	Dynamic signal 5
4	Purple	Output	D.P.	—	—	Dynamic signal 24
5	Brown	Output	Segment A	—	—	Dynamic signal 24
6	Orange	Output	Segment B	—	—	Dynamic signal 24
7	Black	Output	Segment C	—	—	Dynamic signal 24
8	Pink	Output	Segment D	—	—	Dynamic signal 24
9	Yellow	Output	Segment E	—	—	Dynamic signal 24
10	Green	Output	Segment F	—	—	Dynamic signal 24
11	Gray	Output	Segment G	—	—	Dynamic signal 24
12	—	—	—	—	—	—

J2 6-pin connector

Pin No.	Wire color	Input and output as seen from the logic board	Signal	Phase	Voltage (V) during standby position	Voltage (V) during operation position
1	Blue	Output	Power supply	1	AC 117	AC 117
2	Red	Output	Power supply	2	AC 117	AC 117
3	—	—	—	—	—	—
4	—	—	—	—	—	—
5	Black	Input	Power supply transformer secondary side	—	AC 34	AC 34
6	Black	Input	Power supply transformer secondary side	—	AC 34	AC 34

J4 2-pin post

Pin No.	Wire color	Input and output as seen from the logic board	Signal	Phase	Voltage (V) during standby position	Voltage (V) during operation position
1	1	Black	Input	AUTHENTIC BILL signal	—	0
2	2	White	Output	Power supply	—	+24V

J5 4-pin post

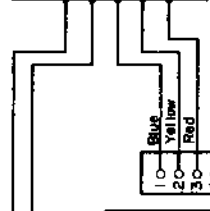
Pin No.	Wire color	Input and output as seen from the logic board	Signal	Phase	Voltage (V) during standby position	Voltage (V) during operation position
1	3	Blue	Output	Coin inserted signal	—	0V
2	4	Yellow	Output	Power supply	—	0V
3	5	Red	Output	Pay-out signal	—	0V
4	6	—	—	—	—	—

J7 3 pin post

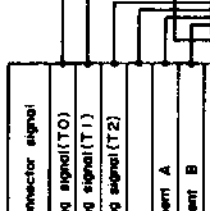
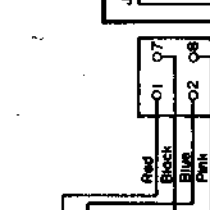
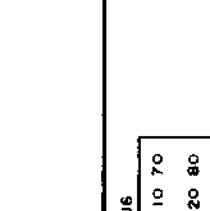
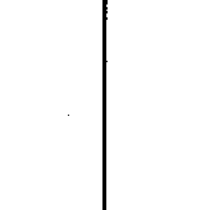
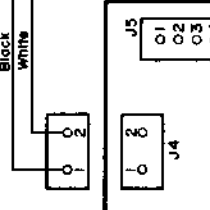
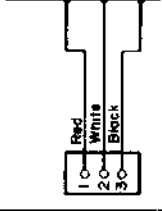
Pin No.	Wire color	Input and output as seen from the logic board	Signal	Phase	Voltage (V) during standby position	Voltage (V) during operation position
1	Red	Output	Power supply	—	+24V	+24V
2	White	Input	C.R.E.M. OFF	—	+5V	0V
3	Black	Output	Power supply	—	0V	0V

* Open collector output

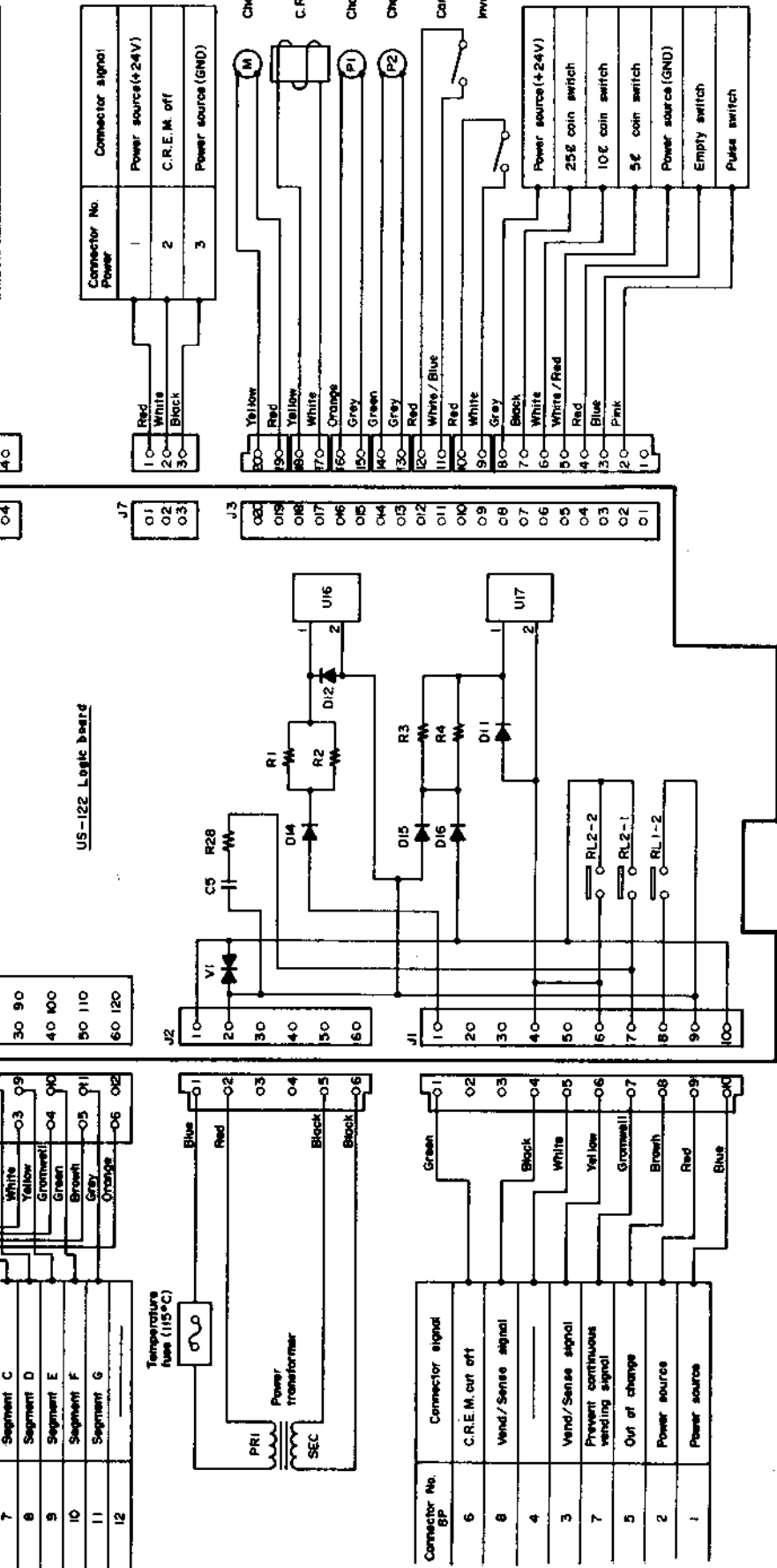
Connector No.	Connector signal
1	Authentic bill
2	Power source (+24V)
3	Coin inserted
4	Power source (GND)
5	Play out
6	



Connector No.	Connector signal
1	Power source (+24V)
2	C.R.E.M. off
3	Power source (GND)



Connector No.	Connector signal
1	Timing signal (T0)
2	Timing signal (T1)
3	Timing signal (T2)
4	D.P.
5	Segment A
6	Segment B
7	Segment C
8	Segment D
9	Segment E
10	Segment F
11	Segment G
12	



Note: The line color is subject to change

8. DISASSEMBLY, ASSEMBLY, AND ADJUSTMENT OUTLINE

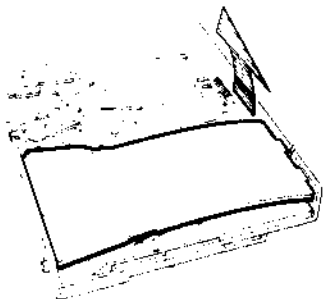
The order of disassembly has been written, therefore, follow the order in reverse when assembling. Please refer to the precautions for assembly written for each item.

8-1 DISCRIMINATOR (The figure shows model M-810)

(1) Removal of the Front Cover

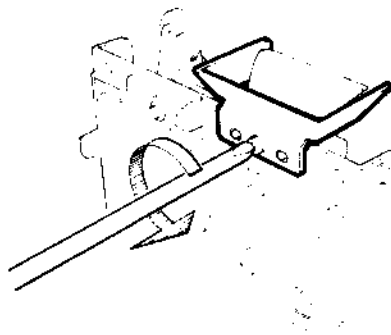
Insert a screwdriver into the opening on the right side of the main plate and remove it by hand while raising it up with the screwdriver.

When assembling, insert the hook portions of the front cover into the installation holes on the left side of the main plate and then while bending the whole cover, insert the hooks into the installation holes on the right side.



(2) Removal of the Funnel

Remove the screw to remove the funnel, and insert it for assembly.



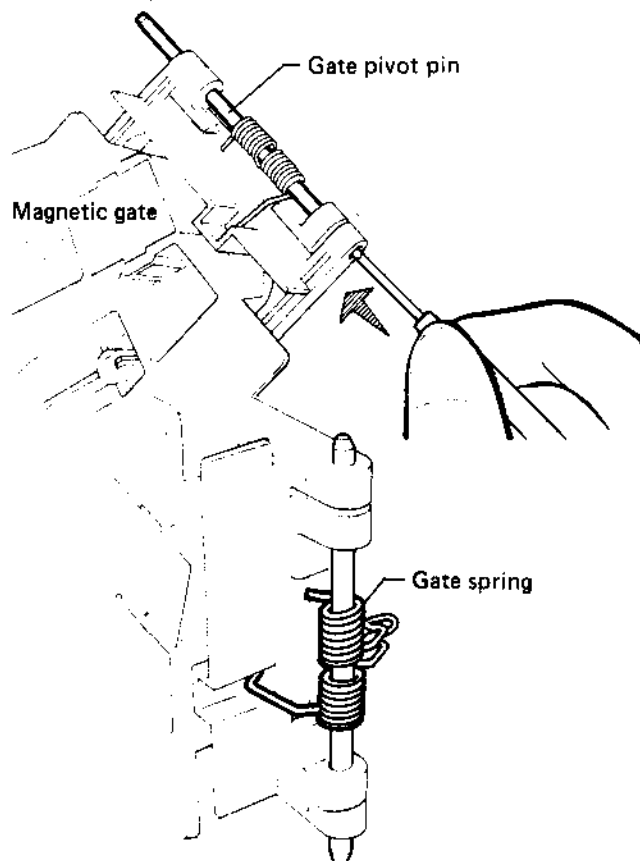
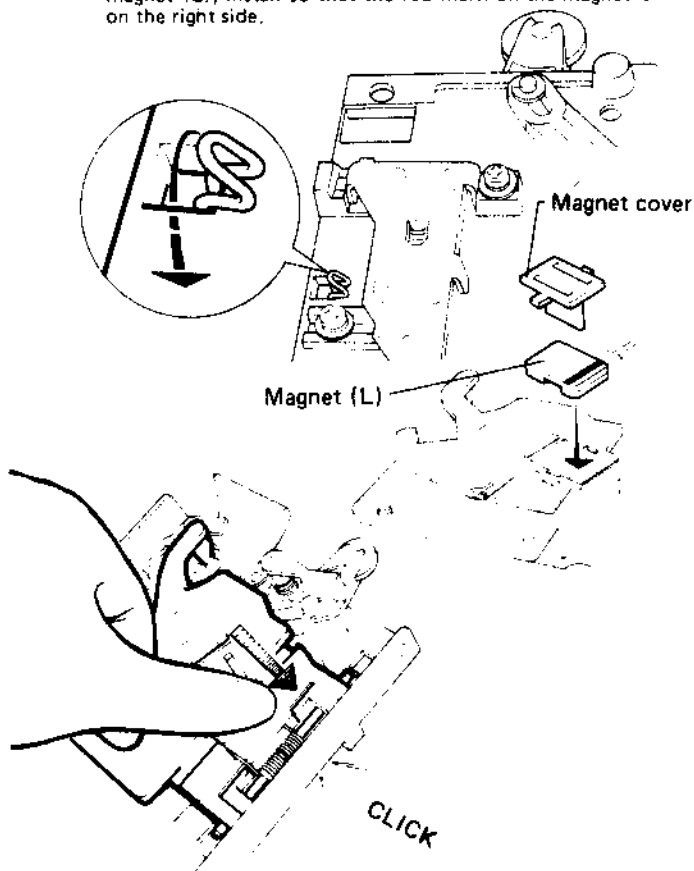
(3) Removal of the Gate

The gate can be removed when the catch portion of the gate spring which protrudes from the back side of the discriminator is released from the installation hole.

When assembling, align the gate spring catch with the installation hole and press the right side of the gate strongly until it "clicks" shut. Do not remove more parts from the gate than necessary. At the time of installing magnet (L), install so that the red mark on the magnet is on the right side.

