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SERVICE MANUAL

MODEL HS-20 BY POLYVEND

AUTOMATIC RACK MERCHANDISER

GENERAL

The HS-20 automatic rack merchandiser has been developed as a part of the Polyvend total vending program. Each of 20 independent dispensing units may be activated by push button after credit has been established in the coin mechanism. The hook and safety chain hold the product securely until the dispenser is activated.

Each dispenser is readily removable from the front for replacement or repair.

All products are sold at one pre-set price level.

SPECIFICATIONS

OVERALL DIMENSIONS:

Height.....72"  
Width.....36"  
Depth.....32"  
Front Clearance (Door).....31"

WEIGHT:

Shipping.....570 pounds

CAPACITY:

Total.....240-320 pieces

ELECTRICAL:

Power Source.....115 VAC  
Internal Power.....24 VAC  
Current.....2 AMP

NOTE: Polyvend Inc. will not be responsible for faulty or overloaded circuits where Polyvend machines are installed. The exact load imposed on each machine is stated in the related service manual. The sum of all machines installed in any one location will determine the total line load.

## INSTALLATION

- Remove all external packing materials.
- Remove keys from envelope in delivery compartment.
- Open product loading door and remove cardboard filler from dispenser assemblies.
- Remove tape from sliding door and coin return cup.
- Set coin equipment to the desired price in accordance with the coin equipment instruction sheet. (The changer is located behind the sliding door on the right-hand inner wall of the product loading compartment.)
- Select desired price labels from the envelope in the delivery compartment and place above the number tabs.
- Save extra fuses, etc. found in the envelopes.
- Adjust leveling screws on the bottom of the machine until the product loading door can be opened and closed freely without binding or rubbing on the cabinet opening.
- Plug the service cord into a 115 VAC source using the grounded, three pronged connector provided. If a suitably grounded outlet is not available, use a proper external ground on all locations.
- Load the coin tubes in the coin changer.
- Load the machine with product.

NOTE: SEE PRODUCT LOADING SECTION OF THIS MANUAL TO PREVENT  
DAMAGE TO DISPENSING CHAINS.

- Test the operation of each dispenser using coins. If all vend properly, the machine is ready for operation.

PRODUCT LOADING

All product loading of the HS-20 is accomplished from the front. Using one of the two keys provided, open the door to the product loading compartment.

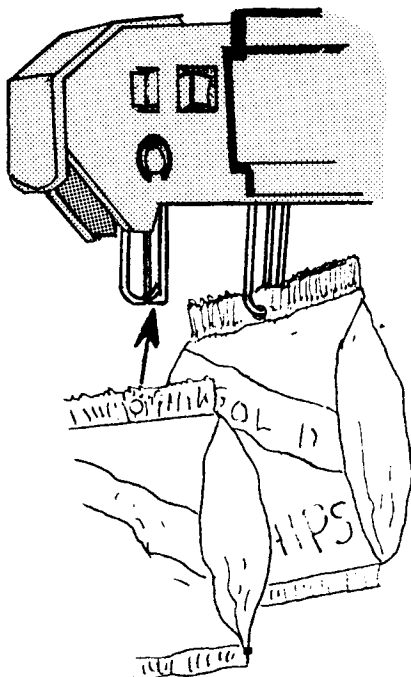
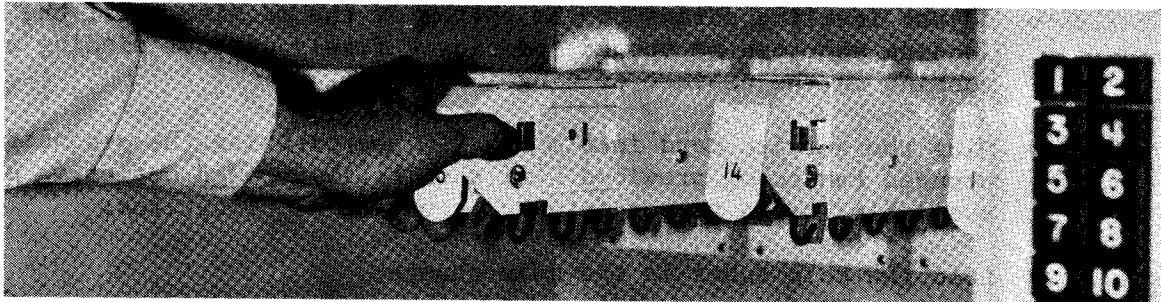
**WARNING:** DO NOT ATTEMPT TO PULL PRODUCT FROM THE BAG DISPENSER AT ANY TIME. SUCH ACTION WILL EITHER JAM THE MECHANISM OR PULL THE HOOK ASSEMBLIES APART.

To load, release the latch on each dispenser as shown in FIGURE 1 and pull forward until the slide hits the stop. To load the product on the hook, dispenser, grasp the product with both hands on the top edges. Push the top of the product wrapper between the retainer and the hook, which will allow the hole in the bag to slide over the hook. (FIGURE 2A )

When a selection is made, the chain advances on the arm. As the chain turns around the front sprocket, the hook swings up and away from the retainer and the bag slides off the hook and falls into the delivery compartment. (FIGURE 2B ).

With all dispensers, slide the loaded unit back into the machine until the latch snaps soundly into place.

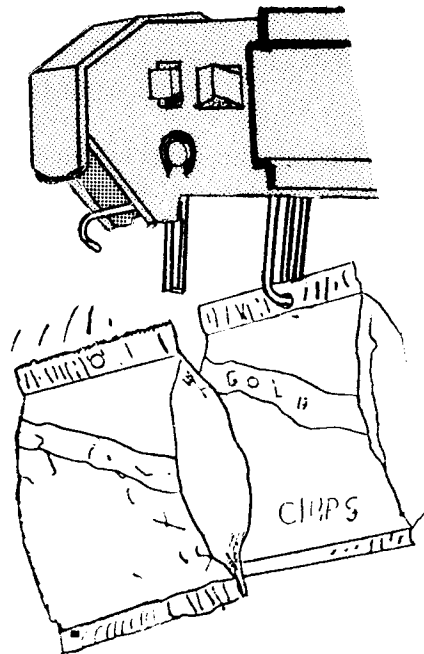
**FIG. 1**



**A**

**B**

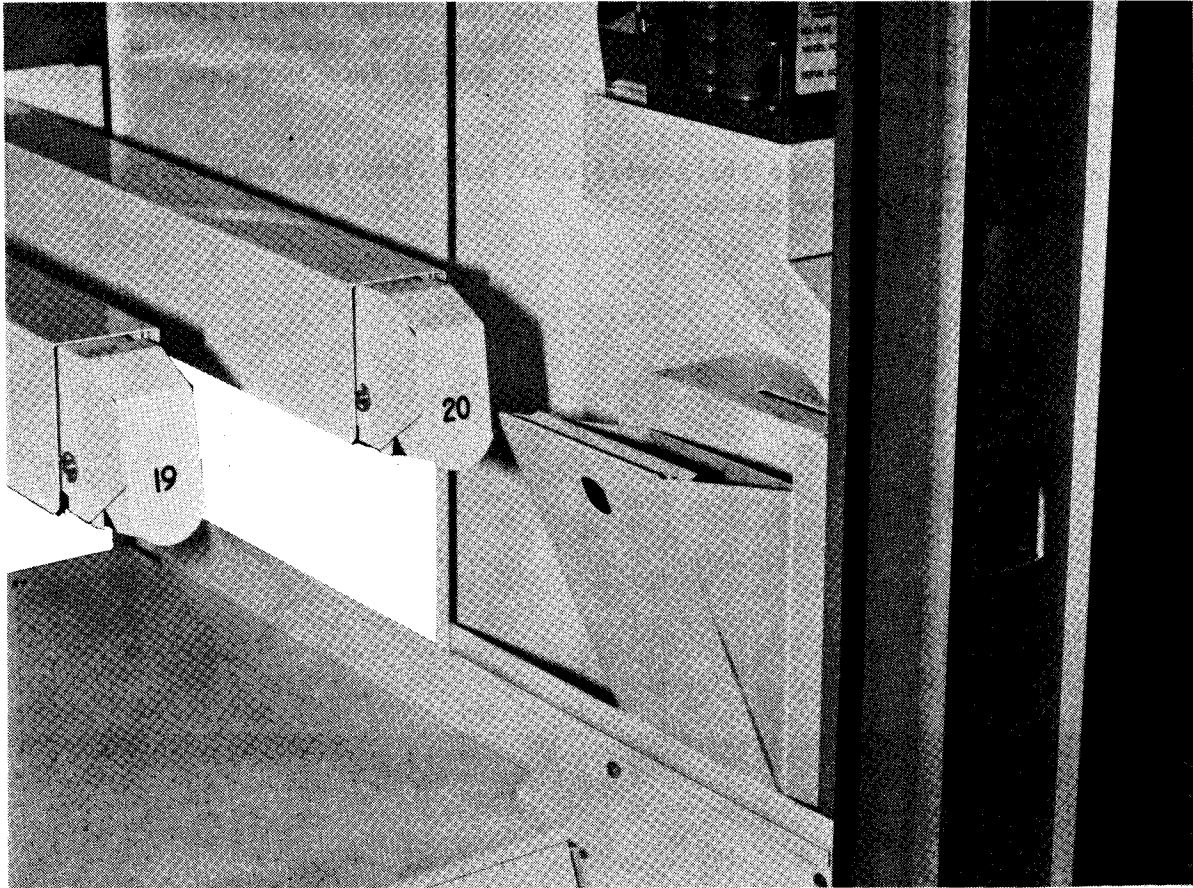
**FIG. 2**



The second type dispenser to be considered is the candy module. Load the candy module by dropping the products into the individual dispensing cups. Since the dispensing cups rotate left to right, the product on the left should face forward, and the product on the right should face backward to assure proper fronting (SEE FIGURE 3).

With all dispensers, slide the loaded unit back into the machine until the latch snaps soundly into place.





**figure 4**

COIN COLLECTION

The coin bank is located in the product loading compartment in the right-hand corner as shown in FIGURE 4. If a locking coin bank has been ordered with the machine, the second key supplied will be used to open this lock. Insert the key, press in and rotate  $\frac{1}{4}$  turn counterclockwise to unlock the bank. Allow the top of the bank to tilt to the left until it can be lifted out. Remove the coins and replace by reversing the procedure.

OPERATION

The HS-20 Single Price Automatic Rack Merchandiser is operated as shown in FIGURE 5 .

- A-Depositing money in the coin mechanism causes the vend circuit(s) to be completed in the coin mechanism.
- B-Completing this circuit also establishes circuits to the plugged motor leads.
- C-The selected dispensing motor is now actuated by pressing of its respective selector switch. If there is sufficient credit, the selected motor will start to turn.
- D-As the motor turns, it breaks the motor ladder circuit. Breaking this ladder circuit de-energizes the vend relay.
- E-When the vend relay is de-energized, the coin mechanism resets, giving change in accordance with the price of the merchandise selected.
- F-The dispenser motor rotates 180°, using a carryover circuit until one dispensing cycle is completed. At this point, the carryover circuit is broken and the ladder circuit is made again.

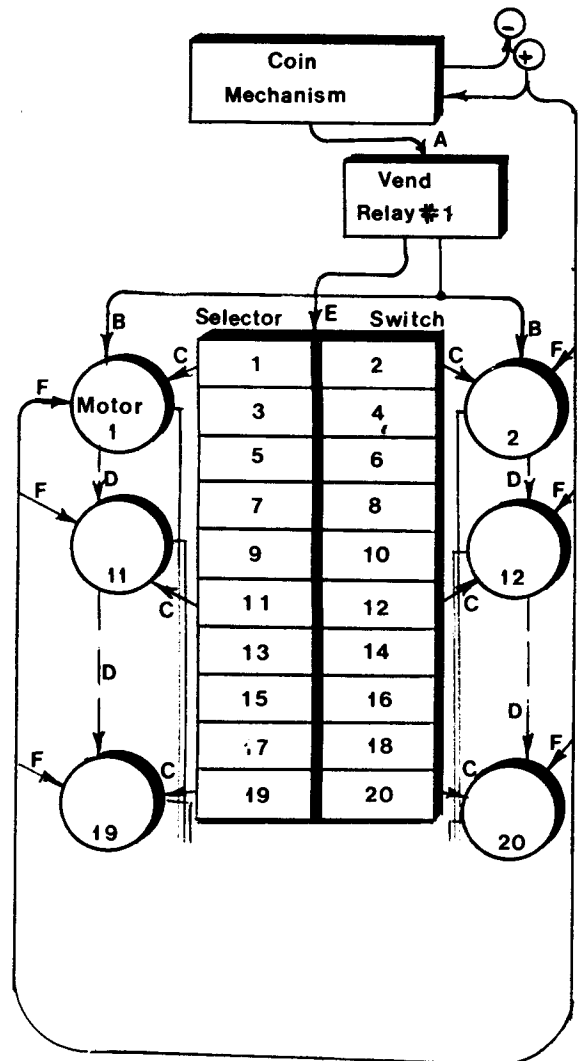


FIGURE 5

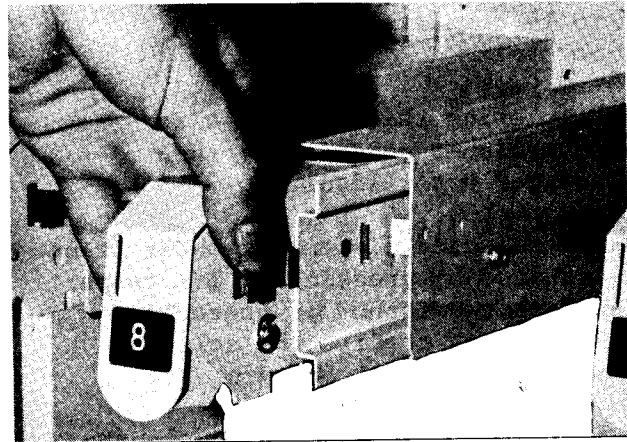
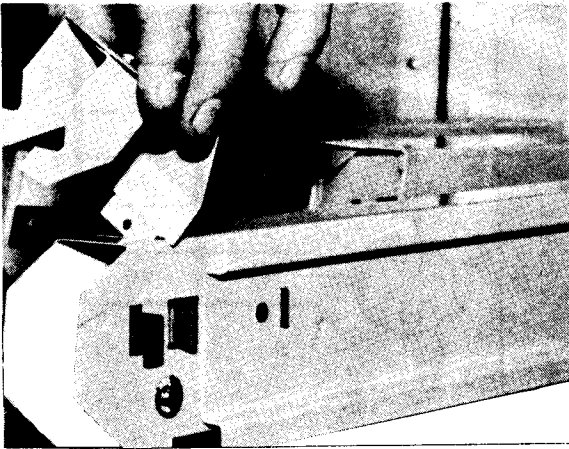
## HOOK DISPENSERS

FIG. 6

The hook dispenser is ideal for products that have a hole pierced in the packet. A hole tab can be purchased that has adhesive on it that sticks to the packet. Using this hole tab makes it possible to easily hang snacks and many other products on the hook chain.

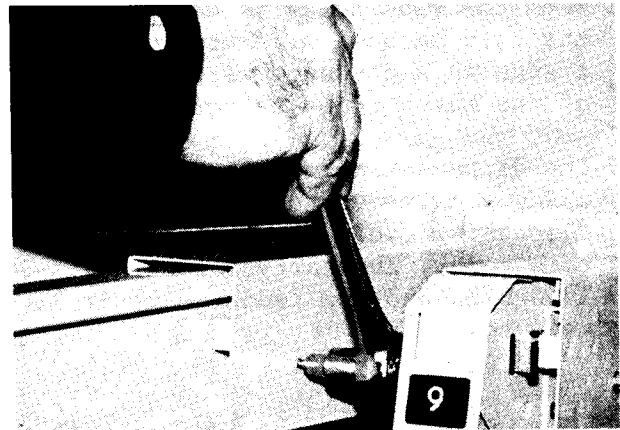
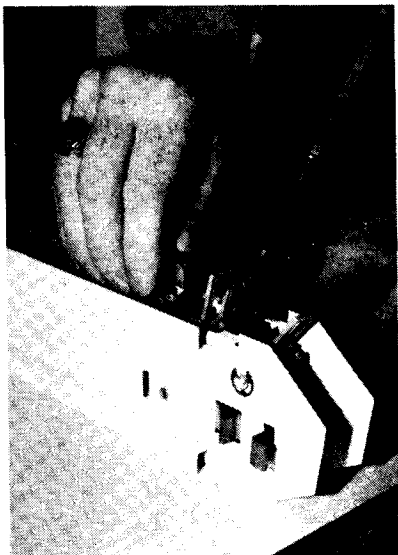
If it becomes necessary to replace or repair these chains, follow the sequence of operations in FIGURE 6 .

