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INSTRUCTIONS FOR INSTALLING A MARS ELECTRONIC™* COIN MECHANISM CONVERSION KIT IN A NATIONAL VENDORS® CROWN SEVENTY TWO® FM-72 FOOD MERCHANDISER

CHECK THE PARTS RECEIVED IN THE KIT WITH THE PARTS LIST IN THESE INSTRUCTIONS. FIGURE 1 SHOWS ALL THE PARTS IN THE KIT. IF ANY PARTS ARE MISSING, CONTACT NATIONAL VENDORS' PARTS DEPARTMENT IMMEDIATELY.

These instructions cover the procedure for installing a MARS ELECTRONIC™ Coin Mechanism Conversion kit in a Crown Seventy Two FM-72 Food Merchandiser.

Read these instructions carefully and thoroughly before installing the kit. Retain these instructions for part number and installation information.

NOTE

1. *The MARS ELECTRONIC™ Coin Mechanism is not included in this kit but is shipped separately from Mars Money Systems.*
2. *If the FM-72 to be converted is equipped with the 5240 ACER Coin Mechanism, a separate Conversion Harness, part number 417-2657, must be ordered before the kit can be installed.*
3. *If the FM-72 to be converted is equipped with a 2540 ACER Coin Mechanism which has a serial number of 00299 or below, a separate Conversion Harness, part number 417-2657, must be ordered before the kit can be installed.*

Kit, Conversion to the MARS ELECTRONIC™ Coin Mechanism, part number 417-2654, contains the following parts:

Part Number	Description	Quantity
417-2649	Conversion Harness	1
417-2648	Price Lines P/C Board	1
417-2610	Mounting Panel Assembly	1
417-2646	Conversion Relay P/C Board	1
404-1168	115 VAC Relay (Clear)	1
417-2650	Relay Identification Label	1
417-2644	Conversion Price Board Cover	1
417-2565	Plastic Price Board Cover	1
230-2223	Grommet	2
222-7237	Spacer	2
130-2106	Bushing	2
417-2566	No.6-32 x 1.62 PHS Screw	2
417-2436	Instruction Panel	1
417-2437	Instruction Panel	1
417-2656	Upper Instruction Panel	1
417-2704	Upper Instruction Panel	1
1302413	Changer Instruction Insert	1
610-2133	Indicator Light Lens	1
417-2531	Indicator Light Assembly	1
3502081	Lens - Indicator - Red	1

1411142	Wire Clamp .750	1
407-1022	No.7 Cable Clamp	1
9900-023	No.8-32 x 3/8 PHS W/LW Screw	1
9900-081	No.8-32 W/LW Nut	1
121-7159	No.4-40 W/LW Nut	2
9900-078	No.6-32 W/LW Nut	2
141-1141	.375 Wire Clamp	1
720-2056	Adhesive Clamp	1
4241250	No. 10 Cable Clamp	1
9900-104	No.6-32 x 1/4 RHS S/T Screw	1
417-2653	Installation Instructions	1
	* * *	

TO INSTALL THE KIT

A. PARTS REMOVAL

1. Open and fully extend the Monetary Compartment.
2. Move the Vend Service Switch to the OFF position.
3. Remove the Coin Mechanism from the Merchandiser as follows:
 - a. Disconnect the Receptacle from the Coin Mechanism Printed Circuit Board.
 - b. Disconnect the Coin Mechanism Harness Plug from the Monetary Harness.
 - c. Remove the Slug Rejector from the Coin Mechanism.
 - d. Lift the Coin Mechanism up and tilt it out of the Monetary Compartment.

NOTE

Step A-4 applies only to Merchandisers equipped with the 2540 or 2505 ACER Coin Mechanism. The Coin Guide Adaptor Assembly will not be reinstalled in the Merchandiser.

4. Remove two attaching Screws and the Coin Guide Adaptor Assembly from the Merchandiser. See Figure 2.
5. Remove the Relay Guard from the Relay Board Cover. See Figure 2.
6. Remove the three Relays from the Relay Board. See Figure 2.