When removing the magnetic gate (which should not be removed unless necessary), push the end of the gate pivot pin strongly with a screwdriver, extract it, and remove the magnetic gate.

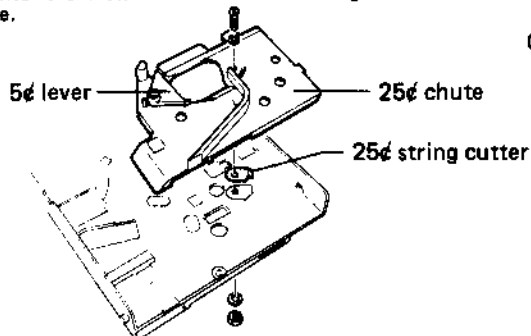
When assembling, be careful with the attachment of the gate spring and insert the gate pivot pin. At this time, after the pin has passed the spring, pull up the catch of the spring and then pushing the pin strongly in will assemble the mechanism.



(4) Removal of the 25¢ Chute and String Cutter

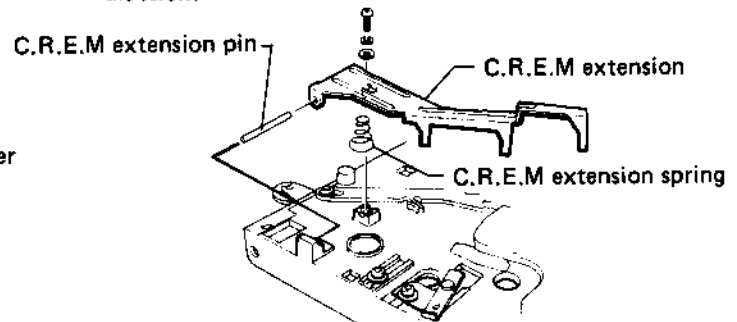
Remove the screw.

When assembling, be careful of the installation direction of the string cutter. Insert the hook of the 25¢ chute into the installation hole on the right side and assemble.

**(5) Removal of the C.R.E.M Extension**

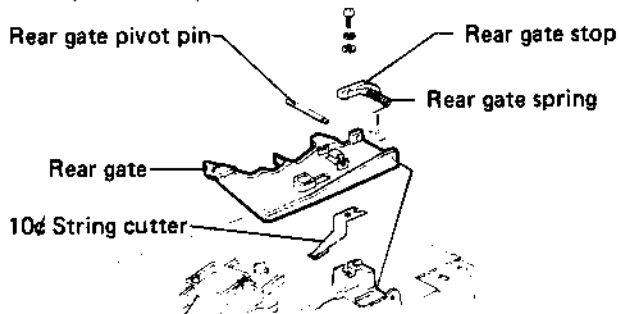
Remove the screw.

When assembling, insert the C.R.E.M extension pin into the pin hole on the left side until it stops and insert the screw.

**(6) Removal of the Rear Gate and String Cutter**

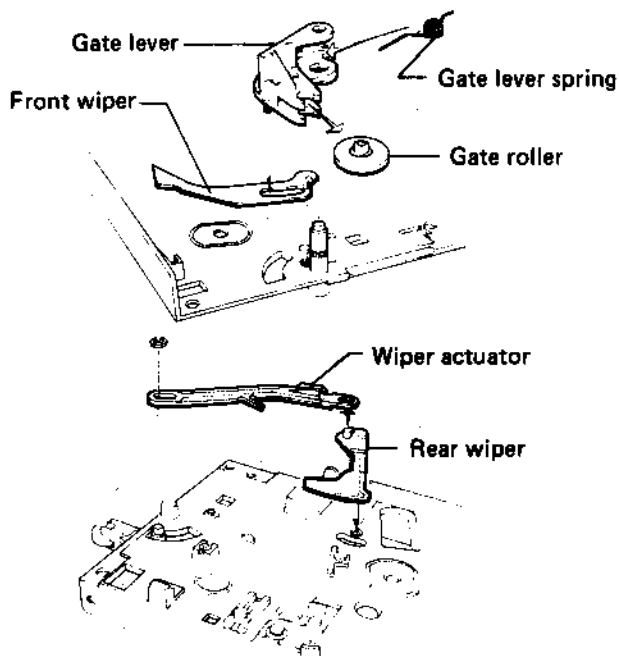
Remove the screw. Be careful of the entry direction of the pin at the time of removing the rear gate pivot pin.

When assembling, first set the rear gate and then install the string cutter. At this time, assemble so that the pin does not protrude too much on the left.

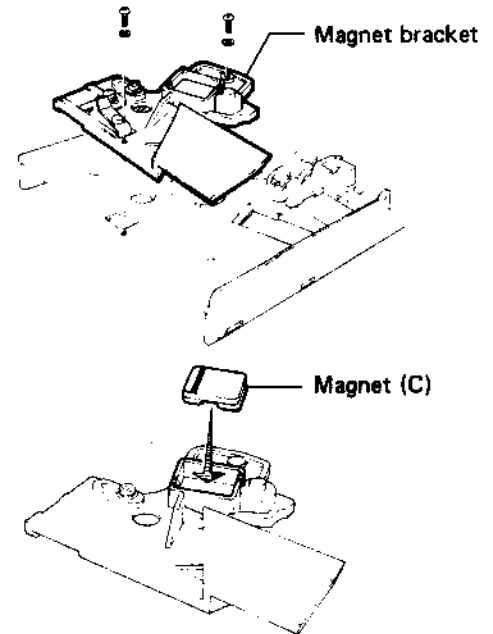
**(8) Removal of the Gate Lever and Wipers**

Remove the E-ring on the back of the gate lever and remove the wiper actuator and the rear wiper. Next, remove the catch portion of the gate lever spring with a screwdriver, pull the spring and gate lever from the shaft and remove the front wiper.

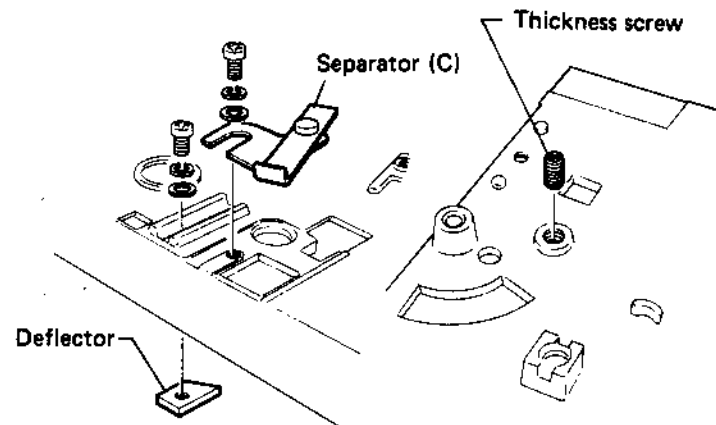
When assembling, first set the spring winding (the uppermost small diameter part) so that it enters the shaft slot and then assemble.

**(7) Removal of the Magnet Bracket**

Remove the two screws. Do not remove the deflector or other parts unless necessary. If such parts are removed, adjustment will be required. When installing magnet (L), install so that the red mark on the magnet is on the left side.

**(9) Removal of the Deflector, Separator (C), and Thickness Screw (C)**

Do not remove these parts unless necessary. If such parts are moved, adjustment will be required.

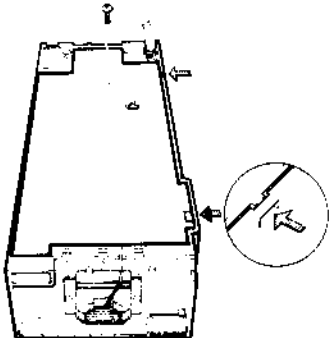


8-2 CHANGER

(1) Removal of the Back Cover

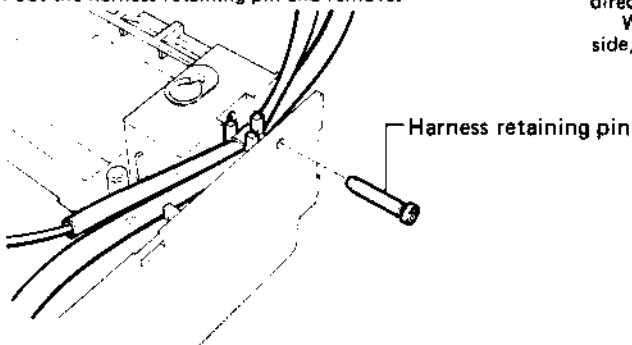
Remove the screw and release the back cover hooks from the right side of the housing.

When assembling, first insert the back cover into the installation holes in the left side of the housing, then insert the hocks and fix the screw.



(3) Removal of the Connector Harness

Pull out the harness retaining pin and remove.



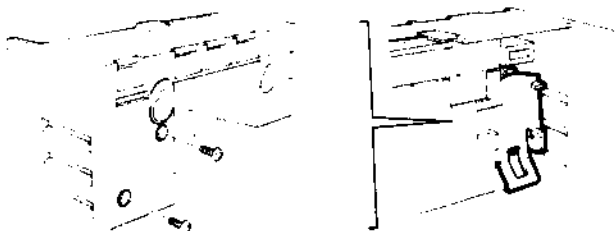
(5) Removal of the Latch

First release the hook on the rear side, then pull out.



(7) C.R.E.M Removal

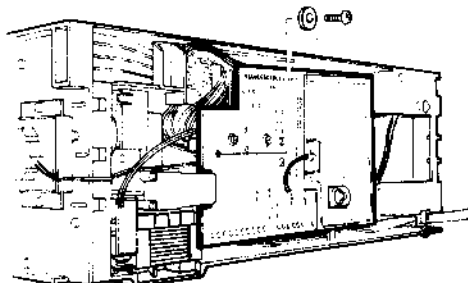
Remove the two screws.



(2) Removal of the Logic Board

After removing the screw, remove each of the connectors.

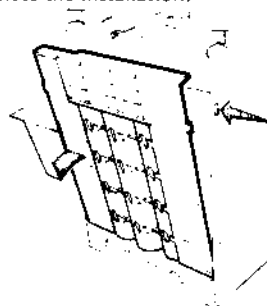
When assembling, bundle each harness appropriately and push it into the space, then fix the logic board with the screw.



(4) Removal of the Front Tubes

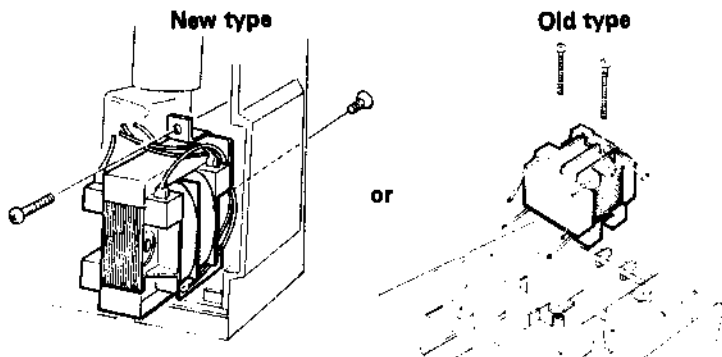
Remove the front tube hooks of the left and right side panels of the housing and pull off in an upward direction.

When assembling, first insert the hooks on the bottom side, then complete the installation.



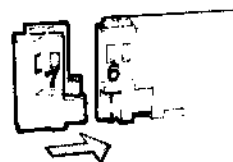
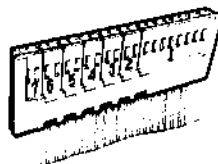
(6) Removal of the Transformer

Remove the two screws.



(7)-1 Assembly of the 20-Pin Modular Connector

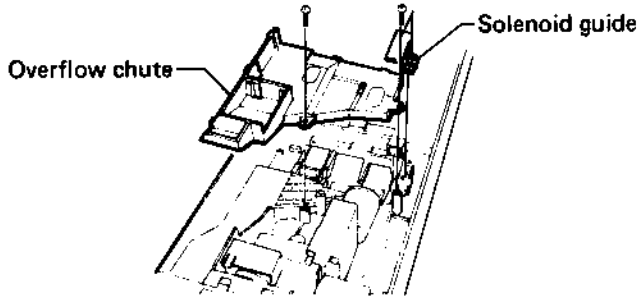
Assemble the 20-pin modular connector as in the diagram.



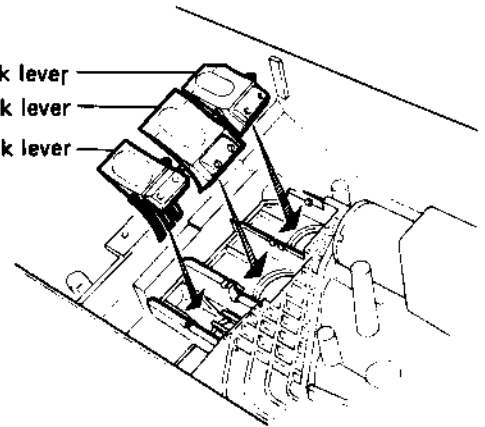
(8) Removal of the Overflow Chute and Block Lever

Remove the two screws from the overflow chute and the block levers can be taken off.

When assembling, be careful of the installation positions of each of the block levers and insert the hook on the left side of the chute into the installation hole, then fix the screws.



