

1980

SERVICE MANUAL

SUPER STACK BOTTLE & CAN MACHINES

BOTTLES		COLUMNS		CANS
111A	-	5	-	214A
125N	-	5	-	220N
183A	-	5	-	324A
156D	-	6	-	276D
182A	-	7	-	322A
198J	-	6	-	348J
231A	-	7	-	406A
266C	-	7	-	462C
304P	-	8	-	528P

Literature Part Number 383754

Vendo[®]

10500 Barkley
Overland Park, Kansas 66212



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INTRODUCTION

The Super Stack Vender offers superior package versatility, labor saving features, plus a 100% lock out system which is effective from time of selection to delivery of product.

The vend mechanism includes a vend motor per column and also a lock out assembly per selection. Should a vend problem occur, this "lock out" will bypass that selection and indicate "Make Another Selection".

The double door design allows the inner door (with magnetized gaskets) to remain closed while servicing the coinage, changing the display light or flavor strips, etc.

MODEL DESIGNATION

This manual applies to any vender with one of the following manufacturers numbers stamped on the identification plate.

01C111**A	01C183**A	01C198**J
01C125**N	01C156**D	01C231**A
01C165**A	01C182**A	01C266**C
	01C304**P	

When requesting information about your vender, please make available ALL information stamped on the identification plate under manufacturers number AND serial number.

* Variations of Models that may not directly affect operational instructions.

SPECIFICATIONS

NOTE: All Electrical Requirement 115 Volt AC - 60 Hertz

MODELS	125/220	156/276	198/348	182/322	231/406	266/462	304/528	111/214	183/324
HEIGHT	64"	66"	72"	66"	72"	79"	79"	64"	79"
WIDTH	32"	38-1/2"	38-1/2"	38-1/2"	38-1/2"	38-1/2"	46-7/32"	32"	32"
DEPTH	24-3/8"	24-3/8"	24-3/8"	24-3/8"	24-3/8"	24-3/8"	24-3/8"	24-3/8"	24-3/8"
SHIPPING WEIGHT (BOTTLE)	520 lbs.	605 lbs.	645 lbs.	635 lbs.	690 lbs.	715 lbs.	830 lbs.	510 lbs.	590 lbs.
* BOTTLES 6-1/2 OZ.	125	156	198	182	231	266	304	111	183
RIMLESS OR ALUM. * 12 OZ. CANS						476	544		
RIMMED STEEL * 12 OZ. CANS.	220	276	348	322	406	462	528	214	324
REFRIGERATION H/P	1/5	1/3	1/3	1/3	1/3	1/3	1/2	1/5	1/5

* TOTAL CAPACITY



MATERIAL RETURN PROCEDURE

All items returned must be accompanied by material return tags clearly stating the reason for return. (Tags are available on request.)

To replace an inoperative part within the terms of the warranty, please follow these instructions.

1. If a replacement part was taken from the available parts stock and installed on the machine, proceed as follows:
 - a. Complete a parts return tag. Be sure all of the requested information is written in.
 - b. Keep the white (top) copy.
 - c. Attach the tab to the inoperative parts and send it by the cheapest method of transportation to: Vanguard, 2001 Arthur Avenue, Elk Grove Village, Illinois 60007.
 - d. A like part will be shipped prepaid, at no charge, if our inspection shows the inoperative part became defective in warranty.
 - e. If a part does not meet the terms of the warranty, it will be replaced with a new part and invoiced accordingly. The returned part will be scrapped to eliminate further handling charges.
2. If a spare part is not available to put on the machine, order the part required. Call 1-913-341-1300 for emergency requirements. The part will be shipped and invoiced to you. After the replacement is received, follow the procedure as outlined above under Number 1.

After exchange of the part on the machine, complete a material return tag. Check the box marked "Credit" and fill in the invoice number covering the part.

Attach the tag to the inoperative part and send it by the cheapest method of transportation to: Vanguard, 2001 Arthur Avenue, Elk Grove Village, Illinois 60007.

If our inspection shows the inoperative part became defective in warranty, a credit will be issued to cancel the invoice on which the replacement part was shipped. This credit will include any prepaid transportation charges. To receive credit the inoperative part **MUST** be returned within 30 days from the date the replacement was shipped.

We do not issue cash credit for the return of any part or accessory.

INSTRUCTIONS: USE TAG FOR UP TO 5 ITEMS
ALL ITEMS RETURNED MUST BE ACCOMPANIED BY PARTS RETURN TAG

DO NOT USE FOR REFRIGERATOR OR ICE MAKING UNITS

WIRE HARD COPY (TAG) TO PARTY'S BEING RETURNED. WRAP & BOX CAREFULLY TO PREVENT DAMAGE.

Form L-1495

VENGUARD PARTS RETURN TAG

Detach lower portion of top copy & use as mailing label
If no ground - machine and serial
Return top portion for your records

MACHINE MODEL NUMBER	SERIAL NUMBER	PART NUMBER	PART NAME	QUANTITY	DATE	INVOICE NUMBER
HBAB	4BK001218	121662	VALVE	6-12 1	✓	966742 ✓
HBBT	35K002248	354005-2	THERMOSTAT	5-31 1	✓	
VF156-6	3RK012218	342238	RELAY	6-5 1	✓	

Reason For Return: **PARTS ARE INOPERATIVE**

Date Returned: **6-20-74**

RETURN TAG No. **370**

CUSTOMER COPY

FROM: **YOUR VENDING CO**
ADDRESS: **1000 MAIN ST**
CITY: **ANYWHERE**
STATE: **U.S.A.** ZIP: **10000**

TO: **VENGUARD**
2001 ARTHUR AVENUE
ELK GROVE VILLAGE, ILLINOIS 60007

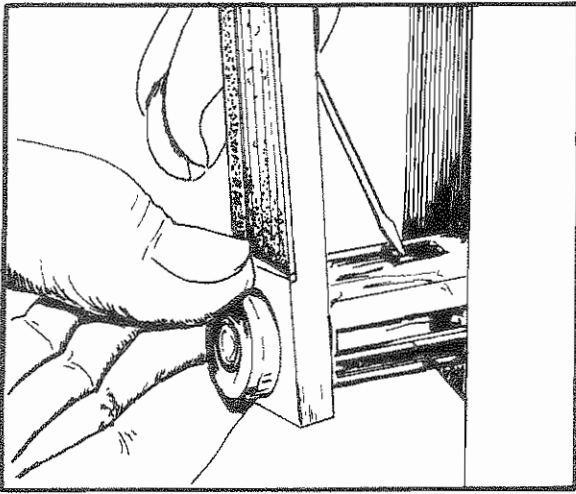
Return Postage Guaranteed

Merchandise - Fourth Class Mail

INITIAL INSTALLATION

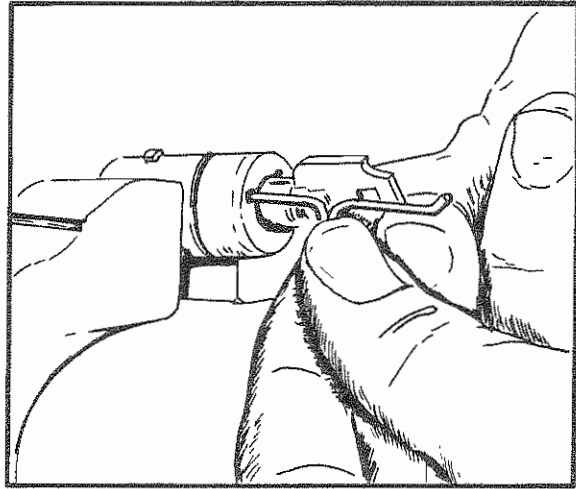
CODE YOUR LOCK (FLEX ACE)

Locks may be recoded either remaining in the handle or outside the handle. Recoding is shown with lock removed from handle and is probably the easiest and safest way and will insure that the lock is recoded properly before it is replaced back into handle. NOTE: Fasten lock in vice or other means of securing lock.



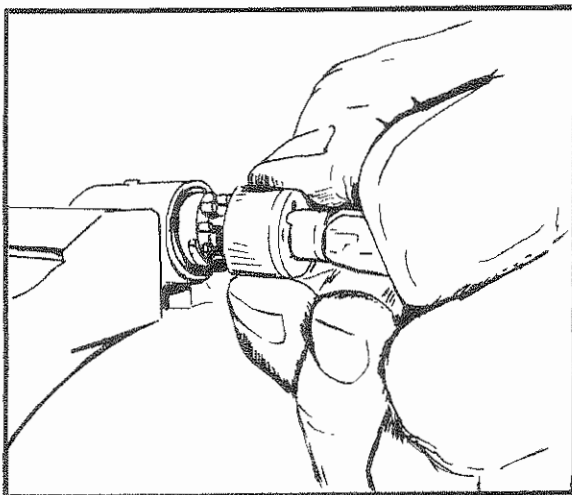
1. Lock may be removed by depressing the latch and sliding lock forward out of handle.

Figure 1



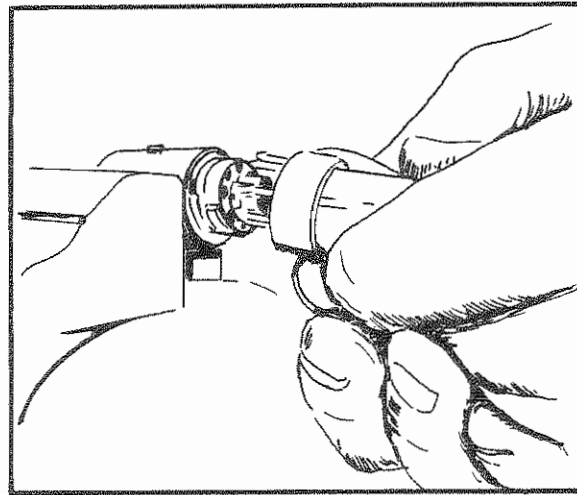
2. Insert release pin into hole in cap. Push pin firmly and rotate key to release at the slot position.

Figure 2



3. Remove cap with key as one unit.

Figure 3

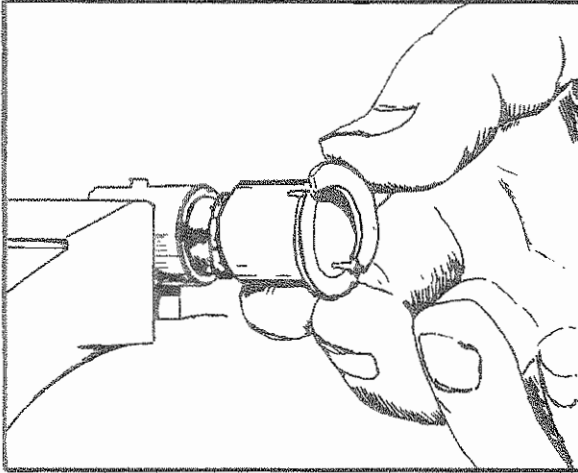


4. Using magnet end of loader tool, remove all seven (7) tumblers.

Figure 4

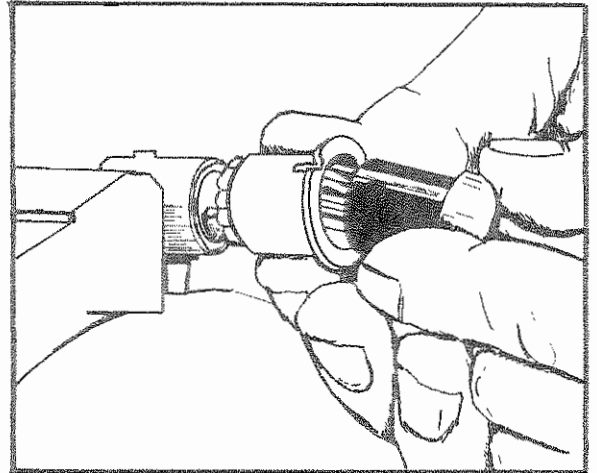
INITIAL INSTALLATION (Continued)

CODE YOUR LOCK (Continued)



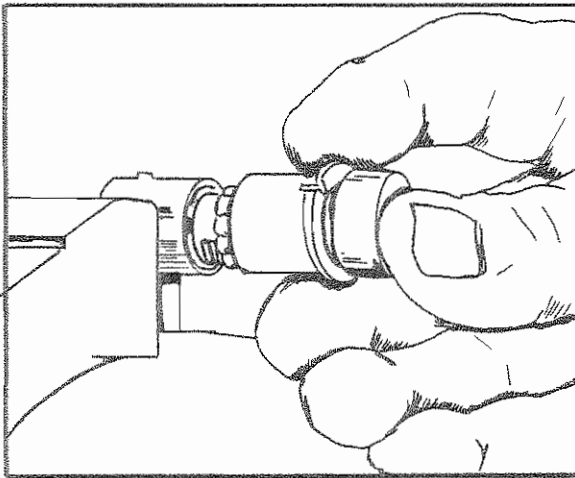
5. Place the preloaded coder into lock. It is slotted to go on the center shaft one way only.

Figure 5



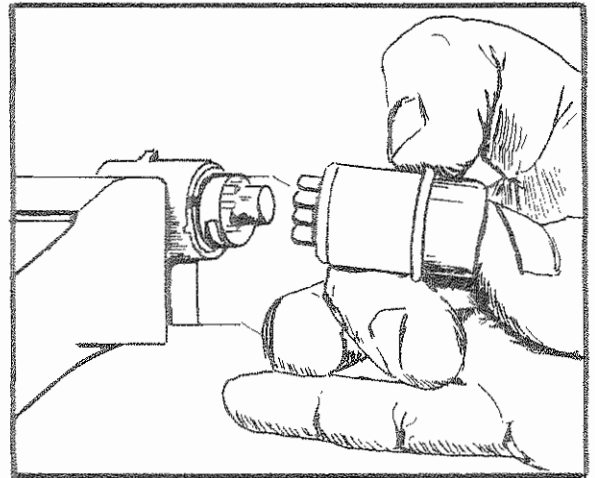
6. Place the loading tool into the coder. (It is slotted to fit one way only.)

Figure 6



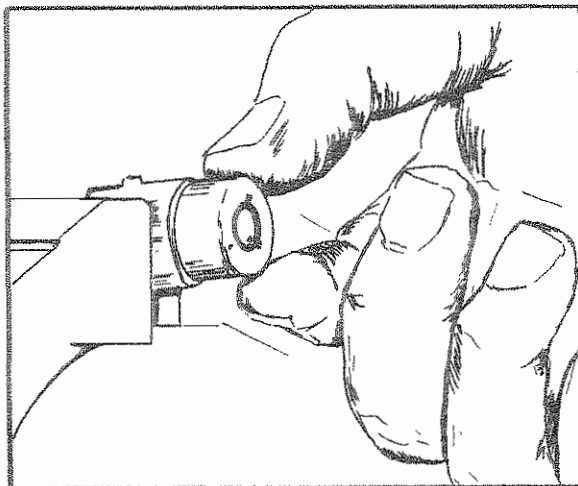
7. Press the new tumblers firmly into place.

Figure 7



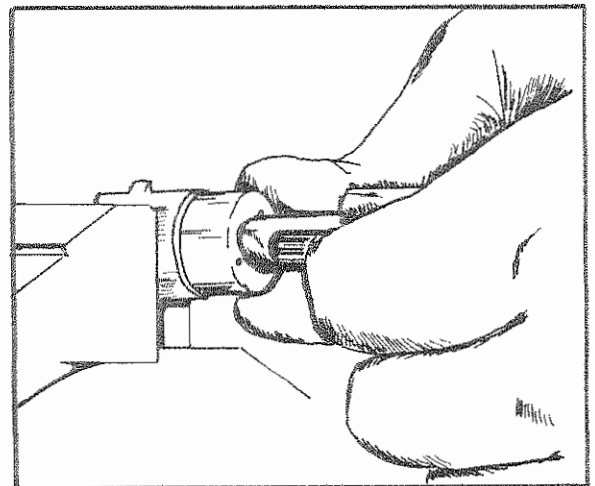
8. While holding loading tool into coder, carefully remove both as one. Be certain all seven (7) tumblers are in place.

Figure 8



9. Replace the lock cap as removed.

Figure 9



10. Insert new key. Press cap in firmly and rotate key to locked position.

Figure 10

INITIAL INSTALLATION (Continued)

1. UNPACK

Remove all packing and tape from the machine.

CAUTION: If shipping damage is noticed, save the carton, notify the shipper immediately, and file a damage claim.

2. LEVEL (See Figure 11)

Remove the wooden shipping base. Replace the leveling screws and level machine to assure proper acceptance of coins. When machine is level, the door can be opened to any position, and the door will not move by itself.

CAUTION

Place the machine so as not to block front or rear with boxes or other material, as air circulation is essential to proper operation of the refrigeration system.

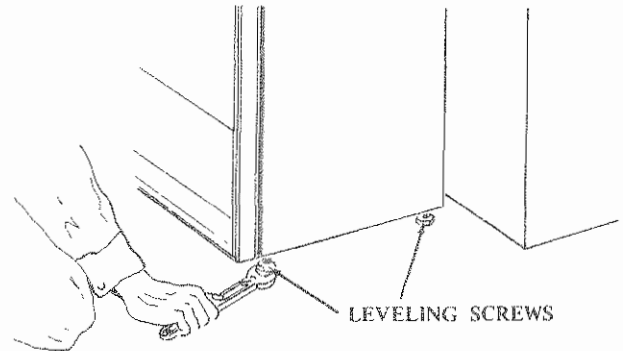


Figure 11

3. CONDENSATE PAN (See Figure 12)

Check to make certain the condensate pan is still in proper position. Check the drain tubing leading to the pan, seeing that it is secured with a clip and free of kinks. Loop must be maintained in tubing for air "trap" purposes.

