

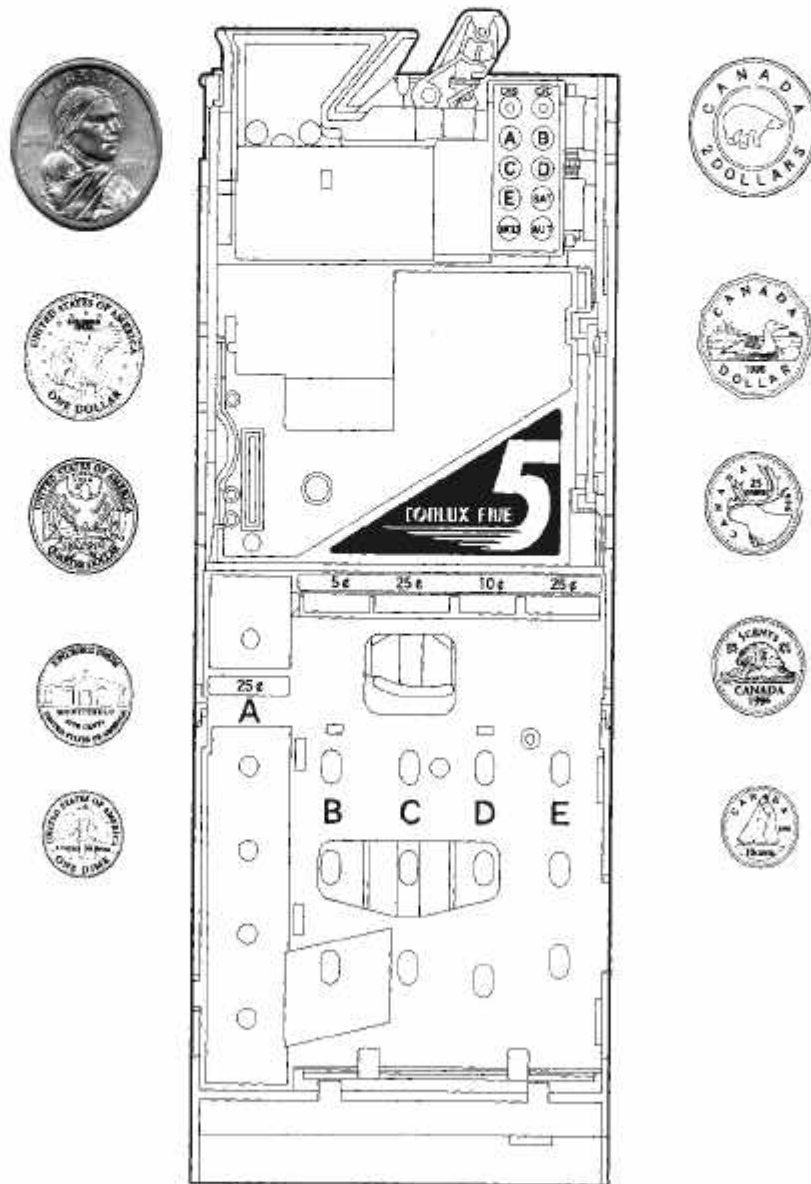
CONLUX®

Multi Drop Bus 5-Tube Coin Changer

CCM5

Series

Service Manual



CONLUX USA CORPORATION

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NOTE: TECHNICAL SUPPLEMENT AVAILABLE UPON REQUEST

1. OUTLINE

- CCM5 series coin changers can be used with U.S. 5¢, 10¢, 25¢ and \$1 coins as well as Canadian 5¢, 10¢, 25¢, \$1 and \$2 coins.
- A selector switch on back of the Discriminator allows the user to select between U.S.-coin-only, Canadian-coin-only or U.S.-and-Canadian-coins.
- Five coin tubes are integrated inside a cassette for ease of handling change.
- Up to three different types of coins are dispensed simultaneously to ensure rapid return of change.
- The coin changer communicates with the vending machine controller via Multi-Drop-Bus (M.D.B.).

Three-Year Customer Protection Plan

CONLUX USA CORPORATION has field proven, reliable and affordable products and we are ready to stand behind our claim. Therefore, we have implemented the following policy to protect your coin changer and bill validator investment.

Current Products:

* CCM5-Series (5-tube) Coin Changers * USL-Series (3-tube) Coin Changers * MKA-Series Bill Validators * NBM-Series Bill Validators * NBU-Series Bill Validators

Plan Features:

* Three-Year Warranty - All Parts and Labor * Vandalized Units (at Conlux's discretion) * Pick Up and Delivery in Many Areas or Freight Paid Both Ways by Conlux USA Corporation

Ask your Conlux Sales Representative or call us at (800) 792-0101 for all the details.

Effective May 1, 1999

Products purchased prior to the above date will be covered by our existing two-year warranty.

Conlux USA Corporation
100 Industrial Drive * P.O. Box 170
Crystal City, Missouri 63019

2. Product Model Names

2.1 Coin Changer

CCM5□-□

Cassette division (Table I)

Color identification (Table II)

2.2 Discriminator

CCM5□D

Color identification (Table II)

2.3 Cassette Tube Assy US-1

Table I

Division	Name	Item	Tube A	Tube B	Tube C	Tube D	Tube E
1	US-1	Type of coin accommodated	25¢	5¢	25¢	10¢	25¢
		Coin filling method	Manual	Auto	Auto	Auto	Manual
		Number of coins accommodated	Approx. 95	Approx. 67	Approx. 74	Approx. 100	Approx. 89

2.4 Color Identification

Table II

Symbol	Color Identification
None	Discriminator and Other Parts: Red
G	Standard Color: Grey

3. General Specifications

Specifications and design are subject to change without notice.

Items	CCM5-1 Series
Coins Accepted	US coins: 5¢, 10¢, 25¢ and \$1 Canadian coins: 5¢, 10¢, 25¢, \$1 and \$2 * A selector switch on the back of the coin discriminator enables the coin mode (country) to be selected.
Coins Paid Out	5¢, 10¢ and 25¢ coins
Coin Cassette Capacity (US-1 Cassette)	Tube A (25¢ coins) approx. 95 coins (Manual) Tube B (5¢ coins) approx. 67 coins (Auto) Tube C (25¢ coins) approx. 74 coins (Auto) Tube D (10¢ coins) approx. 100 coins (Auto) Tube E (25¢ coins) approx. 89 coins (Manual)
Change Payout Operation	DC motor and DC solenoid used in combination (All tubes: A to E)
Power Supply	34 VDC ±10%
Insulation Resistance	20MΩ or greater
Operating Temperature Range	+5°F ~ 140°F (−15°C ~ +60°C)
Rated Power Consumption	0.10A (Standby) 0.66A (Operating State: Coin discrimination, motor operation, etc.) 0.92A (Peak: Max. 5 sec.)
Weight	Approx. 4.19 Lbs. (1.9 kg)
Functions	Change sensing function (All tubes: tubes A to E) Auto fill tube; full status sensing function Failure sensing function (Monitor L.E.D.) Inventory function Cassette tube unit out-of-position sensing function Simultaneous coin payout function (up to 3 types of coins) Coin type acceptance prohibit setting function Simplified automatic change adjusting function Motor lock auto recovery function Drive power supply control function Memory backup function

4. Detailed Specifications

(1) Cassette Tube Assy “US-1”

Five coin tubes are integrated inside a cassette which can be removed from the coin changer. The respective tubes are also equipped with an open/close back cover so that coins can be replenished or collected easily.

- The US-1 cassette tube assy and type of coins accommodated are as shown below.

Division	Name	Item	Tube A	Tube B	Tube C	Tube D	Tube E
1	US-1	Type of coin accommodated	25¢	5¢	25¢	10¢	25¢
		Coin filling method	Manual	Auto	Auto	Auto	Manual
		Capacity of coins per tube	Approx. 95	Approx. 67	Approx. 74	Approx. 100	Approx. 89
		Full status detecting software counter	None	64	71	97	None

* Refer to section (2) for details of the full status detecting software counter.

(2) Automatic Coin Replenishment Tube Full Status Sensing Function

For sensing the number of coins, there is an interrupter switch with a lever at the top section of each automatic coin replenishment tube, along with the coin counter in the software. Based on these two sensing means, the coin tube full status is acknowledged.

If either of the two sensing methods detects the full status and a coin of the particular type which has been sensed as full is inserted, it will be delivered to the cash box by the discriminator.

The software counter for sensing the full status maintains its memory even in the event of a power failure. (Protected by the memory backup function).

- * The software counter function remains effective even if the cassette assembly is removed from the coin changer. When the coins are collected out of the tubes, clear the memory of the software counter.
- * Refer to page 7 for clearing the memory.
- * Refer to section (1) for the value of the software counter.

(3) Coin Acceptance Prohibited

Coin acceptance is prohibited under the following conditions irrespective of the control by the main controller:

- (1) During a power failure.
- (2) When a coin or coins are being dispensed, an abnormal condition is caused or when power is supplied for the first time (for approx. 2 sec.)
- (3) Coin acceptance is prohibited by setting the coin type acceptance prohibit function (only for the specified coin type).
- (4) If the coin acceptance conditions for the coin type to be sent to the cash box are not established by the mounted cassette tube assy.

No.	Name	U.S. and Canadian coins				Canadian coin
		5¢	10¢	25¢	\$1	\$2
1	US-1	✓	✓	✓	▲	▲

*The mark “✓” in the table above indicates that the particular type of coin can be accepted regardless of the condition of the change.

*The mark “▲” in the table above indicates that the particular type of coin can be accepted depending upon the condition of smaller denomination coins in the tubes.

- The conditions of the change for acceptance of \$1: Change for \$1 in 10¢ and 25¢ denominations is available.

Example:

If the cassette tube assy has four 25¢ and ten 10¢ coins, it can accept two \$1 coins.

If the cassette tube assy has six 25¢ and fifteen 10¢ coins, it can accept three \$1 coins.

If the cassette tube assy has one 25¢ and nine 10¢ coins, it cannot accept any \$1 coin.

- The conditions of the change for acceptance of \$2: Change for \$2 in 25¢ denominations is available.

Example:

If the cassette tube assy has eight 25¢ coins, it can accept one \$2 coin.

If the cassette tube assy has sixteen 25¢ coins, it can accept two \$2 coins.

If the cassette tube assy has eight 25¢ and one \$1 coin has already been inserted, it can not accept any \$2 coin.

(4) Escrow

When the main controller transmits the same value as the total amount of the inserted coins by the EXPANSION/ALTERNATIVE PAYOUT command, all the inserted coins are returned.

(5) Failure Sensing Function

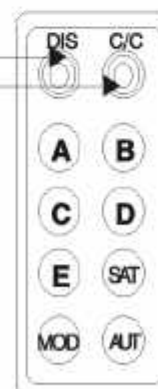
When the coin changer senses a failure, the abnormal condition is notified to the main controller. At the same time, the L.E.D. on the inventory panel starts flashing. The monitoring system consists of two L.E.D.'s. One is for monitoring the status of the discriminator (DIS display: red) and the other is for monitoring the coin changer (C/C display: yellow). The L.E.D.'s start flashing whenever a failure is detected in each section.

Normal condition Both L.E.D. lamps are illuminated.

Failure in the discriminator DIS L.E.D. is flashing (red).

Failure in the coin changer area C/C L.E.D. is flashing (yellow).

Inventory Panel



(6) Automatic Recovery of Motor Lock

If the dispensing operation fails because the payout motor locks:

(1) the changer will automatically start a reset cycle to clear the jam.

(2) in case of failure to clear the jam automatically: (1) press any inventory switch and it will then start the sequences to unlock the motor.

With the motor unlocked, the coin dispensing mechanism stops operation and enters standby mode. If the motor remains locked, set the dispensing mechanism in the standby position to stop the dispensing operation. Under this particular circumstance, the cassette tube assy can be removed to make it easier to solve the cause of the motor lock.

(7) Simultaneous Dispensing Function

Up to three different types of coins can be dispensed simultaneously to complete the process of returning change, depending on the amount of change required and the condition of coins in the tubes.

* This function is not available in inventory mode.

* The combination of tubes D and E are not applicable to this function.

(Level 3 controller is required.)

(8) Simplified Automatic Change Adjusting Function

This function allows the coin changer, without needing to communicate with the main controller, to independently control the increment or decrement of the quantity of change.

For detailed operating instructions, refer to section 5-3-3, "Loading the change tubes" on page 12.

(9) Memory Backup Function

An electrical double-layer capacitor is used, so data in the memory such as the number of coins in the tubes for change, data of the empty quantity counter, data of the full status sensing software counter and the number of coins stored for the simplified automatic change adjusting function are protected even in the event of a power failure.

The memory backup lasts for 3 days or longer (at 25°C) once the system has been turned on for longer than 24 hours continuously.

The data maintained by the backup function can be forcibly cleared as follows.

(1) Deleting Backup Data

A. Detach the cassette assembly from the coin changer.

B. Press and hold down the Auto switch (AUT display "ON") for about 5 seconds.

C. The two monitor lamps (red and yellow) will flash rapidly for about 1 second to indicate that all of the data has been cleared.

Note: The backup data clear operation uses the same switch as that for the simplified automatic change adjusting function. Be careful not to operate the switch incorrectly.

(10) Acceptance Prohibit Setting Function

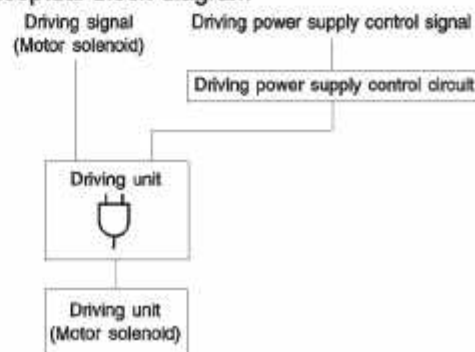
This function allows the coin changer to prohibit the acceptance of particular types of coins independently of the main controller. Instructions for setting this function are available upon request.

(11) Driving power supply control function

The load control system of the motor solenoid, which is part of the coin discriminator and dispensing unit, consists of two circuits. A driving circuit and a driving power supply control circuit (a circuit to supply power to the driving circuit).

Driving of the load (motor solenoid) requires both a driving signal and driving power supply control signal to prevent malfunctions of the driving unit due to external noise.

Conceptual block diagram



(12) Change Sensing Function

Information on the change obtained by the coin changer is transmitted to the main controller by the command TUBE STATUS.

Information regarding the change is maintained in the memory even in the event of a power failure as it is protected by the memory backup function.

12-1 Change Data

Information on each type of coin used for change is prepared on the basis of the proximity empty switch mounted on each coin tube, as well as the memorized data on the number of inserted coins (empty quantity counter). Information for each type of coin is transmitted to the main controller.

The change data is applicable to only those coin types specified for coin tubes in the cassette assembly.

Other types of coins are all sent to the cash box with "0" transmitted to the main controller.

(1) Change data on the basis of the proximity empty switch

If any of the specified types of coins to be normally stored in the automatic coin replenishment tube or manual coin replenishment tube are stored in either tube exceeding the fixed quantity, the number of coins is transmitted to the main controller for each type of coin applicable. (If two or more tubes have coins exceeding each specified quantity, the information on them is also transmitted to the main controller. In this case, the information is not the total of the numbers of coins in different tubes.)

Number of coins for each coin type for "Sufficient Change" status by the empty switch	
5¢	4 coins
10¢	9 coins
25¢	6 coins

Example: 5¢ empty switch

Empty switch status	Change data
Empty switch "Out of change" status	0
5¢ empty switch "Sufficient Change" status	4
One 5¢ coin dispensed. Empty switch "Sufficient Change" status	4
One 5¢ coin dispensed. Empty switch "Out of Change" status	3
Two 5¢ coins dispensed. Empty switch "Out of Change" status	1
One 5¢ coin dispensed. Empty switch "Out of Change" status	0
5¢ empty switch "Sufficient Change" status	4

(2) Change data on the basis of the empty quantity counter

A. When the empty switch is in "Sufficient Change" status

(Initial value of change data = number of coins by type)

Each time a coin or coins are inserted, the initial value of the number of coins by type are increased and the value is transmitted to the main controller.

When none of the inserted coins are dispensed as a result of a sale and are stored inside the coin changer, the number of coins inserted is added to the initial value of the number of coins by type and the coins are held by the coin changer.

On the other hand, if any coins are dispensed as the change in a sale, the number of coins dispensed

is subtracted from the value of the number of coins by type until the initial value (which equals "Sufficient Change") is reached. The changed value is transmitted to the main controller.

Example: When the 5¢ empty switch is in "Sufficient Change" status

	Change data value
Initial value	4 (Empty switch "Sufficient Change" status)
One 5¢ coin is inserted.	5 (Empty switch "Sufficient Change" status)
One 5¢ coin is inserted.	6 (Empty switch "Sufficient Change" status)
One 5¢ coin is dispensed.	5 (Empty switch "Sufficient Change" status)
One 5¢ coin is dispensed.	4 (Empty switch "Sufficient Change" status)
One 5¢ coin is dispensed.	4 (Empty switch "Sufficient Change" status)

B. When the empty switch is in "Out of Change" status

(Initial value of change data = 0)

Each time a coin or coins are inserted, the number of inserted coins is transmitted to the main controller.

When the number of inserted coins is less than the number of coins by type and the empty switch is in the "Sufficient Change" status, the change data at that particular moment equals the number of coins by type. The number of coins inserted thereafter is added and transmitted to the main controller. If the sale proceeds without establishing "Sufficient Change" as a result of coin insertion, the data of the empty quantity counter is transmitted to the main controller as the change data.

On the other hand, if any coins are dispensed as change in a sale, the number of coins dispensed are subtracted from the value 1 at a time after the empty switch enters the "Out of Change" status, until the value reaches "0". The changed value is transmitted to the main controller.

Example: When the 5¢ empty switch is in "Out of Change" status

	Change data
Initial value	0 (Empty switch "Out of Change" status)
One 5¢ coin is inserted.	1 (Empty switch "Out of Change" status)
One 5¢ coin is inserted.	4 (Empty switch "Sufficient Change" status)
One 5¢ coin is inserted.	5 (Empty switch "Sufficient Change" status)
One 5¢ coin is dispensed.	4 (Empty switch "Sufficient Change" status)
One 5¢ coin is dispensed.	3 (Empty switch "Out of Change" status)
One 5¢ coin is dispensed.	2 (Empty switch "Out of Change" status)
One 5¢ coin is dispensed.	1 (Empty switch "Out of Change" status)

* The change data is stored in the memory even if the cassette assembly is detached. When the coins are collected out of the tube by detaching the cassette assembly, clear the memory of the change data. Refer to page 7 for deleting the memory.

12-2 Maximum Values of Change Data

The maximum values of change data for the respective types of coin are shown right.

Maximum values of change data	
5¢	64
10¢	97
25¢	92

5. HANDLING AND INSTALLATION

5-1 Handling Instructions

The discriminator is connected to the coin changer via a dedicated connector and should not be disassembled except for special cases such as cleaning.



In case the discriminator is to be disassembled, be sure to turn off the power of the coin changer before disassembling.



Do not carry the coin changer by the harness.



Store the coin changer in a clean, dry location.



5-2 Identification of Components and their Parts

*US-1 Cassette Shown

• Discriminator Latch

Push up to remove the discriminator.

• Discriminator

This is an electronic discriminator which discriminates US \$1, 25¢, 10¢ and 5¢ coins, and Can. coins. (This discriminator can also be used for Canadian coins by switching to US/CAN or CAN. ONLY.)

• Drain Spout

Liquid poured in by vandals or by accident is collected here.

• Tube Latch

Push down to remove the cassette tube.

• 25¢ Change Tube (Tube A)

• 5¢ Change Tube (Tube B)

• 25¢ Change Tube (Tube C)

• 10¢ Change Tube (Tube D)

• Monitor Lamp

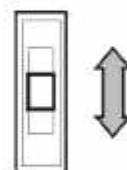
Blinks when failure occurs.

• Inventory Switch

This switch is used to remove coins from the change tubes.

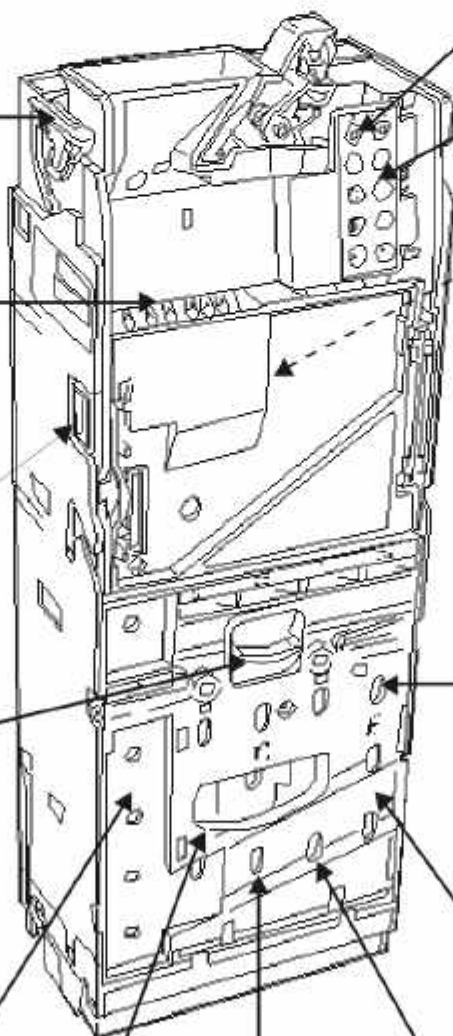
• Currency Selection Switch

Located on back side of discriminator.



• Cassette Tube Assy

• 25¢ Change Tube (Tube E)



5-3 Operating Instructions

Set Up Procedure

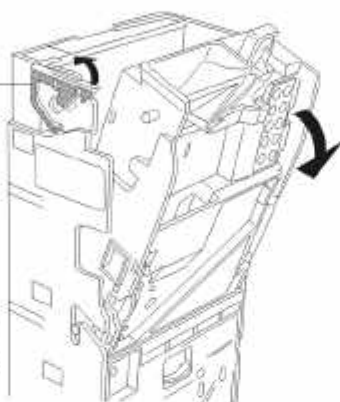
1. How to Install the Coin Changer in a Vending Machine Page 11
2. Currency Selection Switch Page 12
3. Loading the Change Tubes Page 12
 - How to Operate the Simplified Automatic Change Adjusting Function Page 13
4. Removing Coins from the Payout Tubes Page 15
5. Vend Test Page 16

5-3-1 Installation Procedure

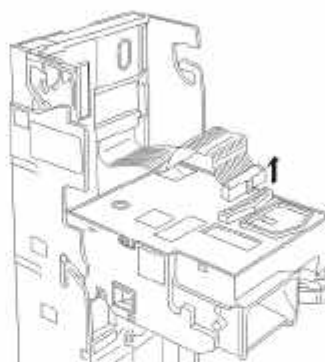
(1)

Discriminator
latch

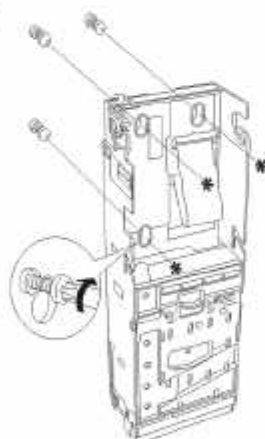
Push up the discriminator latch and tilt the discriminator forward.



(2) Disconnect and remove the discriminator.

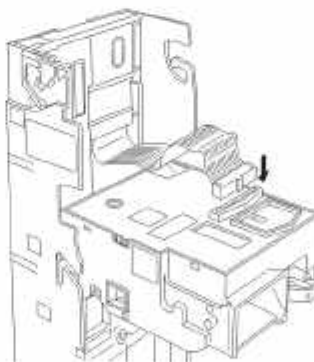


(3)



Locate the slotted holes in the coin changer to the mounts in the vending machine and tighten it at the 3 places shown. (Do not over tighten!)

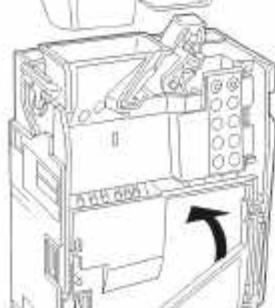
(4) Connect and install the discriminator.



(5)

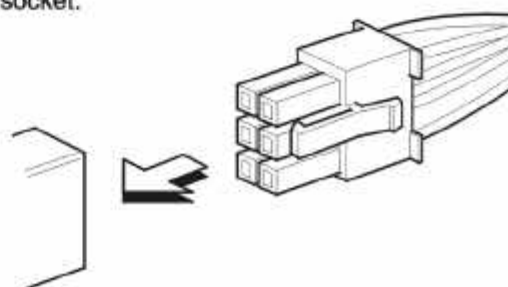
Coin Insert Chute

Coin Return Lever



When the coin changer is installed, ensure proper alignment of coin insert chute and return lever.

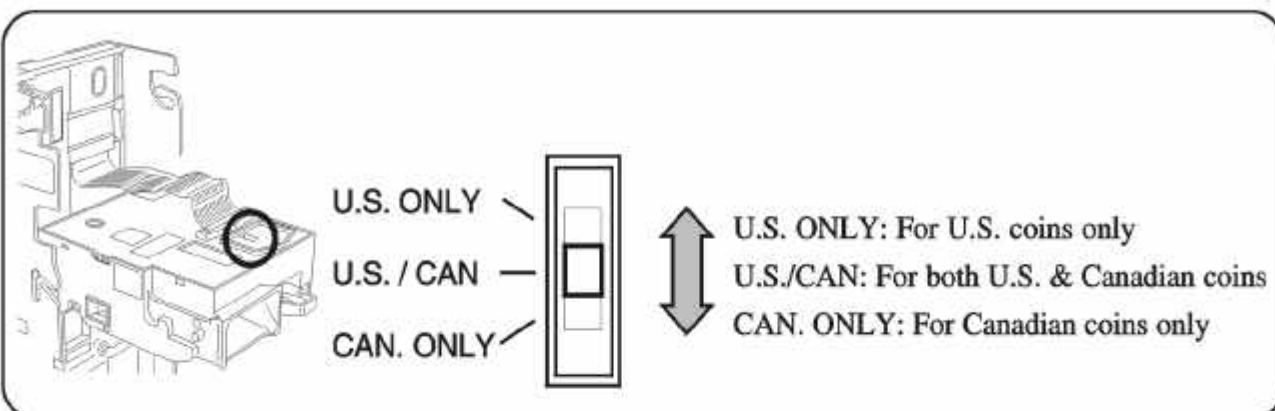
(6) Connect the 6 pin plug into the vending machine socket.



CAUTION: Do not plug or unplug coin changer with power on.

5-3-2 Currency Selection Switch

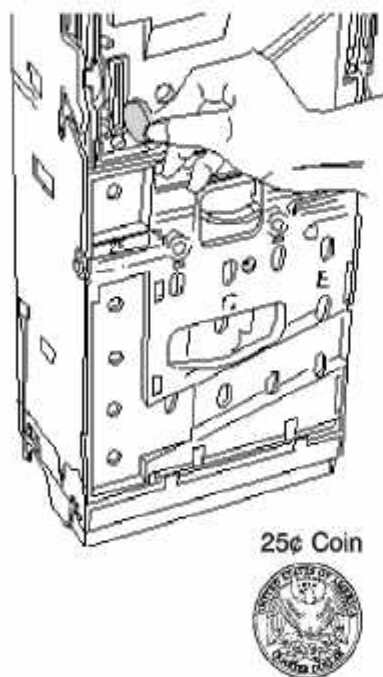
The currency selection switch on the back of the discriminator has three positions for selecting U.S. only, U.S. & Canadian, or Canadian only mode.



