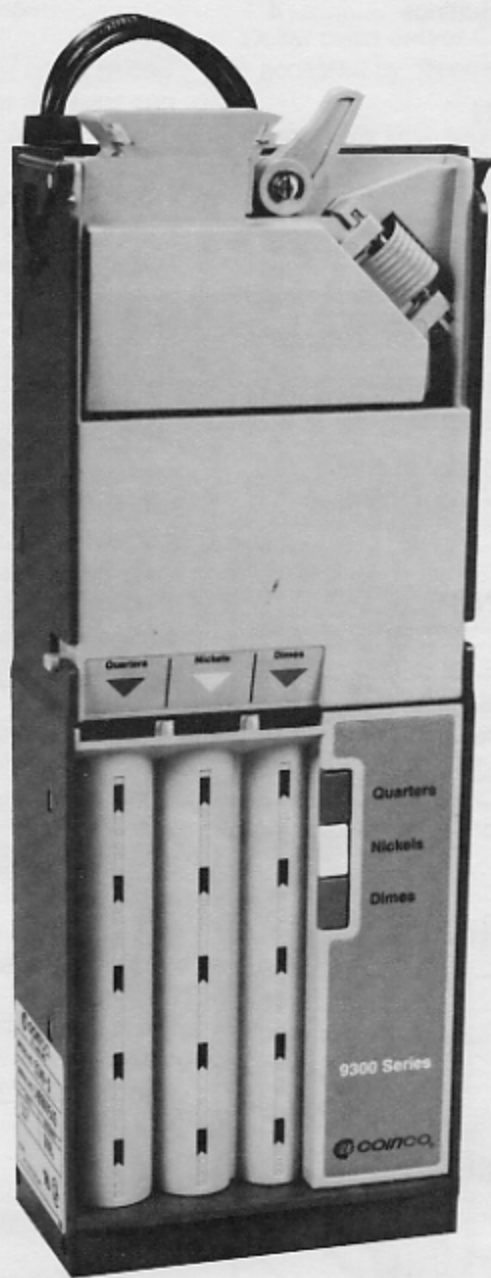


9300-S SERIES ELECTRONIC CHANGER OPERATION AND SERVICE MANUAL



 **coinco**®

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SECTION 1: GENERAL INFORMATION

INTRODUCTION

See Figure 1.0

This manual contains information on installing, operating and maintaining the Coinco 9300-S series coin changers which include:

9340-S
9360-S

Familiarize yourself with this manual to obtain the best performance from your coin changer.

Refer to the model and serial number when calling for information. Both serial and model numbers can be found on the label on the side of the changer.

Example: Serial Number 1289008242 (week 12, year 89). The first and second digits indicate the week of manufacture and the third and fourth digits indicate the year of manufacture.

AFTER UNPACKING

After unpacking the unit, inspect it for any possible shipping damage. If the unit is damaged, notify the shipping company immediately. Only the consignee (the person or company receiving the unit) can file a claim against the carrier for shipping damage. We recommend that you retain the original carton and packing materials to reuse if you need to transport or ship your changer in the future.

If the coin changer is being stored or used as a spare, keep it in its shipping carton when not in use. This will keep it clean and offer the best protection for the unit.

MODEL EXPLANATIONS

Both the 9340-S and 9360-S changers have a vend price setting up to \$12.75 in five-cent increments and are equipped with electronic coin acceptance. They pay out nickels, dimes and quarters from self-loading coin tubes and accept nickels, dimes, quarters and dollar coins.

The 9340-S directly interfaces with the standard 6-pin bill validator interface cable.

The 9360-S directly interfaces with both standard and non-standard bill validators, Cash Accountability™, credit display and M.I.S.™

FEATURES

Pays out nickels, dimes and quarters from self-loading, high-capacity change tubes in least number of available coins.

High or low quarter tube level can be selected with the flip of a switch.

Any vend price from \$.05 to \$12.75 in \$.05 increments can be selected using a single switch module.

Dollar coins and/or Canadian coins can be rejected or accepted by flipping a switch.

Heavy-duty D.C. payout solenoids provide fast, accurate payout.

Field tuneable

Escrow until vend or escrow until select can be selected by simply flipping a switch.

Provides the fastest and most accurate coin acceptance of any electronic unit available today.

Directly interfaces with standard bill validator. No additional wiring is required.

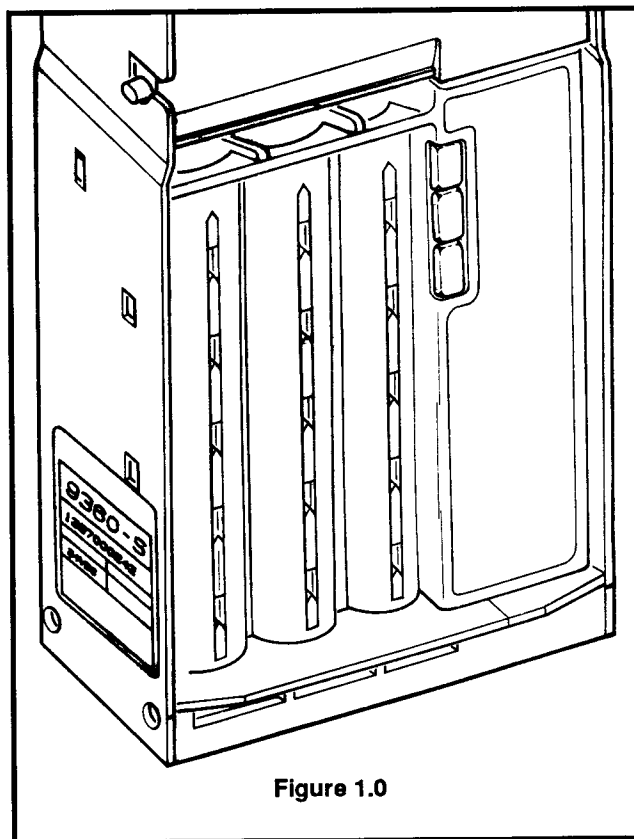


Figure 1.0

SECTION 1: GENERAL INFORMATION

Interfaces with non-standard bill validator with the addition of a 406890 adaptor harness. (9360-S only)

Directly interfaces with cash accountability or Gold Box M (through a three-pin connector). Meter part number 406735. (9360-S only)

Directly interfaces with credit display, part number 406872. (9360-S only)

Pays out to the last coin in the changer tube to provide the maximum usage of a bill validator.

MAIN LOGIC BOARD ASSEMBLY

The main logic board contains the microprocessor which controls all the functions of the coin changer based on information from other changer parts as well as the vending machine.

Also contained on the main logic board is the power supply which receives the primary AC voltage from the vendor. From there the primary AC voltage goes two places: to be rectified to a DC primary voltage to operate the coin dispensing solenoids, and to the changer transformer where it is stepped down to a 12 VAC voltage. This 12 VAC is routed back to the control board where it is rectified and filtered for logic board operation.

SPECIFICATIONS

POWER REQUIREMENTS

95 to 130 VAC 60 HZ
350 m Amp. Max Operating
1 Amp. Max During Payout

VEND PRICE RANGE

\$.05 to \$12.75

OPERATING TEMPERATURE RANGE

0o F to 150o F
-18o C to 65o C

STORAGE TEMPERATURE

-22o F to 160o F
-30o C to 72o C

PHYSICAL DIMENSIONS

Height: 14.81 inches (Base to top of coin return lever)
Width: 5.28 inches (acceptor latch to acceptor latch)
Depth: 2.86 inches (gate closed)

PHYSICAL WEIGHT IN SHIPPING PACKAGE

5.6 lbs.

	\$.05 Tube	\$.10 Tube	\$.25 Tube	
			LO \$.25 Option Switch Set to OFF position	LO \$.25 Option Switch Set to ON position
Low Sensor Level	7	9	7	7
Full Sensor Level	78	113	77	22
Hand Load Level	86	125	95	22

SECTION 2: INSTALLATION

INSTALLING THE COIN CHANGER

See Figure 2.0

1. Remove the acceptor from the changer by raising the acceptor latches and pulling the top of the acceptor forward and away from changer. Unplug ribbon cable from the changer. Free lower acceptor studs from changer housing. With the acceptor removed, set key holes in back of changer housing over the mounting screw in the vendor. Tighten snugly.

2. Set the desired vend price and options on the changer. (See Vend Price and Option Switch Settings.)

3. Replace the acceptor by inserting bottom acceptor studs into changer housing guides. Plug the acceptor ribbon cable into the changer. Press top of acceptor into changer housing until top acceptor studs lock into changer's acceptor latches.

4. Connect changer to desired options. Plug changer into eight-pin vendor socket.

5. Load coin tubes making sure all coins lie flat.

6. Test changer with a variety of coins to insure proper operation and vend price setting.

VEND PRICE AND OPTION SWITCH SETTINGS

See Figure 2.0

1. Unplug the coin changer.

2. Remove the acceptor.

3. Located in the upper portion of the changer is a single switch module with 12 rocker switches. When the top of the rocker switch is pushed in, it is in the ON position. The switches correspond as follows:

1=\$.05

2=\$.10

3=\$.20

4=\$.40

5=\$.80

6=\$1.60

7=\$3.20

8=\$6.40

9=USA/CAN

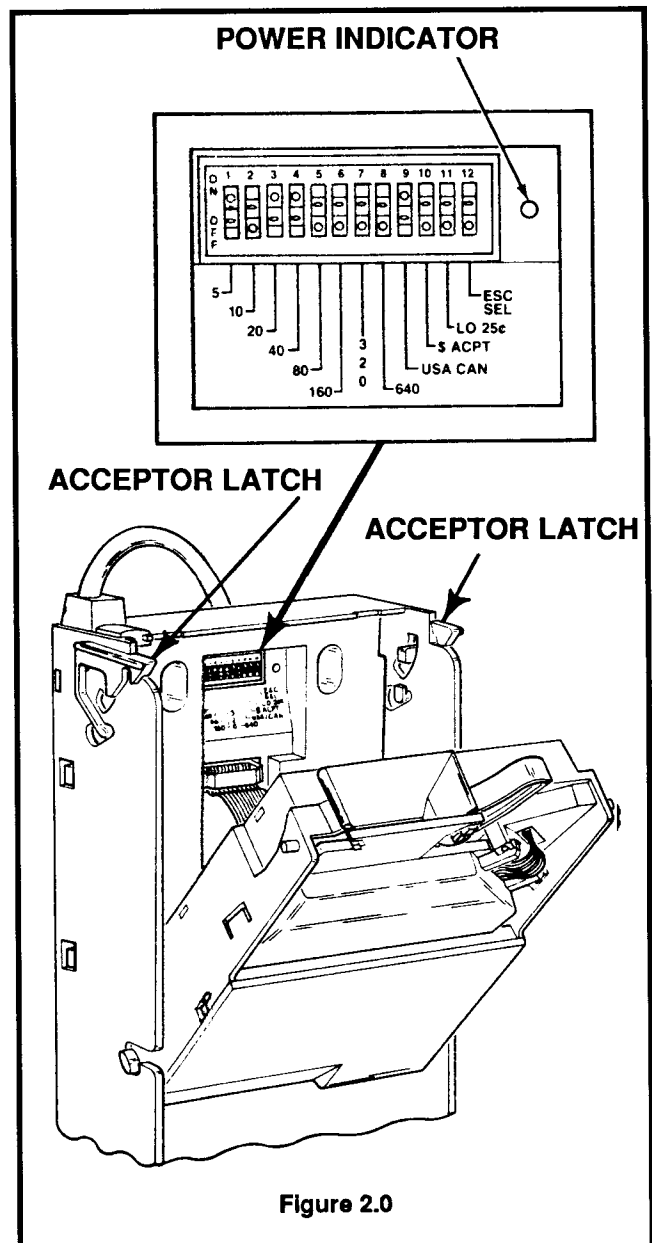
10=\$ coin acceptance

11=LO \$.25

12=escrow until select

4. The vend price is set by adding the value of switches 1-8, which are in the ON position.
Example: switches 1, 3 and 4 in the ON position
= \$.65 vend price.

5. Set switches 1-8 to desired vend price. Make sure vend price set on changer corresponds to vend price indicated on front of vendor.