4. COIN MECHANISM

The coin mechanism mounts on the three mounting screws located on the inner door.

- Remove the acceptor from the coin mechanism.
- Slip the keyholes in the back of the mechanism over the three mounting screws and tighten.
- Put the acceptor back onto the coin mechanism.

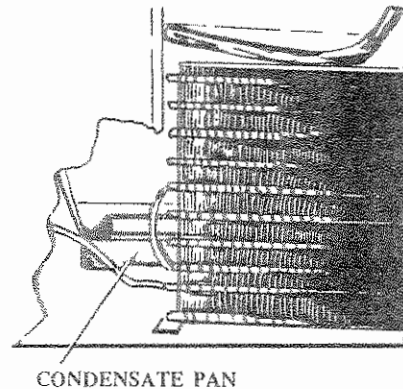


Figure 12

5. CONNECT TO POWER SUPPLY

CAUTION

This vender requires 115 Volt AC 60 Hertz Power Supply.

To insure safe operation of an electrically equipped vender, the vender must be grounded. To verify that the receptacle is properly grounded, connect one probe of a test light or Volt Meter, to the screw holding the receptacle cover. Insert the other probe into the opening of each outlet (SEE FIGURE 13). If the test device does not react when placed in either side of the receptacle, the receptacle is not grounded.

If the above requirements are not met, you should contact a licensed electrician to obtain the proper power supply and grounding facilities. **DO NOT USE AN EXTENSION CORD.**

Dress the vender power cord through the provided openings in the rear of the cabinet, making sure that the condenser motor fan blade is clear of all obstruction.

When power is applied to the vender, the following components should run. Compressor, Condenser Fan, Evaporator Fan. "The Correct Change Only" lamp will light with no coins in the changer pay out tubes. The lamps which indicate "Make Another Selection" should light if there are no products in the columns.

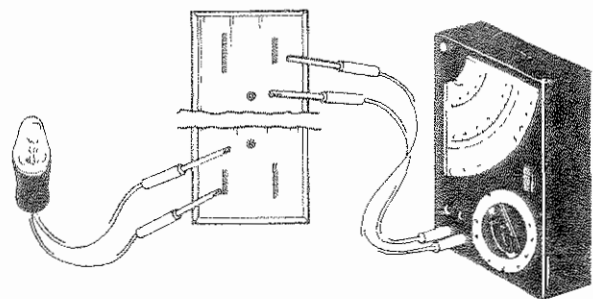


Figure 13

INITIAL INSTALLATION

1. COINAGE LABEL

Be sure the front surface of the coinage assembly is clean and dry. Peel off backing paper and place the selected coinage instruction label on the coinage assembly.

2. FLAVOR STRIPS

Open main door. Place flavor inserts into the left end of the selection button window as shown in Figure 14.

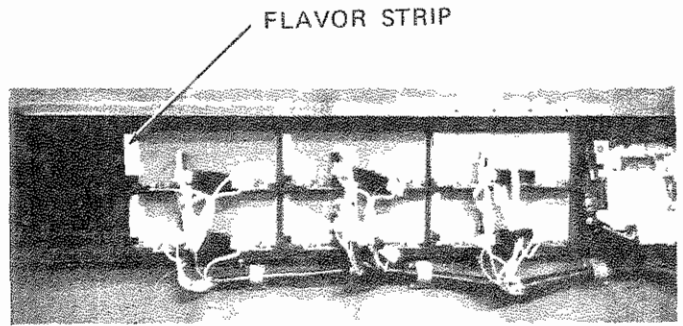
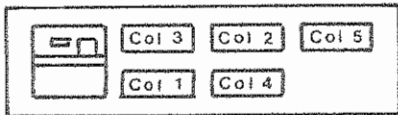


Figure 14

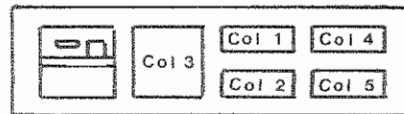
The push button positions and the column or columns they control are as follows –

PUSH BUTTON COLUMN CONTROL

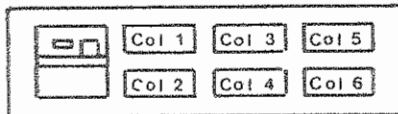
5 Column



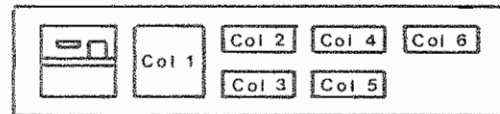
5 Column



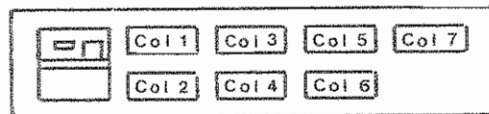
6 Column



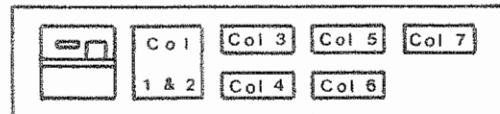
6 Column



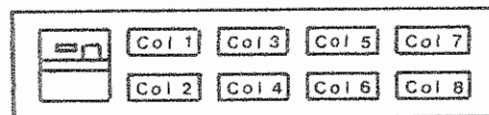
7 Column



7 Column



8 Column



8 Column

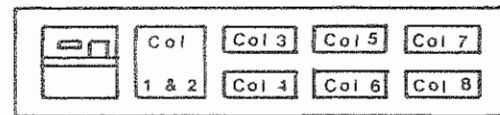
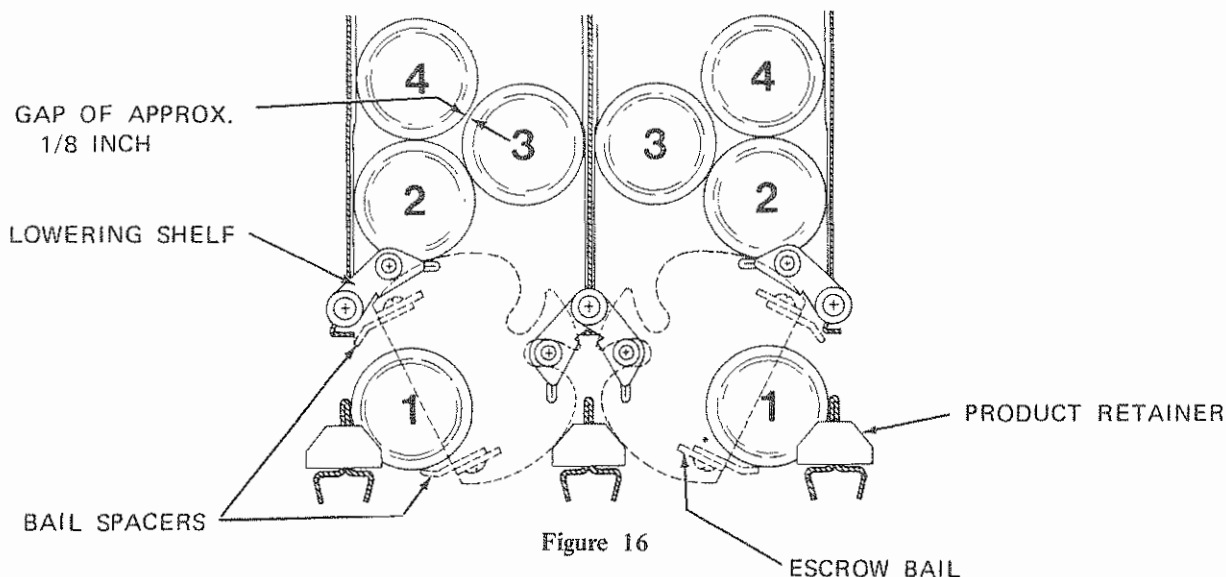


Figure 15

LOADING INSTRUCTIONS FOR BOTTLES



1. **INSTALLATION OF SPACERS IN COLUMNS** -- To install side spacers, release back spacer and turn spacer until parallel to sides of column.

Recommended side spacers per column for large, medium and small diameter bottles, based on average size bottles. To determine proper spacing after shims and/or spacers are added - - refer to Step No. 3.

Spacers are designed for right and left sides of column. Stainless steel covered portion of spacer will go toward front of column.

- a. Large Diameter Bottles - - Zero spacers, zero to 1 shim per side of column.
- b. Medium Diameter Bottles - - 1 spacer and 0 to 2 shims per side of column.
- c. Small Diameter Bottles - - 1 spacer and 2 to 3 shims per side of column.

NOTE: For vending 16 oz. returnable bottles, remove back spacer.

1. Remove its latch slides and springs.
2. Turn the spacer 180° and remount in the extreme rear of the column.

2. **LOAD FIRST FOUR (4) BOTTLES**

- a. Move back spacer to rear of column.
- b. Operate sold out lever to assure that the vend motor is in a "standby" position.
- c. Load the first bottle "into" the escrow bail crown to the rear, as shown in Figure 16, or on the mechanism cover.
- d. Load the second bottle on the "up" lowering shelf. The "up" shelf may be on the right or left side of the column. One shelf will be "up" and the other "down" IF the vend motor is in a standby position.
- e. Load bottles 3 and 4 as shown.

3. **CHECK EACH COLUMN FOR PROPER USE OF SPACERS AND SHIMS.**

- a. Make check with only four (4) bottles loaded in the column. (One bottle down on escrow bail and other three supported by lowering shelf.)
- b. With the last (4th) bottle to be loaded, over against the column wall, check for spacing between the largest parts (probably butts) of bottles 3 and 4.
- c. There should be approximately 1/8 inch clearance between the largest parts of bottles 3 and 4.
- d. Add or remove shims to obtain.

4. **TO COMPLETE LOADING AND CHECK-OUT PROCEDURE.**

- a. Check position of back spacer(s). Position and latch so as to obtain approximately 3/8 inch clearance between bottle crown and back spacer(s). (Remember bottles must operate sold out lever.)
- b. Complete loading in staggered manner.
- c. Test vend each column.

CAUTION: Where more than one column is operated by one selection button, columns affected should be loaded at equal height.

LOADING INSTRUCTIONS "CANS" (Double Depth)

1. Operate sold out flap to assure that the vend motor is in standby position. If it is not, the motor will run to complete a cycle.
2. Load two (2) cans on the lowering shelf which is in the up position (place 1st can on a shelf as far forward as possible, then load 2nd can on same shelf directly behind 1st can) (See Figure 17),
3. Check for approximately 1/2 inch spacing between 2nd can and back spacer. Adjust spacer if necessary.
4. Load next two (2) cans on opposite side of column in same manner. Continue to load cans in staggered pattern (approximately 12 cans).
5. Make one (or possibly two) vends on each column to allow cans to be lowered into a vend position.
6. Test vend each column.
7. Complete loading of column in staggered pattern.

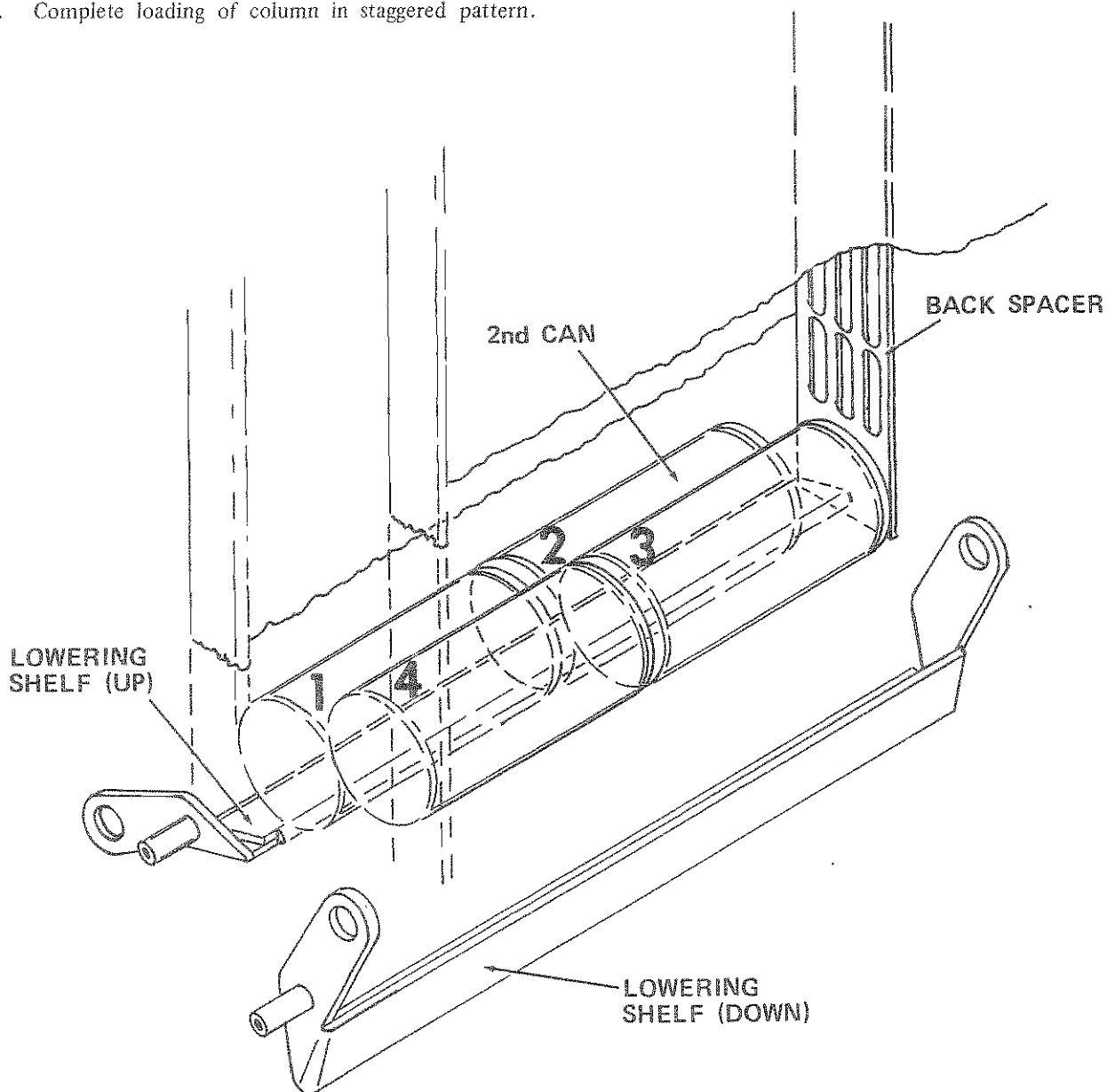


Figure 17

CONVERSION INSTRUCTIONS

CONVERSION FROM BOTTLES – TO 12 OUNCE DOUBLE DEPTH CANS: (See kit list for proper model to kit identification.)

1. Unload column(s).
2. Remove delivery chute and mechanism cover.
3. Release back spacer and turn it until parallel to sides of column. Back spacer will release as shown in Figure 20.
4. Remove all spacers and shims from both sides of column(s).
5. Relocate back spacer in 3rd slot from rear of column.
NOTE: Two (2) hanger tabs of adjacent back spacers will fit in the same slot of the column dividers.
6. Remove bail spacer bars from escrow bail (2 screws each bar), and store for future use. (Escrow bail may be rotated by operating sold out lever and actuating motor carrier switch.)
CAUTION: Use small screwdriver or other small object to depress actuator of motor carrier switch.
7. Add can spacers (blocks) to escrow bails with longer screws provided with conversion parts. (See Figure 18).
8. Change setting of cam detent cover to permit 4 detent positions. Loosen one (1) screw and rotate cam detent cover counterclockwise and secure. (See Figure 19)
NOTE: Drive link will need to be in lower position for access to adjustment screw.
9. Replace delivery chute.
10. Refer to Loading Instructions "Cans" for loading, and positioning of back spacer.
11. Replace mechanism cover.

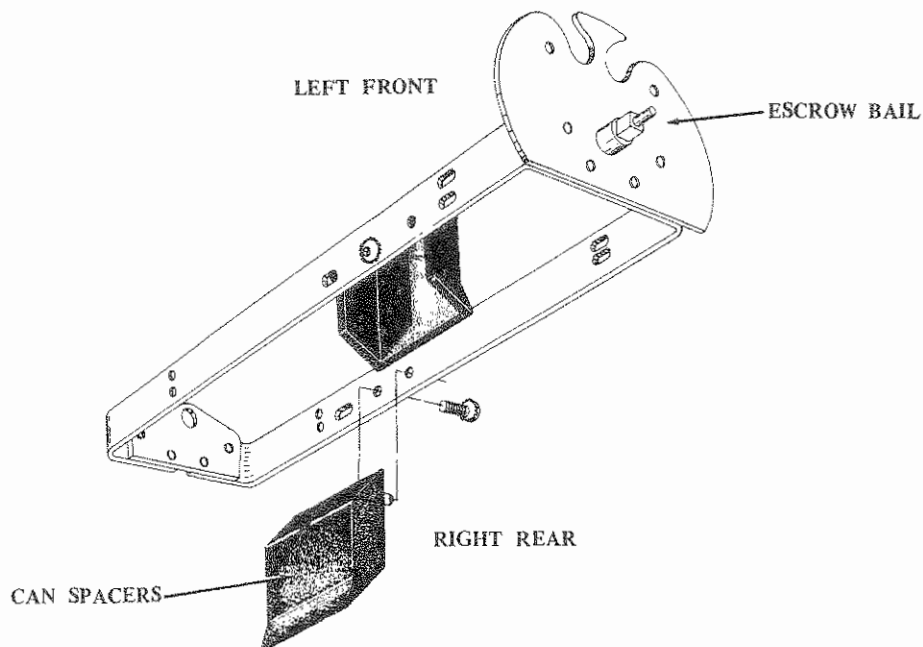


Figure 18

CONVERSION FROM BOTTLES – TO 12 OUNCE SINGLE DEPTH CANS:

1. Release back spacer and turn spacer until parallel to sides of column.
2. Remove spacers and shims from sides of column(s).
3. Relocate back spacer for approximately 1/2" spacing.

