

C-SERIES CHANGER

SERVICE & PARTS MANUAL

With solid painted front door assembly



TABLE OF CONTENTS

	PAGE
WARRANTY	2
SPECIFICATIONS	3
INSTALLATION	4
SYSTEM DESCRIPTION	7
ACCEPTOR OPERATION	9
TOKEN USAGE	10
HOPPER OPERATION	10
PREVENTIVE MAINTENANCE	12
HOPPER & ACCEPTOR ADJUSTMENTS	15
TROUBLESHOOTING	21
PARTS	26

ARDAC changers have been designed to provide dependable service for many years. As with any piece of equipment, periodic maintenance and routine service will be necessary to ensure the most reliable operation.

This manual has been prepared to assist in the installation, operation and service of the changer. Please read it carefully and become familiar with the changer before putting it on location.

Additional information, technical data and schematics are available from the factory upon request for a nominal charge.

LIMITED 2-YEAR WARRANTY

ARDAC currency changers are warranted against defects in materials and workmanship for a period of 2 years from the date of manufacture for repair or replacements, at ARDAC's option, of any defective parts. Factory labor charges for replacing defective parts in returned assemblies are warranted for 90 days.

Defective parts must be returned to the factory at the owner's expense. This warranty does not apply to parts damaged through misuse, abuse, accident, vandalism, or improper operation. Expendable items such as lamps and fuses are not covered by the warranty.

This is the complete warranty and is in lieu of any, and supercedes all other warranties expressed or implied.



C-8000/C-8020

C-8005/C-8025

CHANGER SPECIFICATIONS

SPECIFICATIONS	C-8000	C-8020	C-8005	C-8025
BILL ACCEPTED:	\$1	\$1	\$1 & \$5	\$1 & \$5
STACKER CAPACITY:	1100 BILLS	1100 BILLS	1100 BILLS	1100 BILLS
HOPPERS:	(1) 1x242	(2) 1x242	(1) 1x243	(2) 1x242 & 1x244
ELECTRICAL:	120 VAC 60 Hz 1½ Amp	120 VAC 60 Hz 1½ Amp	120 VAC 60 Hz 1½ Amp	120 VAC 60 Hz 1½ Amp

CABINET DIMENSIONS - All "C" Series Changers:

Width: 12.0"-----Height: 34.0"-----Depth: 10.0"

OPERATING TEMPERATURE - All "C" Series Changers: 32°F to 122°F

WEIGHT:	<u>C-8000</u>	<u>C-8020</u>	<u>C-8005</u>	<u>C-8025</u>
	89 lbs EMPTY	101 lbs EMPTY	99 lbs EMPTY	101 lbs EMPTY
	108 lbs FULL	165 lbs FULL	146 lbs FULL	172 lbs FULL

HOPPER CAPACITIES:

	<u>NICKELS</u>	<u>DIMES</u>	<u>QUARTERS</u>	<u>SBA \$</u>
1x242 Standard	\$105 (2100)	\$420 (4200)	\$450 (1800)	N/A
1x244 1/2 Expanded	\$140 (2800)	\$540 (5400)	\$550 (2200)	N/A
1x243 Expanded	\$180 (3600)	\$660 (6600)	\$750 (3000)	N/A
*1x246-1 Standard SBA \$	N/A	N/A	\$450 (1800)	
*1x247-1 1/2 Expanded SBA\$	N/A	N/A	\$550 (2200)	
*1x248-2 Expanded SBA \$	N/A	N/A	\$750 (3000)	

AVAILABLE ACCESSORIES:

Floor stand, 72" banking header, coin acceptor (25¢/50¢) (25¢/SBA\$), bill counting meters

*The SBA dollar capacity of these hoppers exceeds the capacity of the stacker and if SBA dollars are used, these hoppers should never be filled with more than 1100 SBA dollar coins.

2X1126 or 2X4557 Hopper Control Card

INSTALLATION

ARDAC changers are extremely versatile. They can be installed in many different ways depending upon the location; however, there are a few common methods of installation.

All ARDAC changers can be wall mounted on a frame, concrete or block wall. A minimum of four bolts should be used to secure the changer. Mounting hardware should be of sufficient strength to support the changer and the weight of the coins in the changer. See Figure 1.

Floor stands are available for all changer models. Carriage bolts are used to secure the changer to the floor stand. The floor stand should also be secured to a wall or to other vending machines for complete security.

The line cord can be run out the back of the changer or out the bottom, depending upon the application. See Figure 2.

SET-UP AND OPERATION

Once the changer has been installed and connected to a 120 VAC electrical line, it is ready to receive the coin load and be put into operation.

The C-8000 changer is preprogrammed to pay out four quarters for \$1. The C-8020 changer is preprogrammed to pay out three quarters and five nickels for \$1. The C-8005 changer is preprogrammed to pay out four quarters for \$1, and twenty quarters for \$5. The C-8005 changer will dispense the \$5 payout by releasing four coins at a time five times. The C-8025 changer is preprogrammed to pay out three quarters and five nickels for \$1, and twenty quarters for \$5. The C-8025 changer will dispense the \$5 payout by releasing five coins at a time four times. The \$5 capability of the C-8005 and C-8025 changers can be inhibited by operation of a switch. The switch is located behind an access cut-out in the note acceptor, below the serial number label on the lower left side, as seen from the rear with the changer door open.

Each hopper used in ARDAC C-series changers is equipped with a low level switch. In the C-8000 and the C-8020, this switch performs no function. In the C-8005 and C-8025, the low level switch will inhibit the \$5 acceptance and light the \$1 only L.E.D. on the front of the changer when there is about \$25.00 change left in the hoppers.

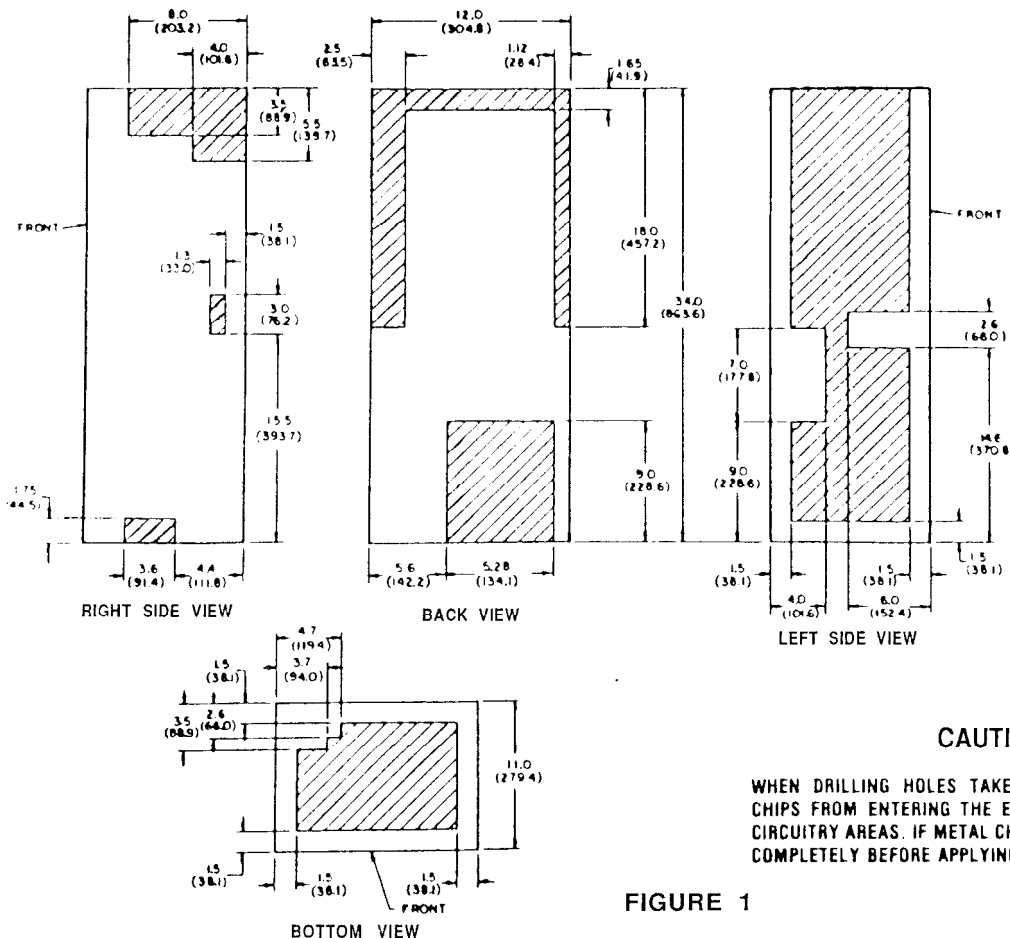
If the changer is equipped with one of the optional quarter/SBA dollar hoppers, and SBA dollars are used, it is recommended that the coin stripper located under the hopper baffle plate be removed. The coin stripped **MUST** be in place when using quarters. These hoppers will **NOT** operate properly with nickels, dimes, or small tokens.

The payout combination is easily changed by removing the payout card located in the control center, finding the desired combination on one of the card's four edges and plugging the payout card back in. When plugging the payout card in, be sure the foil side is to the right. If the desired payout does not appear on the payout cards provided, call the ARDAC Service Department for advice.


The following general handling procedures will aid in simplifying the use of the changer and extending the time between periodic maintenance to the changer.

1. Always load the changer from bulk bags and not rolled coins. This will save time on location and help eliminate the introduction of paper into the hopper, which could result in poor coin pickup or coin jams.
2. The extra bag method is suggested. That is two bags are used for a single hopper machine and three bags are used for a two hopper machine. This enables the emptying of a hopper before refilling it.
3. Turn the coin bags inside out. This has the effect of eliminating string and dirt from getting into the hopper, which could lead to premature maintenance, poor coin pickup or coin jams.
4. In a two hopper changer, balance the load between the two hoppers, depending on the required payback from each hopper to prevent one hopper going empty well before the other hopper. If either hopper in a two hopper changer goes empty, the changer will shut off.
5. Adjust the changer, fill to suit the change needs and service cycle for the location. Since not all locations will require the changer to be filled to capacity between services, this will help minimize cash flow.
6. Completely empty the changer each time it is serviced and audit the changer at least every other time. This will confirm the changer's performance. Some coinage loss is inevitable over time due to coin handling. An actual count of the cash in the changer is required or erroneous conclusions about the changer's performance may result.

ALLOWABLE DRILLING AREA FOR MOUNTING C-SERIES CHANGERS



INSTALLATION NOTES:

1. ALL DIMENSIONS ARE SHOWN (INCH/MM)
2. ALL VIEWS ARE FROM THE OUTSIDE OF THE CABINET.
3.  INDICATES ALLOWABLE AREAS FOR DRILLING MOUNTING HOLES. ALL MOUNTING HARDWARE; NUTS, SCREWS, WASHER, ETC. MUST BE ENTIRELY WITHIN SHADED AREAS.
4. MOUNTING HARDWARE SHOULD BE OF SUFFICIENT STRENGTH TO SUPPORT THE WEIGHT OF THE CHANGER AND THE WEIGHT OF THE COINS IN THE CHANGER. A MINIMUM OF FOUR (4) BOLTS SHOULD BE USED TO SECURE THE CHANGER.

CAUTION !

WHEN DRILLING HOLES TAKE CARE TO PREVENT METAL CHIPS FROM ENTERING THE ELECTRICAL AND ELECTRONIC CIRCUITRY AREAS. IF METAL CHIPS DO ENTER REMOVE THEM COMPLETELY BEFORE APPLYING POWER TO THE CHANGER.

FIGURE 1

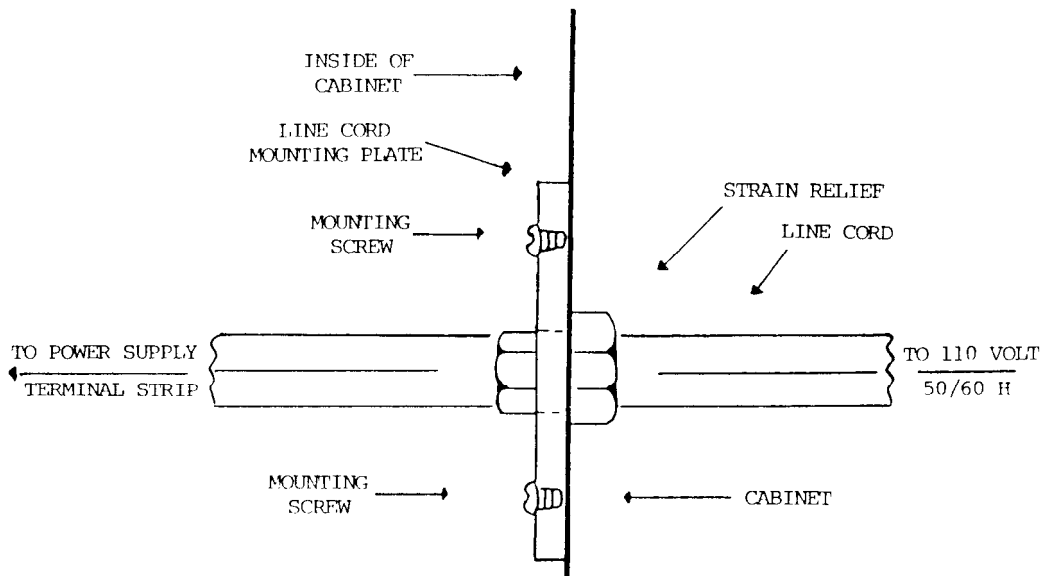


FIGURE 2

LINE CORD INSTALLATION INSTRUCTIONS

1. Install the end of the line cord with the three terminals on the end through one of the two line cord openings in the cabinet.
2. Put the line cord through the line cord plate.
3. Remove the cover of the power supply box.
4. Put the line cord through the wire clamp on the bottom of the power supply box.
5. Connect the wires to the terminal strip on the power supply box (wire diagram on back side of power supply cover). Leave about 1/8" of the rubber outside of the line cord sticking up through the wire clamp.
6. Slide the line cord plate down the line cord, holding it against the cabinet. Take the slack out of the line cord and mark the line cord where the strain relief is to go.
7. Put the strain relief on the line cord where it is marked, then slide the line cord and strain relief into the line cord plate.
8. Mount the line cord plate to the cabinet with the screws provided.
9. Take up any slack in the line cord by pushing the line cord through the wire clamp and into the power supply box, then tighten the wire clamp screws.
10. On combination machines, when bringing the line cord through the bottom of the cabinet, mount the line cord parts so they will clear the control box.
11. Replace the cover on the power supply box.
12. Block the unused hole with the plug provided.

SYSTEM DESCRIPTION

ARDAC changers provide for verification of banknotes, the collection and storage of authenticated banknotes, and a payback for collected notes. To accomplish the above in the simplest, user friendly manner, ARDAC has designed the C-series changer as a modular system. This provides for ease of troubleshooting and reduced cost for replacements parts. There are four major subassembly groups in the C-series changer that consist of the note acceptor, the stacker, the control center, and the hopper/payout assembly.

The note acceptor is mounted on the door of the changer and receives its own 26 VAC power from one of the secondaries of the changer transformer. By removing the power supply board from the control center, the acceptor can be operated independently from the rest of the changer. In addition, ARDAC acceptors have two detection systems, a primary detection system and a secondary detection system. As an aid to troubleshooting it is possible to disconnect the secondary system and operate the acceptor with the primary detection system only.

The stacker mounts to the back of the acceptor. The stacker provides the function of storing all notes collected by the acceptor and its capacity exceeds the payback capacity of the changer. This eliminates the possibility of a full stacker, placing the changer out of order. If need be, the stacker can be removed from the changer without putting the changer out of order.

The control center provides for power distribution to the hopper/payback assembly and for all payback logic. This subassembly is further divided into a power supply, mother board, hopper control board, payback selection board, and in the C-8005 and C-8025 an interface board. The use of this modular approach provides for the easiest and least expensive means of troubleshooting and repairing any kind of control center problem.

The hopper provides the dual function of storing coins for payback and paying back the required number of coins. The hopper is best thought of as a storage bin and a payback assembly. Seven to nine coins will be stored in the front channel of the hopper from which the coins will be paid back one at a time upon demand. After a payback has occurred, a motor in the hopper will turn on, causing a cleated belt to pick up coins from the storage bin and transfer them to the payback channel for the next cycle.