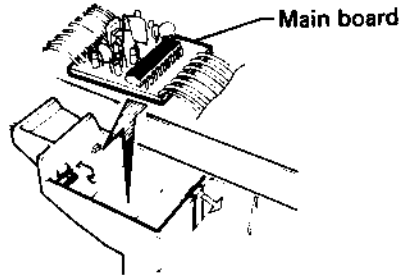
10¢ block lever
25¢ block lever
5¢ block lever



(9) Removal of the Proximity Switch Harness

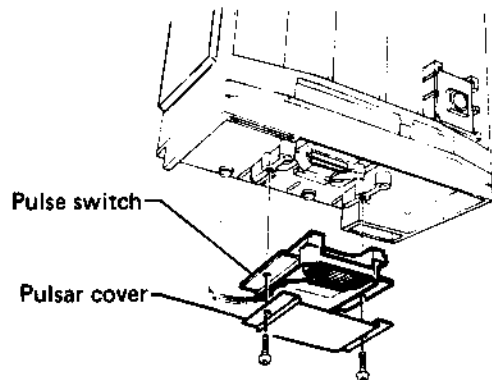
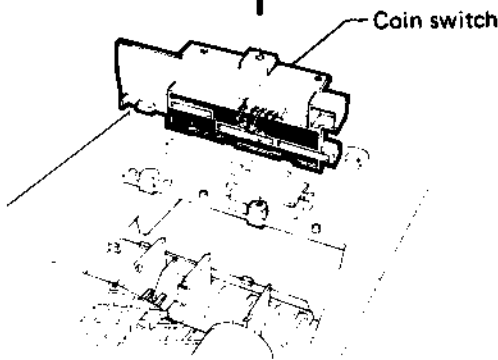
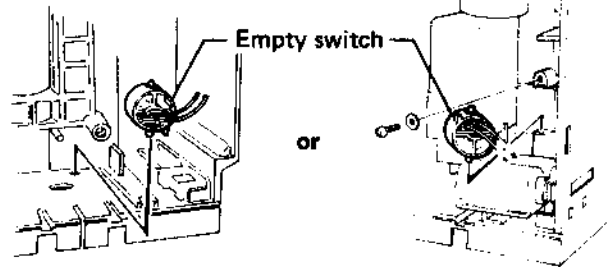
Remove the board from the overflow chute, remove the screw from the coin switch section, remove the screw from the empty switch, and remove the two screws from the pulse switch section.

When assembling, be careful of the installation direction of the empty switch.



New type

Old type



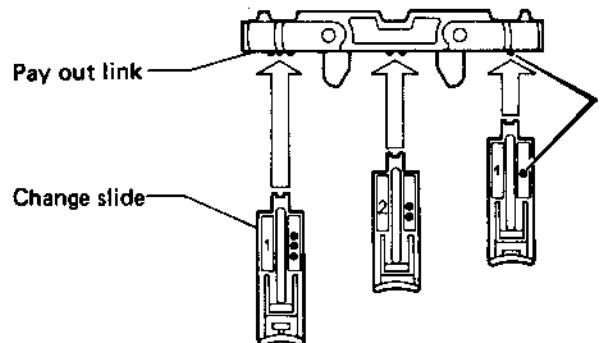
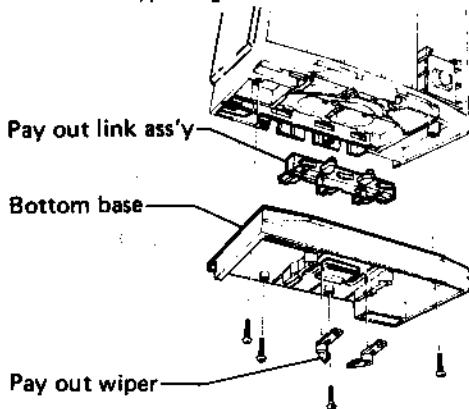
(10) Removal of the Bottom Base and Pay Out Ass'y

Remove the 4 screws from the bottom base and remove the latter, and then remove the pay out link ass'y and the pay out wipers.

When assembling, be sure to install the pay out wipers correctly, noting the "R" and "L" marks.

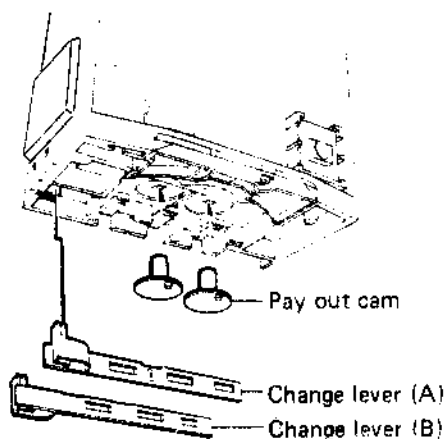
(11) Joining of the Change Slides and Pay Out Link

As in the diagram, match the number of circles on the change slides with the number of lines on the pay out link.

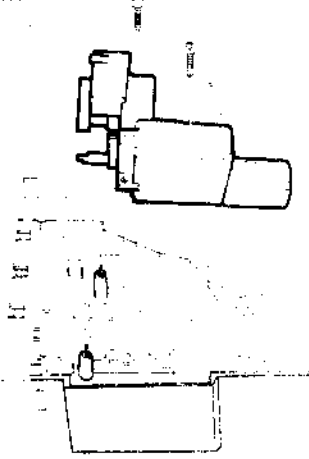


(12) Removal of the Change Lever and Pay Out Cam

Insert change levers A and B into the installation holes on the housing as in the diagram and set the lever of the change solenoid. Also set the pay out cam as in the diagram.

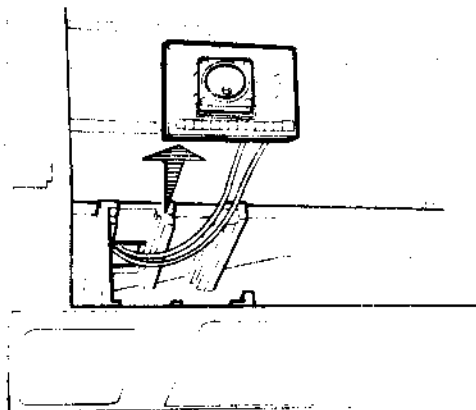
**(14) Remove the Main Gear Box**

Remove the two screws.

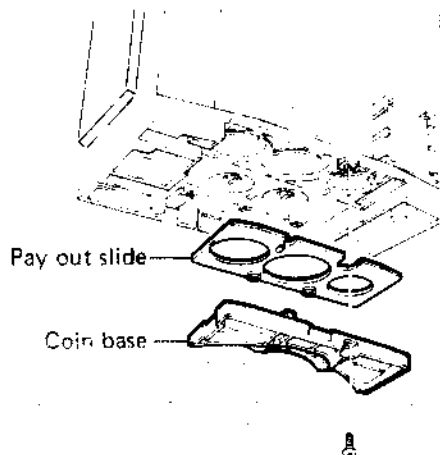
**(16) Removal of the Inventory Switch**

Remove the hook of the switch cover from the front side and then remove the cancel spring and switch lever.

When assembling, be careful of the installation direction of the switch lever.

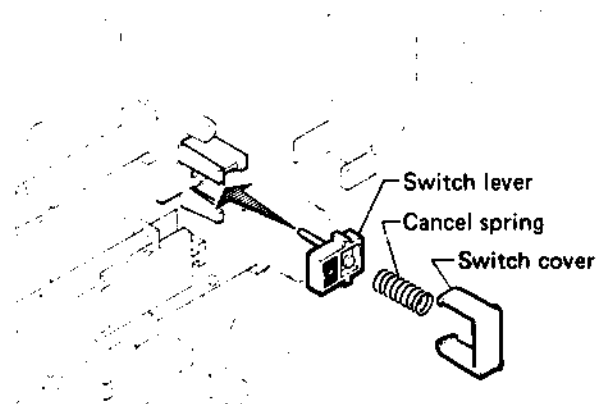
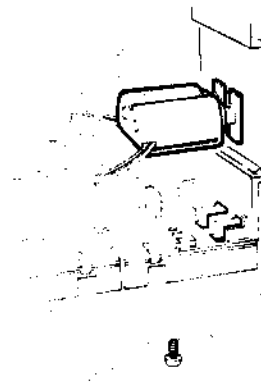
**(13) Removal of the Coin Base and Pay Out Slide**

Remove the coin base by taking out the screw, then remove the pay out slide.

**(15) Removal of the Change Solenoid**

Remove the screw.

When assembling, install the lever of the change solenoid so that it is set in the installation holes of the housing.



8-3 ADJUSTMENT (This explanation covers adjustments for American coins. See the separate instructions for adjustments involving Canadian coins.)

Items to Which Attention Should be Paid

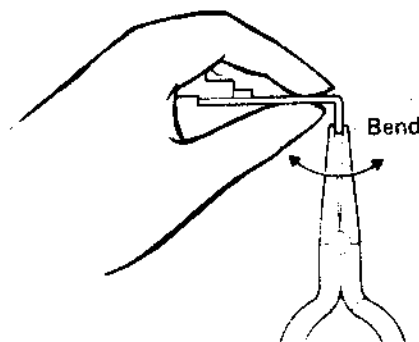
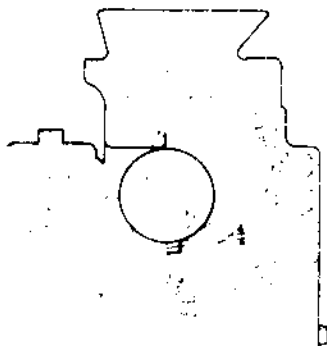
1. Since adjustment has a direct influence on performance, make adjustments carefully.
2. Coins used in the inspection adjustments will become the standard coins so use coins that are not scratched, worn, or distorted.
3. After adjustments, install correctly and check the coin reception.

Item \ Coin	5¢ Coin		10¢ Coin		25¢ Coin	
Diameter (mm)	21.21	0.8484 inch	17.91	0.7164 inch	24.26	0.9704 inch
Thickness (mm)	1.98	0.0792 inch	1.35	0.054 inch	2.05	0.082 inch

* There shall be no scratches between the legs of the cradle, carrier arm, etc.

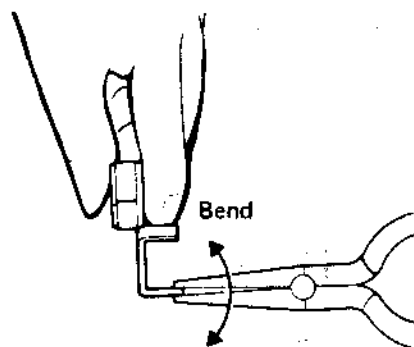
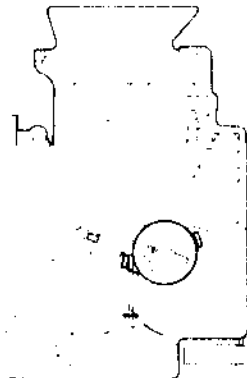
Adjustment of the 25¢ Carrier Arm

Place a standard 25¢ coin between the legs of the carrier arm and the guide stopper at the place where the carrier arm shakes off the coin. Make a gap of about 0.3 mm (0.012 inch) at the maximum diameter position in which the coin is still touching.



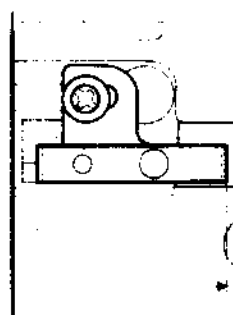
Adjustment of the 5¢ Cradle

Place a 10¢ coin between the legs of the 5¢ cradle. Make a gap of about 0.3 mm (0.012 inch) at the maximum diameter position in which the coin is still touching.



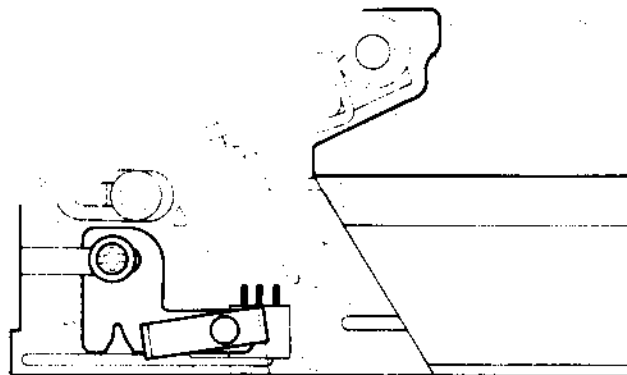
Adjustment of Separator (C)

Make the spacing about 1 mm (0.04 inch) between the main plate and separator (C).

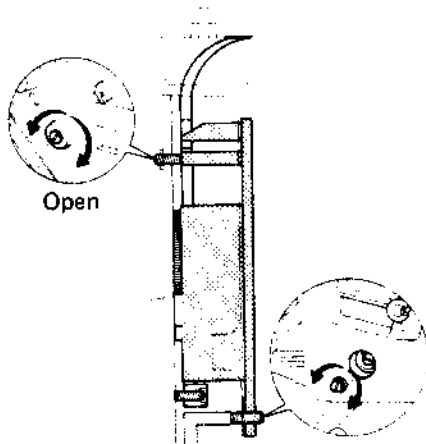


Adjustment of the Separator

Match the middle of the separator board thickness with the middle mark of the magnet bracket.