5-3-3 Loading the Change Tubes

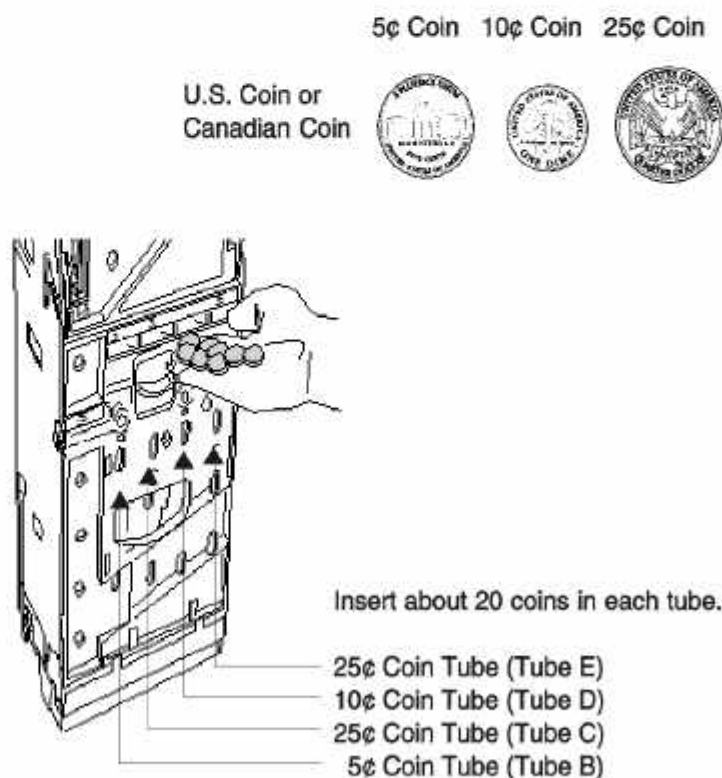
● Inserting Coins Through the Coin Insert Slots on the Cassette Tube Assembly

• Loading 25¢ Coins (Tube A)



Insert about 20 coins in each tube.

• Loading 5¢, 10¢ and 25¢ Coins



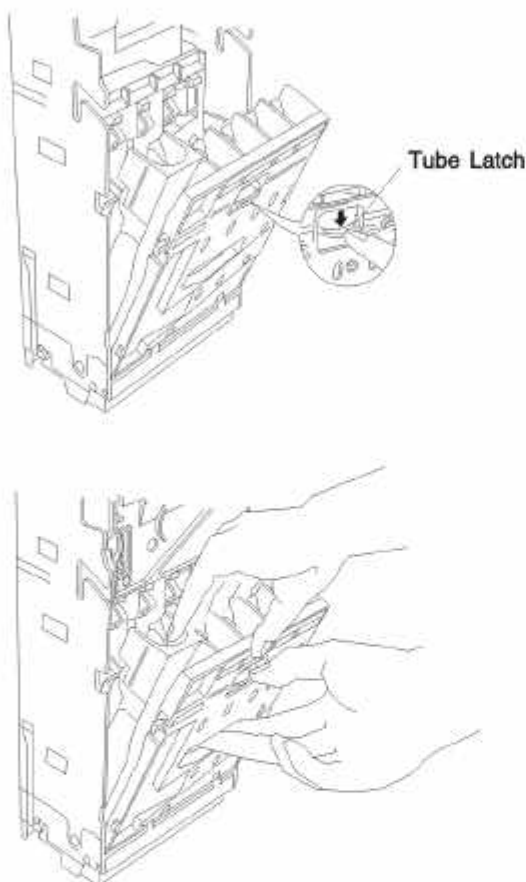
Notes:

1. If a coin drops in and stands on end, correct it.
2. Be careful not to load bent coins.
3. Be careful to load the correct coin in each tube.

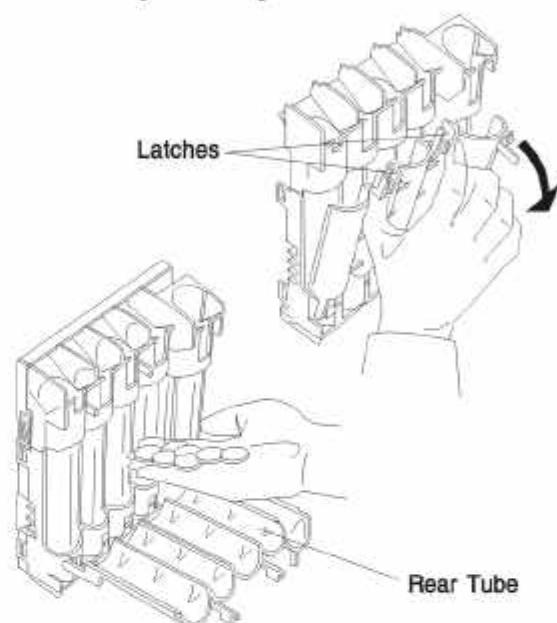
*US-1 Cassette Shown

● Inserting Coins With the Cassette Tube Assembly Removed

- (1) Remove the cassette tube assy as follows: Press down on the tube latch and pull the cassette assy toward you to remove it.



- (2) Squeeze the upper two levers to release the lock and open the rear tube. Replenish as many individual coins into their respective tubes as required.
- (3) Close the rear tube and mount the cassette tube assy back in place.



Notes:

- 1 If a coin drops in and stands on end, correct it.
- 2 Be careful not to load bent coins.
- 3 Be careful to load the correct coin in each tube.

*** When reinstalling the cassette tube assy, be sure to verify the operations as follows:**

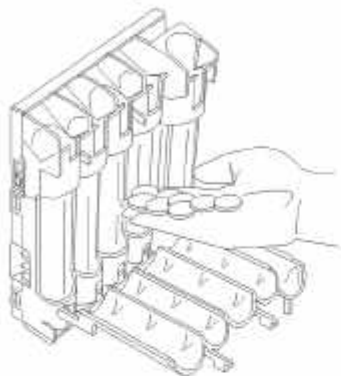
Insert at least two coins of each denomination from the vending machine and confirm that they are stored in the correct tubes. Then press the coin return lever and confirm that the coins are properly returned.

● How to Operate the Simplified Automatic Change Adjusting Function

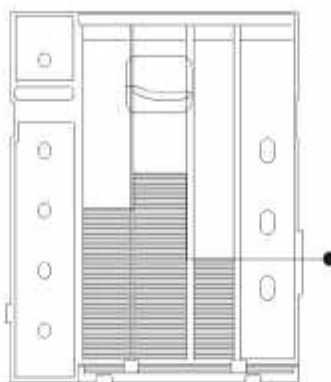
This function allows the coin changer to control the change independently of the vending machine controller based on the number of coins initially loaded as the base quantity in each coin tube (automatically replenished tube) of the cassette tube assy in the coin changer. This function is very convenient when the types of coins are restricted depending on the goods handled by the vending machine or when the change handled by multiple vending machines needs to be unified for easier sales control. To take advantage of this function, carefully read the handling instructions and warnings described later.

1 Setting the Base Quantities (the numbers of coins to be loaded initially)

- (1) Remove the cassette tube assy from the coin changer and replenish as many coins in each individual coin tube (B, C and D tubes) as desired for the base quantities.

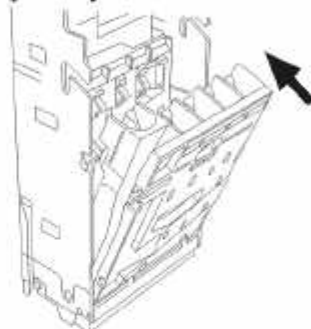


- (2) Install the cassette tube assy.



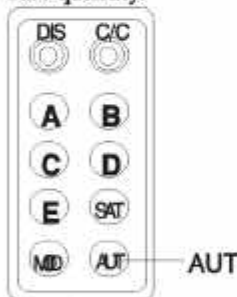
Number of coins to be set as each base quantity (≥ 20)

- (3) Upon completion of installation, the coin changer judges each set quantity as zero regardless of the actual quantity. Thereafter, the coin changer records the dispensed or inserted coins as decrements or increments from the base quantity, respectively.

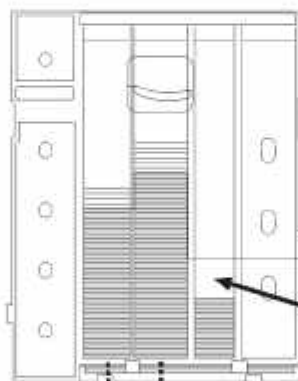


2 Collecting the extra coins

- (1) When the coins in the cassette tube assy exceed the base quantity, press the automatic change adjustment switch "AUT" for at least one second. Then the coin changer pays out the extra coins to restore the initially set base quantity.



- (2) When the coins in the cassette tube assy become fewer than the base quantity, remove the cassette tube assy and replenish the shortfall.



Extra coins to be collected

* The shortfall quantity is not displayed. Therefore, the levels of base quantities of individual coin types should be marked to make it easier to recognize the shortfall and to replenish coins quicker.

● Base quantities

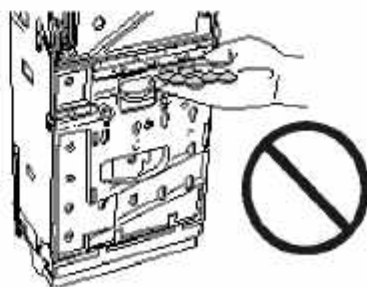
Shortfall coins to be replenished

[Warnings]

- * DO NOT collect the coins manually while this function is in operation.



- * DO NOT insert coins directly into the tubes. The inserted coins will be held in the tubes without being counted by the unit.



- * Each base quantity (the number of coins to be set initially in each coin tube (B, C, D)) should be at least 20 to keep the changer in the "sufficient change" status.

The coin changer's memory will be cleared when:

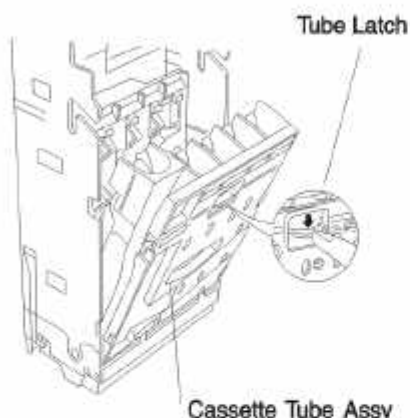
- 1 The cassette tube assy is removed.
- 2 The coin changer's communication with the vending machine controller is disconnected.

*US-1 Cassette Shown

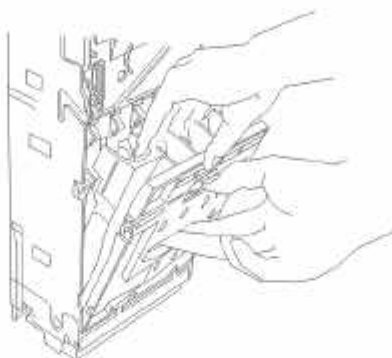
5-3-4 Removing Coins from the Payout Tubes

● When the Cassette Tube Assy Is Removed:

- (1) Press down the tube latch and pull the cassette tube assy toward you to remove it.



- (2) If coins remain in the tubes when removing the cassette tube assy, use both hands as illustrated.



- (3) To collect the extra coins in the coin tubes, release the locking tabs on the rear tube and pull it open toward you. You can also collect the extra coins without opening the rear tube by putting your fingers into the coin tubes that contain no extra coins and turning the cassette tube assy up side down.

Put your fingers into the coin tubes having no extra coins.



*** After removing the cassette tube assy, be sure to verify operations after re-installing:**

Insert at least two coins of each denomination and confirm that they are stored in the correct coin tubes. Then press the coin return lever of the vending machine and confirm that the coins are properly returned.

● When the Tube Inventory Switches Are Used:

There are six tube inventory switches (A, B, C, D, E and SAT) on the inventory panel. Each switch is dedicated to one coin tube and can be operated independently from the others. Pressing a tube inventory switch starts pay-out operation from the appropriate coin tube. Pressing the same switch again or pressing any other tube inventory switch stops the pay-out operation.

- **Tube Inventory Switches A ~ E** (for collecting coins in the cassette tube assy). By pressing any one of switches A to E, dispensing of the corresponding tube in the cassette tube assy is carried out.

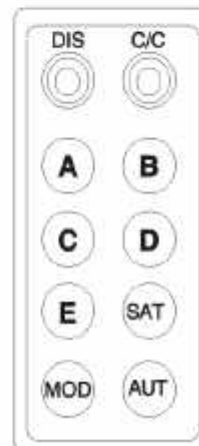
1. Operation has been carried out 150 times continuously regardless of the presence of coins for change. (Automatic Halt)
2. After the change sensing function senses an "Out of Change" status, operation has been carried out 20 times continuously. (Automatic Halt)

- **Satellite Inventory Switch** (auxiliary)
This inventory switch is for auxiliary use of the satellite tube.

- **Mode Switch.** Pressing this switch starts the coin type acceptance prohibit setting. Refer to page 7 for details.

- **Auto Switch.** There are two types of options for the Auto Switch as shown below.

1. Deleting Backup Data. (Refer to page 7 for details.)
2. Activating Simplified Automatic Change Adjusting Operation. (Refer to page 14 for details.)



● **When the Automatic Change Adjusting Switch (AUT) Is Used:**

Pressing the automatic change adjusting switch for at least one second activates the automatic change adjusting function and the extra coins are paid out. (Refer to page 14 for details.)

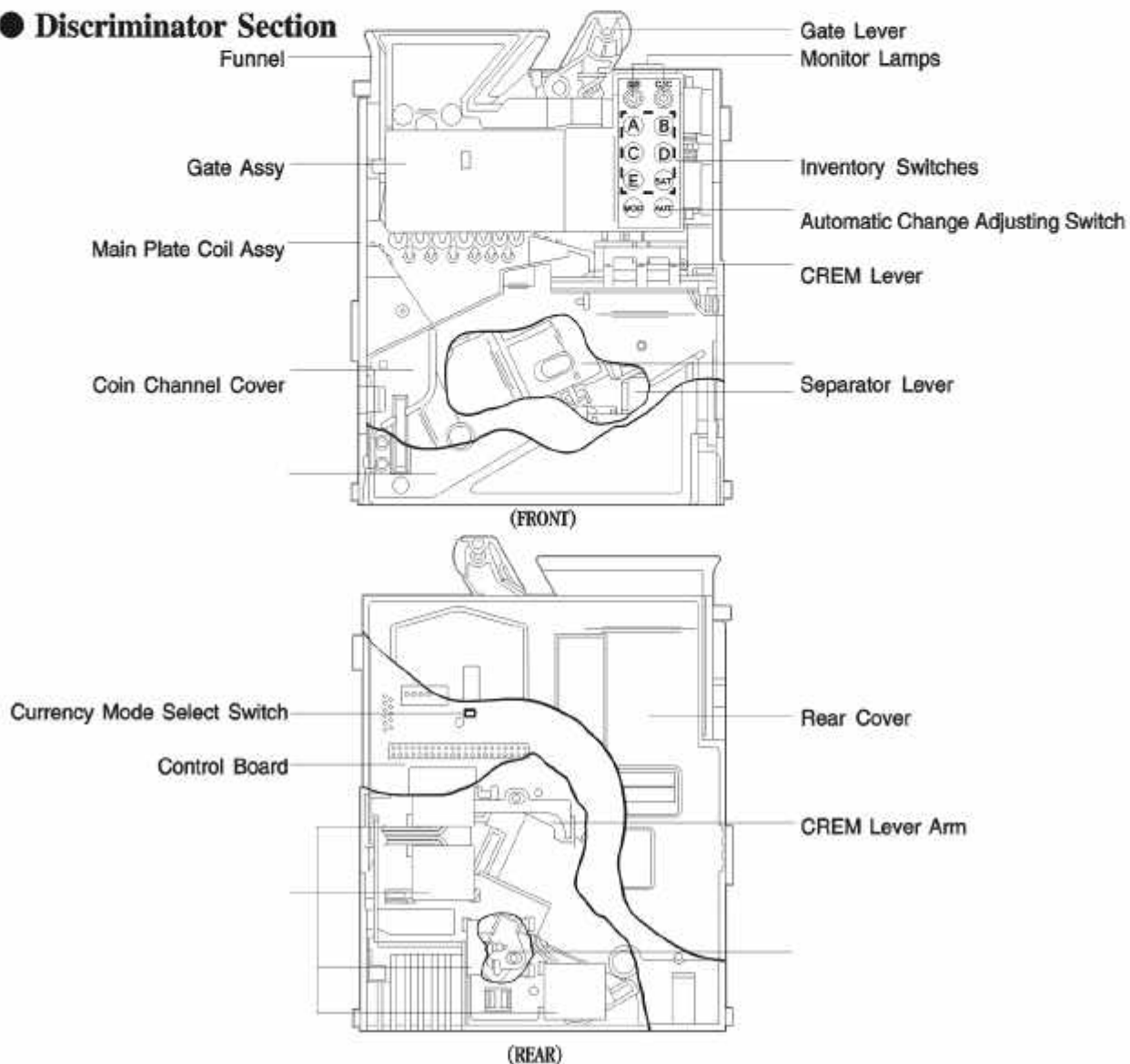
5-3-5 Vend Test

- (1) Connect the 6-pin plug to the vending machine socket. (**Caution: Do not plug in or unplug coin changer with power on.**)
- (2) Insert different combinations of 5¢, 10¢ and 25¢ coins through the coin insert of the vending machine. When sufficient credit is established make a selection (vend product). Change will be returned in case of over credit.
- (3) Insert (1) 5¢ coin. Press the coin return lever, a 5¢ coin should be returned.
- (4) Operate the inventory switches to empty the change tubes.

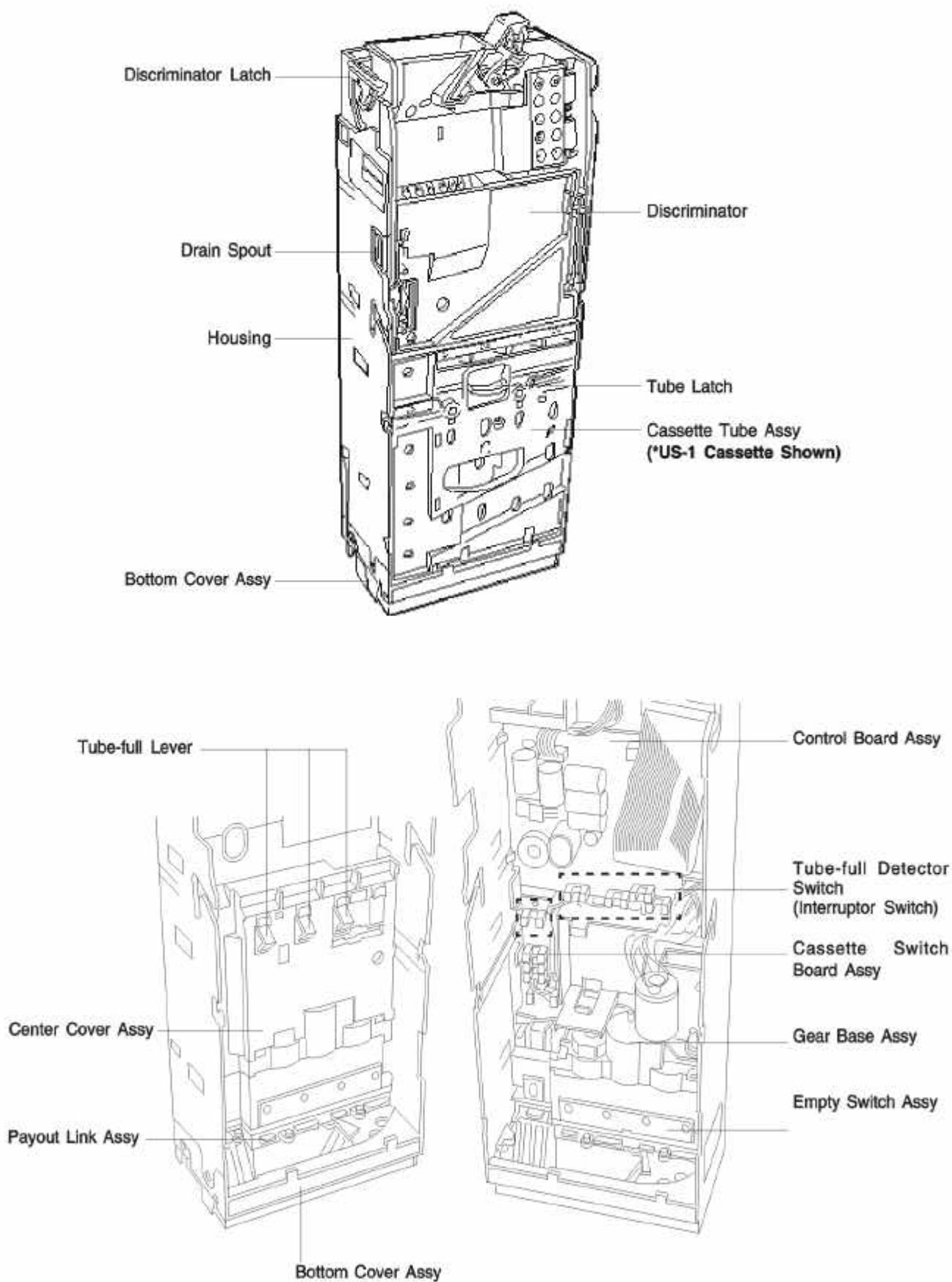
6. CONSTRUCTION AND DESCRIPTION

6-1 Description of Parts

● **Discriminator Section**



● Coin Changer

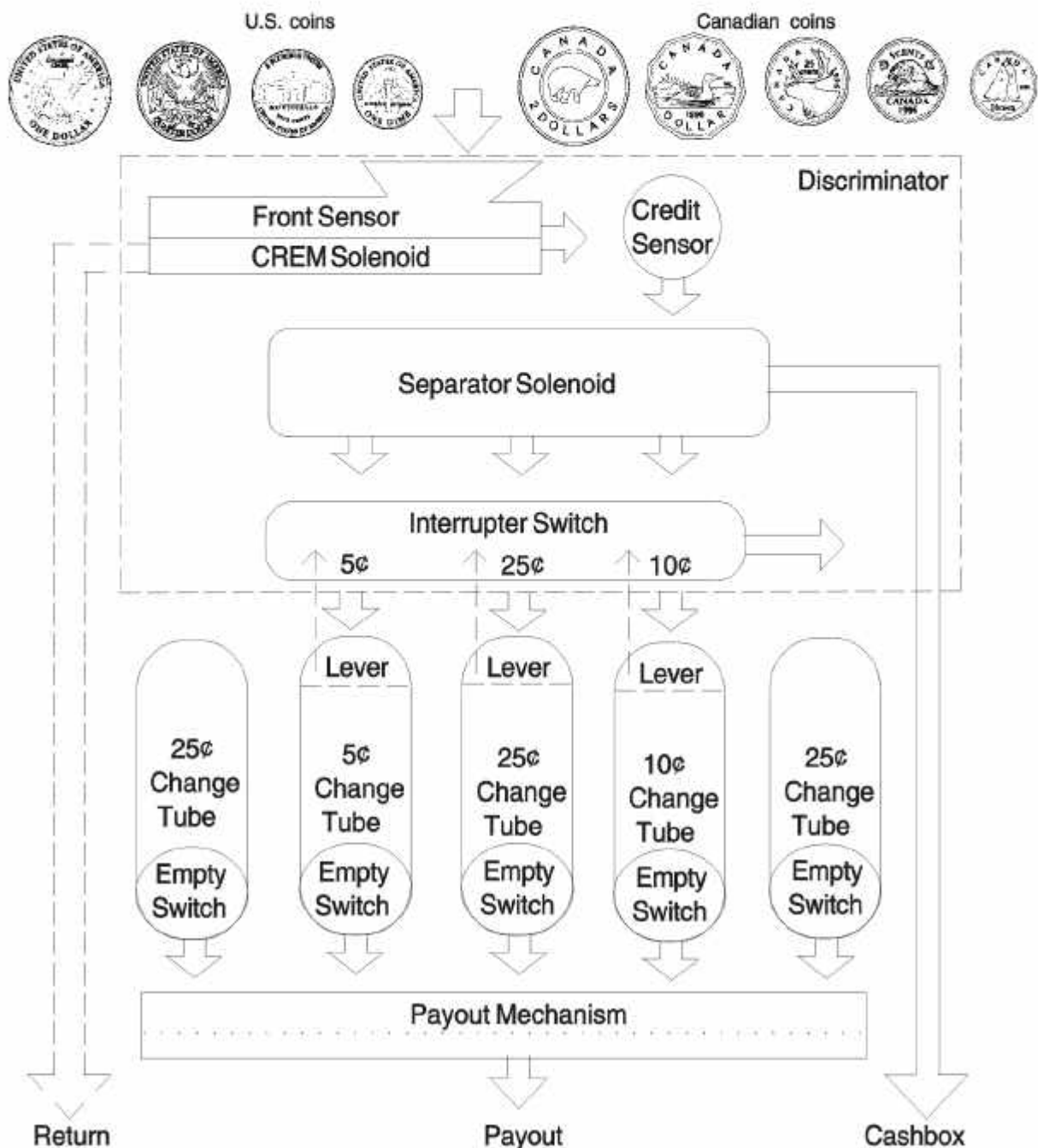


6-2 Flow of Coins

6-2-1 US-1 Cassette

- The front sensor evaluates each inserted coin; if judged genuine, the CREM solenoid operates and coins are routed past the credit sensor to the tubes.
- Canadian \$2 coins are always routed to the cash box.
- Defective coins or slugs are returned, either automatically or by operating the return lever.
- For sensing the number of coins, there is an interrupter switch with a lever at the top section of each automatic coin replenishment tube, along with the coin counter in the software. Based on these two sensing methods, the coin tube full status is sensed.

If either of the two sensing methods detects the full status and a coin of the particular type which has been sensed as full is inserted, it will be delivered to the cash box by the separator solenoid.