Release the latch on the dispenser and pull slide out to its stop (FIGURE 6 A).



Remove the dispenser number and price cover (FIGURE 6 B).

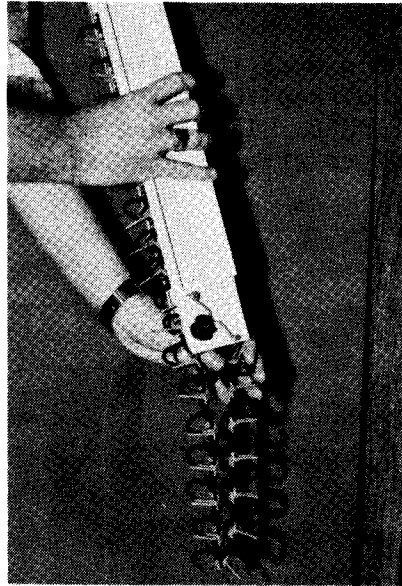
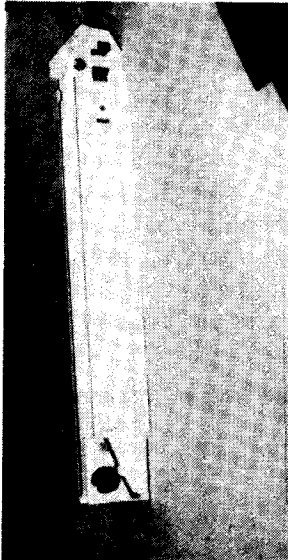
Remove the screw from the side of the dispenser (FIGURE 6 C) which serves as the stop and pull slide from the machine.



Place slide upside down on a work surface and grasp the first hook assembly on the front end of the slide. Using a screw driver, press inward and down as shown in (FIGURE 6 D). The hook will snap loose.

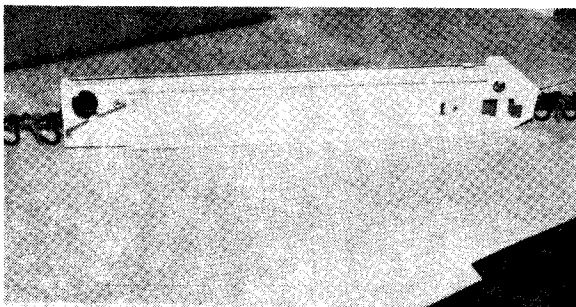
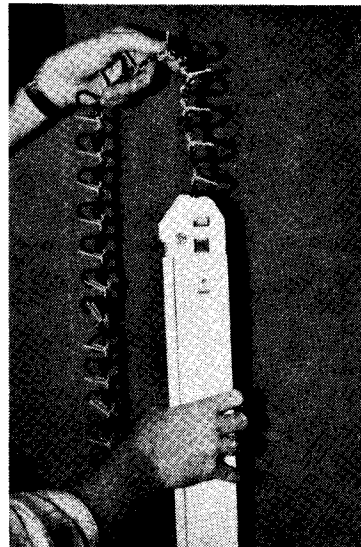


Hold slide vertical with the front end up, and the chain will fall free of the inner portion of the slide (FIGURE 6 E). →



← Still holding the slide vertical, lift bottom of chain outward and away from the slide. Push upward. The chain should easily slide free. (FIGURE 6 F)

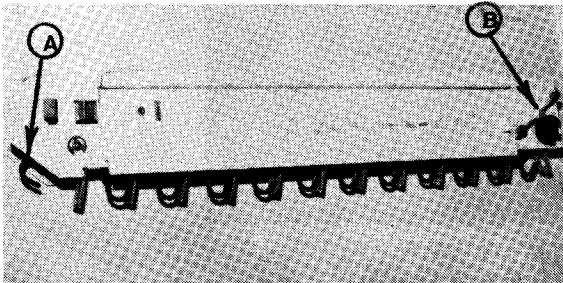
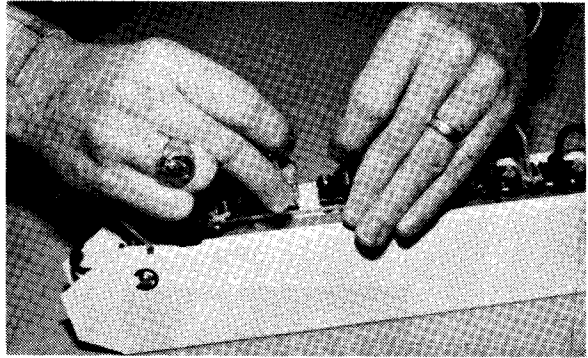
To replace chain, hold it at the middle and drape it over the forward sprocket, inserting as shown to have correct rotation for dispensing action of hooks. → (FIGURE 6 G)



← Place the slide upside down on a work surface. Pull the chain through until equal lengths are extending from both ends of the slide (FIGURE 6 H).



Fold the chain over the slide from both ends and snap together as shown in (FIGURE 6 I). Care must be taken NOT to stretch the links.



Note that the timing is right. (FIGURE 6 J-A) shows that the forward hook is in a horizontal position and the detent spring is in the "locked" position (FIGURE 6 J-B). If timing is right, manually pull the chain through in the direction of normal operation to engage the support pins.

The slide may now be replaced in the machine and the stop screw reinstalled.

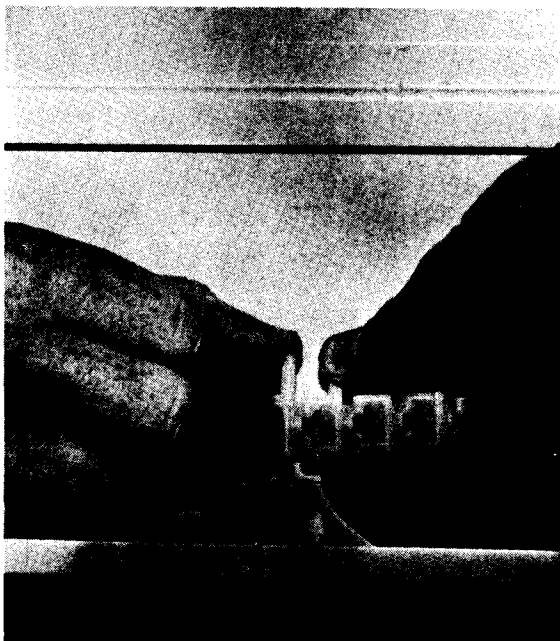
NOTES



## CANDY MODULE

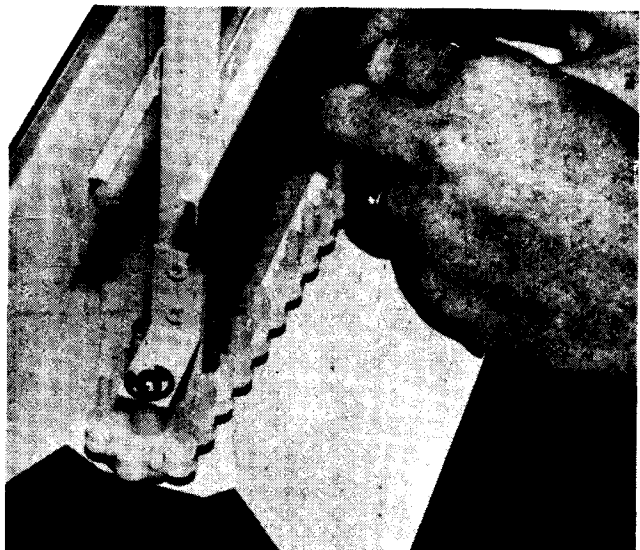
The candy dispenser slide assembly is removed from the machine in the same way that the hook slide assembly is removed. Just withdraw the stop screw and slide the assembly out of the machine.

- To disassemble, first remove all dispensing cups by tilting the top of each cup toward the front of the module and at right angle to the plane of the conveyor chain. After tilting, unsnap the cup, lift it up and out. Repeat until all are removed. (SEE FIGURE 7 A)



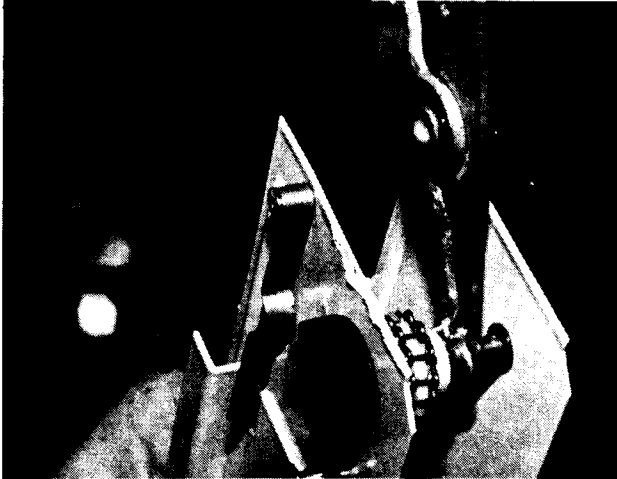
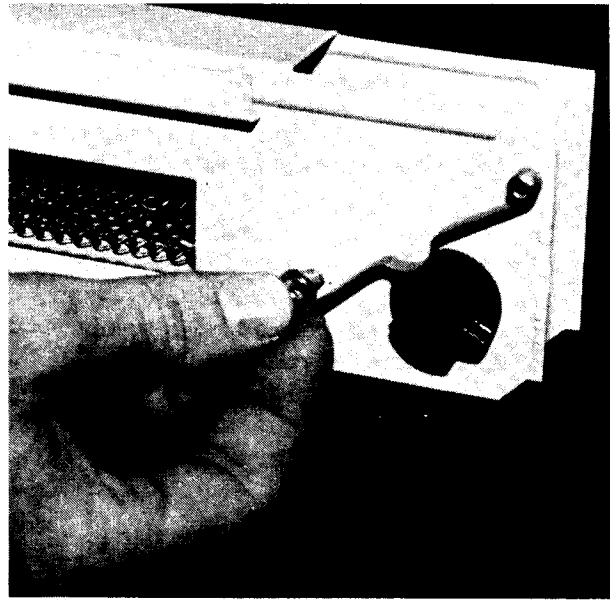
After removing all cups, remove the conveyor chain (SEE FIGURE 7-B). Simply insert finger tip under one link and press inward on the next (FIGURE 7 B). The links will snap apart and the conveyor chain drops free.

Reinstall the conveyor chain, snapping it together and positioning it so that the cup holding pins are directly opposite each other on each side of the module to assure proper timing (FIGURE 7 C).

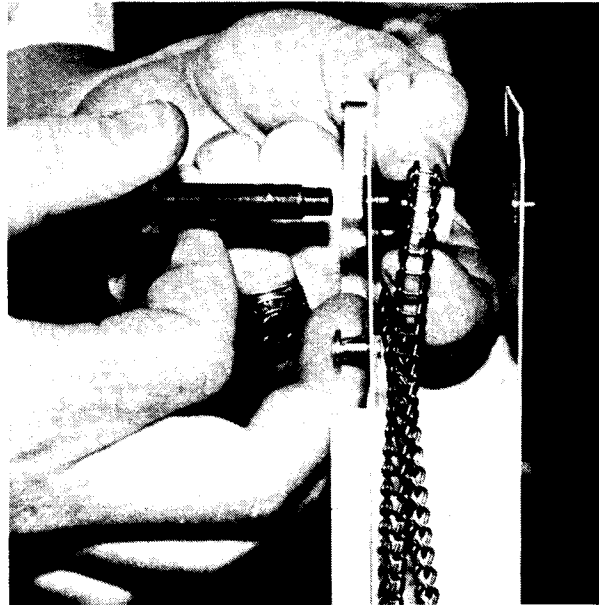




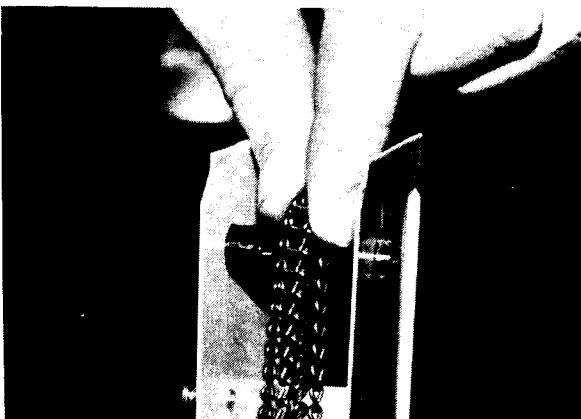
- Removal of the copper colored ladder chain commences with the release of the detent lever spring on the side of the slide (FIGURE 7 D).



- Next, using E-ring pliers remove the spring steel snap ring holding the slide, sprocket and shaft together (FIGURE 7 E).



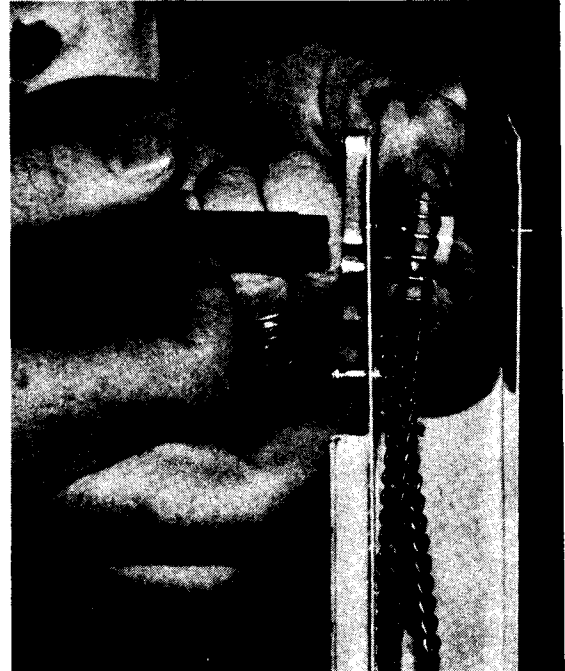
- The black plastic shaft can now be pulled from the side of the slide, dropping the sprocket and chain free (FIGURE 7 F).



- The new ladder chain can now be installed. First, place it over the conveyor drive shaft sprocket and pull toward the rear of the slide, moving  $\frac{1}{4}$  turn counterclockwise in the process (FIGURE 7 G).



Holding the chain in the  $\frac{1}{4}$  turn position, insert the black drive shaft through the black grommet and sprocket. Position snap ring over the shaft and complete insertion into opposite side of slide. Center the sprocket and position snap ring retainer on the shaft. Take care to check for proper timing of the conveyor chain. (The conveyor chain is properly timed when the cup holding pins on the chain are directly opposite each other on each side of the module and the black sprocket shaft is in the detent position (FIGURE 7H).



- Reinstall all cups by reversing the technique shown in FIGURE 7 A.
- Reinstall the candy module in the dispenser and the machine, tightening the stop screw in the process. It is now ready to operate.

The dispenser motor assembly can be removed by withdrawing two self-tapping screws at the bottom of the assembly, lowering it slightly and pulling it out. Care must be exercised to protect the pigtail connector wiring and unplug it as you remove the assembly. Reverse the procedure for re-installation.

#### NOTES



## ELECTRICAL

The HS-20 Single Price Automatic Rack Merchandiser operates from a primary power source of 115 volts, 60 cycle A.C. reduced through a transformer to a secondary source of 24 to 30 volts, 60 cycle A.C. which supplies power to the entire machine with the exception of the fluorescent lighting. The electrical schematic, (FIGURE 10 ) shows the entire system.