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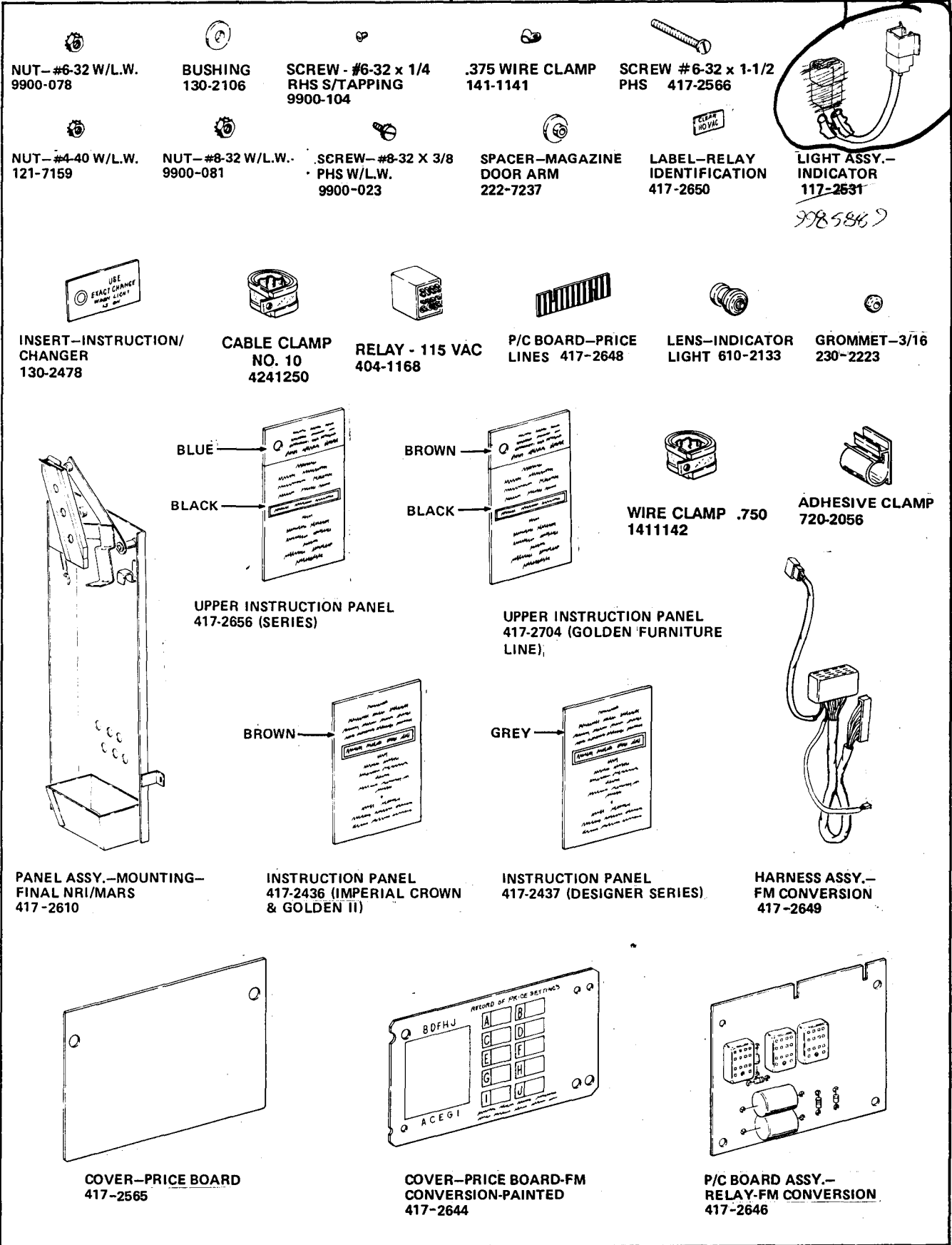