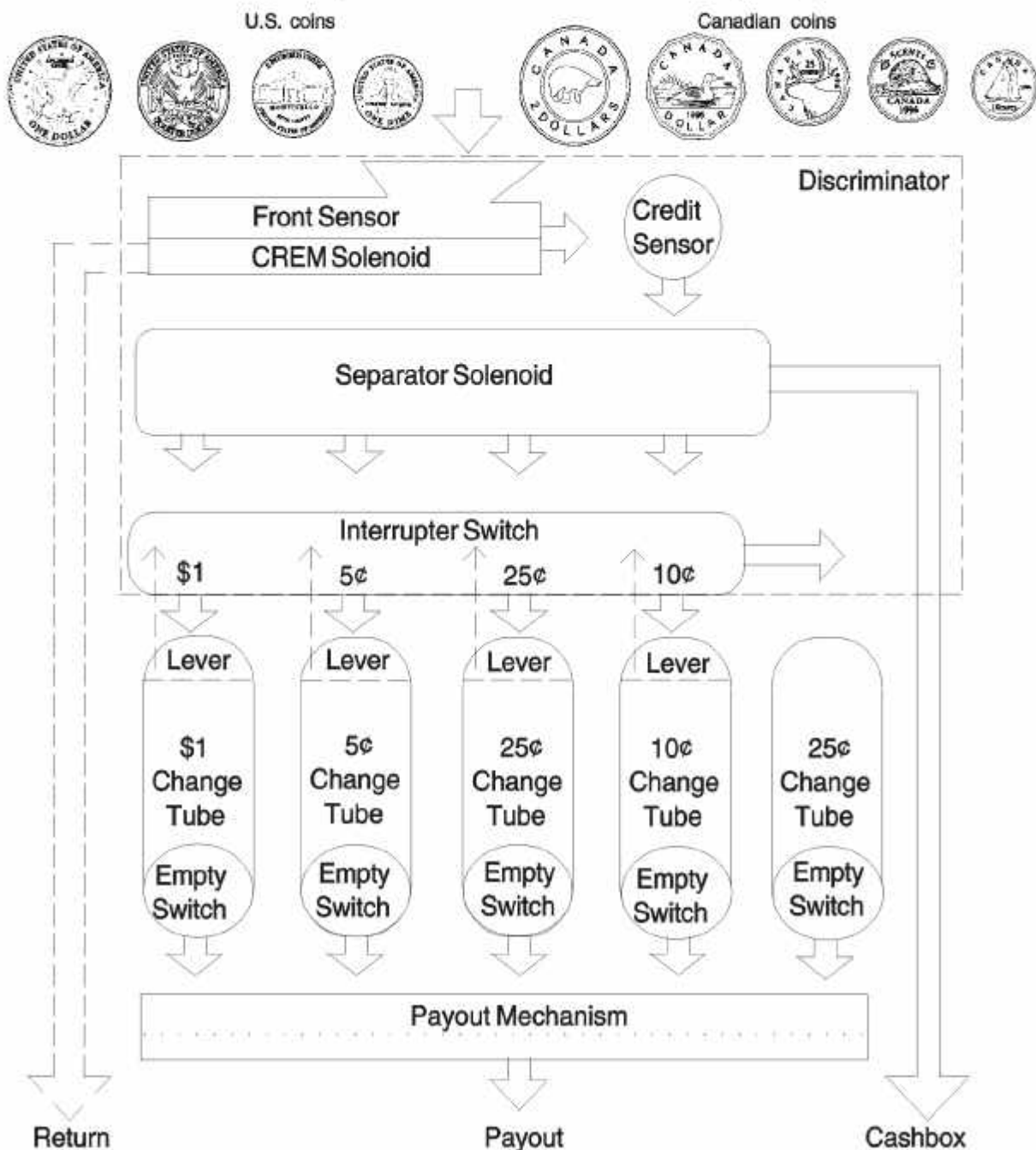


6-2 Flow of Coins

6-2-2 US-4 Cassette

- The front sensor evaluates each inserted coin; if judged genuine, the CREM solenoid operates and coins are routed past the credit sensor to the tubes.
- Canadian \$2 coins are always routed to the cash box.
- Defective coins or slugs are returned, either automatically or by operating the return lever.
- For sensing the number of coins, there is an interrupter switch with a lever at the top section of each automatic coin replenishment tube, along with the coin counter in the software. Based on these two sensing methods, the coin tube full status is sensed.

If either of the two sensing methods detects the full status and a coin of the particular type which has been sensed as full is inserted, it will be delivered to the cash box by the separator solenoid.

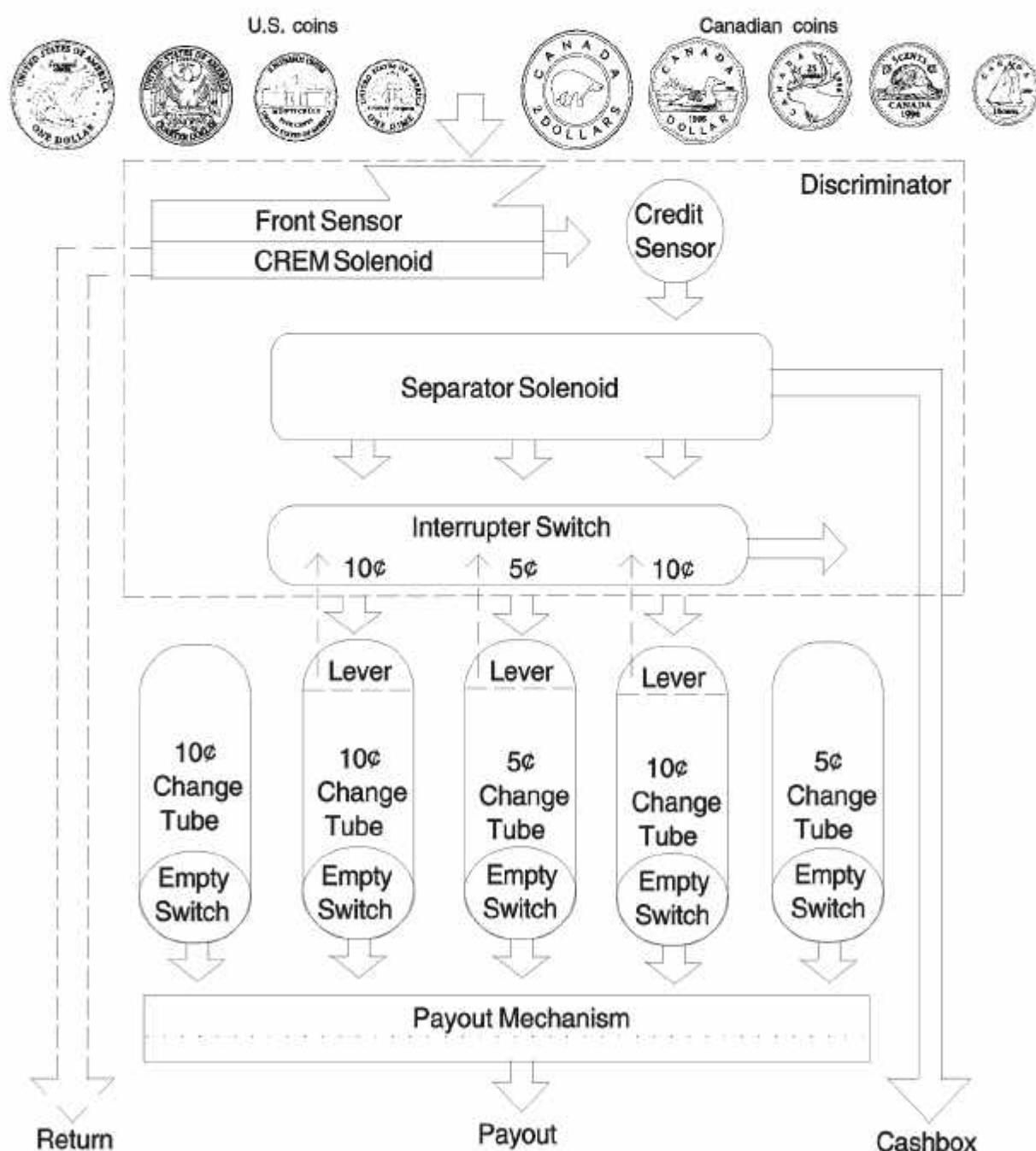


6-2 Flow of Coins

6-2-3 US-5 Cassette

- The front sensor evaluates each inserted coin; if judged genuine, the CREM solenoid operates and coins are routed past the credit sensor to the tubes.
- Canadian \$2 coins are always routed to the cash box.
- Defective coins or slugs are returned, either automatically or by operating the return lever.
- For sensing the number of coins, there is an interrupter switch with a lever at the top section of each automatic coin replenishment tube, along with the coin counter in the software. Based on these two sensing methods, the coin tube full status is sensed.

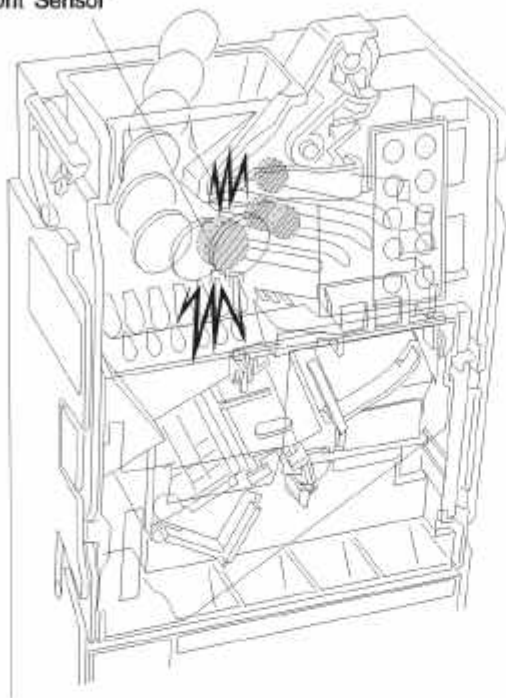
If either of the two sensing methods detects the full status and a coin of the particular type which has been sensed as full is inserted, it will be delivered to the cash box by the separator solenoid.



6-3 Discrimination Method

6-3-1 Discrimination by Metal Content and External Shape (Diameter)

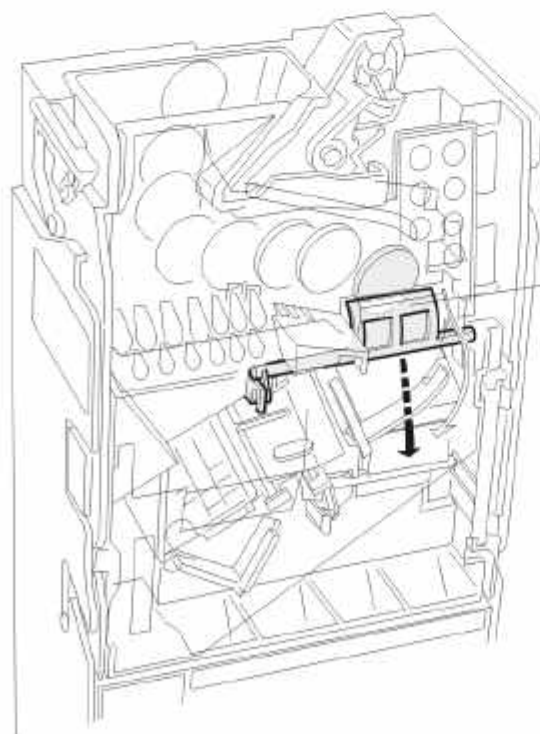
Front Sensor



When coins pass between the front sensors, the metal content and diameter of the coins are checked and compared with the preset reference values of the control board.

A coin is judged to be genuine only when these values match.

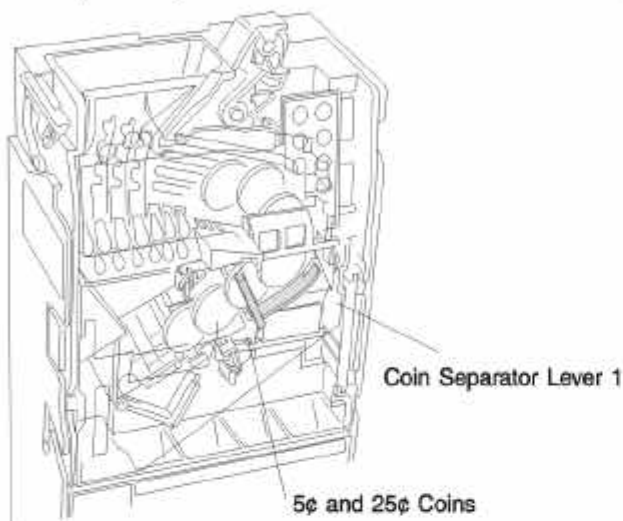
6-3-2 CREM Solenoid and CREM Lever



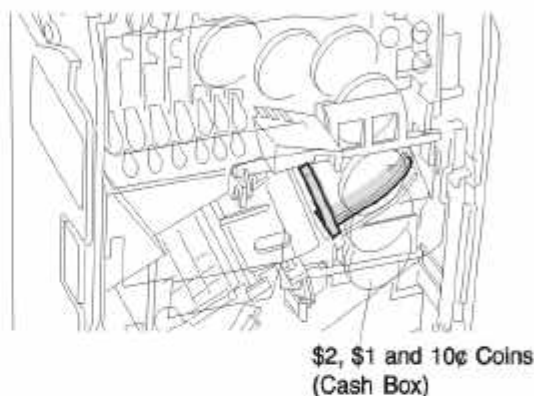
If a coin is judged to be genuine, the CREM solenoid operates, the CREM lever opens and the coin is received. If a coin is judged to be bad (defective), the CREM lever remains closed and the coin is guided to the return chute.

6-3-3 Separator Solenoid and Lever

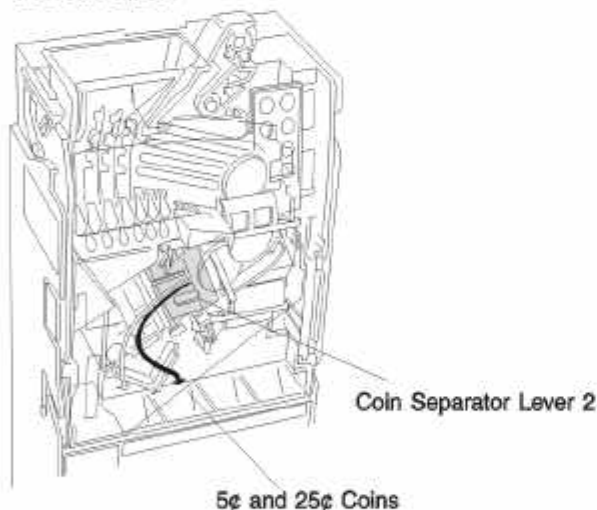
● Separating \$1, \$2 and 10¢ coins from 5¢ and 25¢ coins (or coins to be stored in the cash box)



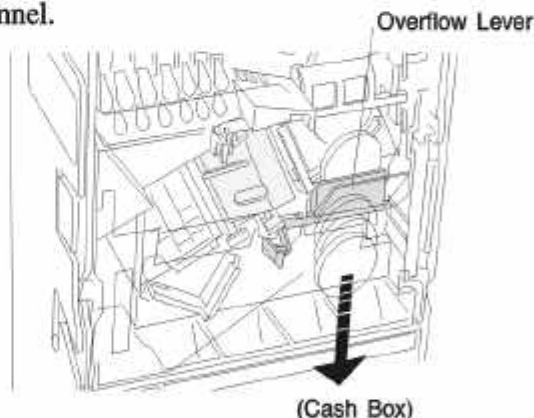
When inserted coins are \$1, \$2 or 10¢ coins or when they are to be sent to the cash box, the coin separator solenoid 1 is activated to open the coin separator lever 1, and the coins are sent to the cash box. When inserting 5¢ or 25¢ coins, the coin separator lever 1 is kept closed and the coins are delivered to the 5¢/25¢ coin channel.



● Separating the coins to be delivered to the 5¢/25¢ coin channel from the coins to be stored in the cash box

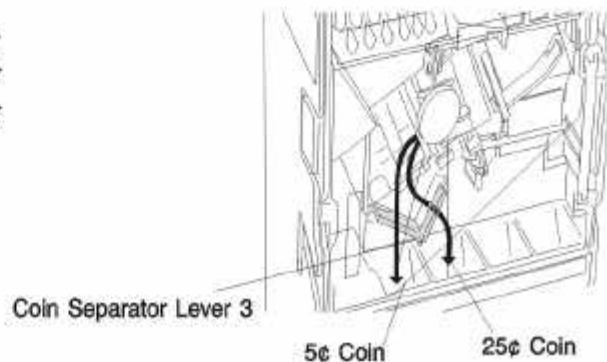


When coins are to be delivered to the 5¢/25¢ coin channel, the coin separator solenoid 2 is activated to close the coin separator lever 2 and allows the coins to be delivered to the 5¢/25¢ coin channel. When coins are to be stored in the cash box, the overflow lever is opened to drop the coins into the cash box channel.



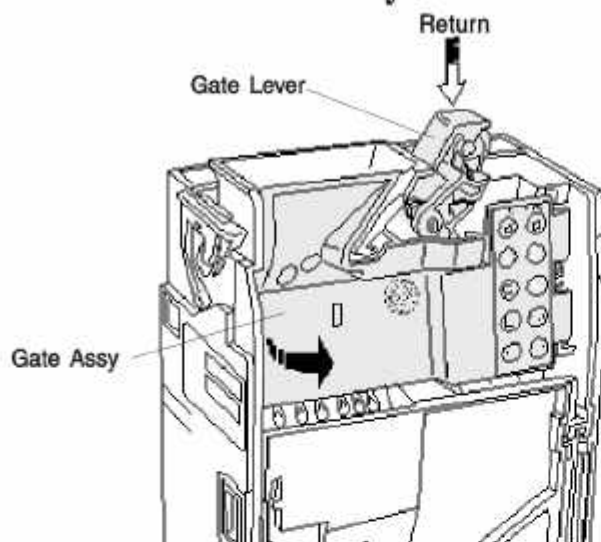
● Separating 5¢ coins from 25¢ coins

For 5¢ coins, the coin separator solenoid 3 is activated to open the coin separator lever 3 to deliver the coins to the 5¢ channel. This lever is closed for 25¢ coins to deliver them to the 25¢ channel.



6-4 Operation of Switches, Sensors and Related Parts

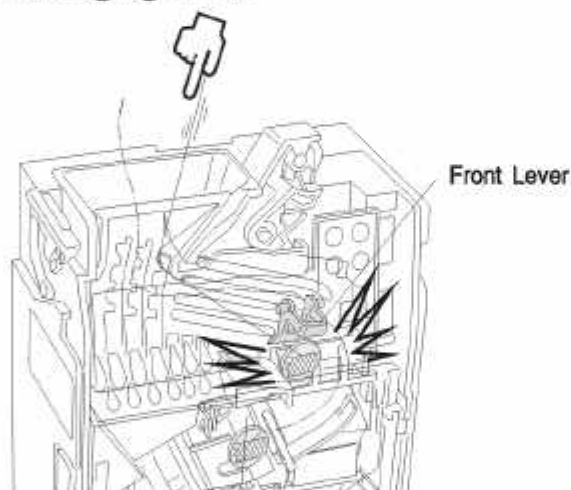
6-4-1 Gate Lever Assembly and Related Parts



When the return lever on the vending machine is operated, it pushes the gate lever down and the gate opens.

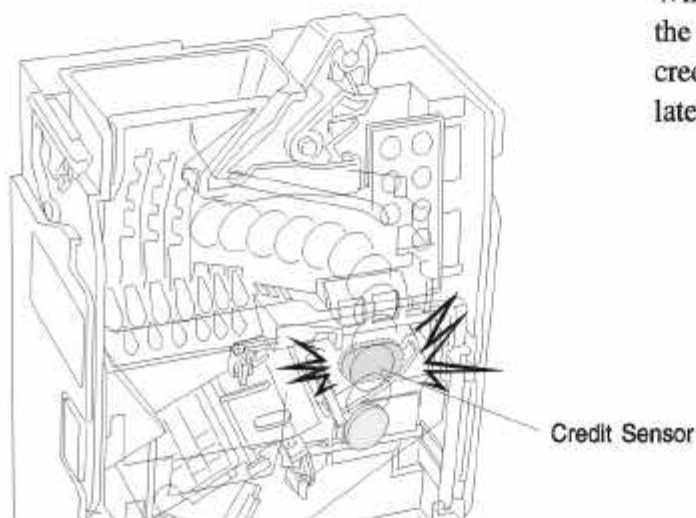
If there are any defective coins, etc., stopped behind the gate, this operation causes them to be guided into the coin return chute. In addition, the movement of the front sensor causes the cancel signal to be sent. (escrow)

6-4-2 Anti-Stringing Hook



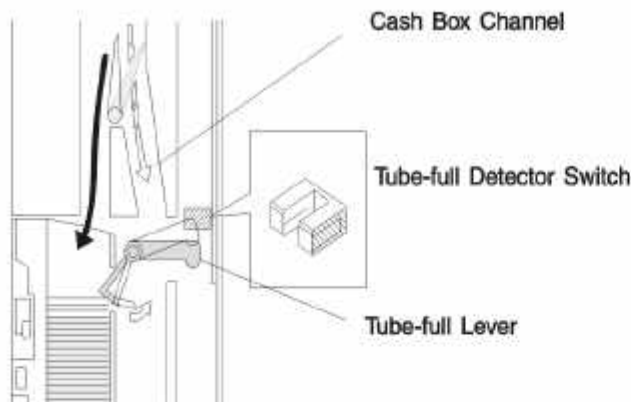
The hook on the housing prevents stringing!

6-4-3 Credit Sensor



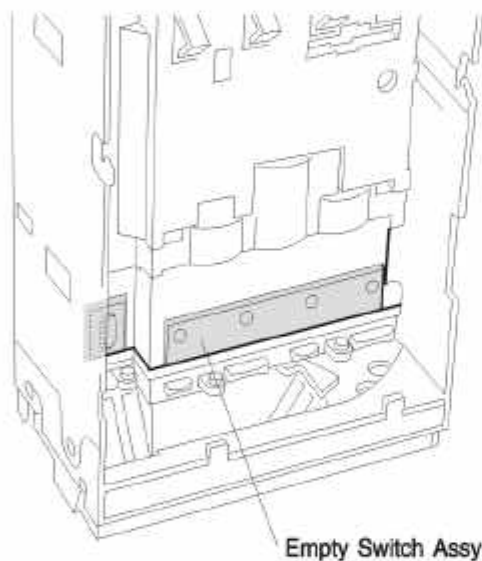
When a coin is determined to be genuine by the front sensor, it will be guided past the credit sensor and its value will be accumulated in the memory of the control board.

6-4-4 Tube-full Detector Switches and Levers



When each coin tube (automatic coin replenishment tube) for 5¢, 10¢, 25¢ or \$1 becomes full, the associated tube-full lever is lifted to activate the respective tube-full switch and thus inform the tube-full status. In this case, the overflowed coins are separated and routed to the cash box.

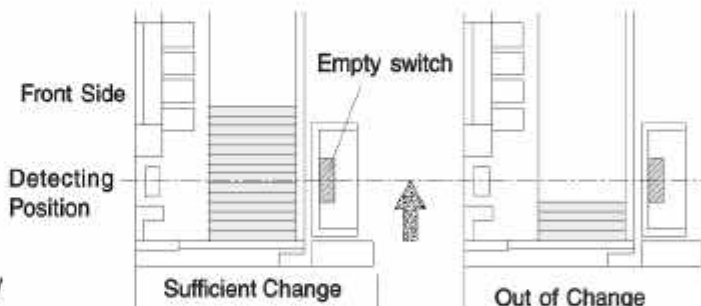
6-4-5 Empty Switches (Proximity Switch)



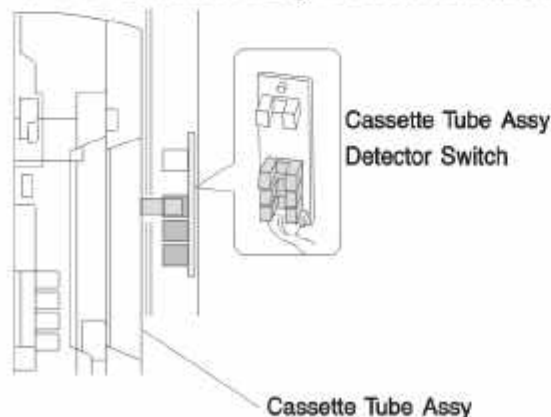
This sensor detects the presence of coins in the change tube.

The coin changer will determine the tubes to be empty when the coins are below the sensor levels.

5¢ coin change tube: 4 coins
10¢ coin change tube: 9 coins
25¢ coin change tube: 6 coins

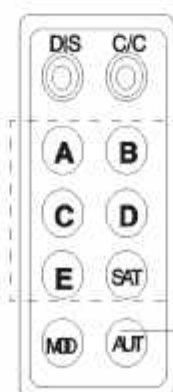


6-4-6 Cassette Assy Detector Switch



1. This switch detects whether the cassette tube assembly has been installed correctly.
2. This switch also detects which cassette has been installed.

6-4-7 Inventory Switches and Simplified Automatic Change Adjusting Switch



Tube inventory switches:
These switches are used to manually collect the extra coins in the tubes.

Automatic change adjusting switch:
This switch is used to automatically collect the extra coins in the tubes.

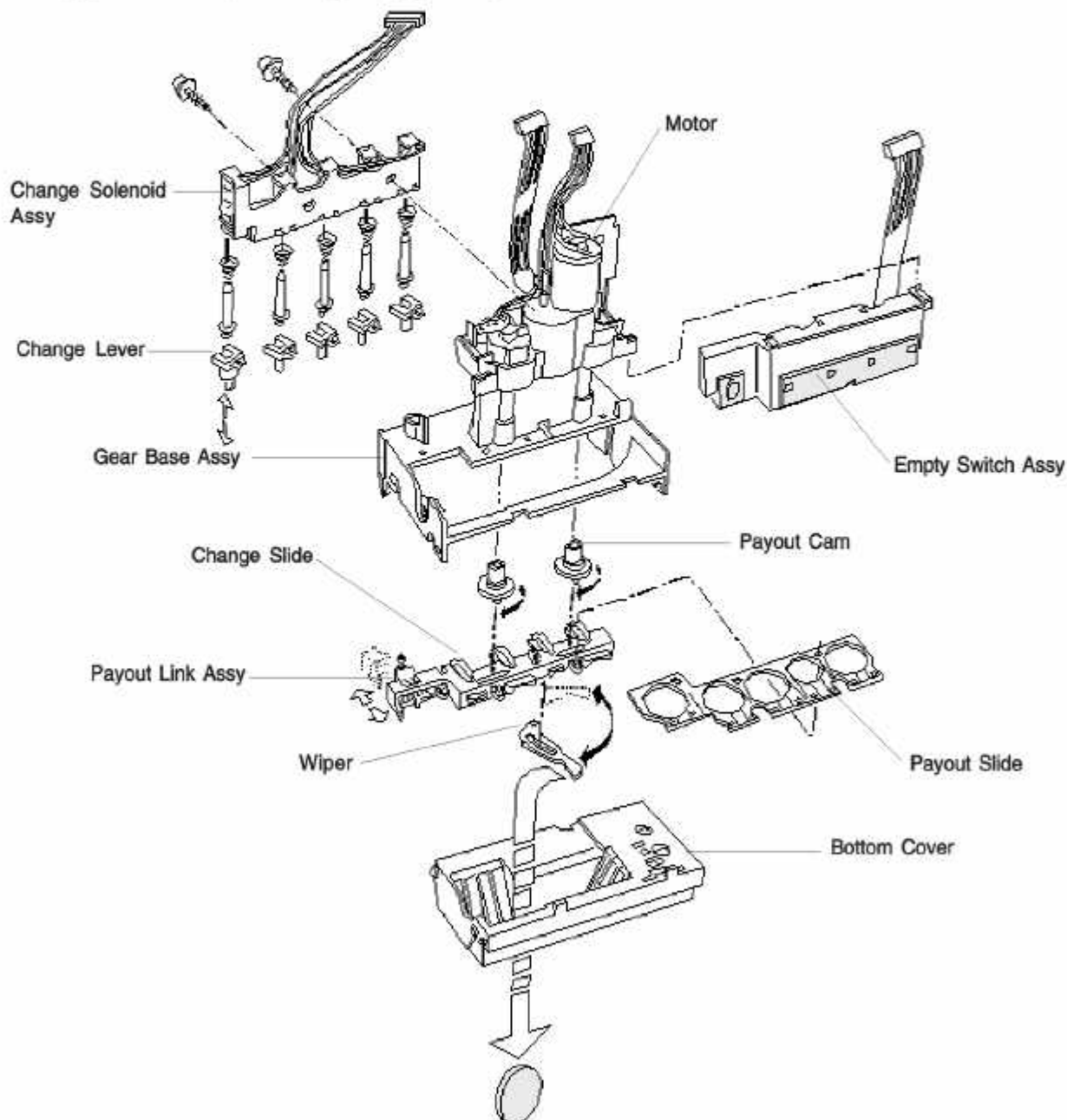
6-5 Payout System

6-5-1 Payout Diagram

When the rotation of the motor is transmitted to the gear, payout cam and payout link assembly, the payout link assembly reciprocates back and forth. This motion is also transmitted to the change slide and the payout wiper.