FIGURE 8 shows the electrical control box area located on the right-hand inner side of the product compartment. Item 1 in this figure is the vend relay. If the vend relay fails, it is replaced by pulling the relay from its socket (Item 2) and plugging in a new one.

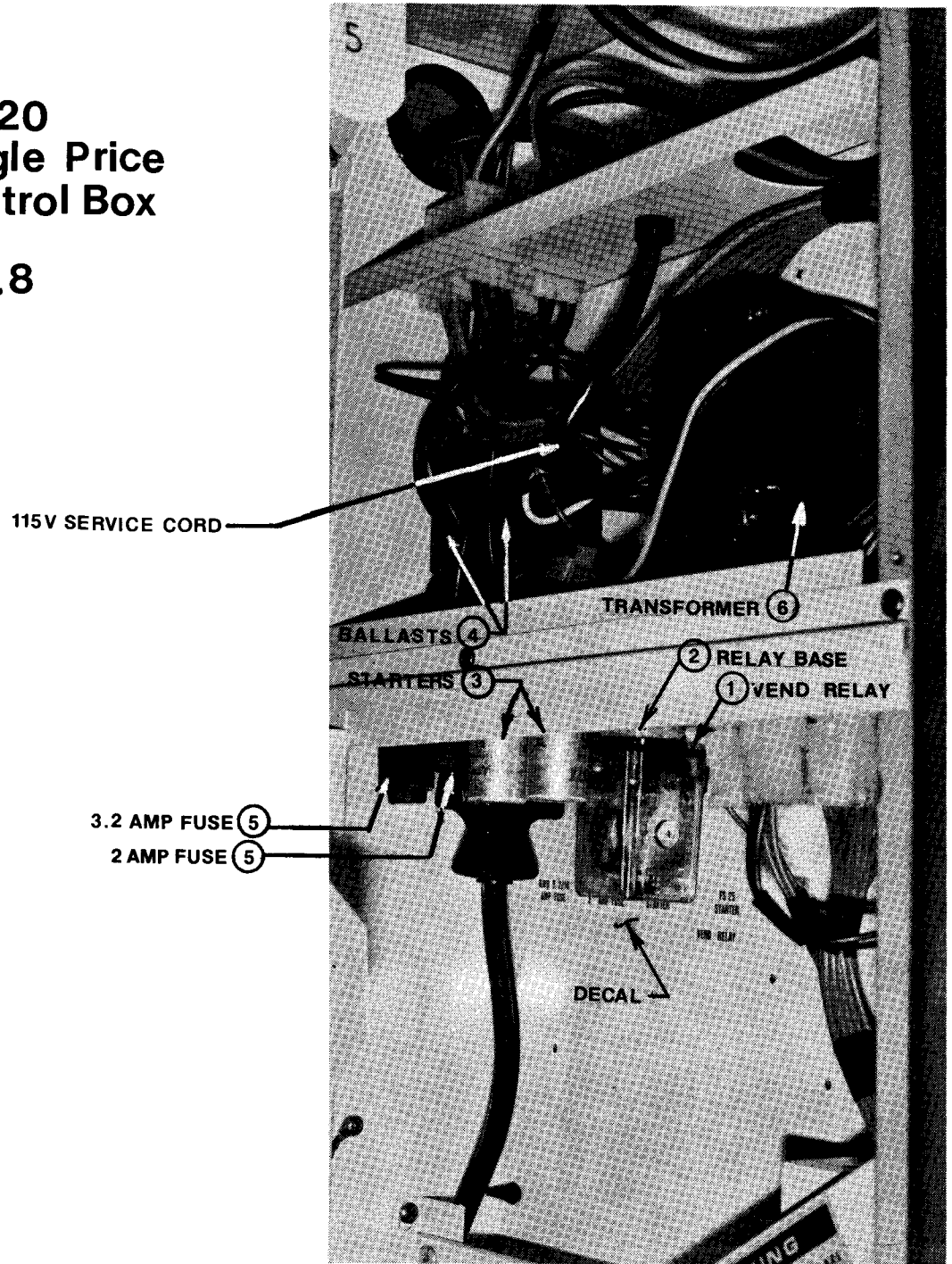
Lighting for the HS-20 is supplied by two 15 watt fluorescent lamps located on the left side and top of the product compartment. In FIGURE 8, Items 3 are the replaceable starters. Item 4 is the ballasts for the lights. The step down transformer for reducing the 115 VAC 60 cycle to 24 VAC 60 cycle is item 6. CAUTION: The 24 V side has a white lead as well as a 24V identification. Caution should be observed. The opposite side and the related terminal board beside the transformer have a full 115 VAC potential.

Items 5 are fuses. The fuses can be replaced as required by turning the cap on the bottom of the fuse holders counterclockwise until they fall free. The fuses can then be replaced.

FIGURE 9 shows the entire control chassis and coin changer area side by side with the rear of the machine including motor assemblies and wiring harness for reference purposes.

# HS-20 Single Price Control Box

Fig.8



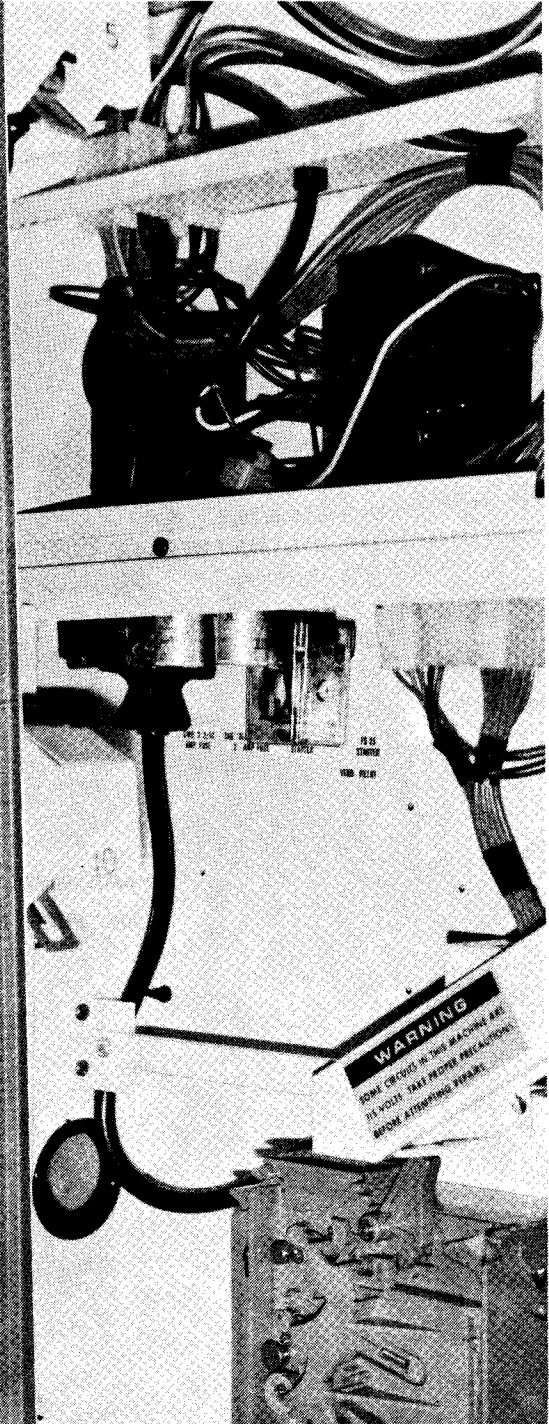
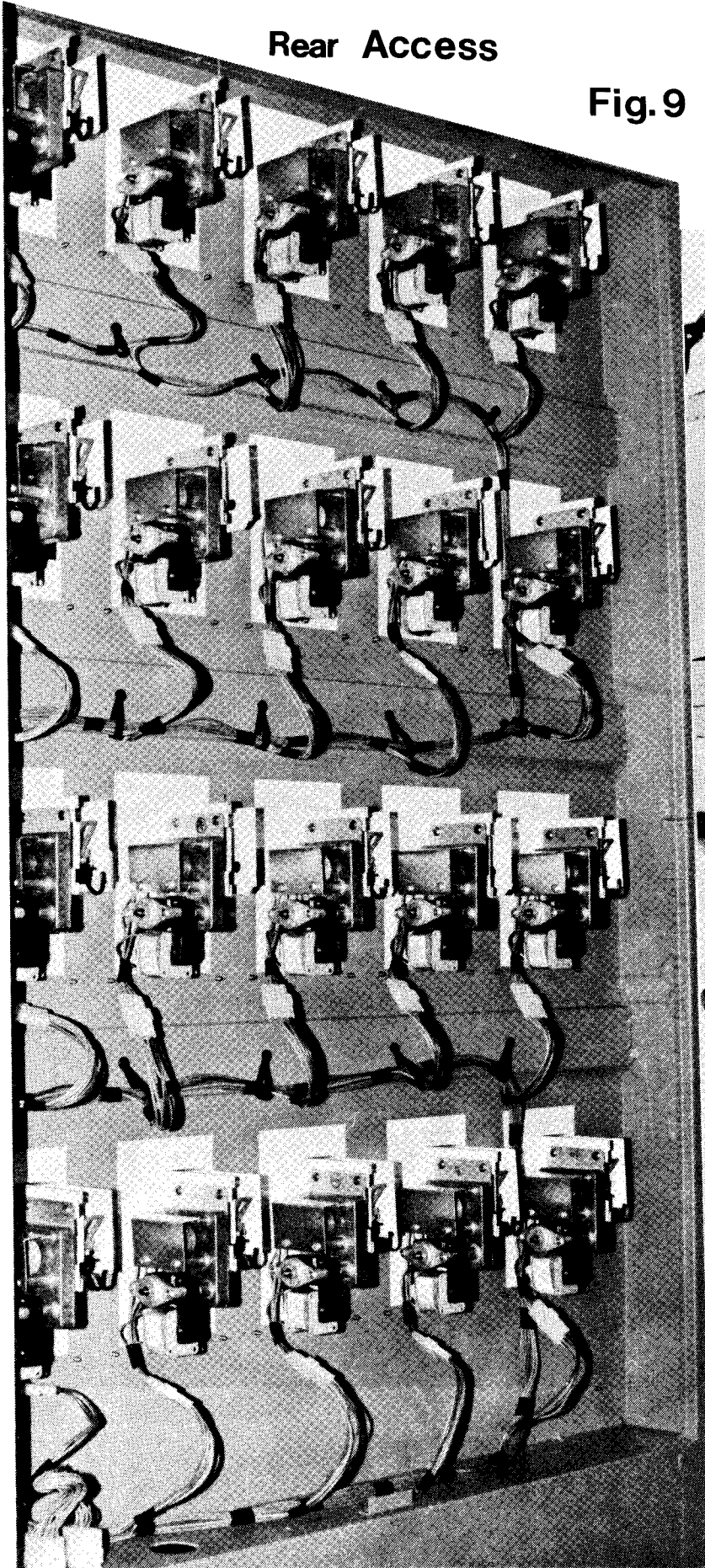


Rear Access



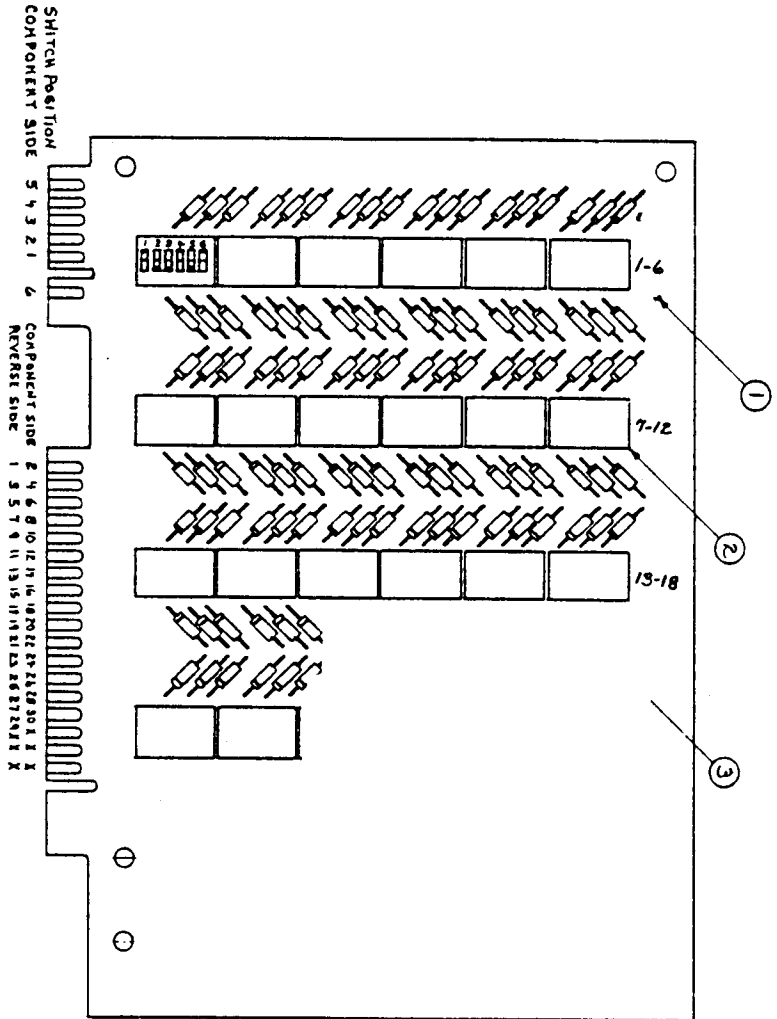
Fig.9

Control Box

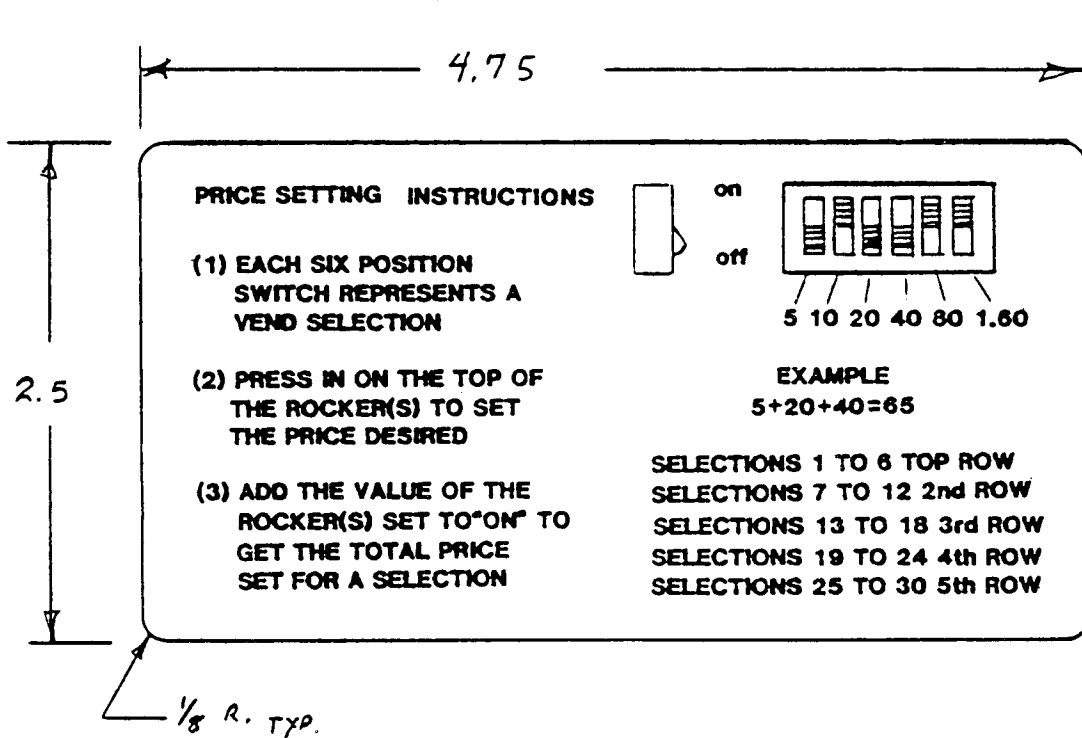




**Fig. 1**  
PRICE BOARD ASSEMBLY  
**16220**



ITEM	PART NUMBER	QTY.	DESCRIPTION
1	16220	1	P.C. Board
2	B-16239	30	Switch (ECCO 24000 GGB)
3	CMI-2079-2	180	Diode (IN 4003)



### SELECTOR SWITCH

The 20 button selector switch is mounted inside the right front of the product compartment behind the sliding electrical compartment door. It may be removed by backing out four phillips head screws and disconnecting it from the control box.