FIGURE 1
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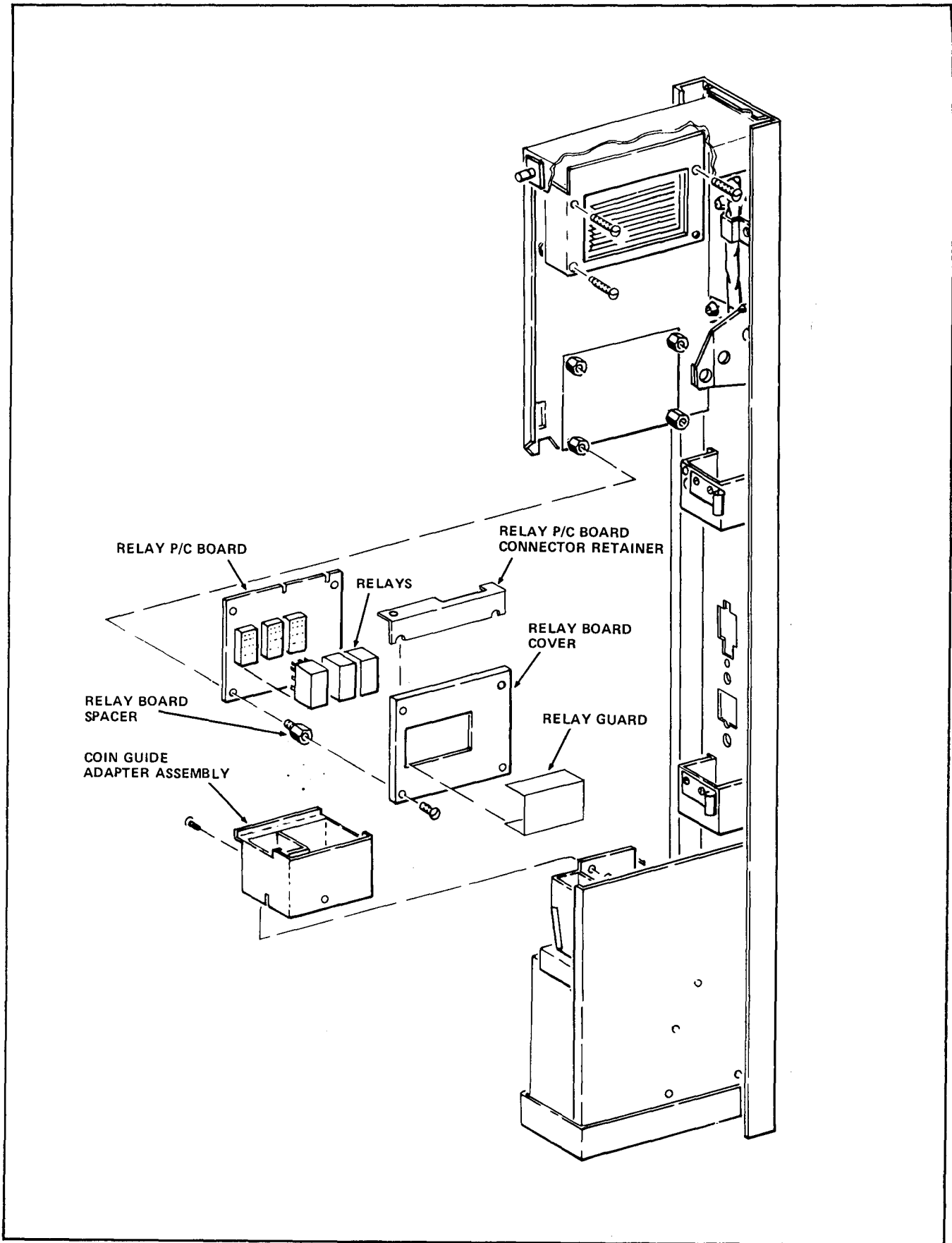


FIGURE 2

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7. Remove the Relay P/C Board Connector Retainer from the Relay Board Cover, if the Merchandiser is so equipped. See Figure 2.
8. Remove four attaching Screws and the Relay Board Cover from the Merchandiser. See Figure 2.
9. Disconnect the P/C Board Connector of the Monetary Harness from the Relay P/C Board.
10. Remove four Relay Board Spacers and the Relay P/C Board from the Merchandiser. See Figure 2.