Adjustment of Thickness Screw (C) (25¢ coins and 5¢ coins)

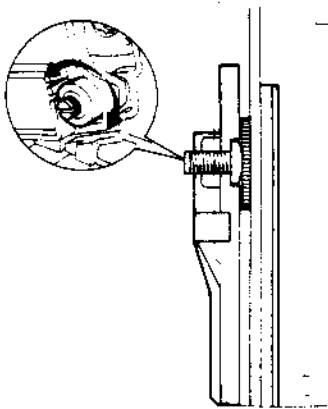


Turn the top and bottom of thickness screw (C) to the left (which will loosen it) and narrow the coin passage.

Hold a standard 25¢ coin between the coin passage portion of the main plate and magnetic gate. Turn the top and bottom of thickness screw (C) to the right (which will tighten it) to the point just before the coin slips out.

After the coin has slipped out, turn the top and bottom of thickness screw (C) about 1/2 turn further to the right.

Adjustment of the Thickness Screw (10¢ Coins)

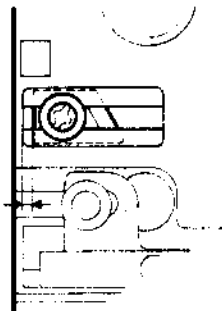


Hold a standard 10¢ coin between the main plate and the thickness screw. Turn the thickness screw to the left (which will loosen it) to the point just before the coin slips out.

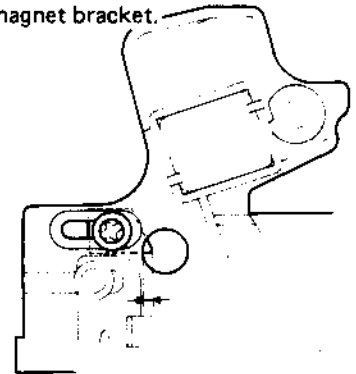
After the coin has slipped out, turn the thickness screw about 1/3 turn further to the left.

Adjustment of the Deflector

In the case of the 25¢ coin passage, make a space of about 1 mm (0.04 inch) between the main plate and the deflector.



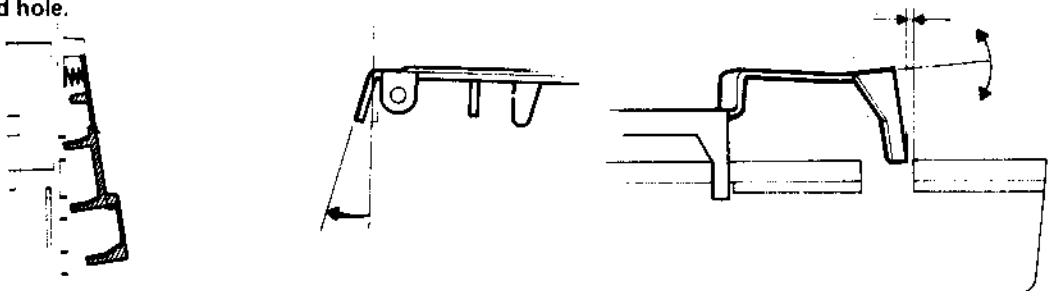
In the case of the 10¢ coin passage, make about 2 mm (0.08 inch) at the portion that can be seen in the round hole of the magnet bracket.



Adjustment of the C.R.E.M Extension

Adjust so that the passage sides do not protrude in the free condition.

In the case of 10¢ coins, make a space of 0.3 (0.012 inch) to 0.5 mm (0.02 inch) at the position which touches the round hole.

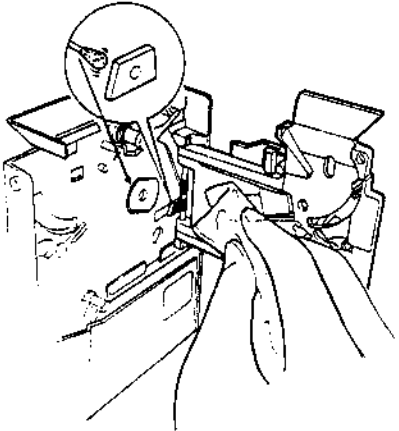


9. CLEANING

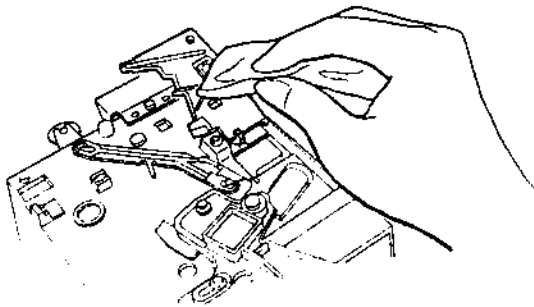
The discriminator and changer may become dusty, wet, or blocked with coins or foreign matter. Should the dirty condition become severe, it will not be possible to maintain normal sorting and pay out performance, therefore, clean as required.

(1) Open the gate and the rear gate and wipe the dirt off the coin passages and the magnetic section with a soft cloth. Clean the dirt from the deflector surface with a cotton swab.

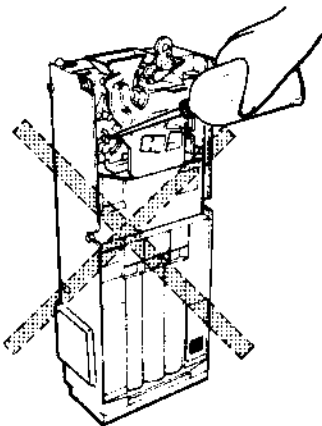
- Gate



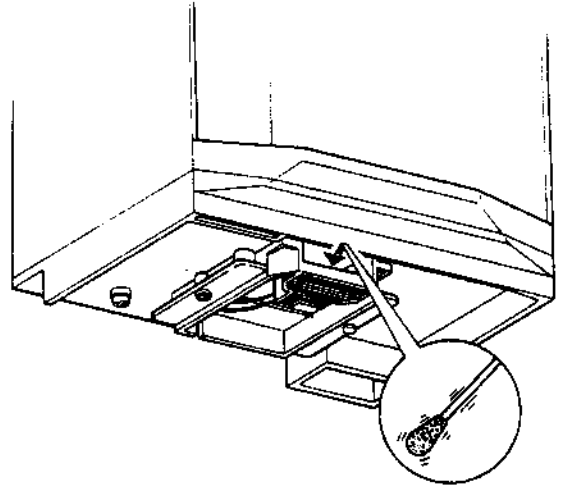
- Rear Gate



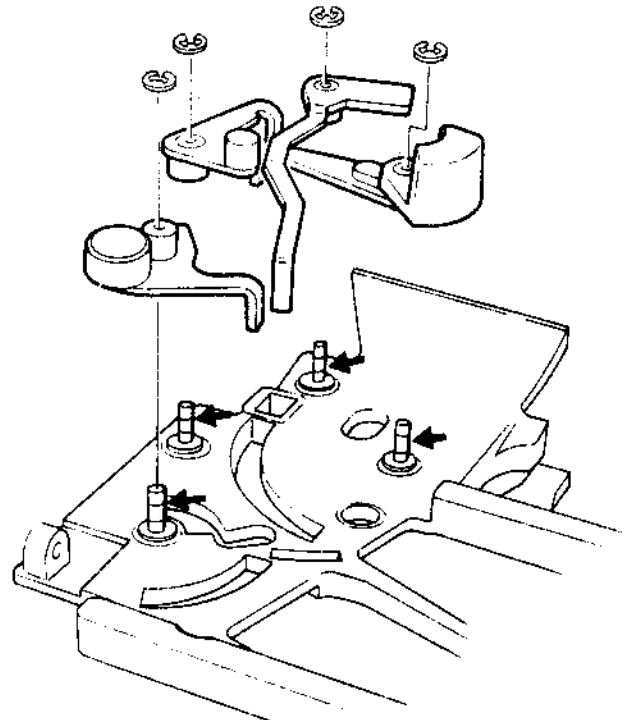
(3) Never use machine oil, grease, etc. on the rotary shaft or slide portion.



(2) Wipe the dirt off the pay out section (pulse switch) from the bottom of the changer with a cotton swab.



(4) Remove the cradle, carrier arm, swing lever, etc. from the rotary shaft and wipe the dirt from the shaft and bearings with a soft cloth.



When cleaning, remove the discriminator and change pay out sections from the coin changer and brush off the dirt with a hair brush or soft cloth. Remove each section and (with the exception of the deflector and hot disturbing the magnet and electrical parts) wash with cold or warm water and a neutral detergent. After finishing, raise the unit up, wipe with a soft cloth, and dry sufficiently. Assemble all of the parts, make necessary adjustments, and check the operation.

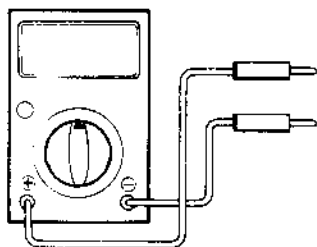
10. TROUBLE-SHOOTING

(This guide is applicable to the US-101 and 111 series. It can be used for the US-121, 131 and 122 series, but please see the separate instructions concerning the additional measurements for posts J4~J7.)

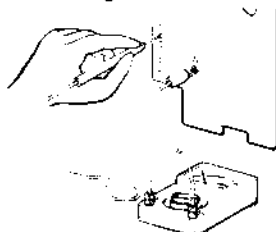
A Guide to the Diagnosis of Faults

Make level measurements at the inspection points as follows:

* AC voltage measurement

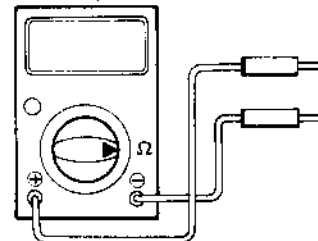


* DC voltage measurement



Connect minus terminal of tester to the GND line, and plus terminal to measuring terminal.

* Continuity check

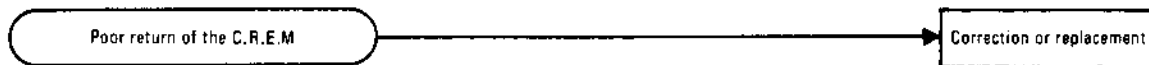


Be sure to disconnect the power supply before making the checks.

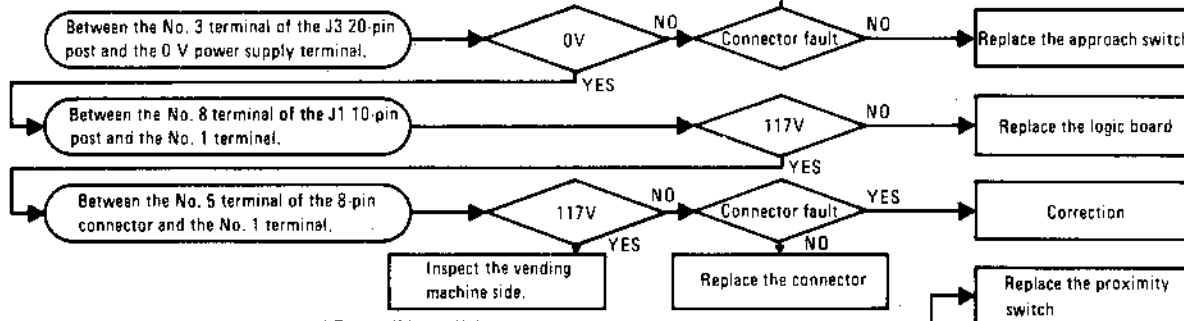
Broken parts and faulty wiring are not included.

- (1) Coins are received even though the power supply has not been turned on.
- (2) Even though there is no change, the "Empty" lamp does not light up.
- (3) Even though there is change, the "Empty" lamp lights up.
- (4) The vend signal is sent out even though the coins are not inserted.
- (5) All the coins are returned.
- (6) The vend signal is not sent out.
- (7) The change is not sent out.
- (8) Too much change comes out.
- (9) There is no inventory operation.
- (10) The inventory operation does not cause the 5¢ coin to come out.
- (11) The inventory operation does not cause the 10¢ coin to come out.
- (12) The inventory operation causes a different kind of coin to come out.

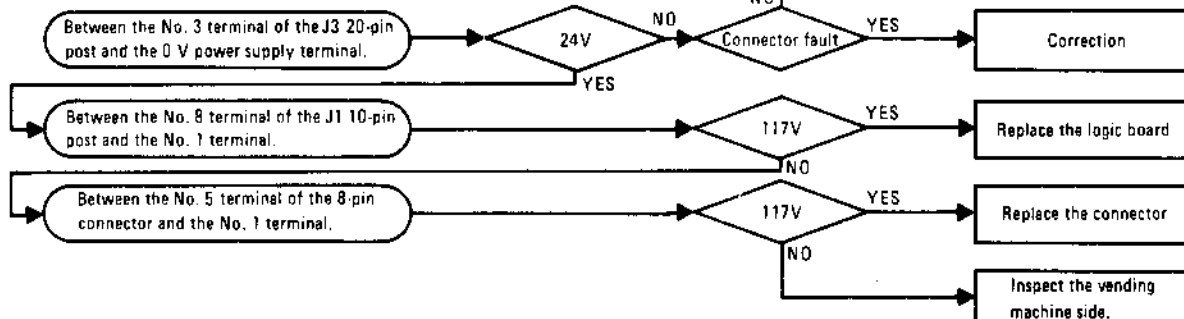
(1) Coins are received even though the power supply has not been turned on.