SECTION 2: INSTALLATION

6. Set option switches 9-12 to desired setting.

- | | |
|-------------|---|
| 9-USA/CAN | ON: U.S. and Canadian coins will be accepted.
OFF: Canadian coins will be rejected. |
| 10-\$ ACPT | ON: Dollar coin will be accepted.
OFF: Dollar coins will be rejected. |
| 11-LO \$.25 | ON: Quarters are directed to cash box once change tube has approximately 18 quarters.
OFF: Quarters are directed to cash box once change tube is full. |
| 12-ESC-SEL | ON: Changer allows complete escrow until selection and delivery have been made.
OFF: Changer allows escrow until vend price is accumulated. |

COIN RECOGNITION

See Figure 3.0

As a coin enters the changer through the acceptor funnel, its impact is absorbed by a white ceramic rail which debounces the coin and allows it to continue down the coin rail at a smooth and steady speed. As the coin rolls down the rail, it passes between two sets of LED sensors which measure the speed and size of the coin. The coin also passes between two sets of coils which measure the metallic content of the coin. These measurements are used to determine the validity and value of the coin.

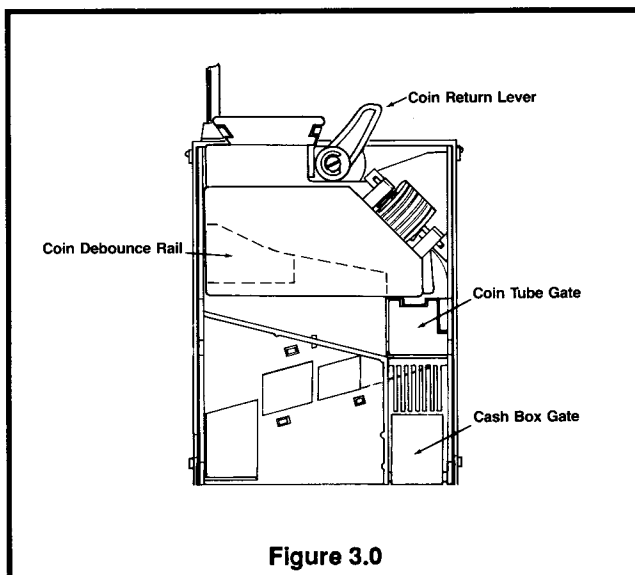
COIN SEPARATION

See Figure 3.0

After the coin's validity has been determined, the coin rolls off the end of the coin rail and enters the separator section of the acceptor. The UPPER (coin tube) gate and the LOWER (cash box) gate are opened and closed by their respective solenoids. These solenoids are energized and de-energized by an electrical signal from the acceptor logic board based on the following criteria:

- the validity of the coin
- the denomination of the coin
- the status (full or empty) of the appropriate coin tube.

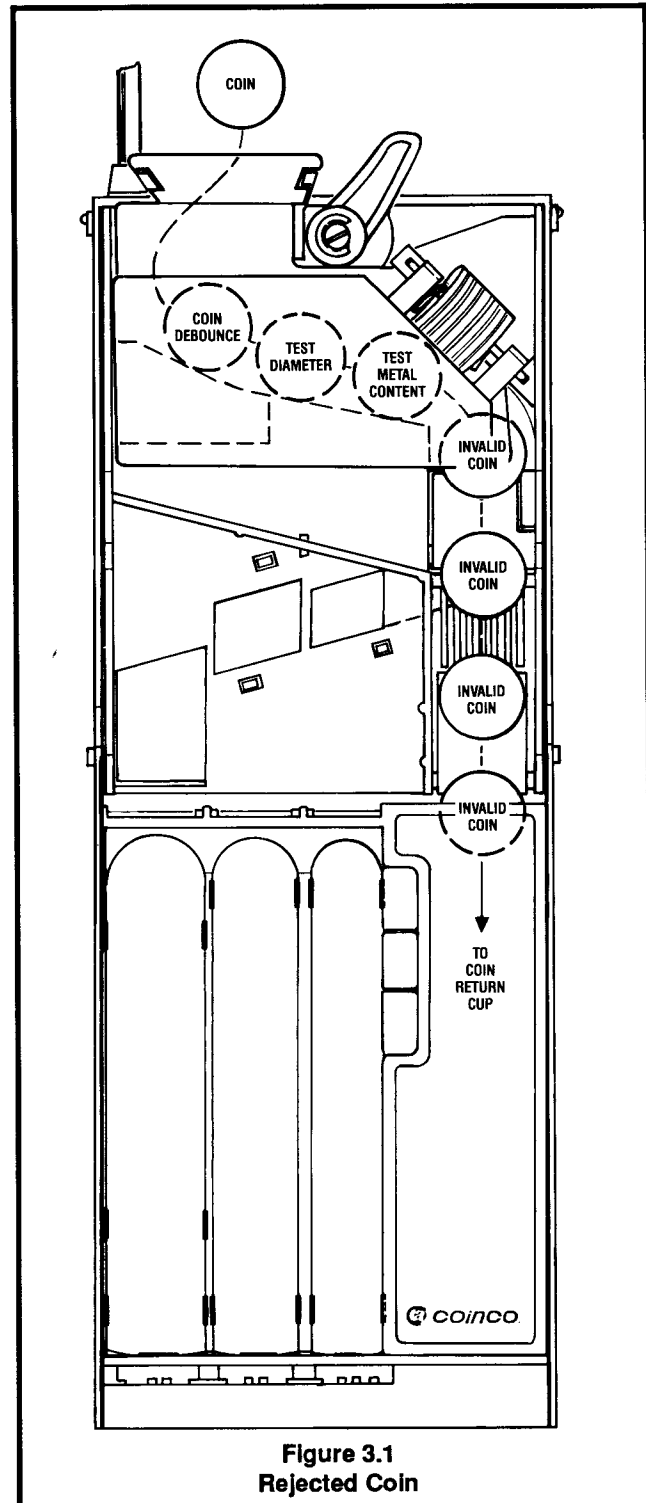
The positions of these two gates cause the coin to be routed to one of three places: the appropriate changer coin tube, the vendor cash box, or if the coin is rejected, the vendor coin return cup.



Rejected Coin

See Figure 3.1

If a coin is rejected for any reason, both the UPPER (coin tube) gate and the LOWER (cash box) gate will remain closed. All rejected coins will drop into the vendor coin return cup via the coin changer's coin return chute.



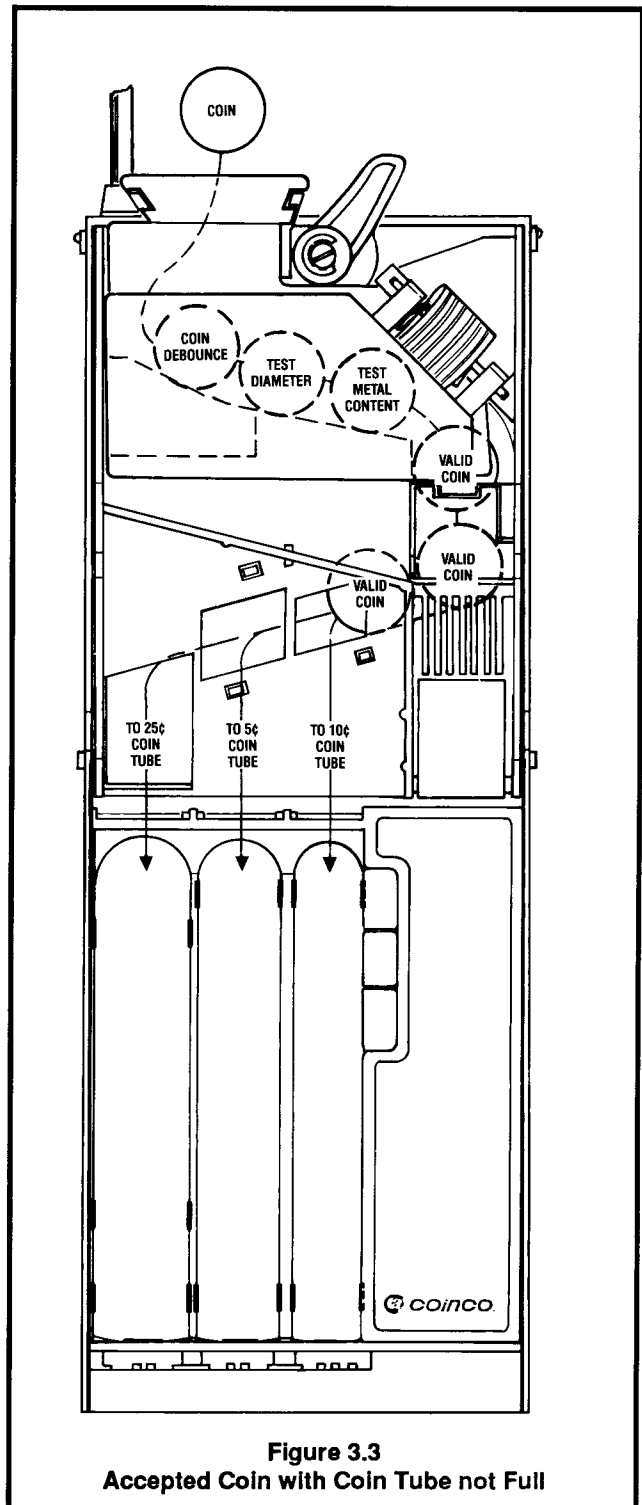
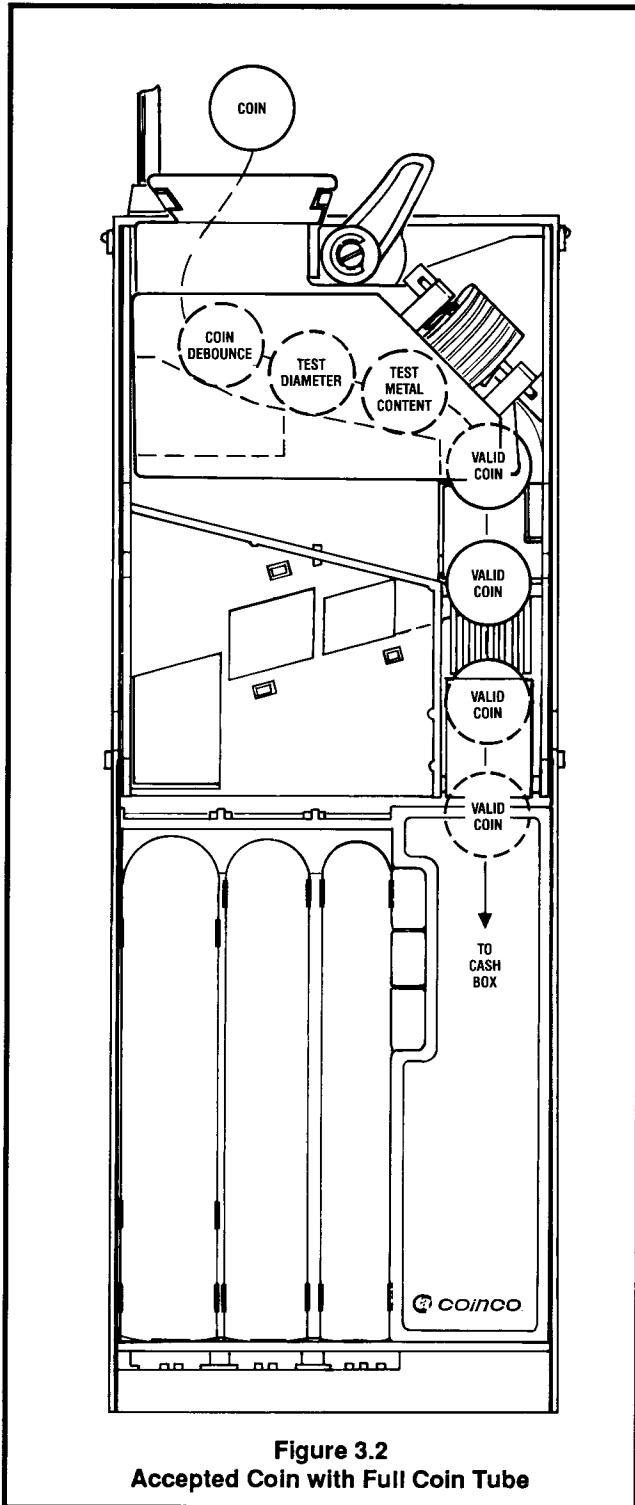
SECTION 3: OPERATION

Accepted Coin

See Figure 3.2 and 3.3

An accepted coin is diverted in one of two directions depending on the full sensor in each coin tube. If the full coin tube sensor is blocked (tube full) for the corresponding coin, the lower (cash box) solenoid energizes, sending that coin to the cash box. If the full

tube sensor is not blocked (tube not full) for the corresponding coin, the upper (coin tube) solenoid will energize, sending that coin to the separator rail where it is diverted to the correct coin tube. Dollar coins are diverted directly to the cash box via the lower (cash box) solenoid.



CREDIT AND ACCUMULATION

See Figure 3.4

There are two sensors, one in the separation section of the acceptor and one in the cash box path of the acceptor. As coins pass either one of these sensors, they are credited and accumulated by the microprocessor.