### PRODUCT DELIVERY COMPARTMENT

This sub-assembly, including the "push" plastic door, may be removed from the front of the machine thru the product compartment. This may be accomplished as follows:

- Remove product compartment bottom. (5 screws)
- Remove left panel over delivery compartment (4 screws)
- Remove #17, 18 and 19 dispenser motor assemblies.
- Remove the right side deflector (2 screws)
- Remove 4 screws on the front inside edge of the delivery compartment.

Note: Support the compartment while removing the last screw to prevent dropping.

- Lift compartment up and turn slightly to remove through the product compartment door.
- Reverse procedure to replace.

### REAR ACCESS COVER

A large access cover is provided on the rear of the HS-20. Its major purpose is to permit access to the wiring harness in the rear of the machine. To remove it use one of the keys provided. Unlock it and lift off. (While pulling outward with key.) CAUTION: Do not allow the cover (door) to fall off freely as this could result in damage to the door.

HS-20 TROUBLE SHOOTING (SINGLE PRICE)

- MACHINE WILL NOT ACCEPT COINS: Remove acceptor/rejector to visually inspect 5¢/10¢ blocking fingers in coin changer.
  - Check for credit on the machine by attempting to make a selection.
  - 5¢/10¢ Blocking fingers are magnetically retracted:
    - Be sure machine is level.
    - Be sure changer is properly installed.
    - Acceptor/rejector needs cleaning or adjustment, clean, repair or replace.
    - Blocking fingers need adjustment so ends clear coin path in acceptor/rejector.
  - 5¢/10¢ or 25¢ Blocking fingers are not magnetically retracted:
    - Make sure machine is plugged into 115 volt outlet. (Are fluorescent lamps on - check 2 amp fuse)
    - Make sure changer Jones Plug is securely connected.
    - Check manual payout on changer - if it does not operate, check red cap fuse. If blown, check for short or ground on 24 volt circuit. Transformer may be defective.
    - Check for a dispensing motor being hung in cycle. See that each module arm is pushed in all the way so as not to lock a motor in cycle.
    - Manually pull #20 dispensing chain forward by grasping several segments with both hands. If it electrically picks up and completes one cycle, repeat for dispensing conveyor #5. If #5 fails to pick up electrically the ladder circuit between #20 and #5 is broken. Locate break by testing each dispenser in order, beginning with #19, #18, #17, #16, #11, #12, #13, #14, #15, #10, #9, #8, #7, #6, #1, #2, #3, #4, #5, until the first dead position is found. This dead dispenser motor assembly, the previously tested assembly, or wiring between the two is faulty. (Refer to trouble shooting chart, Page 21 .)
    - Check vend relay by replacing with one known to be operable. If blocking fingers are now retracted, relay was bad.
    - Check 5¢/10¢ blocking finger crem coin in changer for being defective.
    - If this does not correct your problem, then it is either a problem in the changer or motor #5 is defective.

- MACHINE WILL ACCEPT COINS, BUT.....
  - No selection can be made.
    - Check for coins lodged in coin path of changer.
    - Check connections from selector switch to control parts.
    - Check red wire continuity between control panel and the series circuit starting at position #1 on the selector switch assembly.
    - If a selection has a chain that is too snug to pull forward; check to see if a module slide has been pushed in too far, or if the rear door has been pushed in against the chain, causing it to bind.
    - If #20 and #1 complete cycle when pulling chain by hand, coin changer is probably defective.
    - Check for defective changer by substituting one known to be operable.
  - Only some selections can be made.

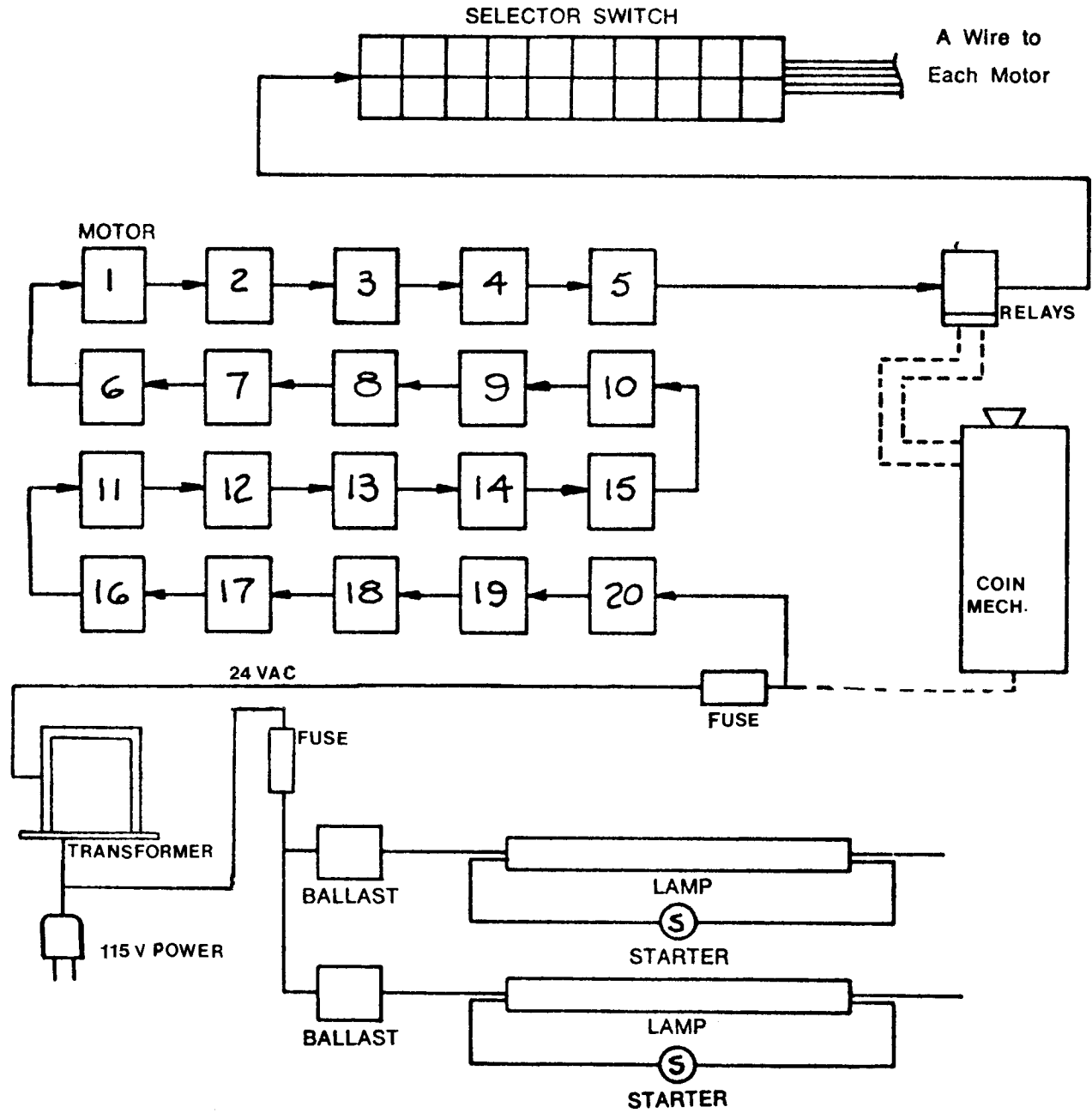
NOTE: Identify all non-operable selections by number, position in machine, or position on selector switch.

- Check for proper price setting in changer.
- Changer must be a 24 volt unit.
- Check for defective selector switch assembly. The selector switch is wired in series starting at position #1 and running down the left side thru the odd numbers. A jumper then connects to position #2 and the series circuit runs down the right side thru the even numbers. A defective selector switch is indicated when a sequence of selections in this series do not operate.

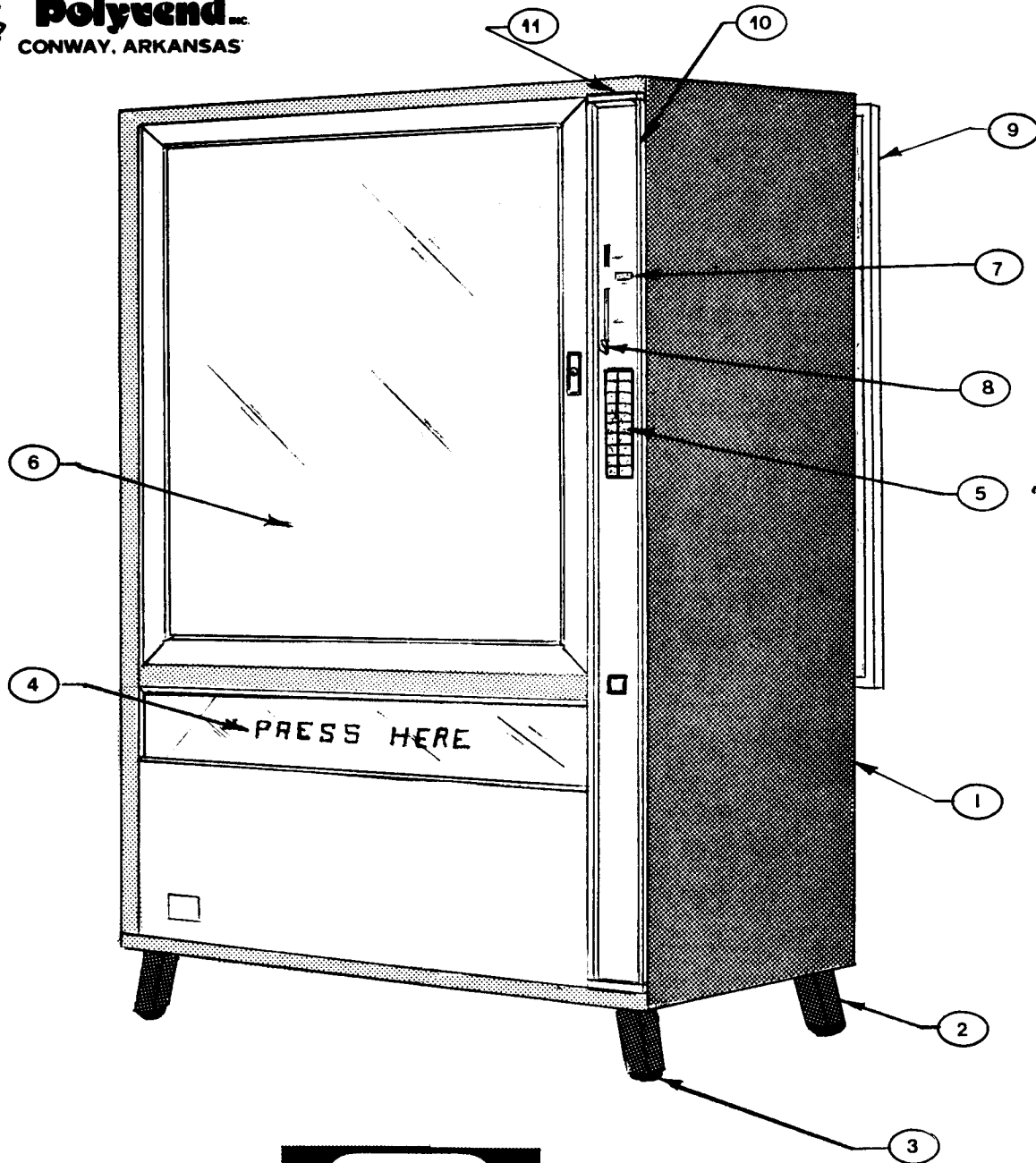
EXAMPLE: Selection #1, #3, #5, & #7 can be made but the remaining selection can not. The selector switch is defective between positions #7 and #9.

- Check vend relay by replacing with one known to be operable.
  - Check for defective dispensing motor(s).
- MACHINE WILL ACCEPT CERTAIN COINS BUT NOT OTHERS.
    - Will not accept Quarters.

- Check 25¢ coin blocking finger.
  - If retracted, clean, adjust, or replace acceptor.
  - If not retracted check that coin tubes are full. (Must have at least 7 coins in each tube to make change one time).
  - If coin tubes are full and finger is not retracted, check for loose connection, burned out electromagnetic coil, or defective tube switch.
- Will not accept nickels and dimes but 25¢ Finger is retracted. ,
- Check 5¢/10¢ Blocking Fingers.
  - If retracted clean, adjust, or replace acceptor.
  - If not retracted check for loose connection, or a burned out electromagnetic coil.



**TROUBLE-SHOOTING WIRING REFERENCE**

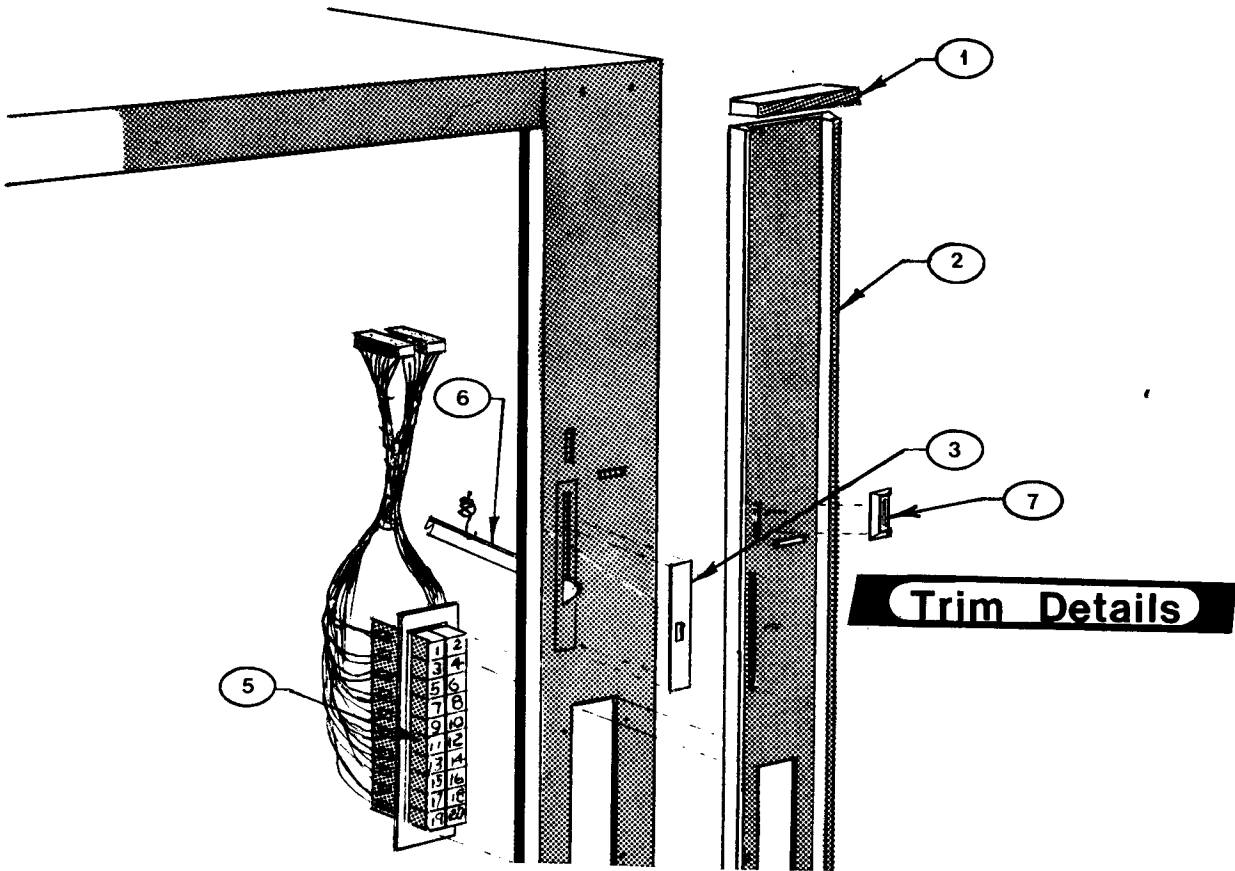


**HS-20**

CABINET

INDEX	PART NO.	NOMENCLATURE
1	R-10537-05	Outer Shell
2	B-10338	Leg Assembly
3	A-2601	Leg Equalizer
4	B-10668	Delivery Compartment Assembly
5	C-10344	Selector Switch Assembly
6	C-10669	Product Loading Door
7	A-1616	Indicator Light Assembly
8	B-10322	Reject Lever Assembly
9	C-10356-05	Rear Door Assembly (Access cover)
10	A-10352	Escutcheon Plate Assembly
11	C-1380	Escutcheon End Cap