NOTE

If the Merchandiser is equipped with the clear Plastic Price Board Cover and attaching parts, these parts will be removed in Step A-11.

11. Remove three of the four Screws attaching the Price Board Cover and the Price Board to the Monetary Compartment, leaving the Screw in the lower right corner of the Price Board Cover in place. See Figure 2.

NOTE

1. *Step A-12 and A-13 apply only to Imperial Crown, Designer Series and Golden II style Merchandisers.*
2. *Step A-13 applies only to Merchandisers equipped with the 2540 or 2505 ACER Coin Mechanism.*

12. Remove four attaching Screws, four Spacer Cups, the Instruction Panel Frame and the Instruction Panel from the Monetary Compartment. See Figure 3.
13. Remove eight attaching Screws, four Spacer Cups, the Coin Insert Trim and Instruction Insert from the Monetary Compartment. See Figure 3.

NOTE

1. *Steps A-14 and A-15 apply only to the Series and Golden Furniture Line style Merchandisers.*
2. *Merchandisers equipped with the 2540 or 2505 ACER Coin Mechanism do not have an Indicator Light Assembly nor an Indicator Light Lens.*
14. Disconnect the Indicator Light Assembly from the Indicator Light Lens.
15. Remove eleven attaching Screws, seven Spacer Cups, the Coin Insert Casting, the Indicator Light Lens and the Upper Instruction Panel from the Monetary Compartment. See Figure 4.