MAIN LOGIC BOARD

The main logic board is responsible for all logic functions of the changer. It receives information from other changer modules as well as the vending machine, and based on this information, controls the operation of the changer.

The main logic board also contains the changer power supply. It receives the incoming AC voltage from the vendor and does the following: First, it is rectified to a DC voltage for the payout solenoids. Second, it is routed to the transformer's primary where it is reduced to 12 VAC. This 12 VAC is routed back to the logic board where it is rectified and filtered to the operating DC voltage.

COIN TUBE SENSING

See Figure 3.5

The low tube sensors in each coin tube continually report the (blocked/not blocked) coin level to the microprocessor. This information is used to determine the availability of change for:

- Change Payback
- Escrow
- Exact Change Condition

The full tube sensors in each coin tube continually report the (full/not full) status to the coin changer's microprocessor. The information is then used to determine the placement of the next accepted coin. This information controls the action of the acceptor coin tube and cash box gates.

EXAMPLE: If the quarter coin tube is full (full sensors blocked by coins) the acceptor coin tube gate will remain closed and the cash box gate will open each time a quarter is accepted, routing all quarters to the vendor cash box via the changer coin chute. After one or more quarters is paid out as change, leaving the full sensor exposed (quarter tube not full), the accepted coin tube gate will open each time a quarter is accepted, routing quarters to the changer coin tube until it is full again.

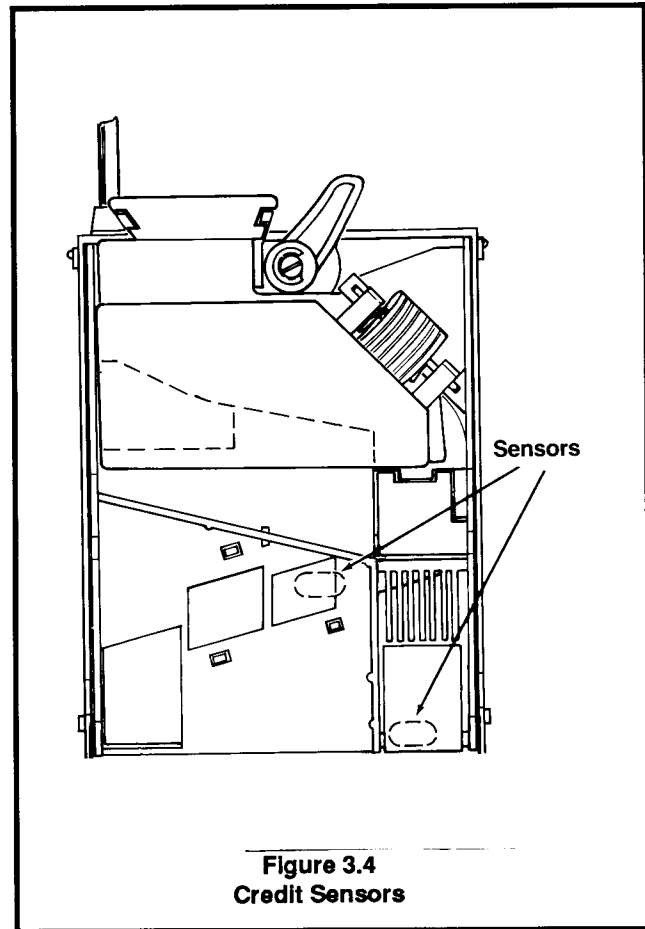


Figure 3.4
Credit Sensors

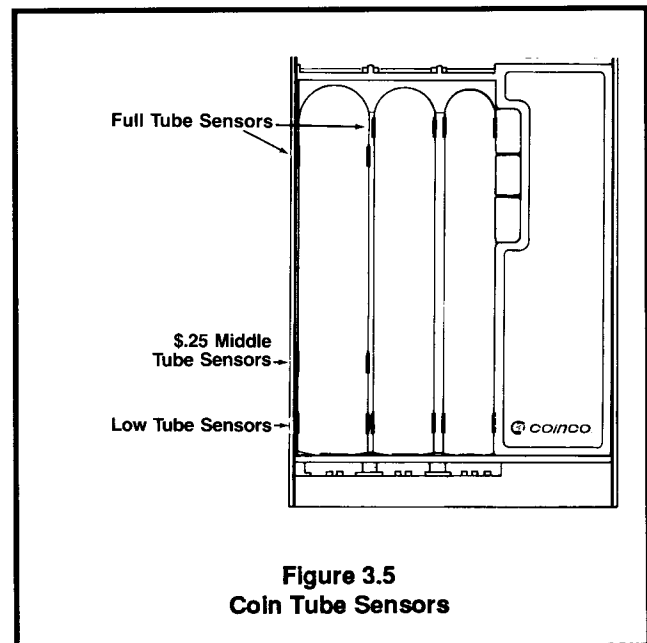


Figure 3.5
Coin Tube Sensors

SECTION 3: OPERATION

NOTE: If the changer LO-\$.25 option switch is set to the on position, accepted quarters will be routed to the cash box when the (middle \$.25 tube sensor) is blocked by coins.

CHANGE PAYBACK

The low tube sensors report which coins are available for payback so payout can be made in the fewest coins available.

EXACT CHANGE CONDITION

The microprocessor is constantly looking at the change status. If correct change cannot be made, the changer rejects the last coin deposited, resulting in an over insertion. At this time, the correct change light flashes on and off in one second intervals for 10 seconds, during which time the escrow lever may be depressed for a full refund, the correct change may be inserted or the same coin which was rejected may be reinserted. (However, no change payout will be attempted under this condition.) If correct change cannot be made for a dollar bill, the correct change light will be lit continuously, inhibiting the bill validator.

COIN PAYOUT

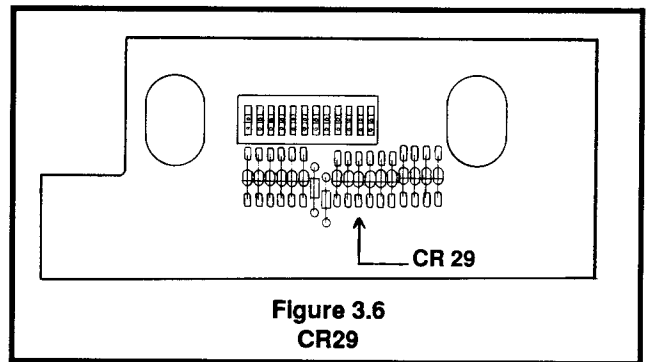
The payout assembly pays out coins using three solenoid-operated slides. Coins are paid out for: change payout, escrow return and manual inventory of the coin tubes.

When a solenoid energizes, the upward motion of its plunger compresses a spring and draws the solenoid lever, which in turn pushes a payout slide forward. This loads the coin for payout. When the solenoid de-energizes, the spring force returns the plunger to its de-energized state, which returns the solenoid lever, which returns the payout slide, which in turn pays out a coin. Payout rate is two coins per second.

Change Payout: When the amount of credit exceeds the vend price, a payout will be made in the least number of available coins. (See Exact Change Condition)

Escrow Return: When a request for escrow is made, the changer will return the amount credited in the least number of coins. Under exact change conditions, nickels, dimes and quarters may be returned coin for coin.

Manual Inventory of Coins: Operating the manual inventory switches manually empties the



changer coin tubes. The inventory switches are red, white and blue, and are located on the front of the inventory tube assembly. Only one inventory switch will operate at a time.

DOLLAR CREDIT ESCROW OPTION

9340-S: Credit from the dollar bill validator or dollar coin is inhibited from escrow. Credit will be retained if the escrow lever is depressed. At this time, a selection must be made.

9360-S: Credit from the dollar bill validator or dollar coin is not inhibited from escrow. Four quarters will be returned to the customer if an escrow is called for.

NOTE: If escrow of a dollar coin or dollar bill is to be inhibited, remove CR29 on the main logic board. See Figure 3.6

ESCROW

Escrow Until Vend: Allows the customer to get a full refund any time before actual vend price is reached.

Escrow Until Select: Allows the customer to receive a full refund any time prior to product delivery.

NOTE: The vendor circuit determines whether the escrow to select feature can be used.

SECTION 3: OPERATION

ESCROW UNTIL VEND CHANGER VENDOR INTERFACE

See Figure 3.7 and 3.8

As coins are inserted, the changer's logic board compares the accumulated credit to the vend price. When adequate credit is reached, the changer's logic board activates the changer's vend relay for 250 milliseconds. This energizes the vendor's credit relay, cancels the changer's credit and initiates the change making cycle if required.

The energizing and latching of the credit relay removes power from Jones plug line six, which inhibits the acceptance of coins and sets the selection

switches for vending. The changer's vend relay's N/C contact connects the AC hot line to the vendor's credit relay's N/O contact.

When a selection switch is activated, the vendor's vend motor begins to run. The vend motor mechanically activates a motor carrier switch which holds power to the vend motor until the motor returns to its home position and deactivates the vend relay of the vendor. This returns power to Jones plug line six enabling the acceptance of coins.