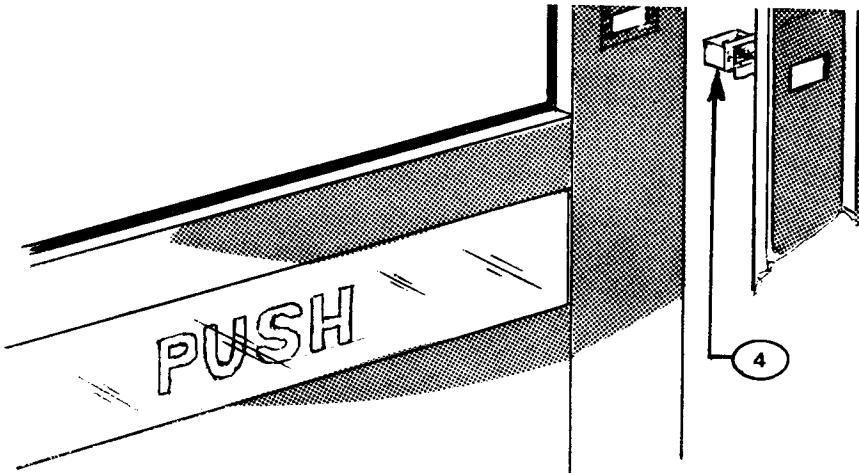




**Trim Details**

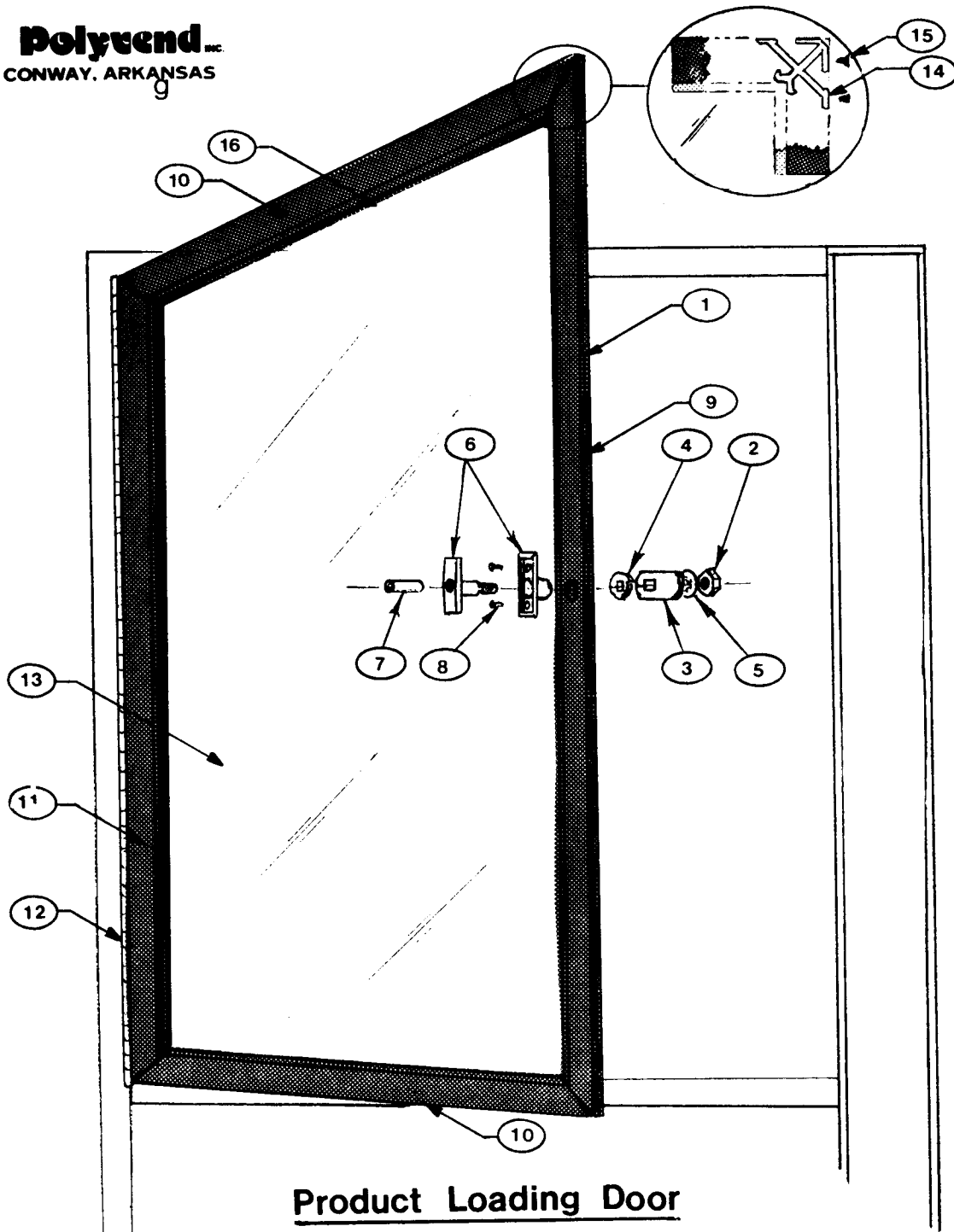
INDEX                      PART NO.                      NOMENCLATURE

1	C-1380	Escutcheon End Cap
2	D-1424	Escutcheon Plate
3	A-1414	Reject Lever Cover Plate
4	B-10342	Coin Return Cup Assembly
5	C-10344	Selector Switch Assembly
6	B-10322	Reject Lever Assembly
7	B-1384	Coin Insert Casting





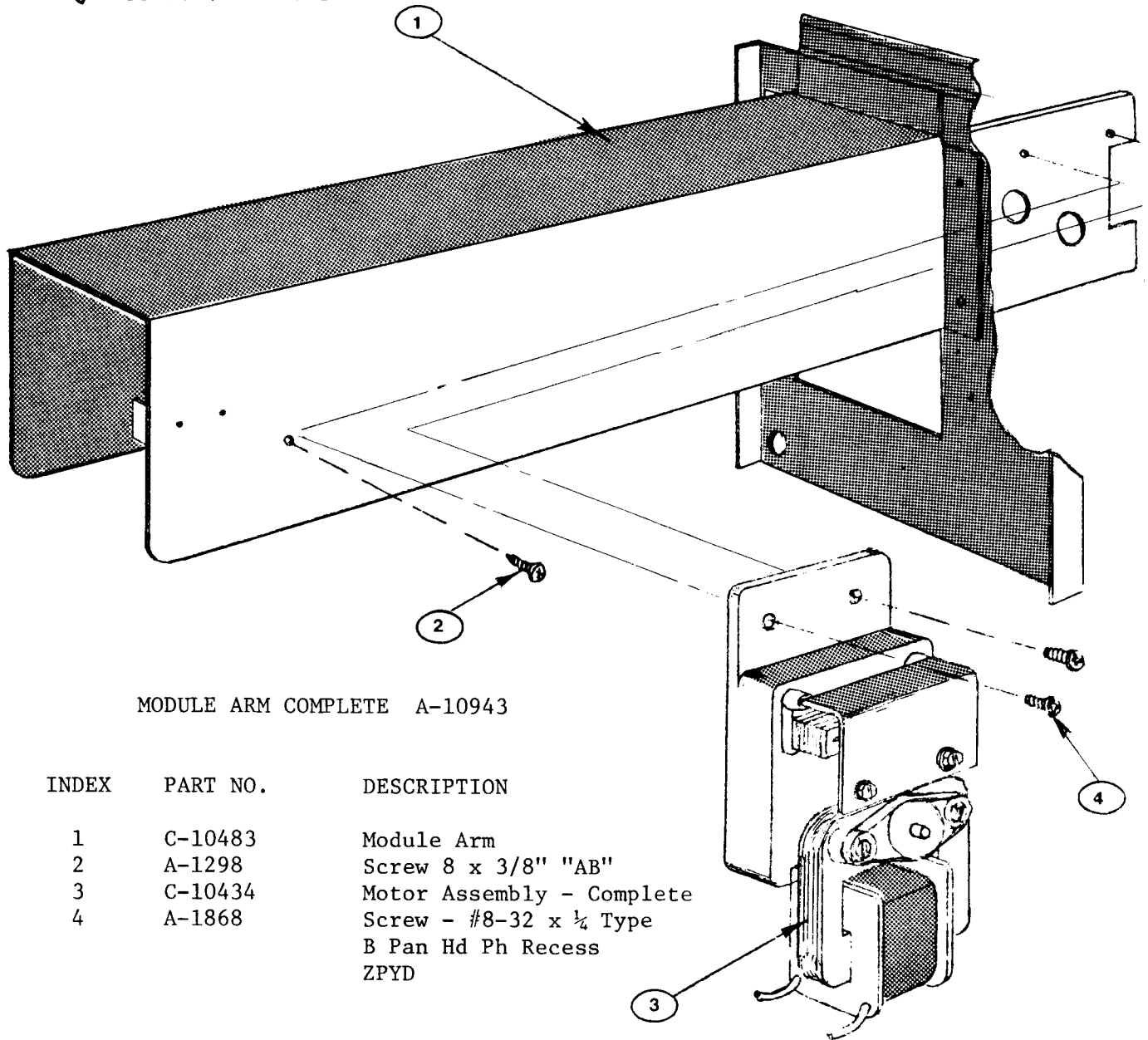
**Polyvend**<sup>INC.</sup>  
CONWAY, ARKANSAS



**Product Loading Door**

INDEX	PART NO.	NOMENCLATURE	INDEX	PART NO.	NOMENCLATURE
1	R-3887	Door - Product Loading	9	A-11594	Door Frame, Lockside
2	A-11538	Nut - Hex Jam	10	A-11595	Door Frame, Top & Bottom
3	A-1483	Cam	11	A-11596	Door Frame, Hinge Side
4	A-11539	Stop Cam	12	A-11597	Hinge, Product Door
5	A-1680	Lockwasher	13	A-1924	Glass, Tempered 3/16" Door
6	A-11537	Handle Assembly	14	A-11598	Angle, Corner Frame
7	A-1809 *	Cylinder - Inner	15	A-11599	Screws, #10 x .500 Flat Head Ct Sk
8	A-746	Screw	16	A-11600	Gasket, Vinyl - Glass/Frame (Lighter Shade)

\*NOTE: Please specify key number



MODULE ARM COMPLETE A-10943

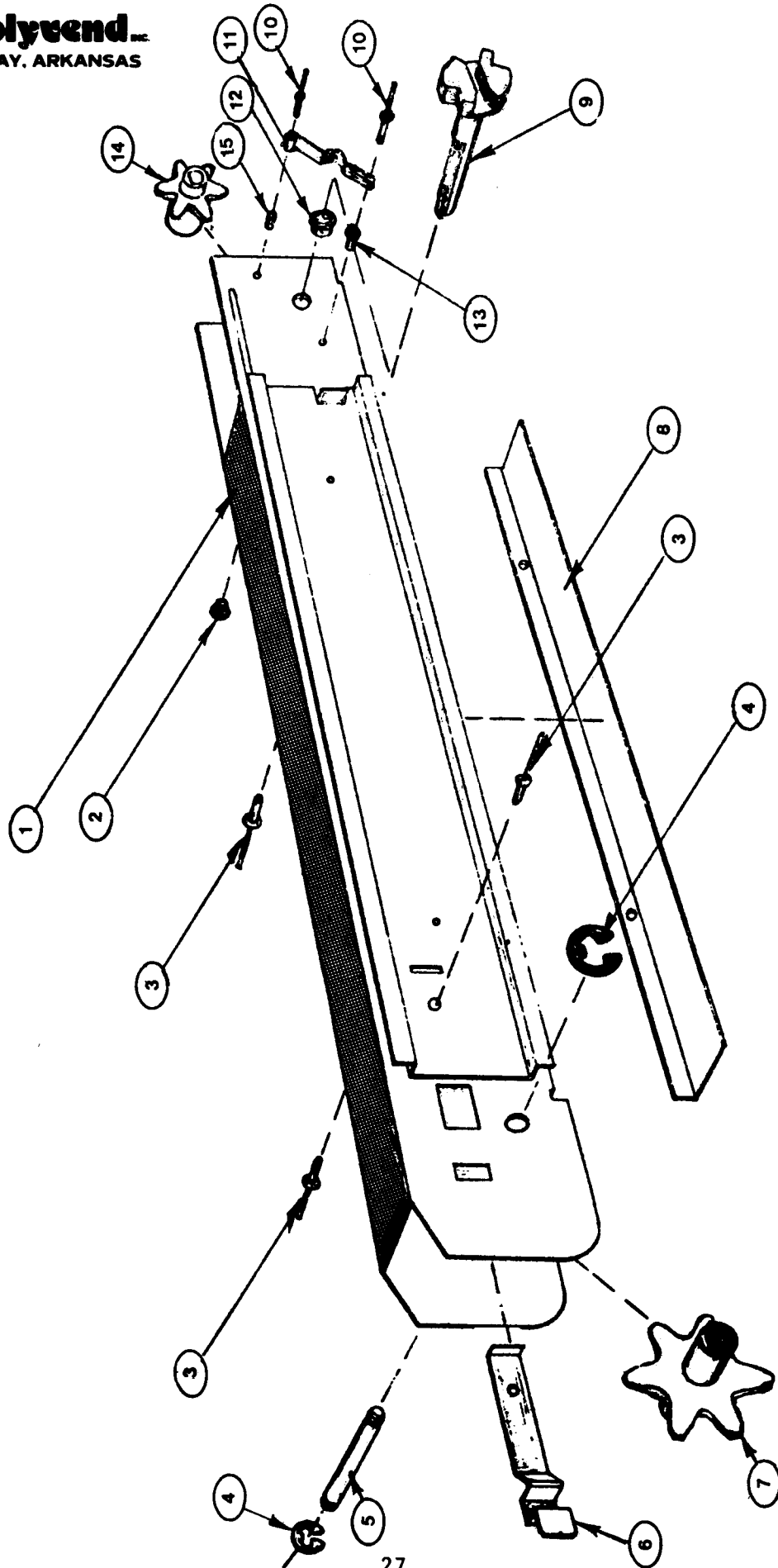
INDEX	PART NO.	DESCRIPTION
1	C-10483	Module Arm
2	A-1298	Screw 8 x 3/8" "AB"
3	C-10434	Motor Assembly - Complete
4	A-1868	Screw - #8-32 x 1/4 Type B Pan Hd Ph Recess ZPYD

RACK MODULE - B-10438

INDEX	PART NUMBER	DESCRIPTION
1	B-10495-01	Slide & Module Assembly
2	A-730	Bushing
3	A-729	"Pop" Rivet SD-42-BS
4	A-2559	"E" Ring, Tru Arc
5	A-2558	Front Sprocket Shaft
6	A-1744	Spring Lock
7	A-2565	Sprocket - Front
8	A-4963	Chain Guide
9	A-1741	Sprocket Shaft - Rear
10	A-1642	"Pop" Rivet SD-45-BS
11	A-1743	Spring, Rear Sprocket, Detent
12	A-1178	Bearing Bushing
13	A-1745	Spacer - Detent, Spring - "T"
14	A-2563	Sprocket - Rear
15	A-1869	Spacer, Detent Spring "Plain"