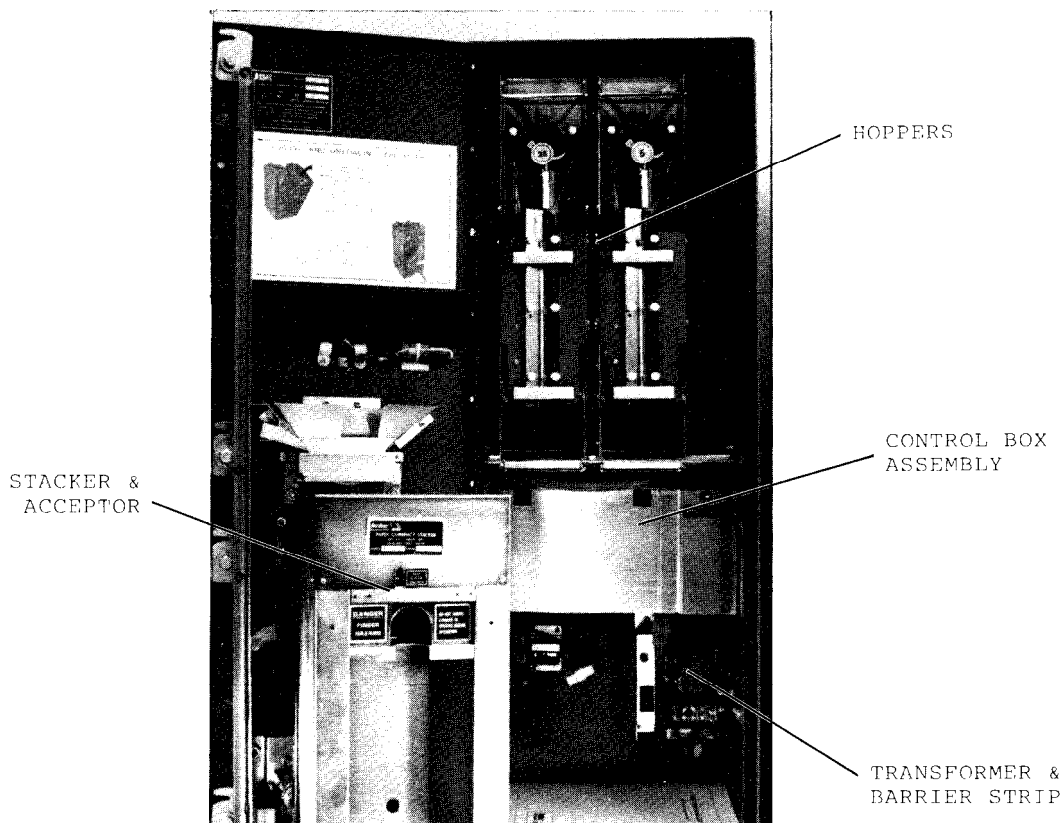
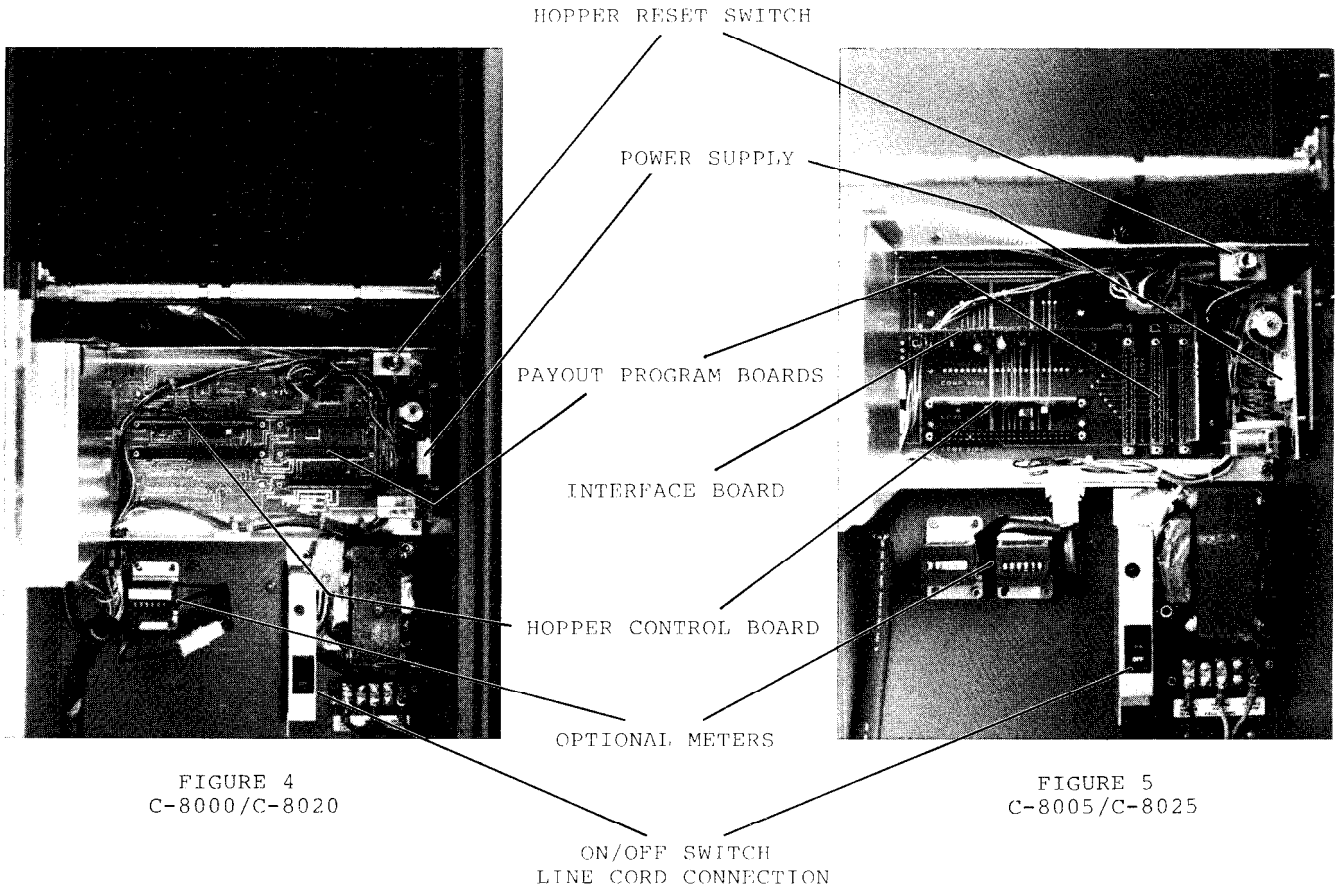


FIGURE 3

CHANGER CONTROL CENTER

The changer control center consists of a power supply board, a reset switch, and a main board into which are plugged a payout program card and a hopper control card. Check to see that all boards and plugs are firmly positioned so as to make good contact. The power supply board is located in the main control box on all changers. It regulates current in the changer. It contains a latching relay which disconnects power to the hopper and control board when the hopper is empty. In addition, an inhibit relay on the board prevents notes or coins from being accepted during a payout cycle or when the changer is empty.



The hopper performs the functions of storing the coins to be paid out, transporting the coins to a prepayout position, and paying out the coins. There is one hopper used for each denomination of coins paid out. Contained within the hopper is a belt with cleats, which carries the coins up to the top of the hopper and drops them in a chute called the coin channel. The coins are trapped at the bottom of the coin channel by small pins which are operated by a solenoid. In response to instructions from the hopper control card, the solenoid releases the coins one-by-one into the coin cup for the customer to take. The amount of coins released is counted by an emitter L.E.D. and sensor at the bottom of the coin channel. When the correct amount of coins has been released, the coins are again trapped in the channel to await the next customer. The emitter L.E.D. and sensor at the top of the coin channel control the hopper belt motor and turn the motor on and off as needed.

The ARDAC bill acceptor is used for the verification and collection of paper currency. Various tests are performed on the note prior to acceptance, such as size, ink and paper characteristics.

OPERATION

There are three phases to the operation of the bill acceptor:

1. Recognition and Tray Lock. This occurs as soon as the tray is pushed in with a bill in place. Tests are performed on the bill and when the bill is recognized as valid, the tray is locked in place.
2. Collection. The bill is transported out of the tray and clear of the rear of the bill acceptor. Multiple checks are made during collection to insure that the bill is collected.
3. Vend Signal. After the bill is recognized and collected, a vend signal is issued, the tray is unlocked and resumes its open position.

OPERATIONAL SEQUENCE OF TRAY ACCEPTORS

In the standby condition the tray is out, the solenoid is not energized, all switches are at their normally closed position, the relays are not energized, and the lamps in the primary and secondary sensors are at low intensity (2.0 VDC).

RECOGNITION AND TRAY LOCK

When a bill is inserted into the tray the tray clear switch is actuated to its normally open side, which brings the lamps to high intensity (5.0 VDC).

When the tray is pushed in, the trigger switch is actuated to its normally open side. The reticle lever slides off the end block to provide the primary scan.

NOTE: The trigger switch MUST actuate before the primary scan occurs or no accept will result.

The signals from the primary sensing system and the secondary sensing system are routed to the module board, where they are amplified and compared. In the case of a \$1 & \$5 acceptor, a relay on the module board will energize if the inserted bill is determined to be a \$5 bill. This relay will determine whether or not a \$1 vend or a \$5 vend is issued.

COLLECTION

As the bill is being pulled through the acceptor the following sequence must occur.

- The rear clear switch is actuated to the normally open side.
- The solar cell is uncovered.
- The tray clear switch returns to the normally closed position.
- The rear clear switch returns to the normally closed position.
- The vend relay energizes.

VEND SIGNAL

A 26 VAC vend pulse is issued on the brown wire (pin 3 of the acceptor plug) through the vend relay. In the case of the \$1 & \$5 acceptor, the vend pulse from the vend relay is routed to the \$1/\$5 relay on the module board. The vend pulse for a \$1 acceptance is issued on the brown wire of the 2 pin plug that goes to the module board through the right-hand side of the acceptor. The \$5 vend pulse is issued on the white-black wire of the same 2-pin plug that the \$1 vend pulse is issued from. A concurrent vend pulse is issued through pin 3 on the acceptor 4 pin plug for either a \$1 or \$5 acceptance to start the stacker.

TOKENS

ARDAC hoppers are designed to work with U.S. and Canadian coinage. Because of this, not all types of available tokens will work properly in ARDAC hoppers. Any token used must be round, solid, and made of metal. Tokens with grooves or irregular thickness are not recommended.

Tokens with a diameter of .900 +/- .005 inches have proven to provide the best performance in the standard hoppers. Tokens with a diameter of .980 +/- .005 inches have proven to provide the best performance in the quarter/SBA dollar hopper. It cannot be assumed that because a token's diameter falls between that of a dime and a quarter (.700" to .950") or between that of a quarter and a SBA dollar (.950" to 1.040") that it will perform properly in the hopper. The thickness of the tokens must be between .045 inch minimum and .095 inch maximum.

The ARDAC Service Department will evaluate any token that may be considered for use in terms of size and shape if a sample of 50 or more tokens is sent in. Because of the many different types of metals and finishes used by token manufacturers, ARDAC cannot make any guarantees concerning pickup and payout of tokens even though their size and shape may be acceptable.

HOPPER OPERATION

A vend signal generated by the bill acceptor is sent to the control box which contains a hopper control card for each hopper, which contains a custom I.C., which has all the logic for receiving and analyzing the incoming vend signal. In turn, it controls the hopper solenoid and motor as well as analyzing the signals from the upper and lower detectors.

1. The hopper channel keeps from 7 to 9 coins in escrow, depending on the coin size. The number of coins paid out is controlled by a user changeable program card which is mounted in the control box.
2. Upon receipt of the vend signal, the front channel pays coins, one at a time in rapid succession by means of a solenoid operated toggle. The lower detector counts the coins as they pass out the bottom of the channel.
3. After the correct number of coins has been paid out, the hopper motor turns on, which drives a belt. The belt has cleats mounted to it which pick up the coins in the hopper to refill the channel.
4. When the level of coins in the channel reaches the upper detector, the motor is turned off.
5. If the upper detector does not sense a coin passing by for approximately 23 seconds, it will shut the changer down and indicate "EMPTY". This prevents the changer from accepting bills when insufficient coins are available for payout.
6. If an excessive number of coins pass the lower detector based on the program card setting, the changer will shut down to signal an error has occurred.
7. The detector lights (L.E.D. emitters) are wired in series so the failure of one light causes the other light to go out, which shuts down the changer.
8. An inhibit circuit is incorporated in the control box to keep the bill acceptor from accepting a bill while the motors of the hoppers are operating to refill the channel.

LOADING & UNLOADING THE HOPPER

To load the hopper, pull it forward until the latch spring catches on the front edge of the cabinet.



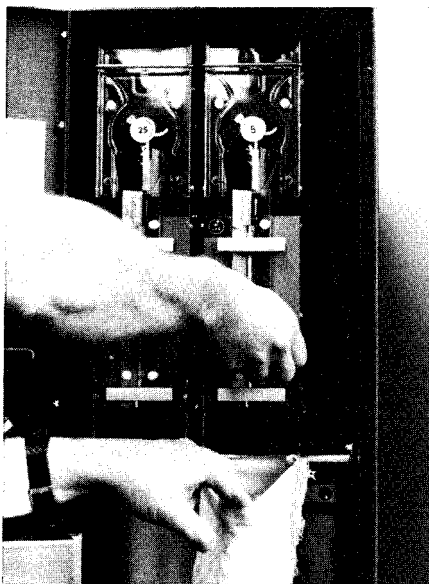
FIGURE 6

CAUTION!! THE HOPPER LATCH SPRING IS DESIGNED TO PREVENT THE HOPPER FROM INADVERTENTLY BEING PULLED OUT OF THE MACHINE AND CAUSING INJURY TO THE OPERATOR. WHEN PULLING THE HOPPER FORWARD, KEEP THE WEIGHT OF THE HOPPER BALANCED ON YOUR HAND UNTIL YOU ARE SURE THAT THE LATCH SPRING HAS ENGAGED AND IS SUPPORTING THE LOAD.

Load coins directly into the hopper, making sure that the coins do not drop into the front channel of the hopper where they could cause a jam. **DO NOT OVERLOAD.** The number of coins in the hopper should not exceed the stated capacity. Coins should always be level in the hopper.

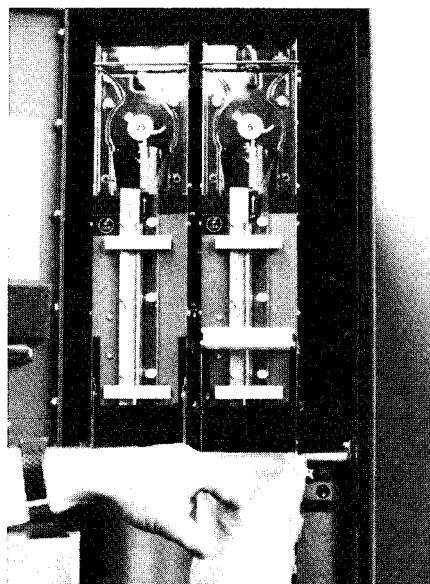
When the hopper is filled, push it back to its normal operating position. Press the **POWER ON** button, and, if the hopper does not begin to fill, press the **RESET** button. When the hopper has filled the coin channel, the changer is ready for operation.

To empty the hopper, first place a container under the hopper to catch the coins. A canvas bag can be utilized, using the serrated edges at the bottom of the hopper to hold the bag in place. To empty the hopper, lift the hopper dump lever up as far as it will go. Coins will empty from the bottom of the hopper and the front channel, and the belt drive will start up to further help clear the hopper. Wait until all of the coins are out of the hopper before lowering the dump lever. If any resistance is felt, stop and investigate. **DO NOT FORCE THE DUMP LEVER CLOSED.**



NOTE:
Placement of coin bag and pulling dump handle up.

FIGURE 7



Dump handle all the way up.

FIGURE 8

IMPORTANT!! Once the dump lever has been lifted, it should be moved up as far as it will travel. **DO NOT** push it down until all coins have been emptied from the hopper; otherwise, damage to the hopper will result.

PREVENTIVE MAINTENANCE

There is not a great deal of preventive maintenance required on the C-series changers. Because the changers use optical sensing system, which are affected by dust and dirt build-up, an additional 30 minutes spent at a typical location every 6 months or as needs dictate, cleaning the acceptor and hoppers can prevent many troublesome service calls and provide the best performance possible.

Lubrication of components in the changer is not recommended. The major effect of lubrication is to collect dust and dirt, which will result in more frequent service calls for preventive maintenance.

CLEANING THE NOTE ACCEPTOR

Remove the stacker or back plate.