CONVERSION INSTRUCTIONS (Continued)

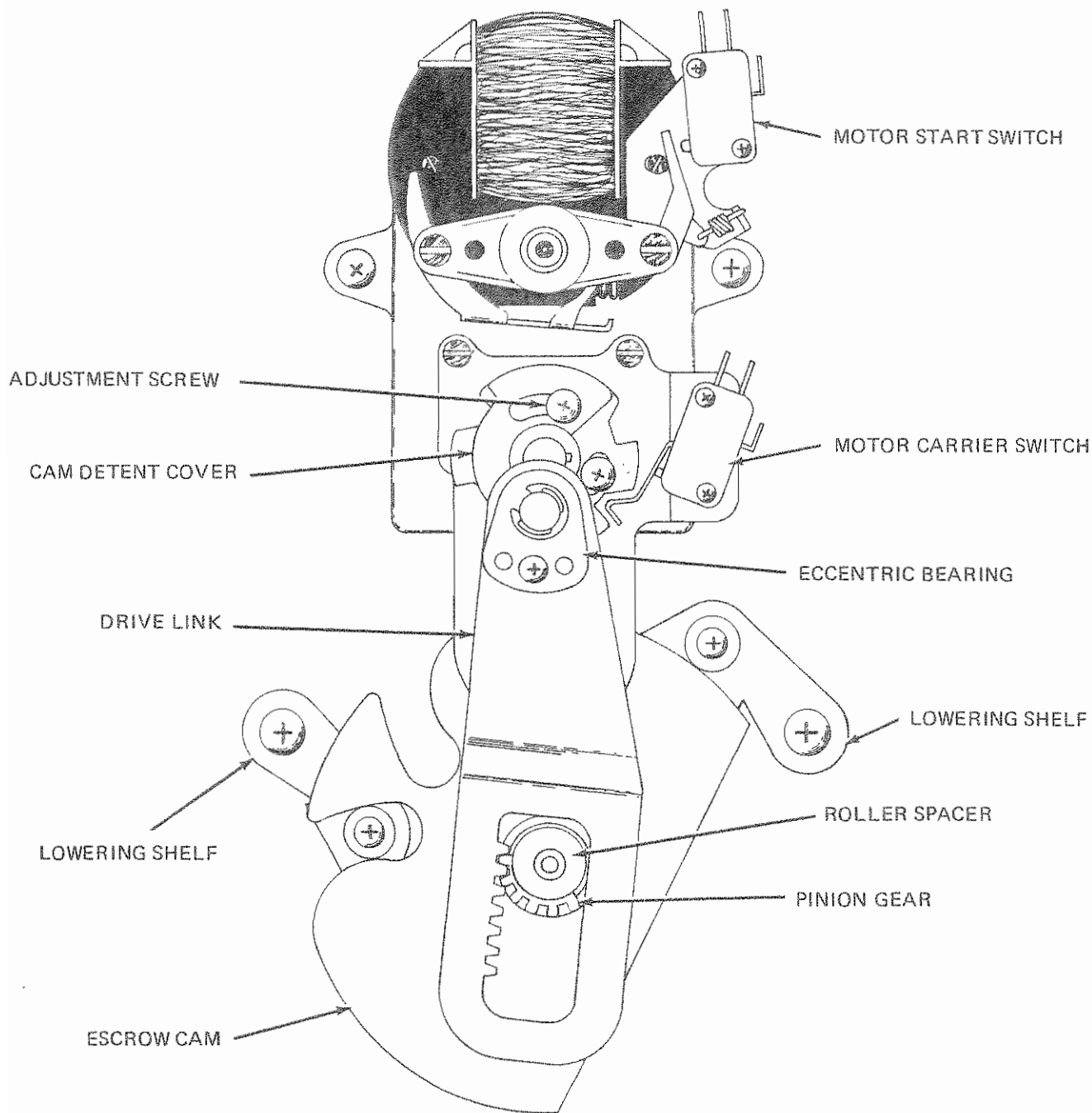


Figure 19

CONVERSION KITS

To Convert from Cans to <u>Bottles</u>			To Convert from Bottles to 12 oz. <u>Cans</u>		
106916-16	276/156, 348/198, 396/228	6 Column	106916-19	276/156, 348/198, 396/228	6 Column
106916-17	214/111, 324/183, 220/125	5 Column	106916-20	214/111, 324/183, 220/125	5 Column
106916-18	528/304	8 Column	106916-21	528/304	8 Column
106916-28	322/182, 406/231, 462/266	7 Column	106916-29	322/182, 406/231, 462/266	7 Column

CONVERSION INSTRUCTIONS (Continued)

CONVERSION FROM DOUBLE DEPTH CANS – TO BOTTLES: (See kit list for proper model to kit identification.)

1. Unload column(s).
2. Change setting of cam detent cover to permit only two detent positions. Loosen one (1) screw and rotate cam detent cover clockwise and secure. (See Figure 19).
3. Remove can spacers (blocks) from escrow bails and store for future use. (Escrow bail may be rotated by operating sold out lever, and actuating motor carrier switch.)
CAUTION: Use small screwdriver or other small object to depress actuator of the motor carrier switch.
NOTE: When converting from 10 ounce cans, bail spacer bars must be removed also!!
4. Install bail spacer bars on escrow bails using shorter screws. The spacer bars are to attach through the lower two holes in the escrow bails using shorter screws. The bend of the spacer bars should angle inward at bottom of escrow bail. (See Figure 21).
NOTE: Drive link will need to be in lower position for access to adjustment screw.
5. Release back spacer and turn spacer until parallel to sides of column. Back spacer will release as shown in Figure 20.
NOTE: For vending 16 oz. returnable bottles, it will be necessary to remove latch slides from the back spacers. Turn the spacer 180° and reinstall in the extreme rear position.
6. Install spacers and shims to sides of columns as needed. (Refer to Initial Loading Instructions, Item 1.)
7. Relocate back spacer to rear of column for temporary storage.
8. Load four (4) bottles (see Initial Loading Instructions No. 2 and No. 3). Check for correct number of shims and spacers.
9. Relocate back spacer to allow approximately 3/8 inch spacing between bottle crowns and back spacer.
NOTE: Two (2) hanger tabs of adjacent back spacers will fit in the same slot of the column dividers.
10. Replace delivery chute and mechanism cover.
11. Complete loading and test vend.

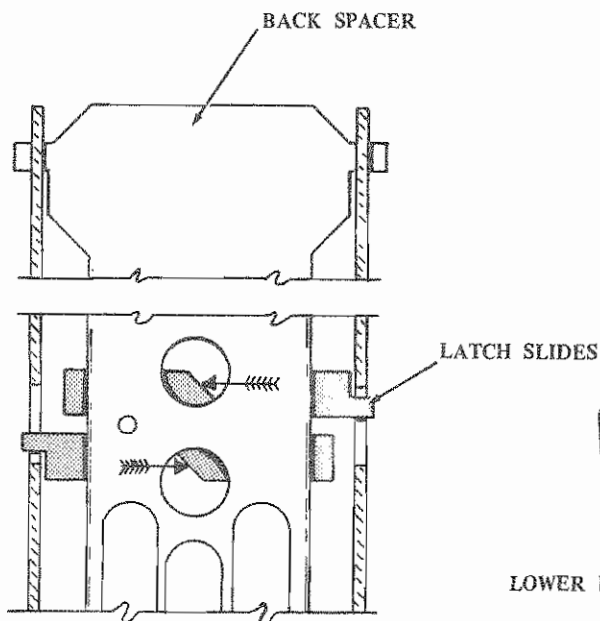


Figure 20

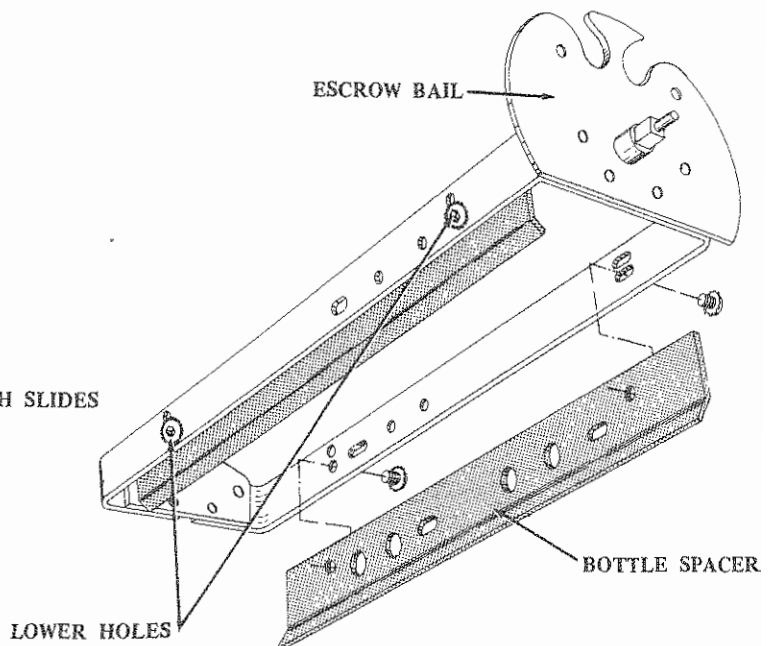


Figure 21

CONVERSION INSTRUCTIONS (Continued)

CONVERSION FROM BOTTLES – TO 10 OUNCE DOUBLE DEPTH CANS: (See kit list for proper model to kit identification.)

1. Unload column(s).
2. Remove delivery chute and mechanism cover.
3. Release back spacer and turn spacer until parallel to sides of column.
4. Remove shims from sides of column(s) leaving only the spacers (one each side); stainless steel of spacers must be toward front of column.
5. Relocate back spacer in 3rd slot from rear of column.
NOTE: Two (2) hanger tabs of adjacent back spacers will fit in the same slot of the column dividers.
6. Remove bail spacer bars from escrow bail; turn end for end (180 degrees) to reinstall. Using same screws just removed, attach bail spacer to bail through upper holes in bail. (See Figure 22). (Escrow bail may be rotated by operating sold out lever and actuating motor carrier switch.)
CAUTION: Use small screwdriver or other small object to depress actuator of motor carrier switch.
7. Add can spacer (blocks) to escrow bails, left front and right rear (See Figure 22). Use longer screws, provided with conversion parts.
8. Change setting of cam detent cover to allow 4 detent positions. Loosen one screw and rotate cam detent cover counterclockwise and secure (See Figure 19).
9. Refer to Loading Instructions "Cans" for loading and repositioning of back spacer. Back spacer will release as shown in Figure 20.
10. Replace delivery chute and mechanism cover.

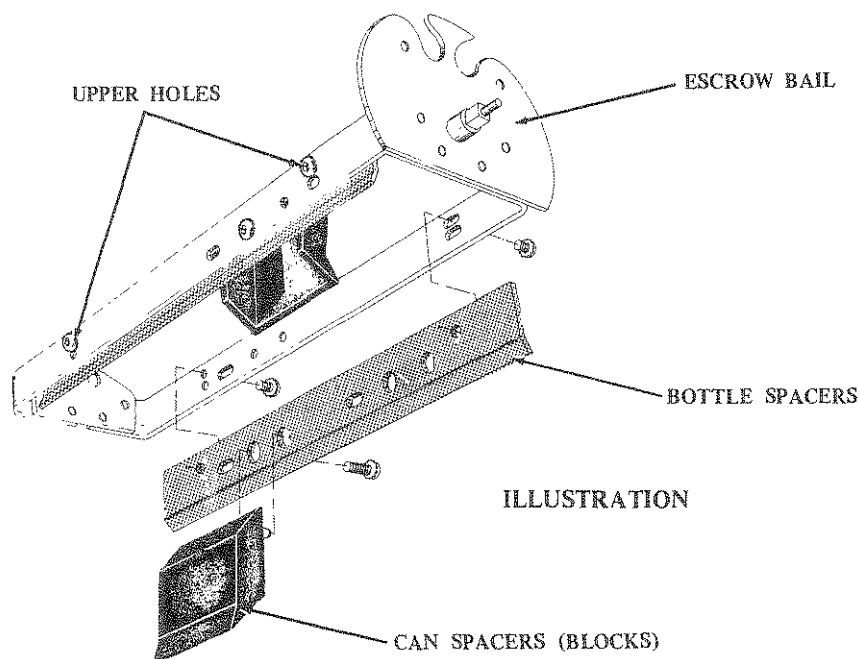


Figure 22

CONVERSION FROM BOTTLES – TO SINGLE DEPTH 10 OUNCE CANS:

1. Release back spacer and turn spacer until parallel to sides of column.
2. Remove the shims from sides of column(s) leaving only the spacers.
3. Relocate back spacer for approximately 1/2" spacing.

CONVERTING MODELS 111/214 AND 183/324

To convert these two models from bottles to cans it will be necessary to make the conversion described previously, 5 Column Kit P/N 106916-20 PLUS.

REMOVE

1. The Back Spacer Extension P/N 383417
2. Both Bottle Retainers – L.H. P/N 383415, R.H. P/N 383416
3. The Shelf Spacer P/N 383443
4. Then move the rear shelf retainer to the second mounting hole from the front.

ADD

1. Guide P/N 383399
2. Shelf Spacer P/N 383441 (Use two P/N V800570 Screws removed from back spacer extension).
3. Decal P/N 383364

To convert from cans to bottles reverse the above procedure. In addition, you will need four P/N V800952 Hex Nuts and four P/N V800457 Screws to mount the bottle retainers. Use 5-Column Kit P/N 106916-17.

NOTE: The space to the right and left of the bottle retainers may be used for pre-cool storage.

CAUTION: Do not attempt to vend bottles from the prime product column without converting.

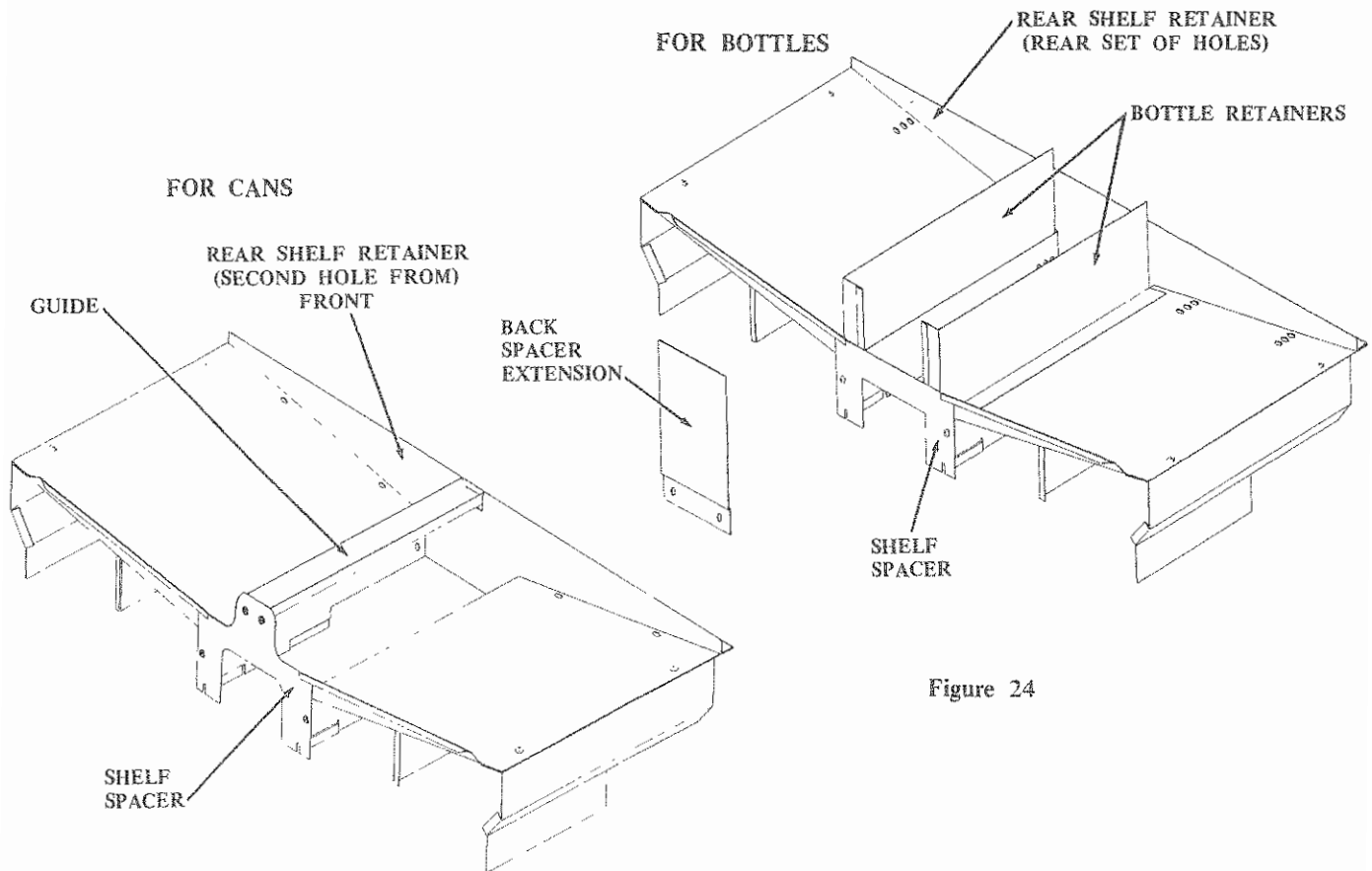


Figure 23

Figure 24

ADJUSTMENTS

1. DOOR ADJUSTMENTS

The outer door may be adjusted to allow the door to close and lock securely. The cabinet hinges may be adjusted to provide a door-cabinet relationship as shown