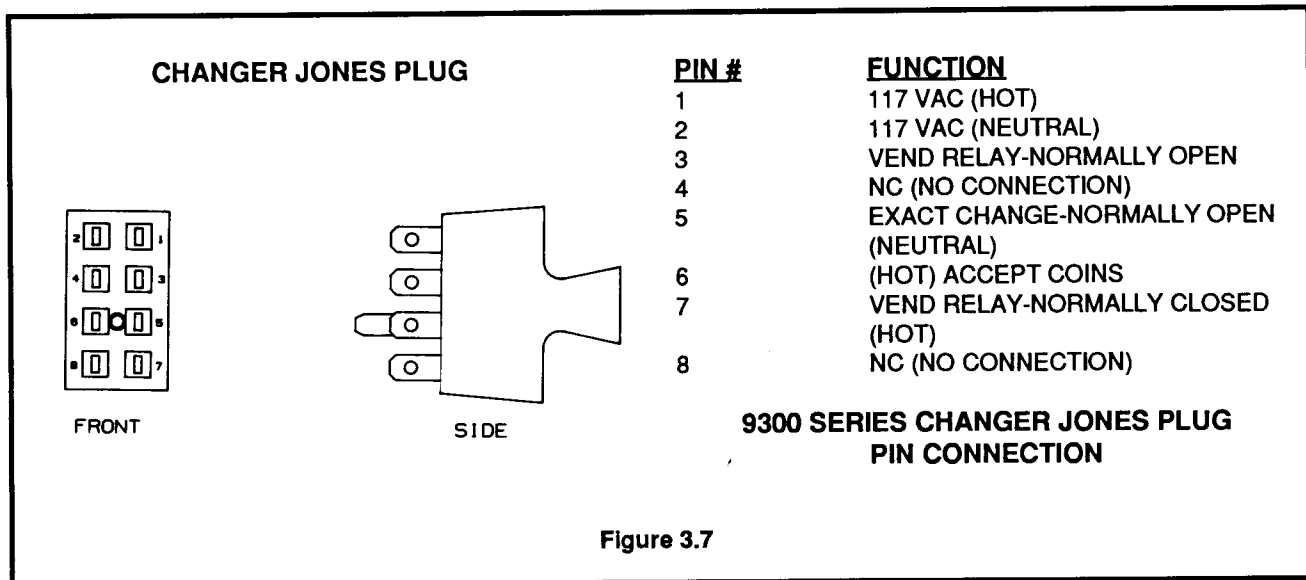


Figure 3.7

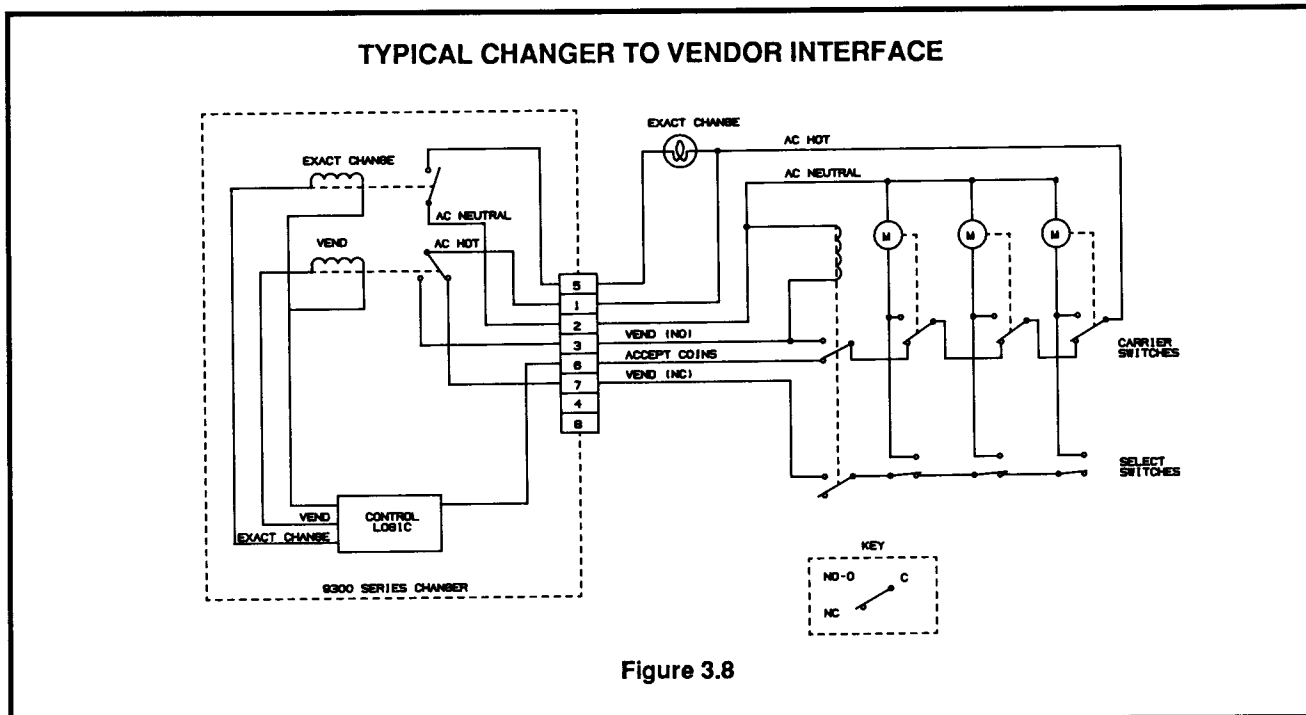


Figure 3.8

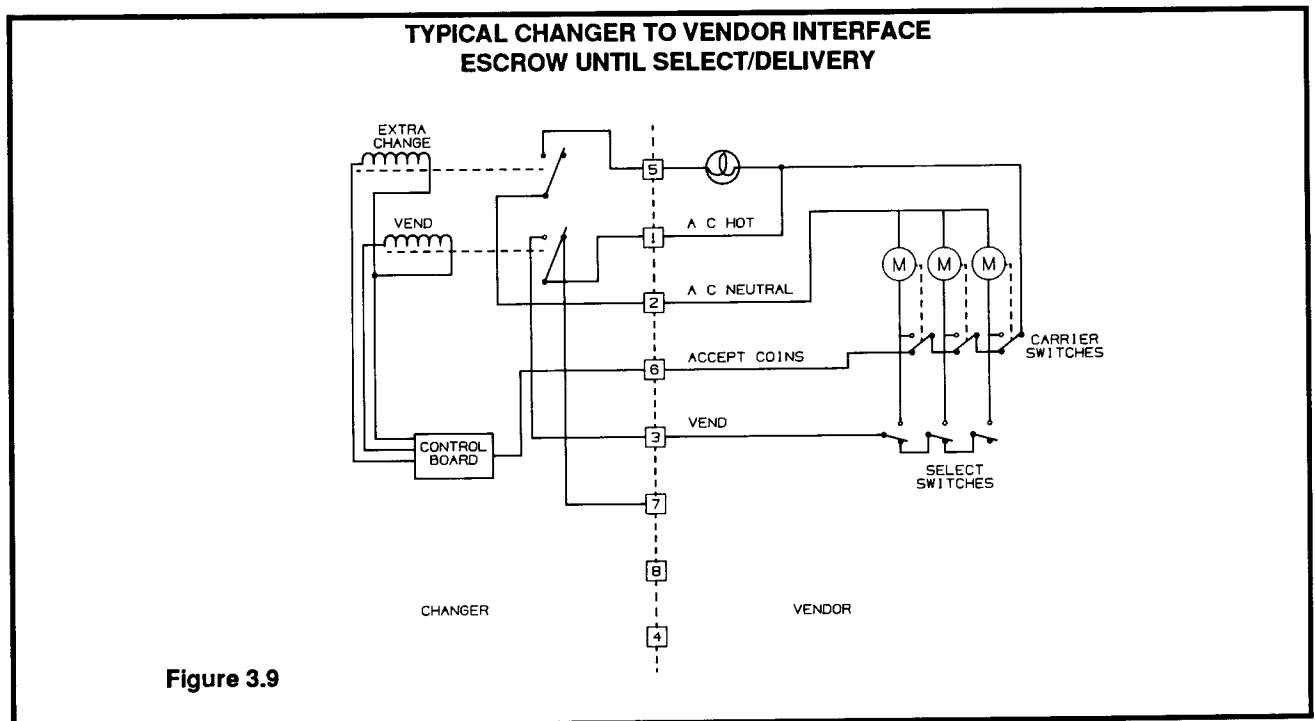
SECTION 3: OPERATION

ESCROW UNTIL SELECT CHANGER VENDOR INTERFACE

See Figure 3.9

As coins are inserted, the changer microprocessor accumulates and holds the credit until a selection and delivery are made. When a selection is made, the changer senses the selection through Jones plug line three. If the accumulated credit is equal to or greater than the vend price, the changer will send a hot AC signal out on Jones plug line three, until the hot AC signal to Jones plug line six is broken. At this time, the changer will pay out any change owed and reset. Upon the return of the hot AC signal to Jones plug line six, the changer will stand by for the next transaction.

If an escrow is detected while waiting for the hot AC signal to Jones plug line six to break, then the hot AC signal to Jones plug line six is monitored for two seconds. If the hot AC signal to Jones plug line six does not break in this two seconds, then an escrow of the accumulated credit is made. If the hot AC signal to Jones plug line six does break within two seconds, then the escrow is ignored and the changer pays out any change owed and resets. Upon the return of the hot AC signal to Jones plug line six, the changer will stand by for the next transaction.



SECTION 4: MAINTENANCE

INTRODUCTION

This section contains valuable information on maintaining and repairing the 9300-S series coin changer.

ROUTINE MAINTENANCE

Routine maintenance will improve performance and extend the working life of the 9300-S series changer, reducing the need for more involved repairs. Frequency of routine maintenance will depend on environment and number of transactions.

The coin changer should be kept in its original shipping carton when not in use. This will keep the changer clean and afford the best protection for the unit.

REMOVING/REPLACING INDIVIDUAL MODULE ASSEMBLIES

Modular assembly replacement provides the basis of all 9300-S series changer repair. Instructions for removing and replacing modules are provided below. These modules should be removed in the following sequence:

Acceptor

To remove the acceptor, raise the two acceptor latches and pull the top of acceptor forward and away from the changer housing. Unplug acceptor ribbon cable from main logic board. Raise acceptor and pull outward until the acceptor clears the housing slots.

Coin tube and tube sensor assembly

Remove logic board cover by spreading the changer housing slightly and pulling up on board cover. Unplug tube sensor ribbon cable from main logic board. Spread the lower part of the housing slightly and pull out on tube assembly. To separate the coin tube assembly from the tube sensor assembly, place the assembly face down. While freeing the four locking tabs, pull up on tube sensor board. Be careful not to damage sensors or logic board.

Main Logic Board Assembly

Unplug primary and secondary windings of the transformers, payout solenoids and the main harness assembly from logic board. Lift top of logic board and slide upward until large metal heat sink

clears tab on payout base, then lift board out of housing.

Payout Assembly

Unplug transformer and payout solenoids from logic board. Remove the four Phillips head screws from the housing side panels. From the back of the changer, free the locking tab of the changer housing from the payout assembly. Remove payout assembly.

CLEANING

The main material used in the manufacture of the 9300-S Series changer is a high-quality industrial grade plastic, which should only be cleaned with a warm water and mild detergent solution.

CAUTION:

- NEVER SUBMERGE CHANGERS IN WATER.
- DO NOT USE PETROLEUM SOLVENTS, STEEL WOOL, SCOURING PADS OR A METAL BRUSH FOR CLEANING.
- DO NOT LUBRICATE ANY PART OF CHANGER.

Since all coins share a common coin ramp, heavy usage or a dirty environment can result in dirt build up. To clean the coin ramp, lift the acceptor gate upward and diagonally to the right. Hold gate firmly to prevent it from snapping back. Wipe the exposed coin ramp and inner surface with a damp cloth. For excessively dirty units, use a damp cloth with a mild detergent. **NOTE:** Do not submerge in water.

For detailed cleaning of the acceptor, remove its front cover by pulling out and down. Remove the back cover by pushing in on the two locking tabs on the side of the acceptor. To remove the coin sorting rail, desolder the four wires to the two sensors from the logic board to prevent damaging them. (Changers manufactured after June 1989 do not require desoldering). From the front of the acceptor, in area exposed by removing the front cover, locate the three locking tabs which secure the sorting rail. Using a small straight tip screwdriver, free the three locking tabs and remove sorting rail. See Figure 4.0

SECTION 4: MAINTENANCE

Disassembling Payout Base for Cleaning

See Figure 4.1

Unplug transformer and payout solenoids from logic board. Remove the four Phillips head screws from the housing side panels. Remove payout module. Remove the four Phillips head screws from the bottom plate. Remove bottom plate and individual slides. Clean parts with mild detergent and warm water. **DO NOT SUBMERGE SOLENOIDS OR TRANSFORMER IN WATER.**

Replace slides making sure part numbers face up into changer. With the slides correctly seated on plunger tabs, reinstall the transformer and bottom plate, securing with bottom screws. Be sure the transformer's black wires are to the right of (away from) the solenoids. Reinstall payout module into changer, securing with side screws.

CLEARING COIN JAMS

Should a coin jam occur in the cash box chute area, use the following steps to help dislodge coins:

1. Remove changer from vendor.
2. Keeping changer in an upright position, insert a narrow screwdriver into cash box chute or reject chute from bottom of changer to relieve jam. Access holes are also provided at the rear of the changer housing to help relieve coin jams.

CAUTION: Excessive screwdriver pressure or twisting can cause permanent damage to the coin changer.