Remove the top cover plate, in the case of the \$1 & \$5 acceptor, carefully unplug the TNT board located under the top cover.

Remove the top roller place and either disconnect the rear clear switch or let the top roller plate hang to the side of the acceptor.

Inspect the acceptor under the lamp board for foreign objects and, using a small brush, clean out any dirt and dust that has accumulated on the P.C boards, being careful not to dislodge any components or wires.

Using a damp Q-tip applicator, clean any dust and dirt accumulation off the top of the SSTR2 sensor (\$1 acceptor) and the infrared filter assembly.

Using a damp cloth, wipe off the top of the tray and the clear lens on the TNT sensor (\$1 & \$5 acceptor) located on the top roller plate as well as the bottom of the reticle tube.

Using a damp Q-tip applicator, clean the underside of the tray from the back of the acceptor.

After cleaning the acceptor, reassemble the acceptor and test for proper operation.

INFRARED FILTER

U.S. \$1 ACCEPTOR

U.S. \$1 & \$5 ACCEPTOR

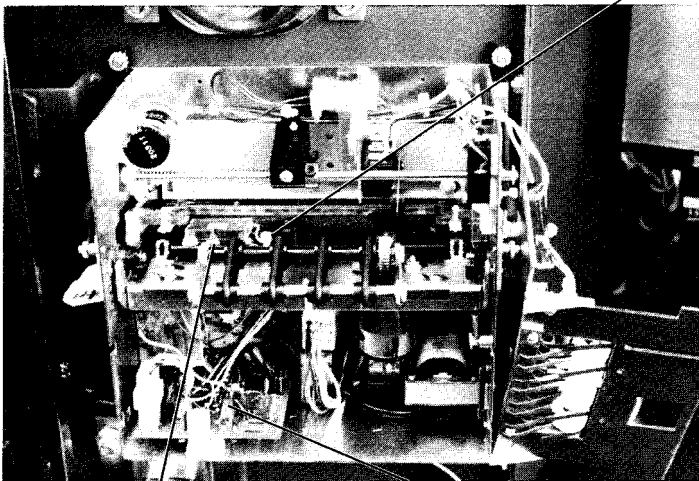


FIGURE 16

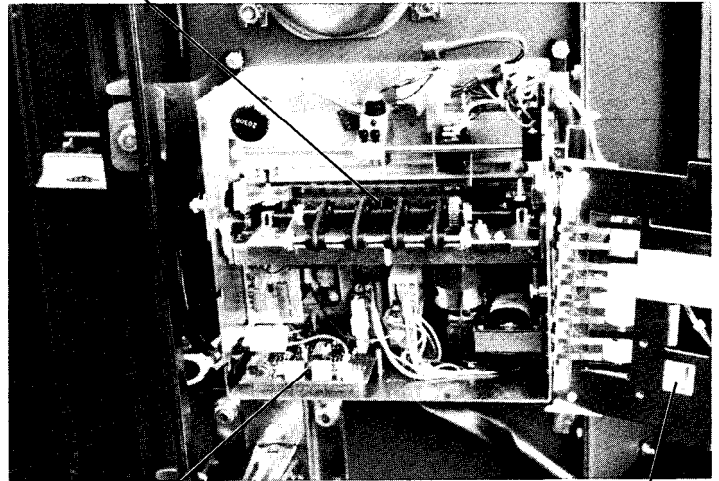


FIGURE 17

SSTR2
SENSOR

AMP MODULE
BOARD

TNT WINDOW

CLEANING THE HOPPER

Remove the coins from the lower coin channel.

Remove the emitter housings from the lower coin channel.

Remove the V-strip from the lower coin channel by removing the 6 thumb screws from the front of the lower coin channel.

Remove the 2 thumb screws from the upper coin channel assembly and remove the clear plastic front.

Using a damp cloth, wipe off any dirt buildup on the clear plastic V-strip and the clear plastic upper coin channel front. Being careful not to damage the flip-flop toggle assembly on the upper coin channel assembly, wipe any dirt buildup off of the black plastic upper coin channel back plate. In the case of excessive dirt buildup, isopropyl alcohol can be used.

Using a small brush or Q-tip applicator, clean any dirt out of the metal lower coin channel. Pay particular attention to the small holes at the back of the channel that the emitter light must shine into. Do not stick any kind of object into these holes or damage to the photo transistors behind the holes may result.

Reassemble the hopper and test for proper operation. Before putting the V-strip back on, inspect the part to insure that the metal foil strip is not loose and that the holes in the center of the V-strip are open. Do not overtighten the thumb screws or they will be stripped.

HOPPER CHANNEL with coin channel front installed.

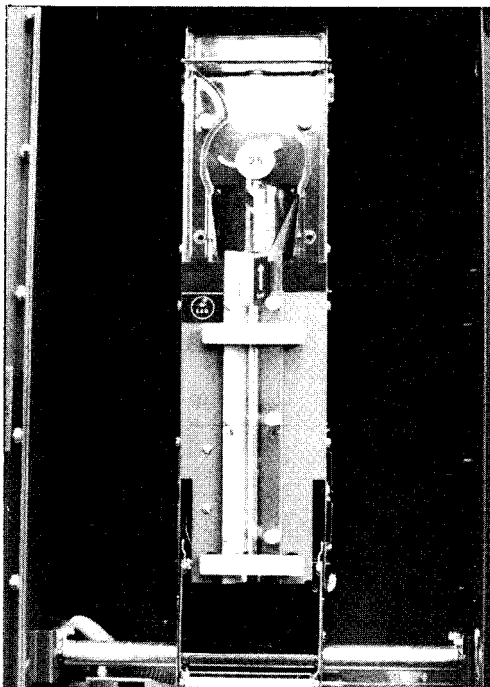
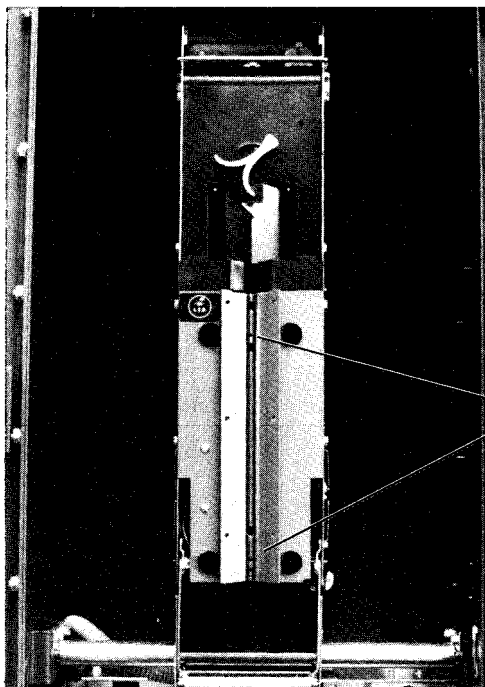


FIGURE 18

HOPPER CHANNEL with coin channel front removed.



SENSOR HOLES
MUST BE CLEAN

FIGURE 19

TIPS FOR TROUBLESHOOTING

IMPORTANT - P.C. board or subassemblies should never be removed or installed without first turning the ON/OFF switch to the OFF position or disconnecting all power to the changer. Do not use the hopper reset switch as a means of turning off power.

FAILURE TO DISCONNECT POWER COULD RESULT IN DAMAGE TO THE CHANGER.

The reset switch is simply used to turn the hopper on and off. It is normally used to start the hopper motor and put the changer into operation once the hopper has been filled with coins. It should not be confused with the circuit breaker or the ON/OFF switch located near the transformer.

CLEARING JAM CONDITIONS

NOTE ACCEPTOR JAMS

Because of the exclusive ARDAC tray design, ARDAC note acceptors do not jam under normal operating conditions.

NOTE STACKER JAMS

To clear a stacker jam, remove the stack of notes from the collection compartment and straighten the notes. Remove any notes in the entry area and add them to the stack.

HOPPER JAMS

Visually locate the area of the jam in the hopper and, using the thumb screws provided, remove the clear cover(s) to expose the coin path. Clear the jam and replace the clear cover(s).

To fill the hopper coin channel, press the RESET button once or twice until the hopper begins filling.

GENERAL

If acceptance only testing is to be done on the changer, the following suggestions will simplify the testing.

With the power turned off, remove the power supply board from the control center. This will allow only the acceptor to operate. If the stacker operates after a bill is collected, then a vend pulse is issued by the acceptor.

Good acceptance testing must be done with a sample of at least 25 notes, varying in condition from new to used. Notes that have been taped or damaged should not be used. The test sample should be changed on a periodic basis to eliminate wear that may be caused by excessive use in an acceptor.

If vend only testing is desired a vend signal can be simulated by shorting together the brown and white wires in the acceptor 4 pin plug. In the \$1 & \$5 changers, the vend output lines from the 2 pin plug that connects to the acceptor amplifier board must be shorted to the white wire in the acceptor 4 pin plug. The brown wire will simulate a \$1 vend and the white/black wire will simulate a \$5 vend.

IMPORTANT - The first step in troubleshooting or repairing bill acceptors and hoppers is cleaning. The following adjustments can not be properly made on dirty acceptors. The acceptor must be clean before any adjustments can be made. See the section on Preventive Maintenance.

Mechanical adjustments to the acceptor scanning system (reticle tube and reticle holder position) are very critical to the proper operation of the acceptor. These adjustments are factory set and under normal operating conditions, should not change. These adjustments should be performed only by factory trained personnel.

DETECTION SYSTEMS

The ARDAC bill acceptor has two detection systems to verify a genuine note.

1. PRIMARY DETECTION. This system scans the front side of a bill. It examines the grid pattern engraved around the portrait area to determine the correct pattern and characteristics of the ink. It consists of a reticle tube and solar cell on top of the tray insert, and a grid lamp and infrared filter assembly under the tray.
2. SECONDARY DETECTION FOR \$1 ONLY ACCEPTOR - SSTR2. This system looks at the back side of a bill. It is a self-contained reflective sensor.
3. SECONDARY DETECTION FOR \$1/\$5 ACCEPTORS - TNT. This system looks at the front side of a bill. It is a self-contained reflective sensor.

The primary and secondary sensing systems are optical and utilize a light source and receiver. Heavy collections of dirt and dust on any component can have an adverse effect on the acceptance of genuine bills. Periodic cleaning of these systems, particularly the infrared filter assembly of the primary and the filter glass of the secondary sensor, will help maintain a high rate of acceptance.

There are adjustments that are unique to each type of acceptor and adjustments that are common to both types of acceptors. The first adjustments discussed will be unique to the \$1 only acceptor, then the \$1 & \$5 acceptor, then the common adjustments.

PRIMARY DETECTION SYSTEM ADJUSTMENT IN \$1 ONLY ACCEPTORS. See Figure 13.

Adjustment of the primary detection system is made by turning the primary acceptance control, R1, which is located on the amplifier module board.

1. Disable the secondary detection system by unplugging the SSTR2 sensor, plug J5.
2. Turn the primary acceptance control fully counterclockwise.
3. Adjust the primary acceptance control by turning it in a clockwise direction until all reasonably good notes are accepted. Do not advance the sensitivity control further clockwise than necessary.
4. Reconnect plug J5.

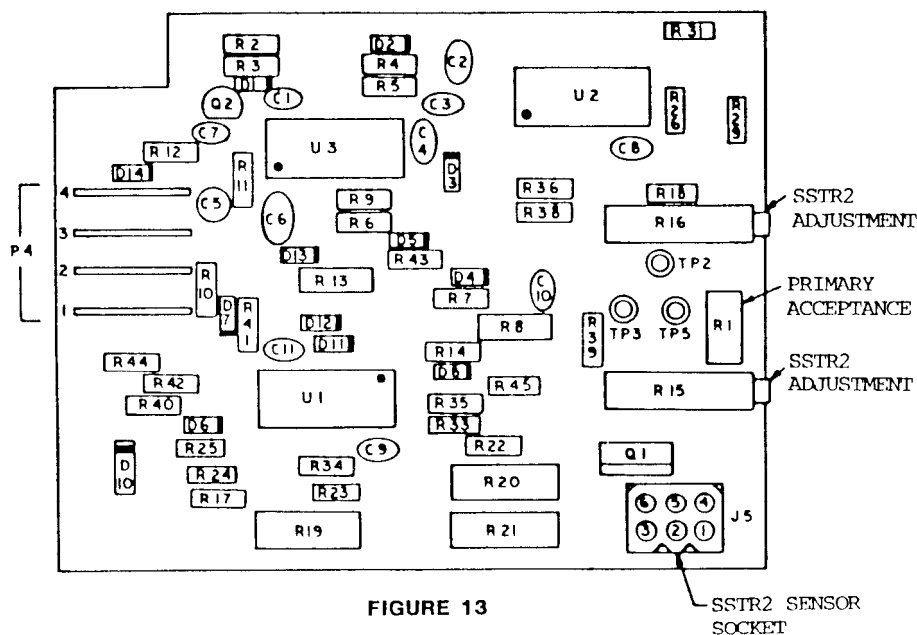


FIGURE 13

SSTR2 ADJUSTMENT (\$1 NOTE ACCEPTOR). See Figure 13.

The following adjustments must be performed in sequence. Allow a 3-hour warm-up period before proceeding.

The primary detection system must be in adjustment before proceeding.

The secondary detection system adjustments, R15 and R16, are also located on the amplifier module board.

1. Insert the adjustment card, 49x218, in the tray with the words "SSTR Balance" pointed towards the acceptor. The tray should not be held in for more than four seconds at a time during adjustment.
2. Turn potentiometer R15 and R16 fully counterclockwise.
3. Set a DVOM on a 20 to 50 VDC scale. Hook the negative meter lead to the acceptor chassis (Ground). Hook the positive meter lead to TP-5, located behind the primary acceptance control. Adjust R15 until the voltage reading is 10.0 +/- .5 VDC.
4. Remove the negative meter lead from the chassis and hook it to TP-2, leaving the positive meter lead on TP-5. Push the tray in and adjust R16 until the voltage reading is 0.0 +/- .15 VDC.
5. Measure the voltage at TP-3, negative meter lead to chassis. This voltage must be 8.0 +/- 1.5 volts DC with the tray pushed in.
6. Remove the SSTR balance card from the tray.
7. Test the acceptor for proper operation.

PRIMARY DETECTION SENSITIVITY ADJUSTMENT (\$1 & \$5 NOTE ACCEPTOR). See Figure 14.

The primary detection sensitivity controls, R12 and R28 are located on the amplifier module. R12 is the \$1 sensitivity adjustment. R28 is the \$5 sensitivity adjustment.

Disable the secondary system by removing the gray wire from the amplifier module.

Turn the primary detection sensitivity control fully counterclockwise.

Adjust the sensitivity control by turning it in a clockwise direction until all reasonably good bills are accepted (98% to 99% of bills in circulation). Do not advance the sensitivity control further clockwise than necessary to achieve 98% to 99% acceptance.

Reconnect the secondary system.

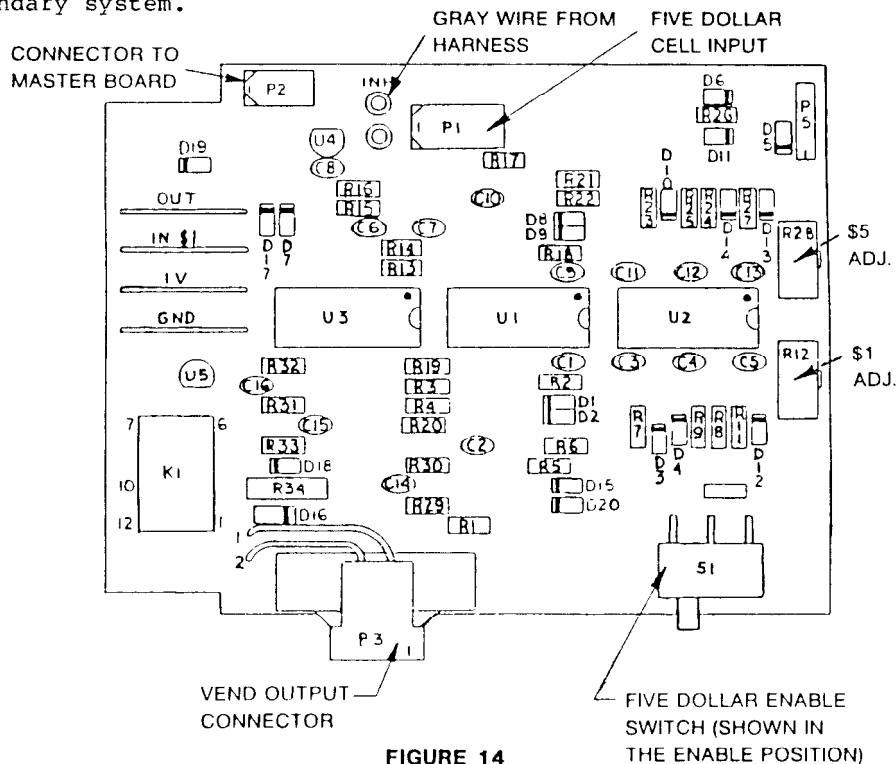


FIGURE 14

TNT SYSTEM ADJUSTMENT (\$1 & \$5 NOTE ACCEPTOR). See Figure 15.