(2) Even though there is no change, the "Empty" lamp does not light up.



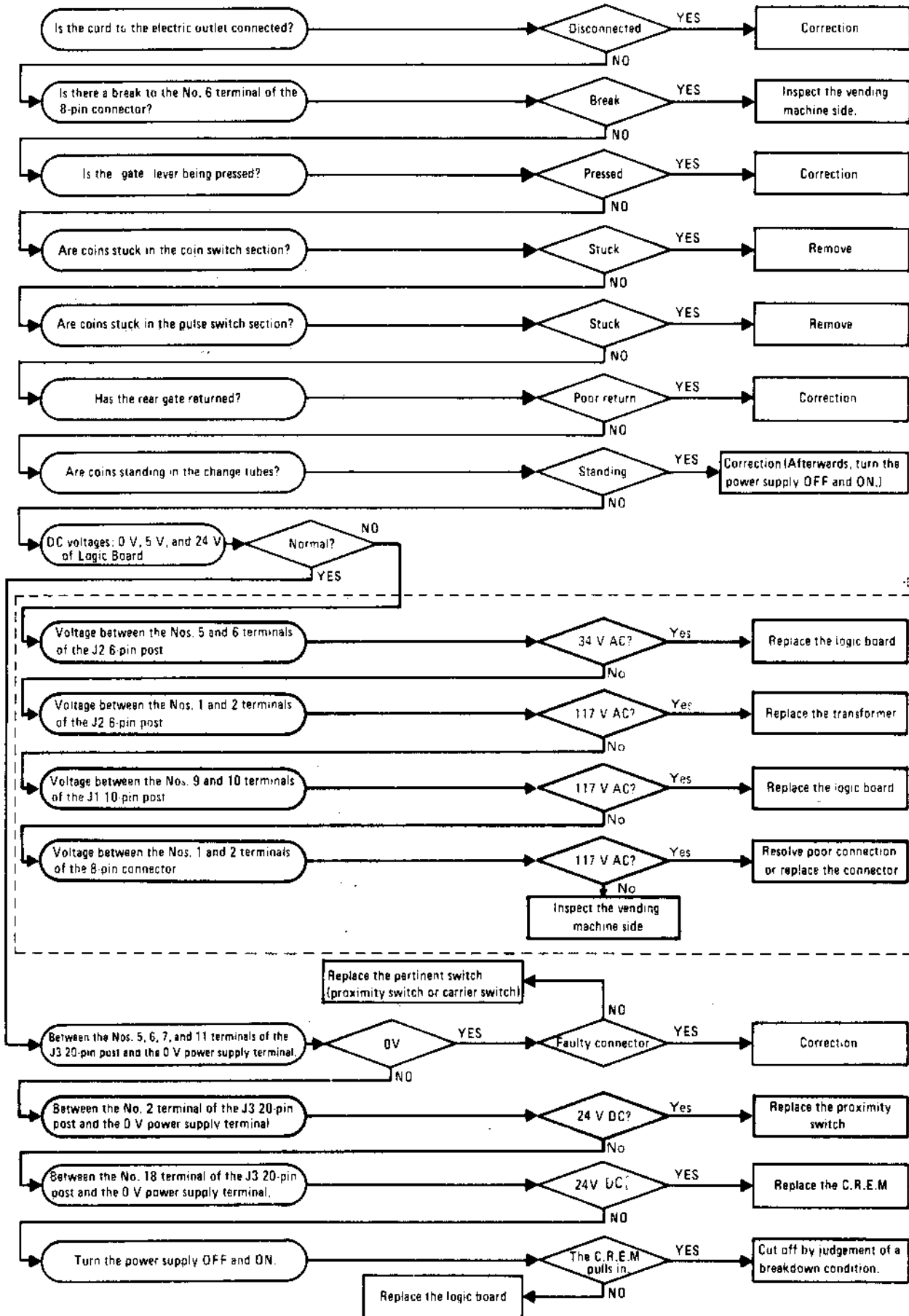
(3) Even though there is change, the "Empty" lamp lights up.



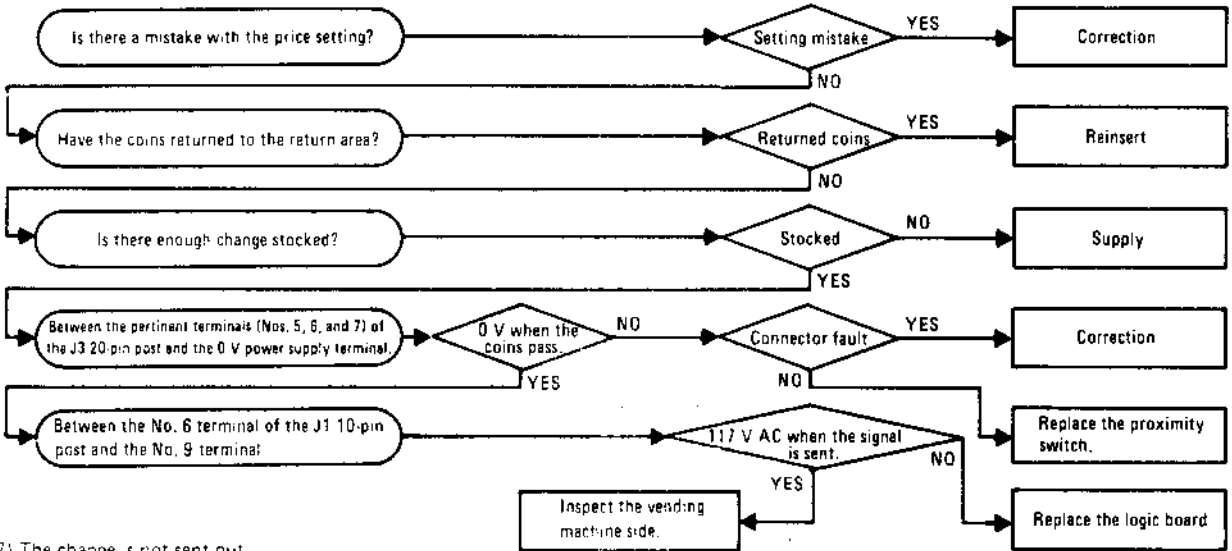
(4) The vend signal is sent out even though the coins are not inserted.



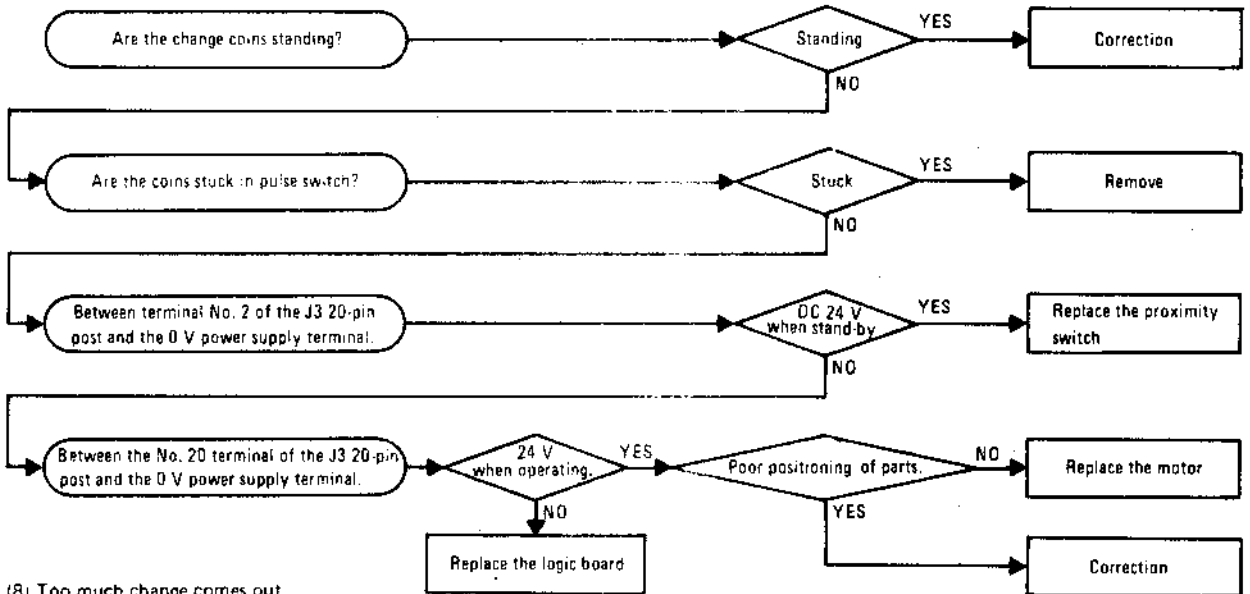
(5) All the coins are returned.



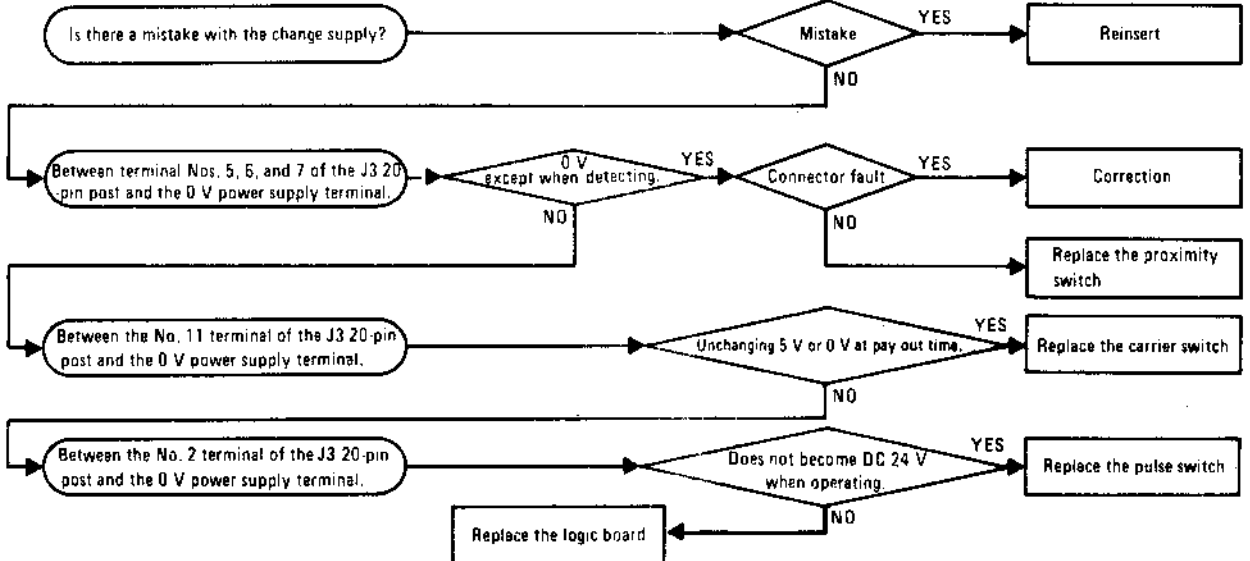
(6) The vend signal is not sent out.