The change solenoids activate the change levers to control the motions of the change slides.

Coins are carried by the payout link assembly and drop down when the change slides are activated. The dropped coins are paid out by the payout wiper.

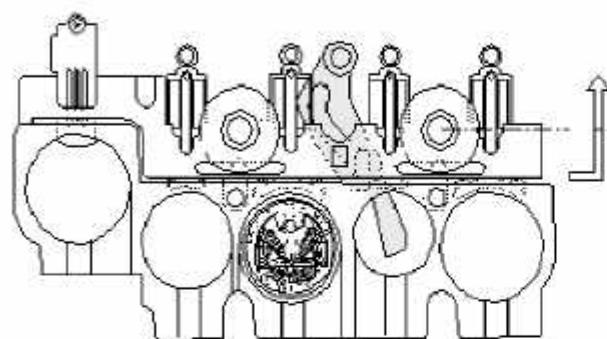


6-5-2 Operation of the Change Solenoids and Payout System

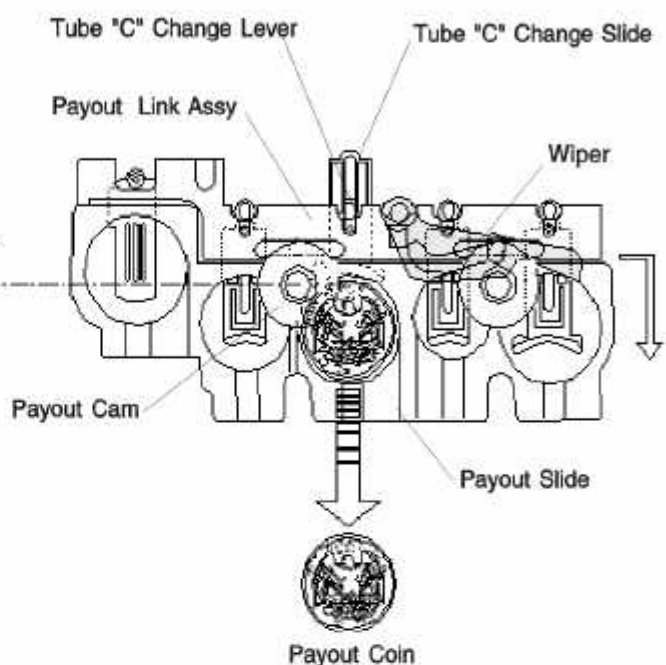
Change solenoids are provided for each coin tube, and the solenoids are activated to dispense coins from the associated coin tube.

6-5-3 Payout of Change

●Standby Status:



●Payout from the "C" tube:



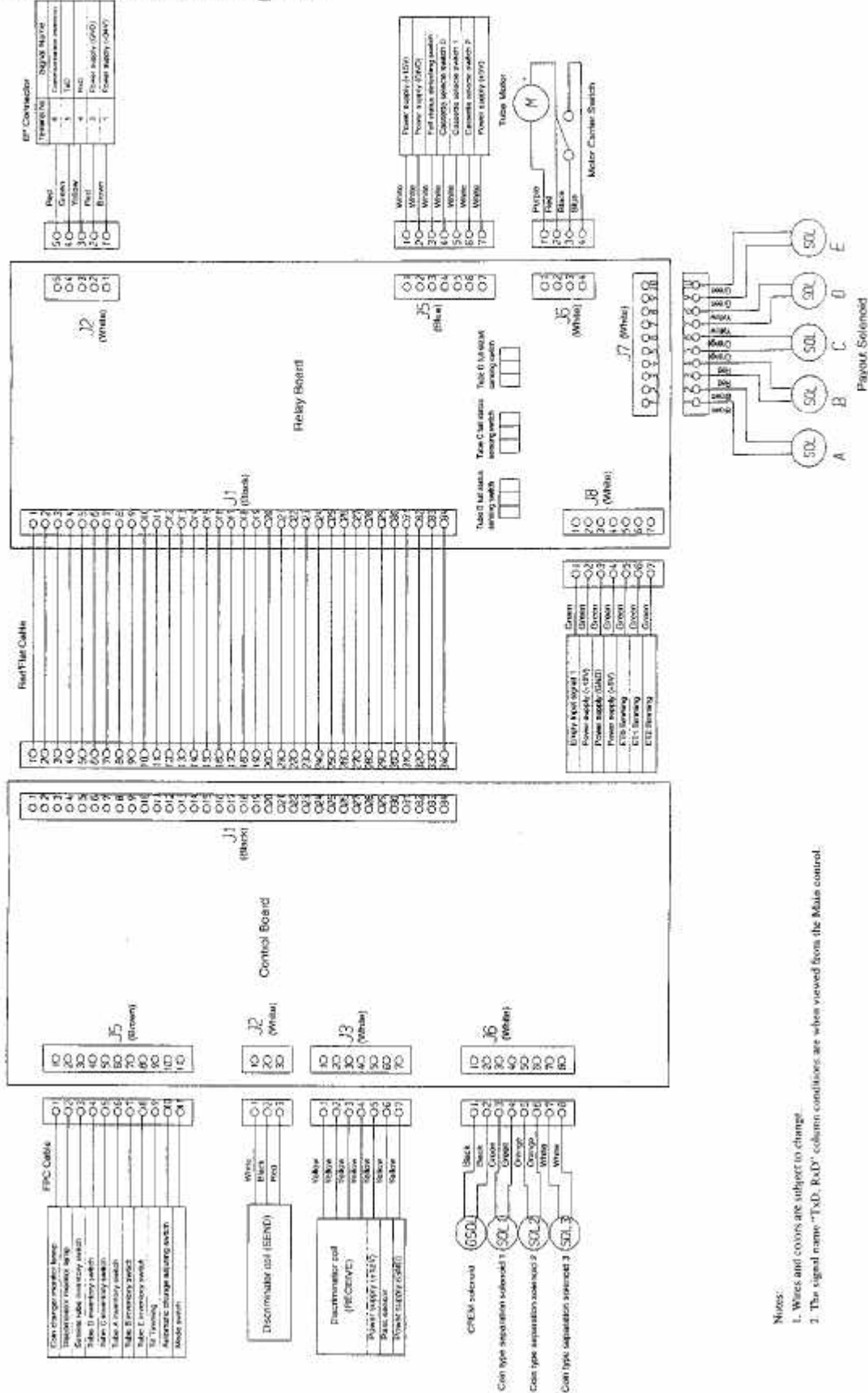
* Operation of the payout wiper *

Coins are paid out by the payout wiper interlocked with the payout link assembly.

- (1) Coins in tube A: The change solenoids for tube A are activated to move the associated change lever. The payout link assembly is activated to move the change slide. The coin carried by the payout link assembly drops down and is dispensed by the payout wiper. Then all the relevant parts return to the standby status.
- (2) Coins in tube B: Operations are the same as 1 except that the change solenoids for tube B are activated.
- (3) Coins in tube C: Operations are the same as 1 except that the change solenoids for tube C are activated.
- (4) Coins in tube D: Operations are the same as 1 except that the change solenoids for tube D are activated.
- (5) Coins in tube E: Operations are the same as 1 except that the change solenoids for tube E are activated.

7. WIRING DIAGRAM

7-1 Terminal Connections/Signals



8. PREVENTIVE MAINTENANCE

The coin changer can become dirty from coins, dust, foreign matter, etc., therefore, good coin acceptance can be maintained by cleaning periodically.

Use mild soap water to remove sticky matter, syrup, etc. **NEVER USE SOLVENTS!**

● **Preparing to clean the discriminator** (Be sure to turn off the power to the coin changer before cleaning.)

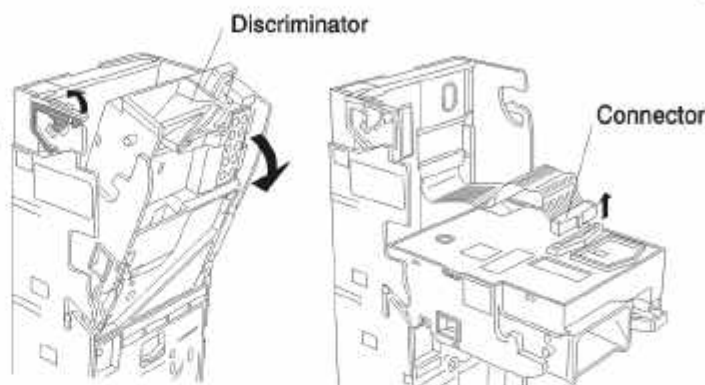
● Removal and installation of the discriminator

* Removal

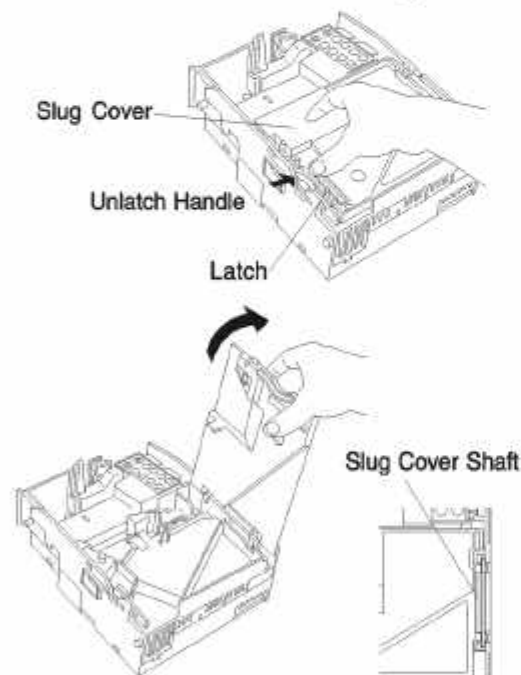
- (1) Turn power off to vendor prior to servicing
- (2) Push the latch up and pull the discriminator towards you.
- (3) Unplug discriminator connector.
- (4) Remove the discriminator.

* Installation

Follow the reverse procedure of removal.



● Removal and installation of the slug cover



* Removal

- (1) Press the unlatch handle on the slug cover with your thumb and pull the cover open towards you.
- (2) Pull the slug cover up to detach it from the main plate.

* Installation

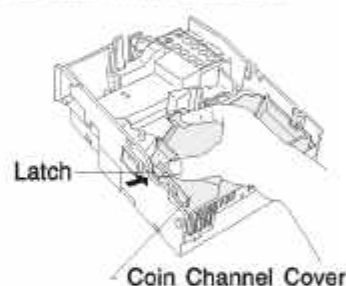
Align the slug cover shaft (to the right on the slug cover) with the notch on the main plate and push the cover until the latch engages with a click.

● Removal and installation of the coin channel covers 1 and 2

(1) Coin Channel Cover 1

* Removal

Press the latch handle on the coin channel cover 1 with your thumb and pull towards you.



* Installation

Align the right latches on the cover with the slot on the main plate and push the cover until the latch engages with a click.



(2) Coin Channel Cover 2

* Removal

Slide the coin channel cover 2 upward, release the lower latch and pull the cover up toward you to detach it.

Slide the cover upward.

Coin Channel Cover 2



* Installation

Attach the upper hook and slide the cover downward to latch it in place.

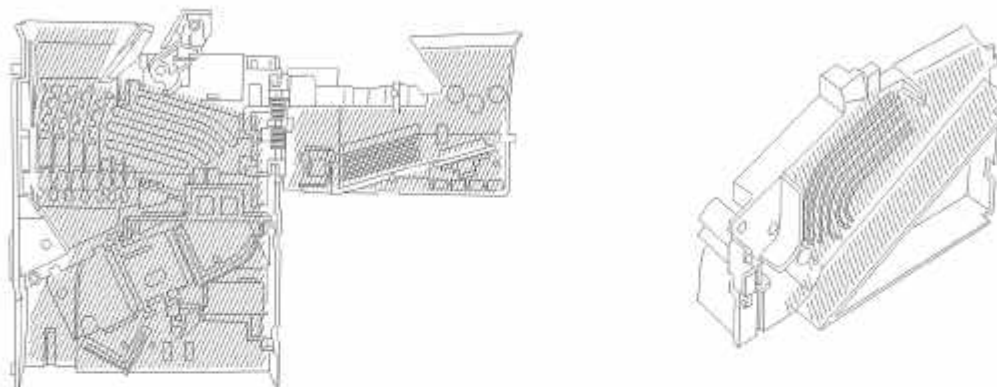
Pull the bottom of the cover up.



● Cleaning the Discriminator

● Cleaning: Keep shaded area clean.

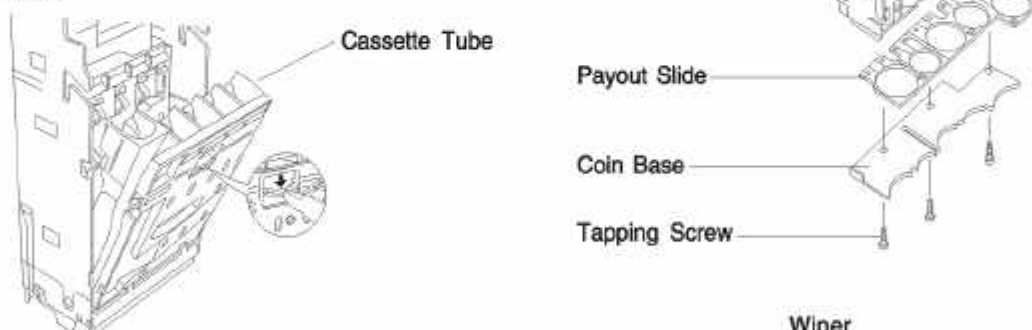
Remove the discriminator from the coin changer. Then remove the slug cover and coin channel covers 1 and 2. Wash these covers with clean soapy water and dry them completely with a dry cloth. Open the gate of the main body and clean the coin channels with a damp cloth. Especially, the portions shaded in the following illustration should be carefully cleaned.



● Cleaning the payout section of the coin changer

● Cleaning the coin base and the payout slide

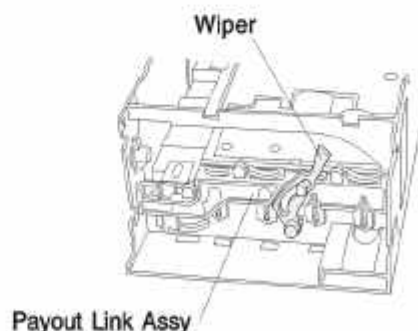
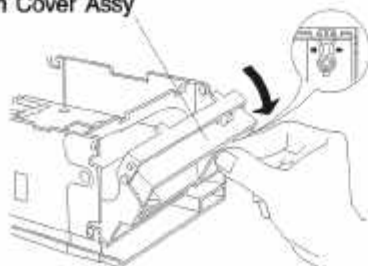
Remove the cassette tube assy. Loosen the three tapping screws to remove the coin base and the payout slide and clean them. *The payout slide can be removed without removing the coin base.



● Cleaning the payout link assy

- (1) Squeeze the latch on the bottom base between two fingers and pull the assy toward you to remove it.
- (2) Clean the payout wiper, the payout link assy and the bottom cover.

Bottom Cover Assy



[Warning]

For usual cleaning, DO NOT remove the payout link assy or payout wiper. If they are very dirty and need to be removed for cleaning, be sure to install them back correctly after cleaning. If incorrectly installed the payout operation will fail.

* After cleaning, insert coins in individual denominations in the normal operation status and confirm proper payout functions.

9. DISASSEMBLY AND ASSEMBLY PROCEDURE

Remove the coin changer in the order written, install in reverse order.

9-1 Disassembly and Assembly of the Main Body of the Coin Changer

PRIOR TO ANY SERVICE ALWAYS TURN POWER OFF TO THE VENDOR!

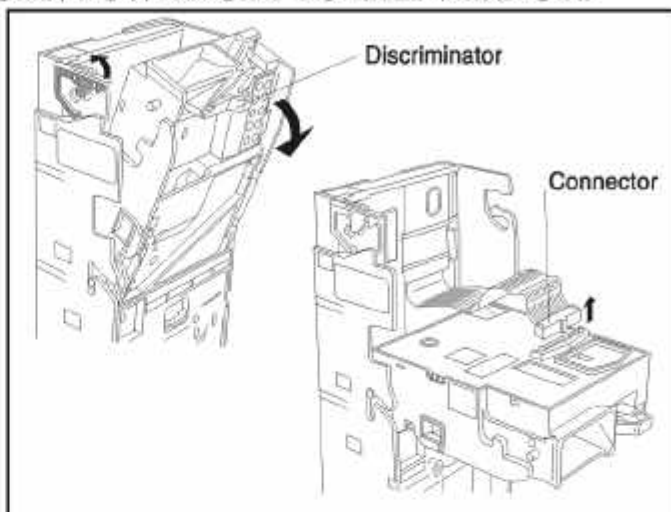
1. Discriminator

Removal:

1. Push the latch up.
2. Pull the discriminator towards you.
3. Disconnect the discriminator connector.
4. Remove the discriminator from the housing.

Installation:

Install in reversed order.



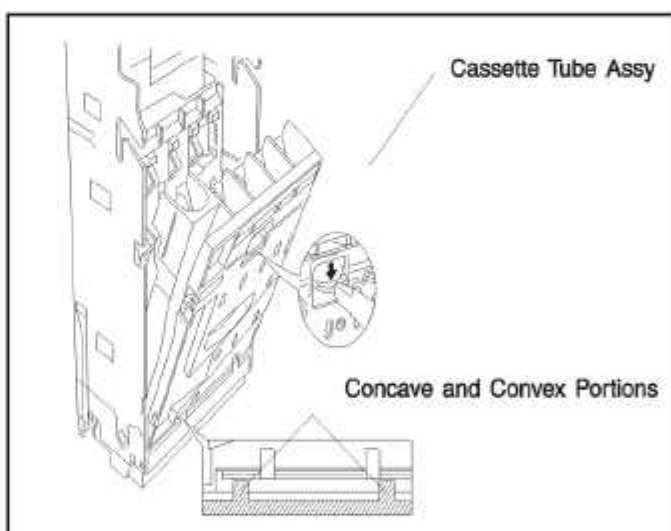
2. Cassette Tube Assembly

Removal:

1. Press the cassette latch down.
2. Pull the cassette tube assy towards you.

Installation:

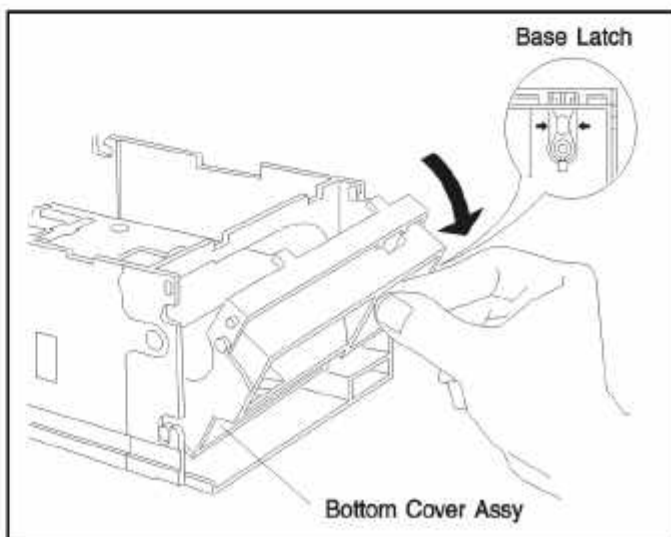
Engage the concave portions of the cassette tube assy with the convex portions of the bottom cover assembly and push the unit until it engages with a click.



3. Bottom Cover Assy

Removal:

1. Squeeze the base latch between two fingers and open the bottom cover assy towards you.
2. Lift the bottom cover assy up a little and pull it out toward you.



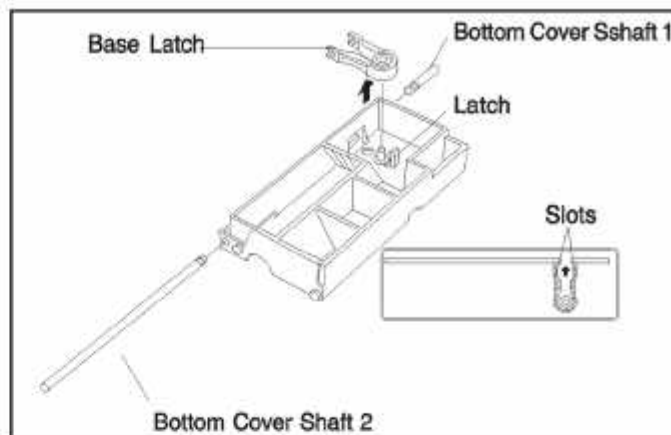
4. Base Latch and Bottom Cover Shaft

Removal:

1. Release the latch that fixes the base latch.
2. Pull the base latch up toward you to detach it.
3. Pull the bottom cover shafts 1 and 2 out from both sides.

Installation:

Engage the concave portions of the base latch with the slots on the bottom cover shafts 1 and 2 as illustrated.



5. Payout Link Assy, Wiper, Change Slide and Change Lever

Removal:

1. Pull the payout link assy out toward you from the bottom of the gear base assy.
2. The wiper and change slides 1, 2 and 3 can be removed for cleaning.

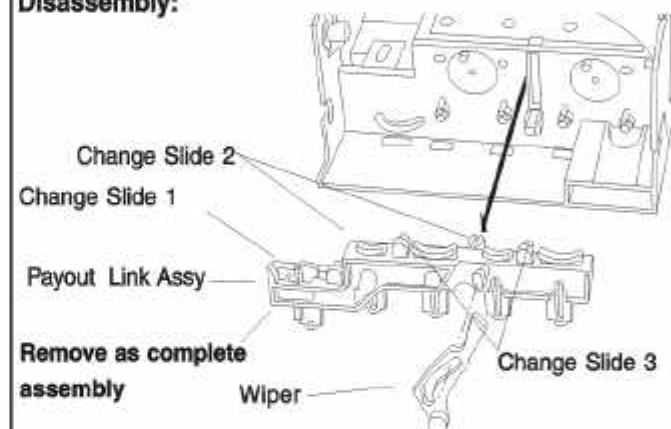
Note: Unless very dirty, DO NOT remove these parts.

Installation:

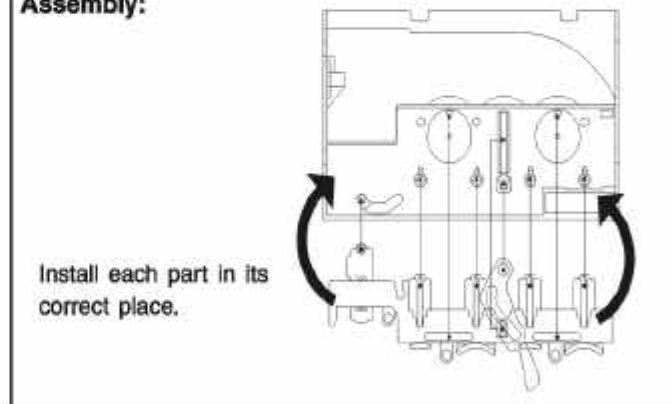
Push the payout link assy into the gear base assy until it is firmly installed.

Note: Be sure to set the payout link assy, change slides and wiper to the standby status as illustrated.

Disassembly:



Assembly:



6. Payout Cam

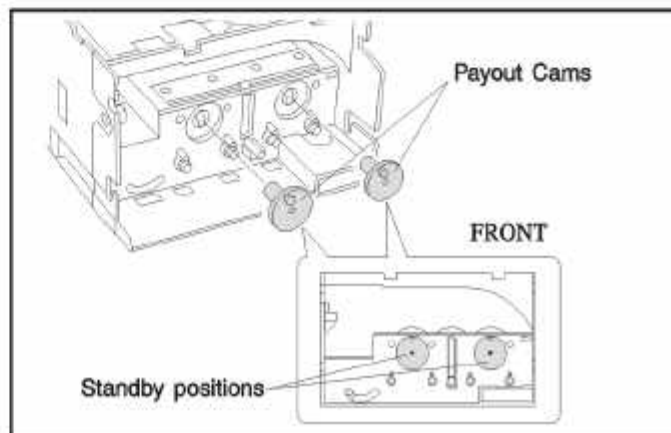
Removal:

1. Pull out the payout cams.

Installation:

Set the payout cams to the standby positions as illustrated.

Note: After any service to the payout area always check the payout of each tube!



7. Center Cover Assy

Removal:

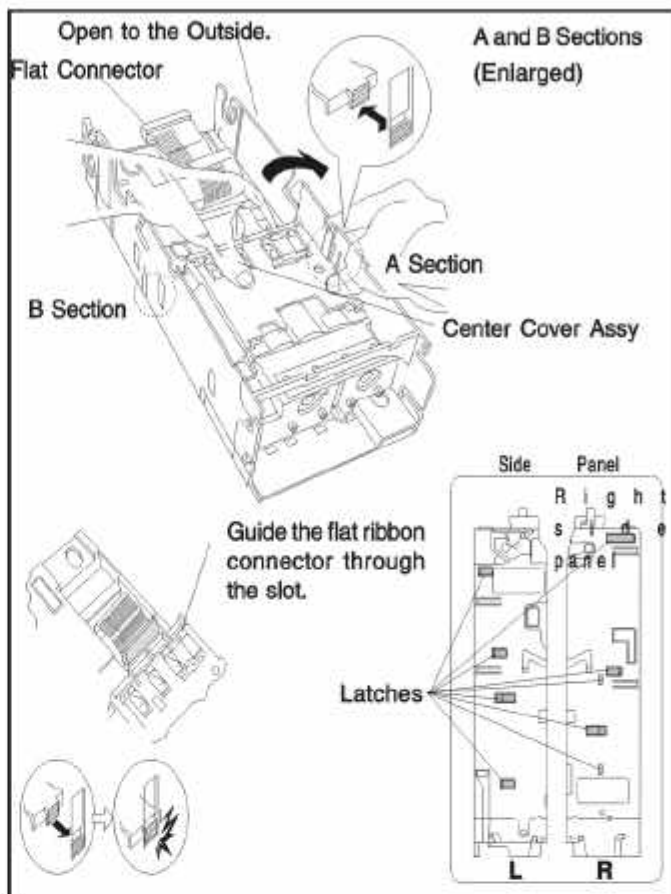
1. Hold the center cover assy with your left hand, press section A with your thumb from inside to allow the right side panel to unlatch from the housing (five latches).
2. Pull the center cover up and release the latch at section B (four latches) left side panel.
3. Guide the flat ribbon connector through the slot.