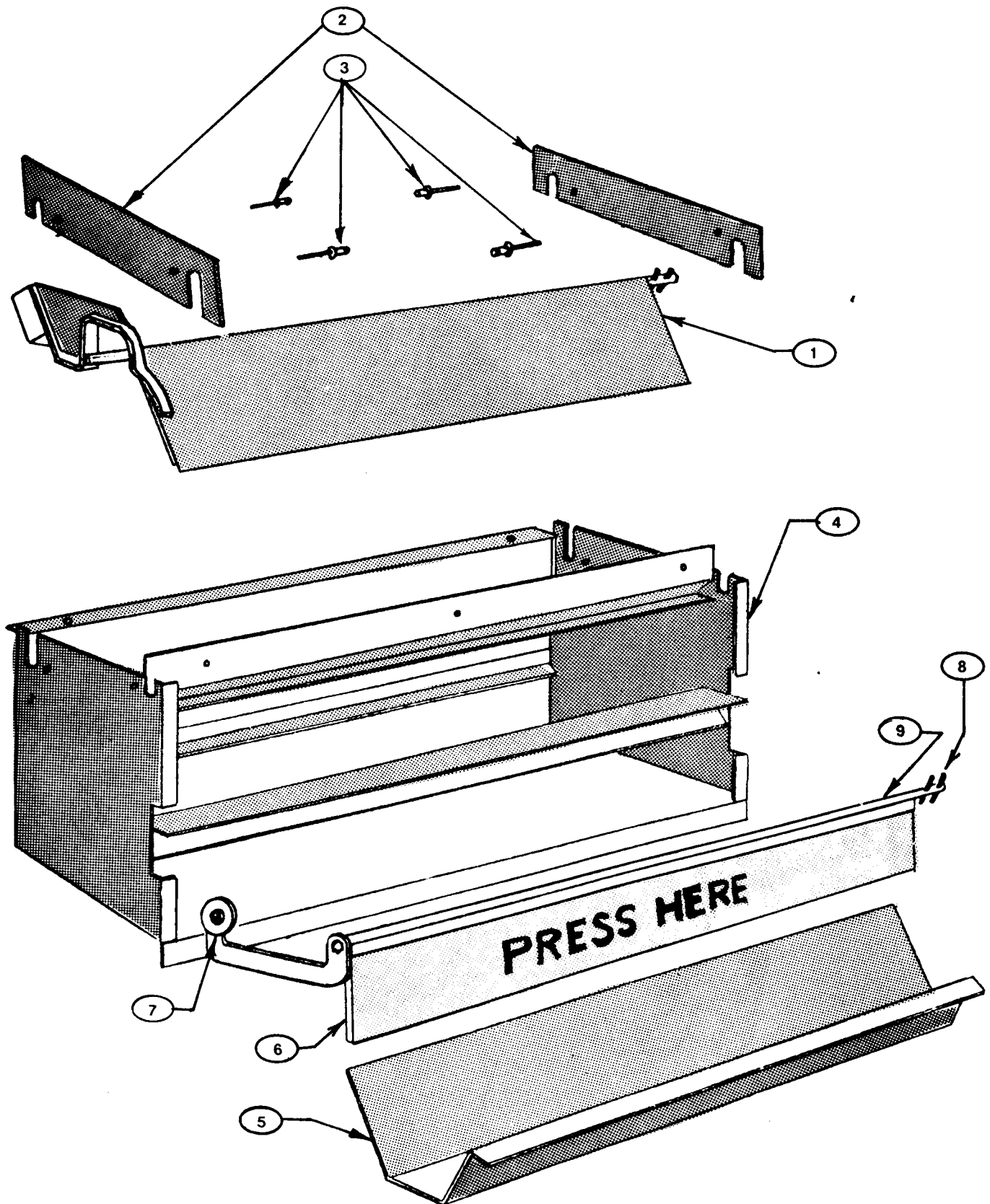


**Polyvend**  
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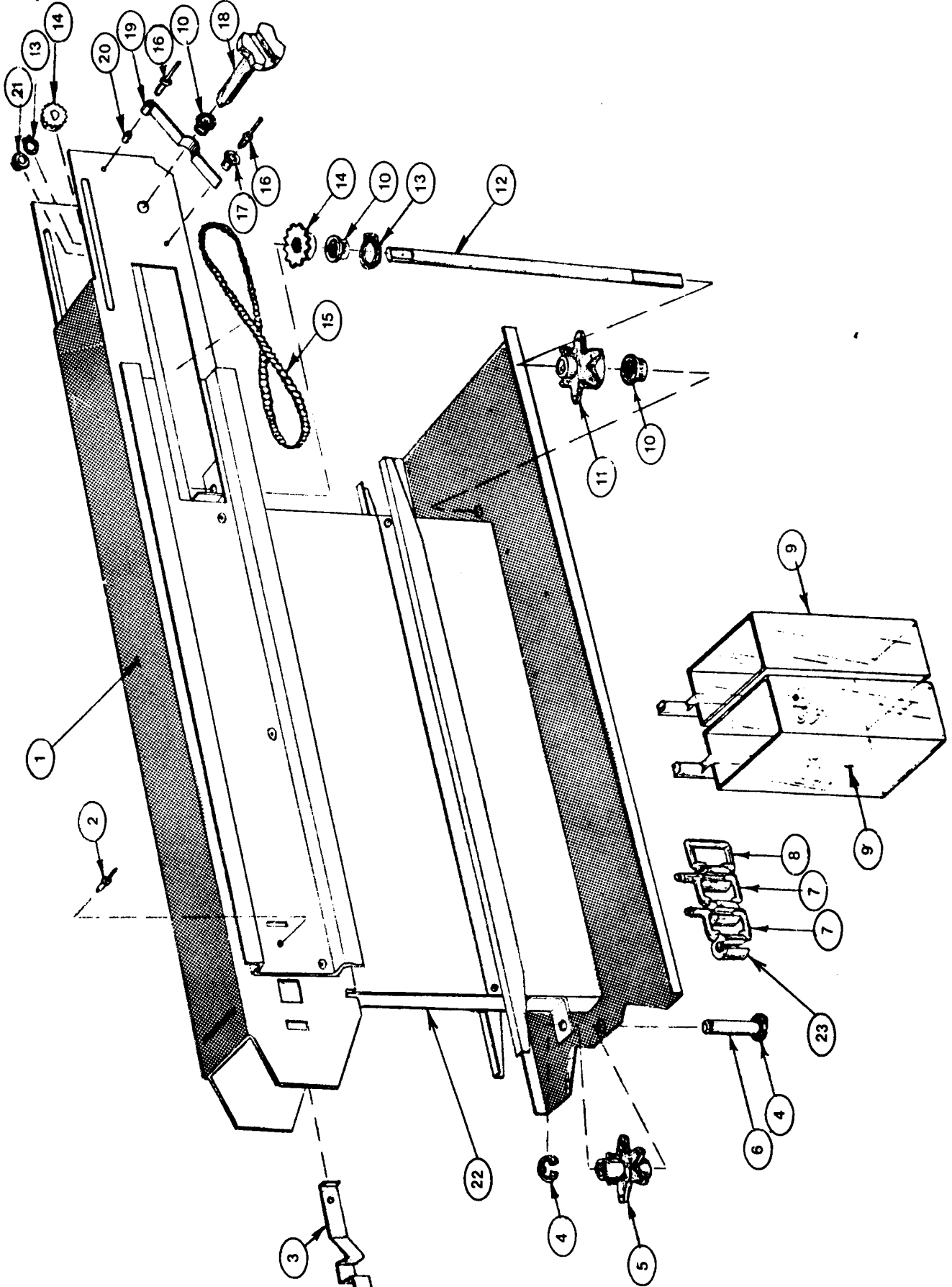
DELIVERY COMPARTMENT COMPLETE - B-10668

INDEX	PART NUMBER	DESCRIPTION
1	A-10315-01	Door Assembly - Anti-theft
2	B-1401	Retainer, Delivery Compartment Door
3	A-729	"Pop" Rivet - Delivery Compartment, Door Retainer
4	D-10662-01	Delivery Compartment Assembly
5	B-1394	False Bottom - Delivery Compartment
6	B-1419-01	Plexiglass door
7	A-534	Skate Wheel
8	A-1272	Roll Pin
9	D-10335-01	Arm & Channel Assembly





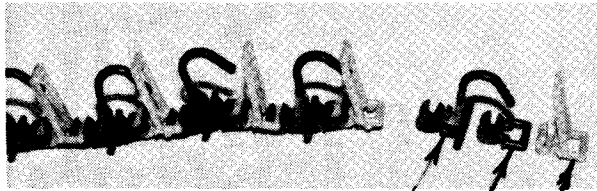
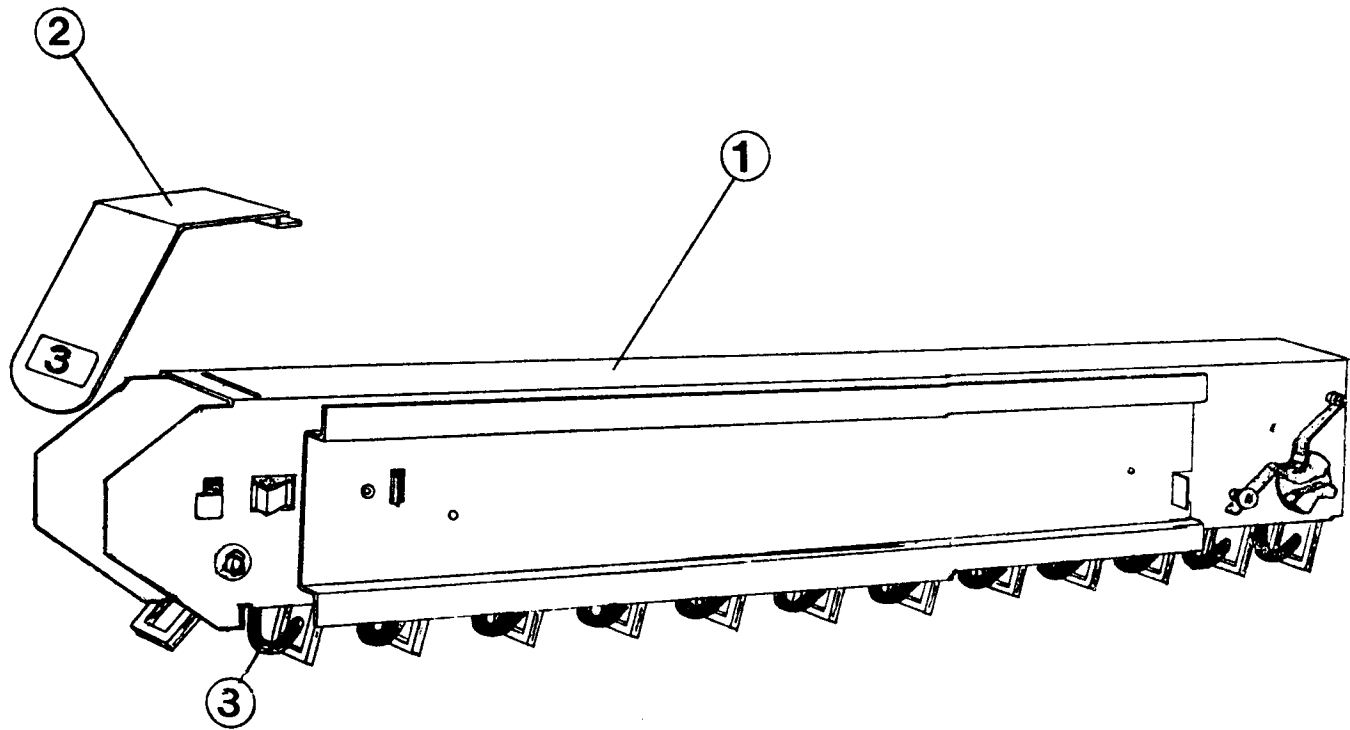
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CANDY MODULE B-10935

INDEX	PART NO.	NOMENCLATURE
1	C-10478-01	Candy Slide & Module
2	A-729	"Pop" Rivet SD-42-BS
3	A-1744	Spring Lock
4	A-2559	"E" Ring, Tru Arc
5	A-2565	Front Sprocket
6	A-2558	Front Sprocket Shaft
7	A-1945	Cup Retainer Link
8	A-1946	Plain Link
9	C-4886	Dispensing Cup
10	A-1178	Bearing Bushing
11	A-2563	Rear Sprocket
12	A-1939	Vertical Shaft
13	A-2225	Gripring
14	A-1927	Drive Sprocket
15	A-1928-01	Ladder Chain
16	A-1642	"Pop" Rivet SD-45-BS
17	A-1745	Spacer - Detent Spring "(T)"
18	A-1741	Rear Sprocket Shaft
19	A-1743	Rear Sprocket Detent Spring
20	A-1869	Spacer-Detent Spring (Plain)
21	A-730	Bushing
22	C-10933	Divider and Bottom Assembly
23	A-10526	Link Chain Assembly (Complete)

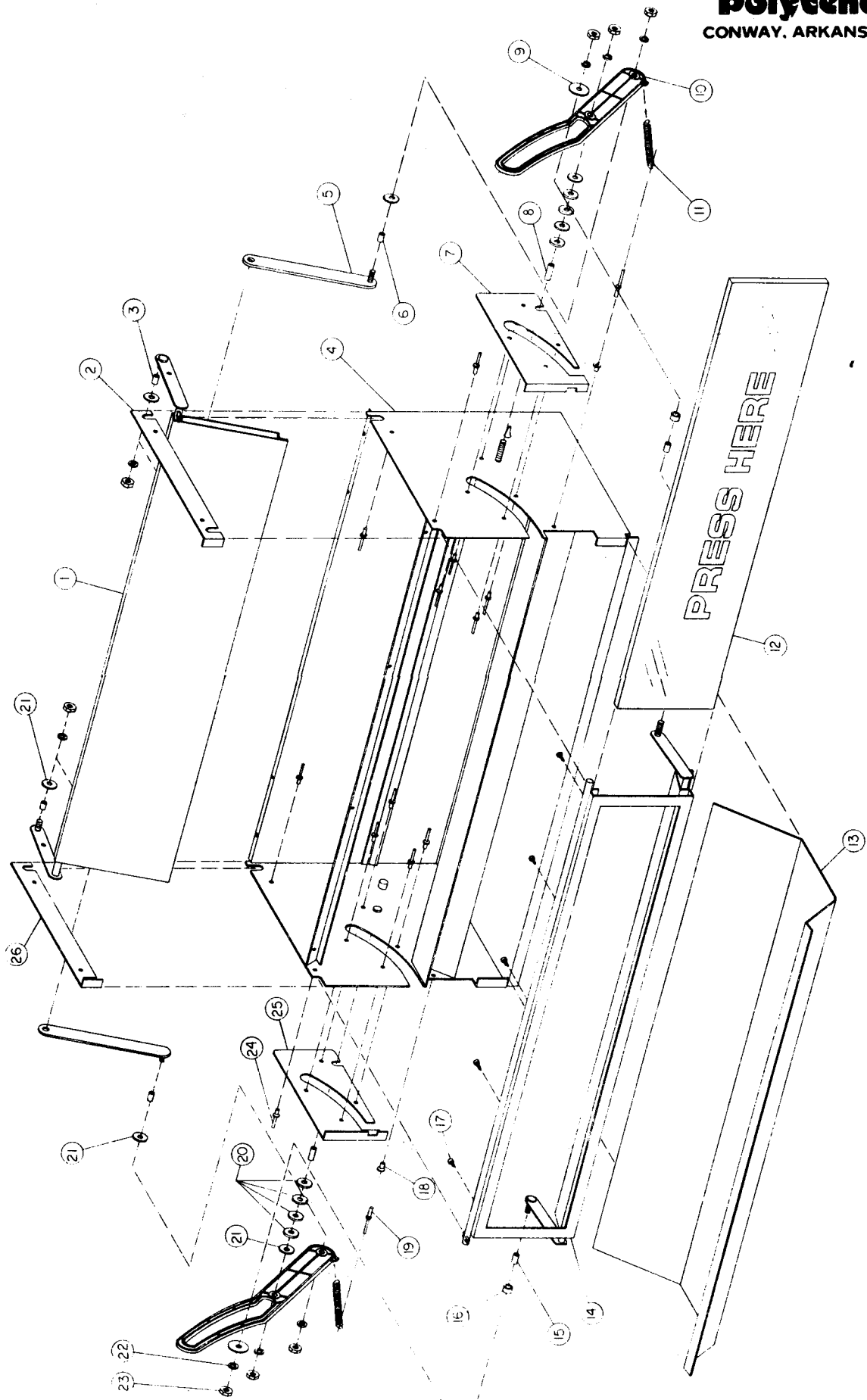


RACK MODULE ASSEMBLY COMPLETE

INDEX	PART NO.	NOMENCLATURE
1	A-10438	Rack Module Assembly Complete
2	1767-01	Number Tab
3	A-10348	Hook Chain Assembly
3A	A-1498	Chain Hook Link -- required
3B	A-1500	Chain Plain Link -- required
3C	A-1499	Chain Retainer Link -- required