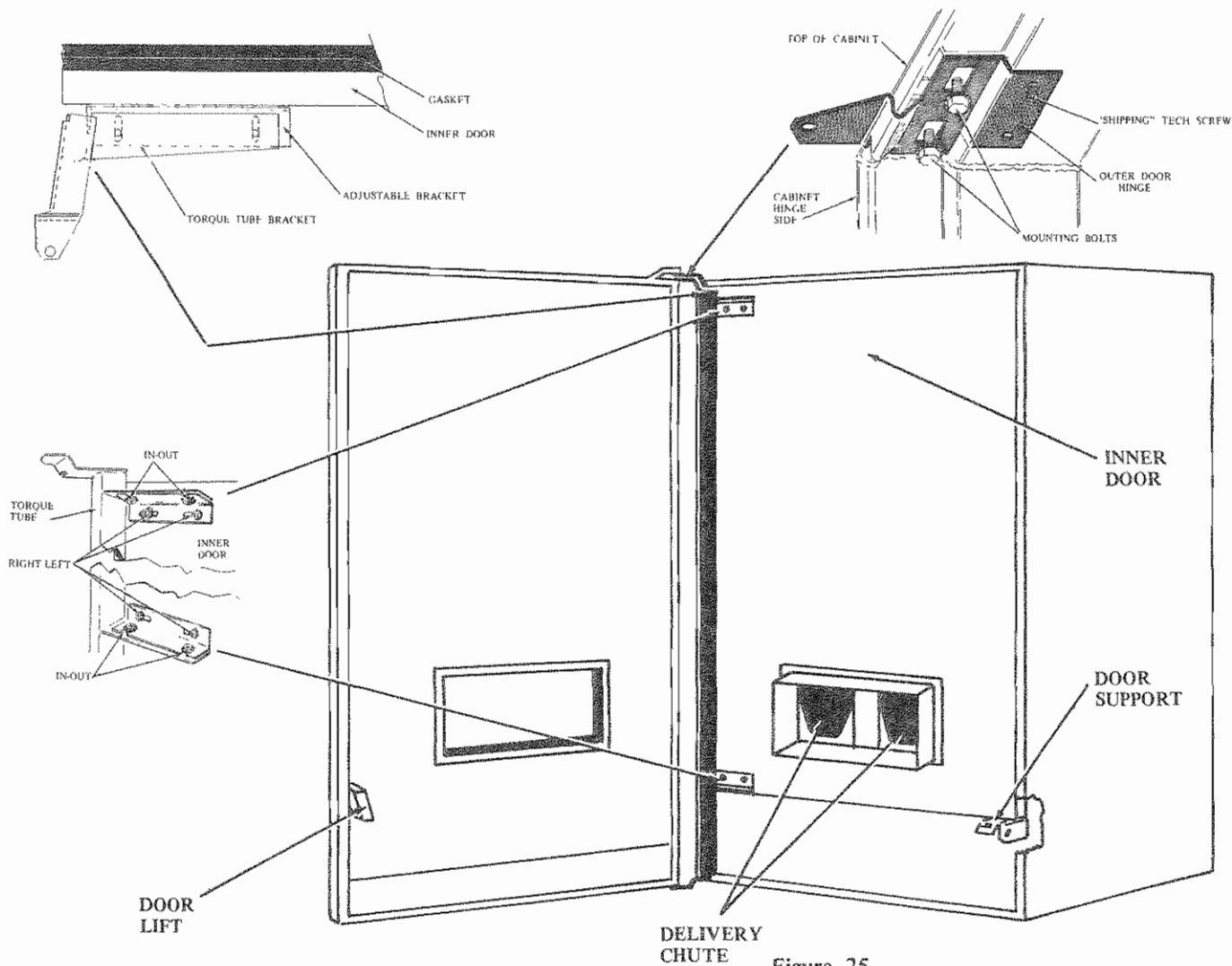


Figure 25

1. The adjustable upper hinge should have its mounting bolts in the center of the hinge slots. (Remove the shipping tech screw if necessary.)
2. Loosen the "in-out" bolts on inner door upper and lower hinges. Adjust the door so that it is PARALLEL to the TORQUE TUBE BRACKET and as far forward as possible (away from the cabinet). Tighten the bolts
3. The cabinet mounted door support may be adjusted to properly support the inner door "square" with the cabinet when the door is firmly closed.
4. The outer door lift should rest on the door support and the outer door should be square with the cabinet when the outer door is closed. The lock cam latch strike on the cabinet may then be adjusted to allow smooth lock engagement.
5. Check the alignment of the product delivery chutes with the delivery eyelet on the door. Any RIGHT to LEFT adjustment may be made at the inner door hinges.
NOTE: UP or DOWN alignment of the chute is made at the chute mounting bolts.
6. Close the inner door on a piece of paper at several positions on all four sides of the door to check the "refrigeration seal". There should be a discernable resistance to the removal of the paper at all points. Adjust hinges as necessary.

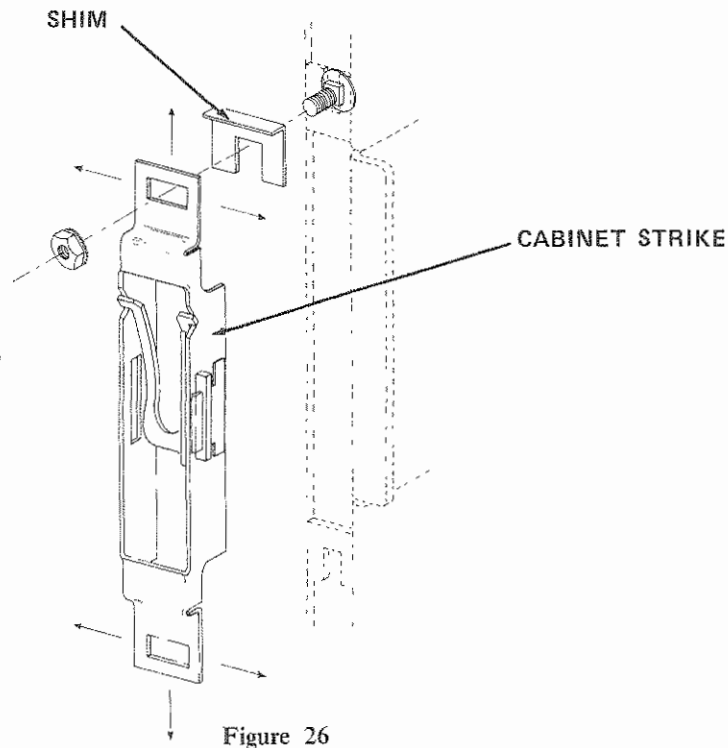
ADJUSTMENTS (Continued)

2. LOCK AND LATCH ASSEMBLY

A. MAIN LATCH AND STRIKE

When the key is turned, the flush mounted latch handle is allowed to pop out. Rotating the handle counterclockwise 110° releases the cam from the cabinet strike to allow the door to open. If the handle becomes hard to turn, proceed as follows:

Adjust the cabinet strike so that the latch pin catches the latch strike. Loosen the two nuts and move the strike as required. Shims can be added or removed between the strike and cabinet to provide $1/16''$ clearance between lock cam and latch strike. (See Figure 26)



3. TEMPERATURE CONTROL

The temperature inside the cabinet is regulated by the temperature control located on the left side of the evaporator. Before adjusting the control, make sure all components of the refrigeration system are working properly and the inner door seal is tight. To increase the temperature, turn the control counterclockwise. To decrease the temperature, turn the control clockwise. For a temperature change of approximately 2 degrees, turn the control knob $1/12$ turn. (See Figure 27).

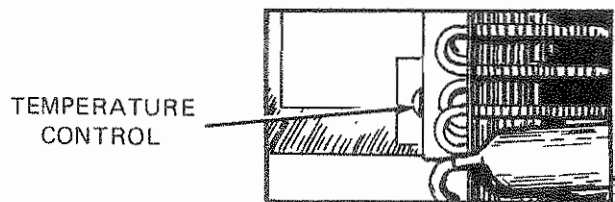


Figure 27

ECCENTRIC ADJUSTMENT

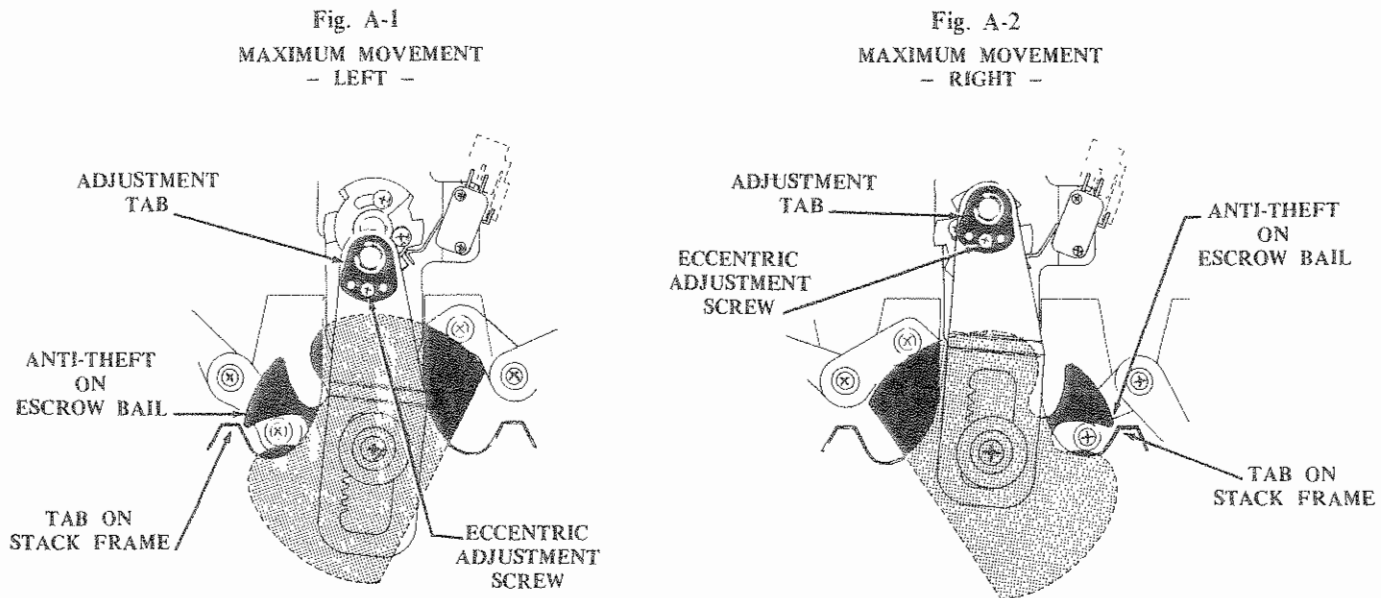
The eccentric adjustment is to assure that the escrow bail moves an "equal maximum distance" to the left and right. The "distance" it moves is controlled by the cam. (See cam adjustment.)

The eccentric adjustment should be made with the column loaded - - not necessarily full, but with at least enough product to give normal vend conditions.

To check -

1. Operate the selection until the escrow bail is at its maximum left hand travel and note the position of the anti-theft portion of the escrow bail to the stack frame. (See Figure A1)
2. Operate the selection until the escrow bail is at its maximum right hand travel. The relationship between the bail and stack should be the same as noted in Step 1. (See Figure A2)

FIGURE A



To adjust remove the adjustment screw and rotate the tab until the distance is as equal as possible.

CAM ADJUSTMENT

The motor through its cam hub drives the link up and down to rotate the escrow bail.

For more or less space for the product to leave the bail (vend) you increase or decrease the space between the escrow bail and the product retainer involved. Adjust by loosening both screws in the cam. Rotating the cam to the "left increases" the vend space on both sides of that column, and to the "right decreases" the space.

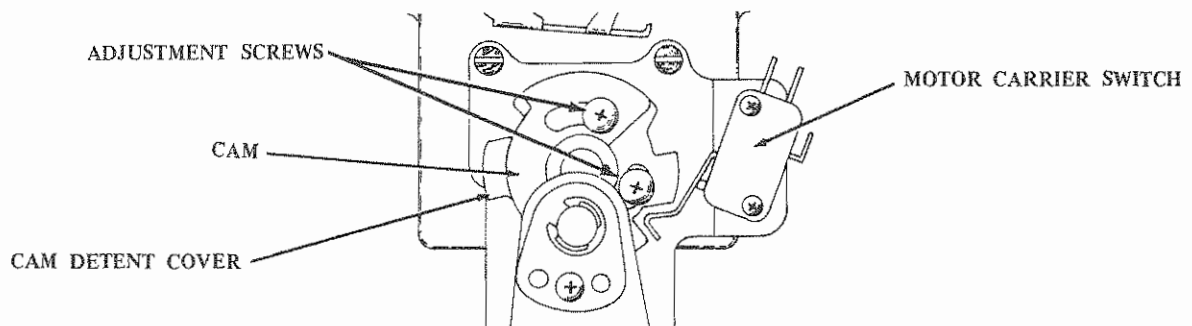


Figure 28

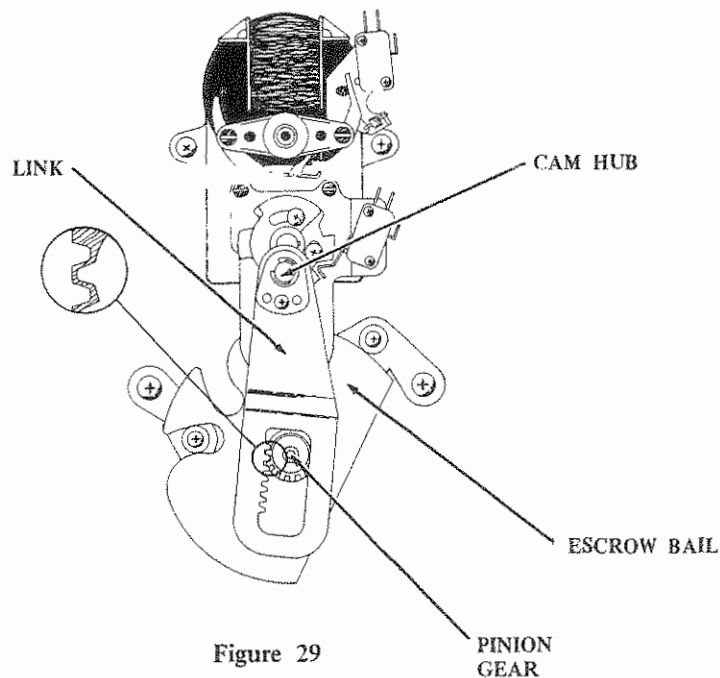


Figure 29

TIMING OF DRIVE LINK AND PINION GEAR

With the shaft of the Hub Assembly in the lowest position and the Escrow Bail Assembly rotated to the left side of the column, the first (top) tooth of the Pinion Gear is to engage between the first two (2) teeth of the Drive Link.

LOCK OUT/SOLD OUT ASSEMBLY

LOCK OUT FUNCTION

At the time a selection is made, a circuit is completed to the Time Delay Assembly (mounted in the Control Box). A circuit remains to the Time Delay Assembly until the motor carrier switch is de-actuated, which is the completion of the vend cycle. Should a jam or malfunction occur, and for some reason the cycle fails to be completed within approximately 12 seconds, then the Time Delay Assembly will allow a circuit to be completed to the lock out solenoid. When energized, the lock out solenoid releases a stop pin. This causes both lock out/sold out switch "A" and "B" to be actuated.

When actuated, lock out/sold out switch "A" will prevent a circuit from being completed to that respective motor. It will by-pass the problem section and allow all other selections to function normally.

When actuated, lock out/sold out switch "B" will complete a circuit to the sold out lamp of its selection to indicate "Make Another Selection".