B. INSTALLATION OF THE KIT

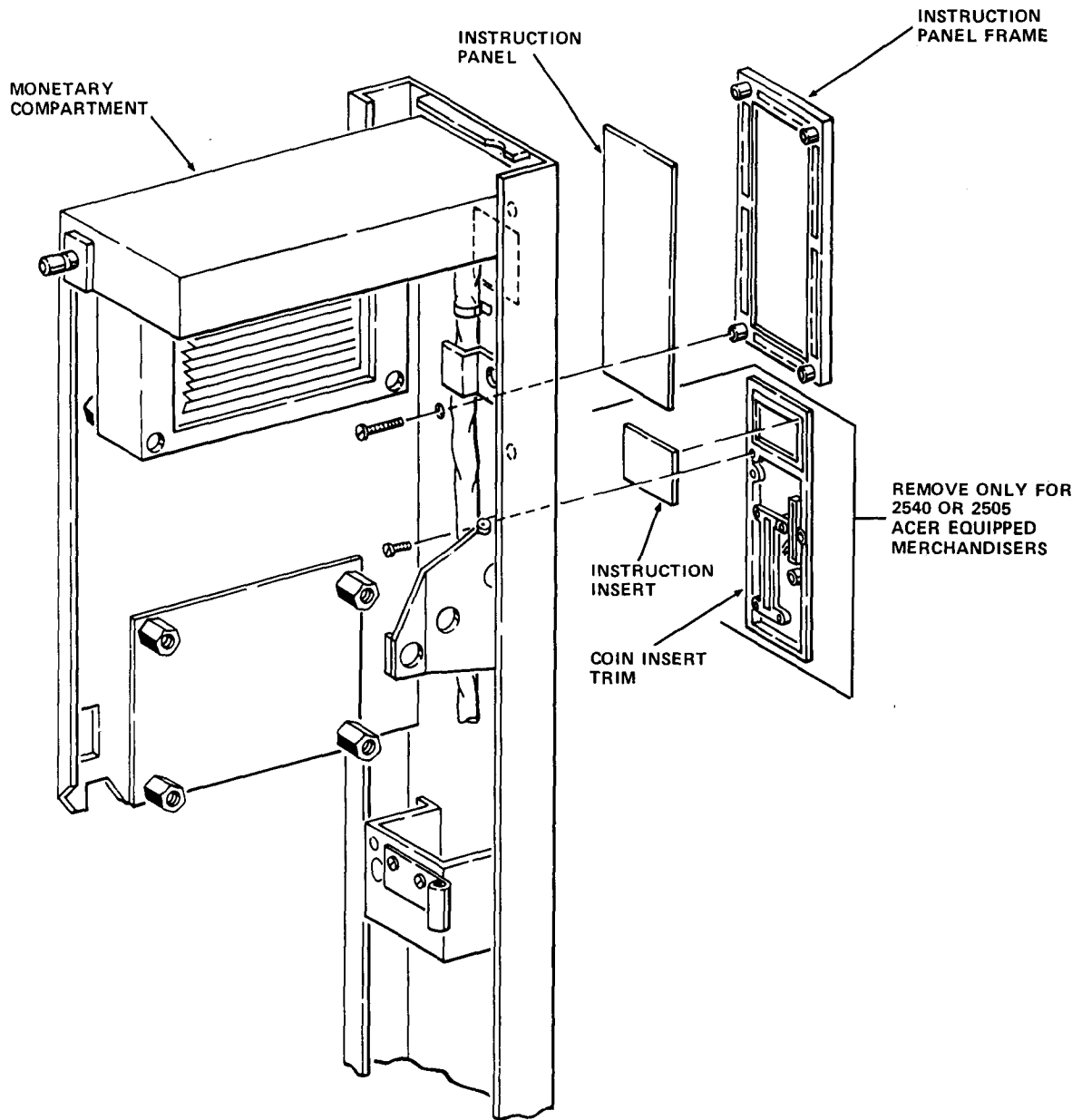
NOTE

1. *Steps B-1 through B-3 apply only to the Series and Golden Furniture Line style Merchandisers.*
2. *The Upper Instruction Panel, part number 417-2656, is used on the Series style Merchandiser. The Upper Instruction Panel, part number 417-2704, is used on the Golden Furniture Line style Merchandiser. See Figure 1 to distinguish between the two Panels.*
3. *Step B-1 applies to Merchandisers which were equipped with the 2540 or 2505 ACER Coin Mechanism only. If the Merchandiser was equipped with a Changemaker, the Indicator Light Assembly furnished in the kit will not be used.*

1. Connect the Indicator Light Assembly included in the Kit, part number 117-2531, to the Monetary Harness. See Figure 5.
2. Install the Indicator Light Lens, part number 610-2133, and the appropriate Upper Instructions Panel, part number 417-2656 or 4172604, on the Monetary Compartment along with the Coin Insert Casting and the attaching parts removed in Step A-15.
3. Connect the Indicator Light Assembly to the Indicator Light Lens.