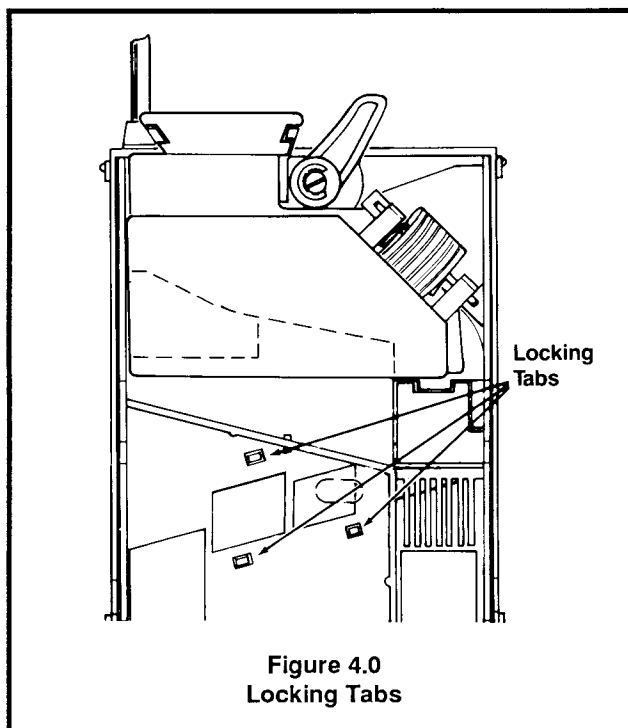


Figure 4.0
Locking Tabs

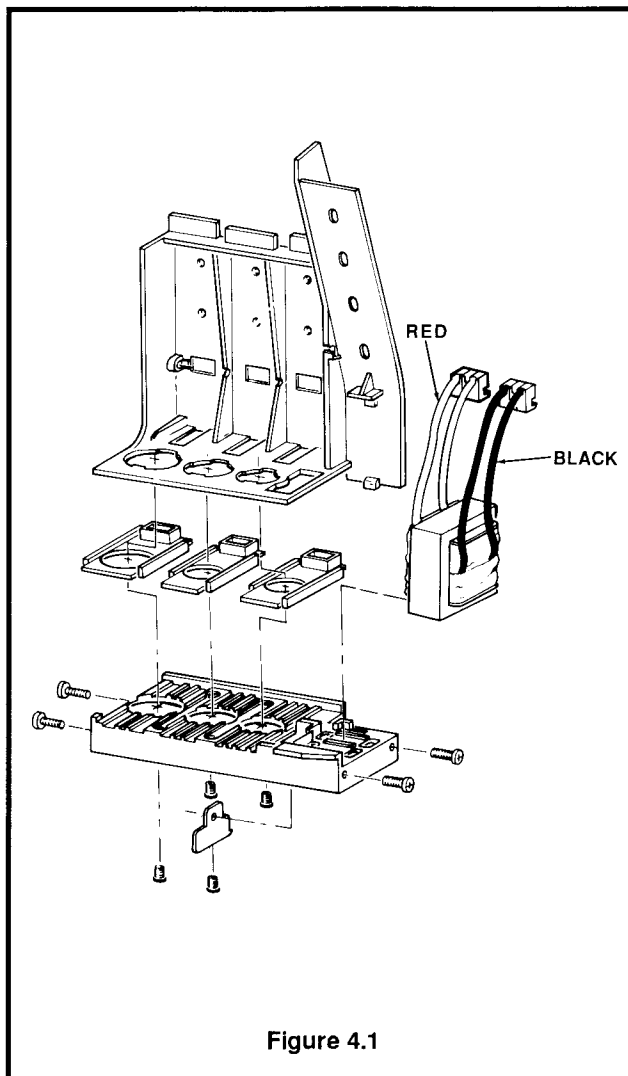
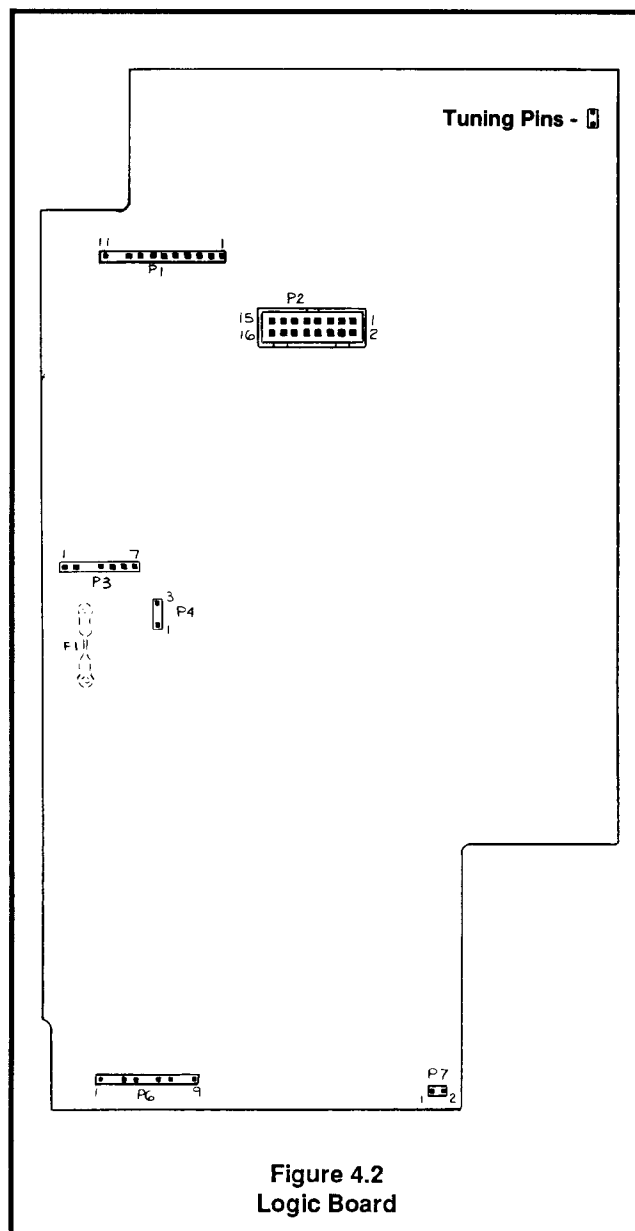


Figure 4.1

SECTION 4: MAINTENANCE

TUNING THE COIN CHANGER TO ACCEPT COINS

1. With changer unplugged, remove acceptor and logic board cover from changer.
2. Locate the two (field tune) pins (See Fig. 4.2) in the upper right-hand corner of the logic board and jump pins together using Coinco jumper, part number 906137 or equivalent.
NOTE: Jumper must remain installed during entire tuning process.
3. Install acceptor into changer and apply power to changer by plugging into vendor or changer tester.
4. Correct change light will flash indicating changer is in the field tune mode.
5. Determine which coin the changer is to be tuned for. For best results use 16 different coins of the denomination determined.
6. Drop all 16 coins, one at a time, through the acceptor. Coins will be returned to the coin return cup.
7. Upon first coin insertion, the correct change light will stay on constantly. After the 16th coin insertion, correct change light will start flashing indicating tuning for coin is complete.
8. At this time the changer may be tuned for a different coin denomination following steps 5, 6 & 7, or the field tune mode may be aborted by removing power and tuning jumper installed in step 2.
9. If the field tune mode is interrupted, i.e. loss of power, jumper removed, 16 coin insertion interrupted by a different coin denomination, changer will automatically return to previous tuning.
10. Unplug changer and remove acceptor and jumper. Install logic board cover and acceptor.
11. Test changer for proper operation.



SECTION 5: TROUBLESHOOTING

INTRODUCTION

The Troubleshooting Guide on the following pages is intended to help locate problems within the coin changer. If a changer cannot be repaired by following the guide, return the changer to the nearest Coinco Service Center for repair. If it is necessary to return the changer to Coinco, please accompany the changer with a brief description of the malfunction to help expedite the repair and return of the changer.

Logic troubleshooting minimizes time spent in removing and replacing modules that are not defective. Some failures are caused by minor problems such as loose or faulty connections. Please check the following before replacing any parts:

Connectors are inserted correctly
Connector pins are not bent or broken
All wires are properly secured
Inventory tubes are filled to their correct levels.

NOTE: The following Troubleshooting Guide is based on the fact that the tester or vendor, with which the defective changer is being tested, functions properly when used with a known good changer.

This guide is not intended to cover all failures, but to cover the most common failures.

9300-S TROUBLESHOOTING GUIDE

<u>TROUBLE</u>	<u>POSSIBLE CAUSE</u>	<u>PROCEDURE</u>	<u>REMEDY</u>
No coin acceptance and no payout when inventory switch is actuated. Changer appears to be dead	No power	Make sure the changer is plugged into the vending machine or tester has power	Plug changer into vending machine or tester
		Hinge acceptor down, check red LED next to price option switch, if LED is ON	Replace main logic board.
		If LED is OFF, check continuity between Jones plug pin 1 and P3 pin 7 Jones plug pin 2 and P3 pin 4 and Jones plug pin 2 and P3 pin 2. (See Fig. 5.0, 5.1 and 5.2) If continuity does not exist between all 3 pairs	Replace harness
		If continuity does exist between all three pairs check foil fuse on back of main logic board. (See Fig. 5.2)	Repair fuse or replace main logic board

SECTION 5: TROUBLESHOOTING

<u>TROUBLE</u>	<u>POSSIBLE CAUSE</u>	<u>PROCEDURE</u>	<u>REMEDY</u>
		If fuse is good Check transformer as follows: Check between P7 pins 1 and 2 for approximately 12-18 VAC (See Fig. 5.0, 5.1 and 5.2) If no voltage or less than 12 VAC	Replace transformer
		If 12-18 VAC exist	Replace main logic board
No coin acceptance solenoids energize when inventory switches are actuated	Coin return lever	Make sure changer is mounted correctly and coin return lever is in proper position	Reposition coin changer and/or machine coin return lever
	Acceptor	Make sure acceptor is plugged in properly	Plug acceptor in properly
	No blocker (CREM) signal	Hinge acceptor down and check to see that the red LED next to the price option switch is ON.	
		If not, check continuity between changers Jones plug pin 6 to P3 pin 4	If no continuity replace main harness
		If continuity is present	Replace acceptor
		If still no acceptance	Replace main logic board
Rejects coins or percentage of good coins	Improper tuning	Tune for coin being rejected	See field tuning procedure Section 4 Maintenance
		If still rejects coin	Replace acceptor

SECTION 5: TROUBLESHOOTING

<u>TROUBLE</u>	<u>POSSIBLE CAUSE</u>	<u>PROCEDURE</u>	<u>REMEDY</u>
Rejects Canadian coins	Check for USA/CAN switch in ON position	If still rejects coins	Replace main logic
		If in OFF position only	Turn USA/CAN switch ON
		If still rejects Canadian coins	Tune unit with Canadian coins See Section 4 Maintenance
		If still does not accept	Replace acceptor
Accepts money, but will not vend	Open circuit	If still does not accept	Replace main logic board
		Check continuity between Jones plug pin 3 & P3 pin 6 (See Fig. 5.0, 5.1 and 5.2)	If open, replace main harness
		Check continuity between Jones plug pin 7 & P3 pin 5	If open, replace main harness
		If continuity is present	Replace logic board
Accepts coins and vends but no payout	Logic board or acceptor	If still no vend	Replace acceptor
		Actuate \$.05, \$.10, \$.25 inventory switches one at a time. If any or all solenoids do not energize, check resistance of solenoids in question. Resistance should be .210 ohms + or - 10% if incorrect	Replace solenoid or solenoids in question
		If resistance is correct	Replace tube sensor board
		If still no inventory or payout	Replace main logic board
Incorrect change payout	Main logic board or acceptor	Check solenoids for correct connection	Connect solenoids correctly

SECTION 5: TROUBLESHOOTING

<u>TROUBLE</u>	<u>POSSIBLE CAUSE</u>	<u>PROCEDURE</u>	<u>REMEDY</u>
		If solenoid connection is correct	Replace main logic board
		After changing logic board there is still an incorrect payout	Replace acceptor
<p>NOTE: If correct change is not available for a \$ bill, the correct change light remains ON. See exact change condition, Section 3: Operation.</p>			
Exact change light does not flash for an over insertion when correct change is not available	Open circuit	Check continuity between pin 5 of changer 8 pin Jones plug & P3 pin 1, if open	Replace harness
		If harness is not open	Replace logic board
Vends at wrong price	Logic board or acceptor	Set vend price for \$.50. Deposit \$.25. Depress coin return. Deposit \$.05. Depress coin return. Deposit \$.10. Depress coin return. If amount returned doesn't equal amount deposited	Check solenoids for proper connection. If solenoid properly connected
		If the problem still exists	Replace logic board
		If the problem still exists	Replace acceptor
Coin always goes to cash box	Tube sensor board or acceptor	Check sensor boards for broken or loose components and check cable from sensor board for damage or improper connection.	Replace tube sensor board
		If coin still goes to cash box	Replace acceptor

SECTION 5: TROUBLESHOOTING

<u>TROUBLE</u>	<u>POSSIBLE CAUSE</u>	<u>PROCEDURE</u>	<u>REMEDY</u>
Coin always goes to coin tubes	Coin tube gate in open position	If coin still goes to cash box Remove acceptor back cover, check solenoid for free operation	Replace main logic board Replace acceptor
	Defective tube sensor board	Inspect tube sensor board for loose or broken components, frayed cable, etc.	Replace tube sensor board
Does not accept dollar coin	Dollar accept switch OFF	If coin still goes to change tubes	Replace main logic board Turn dollar switch ON
	Improper tuning	Tune unit	Retune unit See retuning procedure See Section 4 Maintenance
Does not escrow properly in ESC/SEL mode	Check for position of escrow option	If still doesn't accept dollar coin	Replace acceptor
		If still doesn't accept dollar coin	Replace main logic board
Fills \$.25 tube when low \$.25 tube level is selected	Check low \$.25 option switch in ON position	Set escrow option. If set properly	Replace main logic board
		If still no escrow	Replace acceptor
Fills \$.25 tube when low \$.25 tube level is selected	Check low \$.25 option switch in ON position	If coin still goes to quarter tube	Replace tube sensor board
		If quarter still goes to quarter tube	Replace main logic board
		If quarter still goes to quarter tube	Replace acceptor