Note: Be careful not to damage the latches on sections A and B.

Installation:

1. Guide the flat ribbon connector through the slot.
2. Engage the four left latches first and then the five right latches.

Note: Be sure that the latches on sections A and B are firmly engaged.



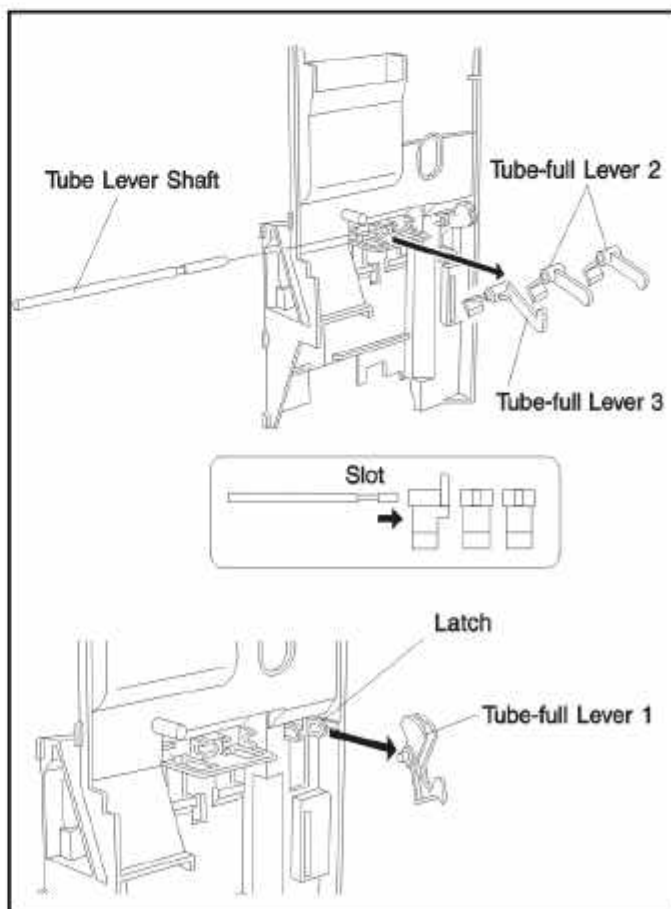
8. Tube-full Lever

Removal:

1. Pull the tube lever shaft out.
2. Then release the three tube-full levers.

Installation:

Be sure the shaft is aligned properly. Insert the tube lever shaft until it is firmly locked. (See the figure.)



● Tube-full lever 1

Removal:

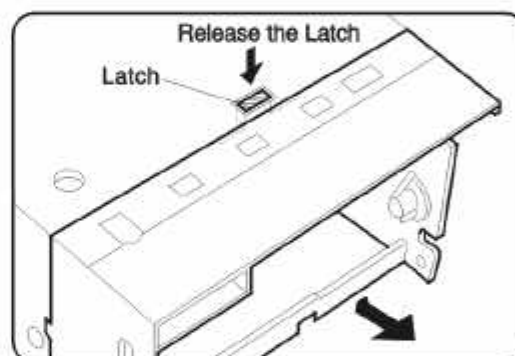
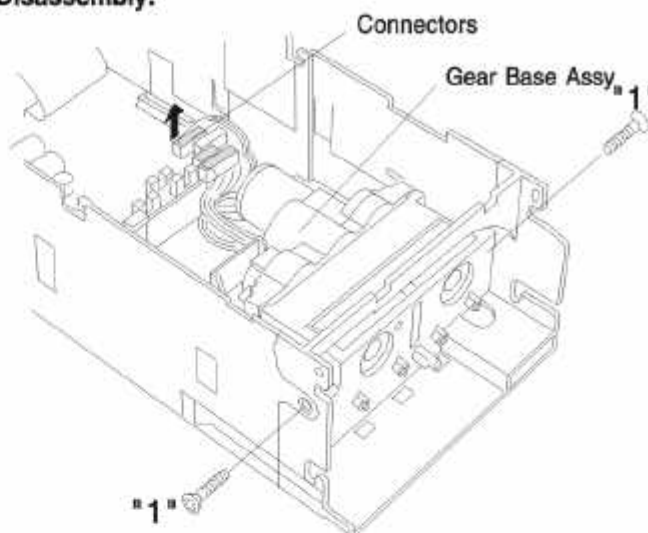
1. Release the latch.

9. Gear Base Assy

Removal:

1. Unplug the three connectors.
2. Remove the cross-headed (flat head) screws M3x8 (2) "1".
3. Release the latch on the rear panel and detach the assembly.

Disassembly:



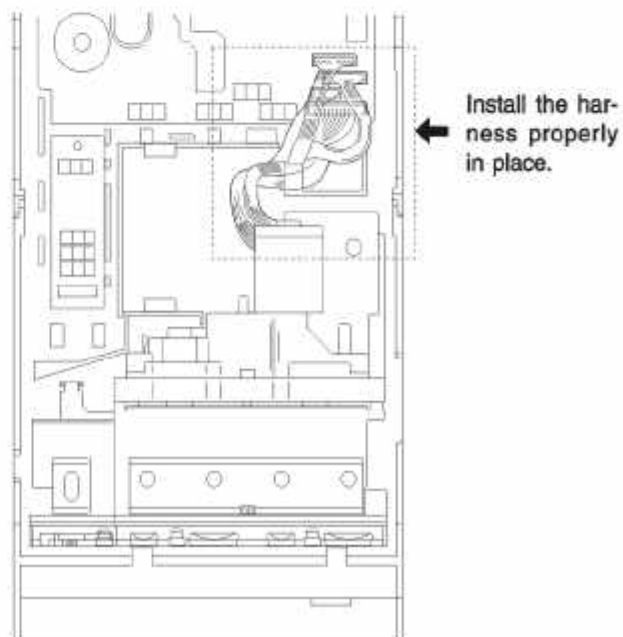
Installation:

1. Engage the latch on the rear panel.
2. Plug in connectors and guide the harness back in place. (See the figure.)

Note:

The harness should be guided very carefully in the exact same way as before the removal. To ensure this, be sure to memorize how the harness is set before removal. If improperly set, it may cause abnormal stress and damage to parts.

Assembly:



10. Change Lever and Change Solenoid

Removal:

1. Cut the harness tie wrap on the back of the gear base assy.
2. Remove two M3x8(2) screws.
3. Remove the harness. Before removal, memorize how the harness is set so that you can properly reinstall it later.
4. Detach the change solenoids and the change levers.

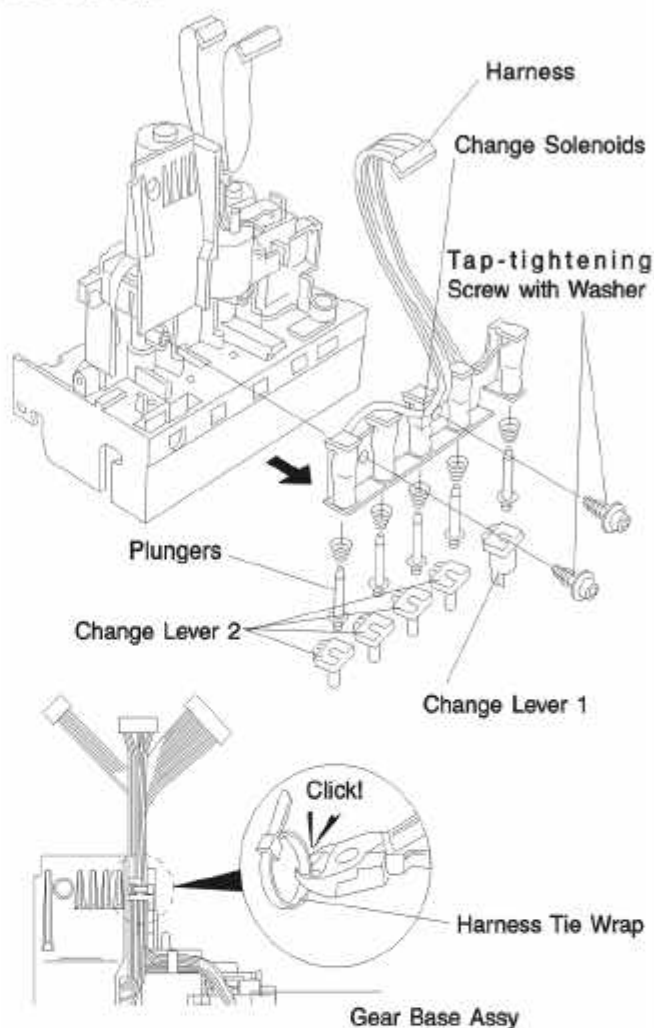
Note:

When you detach the change solenoids, the associated change levers, plungers, and springs are also removed. Keep them together. Do not mix them up!

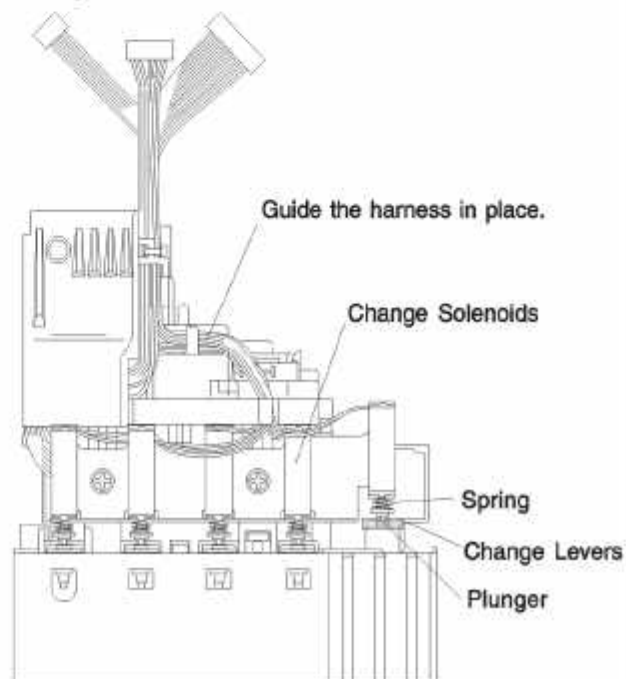
Installation:

1. Insert the plungers of the change solenoids into the slots of the change levers. (See the figure.)
2. Install the harness properly in place as it was before removal. (See the figure.)

Disassembly:



Assembly:



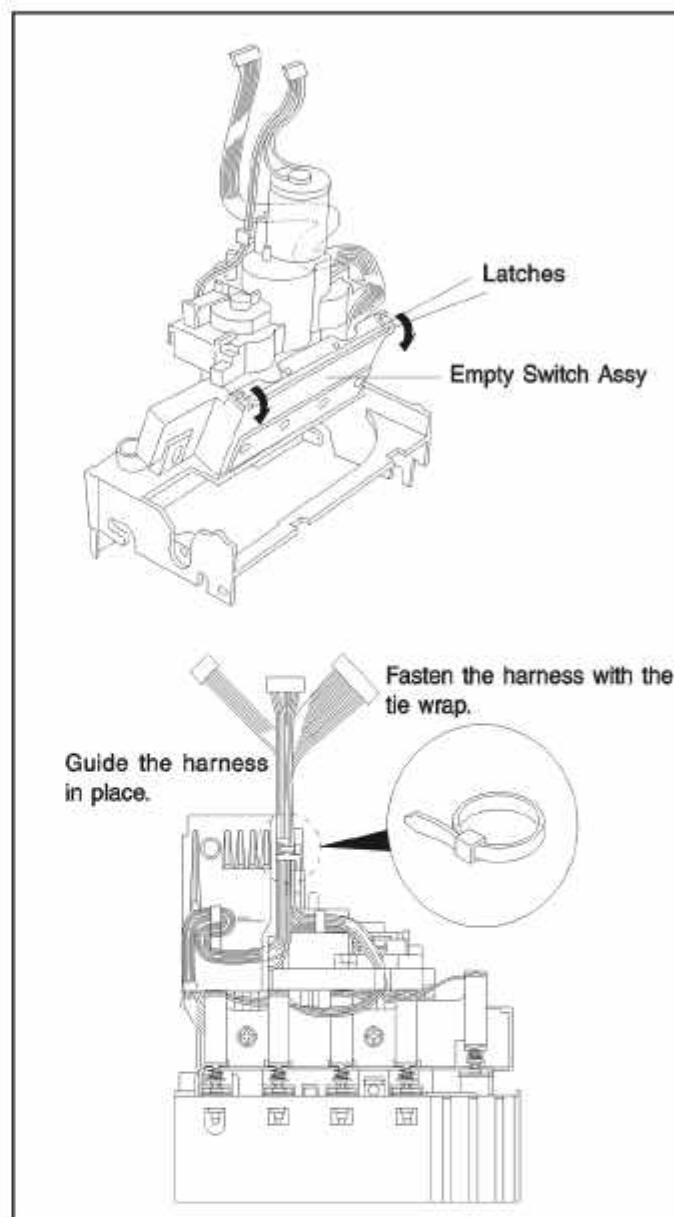
11. Empty Switch Assy

Removal:

1. Remove the harness. Before removal, memorize how the harness is guided so that you can properly reinstall it later.
2. Release the right and left latches and pull the empty switch assy out.

Installation:

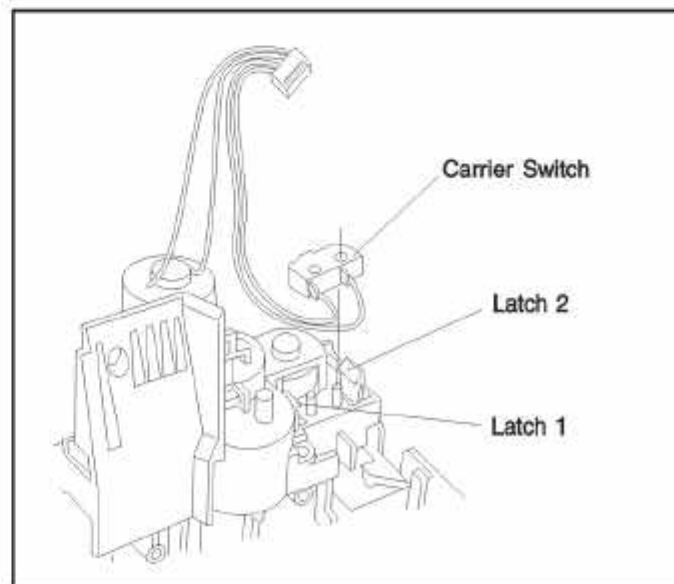
1. Install the harness properly in the same place as before removal.
2. Bundle the harness and fasten it with the tie wrap.



12. Carrier Switch Assy

Removal:

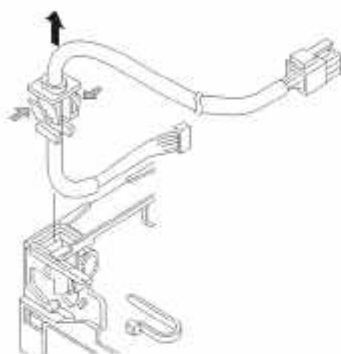
1. Release latch 1 and latch 2.
2. Remove the carrier switch.



13. Power Supply Harness Assy

Removal:

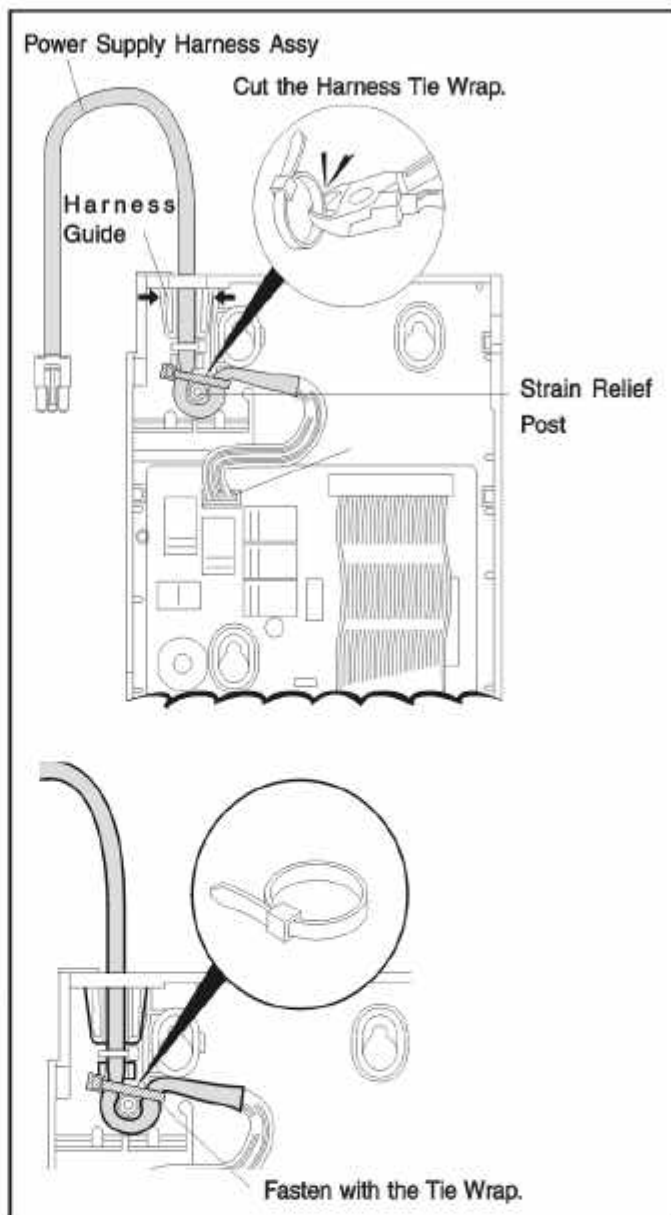
1. Cut the harness tie wrap from the power supply harness assy.
2. Disconnect the connector from the board.
3. Release the right and left latches on the harness guide and remove the power supply harness assy together with the connector.



Installation:

1. Mount the power supply harness assy back in place and fasten the harness with the tie wrap as illustrated.

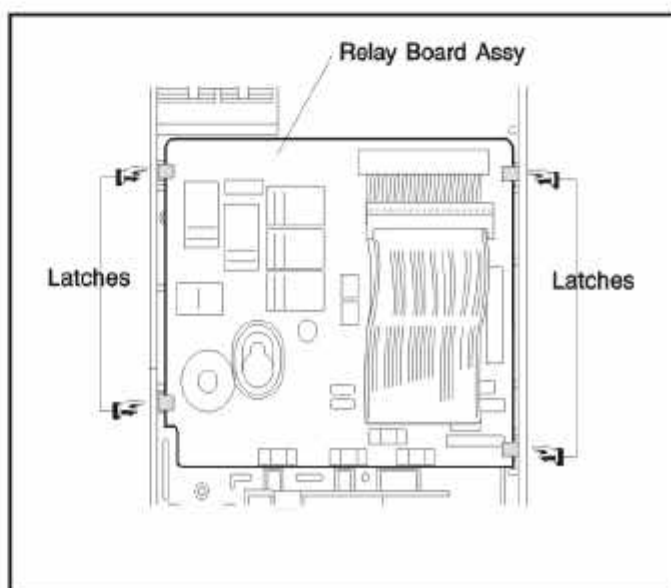
Note: Make sure the harness guide latches back into place.



14. Relay Board Assy

Removal:

1. Disconnect all harnesses.
2. Release the four latches on the housing and remove the board.



15. Cassette Switch Board Assy

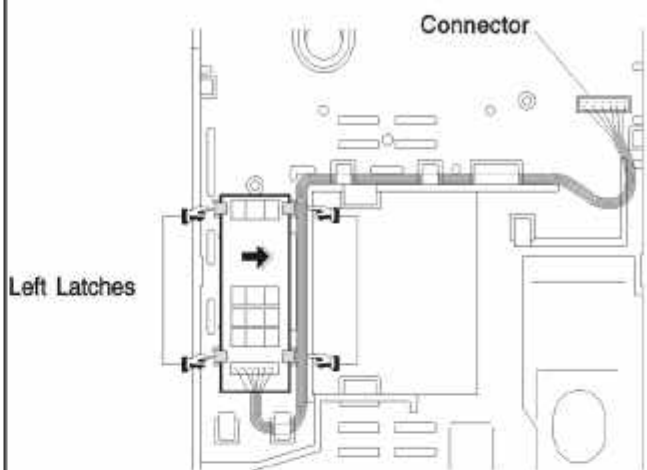
Removal:

1. Remove the harness.
2. Release the two left latches on the switch board assy.
3. Release the two right latches on the switch board assy.

Installation:

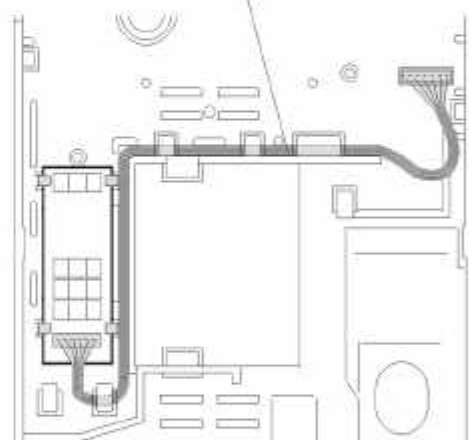
1. Guide the harness in place. (See the figure.)

Disassembly:



Assembly:

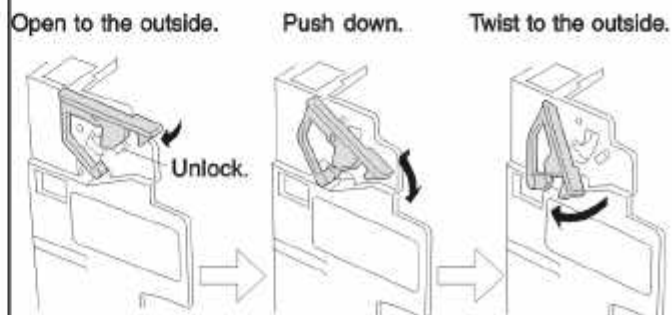
Guide the harness in place.



16. Discriminator Latch

Removal:

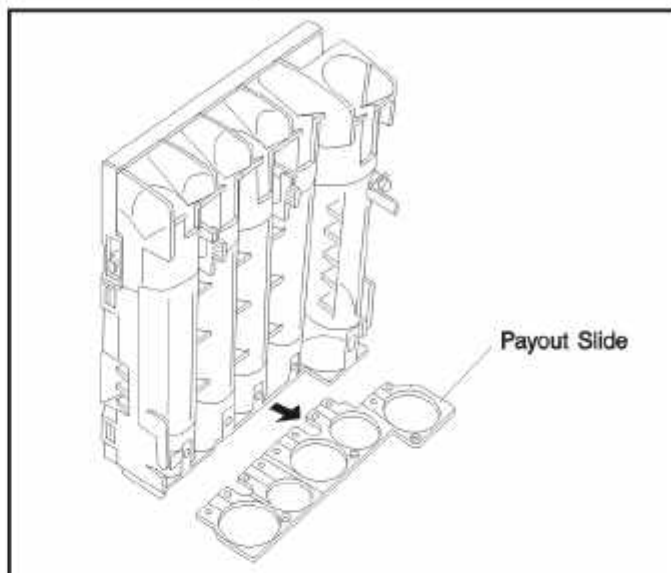
1. Release the lock and open the latch to the outside.
2. Push the latch down.
3. Twist the latch to the outside.



9-2 Disassembly and Assembly of the Cassette Tube Assy

1. Payout Slide

1. Pull out the payout slide.



2. Tube Cover

Removal:

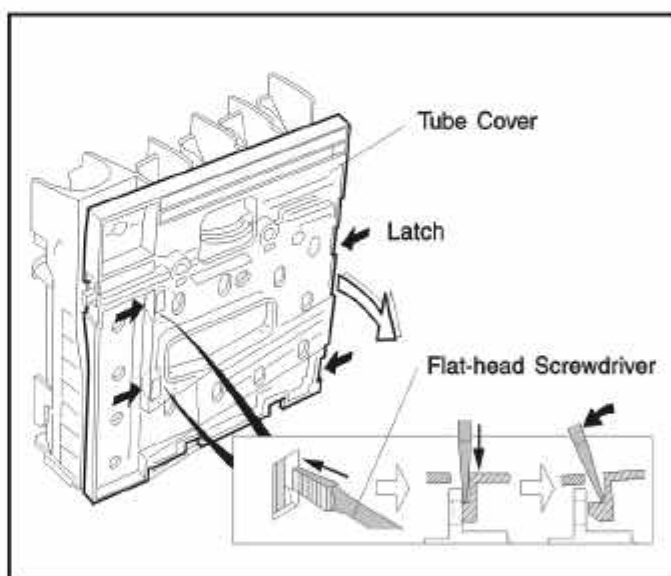
1. Release the two right latches.
2. Release the upper left latch.
3. Release the lower left latch.

Note:

The left latch is engaged very firmly, you may need extra force to unlatch.

Installation:

Engage the two left latches first, then the two right latches.



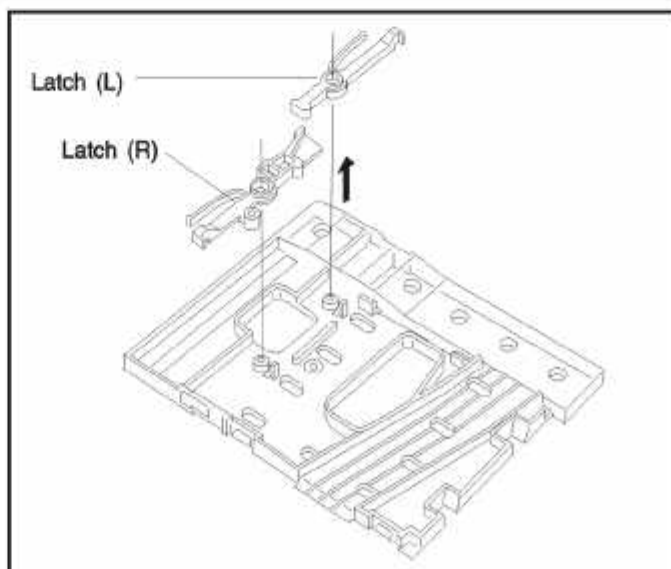
3. Latch (R), (L)

Removal:

1. Release the latch (L).
2. Release the latch (R).

Installation:

Engage the latch (R) before the latch (L).