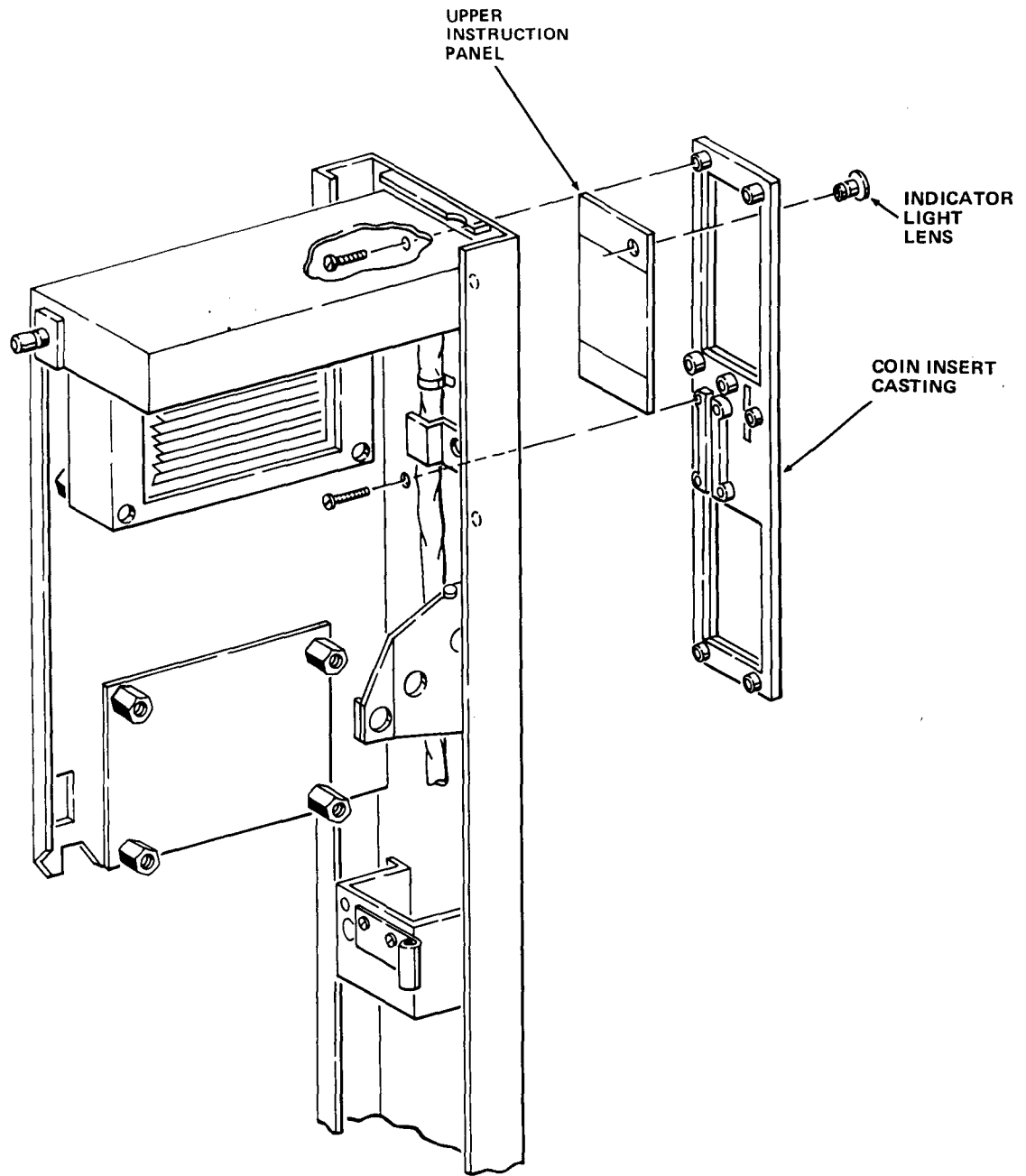
NOTE

1. *Steps B-4 through B-7 apply only to Imperial Crown, Designer Series and Golden II style Merchandisers.*
2. *The Instruction Panel, part number 417-2436, is used on Imperial Crown and Golden II style Merchandisers. The Instruction Panel, part number 417-2437 is used on Designer Series style Merchandisers. See Figure 1 to distinguish between the two Panels.*
3. *Steps B-4, B-5 and B-6 apply only to Merchandisers which were equipped with the 2540 or 2505 ACER Coin Mechanism. If the Merchandiser was equipped with a Changemaker, the Indicator Light Assembly, the Indicator Light Lens and Changer Instruction Insert provided in the kit are not used.*
4. Connect the Indicator Light Assembly included in the kit, part number 117-2531, to the Monetary Harness. See Figure 5.
5. Install on the Monetary Compartment, the Changer Instruction Insert, part number 130-2413, and the Indicator Light Lens, part number 610-2133, both parts included in the kit, along with the Coin Insert Trim and attaching parts removed in Step A-13.