# DELIVERY COMPARTMENT PARTS LIST

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>	<u>QTY.</u>
1	Door WA-Anti-Theft	16129-01	1
2	Retainer-Door Rod (Right)	16141-02	1
3	Bushing-Arm	16152-01	2
4	Compt. WA-Delivery	16136-01	1
5	Arm WA-Connecting	16139-01	2
6	Bushing-Arm	16152-02	2
7	Retainer Pivot Arm (Right)	16142-02	1
8	Bushing-Arm	16152-03	2
9	Washer-Flat	16154	2
10	Arm-Plastic, Del. Compt.	16143	2
11	Spring-	611	2
12	Door-Del.	16138-01	1
13	Bottom-False	16137	1
14	Door WA-Push	16151-04	1
15	Bushing-Bushing	16153	2
16	Bushing-Bronze	14055	2
17	Screw-TP AB Pan #2	1298	5
18	Spacer-Detent Spring	1745	2
19	Rivet-Pop	1642	2
20	Washer-5/16 I.D. 3/4 O.D.	13398	8
21	Washer-5/16 I.D. 3/4 O.D.	13412	6
22	Lock Washer-Split	2386	8
23	Nut-Hex	2385	8
24	Rivet-Pop	729	12
25	Retainer-Pivet Arm (Left)	16142-01	1
26	Retainer-Door Rod (Left)	16141-01	1



HS-20 SINGLE PRICE

ALPHABETICAL PARTS LIST

PART NO.	NOMENCLATURE
A-11598.....	Angle - Corner Frame - Product Door
A-10335-01.....	Arm & Channel Assembly - Delivery Compartment
A-104.....	Ballast, G.E. 89G457G5 Control Box
A-344.....	Barrell, Lock Rear Door
A-1178.....	Bearing Bushing - Module Arm
A-1478.....	Bolt 3/8-16 x 3/4" lg. - Leg Glide Assembly
A-326.....	Bumper, Associate Rubber Product #m-22-A1 R.H. Inner Panel
A-842.....	Bumper, Assoc. Rubber Prod. #M-22-B-2 Del. Compt.
A-730.....	Bushing, Module Arm Shaft
A-987.....	Bushing, Heyco #SB-562-7 Control Box
A-1435.....	Bushing, Shoulder - Pendulum
A-1322.....	Bushing, Snap - Inner Panel
A-2438.....	Bushing, Strain Relief - Heyco #SR-6N3-4 (service cord)
A-570.....	Cam - Rear Door Lock
A-1483.....	Cam - Service Door Lock
A-5404.....	Cam - Straight - Coin Box Lock
A-11539.....	Cam - Stop - Service Door
A-10318.....	Chain Assembly - Complete - Hook
A-1928-01.....	Chain, Ladder - Candy Module
A-10526.....	Chain, Link Assembly - Complete - Candy Module
A-1774.....	Chainguide - Rack Module
A-1498.....	Chain - Hook - Link
A-1500.....	Chain - Plain - Link
A-1499.....	Chain - Retainer - Link
A-1974.....	Changer, Coin
A-2369.....	Clamp, Cable Richo #NE8 Harness
A-348.....	Clip, Steel - Rear Door Lock
C-10665-01.....	Coin Box Assembly
B-10319-01.....	Coin Chute Assembly - Upper
C-8655.....	Coin Hopper & Chute Assembly
B-4959.....	Coin Insert Casting
B-10342.....	Coin Return Cup Assembly
C-10351.....	Control Box Assembly Complete
B-1433-01.....	Control Box Cover
B-1473.....	Cord, Service 13 ft. 115V
B-8436-01.....	Cover, Wire R.H. Panel
A-1414.....	Cover Plate, Reject Lever
A-1809.....	Cylinder, Inner-Product Door Lock
A-1293-15.....	Data Plate
B-1511.....	Decal, Control Box (Fuse, Relay, ETC)
A-8571-02.....	Decal, Price 15¢
A-8571-03.....	Decal, Price 20¢
A-8571-04.....	Decal, Price 25¢

PART NO.	NOMENCLATURE
A-8571-05.....	Decal, Price 30¢
A-8571-06.....	Decal, Price 35¢
A-1790.....	Decal, Selection Numbers
A-11540.....	Decal, Warning
C-1479-01.....	Deflector, Left Hand
B-1439-01.....	Deflector, Right Hand
B-10668.....	Delivery Compartment Assembly - Complete
D-10662-01.....	Delivery Compartment Assembly
B-1743.....	Detent Spring, Rear Sprocket - Module Arm
C-4886.....	Dispensing Cup - Candy Module
C-1477-01.....	Display Bottom
C-10933.....	Divider & Bottom Assembly - Candy Module
A-10315-01.....	Door Assembly - Anti-theft
A-577.....	Door - Coin Return Cup
B-1419-01.....	Door - Plexiglass - Delivery Compt. "Press Here"
C-10356-*	Door - Reat (Specify Color)
R-3887.....	Door, Service Assembly complete
B-10344-01.....	Door, Sliding Weld Assembly
A-11596.....	Door, Frame, Hinge Side
A-11595.....	Door, Frame, Top or Bottom
A-11594.....	Door, Frame, Lock Side
A-2559.....	"E" Ring, Tru-Arc #5133-25
C-1380.....	Escutcheon Plate, End Cap
D-1424.....	Escutcheon Plate, Right Side
B-1394.....	False Bottom, Delivery Compartment
A-1488.....	Fuse, 3.2
A-222.....	Fuse, 2
A-11600.....	Gasket, Vinyl - Glass/Frame
A-1924.....	Glass, Tempered 3/16" Service Door
A-2225.....	Gripring - Module Arm
B-1872.....	Guard, Selector Switch
A-11537.....	Handle Assembly - Service Door
A-11597.....	Hinge, Service Door
* .....	Harness, Wiring - See "Wiring"
A-1917.....	Instructions, Cleaning
A-1804.....	Label - U.L. Approval
B-10340.....	Lamp Fixture Assembly - Side and Top
A-759.....	Lamp, Fluorescent - T8-30CW
A-801.....	Lampholder, amp #1-480334-0
A-2601.....	Leg Equalizer
B-10338-01.....	Leg & Plate Assembly
A-1616.....	Light, Indicator - 28V #SS/LYN/W28NMS "Use Correct Change"
A-1945.....	Link, Cup Retainer
A-266.....	Lockwasher - Delivery Compartment Wheel
A-1680.....	Lockwasher - Service Door Lock
A-366.....	Lockwasher, Int. tooth 3/4" - Coin Box
A-357.....	Lockwasher "Shakeproof" 9/32 - Coin Box Lock
* .....	See also "Washer"

PART NO.	NOMENCLATURE
A-10943.....	Module Arm Assembly - Complete
C-10483-01.....	Module Arm and Plate Assembly
C-10434.....	Motor Assembly Complete
C-1789.....	Motor GI-24V Model LM-4
B-1767-01.....	Number Tabs
A-358.....	Nut, Hex 9/32" - 28 x 5/32"
A-1788.....	Nut, Hex 3/4-27 x 9/32 Thick - Coin Box
A-11538.....	Nut, Hex Jam - Service Door Lock
A-347.....	Nut, Rear Door Lock
D-10371-01.....	Panel, R.H. Inner Assembly
A-1407.....	Pendulum - Service Door Latch
A-1484.....	Plate, Name
A-1642.....	"Pop" Rivet #SD-45-BS Rack Mod/Pendulum
A-729.....	"Pop" Rivet #SD-42-BS - Control Box
A-3649.....	Price Insert "Use Nickels, Dimes, Quarters"
D-2304.....	Rack Module
B-10438.....	Rack Module Assembly - Complete
B-10322-01.....	Reject Lever Assembly
A-1414.....	Reject Lever Cover Plate
A-1416-01.....	Reject Lever Mounting Bracket
A-1450.....	Relay, 11 Pin 24 V Coil
B-1401.....	Retainer, Delivery Compartment Door
*.....	Rivet - See "Pop" Rivet
A-1272.....	Roll pin 3/32 dia. x 5/8 lg.
A-766.....	Screen - Fiberglass 2" x 3" Rear Door
A-863.....	Screw - #4-40 x 1/2 Type "23" Ph. Pan Hd. Z.P. Lampholder
A-302.....	Screw, #6-32 x 3/8 Machine - Control Box Starter
A-681.....	Screw- #8-32 x 3/4" "F"-Delivery Compartment Wheel
A-1298.....	Screw, #8-3/8" "AB" Standoff; Coin insert casting; selector switch; trim del. compt.; main harness; reject lever brkt.; wire cover; coin chute; del. compt; harness-sel. switch; display btm; l.h. de- flector; upper track; mod. arm; service door.
A-1465.....	Screw, #8-32 x 3/8" type "23" Inner Panel; escutcheon end cap
A-1715.....	Screw, #8-3/8" SEMS Control Box; reject lever; sliding door; control box cover.
A-638.....	Screw, #8-3/8 "23" rd. hd. Ground wire - Control box
A-689.....	Screw, #8-32 x 3/8" swageform - slot hex washer hd. rack module stop.
A-1868.....	Screw, #8-32 x 1/4 type B. Hd. ph. recess ZPYD - Motor mtg.; module arm
A-2614.....	Screw, #8-1/2" Ph. Pan Hd. type "A" ZP - coin hopper chute
A-286.....	Screw, #10-32 x 1/2 "F" Reject Lever
A-746.....	Screw, #10-24 x 1/2" "23" Flat hd. - Handle service door
A-11599.....	Screw, #10 x .500 flat hd. ct.sk.-serv. door frame


PART NO.

NOMENCLATURE

- A-12057.....Service Manual - HS-20 Single Price
- C-10344.....Selection Switch Assembly Complete - 4-Price
- A-2558.....Shaft, Frt. Sprocket - Module Arm & Candy Module
- A-1741.....Shaft, Rear Sprocket - Module Arm & Candy Module
- A-1939.....Shaft, Vertical - Candy Module
- R-10537-\*.....Shell Assembly - Outer (specify Color)
- A-1717.....Slide, Wedge Chain
- B-10495-01.....Slide and Module Assembly
- C-10478-01.....Slide and Module
- A-1869.....Spacer - Detent Spring "Plain"
- A-1745.....Spacer - Detent Spring "T"
- A-827.....Spacer - Reject Lever
- A-1720.....Spring - Compression - Wedge Chain
- A-84.....Spring - Reject Lever
- A-1744.....Spring Lock - Module Arm
- A-1927.....Socket Drive - Candy Module
- A-2563.....Sprocket, Rear - Rack Module
- A-2565.....Sprocket, Front - Rack Module
- A-11969-01.....Stand Off - Rear Panel
- A-2607.....Starter FS-25 Control Box
- A-545.....Strap, Wire Harness - Motor
- A-3198.....Strap, Wire Harness - Motor
- B-1472.....Stripping, Neoprene 1/2" x 3/16" x 30 9/16"
- A-810-06.....Stripping, Neoprene 3/16" x 3/8" x 30 15/16"
- A-810-05.....Stripping, Neoprene 3/16" x 3/8" x 44 15/16"
- A-3188.....Switch, Slide
- A-1652.....Terminal Board
- A-10333-01.....Track Assembly - Upper - Sliding Door
- A-1565.....Transformer, Basler #BE 11752-001
- A-1470-00.....Trim, Side - Delivery Compartment
- A-1470-02.....Trim, Top & Bottom - Delivery Compartment
- A-342-01.....Tumbler, Lock - Rear Door \*
- B-351-\*.....Tumbler, Lock-Coin Box - Optional (Specify key No.)
- A-559.....Warranty Sheet
- A-345.....Washer, Rear Door Lock
- A-534.....Wheel, Skate - Delivery Compartment
- A-1709.....Wire, Ground - Control Box
- B-1522.....Wiring Harness "Use Correct Change" Light
- C-1519.....Wiring Harness - Sub-Main
- B-1520.....Wiring Harness - Lamp Top
- B-1629.....Wiring Harness - Lamp Side
- A-1518.....Wiring Harness - Main Motor
- A-1619.....Wiring Harness - Motor

\* Keyed PD-20 unless otherwise specified on order

for Parts and Service contact:

**Polyvend<sup>inc.</sup>**   
 P. O. BOX 1166  
 CONWAY ARK. 72032  
 501 / 327-1301



**Polyvend**

supplement for



**SINGLE AND MULTI PRICE SERVICE MANUAL**

**control box • motor switches • selector switch**

**Price Setting & Price Board Assembly**

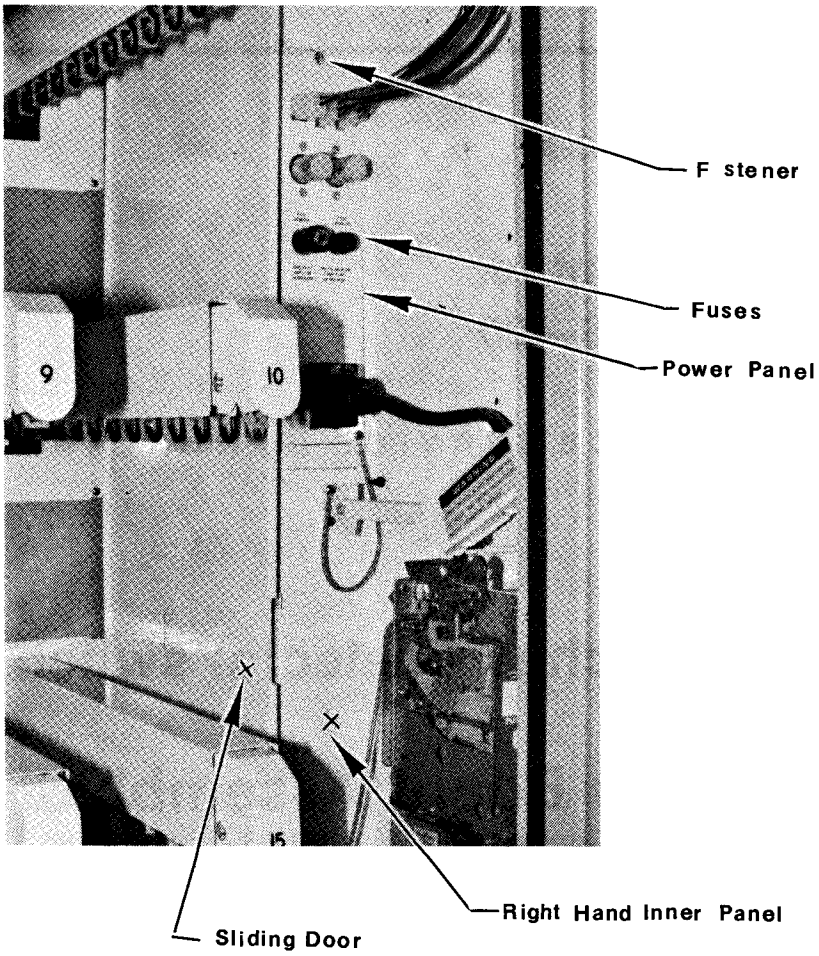
The HS-20 electrical system has been revised by Polyvend beginning with machine 12876 (serial number). All part numbers that have changed are noted in this supplement.