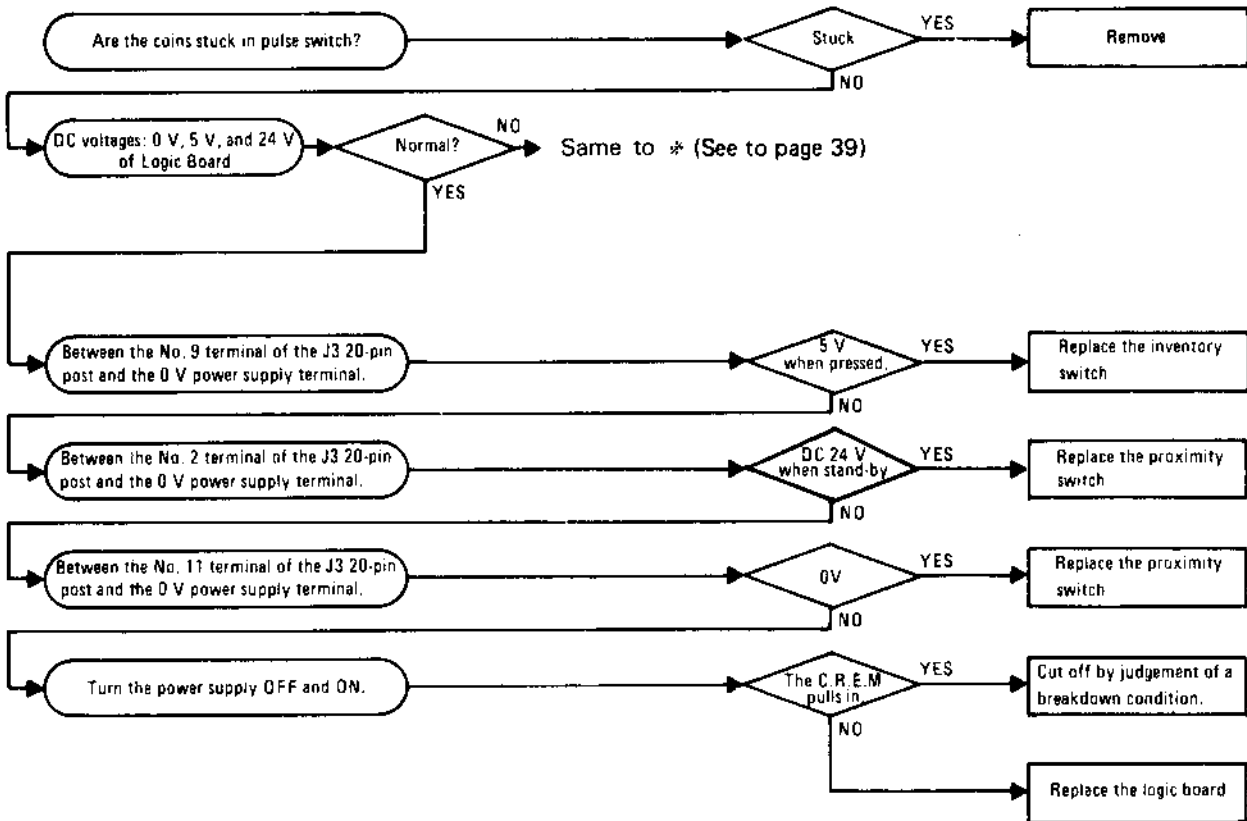
(7) The change is not sent out



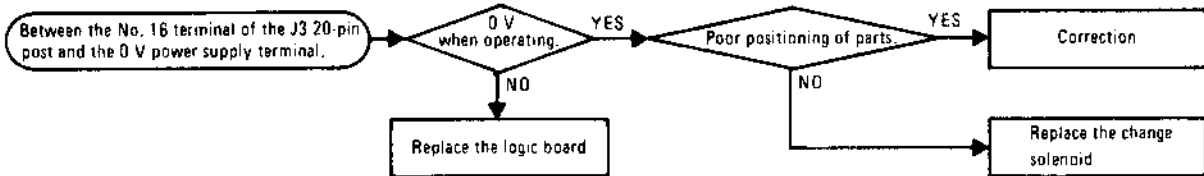
(8) Too much change comes out



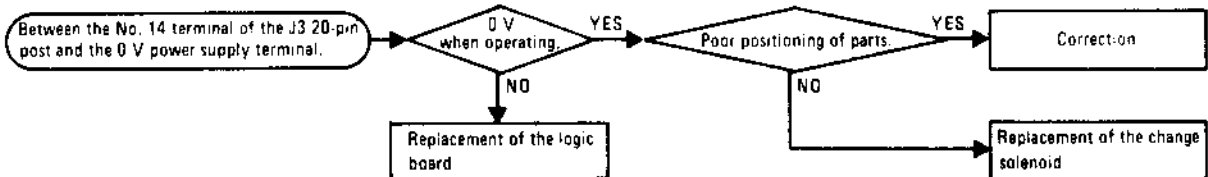
(9) There is no inventory operation.



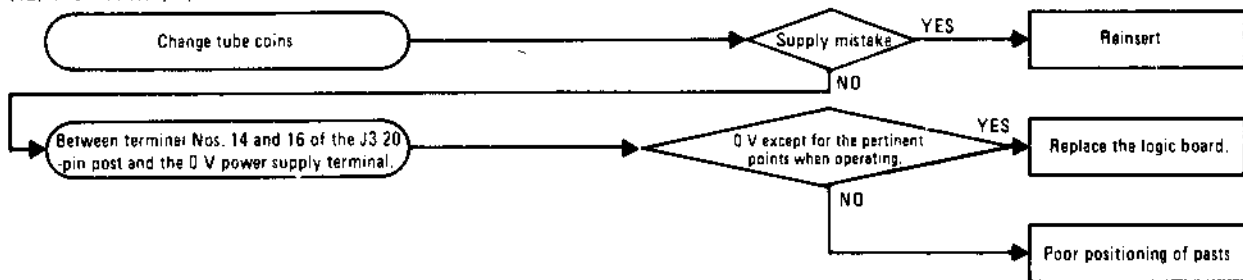
(10) The inventory operation does not cause the 5c coin to come out.



(11) The inventory operation does not cause the 10c coin to come out.

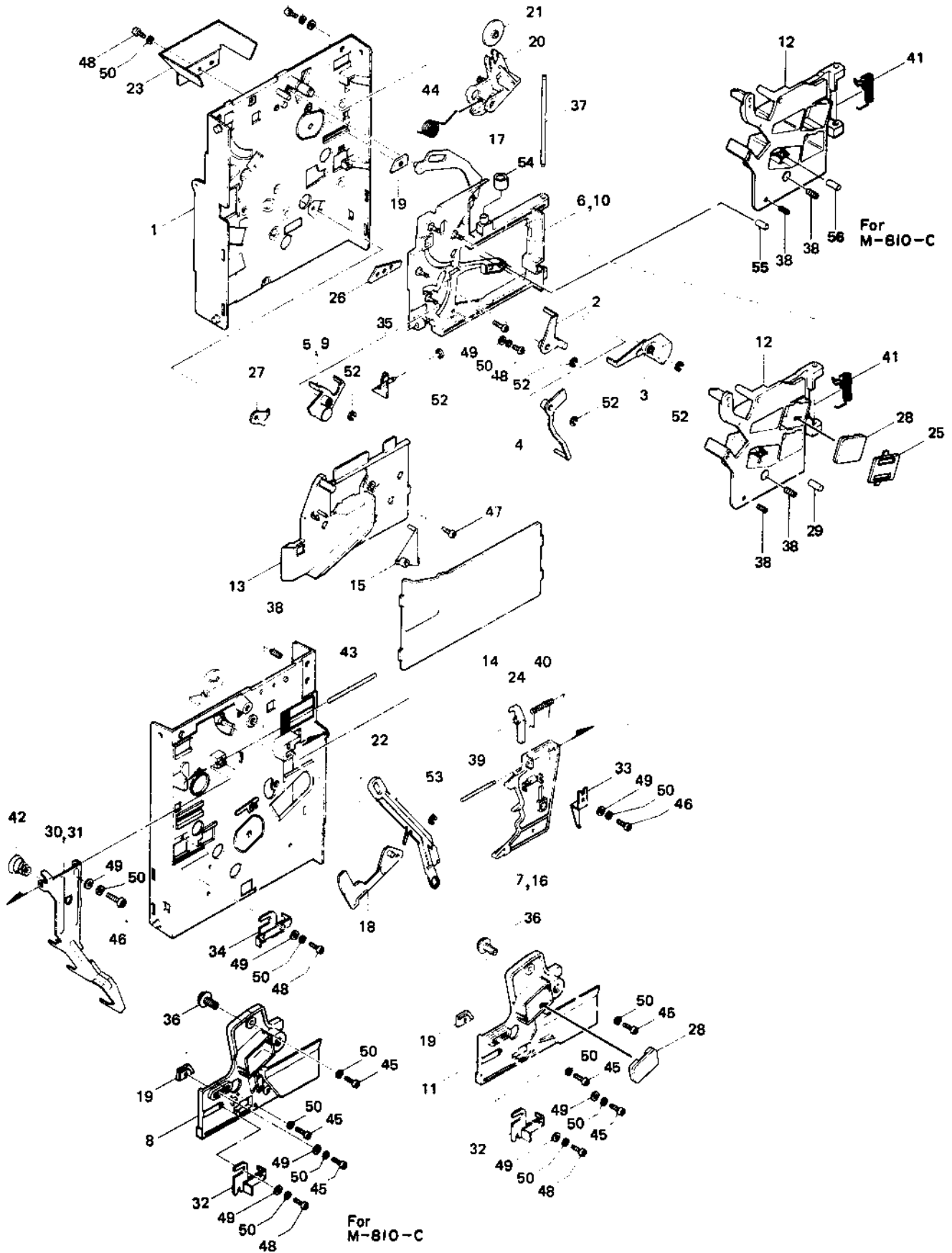


(12) The inventory operation causes a different kind of coin to come out.



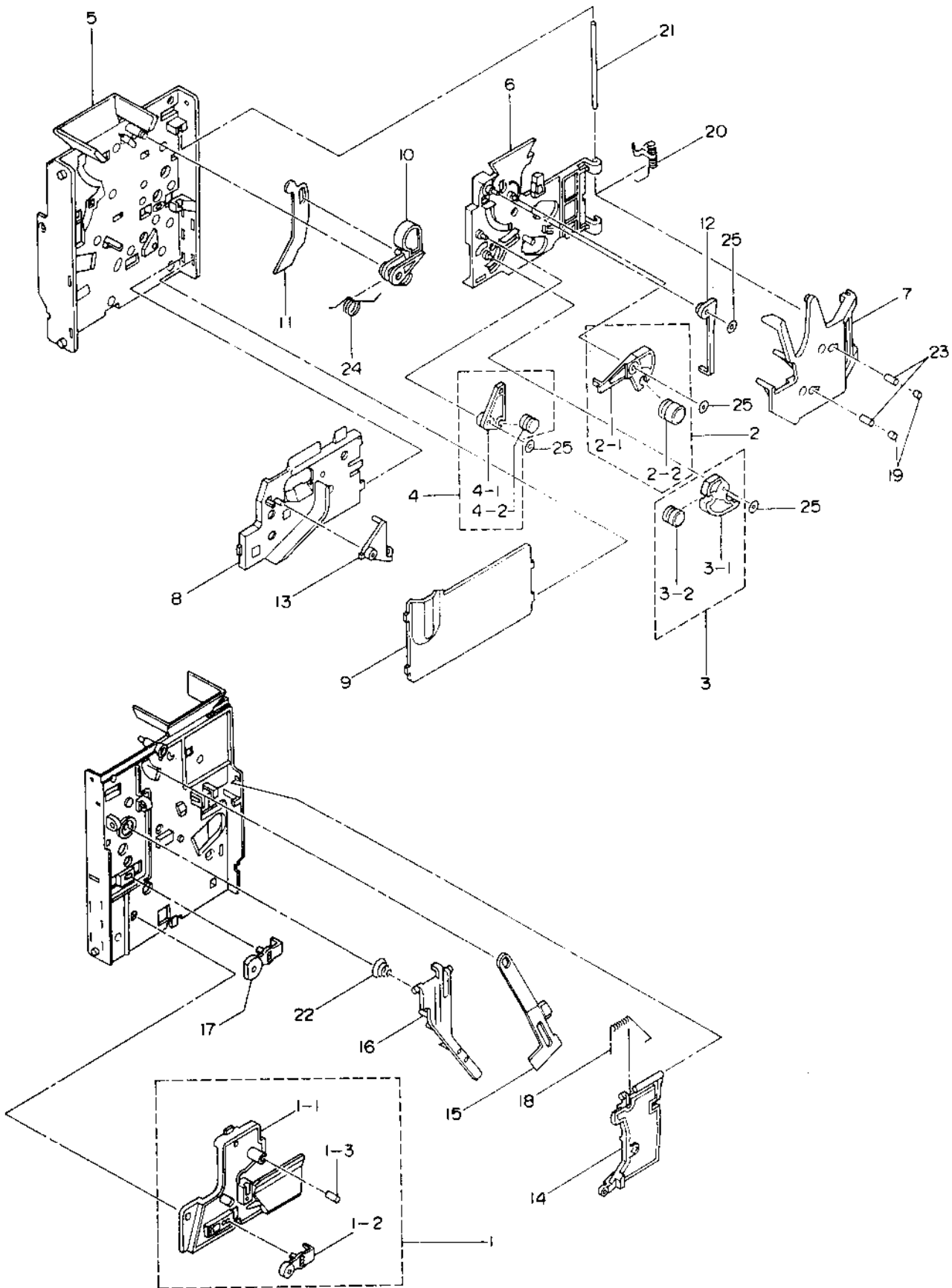
11. PARTS DIAGRAM AND PARTS LIST

11-1a DISCRIMINATOR
(M-810, M-810C)