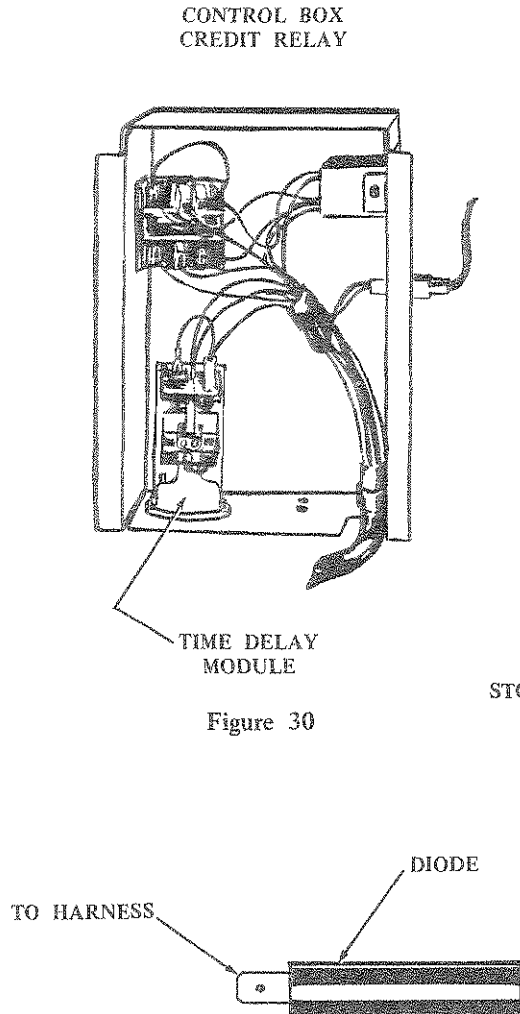


Figure 32

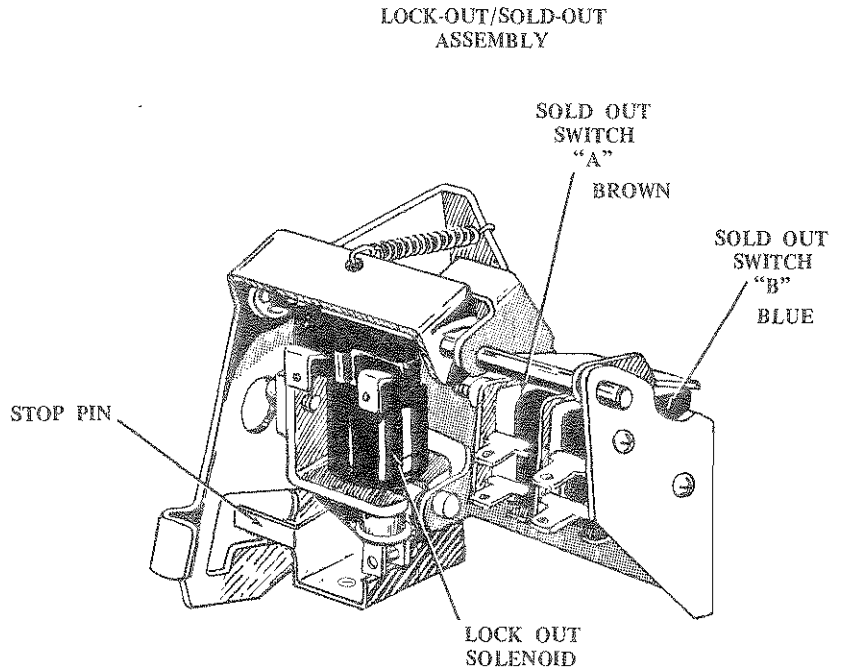


Figure 31

MECHANICAL CYCLE

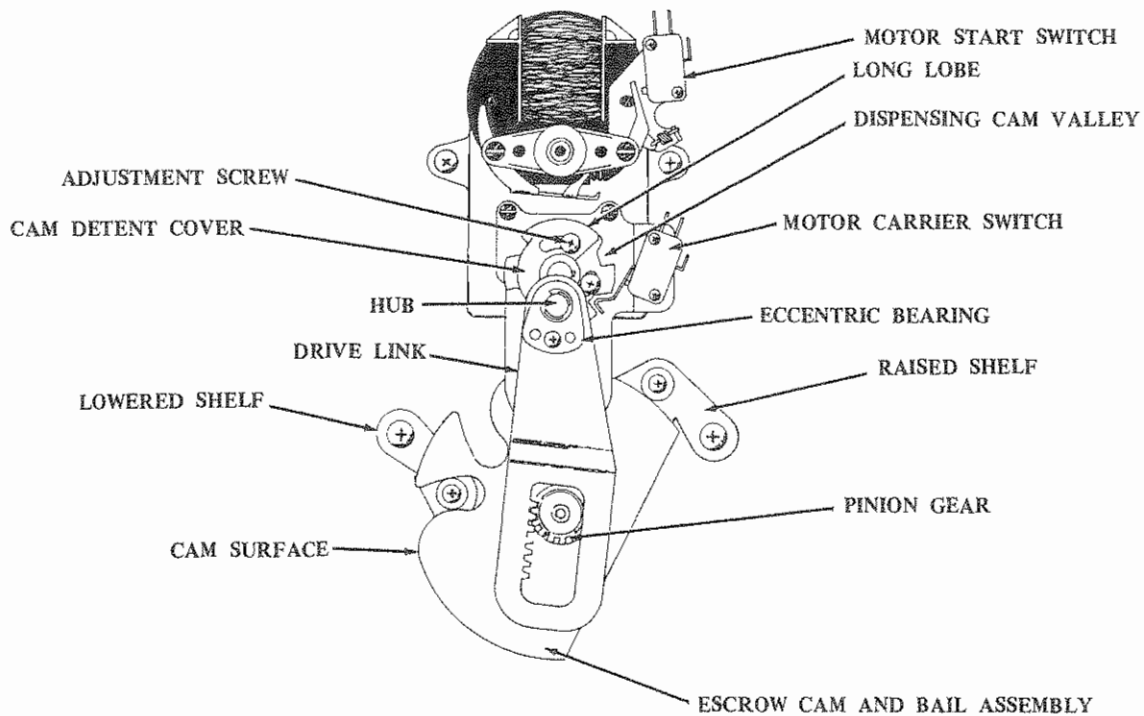


Figure 33

Each column is operated by an individual vend motor. When a selection is made, a circuit is completed to the motor of the selected column. The motor will run and operate the hub, which serves as a crank to drive the Drive Link. The Drive Link is engaged with the Pinion Gear. The Pinion Gear is attached to the Escrow Cam and Bail Assembly. As the Drive Link moves, the Pinion Gear is driven to cause the rotation of the Cam and Bail Assembly.

The Lowering Shelves are supported by the Cam, of the Cam and Bail Assembly. As the Cam rotates, a Lowering Shelf will be raised, and a Shelf will be lowered. The raised Shelf will support the product in the column and the Shelf which is lowered allows the product which was supported by that shelf to go into a vend position in the escrow coil.

In the illustration above (Can Vender), when the motor is started the hub is rotated clockwise. This lifts the link and rotates the escrow cam and bail clockwise.

The motor carrier switch will eliminate the original credit and keep the motor running until it (carrier switch) falls into the next valley of its dispensing cam.

One can will be dispensed from the escrow assembly and one will remain because of the can block. Note the difference in the lobe length on the cam.

On the next vend the remaining can will be vended early in the cycle. The two cans supported by the raised shelf in the illustration, will have been deposited into escrow. The shelf on the left will be "up" supporting the product in the column and the shelf on the right will be "down". This completes one full mechanical cycle.

When the Super Stack vends bottles the only difference is that the dispensing cam moves 180° for each bottle vended, thus completing a "full mechanical cycle" during two vends.

INTRODUCTION TO VEND CYCLE

When sufficient money is deposited and is routed through the acceptor and into the changer, the vend switch is actuated.

The actuation of the vend switch will complete a circuit to the credit relay, which is then energized, thus a credit is established. When the credit relay is energized a credit holding circuit is created through the motor carrier switches, through one or more "B" sold-out/lock-out switches, and through one set of contacts within the credit relay itself. A selection is possible at this time.

When a selection is made, a circuit is possible through the selection switch and through sold-out/lock-out switch "A" of that respective column, to the motor.

As soon as a circuit is completed to the motor, the motor start switch is actuated by magnetic action of the motor. The actuated motor start switch will interrupt the circuit to all the selection switches, and create a momentary holding circuit to the motor.







After the motor has started running, the motor carrier switch will be actuated by the switch cam. Actuation of the motor carrier switch will interrupt the holding circuit to the credit relay, thus cancelling the credit, and create a holding circuit to the motor.

The motor will continue to run until the motor carrier switch is deactuated by the switch cam.

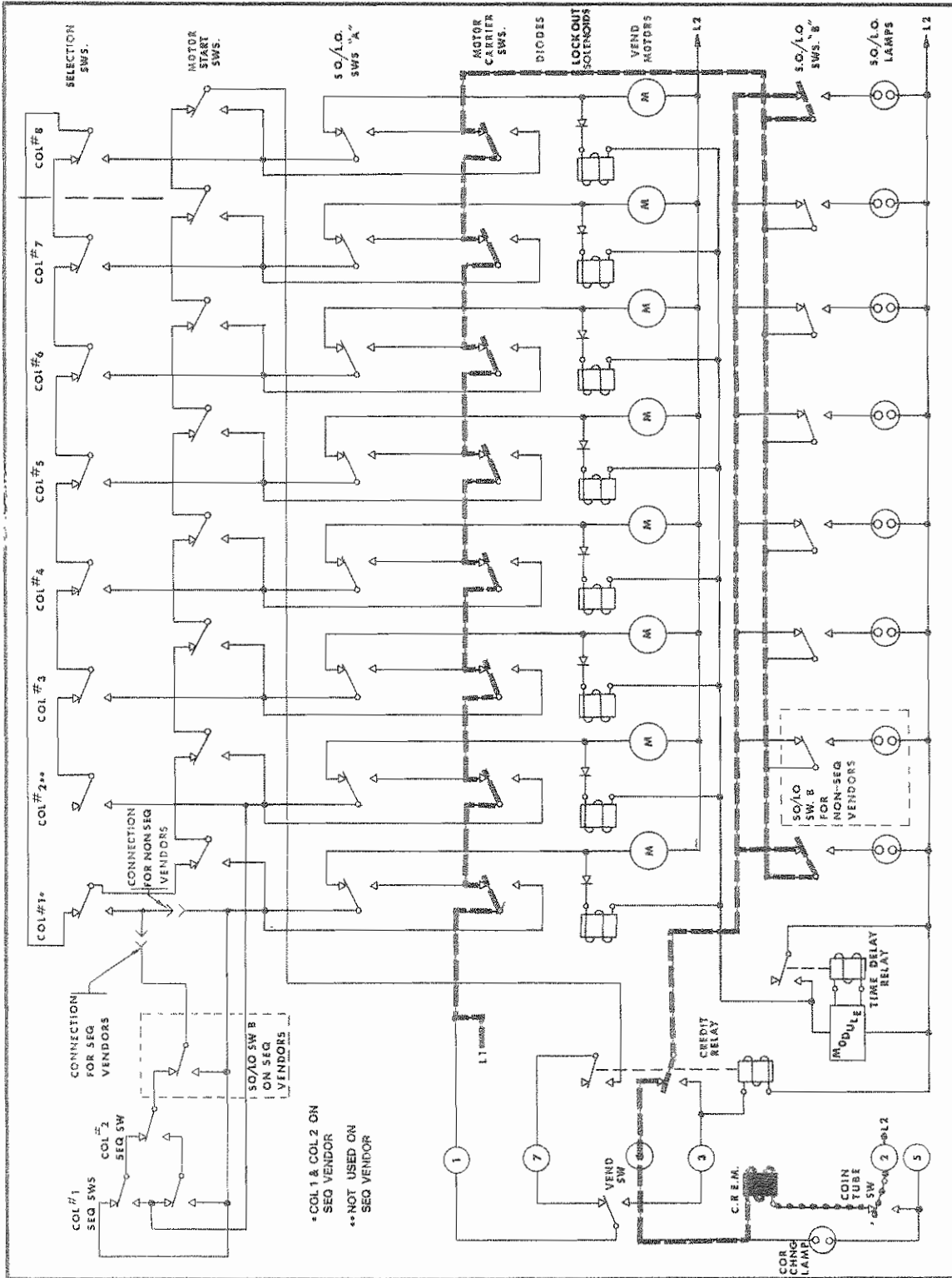
ABBREVIATIONS

C.R.E.M.	Coin Return Electro Magnet
N.C.	Normal Closed
N.O.	Normal Open
C.	Common
C.C.	Correct Change

SYMBOLS

	SWITCH
	SERVICE CORD LINE PLUG
	NEON LAMP
	COIL
	ELECTRICAL WIRE JUNCTION
	ELECTRICAL PLUG AND RECEPTACLE IDENTIFICATION

SCHEMATIC

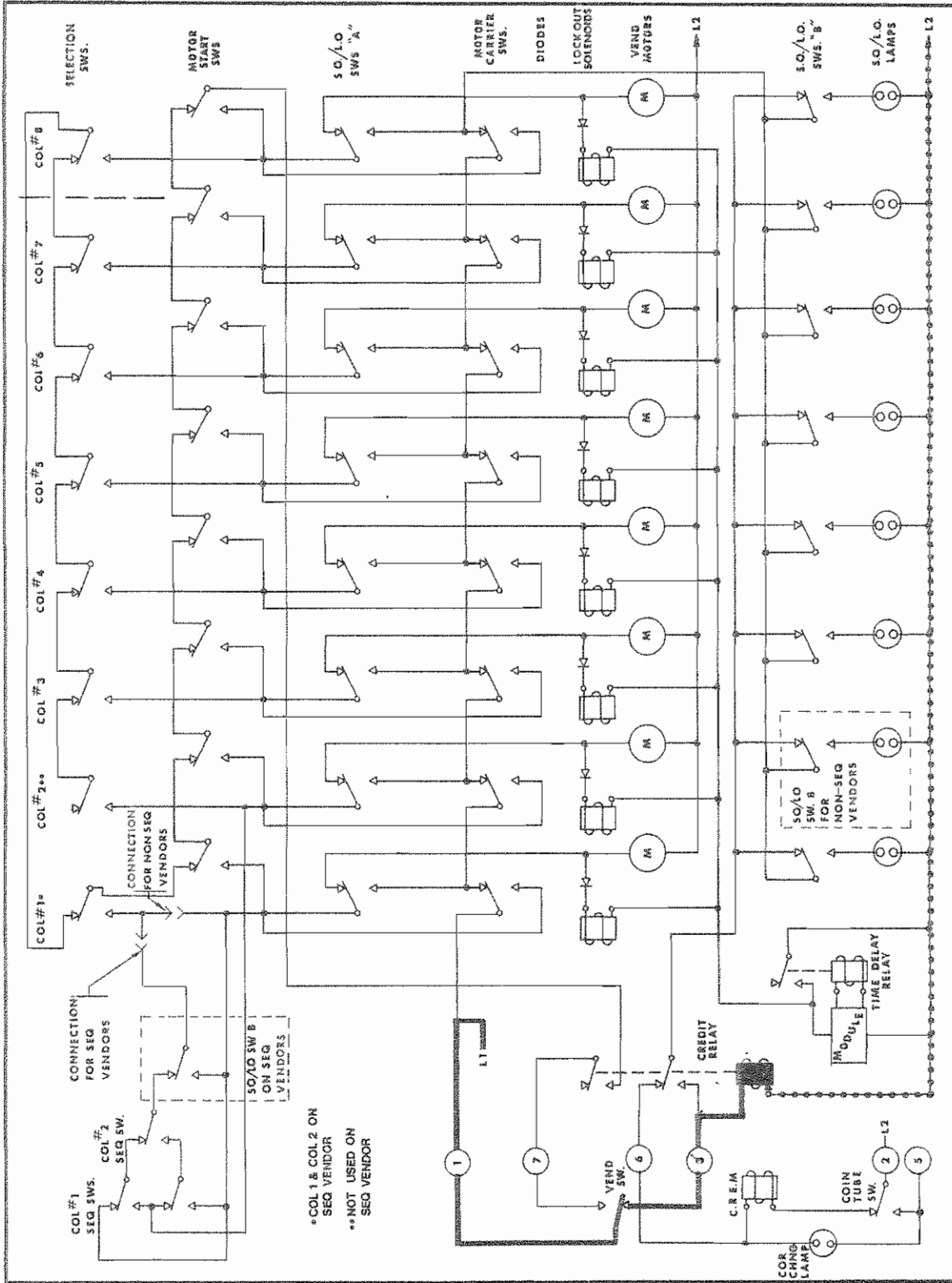


POWER ON, MACHINE LOADED OIC182* OIC231* OIC266* OIC304* 383423B

STANDBY

1. When one or more columns (selections) are loaded with product, the sold-out lever operates both sold-out lock-out switches. Sold-out Switch "B" (any one) completes a circuit to energize the C.R.E.M. (Coin Return Electromagnet) in the coinage.
2. ALL motor carrier switches, any one Sold-out "B", and a switch in the Credit Relay are necessary to complete this circuit.