SECTION 5: TROUBLESHOOTING

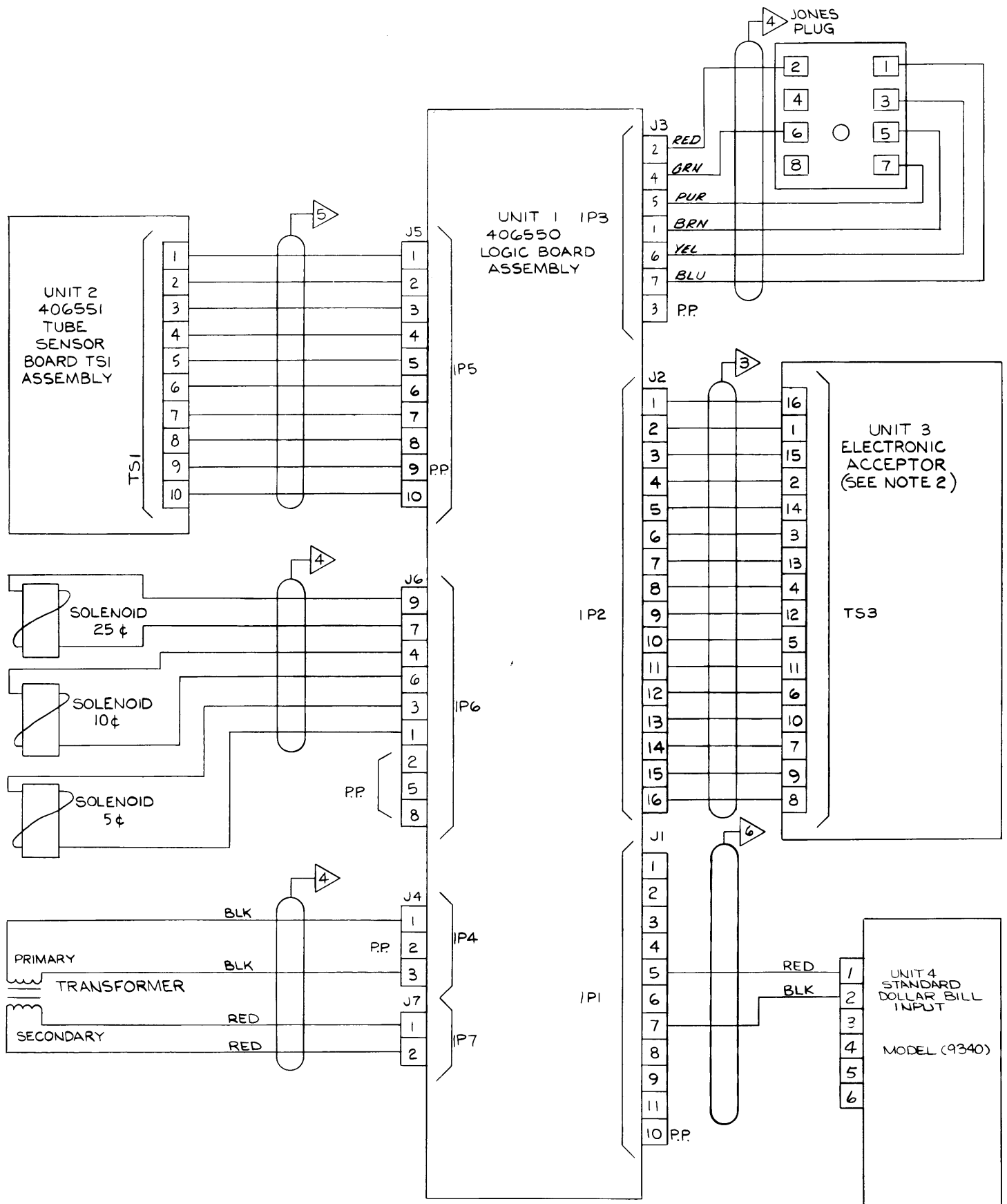


Figure 5.0
9340-S Interconnect

SECTION 5: TROUBLESHOOTING

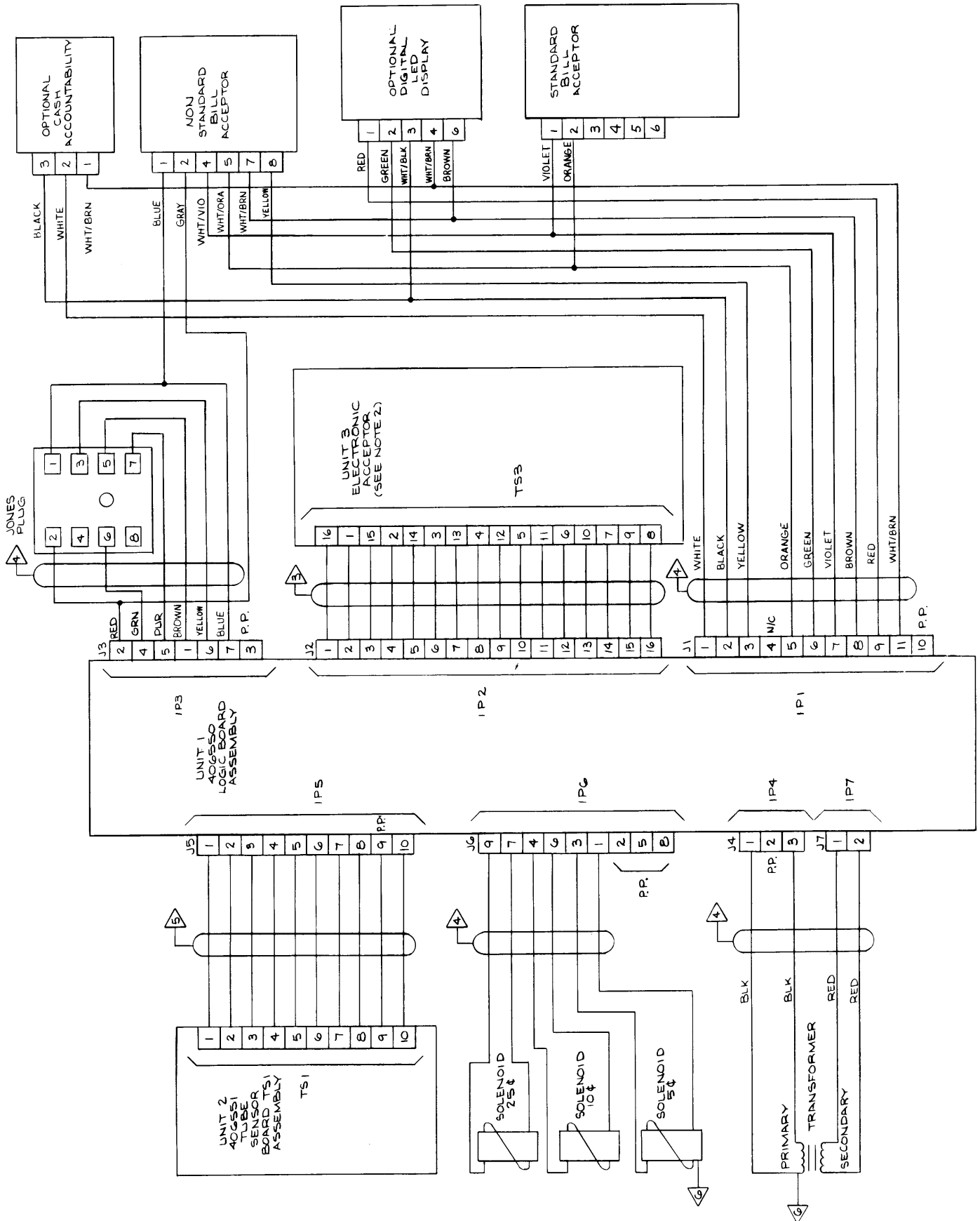


Figure 5.1
9360-S Interconnect

SECTION 5: TROUBLESHOOTING

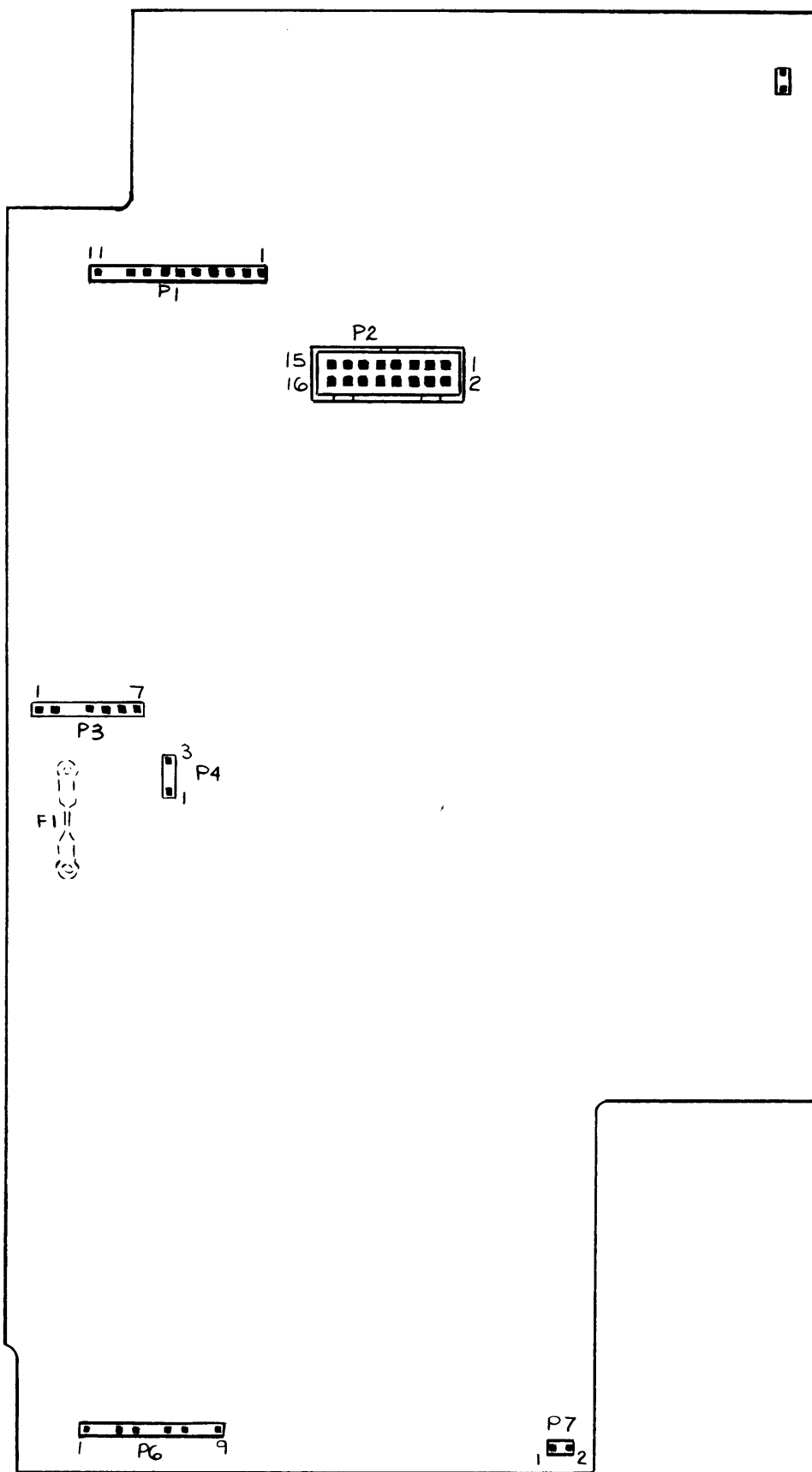
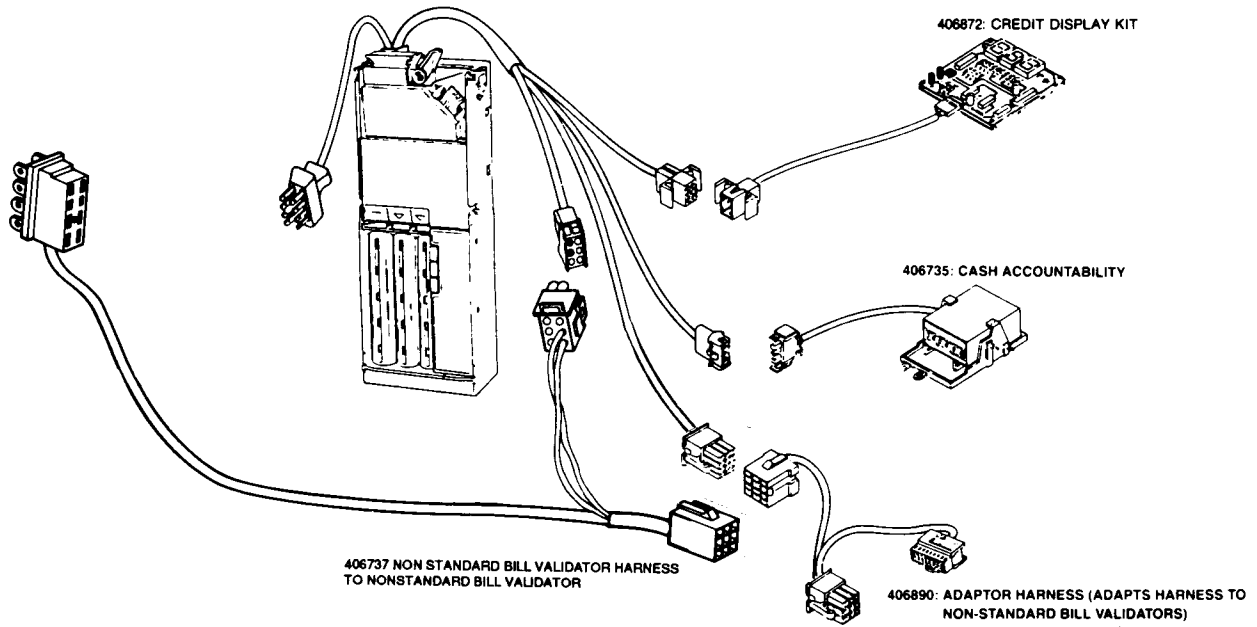