With all the covers in place, allow a one-hour warm-up period before proceeding. Input voltage to the acceptor must be 26 VAC +/- 10%. During adjustment, slight changes in the voltage readings may be noticed. These changes are due to localized heating from the lamp and are normal.

NOTE: The sequence of steps is important! Be sure that you measure and adjust TP-5 FIRST, then TP-6, then back to TP-5, if necessary, then TP-6, and so forth, until TP-5 and TP-6 are balanced. THEN adjust TP-4.

All voltage measurements should be made with respect to TP-1, which is circuit ground. All test points referred to in this section are located on the T.N.T. P.C. board.

1. Insert the balance card, 49x164, in the tray. Push the tray in.
2. Measure the voltage at TP-5, adjust R40 until the voltage reading is 9.00 +/- .05 VDC.
3. Measure the voltage at TP-6, adjust R39 until the voltage is 9.00 +/- .05 VDC.
4. Two or more repetitions of steps 4 and 5 may be necessary to complete the TNT adjustment. It is VITAL to correct operation of the acceptor that the TP-5 and TP-6 readings are within .05 VDC of each other.
5. Measure the voltage at TP-4. Adjust R38 until the voltage reading is 12.6 +/- .1 VDC.
6. Recheck the test points specified above and readjust as necessary. Adjusting R40 affects TP-4, TP-5, and TP-6. Adjusting R38 and R39 affects TP-4 and TP-6 respectively.
7. Remove the balance card from the tray.
8. Test the acceptor for proper performance.

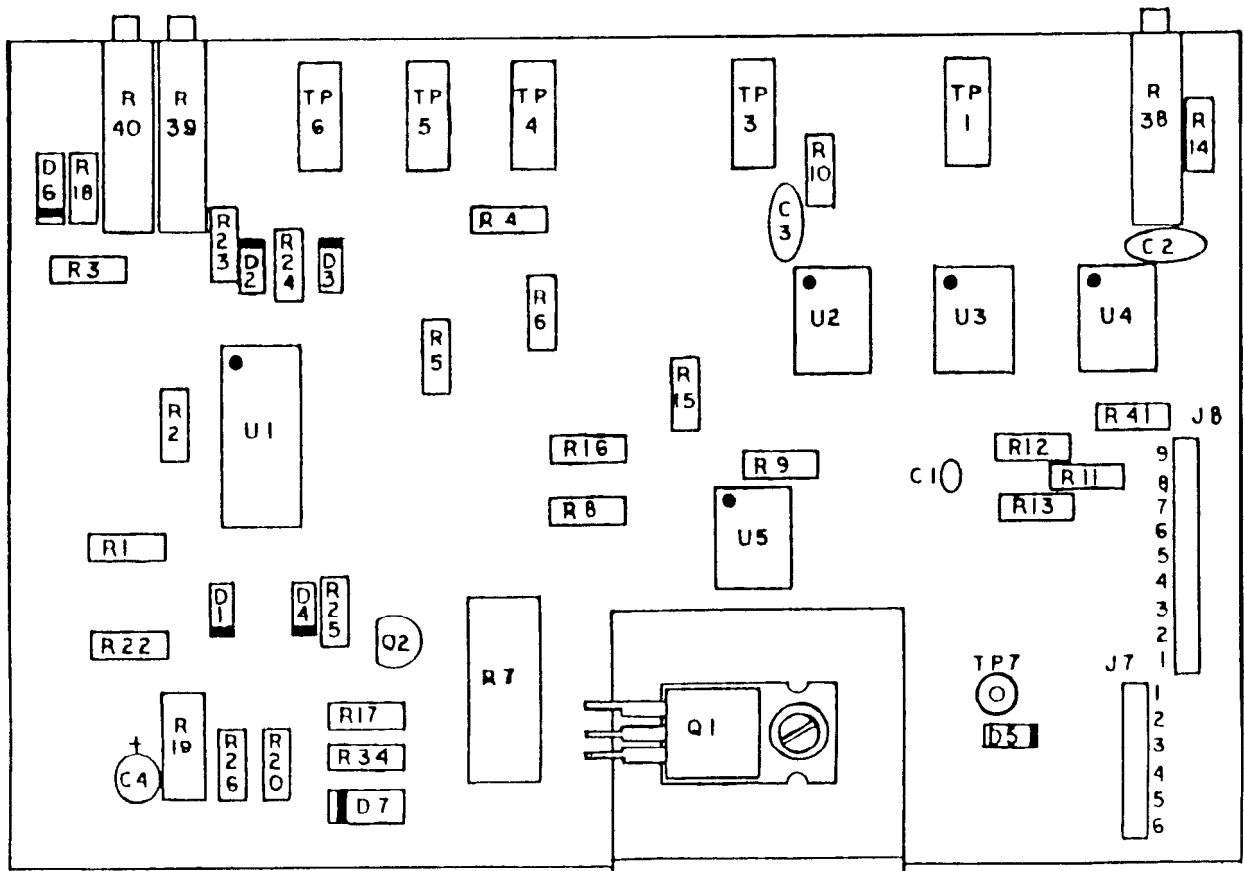


FIGURE 15

CLEARING CIRCUIT ADJUSTMENT - Common to Both Types of Acceptors. See Figure 16.

The clearing circuit in the bill acceptor provides a high level of security to prevent manipulation of a bill during the collection cycle. It prevents a vend signal from being issued until the bill is removed from the tray. If it is out of adjustment, the acceptor may not issue a vend signal.

The amplifier module **MUST** be in the acceptor for this adjustment.

1. Place a jumper wire between pins 1 and 4 of plug J2 on the master board.
2. Turn potentiometer R8 fully counterclockwise. This potentiometer may have a "Factory Sealed" label over it.
3. Connect a DVOM with the negative lead to the acceptor chassis and the positive lead to test point one, TP-1.
4. Insert the adjustment card, 49x218, into the tray with the words "Clearing Circuit Adjustment" pointing towards the bill acceptor but facing down. Close the tray and adjust potentiometer R8 for a reading of approximately .5 to .7 VDC (less than one volt).
5. Release the tray, remove the adjustment card and insert it with the words "Clearing Circuit Adjustment" away from the bill acceptor facing down, side B. Close the tray and measure the voltage at TP-1. This voltage must be equal to or greater than 7 VDC. If unable to obtain 7 VDC, repeat step 4 and readjust to a voltage closer to one volt.

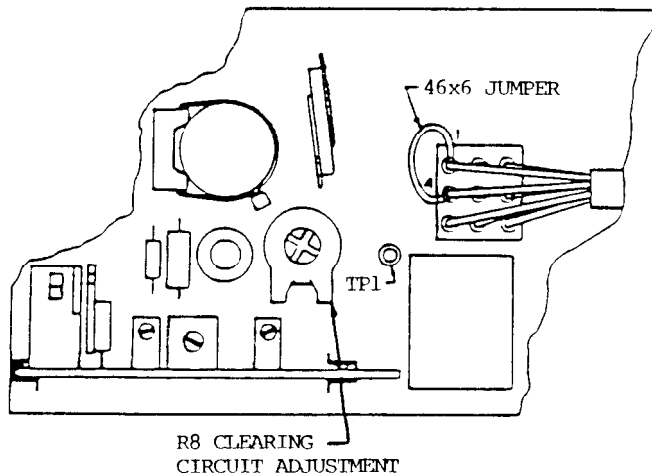


FIGURE 16

BILL TRANSPORT SYSTEM ADJUSTMENT - Common to Both Types of Acceptors. See Figure 17.

The solenoid, motor rail, and drive rollers make up the bill transport system. Proper adjustment of the assembly is necessary to ensure proper delivery of the bill. Improper adjustment can result in folded notes in the stacker or, in the worst case, a jam.

The solenoid pulls the motor rail so that the drive rollers come into contact with the upper idler rollers to move a bill through the acceptor. The motor rail also retracts the bill stops and locks the tray. Adjust the solenoid as follows:

1. Loosen the two solenoid adjustment locking screws.
2. Position the solenoid so that when it is energized, it will cause the lower drive rollers to lift the upper rollers to the point where the upper roller shaft is raised approximately .032 (.8 mm) in its bearing slots. See Figure 14. This adjustment must be checked under actual operating conditions, not by manual actuation.
3. Tighten the solenoid adjustment locking screws.
4. Test the acceptor for proper operation.

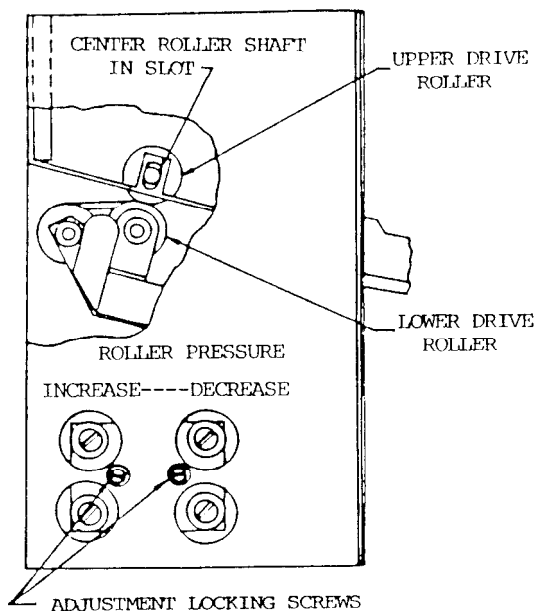


FIGURE 17

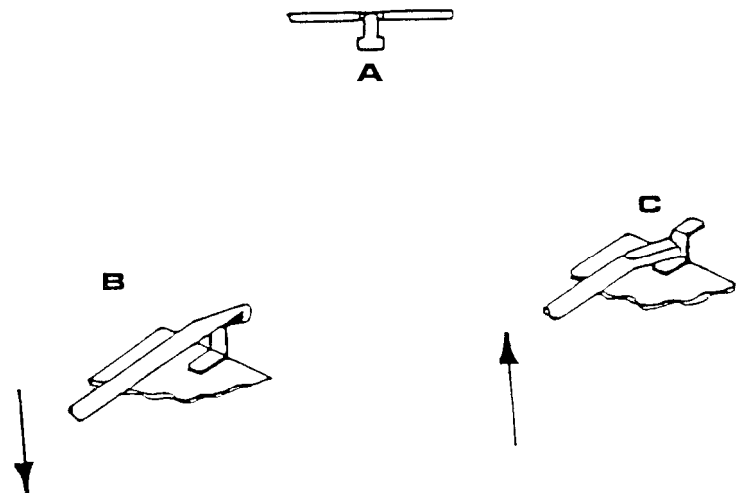


FIGURE 18

BILL STOP ADJUSTMENT - Common to Both Types of Acceptors. See Figure 18.

The note stops prevent improper placement of the bill in the tray. They are the white plastic stops mounted on the rear of the tray assembly. When the tray is closed and the motor rail engaged, the note stops must be lowered below the surface level of the tray to allow the bill to pass through the acceptor. This is accomplished with adjustable tabs on the motor rail. They can be re-formed up or down to increase or decrease deflection of the bill stops.

The bill stops should retract so that the top of the bill stop is .030 inch (.75 mm) to .090 inch (2.25 mm) below the top surface of the tray at the point through which the bill stop passes. See Figure 15A.

The bill stops are adjusted by bending the small actuator tabs on either side of the motor rail. To reduce the bill stop retraction, bend the end of the actuator tab upward. See Figure 15B. To increase the bill stop actuation, the end of the actuator tab is bent downward. See Figure 15C.

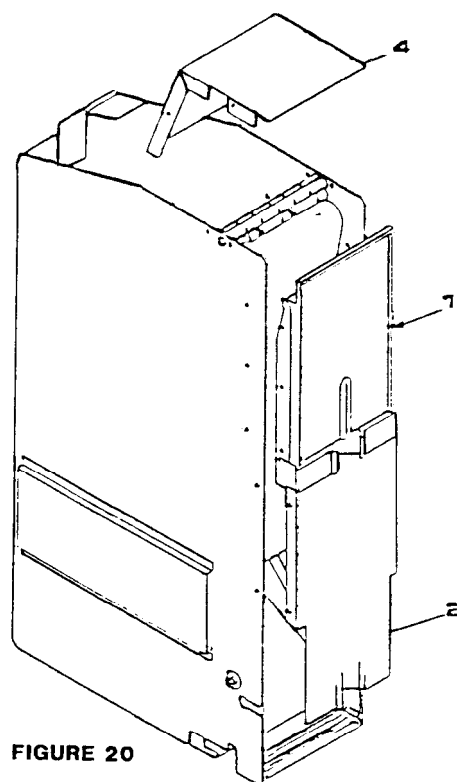
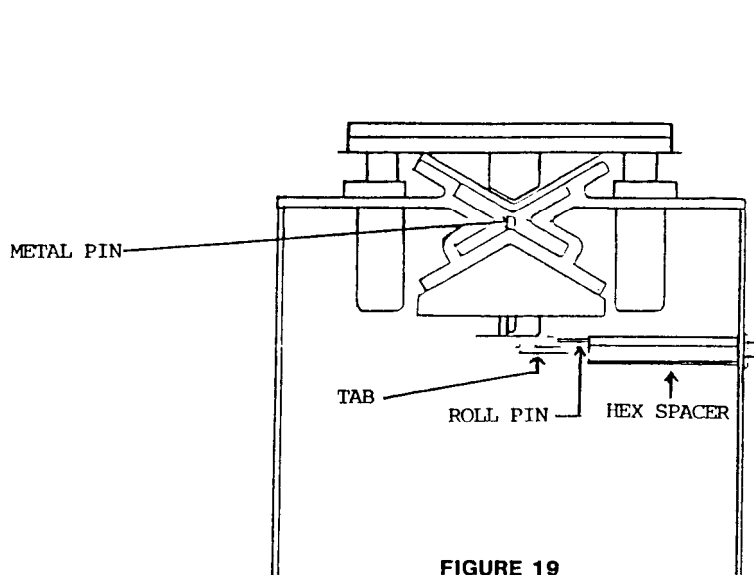
CAUTION!! Excessive retraction of the bill stops puts an unnecessary load on the solenoid which may cause it to fail to operate properly at low line voltage.

HOPPER ADJUSTMENTS

DUMP ADJUSTMENT. See Figure 19.

This adjustment should be made if the coins do not fall out of the front coin channel when the dump lever is pulled all the way up.

1. Lay the hopper on its back so the hex spacer with the roll pin can be observed in the bottom right of the hopper. See Figure 19.
2. Move the dump handle all the way up until it stops.
3. Loosen the hex spacer and turn it until the roll pin protruding from the end contacts the tab on the white plastic toggle assembly.
4. Continue turning the hex spacer until the metal pins protrude equally into the channel or are both retracted below the level of the inside channel face.
5. Tighten the hex spacer and check to see if the pins are still totally retracted. If not, go back to #2 and repeat the adjustment.



COIN STRIPPER & COIN CHANNELS. See Figure 20.

It is very important to the proper operation of the hopper, that the coin stripper (Item 3) and the upper coin channel assembly (Item 1) be tight to the hopper belt.

To adjust the coin stripper, first remove the hopper baffle plate (Item 4). Then loosen the three screws (2 on the left and 1 on the right) that hold the coin stripper in place. Pivot the coin stripper downward until the coin stripper fingers are firmly touching the hopper belt. Retighten the coin stripper screws and reinstall the coin baffle.

To insure that the upper coin channel assembly (Item 1) is tight to the hopper belt, loosen the 8 screws that hold the upper and lower coin channel assemblies in place. Push back on the upper coin channel assembly and tighten the 4 screws that hold the upper coin channel assembly in place. Before tightening the 4 screws that hold the lower coin channel assembly (Item 2) in place, push up on the lower coin channel assembly to insure a tight fit between the upper and lower coin channel assemblies.

TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
Changer will not accept bills.	Faulty subassembly.	Turn the main power off. Remove the power supply board. Turn the power on. If the unit now accepts, the problem is NOT in the acceptor or stacker, but is in the control center, a hopper, or a harness.
Poor or no acceptance of bills.	Secondary sensor loose or out of adjustment.	Remove the covers and disconnect the secondary system. If the unit accepts, readjust the secondary sensor. If the unit still does not accept, examine the sensor head for damage. Replace if necessary.
	Sensing module board loose.	Check to see that the amplifier module is inserted properly and is making good contact. Check all secondary system connections.
	Defective grid lamp.	Remove the top plate of the acceptor. Lift the tray clear switch actuator (this switch is normally actuated by the note). If a red light does not appear under the infrared filter, replace the grid lamp.
	Broken wire to solar cell.	Check the wires and replace the solar cell if any wires are broken.
	Dirt on sensors or tray insert.	Clean the secondary sensor and infrared filter with a soft brush. See the section on preventive maintenance. Clean the tray insert with a damp cloth.
	Sensitivity control set too low.	Turn the sensitivity control clockwise to increase acceptance.
	Primary detection system is out of adjustment.	Adjust the primary detection system and check the grid lamp.
No or intermittent vend.	Defective bill acceptor.	If there is no payout but the bill is accepted and the stacker operated, the problem is NOT in the bill acceptor.

TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
No or intermittent vend.	Rear clear switch is defective or sticking.	Listen for the actuation of the rear clear switch to make sure it activates and deactivates as a bill moves through the acceptor. Remove the top cover of the acceptor to assist in this judgement. Reform the wire switch actuator if necessary to make the switch operate even with a very limp bill.
	Clearing circuit is defective or out of adjustment.	Turn pot R8 fully counter-clockwise. If a vend now occurs, readjust the clearing circuit.
	Defective changer component.	If a note is being delivered from the note acceptor and the stacker operates, check the changer control box for loose or broken wires, plugs, or pins. Check to see that all the boards are seated correctly.
No or poor acceptance of coins.	Dirty coin acceptor.	Clean the unit with soap and water.
	Changer will not accept coins.	Make sure the plug is connected to the coin acceptor.
Bills jammed or folded in the bill acceptor or stacker.	Defective block-out coil.	Make sure the block-out coil activates when the changer is turned on.
	Incorrect adjustment of the solenoid and bill transport.	Adjust the solenoid as previously described.
	Bill stops interfere with transport of the bill.	Reform the tines so they do not slow the bill as it moves through the acceptor.
Front coin channel does not fill completely. Changer goes on empty with coins in the hopper.	Foreign objects in the bill path.	Remove the top cover and top roller plate. Clean and remove all foreign objects.
	Defective hopper control board.	Interchange the hopper control boards operating one hopper at a time to determine if the control board is defective. Replace any defective board.
Incorrect coin payout.	Program board not seated correctly in its connector.	Check the program boards for good connection.
	Defective hopper control board.	Replace the hopper control board and test the changer.
	Defective hopper harness.	Check all plugs and pins to make sure proper connection is made.

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
Hopper does not shut off when the front coin channel is full.	Defective hopper control board.	Interchange the hopper control boards, operating one hopper at a time to determine if the control board is defective. Replace any defective board.
No or intermittent vend C8005, C8025.	Defective interface board.	Replace the interface board.
Short payback on \$5 bill only in C8005, C8025.	Defective interface board.	Replace the interface board.
	Defective hopper control board.	Operate the hoppers one at a time. Replace any defective hopper control board.
No \$5 acceptance in C8005, C8025; \$1 acceptance OK.	\$5 inhibit switch in the acceptor is in the wrong position.	Move the switch and test the changer.
	Defective low level switch in the hopper.	Check the low level switch in the hopper for proper operation.
	In C8025 either hopper may be low.	Fill the hoppers and test the changer.
	Defective module board in the acceptor.	Replace the module board.

HOPPER TROUBLESHOOTING

This guide is for the hopper only and assumes that other changer components, such as the hopper control card, have been eliminated. One easy way to confirm if a problem is in the hopper is to move the hopper to another position in the changer. If the problem follows the hopper, then the problem is in the hopper assembly moved.

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
Incorrect coin payout.	Wrong coins in the hopper.	Insure that the proper coins are in the hopper and that there are no mixed (2 or more different denominations) coins in the hopper.
	Defective lower emitter lamp.	Interchange emitter lamps to determine if one is faulty. Replace any defective emitter lamp.
	Dirt blocking the emitter light path.	Remove the emitter lamps and the coin channel front (plastic V-strip) and check the holes in the coin channel front to insure they are open and check the holes in the coin channel body to insure dirt is not blocking the sensor area.
	Defective lower sensor.	Replace the lower coin channel assembly or the lower sensor.
	Coin jam in the lower coin channel assembly.	Clear the coin jam and check the channel for burrs, excessive wear or foreign objects.
	Defective Hopper Control Board	Replace board.

HOPPER TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
Incorrect coin payout.	Solenoid adjustment incorrect causing a plunger jam.	Readjust the solenoid.
	Slow or sticking solenoid plunger.	Replace the solenoid spring or add the spring alignment cap, part #17x870, if missing.
Hopper motor does not run when the front coin channel is empty, but will run in the dump mode.	Defective upper emitter lamp.	Interchange the emitter lamps to determine if one is faulty. Replace any defective lamp.
	Dirt blocking the light path.	Remove the emitter lamps and the coin channel front (plastic V-strip) and check the holes in the coin channel front to insure they are open and check the holes in the coin channel body to insure dirt is not blocking the sensor area.
	Defective upper sensor.	Replace the lower coin channel assembly or the upper sensor assembly.
Hopper motor will not run in the dump mode.	Hopper motor switch mis-adjusted or defective.	Adjust or replace the switch.
	Defective motor/gear box assembly.	Replace the motor/gear box assembly.
Hopper motor will not shut off when the front channel is full.	Hopper motor switch mis-adjusted or defective.	Adjust or replace the switch.
	Upper sensor defective.	Replace the lower coin channel assembly or the upper sensor assembly.
Hopper turns on and immediately resets to empty.	Belt too loose.	Readjust the spring tension on the belt. Replace the belt if necessary.
	Defective bottom roller.	Replace the bottom roller.
	Cleats missing from the belt.	Replace the belt.
	Defective emitter lamps.	Interchange the emitter lamps to determine if one is faulty. Replace any defective emitter lamp.
Coin leak from the bottom of the hopper.	Hopper bottom plate bent.	Replace the bent bottom plate.
	Hopper bottom plate not snug against the belt.	Reform the hopper dump arms for proper adjustment.

HOPPER TROUBLESHOOTING

PROBLEM

Coin jam in the upper coin channel.

PROBABLE CAUSE

Defective or damaged toggle mechanism.

Coin stripper not adjusted properly or broken.

Burrs, foreign objects, bent coins or excessive dirt in the coin channel.

Wear strip in the lower coin channel or the coin channel front is loose, catching the coins at the top of the lower coin channel.

CORRECTIVE ACTION

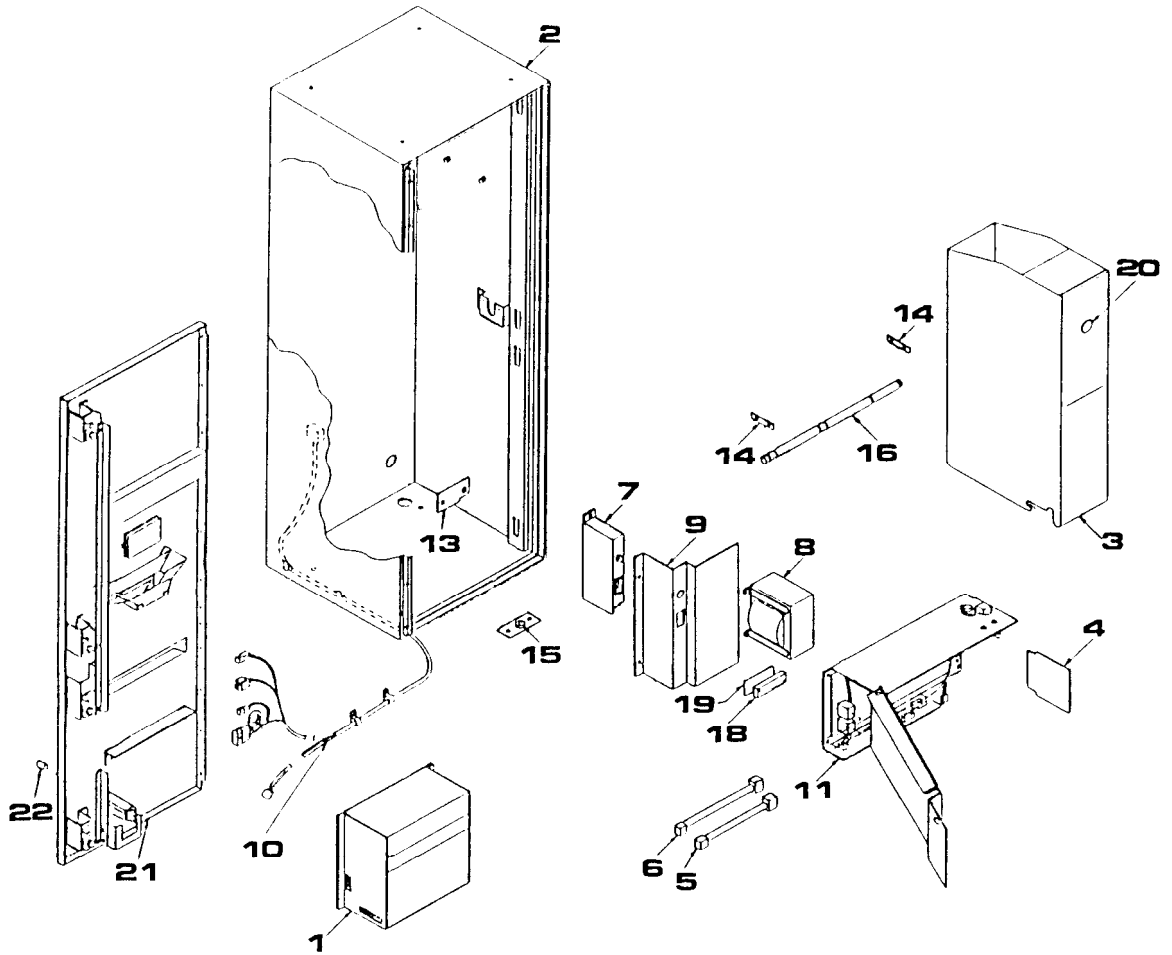
Replace the upper coin channel assembly or defective toggle parts.

Adjust the coin stripper to touch the belt or replace it if broken.

Remove any foreign objects or bent coins, clean the channel and file any burrs smooth.

Replace the lower coin channel assembly or lower coin channel front (plastic V-strip).

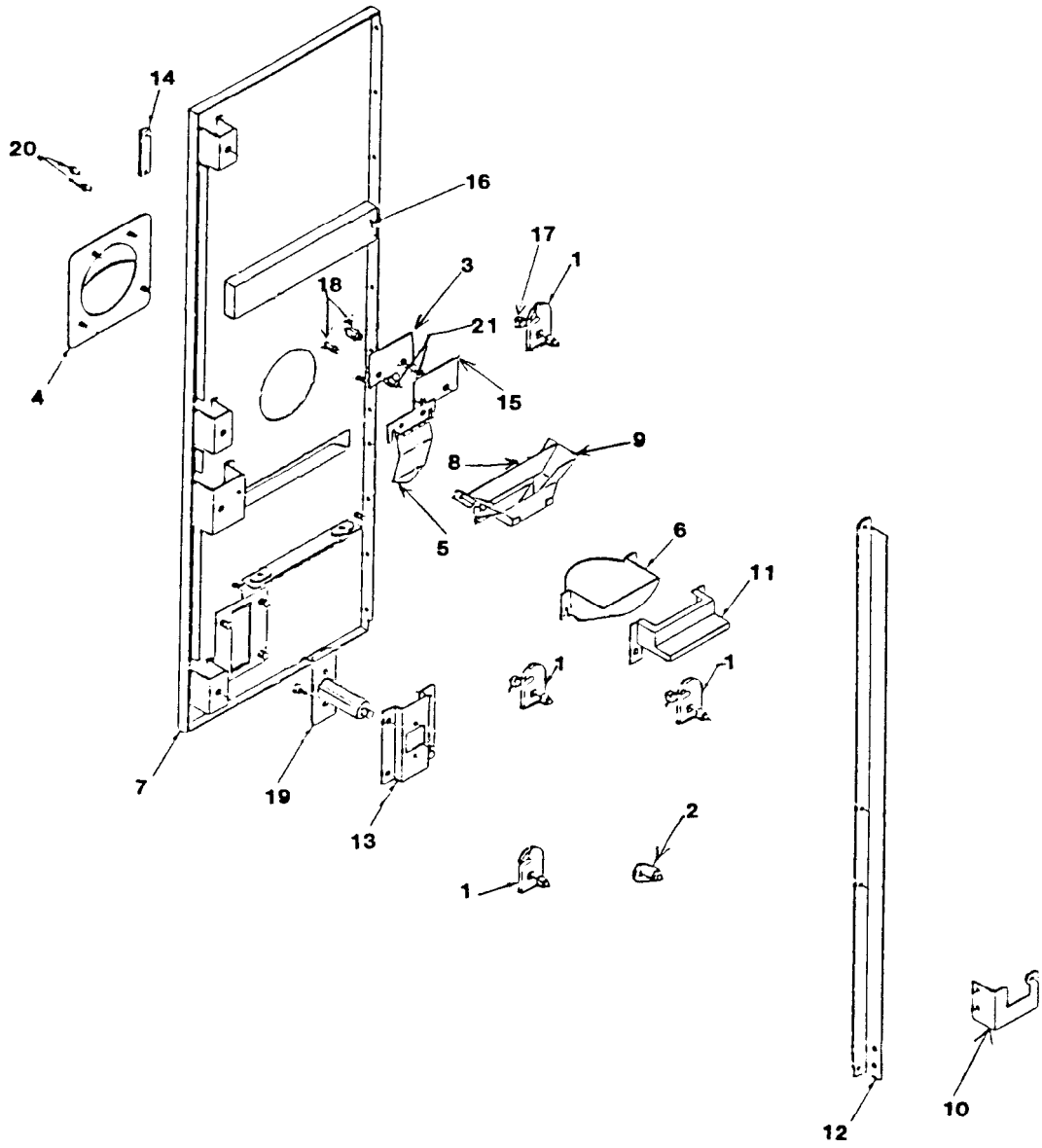
C-SERIES CHANGER



C-SERIES CHANGER

ITEM	PART NUMBER	MODEL	DESCRIPTION
1	88X194-307 88x246-3400	Various	\$1 Bill Acceptor \$1 & \$5 Bill Acceptor w/TNT
2	1x136-1	All	Cabinet Body Assembly
3	1x242 1x243	Various	Hopper Payout Assembly Fully Expanded Hopper Assembly 1/2 Expanded Hopper Assembly
4	2x1731	All	Power Supply P.C. Board
5	2x1795-2 2x4271-2	C-8020 C-8025	Main Board to Hopper Harness
6	2x1795-1 2x4271-1	C-8020 C-8005 C-8025	Main Board to Hopper Harness
7	2x2127	All	Mounting Channel w/Switch & Breaker
8	2x2128	All	Transformer
9	2x2214	All	Power Supply Cover
10	2x3980 2x4270 2x4023	C-8000 C-8005 C-8025 C-8020	Main Cabinet Harness
11	2x3726 2x4311-2 2x2212 2x4311-1	C-8000 C-8005 C-8020 C-8025	Control Panel Complete
12	2x4299	C-8005 C-8025	Jumper Wire (Not Shown)
13	11x710	All	Line Cord Entrance Plug
14	12x272	All	Plate, Hopper Support Rod Ret.
15	17x226	All	Bushing, Strain Relief
16	20x520 20x332	C-8000 C-8005 C-8020 C-8025	Hopper Support Rod
17	30x205	All	#4-20 x .75 R.H.C.S. (Not Shown)
18	65x143-1	All	5 Pt. Barrier Block Terminal Strip
19	65x143-2	All	5 Pt. Number Strip
20	80x303-25 80x303-10 80x303-05	All	Label, 25 cents Label, 10 cents Label, 5 cents
21	2x3981-2 2x4005-4 2x4316 2x4315	C-8000 C-8020 C-8005 C-8025	Door Complete
22	29x28-101	All	Lock Cylinder