SCHEMATIC



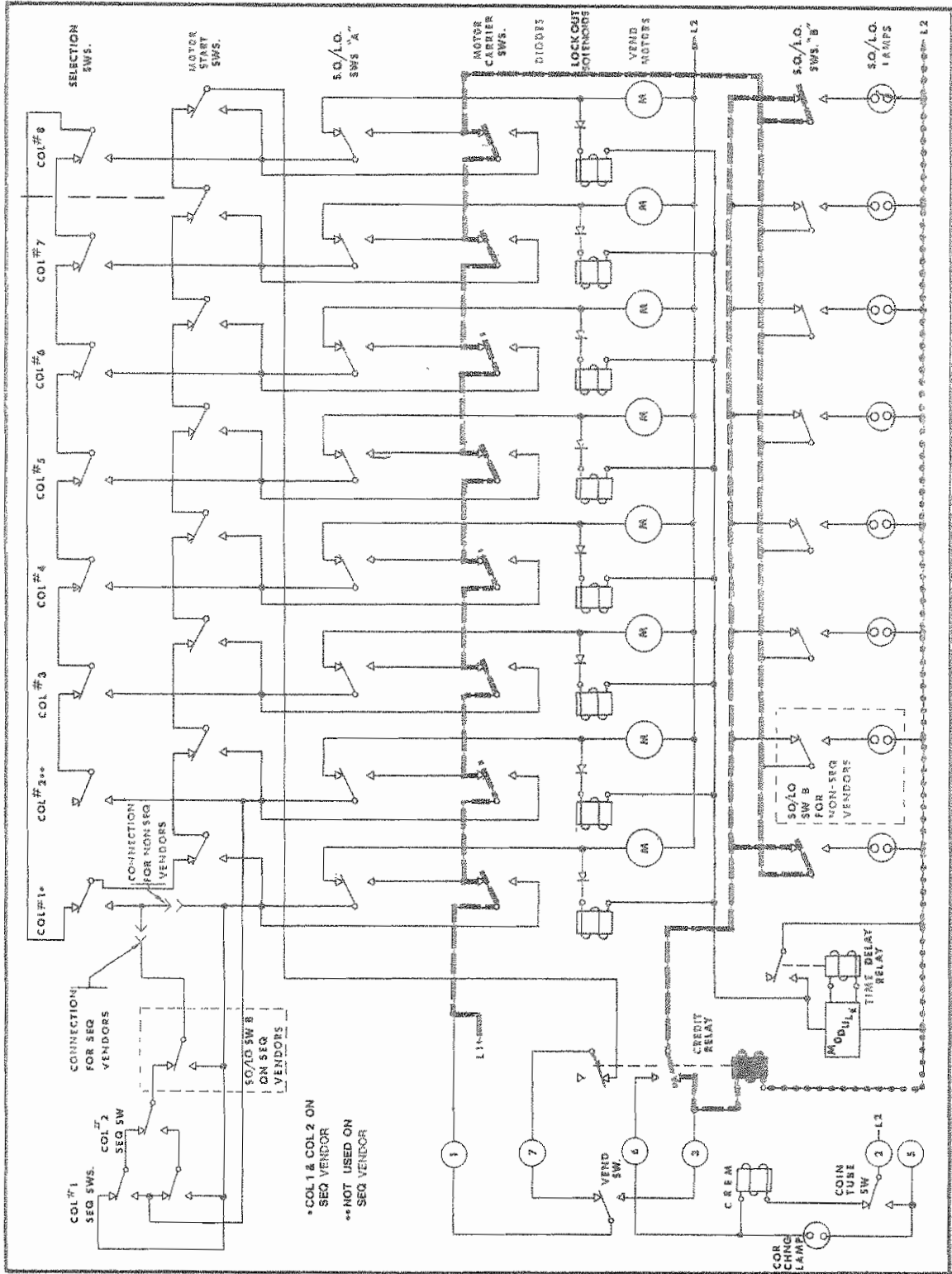
363423B

POWER ON, MACHINE LOADED OIC182* OIC231* OIC266* OIC304*

CREDIT ESTABLISHED

1. The Vender Credit Relay will be energized when the Coinage Vend Switch is operated.

SCHEMATIC

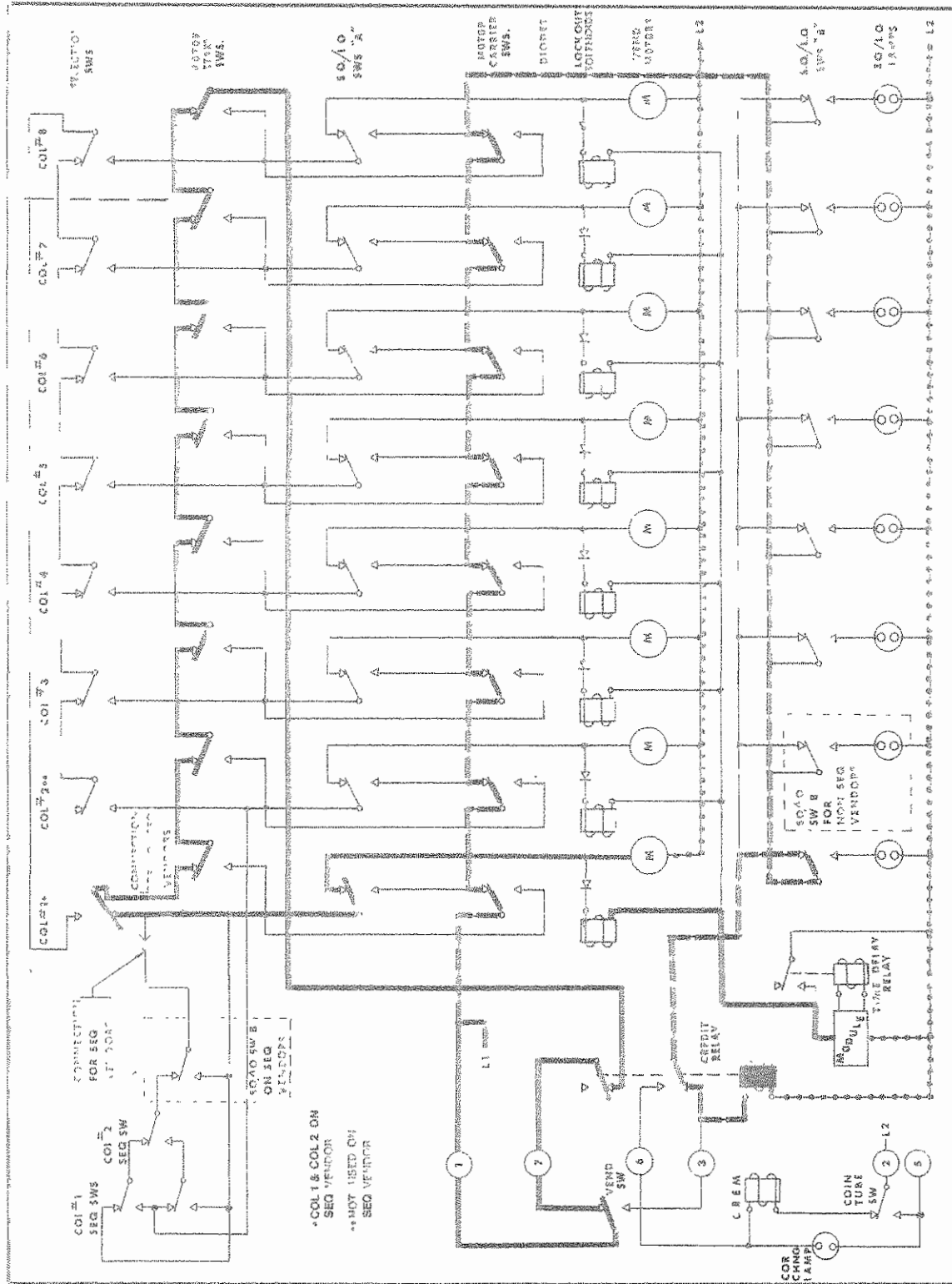


POWER ON, MACHINE LOADED OIC182* OIC231* OIC256* OIC304* 383423B

CREDIT HOLD

1. When the Credit Relay operates its switches, a holding circuit to the relay coil is established.
2. ALL Motor Carrier Switches, any one Sold-Out "B" Switch, and a switch in the Credit Relay are necessary to complete this circuit.

SCHEMATIC

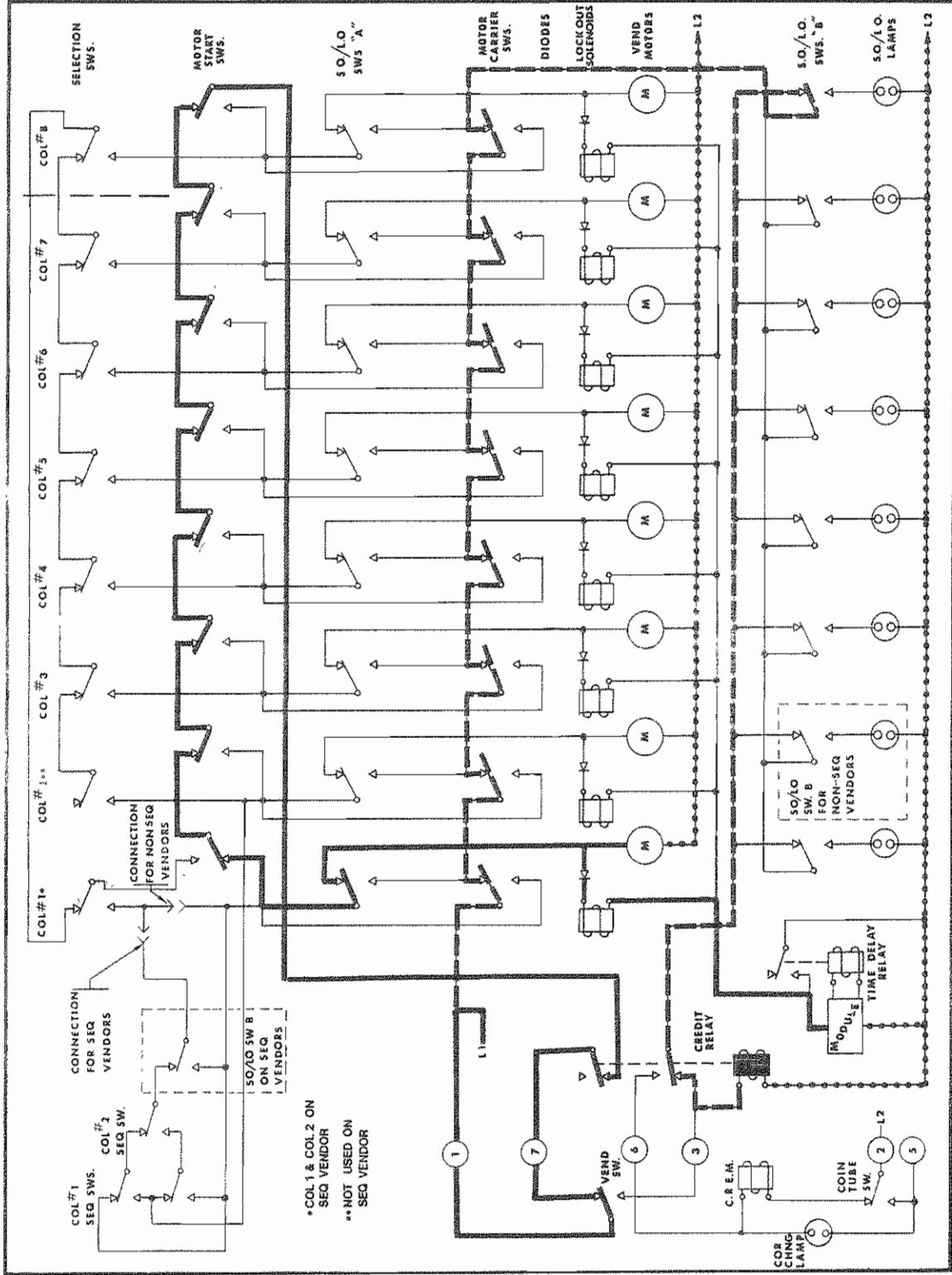


*COL 1 & COL 2 ON SEQ VENDOR
 **NOT USED ON SEQ VENDOR

POWER ON, MACHINE LOADED OIC187* OIC231* OIC266* OIC301* 3894238
SELECTION MADE

1. The Credit Relay must remain energized
2. A circuit is provided to ALL selection switches necessary to complete this circuit.
3. When ANY selection switch is operated, that selection's motor will be started.
4. The Vend Switch in the Changer, a switch in the Credit Relay, ALL Motor Start Switches, one or more selection switch, and a Sold-Out Switch "A" are necessary to complete this circuit.
5. The Time Delay Module receives a circuit at this time (nominal 12 seconds until the Delay Relay is operated to energize its Lock-Out Switch).

SCHEMATIC



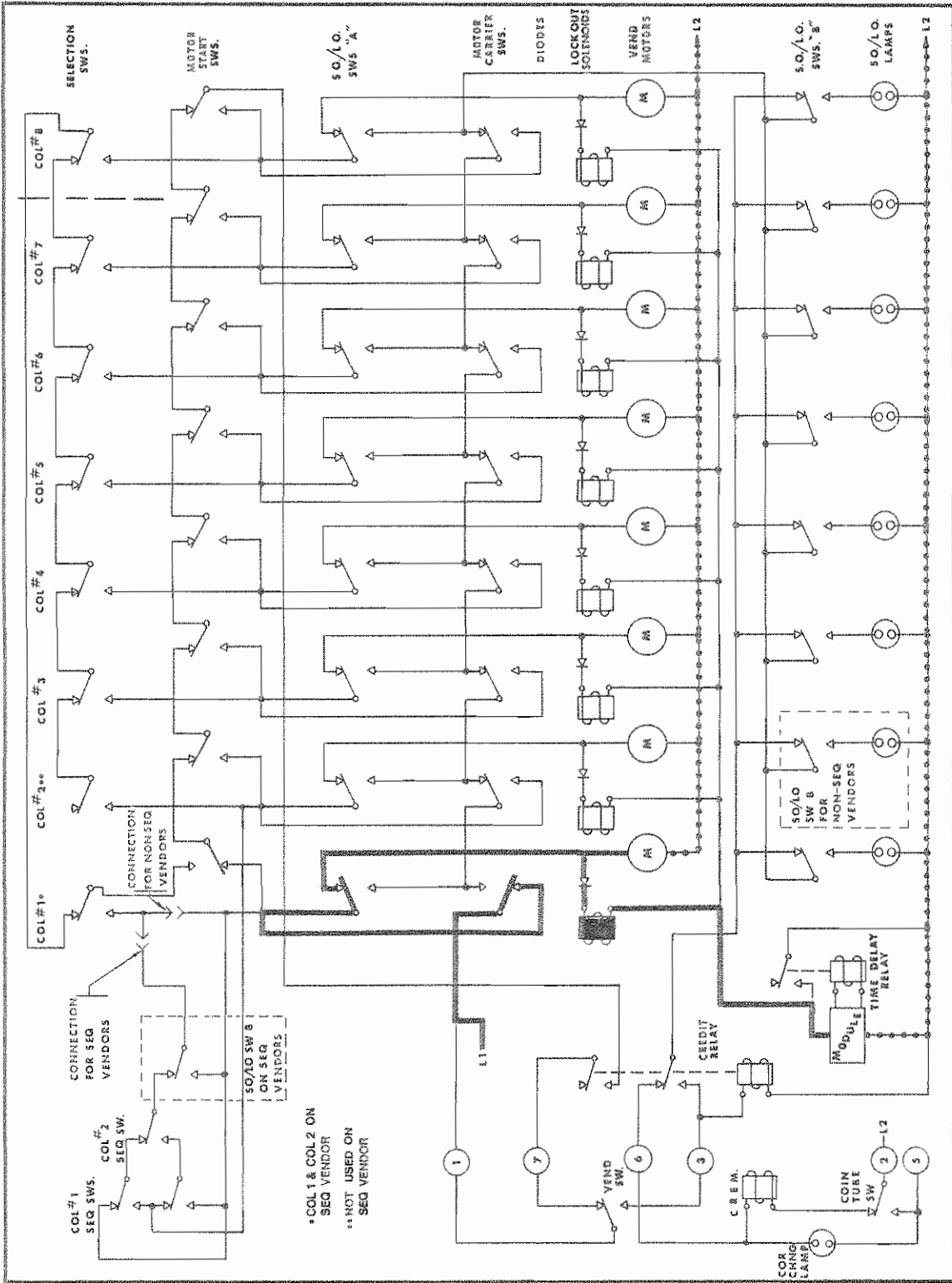
383423B

POWER ON, MACHINE LOADED OIC182* OIC231* OIC266* OIC304*

SELECTION HOLD (MOTOR START SWITCH)

1. The Credit Relay must remain energized
2. When the Vend Motor starts, its magnetic field operates a lever to operate its motor start switch.
3. The vend switch in the Coinage, a switch in the Credit Relay, the selected Motor Start Switch, and the selected Sold-Out Switch "A" are necessary to complete this circuit.