Figure 5.2
Logic Board Partial Layout

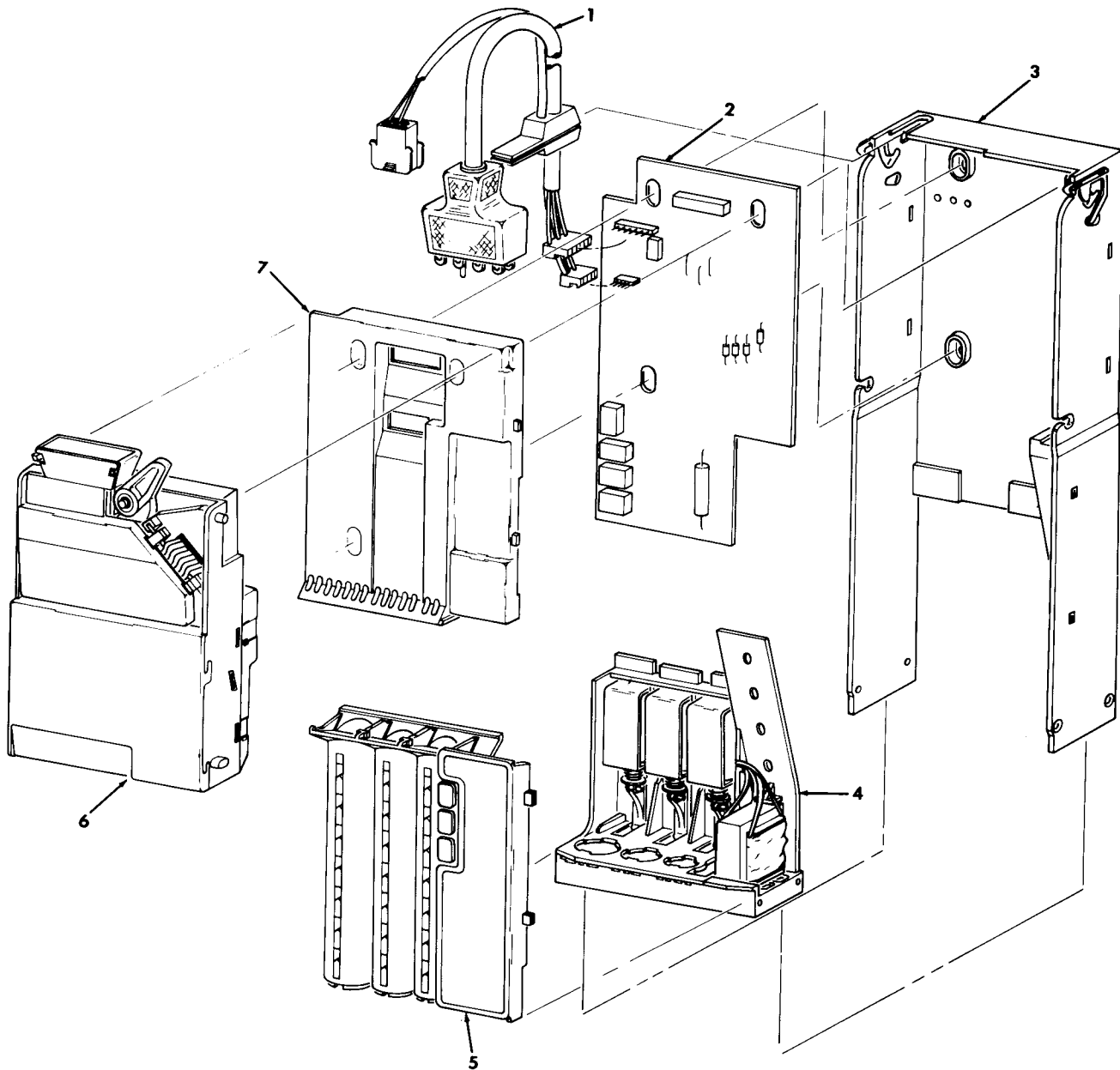
SECTION 6: ACCESSORIES

9360



SECTION 7: PARTS LIST

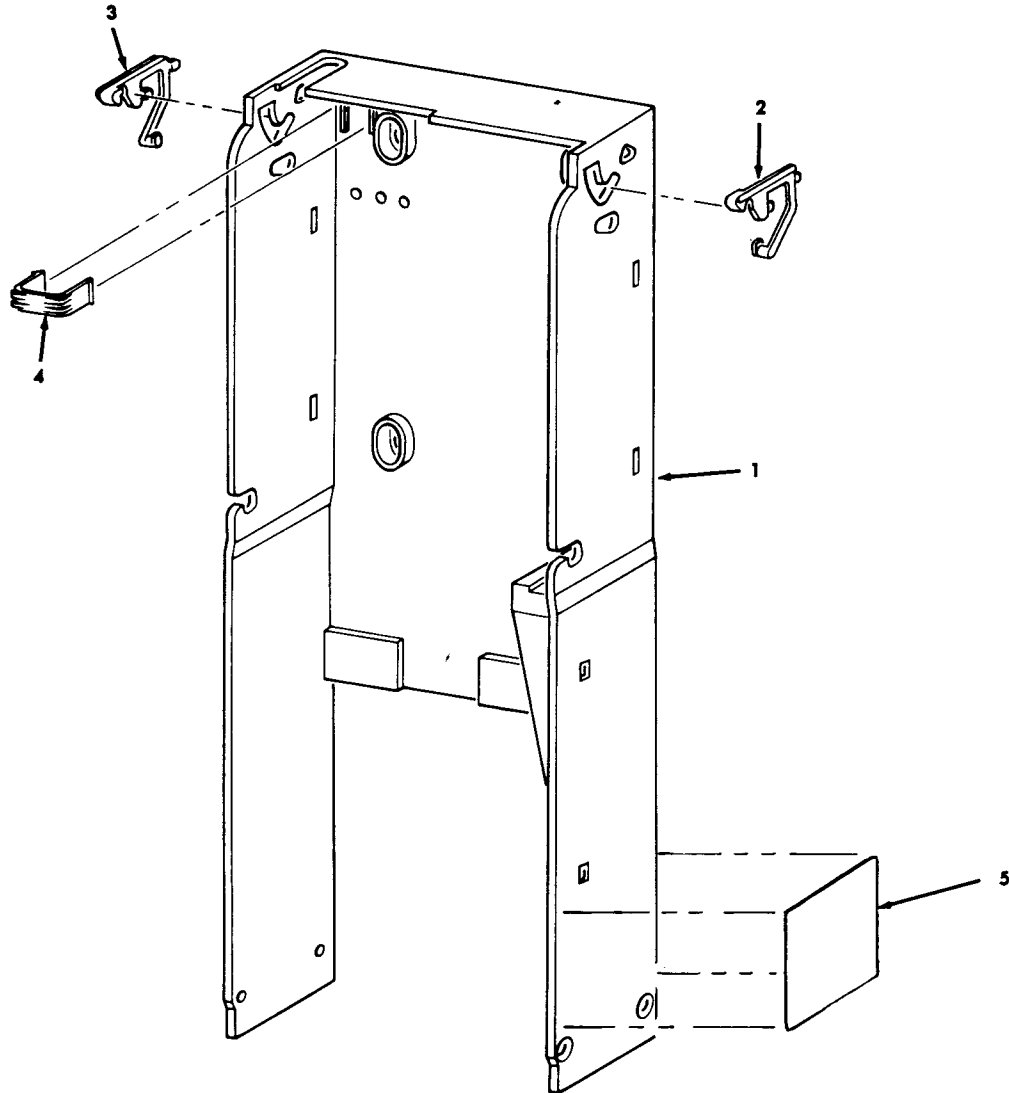
Modular View 9300-S Series Changers



Item #	Part #	Description	Quantity
1	406610	Harness, 9340-S	1
	406614	Harness, 9310-S	1
	406609	Harness, 9300-S	1
	406777	Harness, 9360-S only	1
2	407336	Logic Board, 9310 & 9300-S	1
	406550-2	Logic Board, 9340-S only	1
	407336	Logic Board, 9360-S only	1
3	909100	Changer Housing	1
4	406739-1	Payout Assembly	1
5	406728	Inventory tube & board assy.	1
6	406700	Acceptor	1
7	406788	Logic board cover assy.	1

SECTION 7: PARTS LIST

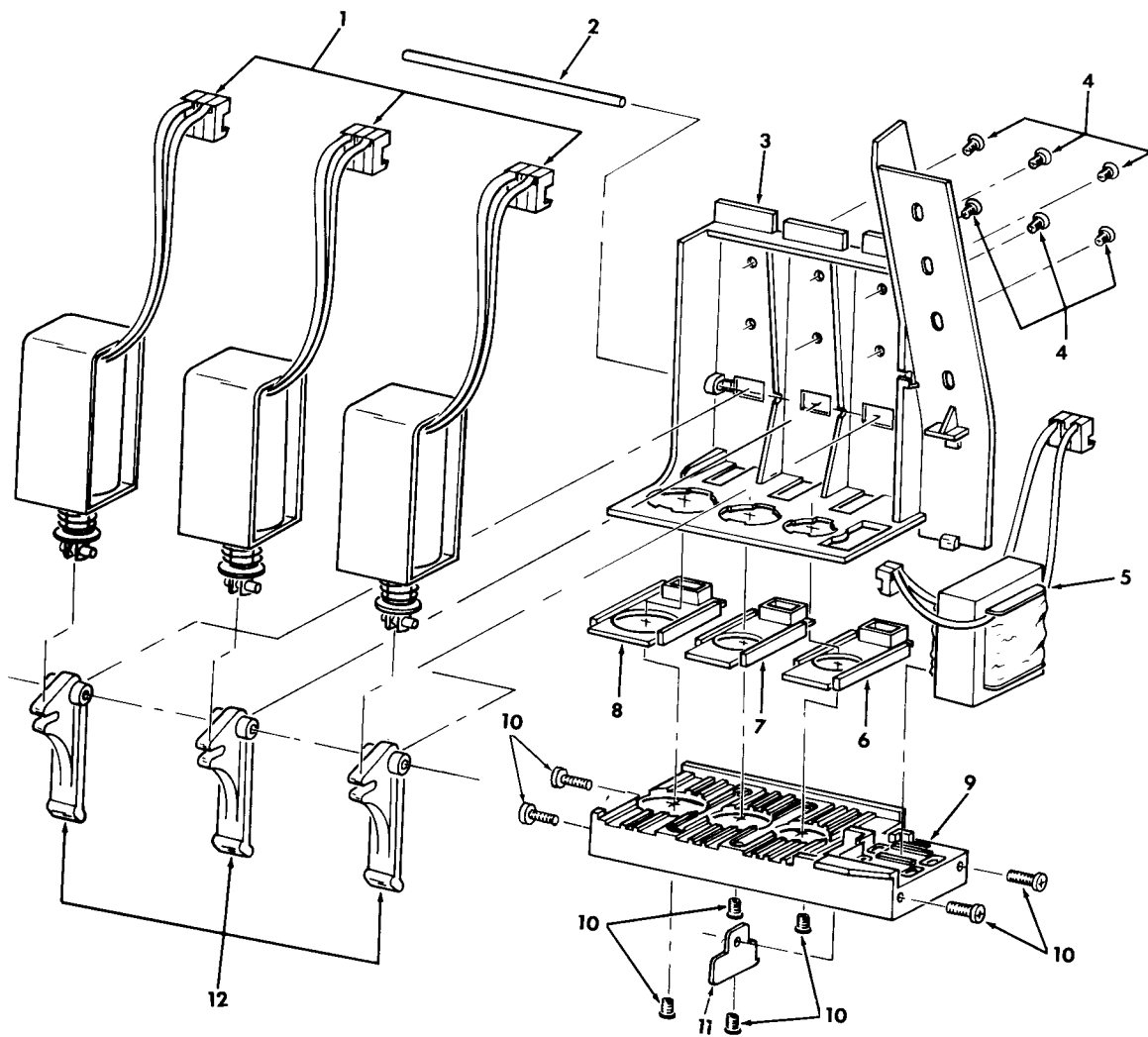
9300-S Changer Housing



Item Number	Part Number	Description	Quantity
1	909100	Housing (only)	1
2	902011-1	Acceptor Latch, right	1
3	902010-1	Acceptor Latch, left	1
4	904195	Harness clamp	1
5	909729	Label, identification	1