The major control box components are now mounted to a tilt out power panel located behind the sliding door, (FIGURE 3H) and inside the right inner panel. Access to the power panel (FIGURE 4H) can be gained by following the procedure on Page 5.

The open leaf motor switch has been replaced with a snap action switch mounted to each motor (FIGURE 5H). The main motor wiring harness has a 6 pin connector to each motor instead of the old style 4 pin connector. The motor wiring diagram is shown in FIGURE 7H.

A new selector switch assembly has also been utilized to make all electrical components compatible and therefore more dependable. The physical appearance of the selector switch has not changed.

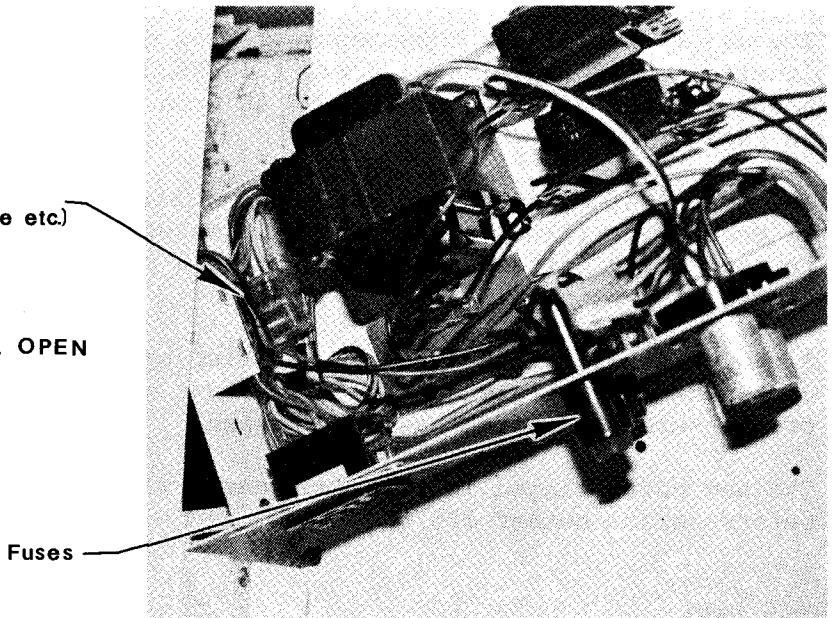
The new parts listed in this supplement will not interchange with machines before serial number 12876.

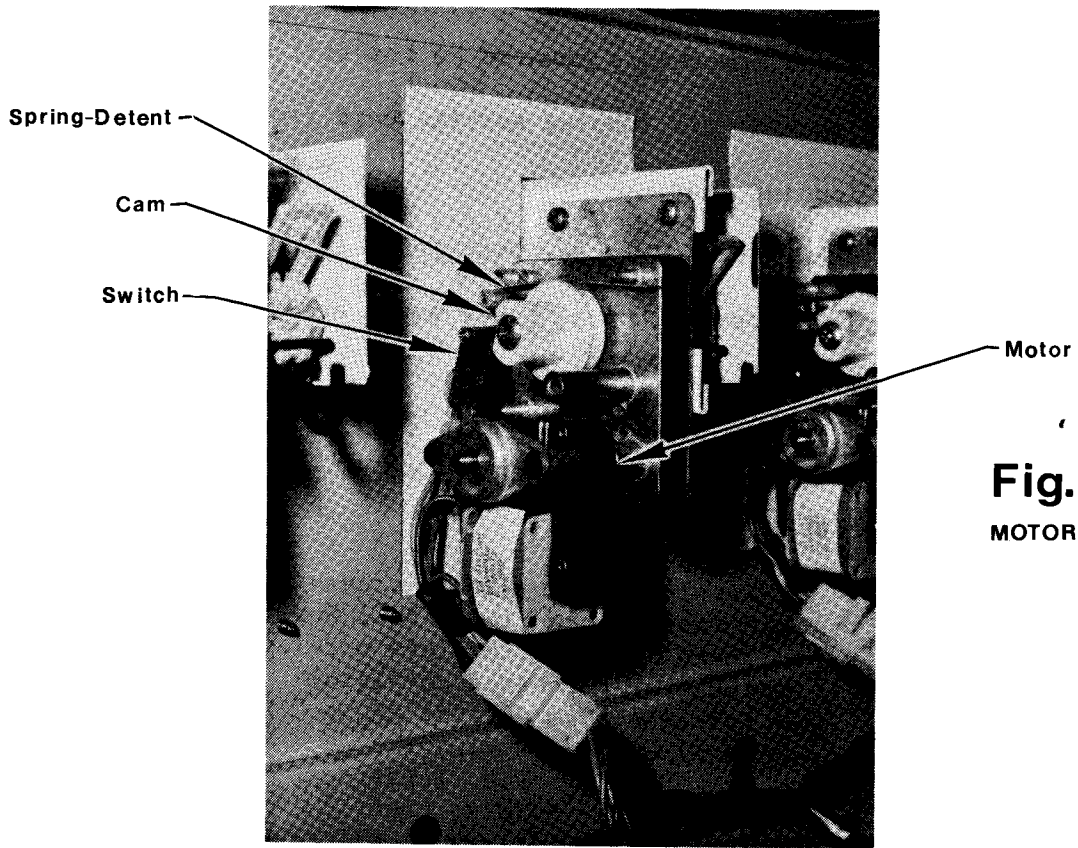


**Fig.3H**  
POWER PANEL CLOSED

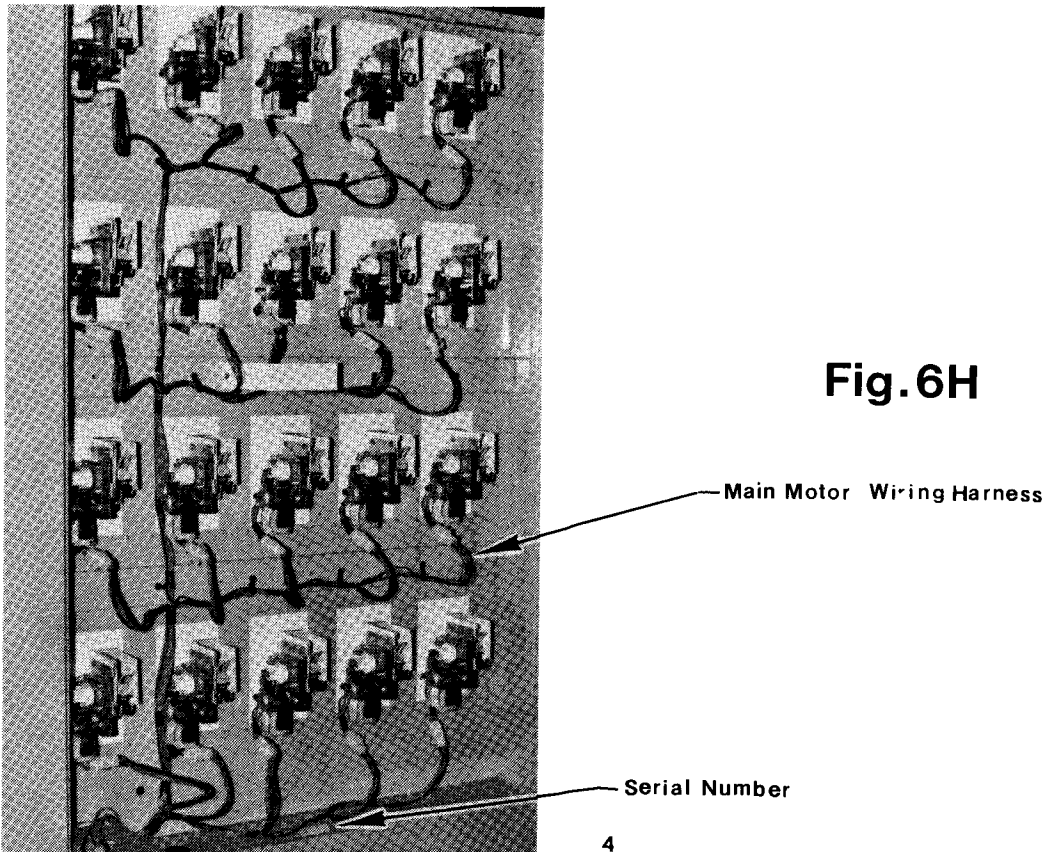
Board Asy.  
(P.C. Board, Relay, Diode etc.)

**Fig.4H**  
POWER PANEL OPEN





**Fig.5H**  
MOTOR ASY.



**Fig.6H**

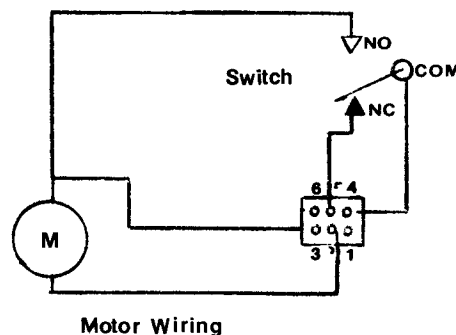


- To gain access to the components mounted on the tilt out power panel:
- Turn power to machine off (unplug service cord from wall outlet).
- Open product loading door.
- Push sliding door back to expose power panel (FIGURE 3H).
- Locate retaining screw at top of power panel and turn it 1/4 turn.
- Tilt top of panel out.

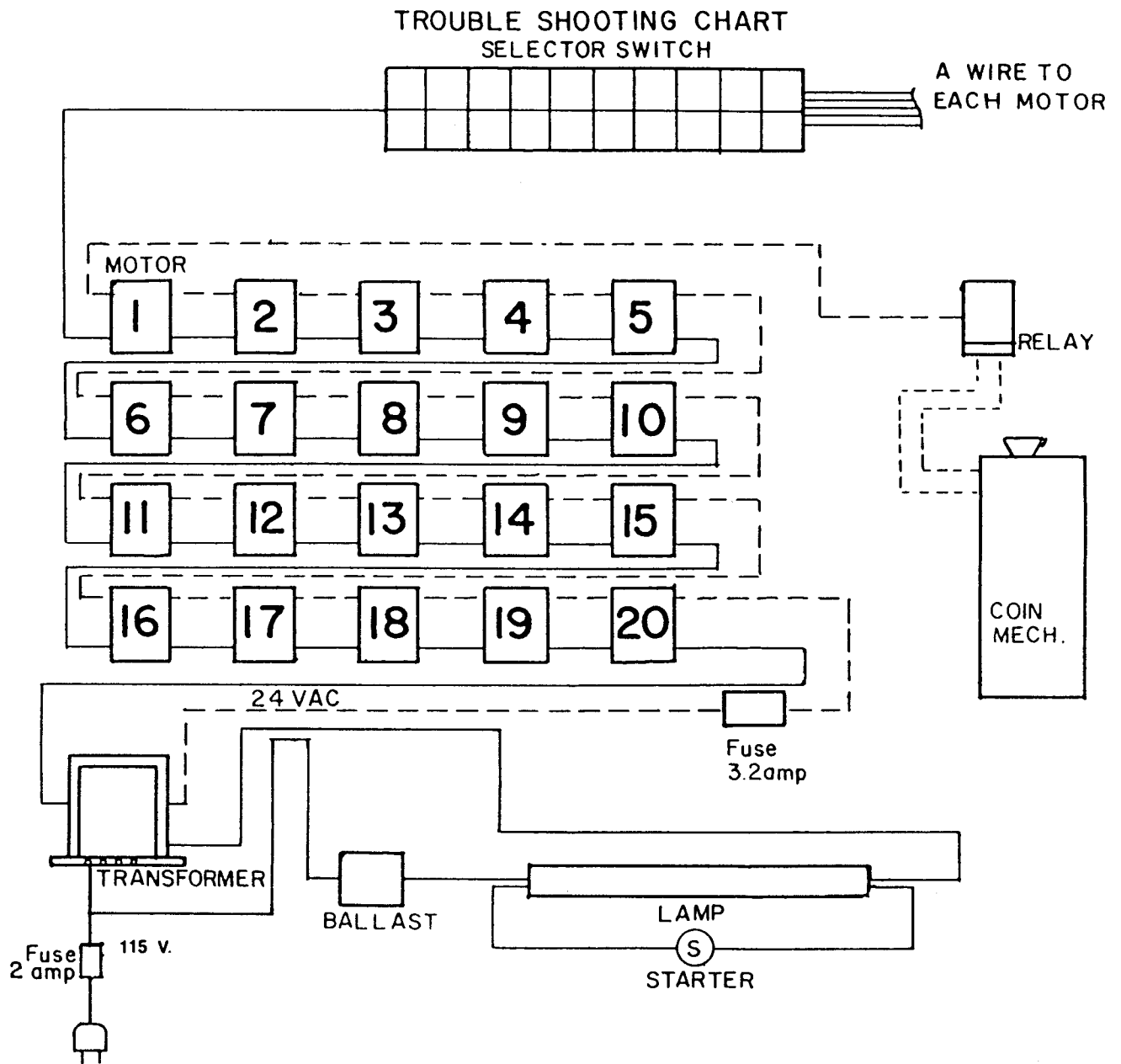
NEW PART NUMBERS (NOT ON POWER PANEL)

PART NO.	DESCRIPTION
C-12693	Panel-Power Asy/less harness - J.P.
C-12688	Harness-Jones Plug W/P.C. Board Asy
A-12670	Board Asy-P.C., complete w/relay, harness etc. (must be purchased complete)
A-12666	Harness- "Use Correct Change" Light
D-12711-01	Panel W.A.-R. H. Inner
C-12704-01	Door-Sliding, R.H. Inner
B-12703-01	Track-Upper Sliding Door
C-12681	Switch-Selector Asy; Complete
B-12679	Harness-Sub-Main (Sel. Swt./Mtr)
C-12687	Harness-Main Motor
A-12698-01	Arm Asy-Module Complete W/Motor
C-10483-01	Arm W.A.-Rack Module, Less Motor
B-12569-01	Motor Asy, Complete W/Swt. & Harness
A-1743	Spring-Detent
A-12662	Screw, Cam/Motor
A-12537	Cam-180°
A-12660	Switch-Snap Action

**Fig. 7H**



# HS-20 SINGLE PRICE



## INSTALLATION

- Remove outside shipping carton.
- Place machine into position and adjust leveling legs so it is level and aligned with adjacent machines.
- Locate small envelope in delivery compartment inside "Push" door and remove keys.
- Open glass service door with supplied key and remove all internal packing. (There are different numbered keys in envelope - one for product door, one for the back door, and, if so ordered, one for coin bank lock.)
- Remove price stickers from envelope shipped in delivery compartment and select the appropriate ones to match desired pricing of products.
- Peel off the adhesive backing and place selected price stickers on their perspective cover bars.
- Set vend prices:
  - Multi-Price:
    - Locate the large price select board behind sliding door on right inside of cabinet.
    - Each blue block of 6 rocker switches controls the vend price of one selection. The top row of blocks left to right control selections 1 thru 6; second row down controls selections 7 thru 10, etc. through 5 rows for all 30 selections.
    - Number one rocker switch in each block represents the lowest coin denomination the coin changer will accept. Number two rocker switch represents two times this lowest amount; number three rocker switch represents two times the value of number two switch. Example: #1 = 5¢; #2 = 10¢; #3 = 20¢; #4 = 40¢; #5 = 80¢; and #6 = 160¢.
    - Placing the rocker switches in the up position, that is by pushing the number on the switch in, causes the coin changer to require that amount of money before the machine will vend.
    - All rocker switches in this "on" position are added to establish a vend price. Example: #1 = 5¢ and #3 = 20¢. With switches in "on" position, the vend price for that selection is 25¢. Example: #1 = 5¢; #2 = 10¢ and #3 = 20¢; with these switches in the "on" position, vend price for that selection is 35¢.
  - Set all selections at desired price level.