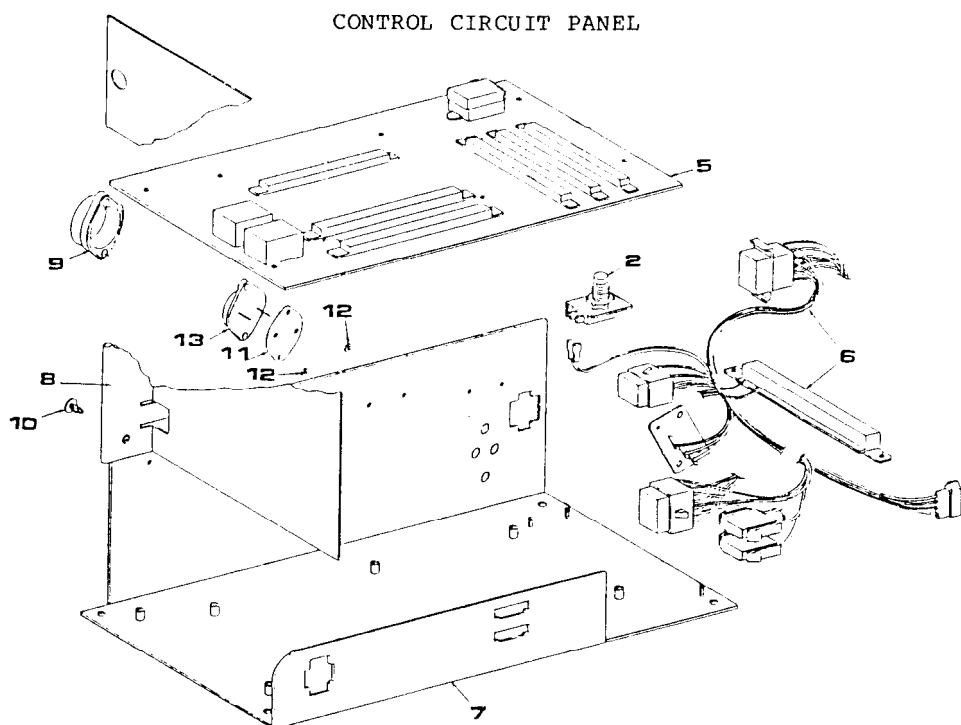
C-SERIES DOOR



C-SERIES DOOR

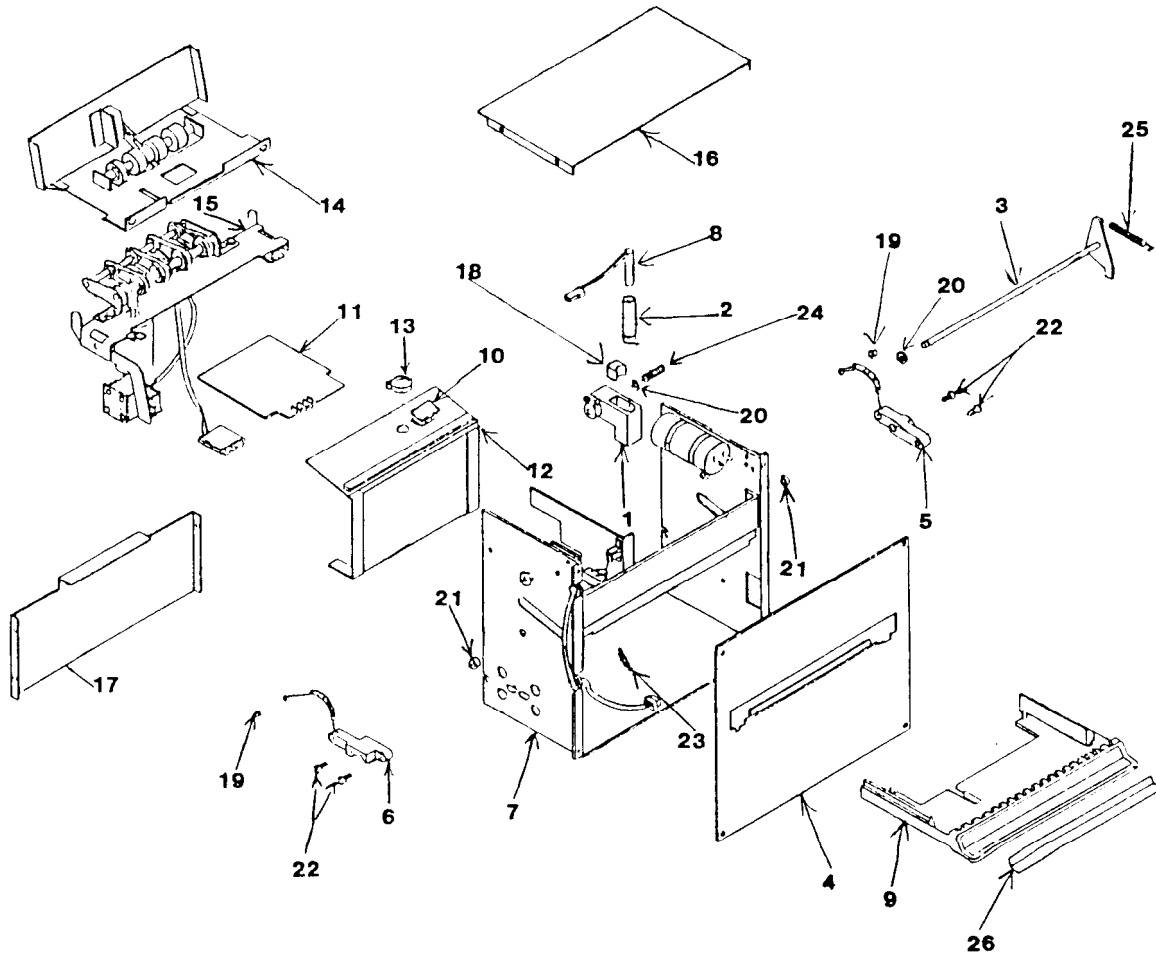
ITEM	PART NUMBER	MODEL	DESCRIPTION
1	2x3725	All	Lock Cam Plate
2	2x3872	All	Lock Cam
3	2x4290	C-8005 C-8025	Door L.E.D. P.C. Board
4	9x768-1	All	Reworked Face Plate
5	9x768-2	All	Reworked Coin Flap
6	9x768-3	All	Reworked Coin Cup
7	9x848 9x840	C-8000 C-8020 C-8005 C-8025	Cabinet Door w/Silk Screen
8	11x1251-5	C-8020 C-8025	Coin Baffle
9	11x1198 11x1251-6	C-8000 C-8005 C-8020 C-8025	Coin Chute Weldment
10	11x1211	All	Angle, Lock Rail Link
11	11x1248	C-8020 C-8025	Coin Cup Cover
12	12x462	All	Lock Cam Tie Bar
13	12x463	All	Bracket, Lock Mounting
14	14x14	All	Blank, Coin Entrance
15	37x21	C-8005 C-8025	Insulator, Door L.E.D. P.C. Board
16	17x482	All	Foam Mounting Pad
17	20x494	All	Lock Cam Spacer
18	21x60	C-8005 C-8025	Standoff
19	29x89	All	T-Handle Assembly
20	65x280-2	C-8005 C-8025	Lens, Snap On (Clear)
21	21x61	C-8005 C-8025	Standoff

CONTROL CIRCUIT PANEL



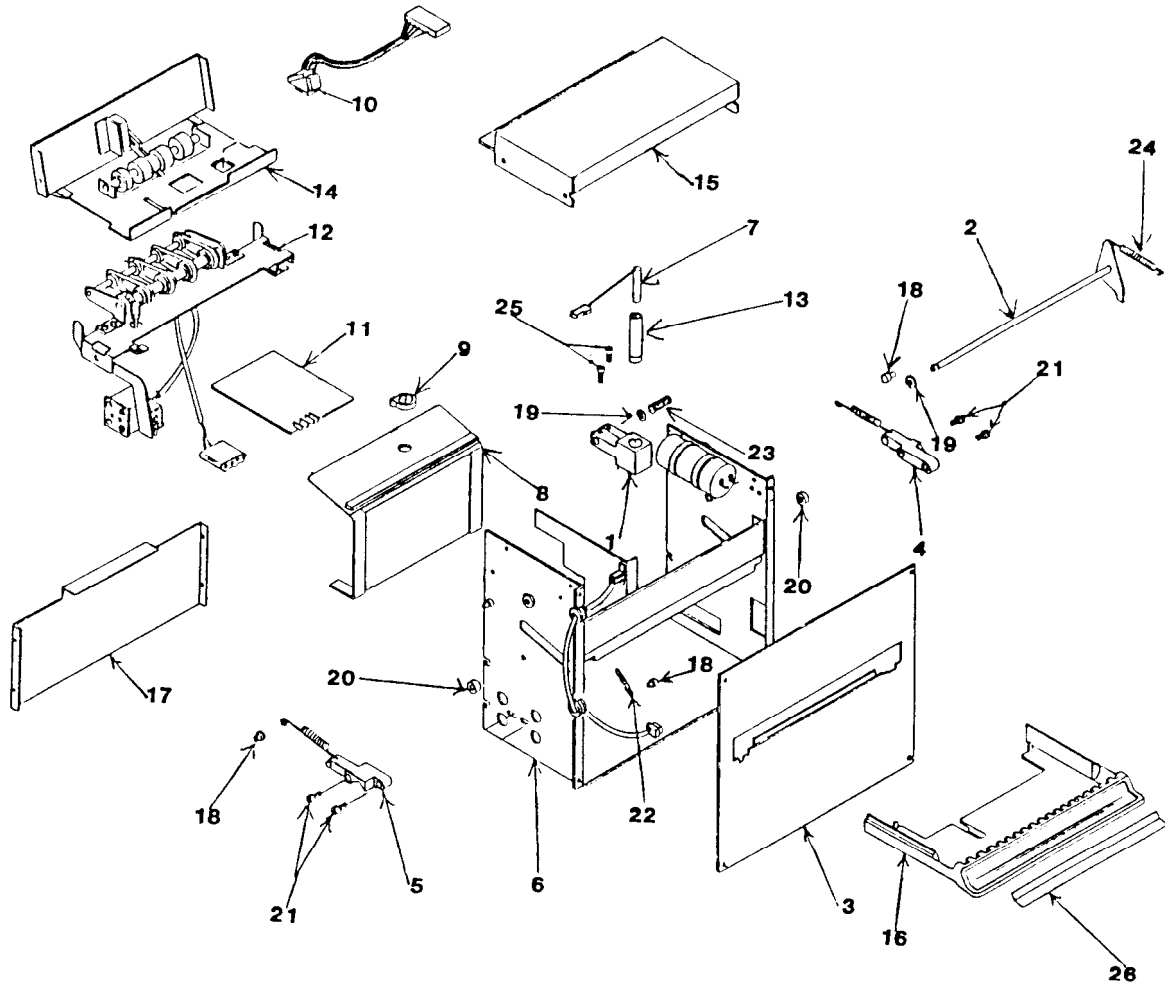
ITEM	PART NUMBER	MODEL	DESCRIPTION
1	2x4437, 2X1126, 2X4557	All	Hopper Control Board (Not Shown)
2	2x1791	All	Reset Switch w/Mounting Angle
3	61x180 2x3784 61x373 61x371	C8020 C8005 C8025 C8025	Program Card - Not Shown \$1 Program Card - (Not Shown) \$5 Program Card - (Not Shown)
4	2x3781 2x4016	C8005 C8025	Interface Card - (Not Shown)
5	2x3716 2x2236 2x4267	C8000 C8020 C8005 C8025	Control Board
6	2x2211 2x4312	C8000 C8020 C8005 C8025	Control Circuit Panel Harness
7	2x2210 2x4317	C8000 C8020 C8005 C8025	Control Circuit Panel
8	2x2213 2x4317	C8000 C8020 C8005 C8025	Control Circuit Cover
9	17x361	All	Transistor Cover
10	29x78	All	Canoe Clip
11	35x19-2	All	Insulator, Transistor
12	35x19-3	All	Insulator, Teflon
13	56x67	All	Transistor MJ-3000

\$1 BILL ACCEPTOR W/SSTR2



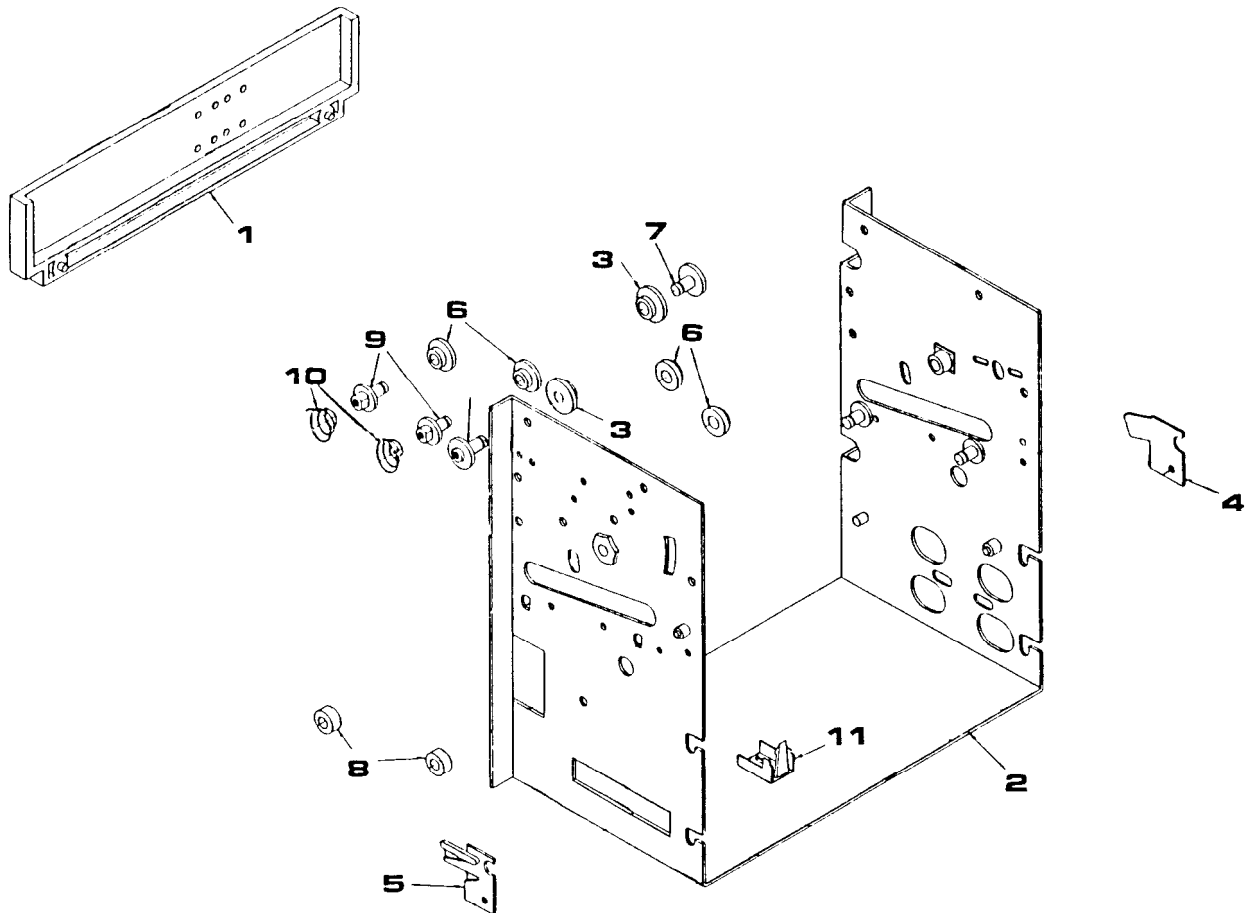
ITEM	PART NUMBER	DESCRIPTION	ITEM	PART NUMBER	DESCRIPTION
1	2X306-1	Reticle Holder	13	2x1866	Filter Housing
2	2x883	Reticle Tube	14	2x2318	Top Roller Plate
3	2x901	Reticle Rod	15	2x3592	Motor Rail Complete
4	2x963	Front Panel	16	11x218-1	Top
5	2x968-1 33x73	End Block, R.H. Block Spring	17	11x871	Stacker Back Plate
6	2x1029-2 33x73	End Block, L.H. Block Spring	18	17x54-2	Clamp, Reticle
7	2x3037	"U" Housing w/Tray Wheels	19	17x62	Sleeve Flanged Nylon
8	2x1509	Solar Cell	20	17x64	Teflon Washer
9	2x1544 14x5-4 9x342	Tray Assembly Tray Extrusion Tray Insert \$ Bill	21	20x232	Spacer
10	2x3156	SSTR2 Sensor	22	30x30	Screw
11	2x3155	Sensing Module w/SSTR2	23	33x13	Spring Motor Return
12	2x1815	Master & Lamp Board	24	33x20	Spring Ret. Traverse
			25	33x40	Spring Reticle Lever
			26	80x188-1	Label, Tray
			27	2x1144	Trigger Switch (Not Shown)