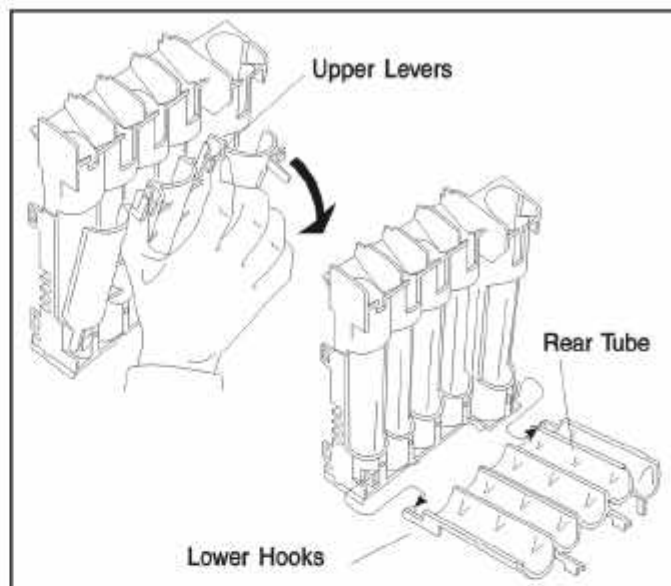
4. Rear Tube

Removal:

1. Squeeze the upper levers between two fingers and pull the rear tube toward you.
2. Release the left and right hooks.

Installation:

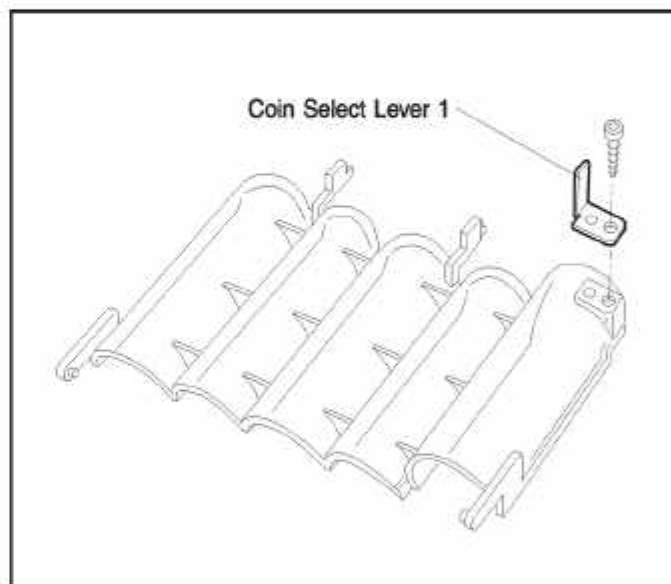
Engage the left and right hooks on the bottom first. Then close the rear tube.



5. Select Lever (1)

Removal:

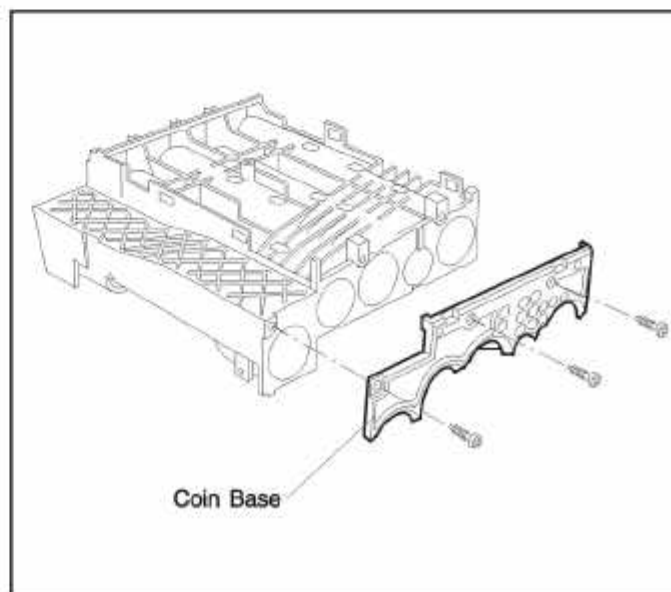
1. Remove one tapping screw M3x5(1).



6. Coin Base

Removal:

1. Remove three tapping screw M3x8(3).



9-3 Disassembly and Assembly of the Discriminator

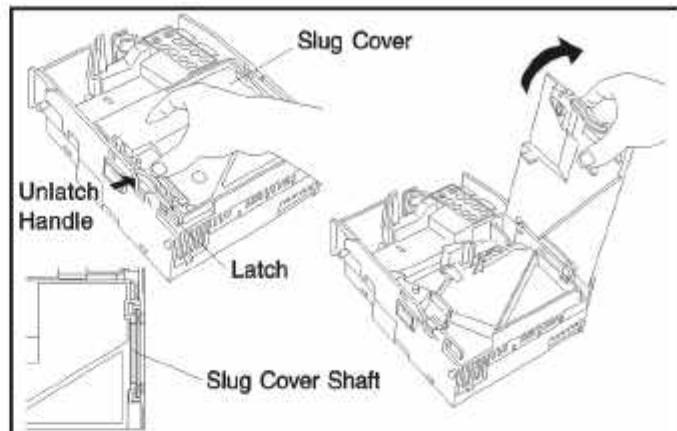
1. Slug Cover

Removal:

1. Press the unlatch handle on the slug cover with your thumb and pull the cover open toward you.
2. Pull the slug cover up to detach it.

Installation:

Align the slug cover shaft on the right with the notch on the main plate and push in the cover until the latch engages with a click. Then close the cover.



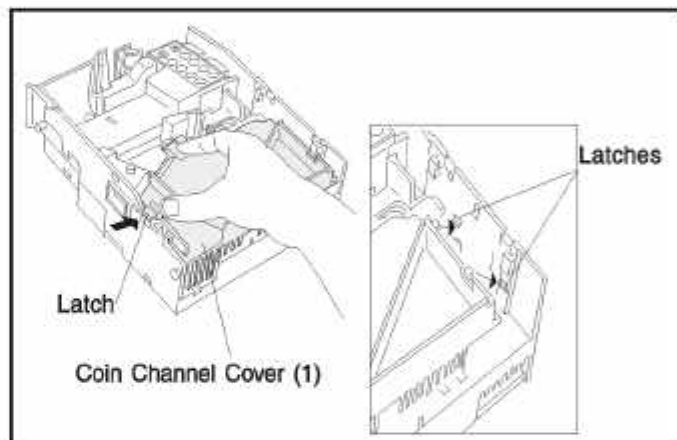
2. Coin Channel Cover (1)

Removal:

Press the unlatch handle on the coin channel cover (1) with your thumb and pull the cover open toward you.

Installation:

Align the latches on the right with the slots on the main plate and push the cover in until the latch engages with a click.



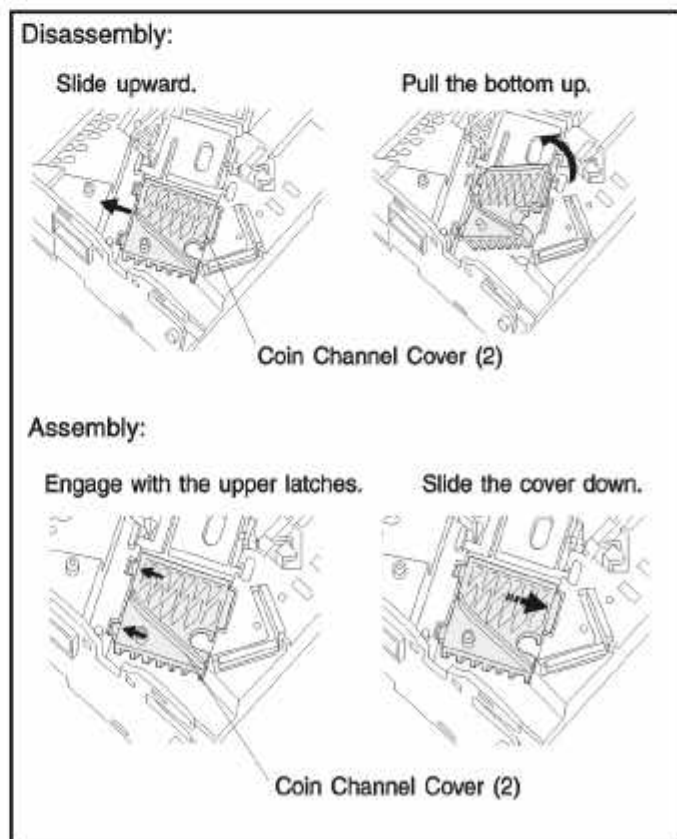
3. Coin Channel Cover (2)

Removal:

1. Slide the coin channel cover (2) upward and release the lower latch.
2. Pull the bottom of the cover up to detach the cover.

Installation:

1. Engage the upper latches.
2. Slide the coin channel cover (2) down to lock it in place.



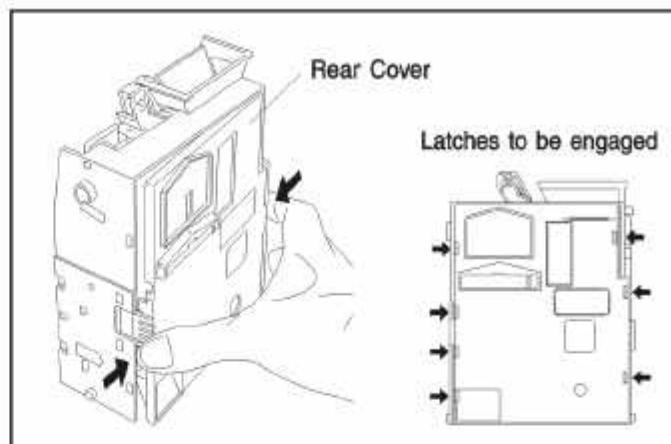
4. Rear Cover

Removal:

1. Press the unlatch handles on both sides of the middle part of the rear cover.
2. Pull the cover toward you to detach it.

Installation:

1. Hold the cover by the unlatch handles and push it back in place.
2. Confirm that all the latches are firmly engaged.



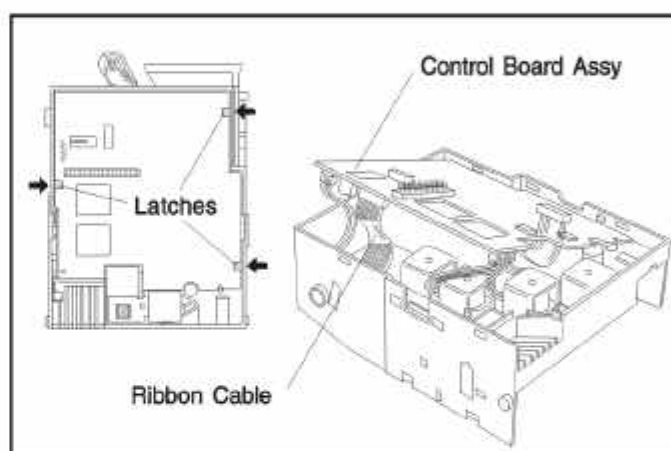
5. Control Board Assy

Removal:

1. Release the left latch and then the two right latches.
2. Lift the control board assy up a little to disconnect the three connectors and the ribbon cable.

Installation:

When connecting the connectors to the control board assy, insert the ribbon cable coming out of the gate assy into the terminal on the board. Be careful not to bend or twist the cable.



6. Gate Assy

Removal:

1. Unlatch the gate spring using a flat-head screwdriver.
2. Detach the gate assy.

Take special care not to cut or twist the ribbon cable.

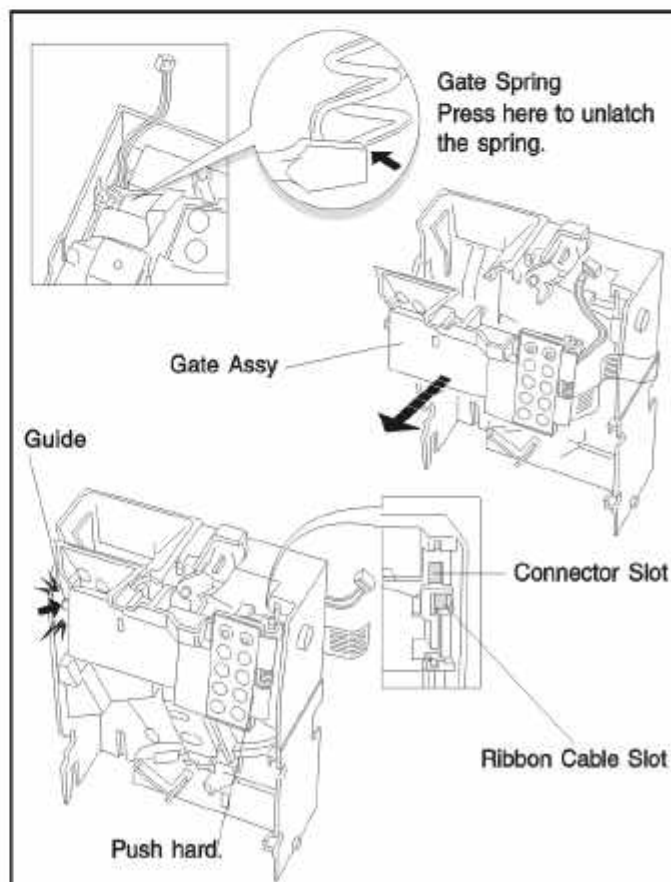
Installation:

1. Pass the connector and the ribbon cable through their slots on the main plate.
2. Latch the gate spring onto the main plate using a flat-head screwdriver.
3. Push hard on the right side of the gate against the spring.

Note:

Handle the gate spring with care as the spring is strong.

Take special care not to damage the guide on the left side of the gate assy.



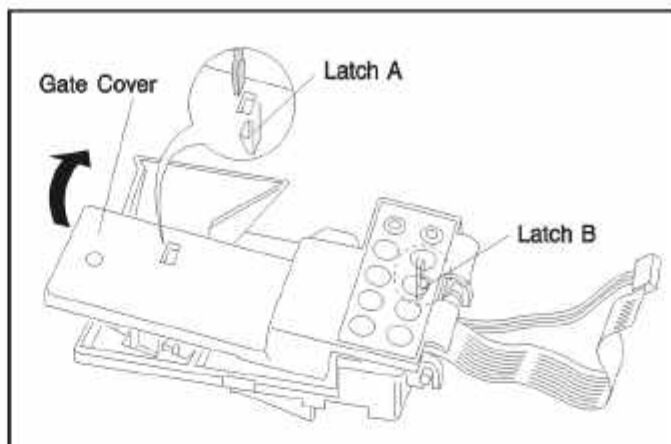
7. Gate Cover

Removal:

1. Release latch A using a flat-head screwdriver.
2. Pull up the left side of the gate cover and release latch B.
3. Detach the cover.

Installation:

1. Engage latch B.
2. Engage latch A.



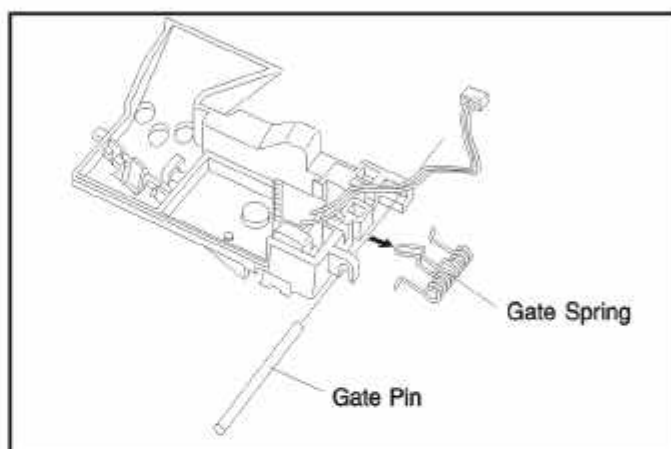
8. Gate Spring and Gate Pin

Removal:

Pull the gate pin out to detach the gate spring.

Installation:

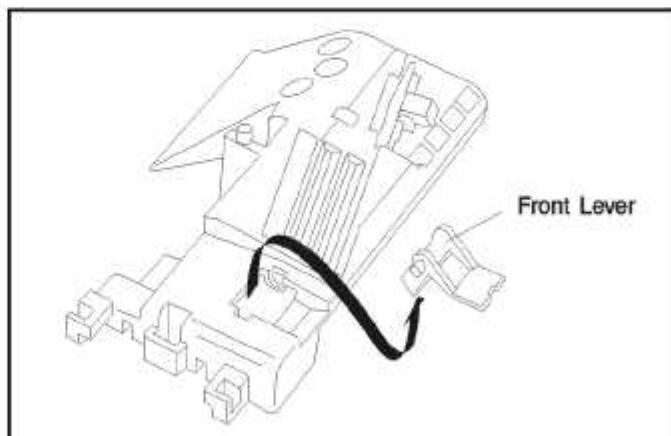
When installing, handle the gate spring with care the spring is strong.



9. Front Lever

Removal:

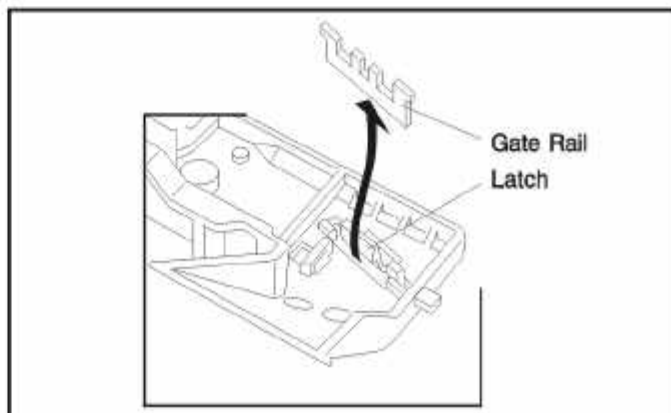
1. Release the latches on both sides.
2. Pull the lever out toward you to detach it.



10. Gate Rail

Removal:

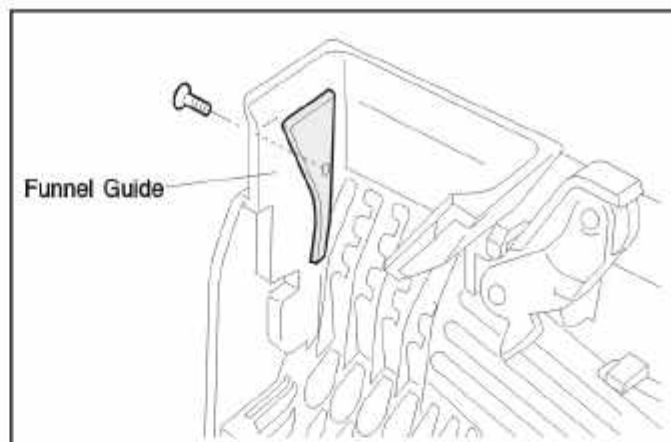
1. Release the latch.
2. Pull the rail out.



11. Funnel Guide

Removal:

1. Remove the (flat-head) screw M3x0.5x4(1).
2. Pull the funnel guide out.



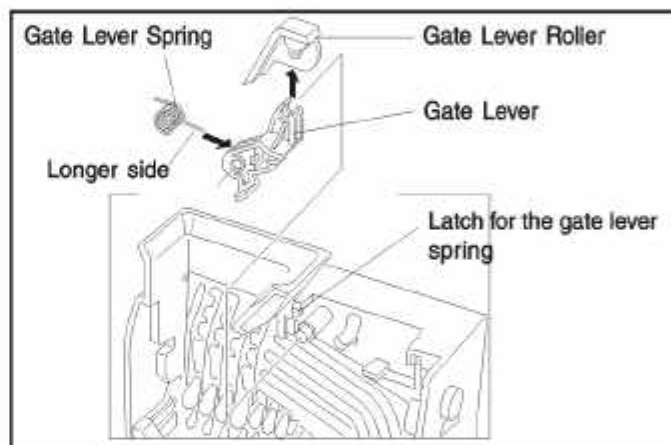
12. Gate Lever, Gate Lever Roller and Gate Lever Spring

Removal:

1. Unlatch the spring using a screwdriver.
2. Detach the gate lever assy from the main plate.

Installation:

Mount the gate lever assy back in place.
Be sure the gate lever spring is aligned properly.



13. CREM Lever

Removal:

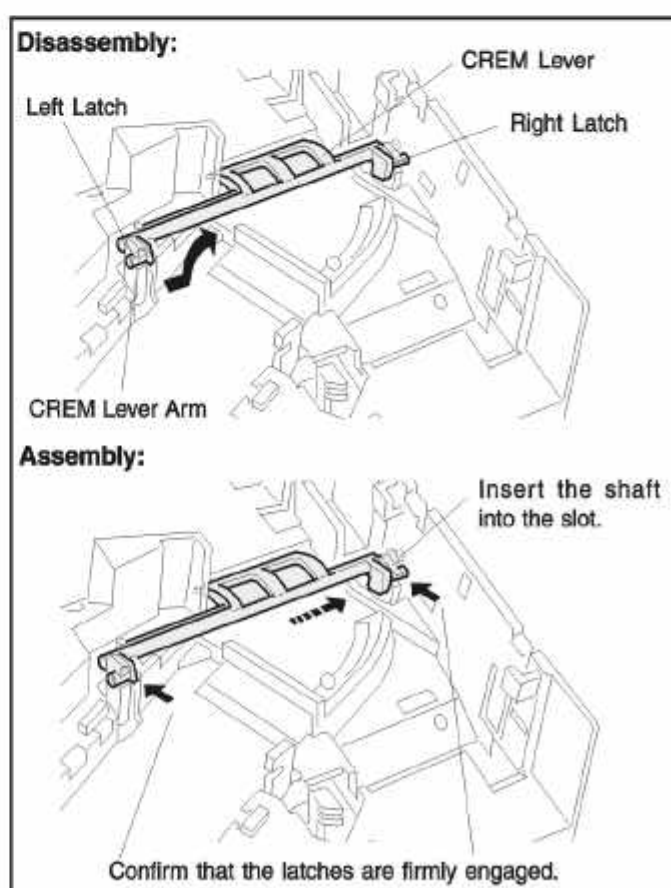
1. Release the left latch and then the right latch of the CREM lever arm.
2. Pull the CREM lever up.

Installation:

Insert the shaft of the CREM lever into the right and then left slots on the main plate.

Note:

Confirm that the right and left latches of the CREM lever are firmly engaged with the slots of the CREM lever arm.



14. Separator Lever (2)

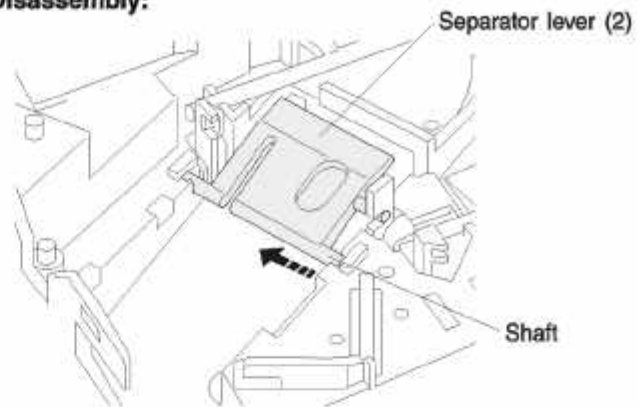
Removal:

1. Slide the separator lever (2) upward.
2. Unlatch the lower shaft.
3. Pull the lever out.

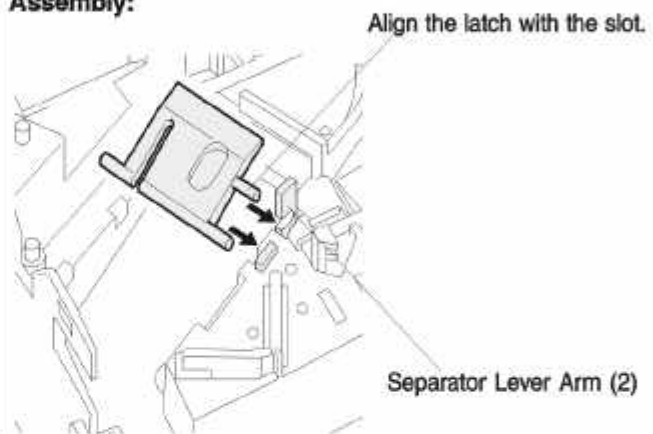
Installation:

Be sure to align the latch of the separator lever (2) with the slot of the separator lever arm (2).

Disassembly:



Assembly:



15. Overflow Lever

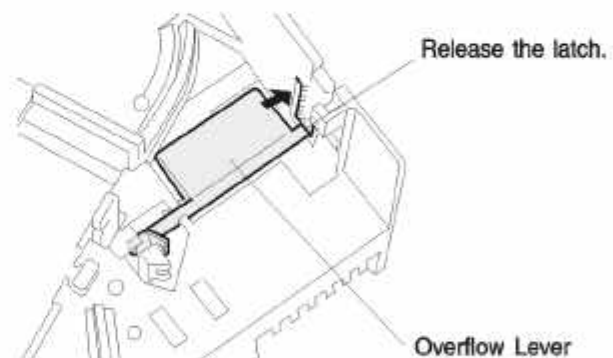
Removal:

1. Release the right latch on the main plate.
2. Pull the overflow lever out.

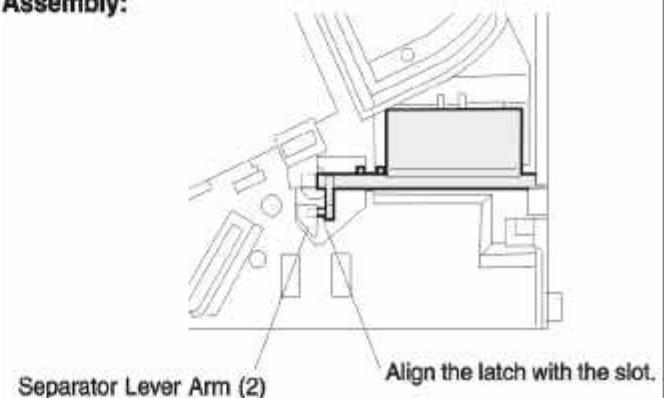
Installation:

Be sure to engage the latch of the overflow lever with the slot of the separator lever arm (2).

Disassembly:



Assembly:



16. Separator Solenoid Assy

Removal:

1. Release the four latches.
2. Slowly pull the separator solenoid assy out.

Note:

Be sure to **pull** the assembly slowly so that the parts of the assembly will not be removed.

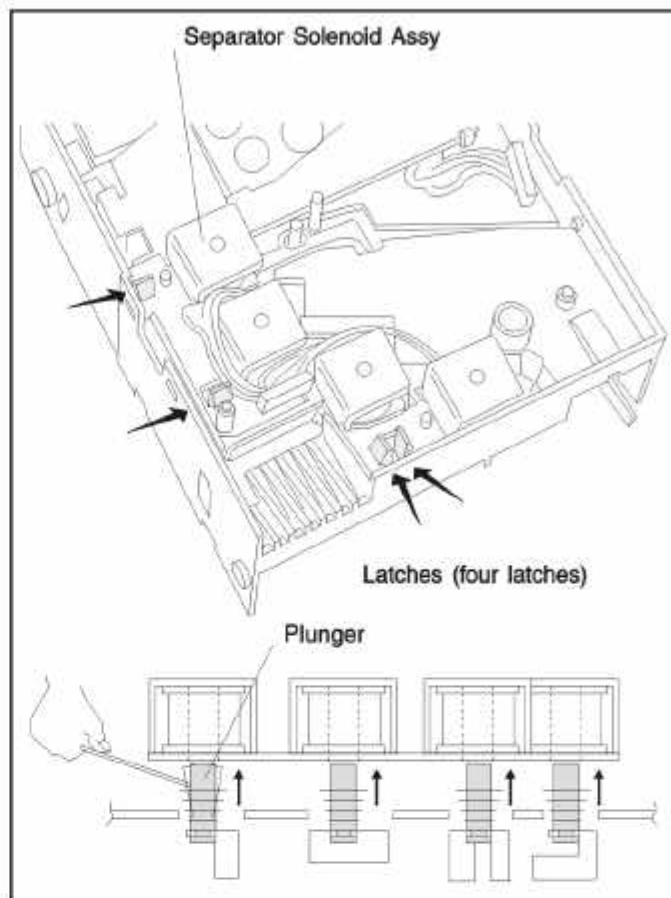
Installation:

1. Align the plunger shaft of each lever into the solenoids.
2. Lock the shaft in place with the four latches.

Note:

If the plunger position is diverted from the solenoid slot, adjust the plunger position using the screwdriver so that the plunger fits into the solenoid slot.