SECTION 7: PARTS LIST

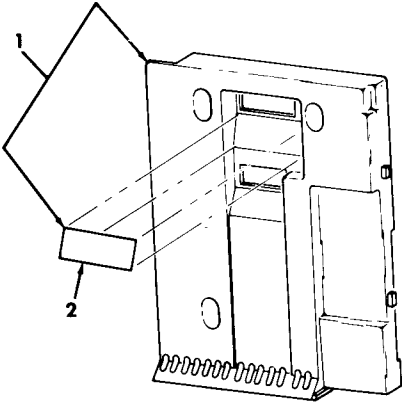
9300-S Payout Assembly 406739-1



Item Number	Part Number	Description	Quantity
1	406607-1	Solenoid Assy., 110VDC	3
2	909113	Pivot Shaft	1
3	909141	Upper payout base	1
4	909630	Screw, 6-32 x 3/16 FH undcut blk	6
5	406606-3	Transformer Assy., 110VAC, fused	1
6	909105	10¢ Payout slide	1
7	909104	5¢ Payout slide	1
8	909103	25¢ Payout slide	1
9	909102	Lower payout base	1
10	345P4R7	Screw, 4 x 7/16 PH PHL PLAS, blk	8
11	909135	Coin Return Liner	1
12	909106	Solenoid Lever	3

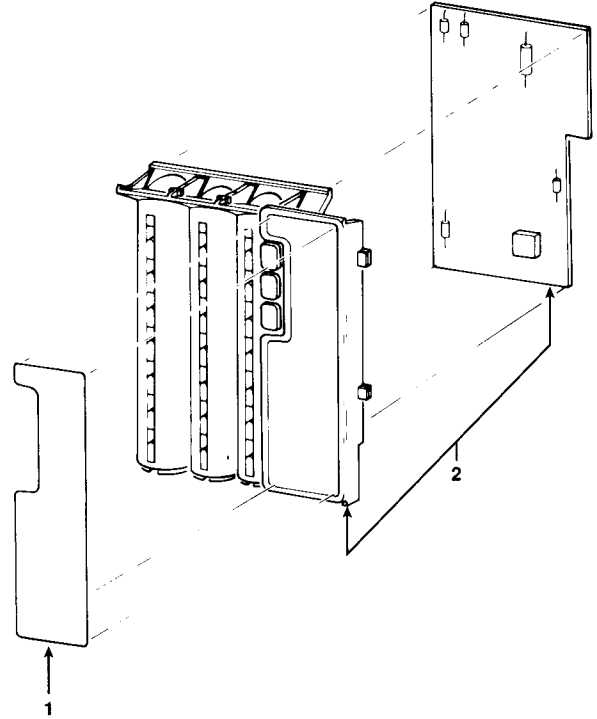
SECTION 7: PARTS LIST

Logic Board Cover 406788 Assembly



Item Number	Part Number	Description	Quantity
1	909585-1	Logic board cover	1
2	909087	Label, Switch Options	1

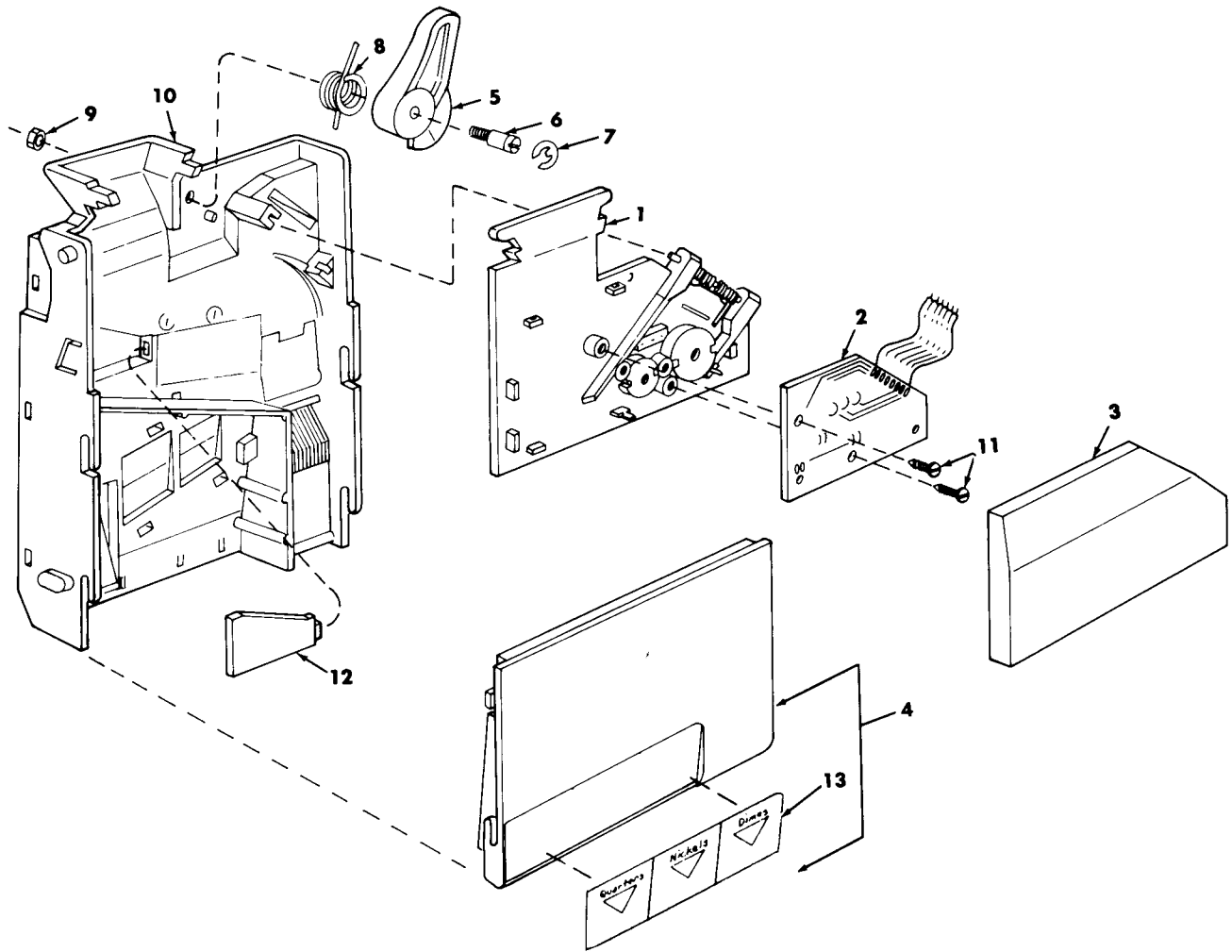
Inventory Tube 406728 Assembly



Item Number	Part Number	Description	Quantity
1	909115	Inventory tube label	1
2	406728-10	Inv. tube and board assy.	1

SECTION 7: PARTS LIST

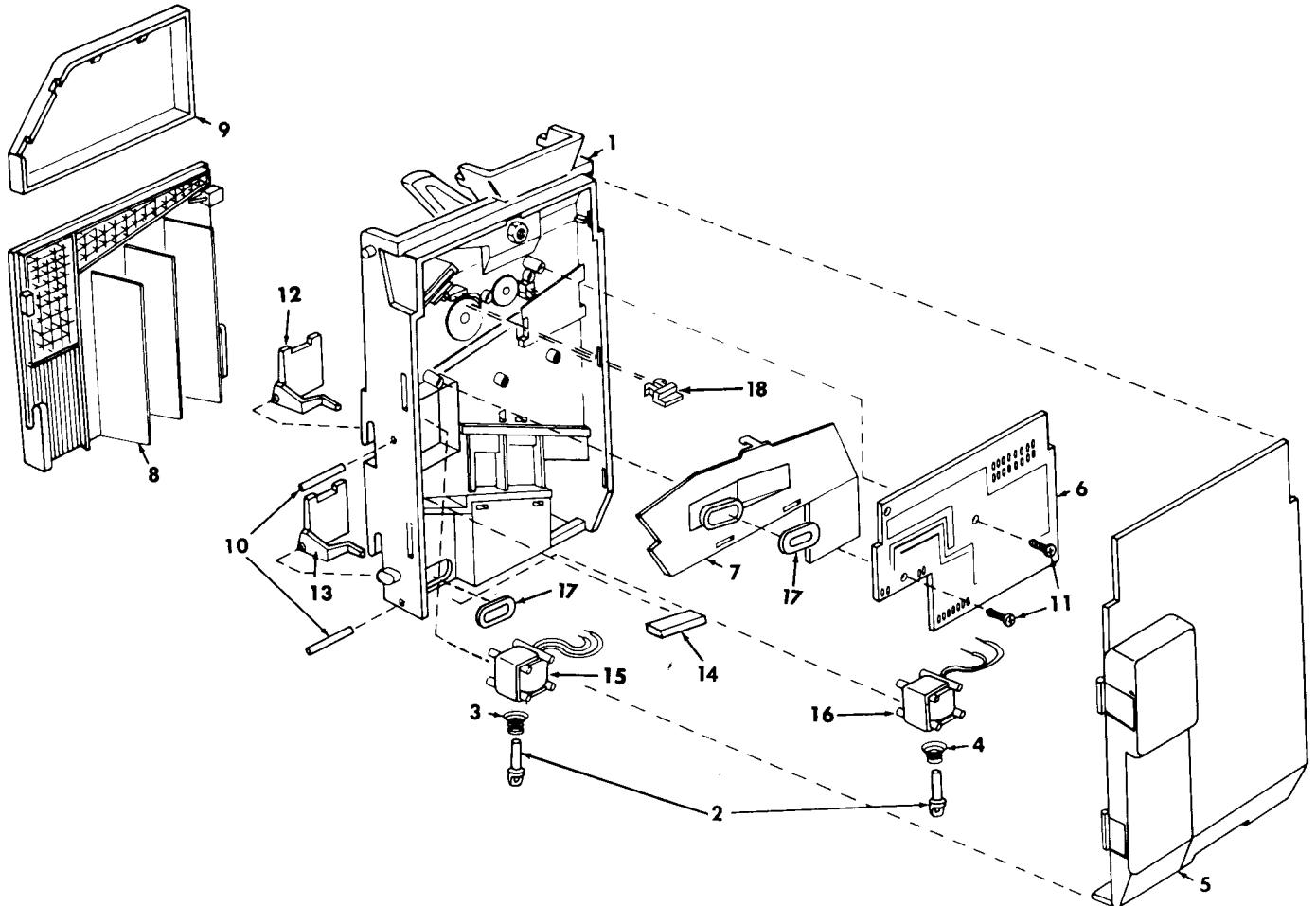
Acceptor Front View 406700 Assembly



Item Number	Part Number	Description	Quantity
1	406184-2	Gate & Coil Assembly	1
2	406567	Gate Board Assy. LED	1
3	906596-1	Cover	1
4	406810	Front cover assy. (Incl. Item #13)	1
5	909606-1	Operating Lever	1
6	906624	Screw, gate lever pivot	1
7	751S21X	Retaining Ring	1
8	906618	Spring, operating lever	1
9	400-8	Nut, 8-32 Lock	1
10	406611	Mainplate & Coil assembly	1
11	345-4R5	Screw, 4 x 5/16 PH PHL PLAS	2
12	906616	Coin Rail	1
13	909086	Front cover decal only	1

SECTION 7: PARTS LIST

Acceptor Back View 406700 Assembly



Item Number	Part Number	Description	Quantity	Item Number	Part Number	Description	Quantity
1	406611	Mainplate & Coils	1	10	906622	Pin, diverter pivot	2
2	406167	Plunger & Yoke Assy.	2	11	345S4R7	4x7/16 PH PHL PLASS SS screw	2
3	906619-2	Spring, copper-plated	1	12	906600	Diverter door, upper	1
4	906619-1	Spring, nickel-plated	1	13	909092	Diverter door, lower	1
5	906606-1	Back cover	1	14	909853	Coin Rual	1
6	407506	Board assy., 9300 acceptor	1	15	406632	Coil assy. solenoid, upper	1
7	406612-1	Rear chute & coil assy.	1	16	406164-1	Coil assy. solenoid, lower	1
8	909095-2	Front cover	1	17	406613-1	Coil assembly, sensing	2
9	906596-1	Cover gate	1	18	908845-1	Plug, spring retention	1

COINCO PRODUCTS ARE COVERED BY
THE FOLLOWING PATENTS:

UNITED STATES PATENT NUMBERS

4,254,857	4,625,852	4,646,904	4,763,769
4,739,869	5,184,708	5,293,979	

CANADIAN PATENT NUMBERS

1,121,873	1,251,565	1,251,862	1,281,134
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Other U.S. and foreign patents pending.