\$1 & \$5 BILL ACCEPTOR W/TNT



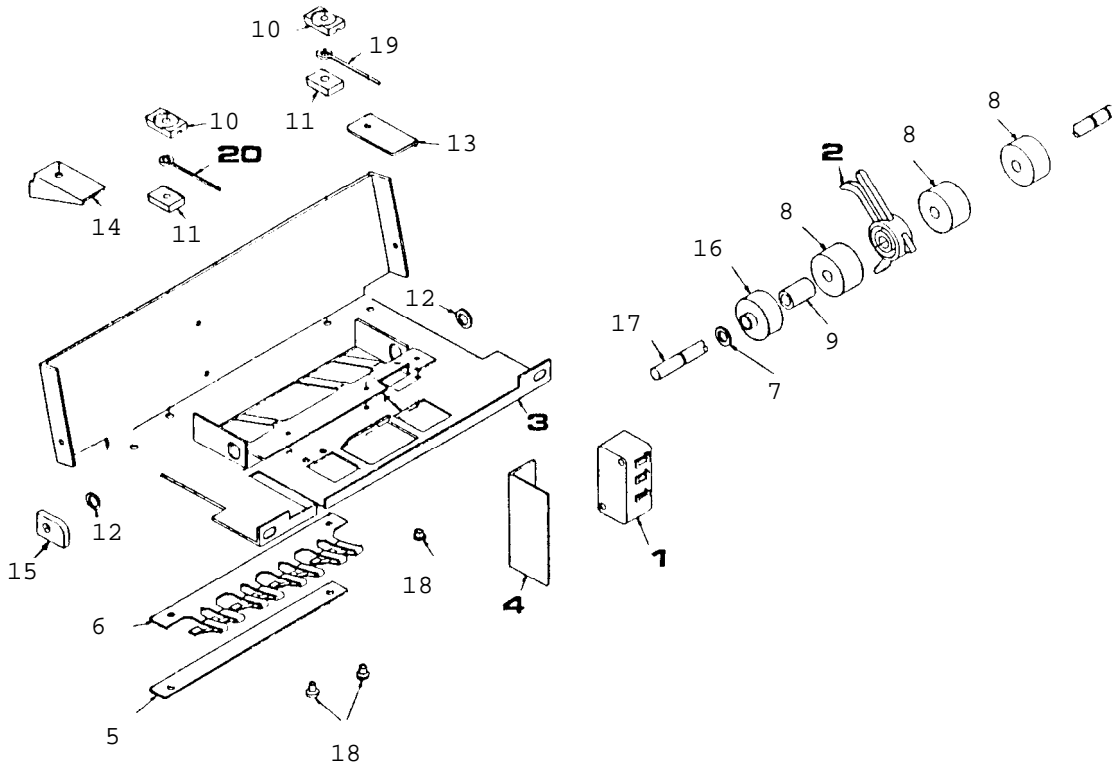
ITEM	PART NUMBER	DESCRIPTION	ITEM	PART NUMBER	DESCRIPTION
1	20x497	Reticle Holder	15	2x2496	Top & TNT PC Bd. Assy
2	2x901	Reticle Rod		2x1630	Top Plate
3	2x963	Front Panel		2x2498	TNT P.C. Board
4	2x968-1	End Block, R.H.	16	2x3792	Tray Assembly
5	2x1028-2	End Block, L.H.		14x5-4	Tray Extrusion
6	2x4292	"U" Housing w/Tray Wheels		9x749	Tray Insert
7	2x3763	Solar Cell w/Plug	17	11x871	Stacker Back Plate
8	2x3791	Master & Lamp Board	18	17x62	Sleeve, Flanged Nylon
9	2x1866	Filter Complete	19	17x64	Teflon Washer
10	2x2044	T.N.T. Head	20	20x232	Spacer
11	2x4297	Sensing Module	21	30x30	Screw
12	2x3592	Motor Rail Complete	22	33x13	Spring, Motor Return
13	2x3762	Reticle Tube	23	33x20	Spring, Ret. Traverse
14	2x4030	Top Roller Plate	24	33x40	Spring, Reticle Lever
			25	30x203	Screw
			26	80x581	Label, Tray US \$1 & \$5
			27	2x1144	Trigger Switch (Not Shown)

"U" HOUSING W/TRAY WHEELS



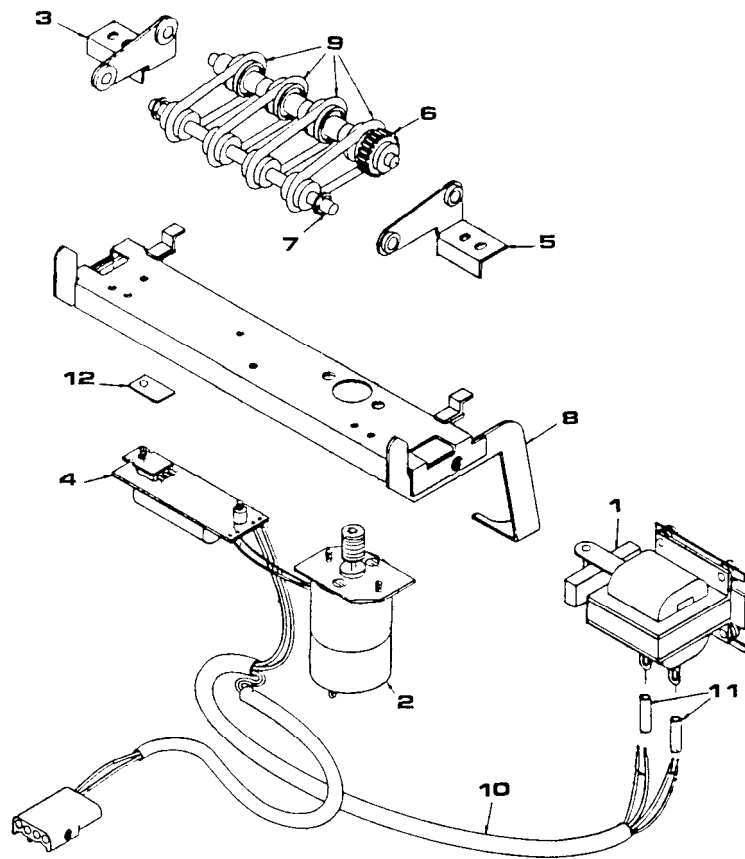
ITEM	PART NUMBER	DESCRIPTION
1	17x241	Escutcheon
2	2x4291 2x3036	"U" Housing (staked) - \$1 & \$5 "U" Housing (staked) - \$1
3	17x54-7	Tray Wheel
4	17x324-1	Cam Block Left-hand
5	17x324-2	Cam Block Right-hand
6	17x363	Tray Wheel
7	20x92	Stud, Top Tray Wheel
8	20x67	Sleeve, Stud Adjustment
9	20x338	Stud, Tray Wheel Adjustable
10	33x113	Tray Wheel Spring
11	17x590	P.C. Board Mount Snap-In

TOP ROLLER PLATE



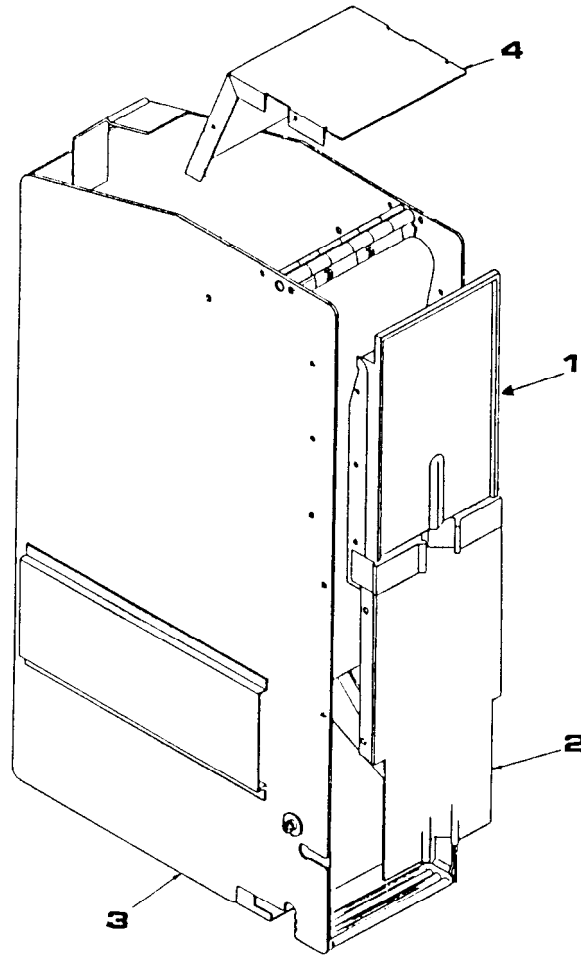
ITEM	PART NUMBER	DESCRIPTION
1	2x1382	Rear Clear Switch
2	17x457	Actuator, Rear Clear Switch
3	11x1113	Top Roller Plate
4	11x659	Bracket Rear Clear Switch
5	12x264	Retainer Bar
6	12x396	Tine Spring Extended Back
7	17x438	Teflon Washer
8	17x353	Idler Roller
9	17x354	Spacer, Idler Roller
10	17x436	Top Spring Retainer Block
11	17x437	Bottom Spring Reticle Block
12	17x439	Teflon Washer
13	17x513-1	Bill Deflector, Right-hand
14	17x513-2	Bill Deflector, Left-hand
15	17x453	Rotational Stop
16	17x560	Roller Idler
17	20x417	Idler Roller Shaft
18	30x75	Eyelet
19	33x101	Pressure Spring Roller

MOTOR RAIL



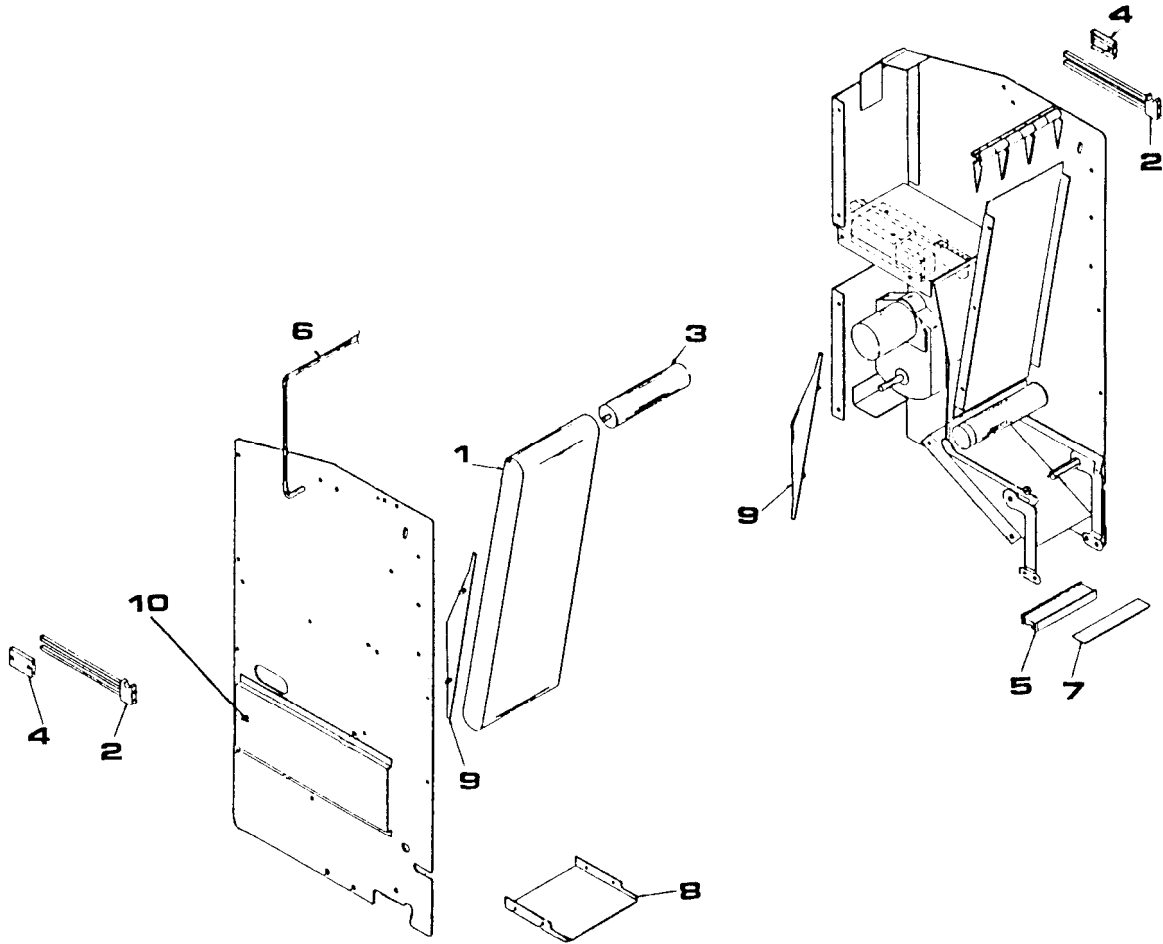
ITEM	PART NUMBER	DESCRIPTION
1	2x70	Solenoid
2	2x2658	Motor w/Worm
3	2x2147	Drive Roller Bracket, R.H.
4	2x2256	P.C. Board D.C. Motor
5	2x2285	Drive Roller Bracket, L.H.
6	2x3578	Drive Roller Complete
7	2x2321	Idler Roller
8	11x815	Motor Rail Assembly
9	16x34	"O" Ring Belt PRB # OC3.1
10	2x2957	Motor Rail Harness
11	37x3	Shrink Tubing
12	37x16	Insulator

HOPPER PAYOUT



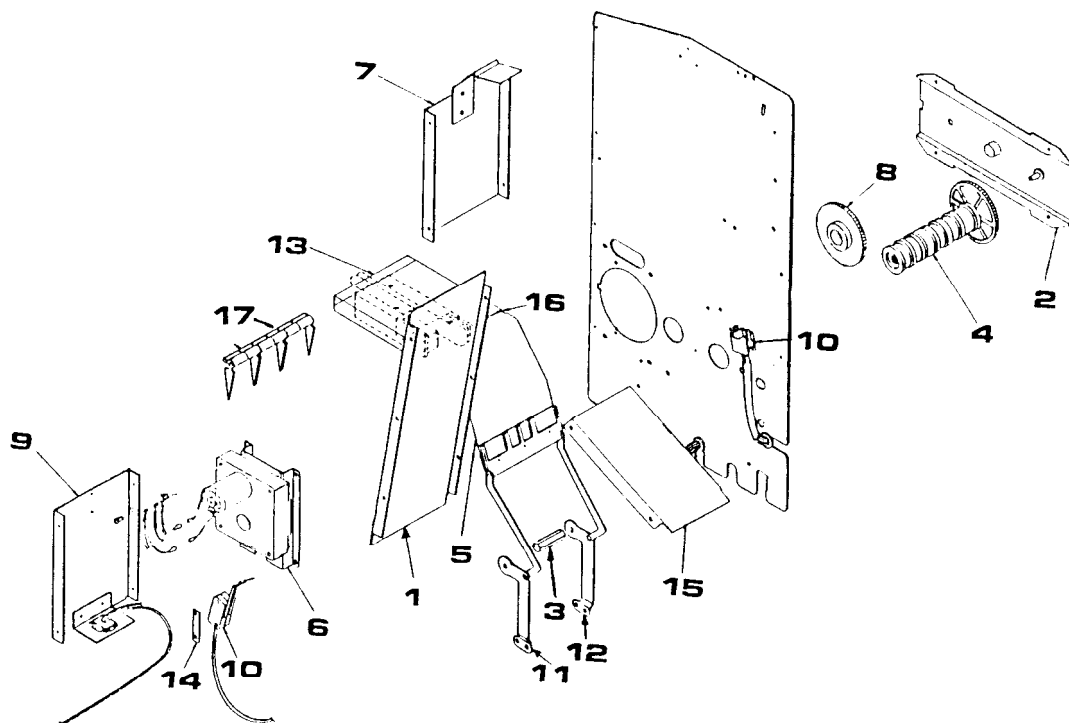
ITEM	PART NUMBER	DESCRIPTION
1	2x2338	Coin Channel Top
	2x2582	Coin Channel Top (SBA)
2	2x4236	Coin Channel Bottom
	2x4304	Coin Channel Bottom (SBA)
3	2x4255	Hopper Chassis - Standard Hopper
	2x4256	Hopper Chassis - Expanded Hopper
	2x4257	Hopper Chassis - 1/2 Expanded Hopper
4	12x380	Hopper Top Baffle - Standard Hopper