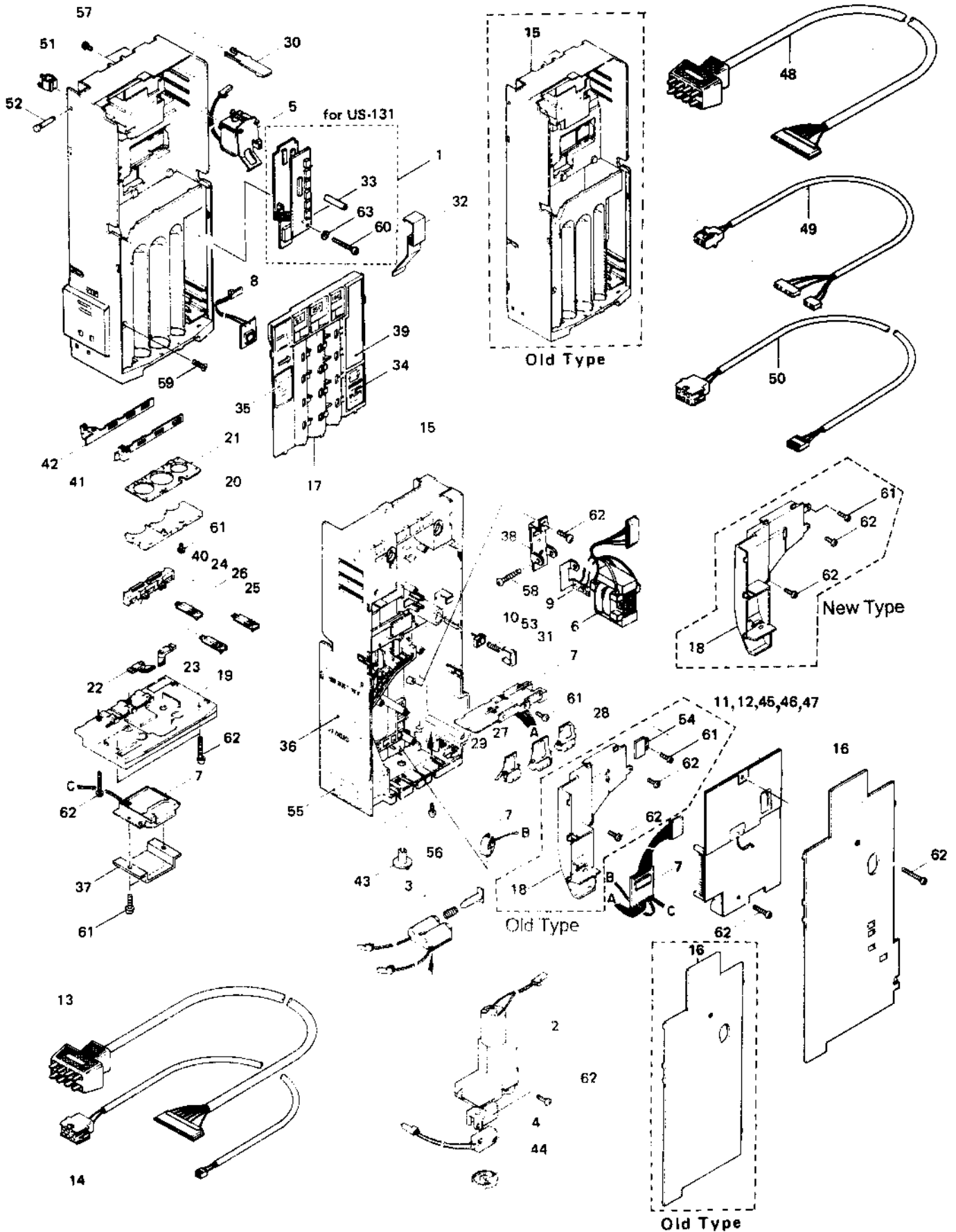
INDEX NO.	PART NO.	DESCRIPTION	QTY		REMARKS
			M-810	M-810-C	
1	359102	Main Plate Ass'y	1	1	
2	359103	Swing Lever Ass'y	1	1	
3	359104	25¢ Carrier Arm Ass'y	1	1	
4	359105	5¢ Swing Lever Ass'y	1	1	
5	359106	5¢ Cradle Ass'y	1	—	
6	359110	Gate Ass'y	—	1	
7	359111	Rear Gate Ass'y	—	1	
8	359112	Magnet Bracket Ass'y	—	1	
9	359114	5¢ Cradle Ass'y	—	1	
10	359402	Gate	1	—	
11	359403	Magnet Bracket	1	—	
12	359404	Magnetic Gate	1	1	
13	359405	25¢ Chute	1	1	
14	359406	Front Cover	1	1	
15	359407	5¢ Lever	1	1	
16	359408	Rear Gate	1	—	
17	359409	Front Wiper	1	1	
18	359410	Rear Wiper	1	1	
19	359411	Deflector	2	1	
20	359413	Gate Lever	1	1	
21	359414	Gate Lever Roller	1	1	
22	359416	Wiper Actuator	1	1	
23	359418	Funnel	1	1	
24	359419	Rear Gate Stop	1	1	
25	359420	Magnet Cover	1	—	
26	359504	5¢ Rail	1	1	
27	359506	25¢ String Cutter	1	1	
28	359509	Magnet (L)	2	—	
29	359510	Pole Magnet	1	—	
30	359513	C·R·E·M Extension	1	—	
31	359518	C·R·E·M Extension	—	1	
32	334103	Separator Ass'y	1	1	
33	333503	10¢ String Cutter	1	1	
34	332102	Separator (C) Ass'y	1	1	
35	332105	Transfer Lever Ass'y	1	1	
36	332412	Thickness Screw	1	1	
37	332503	Gate Pivot Pin	1	1	
38	332511	Thickness Screw (C)	3	3	
39	332521	Rear Gate Pivot Pin	1	1	
40	332522	Rear Gate Spring	1	1	
41	332523	Gate Spring	1	1	
42	332525	C·R·E·M Extension Spring	1	1	
43	332529	C·R·E·M Extension Pin	1	1	
44	332537	Gate Lever Spring	1	1	
45	900009	Screw	5	3	(+ -) Pan-head M3×0.5×8
46	900010	Screw	2	2	(+ -) Pan-head M3×0.5×10
47	901001	Screw	1	1	(+ -) Pan-head M3×0.5×4.7
48	900018	Screw	4	4	(+ -) Pan-head M3×0.5×5
49	907001	Washer	7	6	M3 (φ3.3×4.8×0.8)
50	907201	Spring Washer	11	10	M3 Type 2
52	332509	Retaining Ring	5	5	
53	907404	E type Stop Ring	1	1	φ3 (M2)
54	359421	Roller	1	1	
55	359424	25¢ Pole Magnet	—	1	
56	359425	10¢ Pole Magnet	—	1	

11-1b DISCRIMINATOR (M-820)



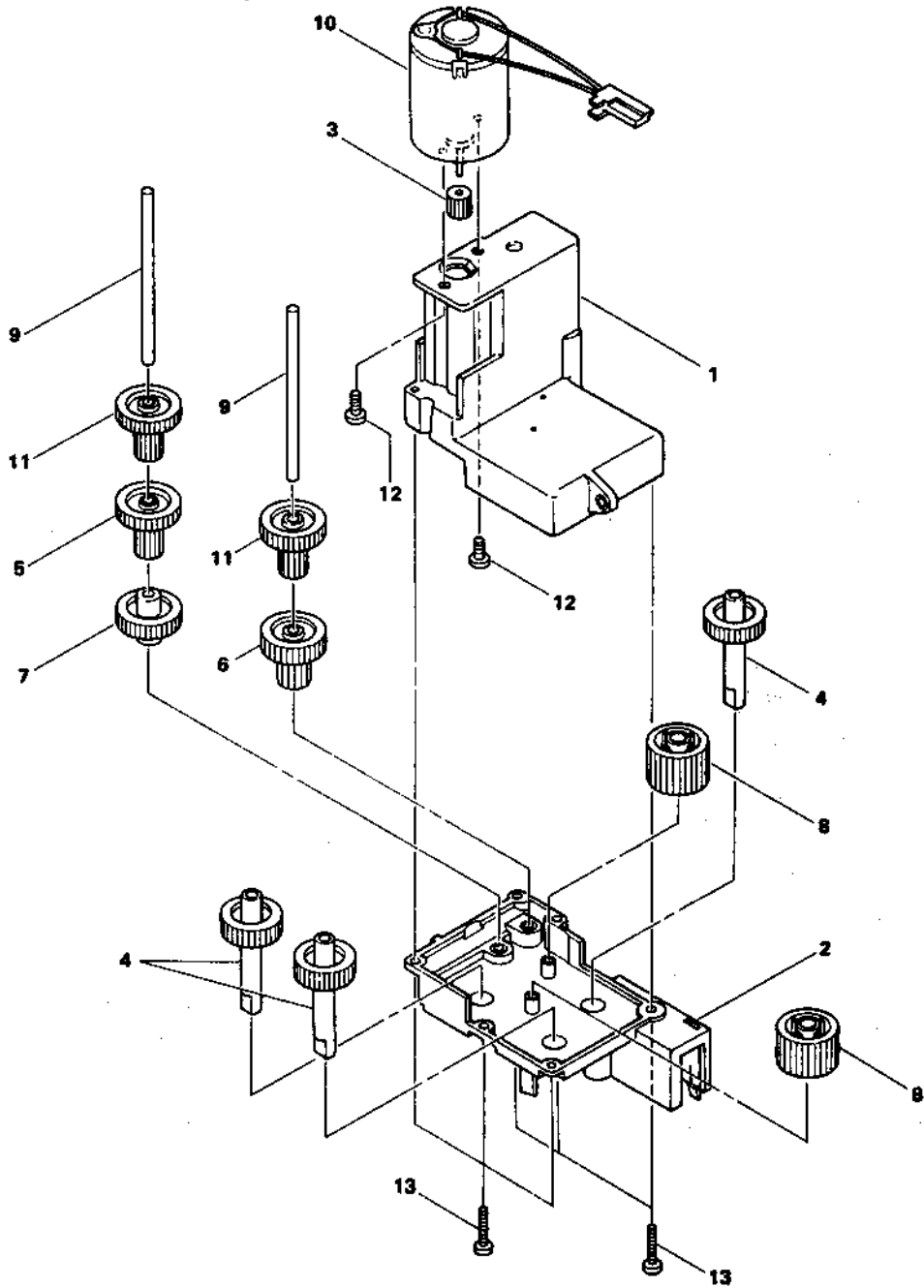
INDEX NO	PART NO.	DESCRIPTION	Q'TY	REMARKS
1	363101	Magnet BKT Ass'y	1	
1-1	363414	Magnet BKT	1	(C)
1-2	363418	10 ϕ Separator	1	(E)
1-3	332401	Pole Magnet	1	
2	363102	25 ϕ Carrier Arm Ass'y	1	
2-1	363408	25 ϕ Carrier Arm	1	(E)
2-2	363501	25 ϕ Weight	1	
3	363103	5 ϕ Cradle Ass'y	1	
3-1	363409	5 ϕ Cradle	1	(E)
3-2	363503	5 ϕ Weight	1	
4	363104	Swing Lever ass'y	1	
4-1	363410	Swing Lever	1	(E)
4-2	363502	Swing Weight	1	
5	363401	Main Plate	1	
6	363402	Gate	1	(A)
7	363403	Magnet Gate	1	(A)
8	363404	25 ϕ Chute	1	(B)
9	363405	Front Cover Plate	1	(B)
10	363406	Gate Lever	1	(D)
11	363407	Front Wiper	1	(E)
12	363411	5 ϕ Swing Lever	1	(E)
13	363412	5 ϕ Oversize Control Lever	1	(E)
14	363413	Rear Gate	1	(C)
15	363415	Autuator	1	(D)
16	363416	C · R · E · M Extension	1	(D)
17	363417	25 ϕ Separator	1	(E)
18	363504	R Gate Spring	1	
19	363424	Magnet Spacer	2	
20	363507	Gate Spring	1	
21	332503	Gate Pivot Pin	1	
22	332525	C · R · E · M Extension Spring	1	
23	364523	Coil Case Magnet	2	
24	362505	Gate Lever Spring	1	
25	907962	Push Nut	4	
	363419	Parts (A)	1Set	Include (A) Parts
	363420	Parts (B)	1Set	Include (B) Parts
	363421	Parts (C)	1Set	Include (C) Parts
	363422	Parts (D)	1Set	Include (D) Parts
	363423	Parts (E)	1Set	Include (E) Parts