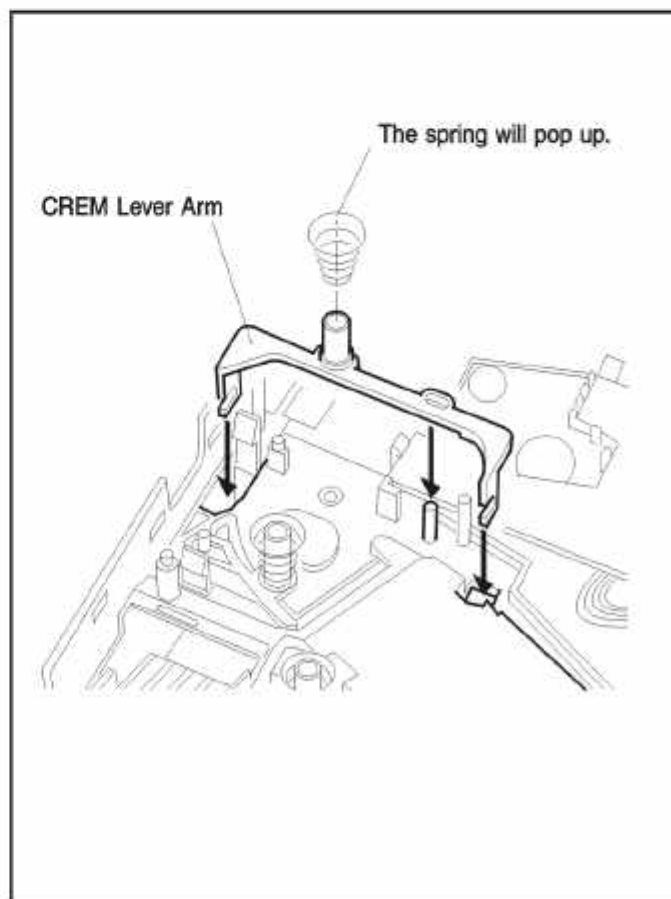
NEVER forcibly push the plunger into the slot, or you might damage the solenoid levers.



17. CREM Lever Arm

Removal:

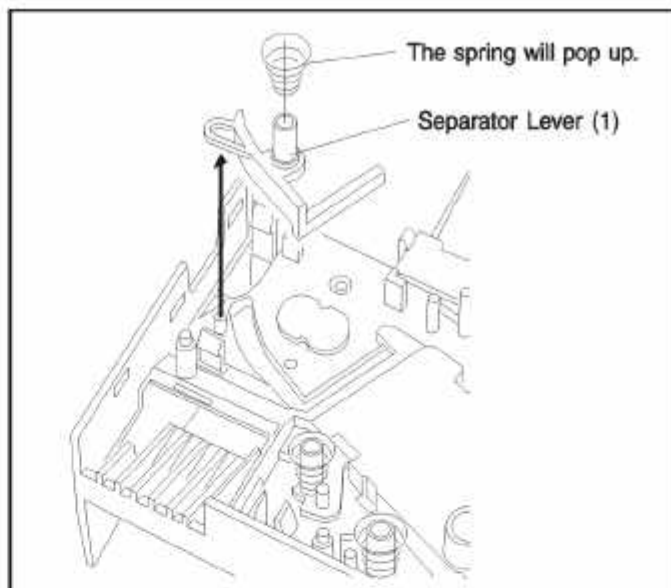
Pull the CREM lever arm out.



18. Separator Lever (1)

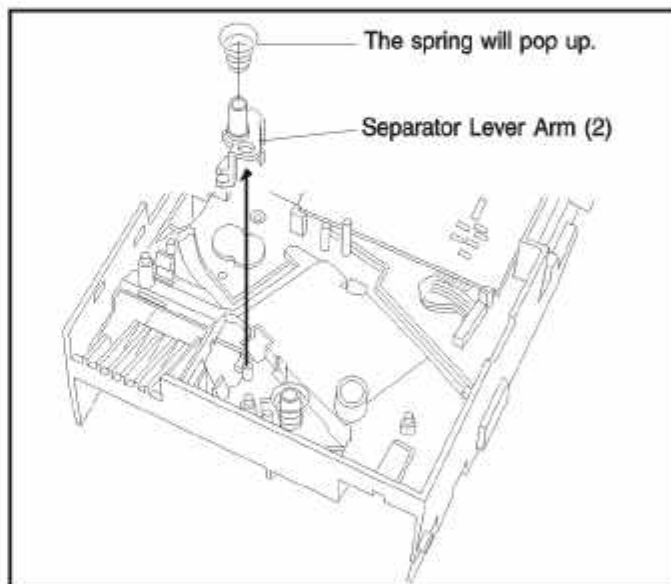
Removal:

Pull the separator lever (1) out.

**19. Separator Lever Arm (2)**

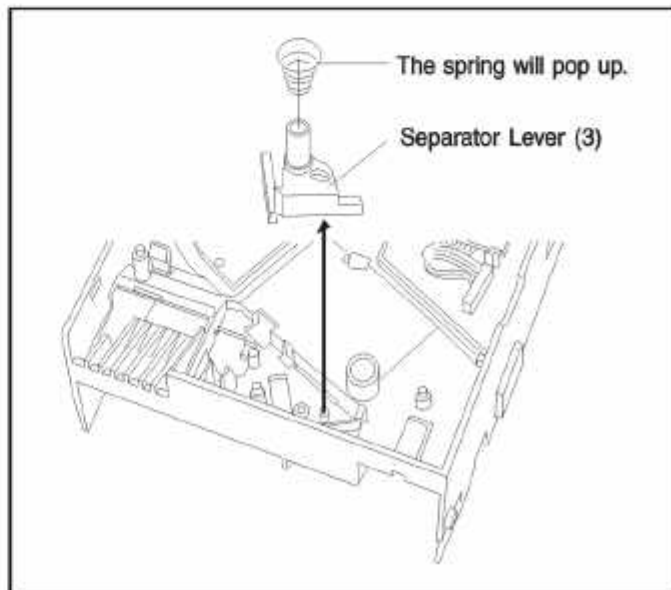
Removal:

Pull the separator lever arm (2) out.

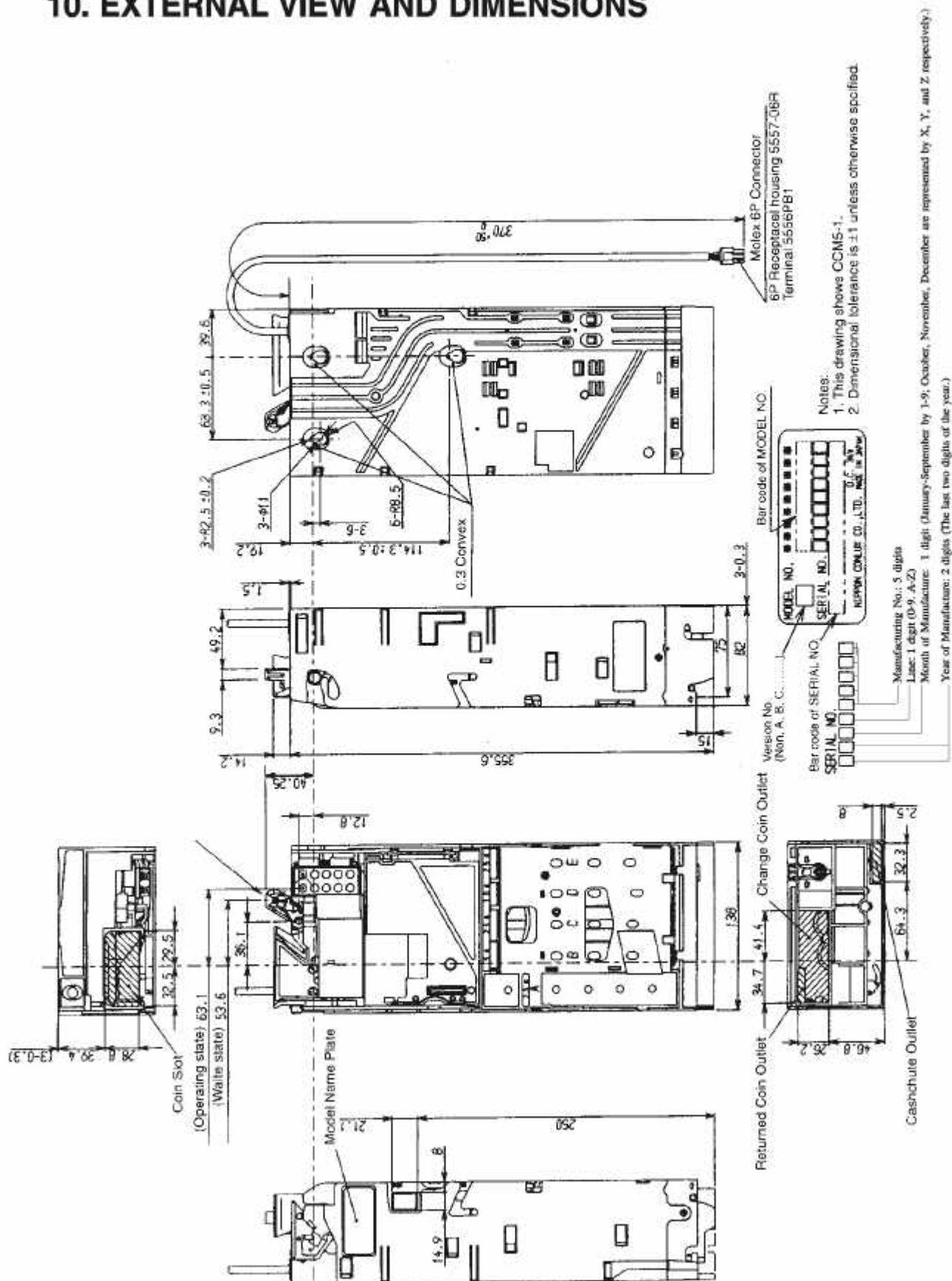
**20. Separator Lever (3)**

Removal:

Pull the separator lever (3) out.

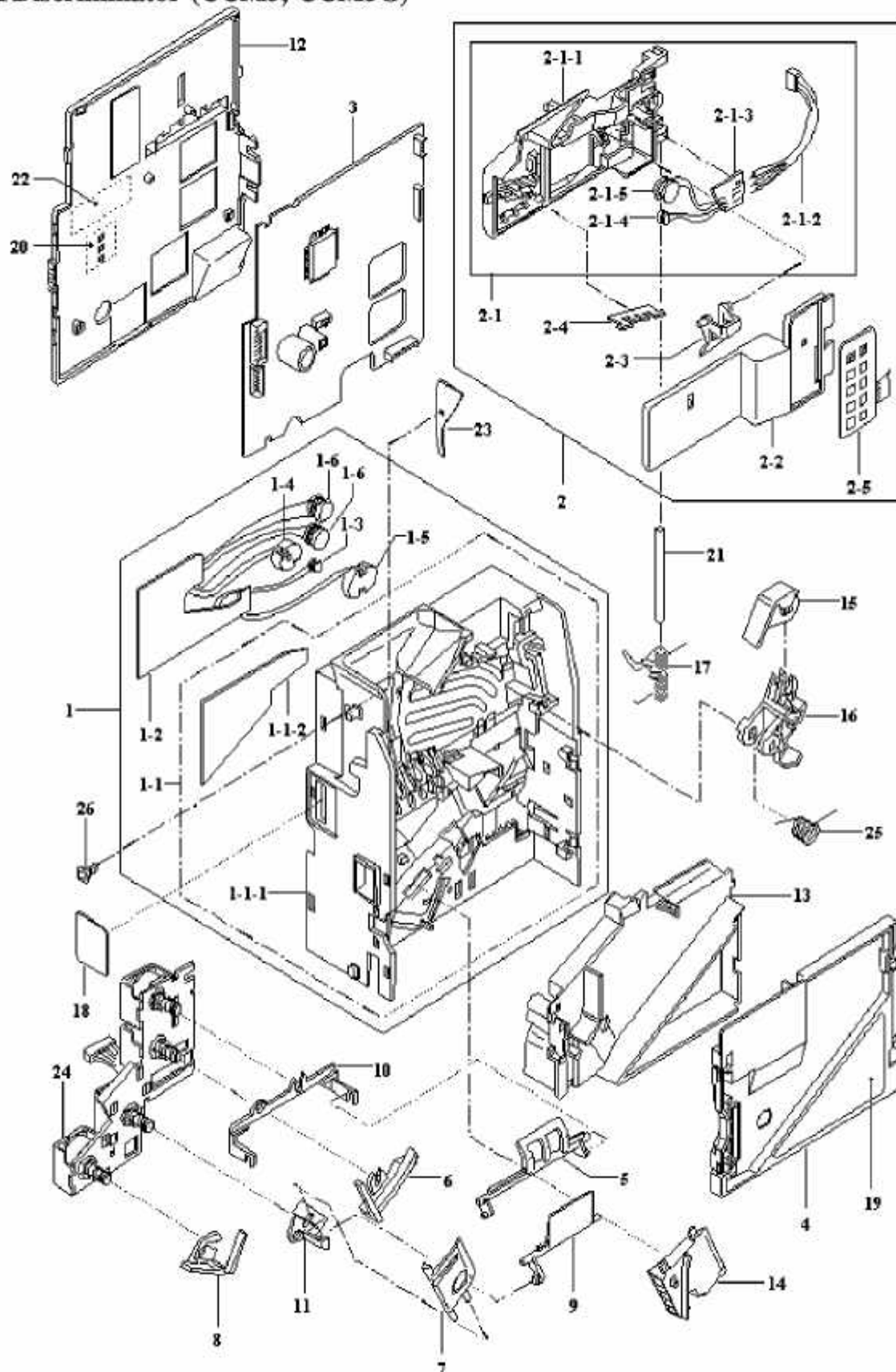


10. EXTERNAL VIEW AND DIMENSIONS



11. PARTS DIAGRAM AND PARTS LIST

11-1 Discriminator (CCM5, CCM5G)



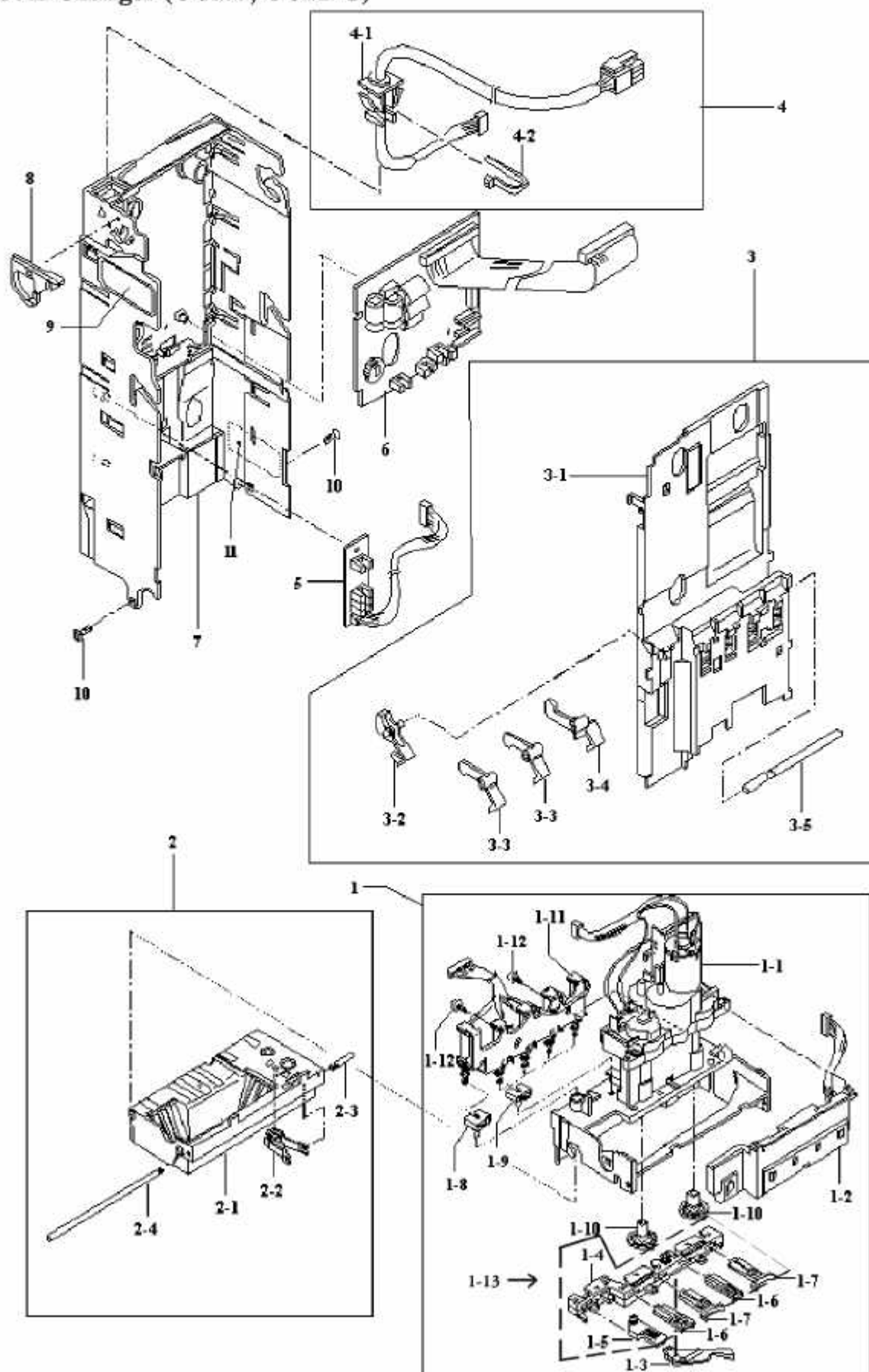
EXPLODED VIEW AND PARTS LIST

CCM5
SERIES

49

INDEX NO.	PART NO.		DESCRIPTION	QTY	REMARKS
	CCM5D	CCM5GD			
0	384001	384002	Discriminator	1	Includes 1-26
1	384103	384107	Main Plate Coil Assy	1	
1-1	384419	384429	Main Plate Cover Assy	1	
1-1-1	384401	384423	Main Plate	1	
1-1-2	384417	384428	Main Plate Cover	1	
1-2	384203	◆	Rear Coil Board Assy	1	
1-3	370720	◆	Coil (6) Assy	1	
1-4	384707	◆	Coil (M) Assy	1	
1-5	384708	◆	Coil (N) Assy	1	
1-6	384709	◆	Coil (10) Assy	2	
2	384104	384108	Gate Assy	1	
2-1	384105	384109	Gate Coil Assy	1	
2-1-1	384403	384425	Gate	1	
2-1-2	384301	◆	Front Coil Harness Assy	1	
2-1-3	383701	◆	Coil Board	1	
2-1-4	370720	◆	Coil (6) Assy	1	
2-1-5	381718	◆	Coil (9) Assy	1	
2-2	384404	384426	Gate Cover	1	
2-3	384415	◆	Front Lever	1	
2-4	384503	◆	Gate Rail	1	
2-5	384705	◆	Inventory Switch	1	
3	384201	◆	Control Board Assy	1	
4	384402	384424	Slug Cover	1	
5	384405	◆	CREM Lever	1	
6	384406	◆	Separator Lever (1)	1	
7	384407	◆	Separator Lever (2)	1	
8	384408	◆	Separator Lever (3)	1	
9	384409	◆	Overflow Lever	1	
10	384410	◆	CREM Lever Arm	1	
11	384411	◆	Separator Lever Arm (2)	1	
12	384412	384427	Rear Cover	1	
13	384413	◆	Coin Channel Cover (1)	1	
14	384414	◆	Coin Channel Cover (2)	1	
15	384422	◆	Gate Lever Roller	1	
16	384421	◆	Gate Lever	1	
17	384501	◆	Gate Spring	1	
18	384504	384510	Main Plate Seal	1	
19	384505	◆	CONLUX Decal	1	
20	384506	384511	Volume Seal	1	
21	384507	◆	Gate Pin	1	
22	384508	◆	Machine Nameplate	1	Not Available for Resale
23	384509	◆	Funnel Guide	1	
24	384706	◆	Separator Solenoid	1	
25	367511	◆	Gate Lever Spring	1	(+)Flat-head M3x 0.5x4
26	902003	◆	Screw	1	

11-2 Coin Changer (CCM5, CCM5G)



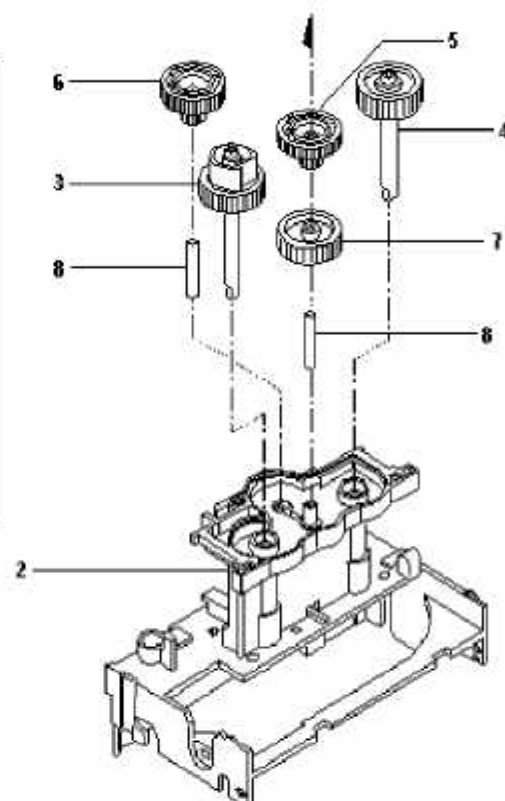
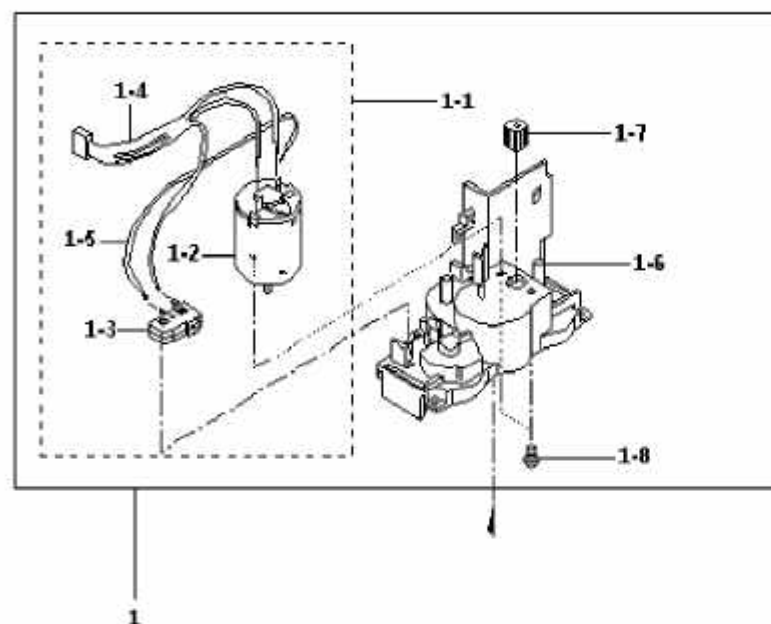
EXPLODED VIEW AND PARTS LIST

CCM5
SERIES

51

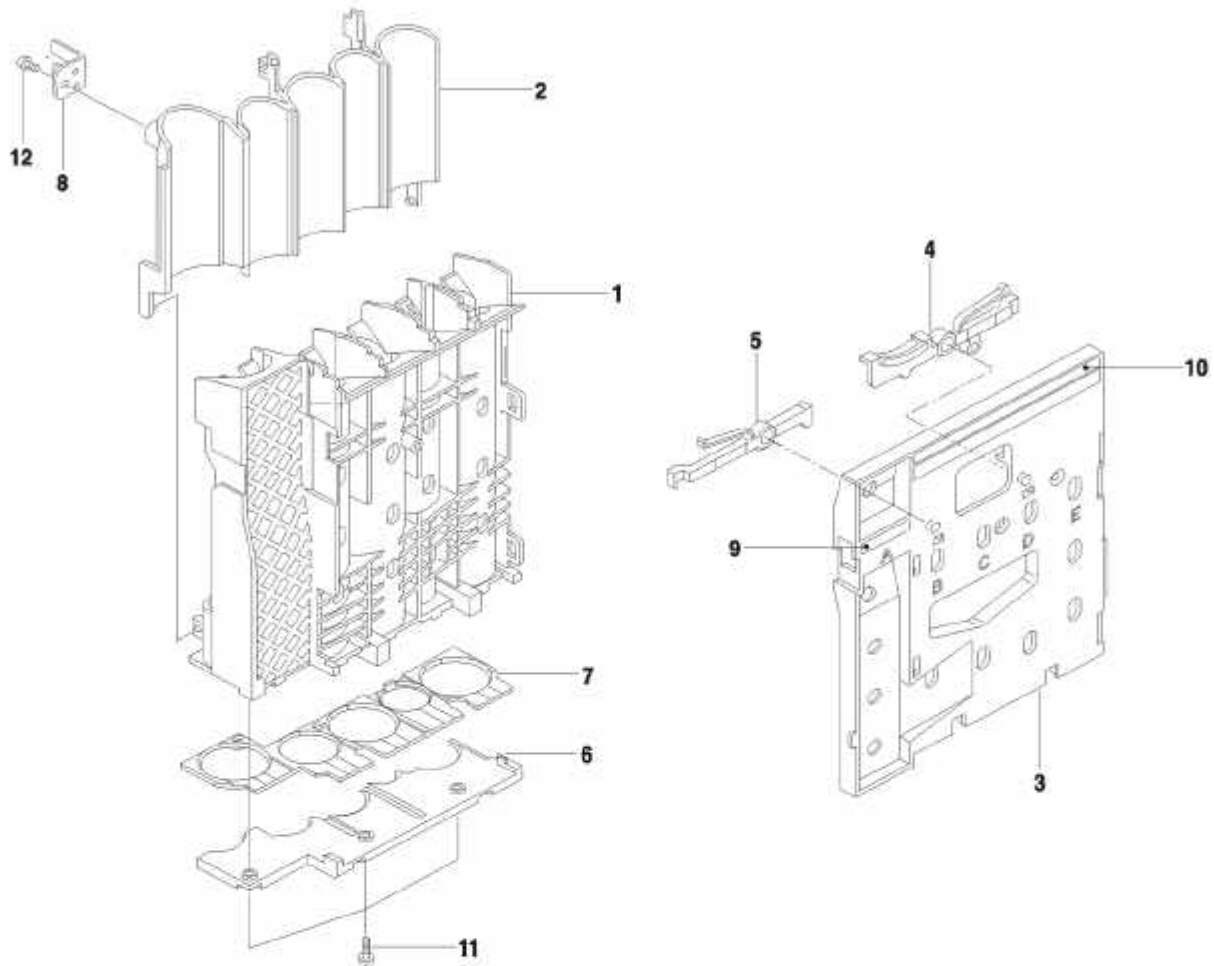
INDEX NO.	PART NO.		DESCRIPTION	QTY	REMARKS
	CCM5	CCM5G			
1	278101	◆	Gear Base Assy	1	} Use Payout Link Assy 5030004010
1-1	278102	◆	Gear Case Assy	1	
1-2	278107	◆	Empty Switch Assy	1	
1-3	278418	◆	Payout Wiper	1	
1-4	*	◆	Payout Link	1	
1-5	*	◆	Change Slide (1)	1	
1-6	278423	◆	Change Slide (2)	2	
1-7	278424	◆	Change Slide (3)	2	
1-8	278425	◆	Change Lever (1)	1	
1-9	278426	◆	Change Lever (2)	4	
1-10	275426	◆	Payout Cam	2	
1-11	278707	◆	Change Solenoid	1	
1-12	904805	◆	Self Tapping Screw with Washer	2	
1-13	5030004010	*	Payout Link Assy (Gray)	1	(+)Pan-head M3x8 Includes 1-4~1-7
2	278105	278110	Bottom Cover Assy	1	
2-1	278417	278436	Bottom Cover	1	
2-2	275420	◆	Base Latch	1	
2-3	275502	◆	Bottom Cover Shaft (1)	1	
2-4	275503	◆	Bottom Cover Shaft (2)	1	
3	278108	◆	Center Cover Assy	1	
3-1	278402	◆	Center Cover	1	
3-2	278411	◆	Tube Lever (1)	1	
3-3	278412	◆	Tube Lever (2)	2	
3-4	278413	◆	Tube Lever (3)	1	
3-5	278502	◆	Tube Lever Shaft	1	
4	278301	◆	Power Supply Harness Assy (1)	1	
4-1	278432	◆	Harness Guide	1	
4-2	994047	◆	Tie Wrap	1	
5	278205	◆	Cassette Switch Board Assy	1	Not Available for Resale
6	278202	◆	Relay Board Assy	1	
7	278401	◆	Housing	1	
8	278433	◆	Latch	1	
9	278510	◆	Machine Nameplate	1	
10	904602	◆	Self Tapping Screw	2	
11	278509	◆	U.S. Patents Seal	1	