HOPPER CHASSIS

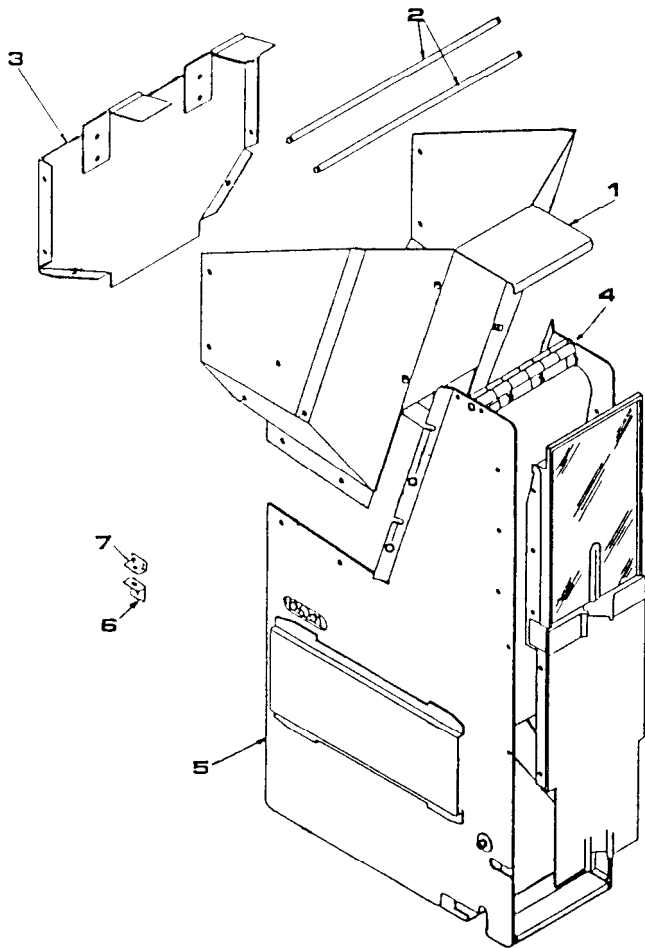


ITEM	PART NUMBER	DESCRIPTION
1	2x1105	Hopper Belt
2	2x1109	Belt Spring
3	2x1112 2x3935	Top Roller - Standard Hopper Top Roller - Expanded & 1/2 Hopper
4	20x267	Spring Clamp Blocks
5	20x291	Hopper Dump Handle
6	29x16	Hopper Handle
7	80x228	Label, "Lift Handle"
8	12x212	Bottom Retainer Channel
9	17x461	Belt Cover
10	2x3582	Gear Cover Left

HOPPER SIDE (RIGHT)



ITEM	PART NUMBER	DESCRIPTION
1	2x1117	Belt Support
2	2x3581	Gear Cover, Right
3	2x1914	Cam Shaft
4	2x1113	Bottom Roller
5	2x1110	Hopper Bottom
6	2x4356	Motor & Gear Box Assembly
7	2x1106	Hopper Back Plate
8	18x55	Idler Gear Assembly
9	2x1133	Multi-Purpose Channel
10	2x4265	Hopper Harness
11	2x2925-1	Hopper Dump Lever (Left)
12	2x2925-2	Hopper Dump Lever (Right)
13	2x4253	Hopper Bottom Rear w/CLS
14	12x120	Nut Plate
15	12x194	Multi-Purpose Channel
16	20x284	Shaft Hopper Bottom Rear
17	2x1152	Coin Stripper

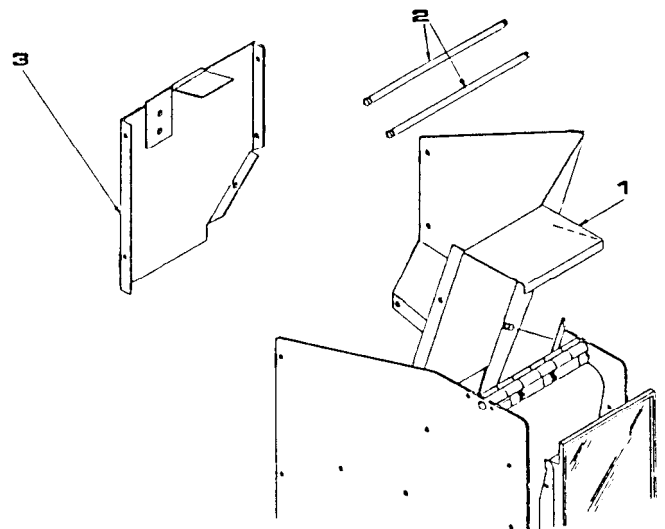


EXPANDED HOPPER

ITEM	PART NUMBER	DESCRIPTION
1	11x1197	Hopper Bucket
2	20x521	Rod, Hopper Bucket
3	2x3902	Hopper Back Plate
4	2x4254	Hopper Side Right (Standard Hopper)
	2x4261	Hopper Side Right (Expanded & 1/2 Expanded)
5	2x1118	Hopper Side Left (Standard Hopper)
	2x3907	Hopper Side Left (Expanded Hopper)
	2x3989	Hopper Side Left (1/2 Expanded Hopper)
6	11x1200	Bracket - Lower Belt
7	11x1201	Bracket - Upper Belt

1/2 EXPANDED HOPPER

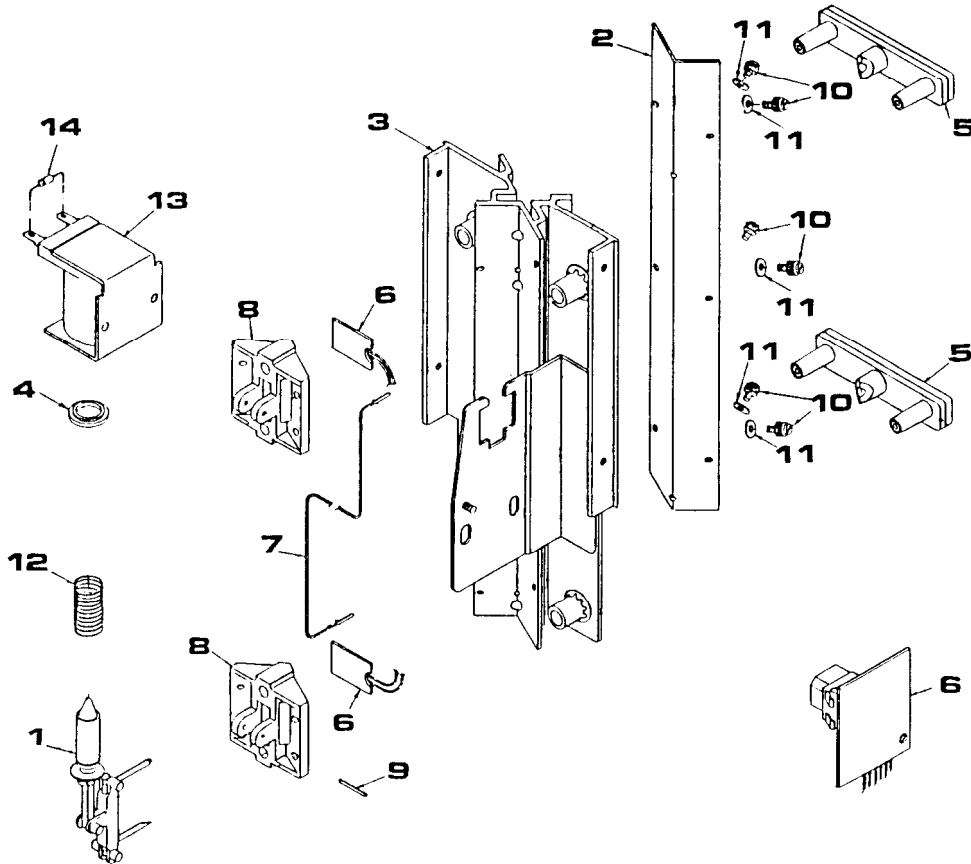
ITEM	PART NUMBER	DESCRIPTION
1	11x1226	Hopper Bucket
2	20x528	Rod, Hopper Bucket
3	2x3984	Hopper Back Plate



2X4236 Standard

2X4304 SBA \$

COIN CHANNEL BOTTOM

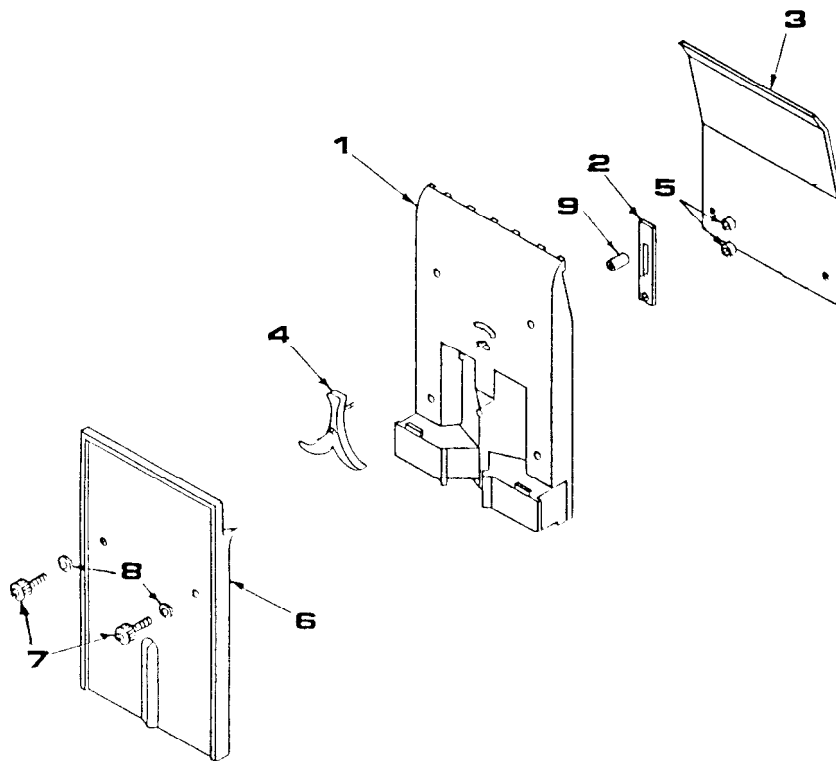


ITEM	PART NUMBER	DESCRIPTION
1	2x1915 2x1916	Solenoid Payout SBA Solenoid Payout
2	2x4230 2x4313	Coin Channel Front SBA Coin Channel Front
3	2x4233 2x4303	Shield to Coin Channel SBA Shield to Coin Channel
4	17x870	Spring Alignment Cup
5	2x3251	Emitter Housing LED style
6	2x4237 2x3511	Sensor Amp Board w/Plug SBA Sensor Amp Board w/Plug
7	2x3274	Wire Housing to Housing
8	17x326-1 17x343	Detector Housing SBA Detector Housing
9	20x219-410	Roll Pin
10	30x228	Thumb Screw Nylon
11	31x53	Nylon Washer
12	33x78	Spring Solenoid
13	51x9-1	Solenoid Frame & Coil
14	56x53	Diode
	51X0016-0001	Solenoid coil only

COIN CHANNEL TOP

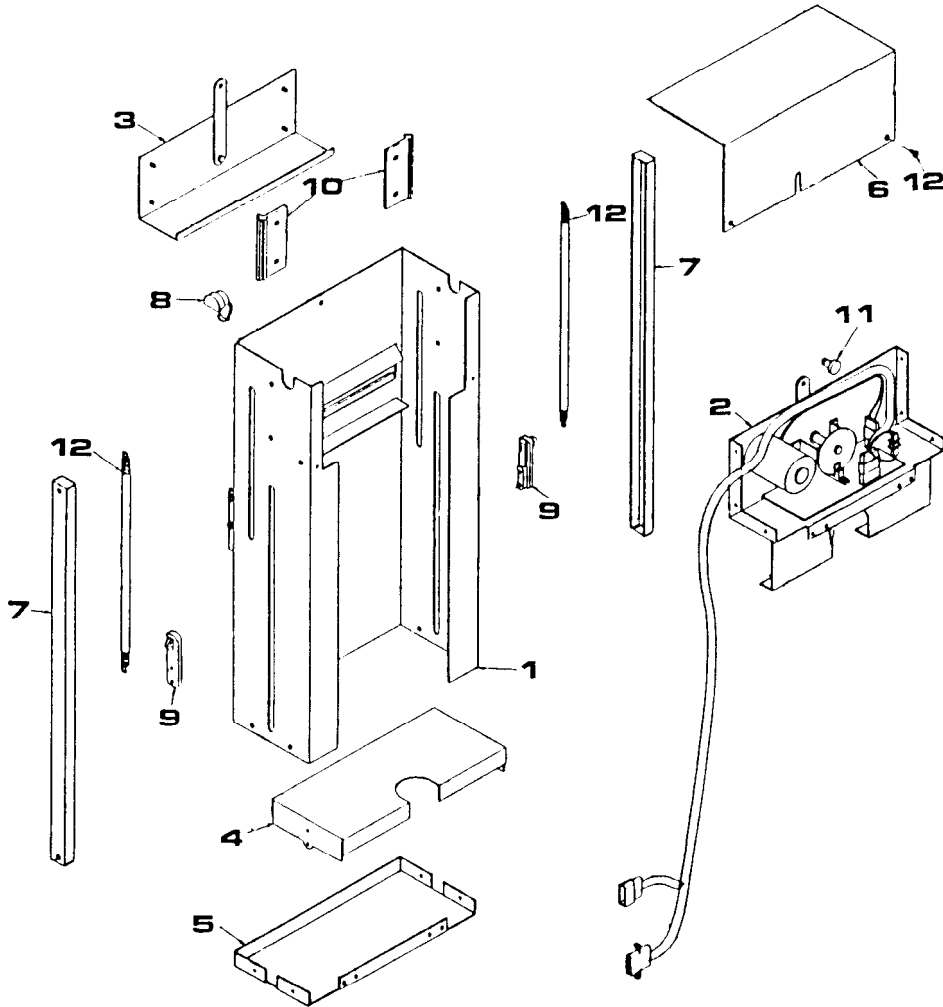
2X2338 Standard

2X2582 SBA \$



ITEM	PART NUMBER	DESCRIPTION
1	2x1237 2x2581	Upper Channel Back SBA Upper Channel Back
2	12x335	F/F Counterweight
3	12x520	Cover F/F Counterweight
4	17x523	Flip Flop
5	17x561	Retainer Cap
6	17x597	Upper Channel Front
7	30x229	Thumb Screw Nylon
8	31x53	Nylon Washer
9	17x901	Spacer, Upper Coin Channel

FLAT STACKER



ITEM	PART NUMBER	DESCRIPTION
1	2x2103	Housing, Stacker
2	2x2104 2x4004 2x2106	Drive Complete Motor Assembly P.C. Board Assembly
3	2x1110	Note Punch
4	2x2111	Note Platen & Glides
5	11x785	Stacker Bottom
6	11x789-2	Cover
7	11x790	Cover, Spring
8	17x256	Bushing, Strain Relief
9	17x525	Guide, Note Platen
10	17x526	Guide, Note Punch
11	20x349	Crank Link Pin
12	33x110	Spring, Note Platform

ACCESSORIES & KITS

Hopper Rebuild Kit.....48x502
(Update Kit)
*\$1 Tray Acceptor Rebuild Kit.....48x503
w/Motor Rail
*\$1 Tray Acceptor Rebuild Kit.....48x504
without Motor Rail

Universal Alignment Card.....49x218
US-1
TNT Alignment Card.....49x164
SSTR2 Alignment Card.....49x255

Tray Clamp.....46x2
Reticle Wrench.....46x3
Note Stop Adjustment Tool.....46x5

Hopper Vend Tester.....49x177

*NOTE: Above kits will convert non-SSTR2
acceptors to SSTR2 acceptors.

Dixie-Narco



A MAYTAG® Company

34000 VOKES DRIVE, EASTLAKE, OH 44094
216/946-3000