SCHEMATIC



383423B

OIC304*

OIC266*

OIC231*

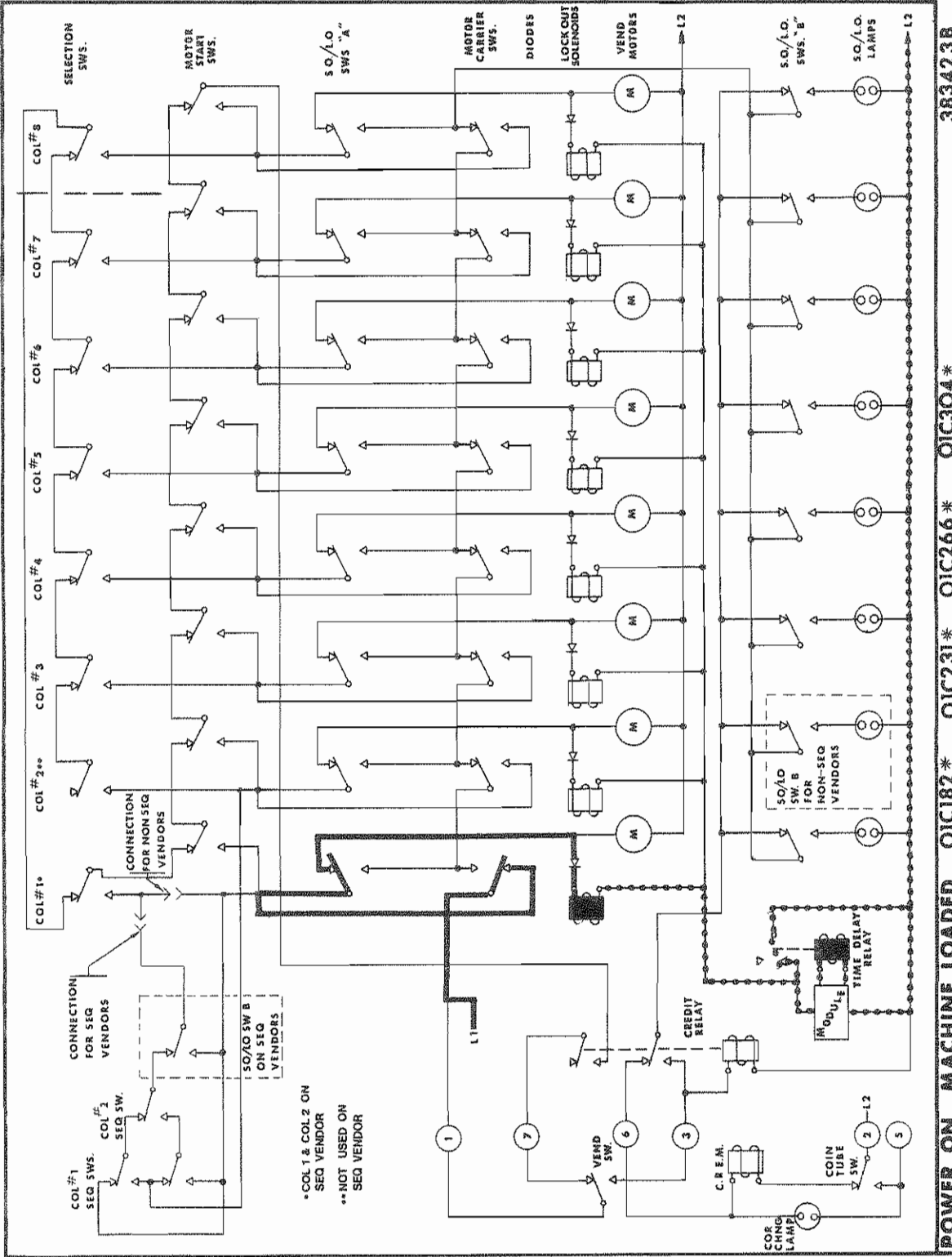
OIC182*

POWER ON, MACHINE LOADED

MOTOR CARRIER SWITCH

1. When the Motor Carrier Switch is first operated during the vend cycle, the Credit Relay is de-energized.
2. The Motor Carrier Switch completes a circuit to its motor.
3. The motor will stop when the Motor Carrier Switch returns to standby - - low side of its cam. (SEE "STANDBY")
4. Note that the Time Delay Module continues to receive a circuit until the motor returns to standby.

SCHEMATIC



383423B

OIC304*

OIC266*

OIC231*

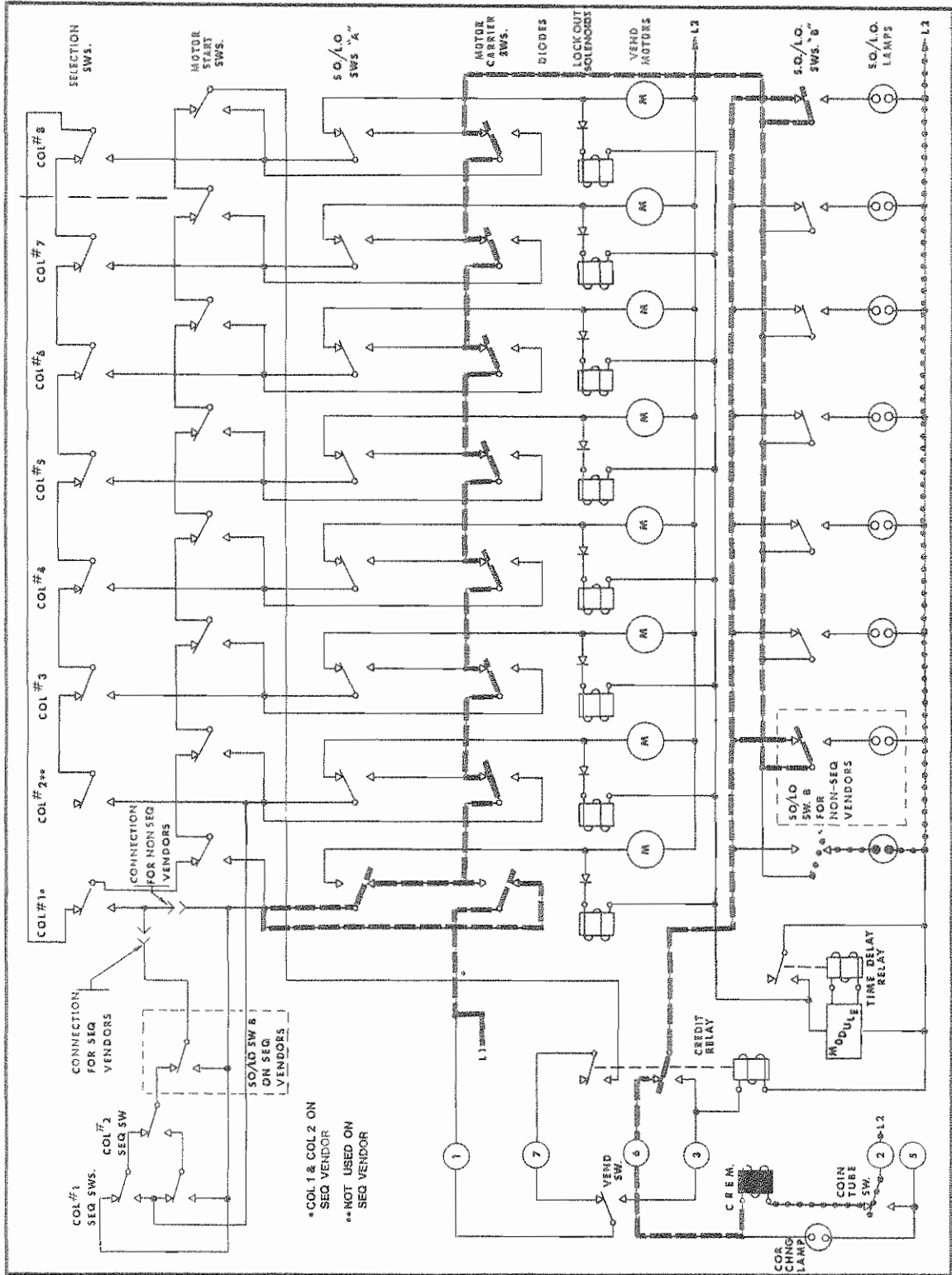
OIC182*

POWER ON, MACHINE LOADED

LOCK-OUT SOLENOID

1. If for any reason the Vend Motor does NOT return to standby in a nominal 12 seconds, the Time Delay Module Relay will become energized.
2. The Lock-Out Solenoid will be energized to operate the Sold-Out Lock-Out Switches "A" & "B".

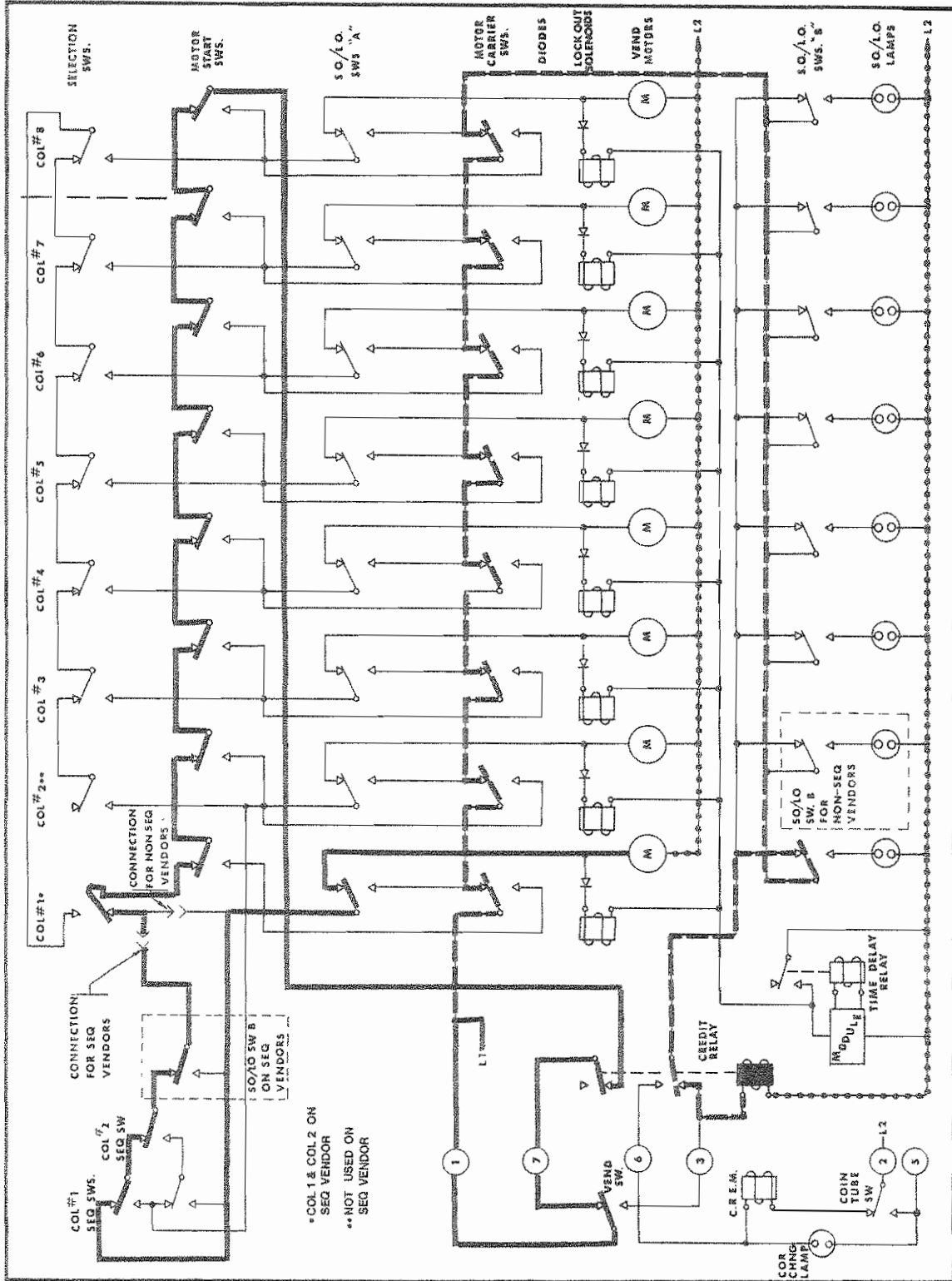
SCHEMATIC



NO. 1 SELECTION ON LOCK-OUT

1. Sold-Out Lock-Out Switch "A" disconnects power from the Vend Motor and the Lock-Out Solenoid.
2. It also provides a BYPASS of that selection to allow all other selections to function normally.
3. Sold-Out Lock-Out Switch "B" provides a circuit to that selections' "Make Another Selection" light.

SCHEMATIC

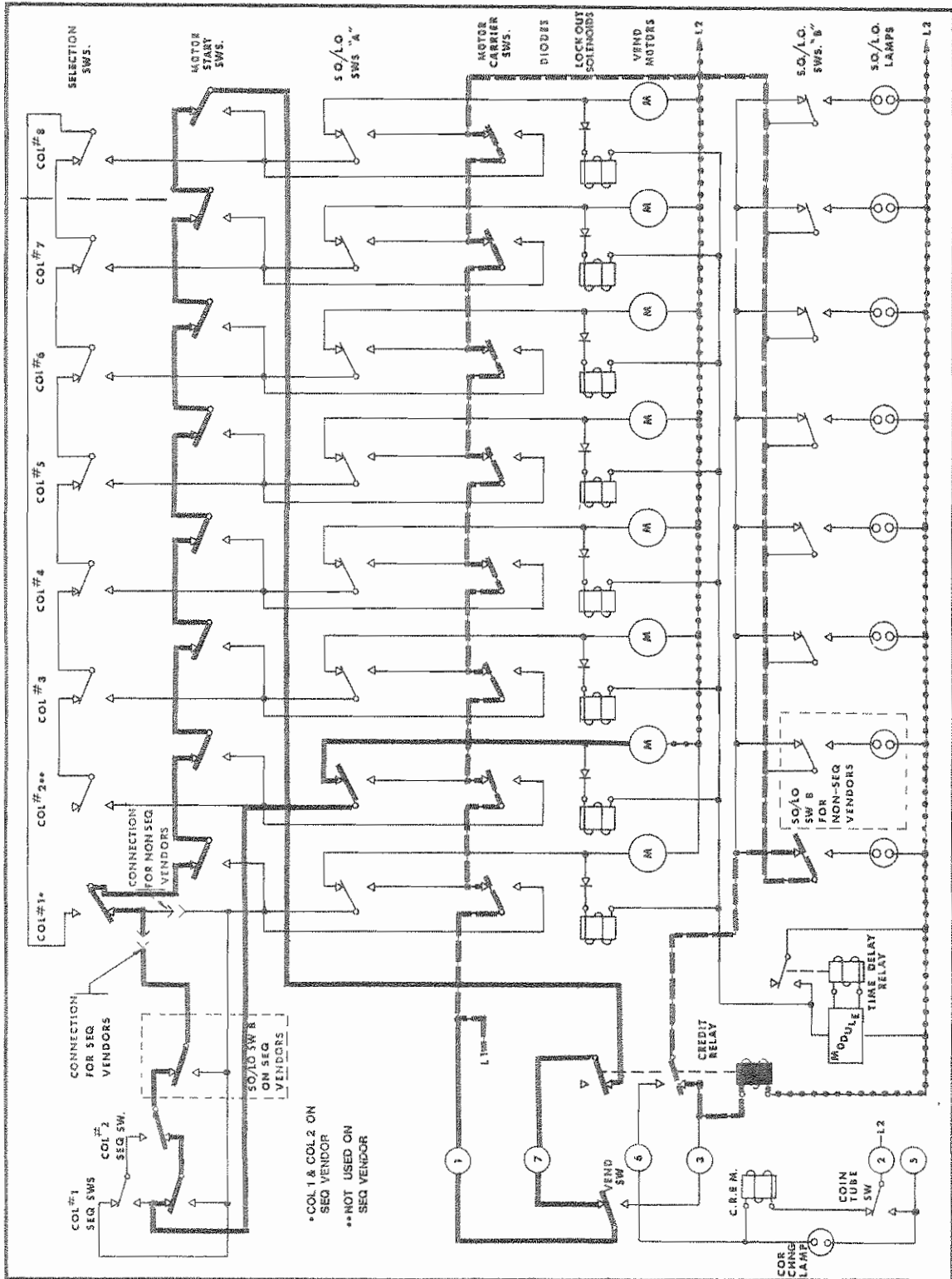


POWER ON, MACHINE LOADED OIC182* OIC231* OIC266* OIC304* 383423B

COLUMN NO. 1 WITH SEQUENCER

When vending bottles the sequencer will alternate between the next three schematics. Note that the two switches in Column No. 1 and No. 2, one bottle each, as shown in Column No. 1 operate together.

SCHEMATIC



COL #1 SEQ SWS

COL #2 SEQ SWS

COL #3 SEQ SWS

COL #4 SEQ SWS

COL #5 SEQ SWS

COL #6 SEQ SWS

COL #7 SEQ SWS

COL #8 SEQ SWS

CONNECTION FOR SEQ VENDORS

CONNECTION FOR NON SEQ VENDORS

SO/LO SW B ON SEQ VENDORS

SO/LO SWS. A

SO/LO SWS. B

SO/LO LAMPS

MOTOR START SWS.

MOTOR CARRIER SWS.

DIODES

LOCK OUT SCIENTISTS

VEND MOTORS

CREDIT RELAY

TIME DELAY RELAY

COR CANSE LAMP

COIN TUBE SW

VEND SW

1 7 6 3 2 5

12

13

12

13

*COL 1 & COL 2 ON SEQ VENDOR

**NOT USED ON SEQ VENDOR

383423B

POWER ON, MACHINE LOADED OIC182* OIC231* OIC266* OIC304*



CLEANING

1. CABINET

Wash the vender with soap and water. Wax the exterior with automobile wax. Corrosion may be removed from the interior with steel wool and retouched with paint.

2. REFRIGERATION UNIT

The face of the condenser and evaporator must be kept clean for efficient operation. Clean with a brush, a vacuum cleaner, or compressed air.