11-2 CHANGER



INDEX NO.	PART NO.	DESCRIPTION	QTY	REMARKS
1	49702	CCS-003 Vending Control Unit	1	US-131
2	220102	Main Gear Box Harness Ass'y	1	
3	220103	Change Solenoid Harness Ass'y	1	
4	220104	Carrier Switch Harness Ass'y	1	
5	220105	D.C. C·R·E·M Harness Ass'y	1	
6	220106	Transformer Ass'y	1	Includ. 9
7	220107	Proximity Switch Harness Ass'y	1	
8	220108	Inventory Switch Harness Ass'y	1	
9	220002	Fuse Bracket Ass'y	1	
10	220110	Switch Lever Ass'y	1	
11	220201	Logic Board Ass'y	1	US-101
12	220203	Logic Board Ass'y	1	US-111
13	220301	8-pin Harness Ass'y (Johnson 8-pin)	1	US-101, 111, 121, 131
14	220302	NB Connector Harness Ass'y	1	Option for US-111
15	220401a	Housing (Old)	1	
	220401	Housing (New)	1	
16	220402a	Back Cover (Old)	1	
	220402	Back Cover (New)	1	
17	220126	Front Tubes Ass'y	1	
18	220404a	Overflow Chute(Old Type)	1	
	220404	Overflow Chute(New Type)	1	
19	220405	Bottom Base	1	
20	220408	Coin Base	1	
21	220409	Pay Out Slide	1	
22	220410	Pay Out Wiper (R)	1	
23	220411	Pay Out Wiper (L)	1	
24	220412	25c Change Slide	1	
25	220413	10c Change Slide	1	
26	220414	5c Change Slide	1	
27	220415	25c Block Lever	1	
28	220416	10c Block Lever	1	
29	220417	5c Block Lever	1	
30	220420	Latch	1	
31	220421	Switch Cover	1	
32	220424	Coin Diverter	1	
33	220425	Control Board Spacer	1	for CCS-003
34	220502	Inventory Seal	1	
35	220503	Entry Nameplate (A)	1	
36	220504	Caution Plate (B)	1	
37	220508	Pulsar Cover	1	
38	220509	Transformer Guide	1	
39	220512	Front seal (B)	1	
40	210421	Pay Out Link Ass'y	1	
41	210425	Change Lever (A)	1	
42	210426	Change Lever (B)	1	
43	210429	Pay Out Cam	2	
44	210430	Carrier Cam	1	
45	221203	Logic Board Ass'y	1	US-122
46	221207	Logic Board Ass'y	1	US-121
47	221209	Logic Board Ass'y	1	US-131
48	221301	Harness 102 Ass'y	1	US II
49	221302	6P Optional Harness Ass'y	1	Option for US-121, 131, 122
50	221303	12P Display Harness Ass'y	1	Option for US-121, 131, 122
51	110423	Cable Guide	1	
52	110507	Harness Retainer Pin	1	
53	130509	Cancel Spring	1	
54	351504	Solenoid Guide(Old Type)	1	
55	440561	Machine Nameplate	1	
56	900006	Screw	1	(+/-) Pan-head M3×0.5×4
57	900008	Screw	2	(+/-) Pan-head M3×0.5×6
58	900038	Screw	1	(+/-) Pan-head M3×0.5×25
59	902004	Screw	1	(+) Saucer-head M3×0.5×5
60	905010	Tapping Screw	1	(+) Pan-head 3×1.06×30
61	905011	Tapping Screw	5	(+/-) Pan-head 3×1.06×8 B Type
62	906002	Tapping Screw	10	(+/-) Pan-head 3×1.06×16 P Type
63	907101	Nylon Washer	1	φ3.3×φ6×t0.5 for CCS-003

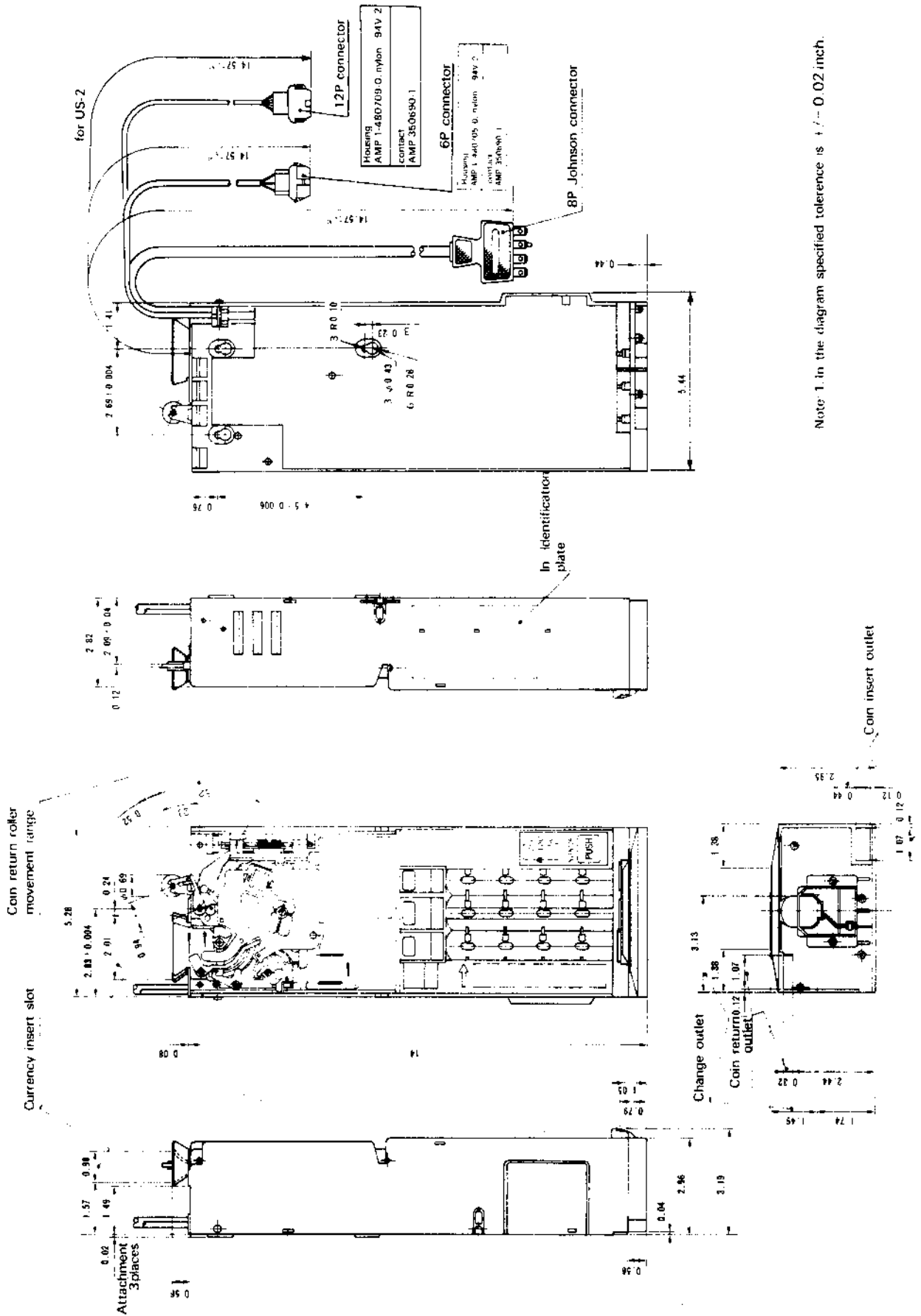
11-3 Main Gear Box Harness Ass'y



INDEX NO.	PART NO.	DESCRIPTION	QTY	REMARKS
1	210431	Gear Case (Upper)	1	
2	210432	Gear Case (Lower)	1	
3	210433	Motor Pinion	1	
4	210434	OP. Gear Output Shaft	3	
5	210435	First Gear	1	
6	210436	Second Gear	1	
7	210437	Third Gear	1	
8	210438	Fourth Gear	2	
9	210504	Gear Shaft	2	
10	210708	Main Motor	1	
11	210803	Pinion Gear	2	
12	900006	Screw	2	(+/-) Pan-head M3×0.5×4
13	905014	Tapping Screw	6	(+) Pan-head M2.5×0.91×12

12. DIAGRAM OF EXTERNAL DIMENSIONS

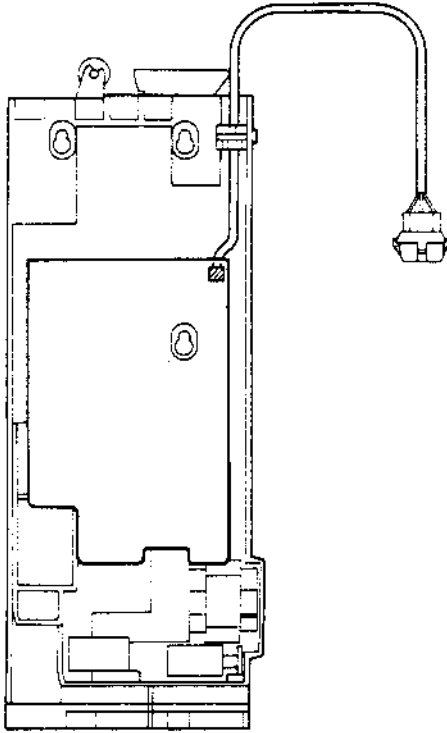
12. DIAGRAM OF EXTERNAL DIMENSIONS



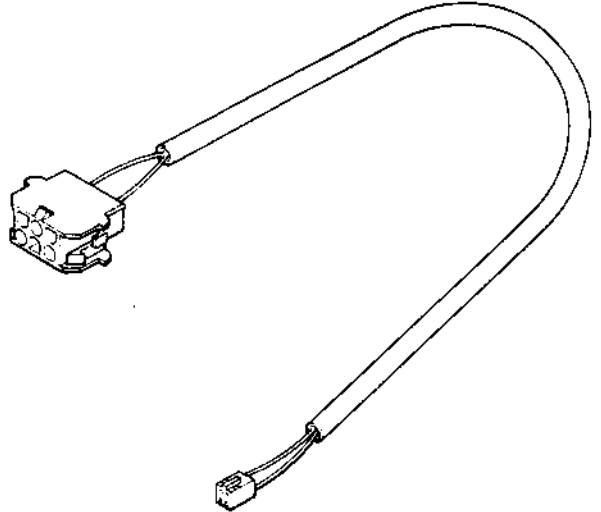
Note 1. In the diagram specified tolerance is +/- 0.02 inch.

13. OPTIONAL CONNECTIONS

NB Connector Harness (Cable for NB-10 \$1 Bill Validator)

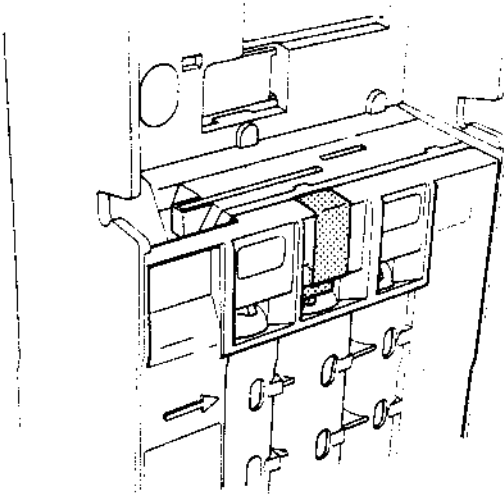


NB Connector Harness

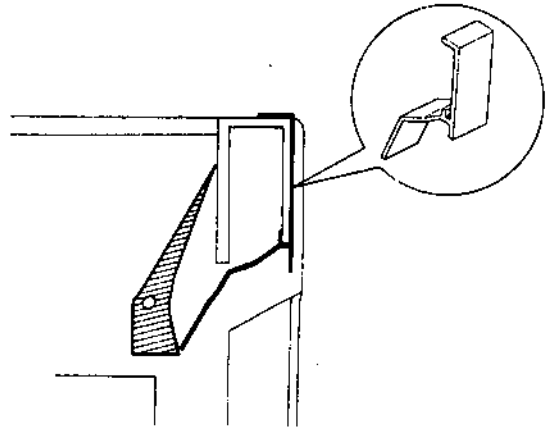


* When connecting the NB-10 \$1 Bill Validator, it is necessary to change the logic board.

* Coin Divider (for 25¢ and 10¢ coins)



Coin divider



● CONTINUOUS TERMINAL SIGNAL CONDITIONS (for external instruments)

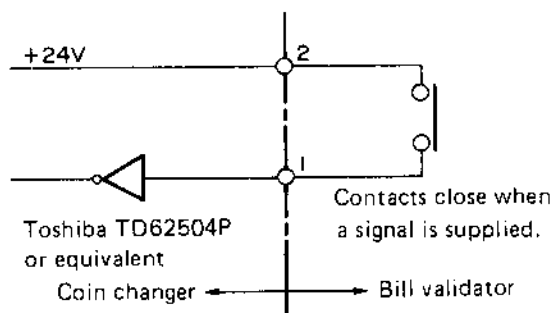
CONTINUOUS TERMINAL SIGNAL CONDITIONS (for external instruments)

1. Signal Conditions

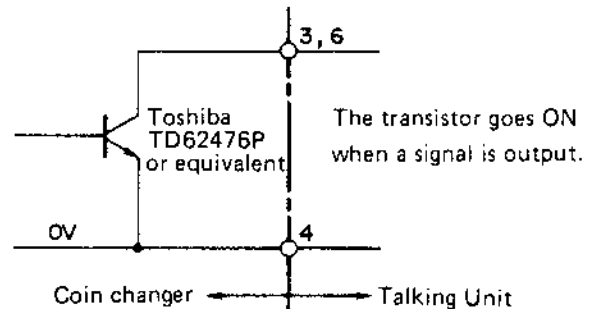
Terminal No.	Signal Name	Input/Output	Description of Signal	Remarks
1	\$1 bill recognition signal	Input	When the bill validator judges that the inserted paper bill is a \$1 bill, the signal is returned to terminal No. 1 through contacts with the power supply of terminal No.2.	\$1 bill validator terminals
2	Power supply (+24V)	Output		
3	Money inserted signal	Output	Output for a minimum of 200 ms when a signal that money has been inserted is received from either the coin changer or the paper bill discriminator.	
4	Power supply (0 V)	Output	0V terminal for interface with the talking unit.	Talking unit connection terminals
5	Change making signal	Output	This signal is output for a minimum of 800 ms when the coin changer's change motor is operating.	
6	N.C.			

2. Input/Output Circuit

(1) 1S Bill Validator Connection Terminals



(2) Talking Unit Connection Terminals



3. Items of Caution

- (1) The conditions in the column (Input/Output) of the table in item 2 are the conditions in the coin changer side.
- (2) If the proper signal is not being output from any terminal, do not make connections to it.