11-3 Gear Case Assy



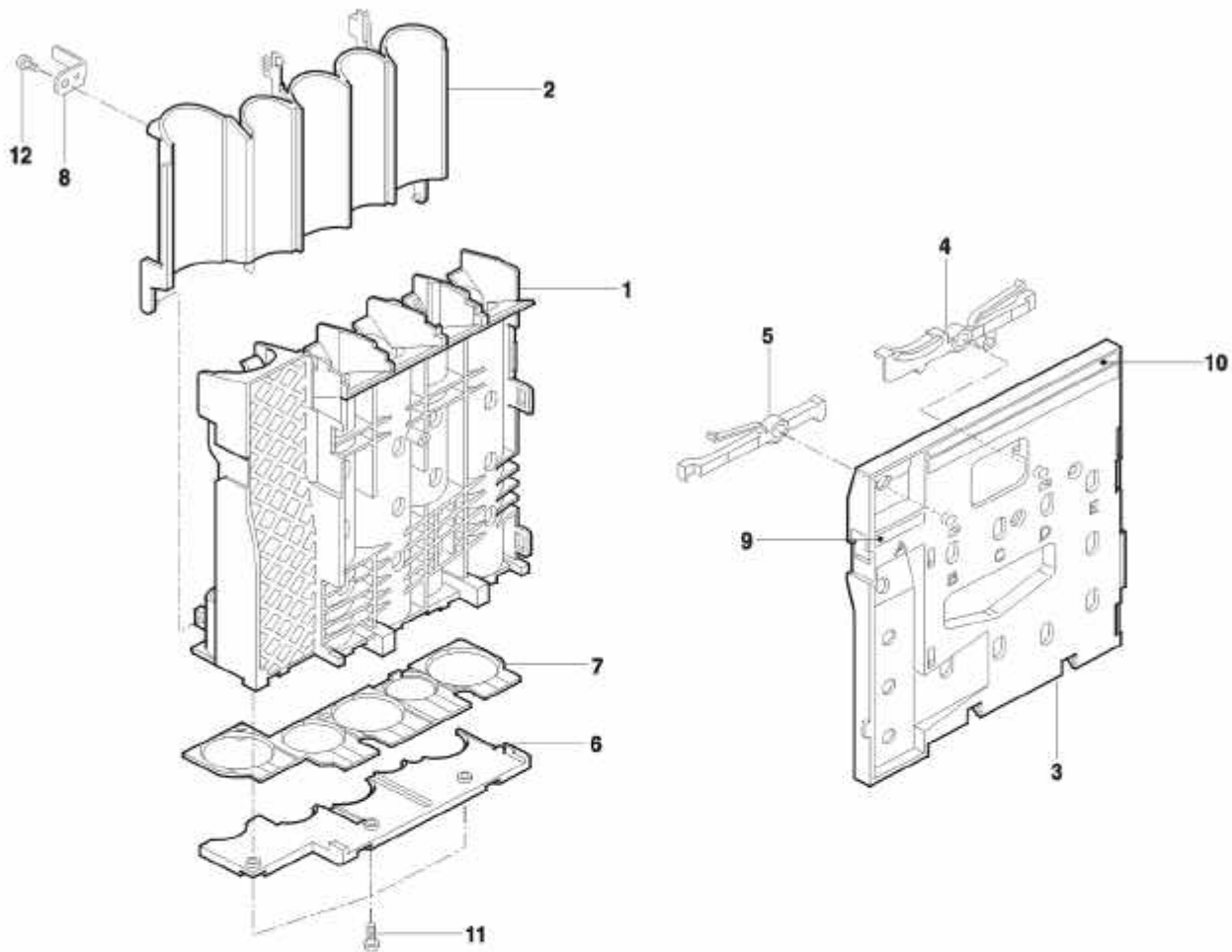
INDEX NO.	PART NO.	DESCRIPTION	QTY	REMARKS
0	278102	Gear Case Assy	1	
1	278103	Gear Case (Upper) Assy	1	
1-1	275104	Motor Switch Assy	1	Includes 1-2-1-5
1-2	278708	DC Motor	1	
1-3	993031	Carrier Switch	1	
1-4	275303	Tube Motor Harness Assy	1	
1-5	381307	Lead Wire (1)	1	
1-6	278416	Gear Case (Upper)	1	
1-7	210433	Motor Pinion	1	
1-8	900006	Screw	2	(±)Pan-head M3x 0.5x4
2	278415	Gear Base	1	
3	278427	Output Shaft (1)	1	
4	278428	Output Shaft (2)	1	
5	278429	Gear (1)	1	
6	278430	Gear (2)	1	
7	278431	Gear (3)	1	
8	278501	Gear Shaft	2	

11-4 Cassette Tube Assy (US-1)



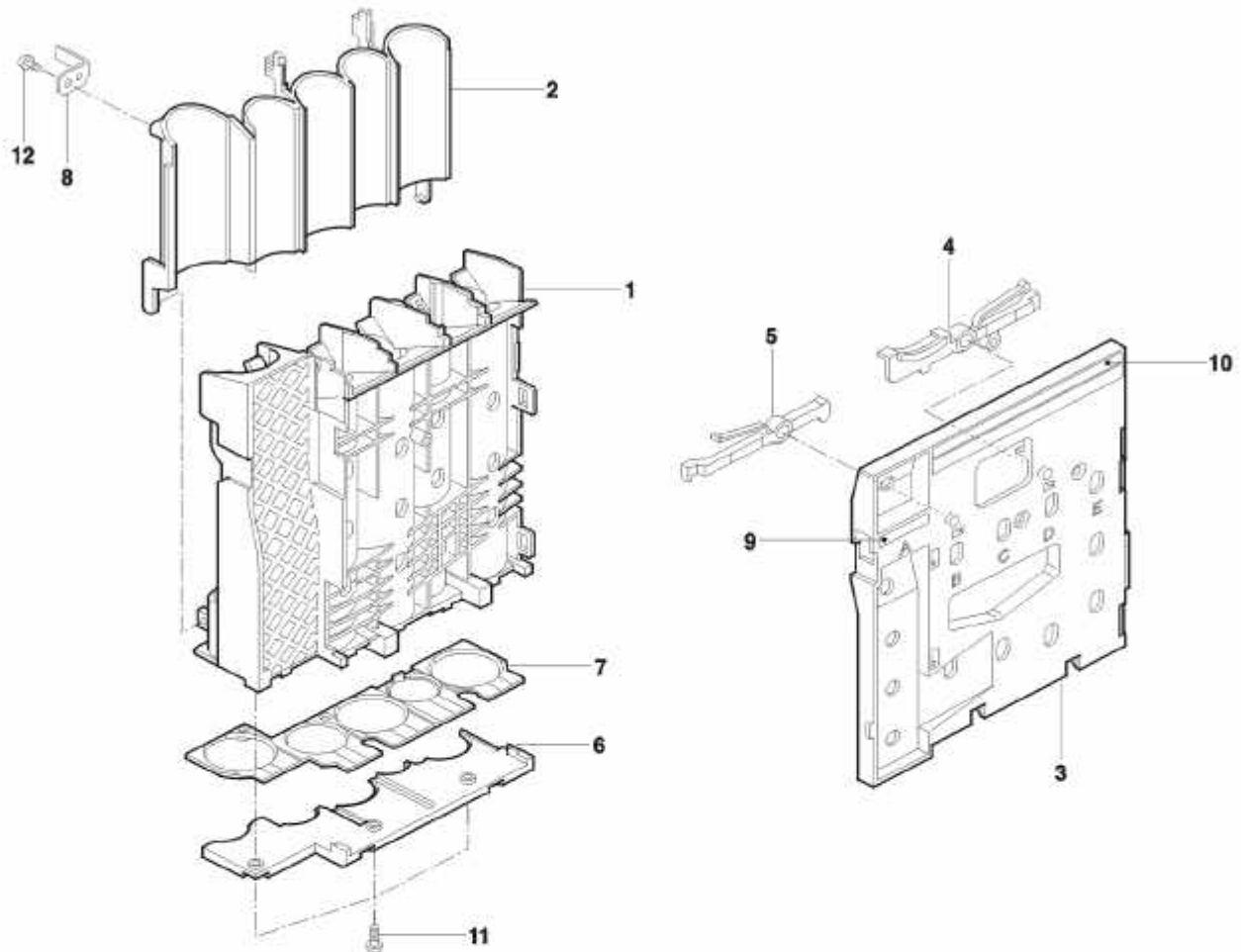
INDEX NO.	PART NO.	DESCRIPTION	QTY	REMARKS
0	278002	US-1 Cassette Tube Assy	1	(25¢, 5¢, 25¢, 10¢, 25¢)
1	278403	Cassette Tube	1	
2	278404	Rear Tube	1	
3	278405	Tube Cover	1	
4	278406	Latch (R)	1	
5	278407	Latch (L)	1	
6	278408	Coin Base	1	
7	278409	Payout Slide	1	Code Color: White
8	278503	Select Lever (1)	1	Gold Single Tab
9	278504	Cassette (1) Seal (A)	1	
10	278505	Cassette (1) Seal (B)	1	
11	904315	Self Tapping Screw	3	(+)Pan-head M3x8
12	904218	Self Tapping Screw	1	(+)Pan-head M3x5

11-5 Cassette Tube Assy (US-2)



INDEX NO.	PART NO.	DESCRIPTION	QTY	REMARKS
0	278023	US-2 Cassette Tube Assy	1	(10¢, 5¢, 25¢, 10¢, 5¢) Code Color: Blue Silver Single Tab
1	5A11104090	Cassette Tube US-2	1	
2	5A11204080	Rear Tube US-2	1	
3	278405	Tube Cover	1	
4	278406	Latch (R)	1	
5	278407	Latch (L)	1	
6	5A11404090	Coin Base US-2	1	
7	5A11504100	Payout Slide US-2	1	
8	5A22104050	Select lever (2)	1	
9	278514	Cassette (5) Seal (A)	1	
10	3912950600	Cassette (2) Seal (B)	1	
11	904315	Self Tapping Screw	3	
12	904218	Self Tapping Screw	1	

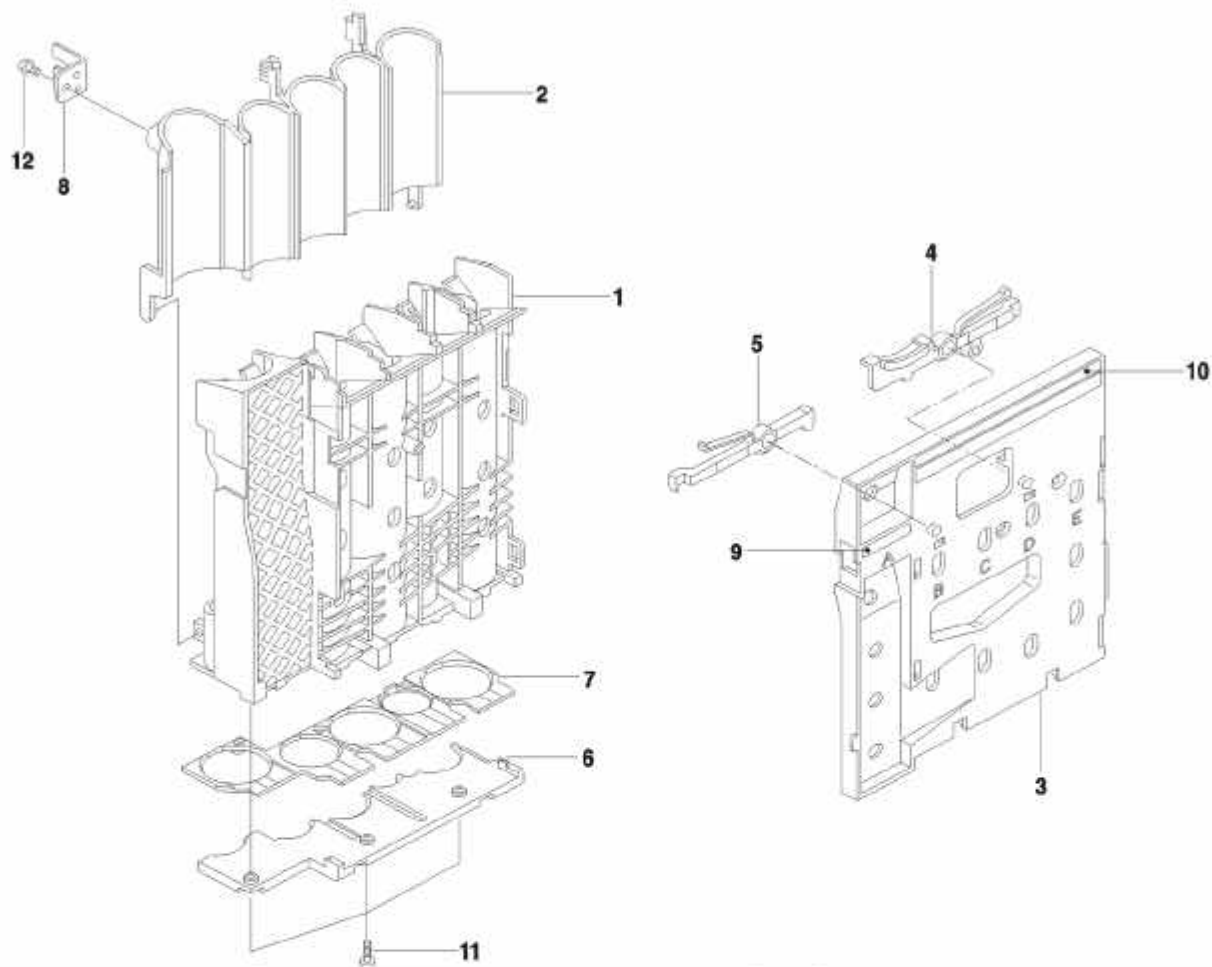
11-5 Cassette Tube Assy (US-4)



INDEX NO.	PART NO.	DESCRIPTION	QTY	REMARKS
0	278003	US-4 Cassette Tube Assy	1	(\$1, 5¢, 25¢, 10¢, 25¢)
1	278437	Cassette Tube US-4	1	
2	278438	Rear Tube US-4	1	
3	278405	Tube Cover	1	
4	278406	Latch (R)	1	
5	278407	Latch (L)	1	
6	278439	Coin Base US-4	1	
7	278440	Payout Slide US-4	1	Code Color: Gray
8	278503	Select Lever (1)	1	Gold Single Tab
9	278512	Cassette (4) Seal (A)	1	
10	278505	Cassette (1) Seal (B)	1	
11	904315	Self Tapping Screw	3	(+)Pan-head M3x8
12	904218	Self Tapping Screw	1	(+)Pan-head M3x5

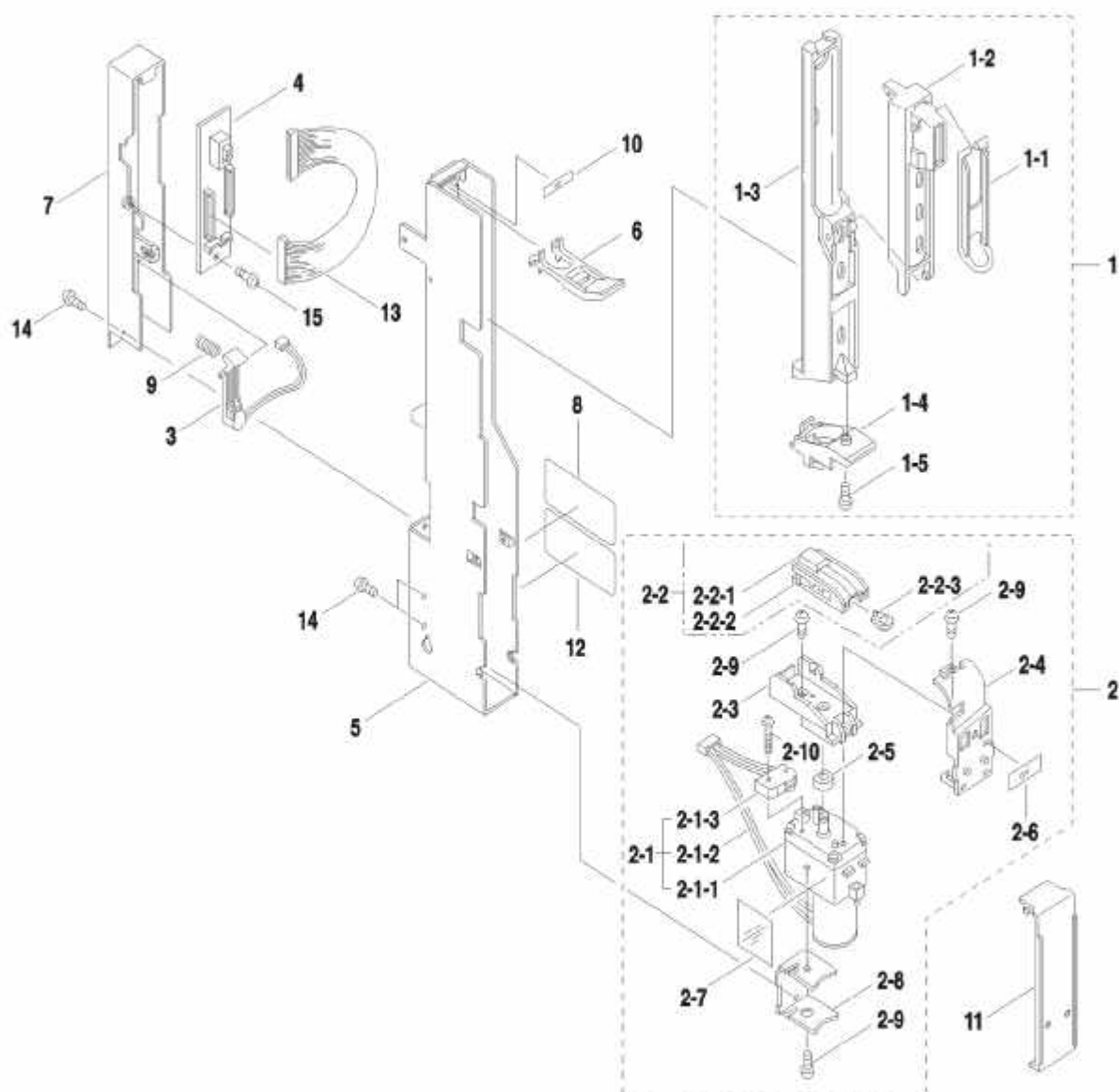
EXPLODED VIEW AND PARTS LIST

11-6 Cassette Tube Assy (US-5)



INDEX NO.	PART NO.	DESCRIPTION	QTY	REMARKS
0	278007	US-5 Cassette Tube Assy	1	(10¢, 10¢, 5¢, 10¢, 5¢)
1	278441	Cassette Tube US-5	1	
2	278442	Rear Tube US-5	1	
3	278405	Tube Cover	1	
4	278406	Latch (R)	1	
5	278407	Latch (L)	1	
6	278443	Coin Base US-5	1	
7	278444	Payout Slide US-5	1	Code Color: Black
8	278513	Select Lever (5)	1	Gold Double Tab
9	278514	Cassette (5) Seal (A)	1	
10	278515	Cassette (5) Seal (B)	1	
11	904315	Self Tapping Screw	3	(+)Pan-head M3x8
12	904218	Self Tapping Screw	1	(+)Pan-head M3x5

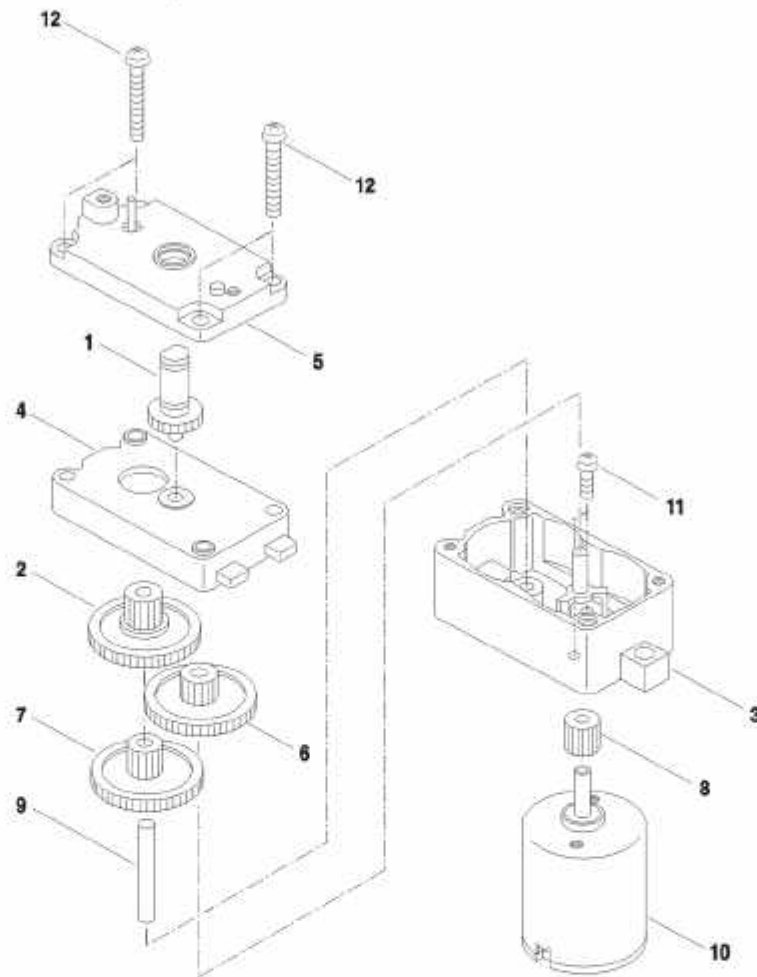
11-7ST-5, ST-25 Satellite Tube Assy



EXPLODED VIEW AND PARTS LIST

INDEX NO.	PART NO.	DESCRIPTION	QTY		REMARKS
			ST-25	ST-5	
0	438001	ST-5 Satellite Tube Assy (5c)		1	
0	438002	ST-25 Satellite Tube Assy (25c)	1		
1	438108	ST-5 Tube Assy (5c)		1	
1	438102	ST-25 Tube Assy (25c)	1		
1-1	210824	Sub Tube Lever	1	1	
1-2	438408	25c Sub Front Tube (2)	1		
1-2	438411	5c Sub Front Tube (2)		1	
1-3	438407	25c Sub Rear Tube (2)	1		
1-3	438410	5c Sub Rear Tube (2)		1	
1-4	438406	25c Tube Base	1		
1-4	438409	5c Tube Base		1	
1-5	905011	Self Tapping Screw	1	1	(+) Pan-Head 3 x 8
2	438103	ST Base Chute Assy	1	1	
2-1	438105	ST Payout Assy	1	1	
2-1-1	438107	ST Motor Gear Case Assy	1	1	
2-1-2	438302	ST Motor Harness Assy	1	1	
2-1-3	993031	Carrier Switch	1	1	
2-2	438101	ST Slide Assy	1	1	
2-2-1	438403	ST Slide (Upper)	1	1	
2-2-2	438404	ST Slide (Lower)	1	1	
2-2-3	438405	Sub Payout Cam (3)	1	1	
2-3	438413	Sub Base (3)	1	1	
2-4	210442	Sub Base Chute	1	1	
2-5	438415	Sub Carrier Cam (3)	1	1	
2-6	250518	Sub Tube Spacer	1	1	
2-7	473512	Sheet	1	1	
2-8	472504	ST Motor Support	1	1	
2-9	905011	Self Tapping Screw	3	3	(+) Pan-Head 3 x 8
2-10	905002	Self Tapping Screw	1	1	(+) Pan-Head 2 x 10
3	438104	ST Sensor Lever Assy	1	1	
4	438201	ST Control Board Assy	1	1	
5	438502	ST Housing	1	1	
6	438414	Sub Tube Latch (2)	1	1	
7	438401	ST Control Base	1	1	
8	438505	Model Nameplate	1	1	Not Available
9	438503	ST Sensor Lever Spring	1	1	
10	473515	Housing Seal	1	1	
11	438412	ST Front Plate	1	1	
12		Patent Seal	1	1	Part # 3912950510
13	438301	ST Relay Harness Assy (1)	1	1	
14	900006	Screw	3	3	(+) Pan-Head M3 x 4
15	904325	Self Tapping Screw	1	1	

11-8 ST Motor Gear Case Assy



INDEX NO.	PART NO.	DESCRIPTION	QTY	REMARKS
0	438107	ST Motor Gear Case Assy	1	
1	210115	O.P. Gear Output Shaft	1	
2	210118	Gear (A)	1	
3	210467	Gear Case (A)	1	
4	210468	Gear Case (B)	1	
5	210469	Gear Base (C)	1	
6	210471	Gear (B)	1	
7	210472	Gear (C)	1	
8	210473	Pinion Gear	1	
9	210519	Gear Shaft (A)	1	
10	278708	DC Motor	1	
11	900006	Screw	2	(+) Pan-Head M3 x 4
12	904038	Self Tapping Screw	4	(+) Pan-Head 3 x 20