3. Cabinet drain must be kept open. Clean as necessary.

LUBRICATION

INTERVAL	PARTS	LUBRICANT
Every Six Months	Top hinge of door. Door hinge pin at base of cabinet. Door latch cam to cabinet strike.	Part Number 323452 1 Pound Can
Whenever Necessary	Shelf Assembly - Pivots & Rollers Bail Assembly - Pivots Drive Link & Pinion Gear Teeth Eccentric Bearing	Part Number 323798 1 Pound Can

TROUBLE CHART

TROUBLE	CAUSE	SERVICE SUGGESTION
Compressor will not run.	No electrical power	Check power source and vender service cord.
	Defective thermostat	Remove cover from thermostat leads and apply jumper across its terminals. If compressor runs, thermostat is defective. Replace.
	Defective overload protector.	Replace
Compressor tries to start but cycles on Overload Protector.	Defective start relay	Replace
	Defective compressor	Ohmmeter check of compressor: Remove all leads from compressor. Check continuity from common connector to compressor case. If meter shows continuity, compressor has shorted windings. Repeat check with start and run connections. Replace. Check continuity from common to start connections, then from common to run. A meter reading should result. If not, windings are open and compressor should be replaced.
Temperature above normal.	Condenser or evaporator fan not operating.	Check fan motor circuit. Check for fan blade obstruction.
	Temperature control sensor out of position.	Check
	Air flow restricted around evaporator.	Check for obstruction around evaporator area.
	Blocked or dirty condenser or air scoop screen.	Keep condenser and air intakes free of lint, dirt and obstructions.
	Bad door seal.	Check seal. Make necessary door adjustments.
	Evaporator frosting up.	Check for broken delivery door. Check for delivery door closing properly. Check delivery door Torsion spring.
		Check drain tube for loop as required for air trap.
Low voltage	Check power source with volt-meter. Check extension cord for proper wire size.	



TROUBLE CHART

TROUBLE	CAUSE	SERVICE SUGGESTION
Excessive noise.	Evaporator fan blades hitting ice build up due to stopped up drain.	Check for obstruction.
	Condenser fan blade hitting foreign object or condenser shroud.	Check for obstruction.
	Fan blades bent.	Straighten or replace.
	Fan motor noisy.	Repair or replace.
	Fan motor mounting loose.	Tighten.
Returns all good coins.	Vender not level.	Level vender.
	Coin path dirty.	Clean acceptor.
	Acceptor needs adjusting or coin gate not closed.	Make sure the coin mechanism is properly mounted. See proper coinage manual for adjustments.
	Coin switch defective or not in standby position.	Replace switch or return it to standby position.
	Coin Return Electro Magnet (CREM) defective or blocking fingers bent.	Replace CREM or reform blocking fingers.
	Contacts of credit relay open.	Check continuity of credit relay switches. Replace if necessary.
	Defective motor carrier switch.	Replace switch
Changer will not pay out change for quarter deposited.	Coins not laying flat in coin tube.	Remove coins and reload tube.
	Dime in nickle payout area.	Remove coins and reload tube.
	Coin tube switch defective.	Replace
	Lack of credit established when money deposited.	Refer to coinage manual.
Correct amount of money deposited but no credit established.	Defective Changer Defective Credit Relay Defective Motor Carrier Switch on any Motor Assembly	Refer to Coinage Manual Replace Credit Relay Replace defective switch.
Credit relay is energized but selection cannot be made.	Changer fails to return to standby Defective Motor Start Switch on any Motor Assembly Defective Selection Switch Defective Sold Out/Lock Out Switch "A"	Refer to Changer manual Replace defective switch Replace defective switch Replace defective switch
Credit Relay is energized Selection is made and selection immediately goes on Lock Out	Diode shorted out. Time Delay Module.	Replace defective diode. Replace module.

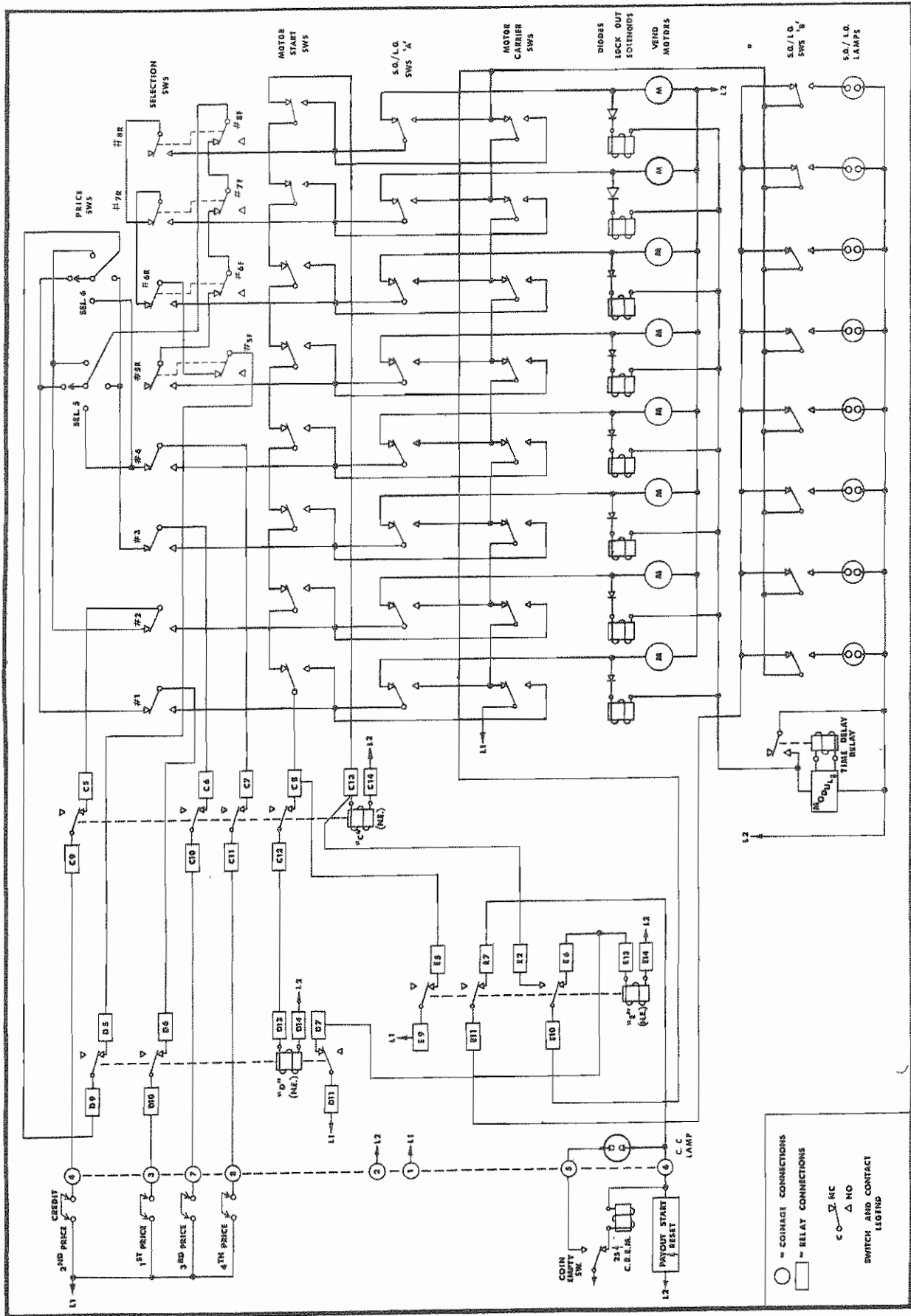


SUGGESTED SPARE PARTS LIST
(1 to 10 Venders)

<u>PART NUMBER</u> (All Models)	<u>DESCRIPTION</u>	<u>QUANTITY</u>
323007	Push Button Switch	2
337576	Motor Carrier Switch	2
368299	Motor Start Switch	2
D10-8085	LO/SO Switch	2
124264	Lockout/Soldout Switch	2
371053	Lockout/Soldout Assembly	2
371051	Lockout/Soldout Solenoid	2
124553	Motor Assembly	1
342238	Credit Relay	1
371052	Time Delay Module	1
*	Evaporator Motor	1 Per Model
*	Condenser Motor	1 Per Model
*	Starting Relay	1 Per Model
*	Overload	1 Per Model
368794	Temperature Control	1
*	Door Latch Assembly	1
320934-1	Door - Coin Return	1
127161-1	Door Latch Assembly	1
*	Fluorescent Lamp	2 Per Model
120216	Lamp Assembly S/O	2
*	Door Gasket (Magnetic)	1 Per Model
370840	Selection Button	

*See appropriate parts manual for part numbers.

4-PRICE SCHEMATIC

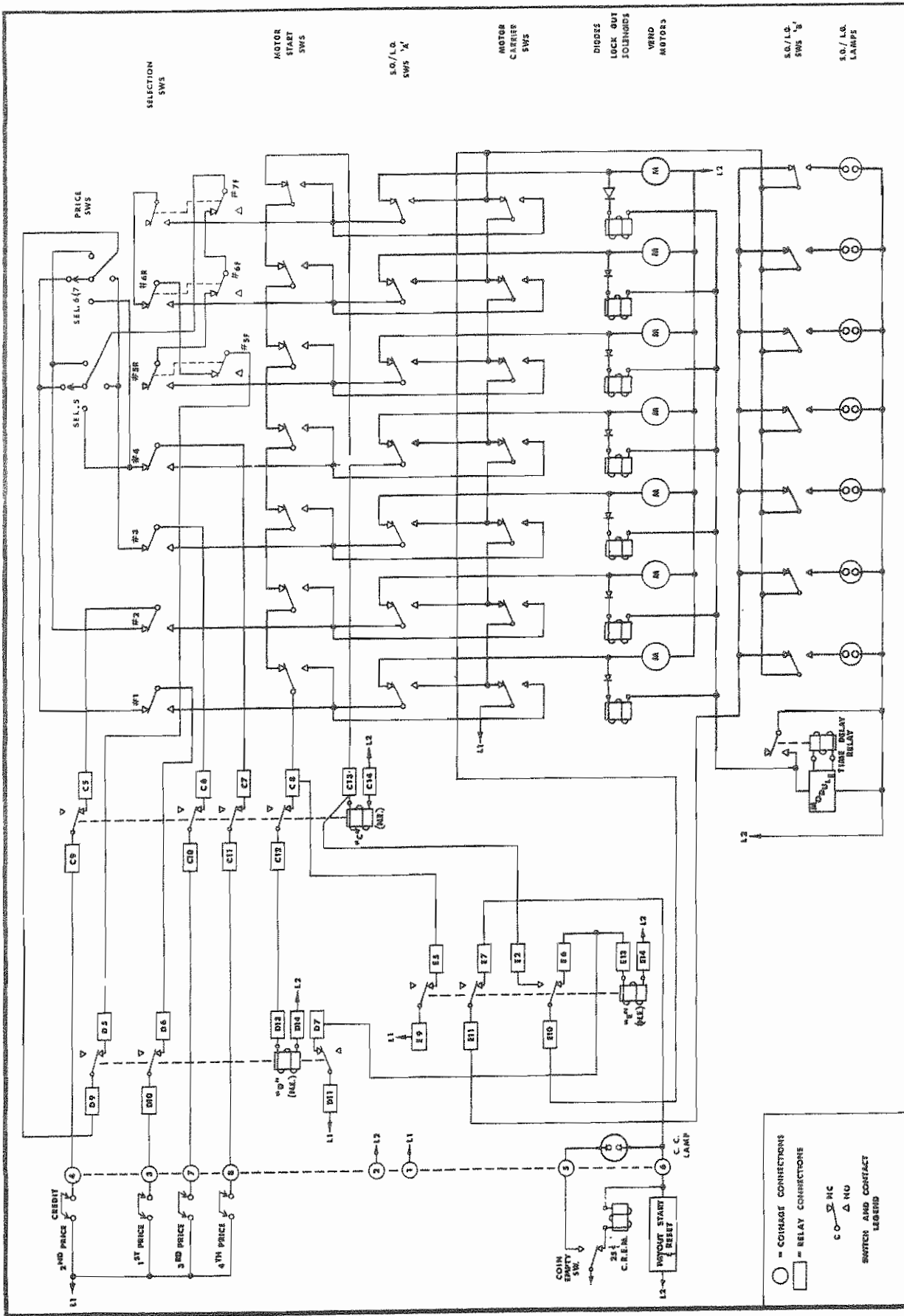


38215C

O1C3048*1

POWER ON, MACHINE LOADED

4-PRICE SCHEMATIC



○ = COINAGE CONNECTIONS
 □ = RELAY CONNECTIONS
 C O = MC
 Δ = NO
 SWITCH AND CONTACT LEGEND

POWER ON, MACHINE LOADED

01C266 1WA

382852 A

PRICING INSTRUCTIONS 4 PRICE MODELS

COINCO

Selections 1, 2, 3 and 4 on the vender will be priced directly by the four (4) price modules in the Coinco Changer (See Figure 6).

Located behind the acceptor are four (4) price switch modules. Each price switch module has five (5) miniature rocker type switches numbered 1 thru 5. These switches correspond to prices as follows: 1=5¢, 2=10¢, 3=20¢, 4=40¢, 5=80¢.

The vend price of Selections 1 thru 4 is set at its corresponding module by adding the value of the switches placed in the ON position. Example: Figure 6 shows SEL. 1 set for 25¢.

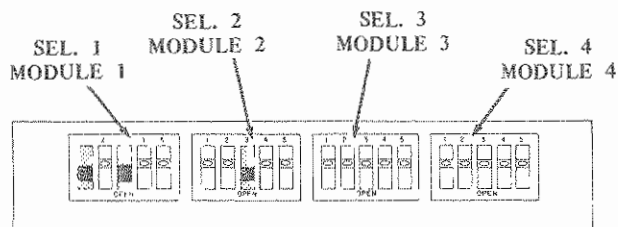


FIGURE 6

MARS

Selections 1, 2, 3 and 4 on the vender will be priced directly by the four (4) price switch modules in the Mars Changer (See Figure 6A).

Located to the right of the coin tube entrance are four (4) price switch modules.

Each price switch module of the Mars Changer has six (6) miniature switches numbered 1 thru 6. The switches correspond to prices as follows: 1=5¢, 2=10¢, 3=20¢, 4=40¢, 5=80¢, 6=\$1.60.

The vend price of Selections 1 thru 4 is set at its corresponding module by adding the value of the switches placed in the ON position. Example: Figure 6A shows Selection 1 at 25¢, Selection 2 at 20¢, etc.

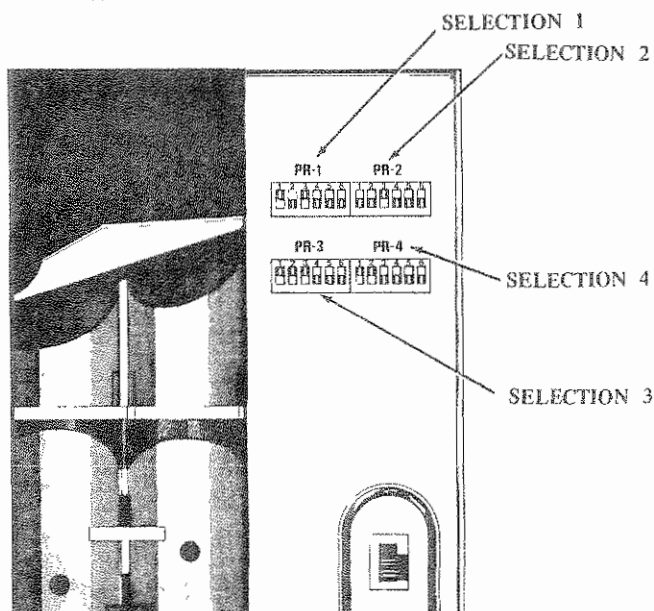


FIGURE 6A

SELECTION 5

Selection 5 is priced with the knob on the Control Box Switch No. 1, Figure 7. The numbers represent the four coinage modules. Example: Figure 7 shows a price setting of 25¢, as related to Figure 6 Coinco and Figure 6A Mars.

SELECTIONS 6, 7 & 8

Selections 6, 7 and 8 will be priced with Switch No. 2 on the control box. These three (3) selections will always be priced the same, but can be any one of the prices established at the coinage.

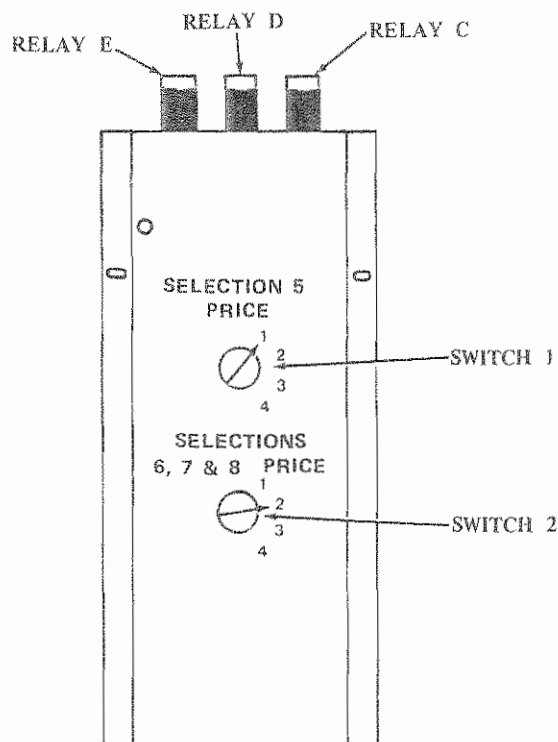


FIGURE 7