IMPERIAL CROWN
 DESIGNER SERIES AND
 GOLDEN II MERCHANDISERS

FIGURE 3



SERIES AND GOLDEN
FURNITURE LINE
MERCHANTISERS

FIGURE 4

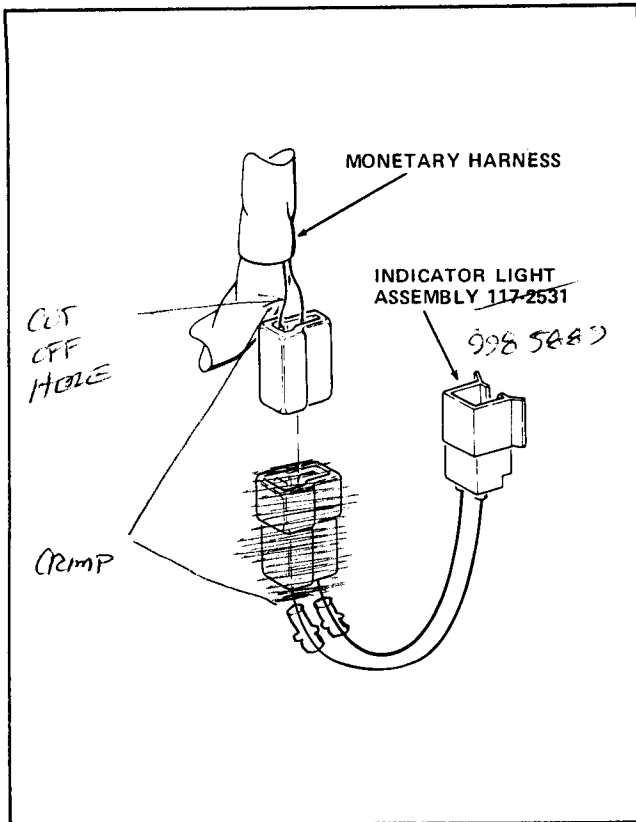


FIGURE 5

6. Connect the Indicator Light Assembly to the Indicator Light Lens.
7. Install the appropriate Instruction Panel, part number 417-2436 or 417-2437, on the Monetary Compartment along with the Instruction Panel Frame and attaching parts removed in Step A-12.
8. Move all the Slide Switches of the Price Board to the 5¢ price position.
9. Place the Conversion Price Board Cover included in the kit, part number 417-2644, over the Price Board Cover as shown in Figure 6 and install one of the Screws removed in Step A-11, in the hole in the lower left corner of the Conversion Price Board Cover.

NOTE

If the Merchandiser is already equipped with the clear Plastic Price Board Cover, skip Step B-10 and proceed to step B-11.

10. Assemble the Plastic Price Board Cover, part number 417-2565, the two Grommets, part number 230-2223, the two Spacers, part number 222-7237, the two Bushings, part number 130-2106, and two Screws, part number 417-2566, as shown in Figure 7. All parts are included in the kit.

11. Install the Plastic Price Board Cover and attaching parts on the Price Board Cover as shown in Figure 6.
12. Install the Conversion Relay P/C Board included in the kit, part number 417-2646, in the Monetary Compartment, attaching with the four Relay Board Spacers removed in Step A-10. See Figure 8.
13. Connect the P/C Board Connector of the Monetary Harness to the Conversion Relay P/C Board. See Figure 8.
14. Attach the Relay Identification Label (clear) included in the kit, part number 417-2650, to the Relay Board Cover, placing the Label over the relay identification marking on the RIGHT. See Figure 8.
15. Attach the Relay Board Cover to the four Relay Board Spacers with the four Screws removed in Step A-8. See Figure 8.
16. Install two blue Relays removed in Step A-6 to the left and center receptacles of the Conversion Relay P/C Board. See Figure 8.
17. Install the clear Relay included in the kit, part number 404-1168, to the right receptacle of the Conversion Relay P/C Board. See Figure 8.
18. Install the P/C Board Connector Retainer, if equipped, on the Relay Board Cover. See Figure 8.
19. Install the Relay Guard removed in Step A-5.
20. Mount the MARS ELECTRONIC™ 10-price Coin Mechanism on the Mounting Panel Assembly included in the kit, part number 417-2610, as follows:
 - a. Adjust the three Screws on the Mounting Panel Assembly to stand off a minimum of 1/8".
 - b. Place the three mounting holes in the back of the Coin Mechanism over the three Screws.
 - c. Tighten the Screws through the access holes in the front of the Coin Mechanism.
 - d. Position the Coin Mechanism Harness so that it is held by the Harness Retainer of the Mounting Panel Assembly as shown in Figure 9.
21. Place the .375 Wire Clamp, part number 141-1141, around the Coin Mechanism Harness as shown in Figure 9 and attach to Mounting Panel Assembly with Screw, part number 9900-104. Both parts are included in the kit.

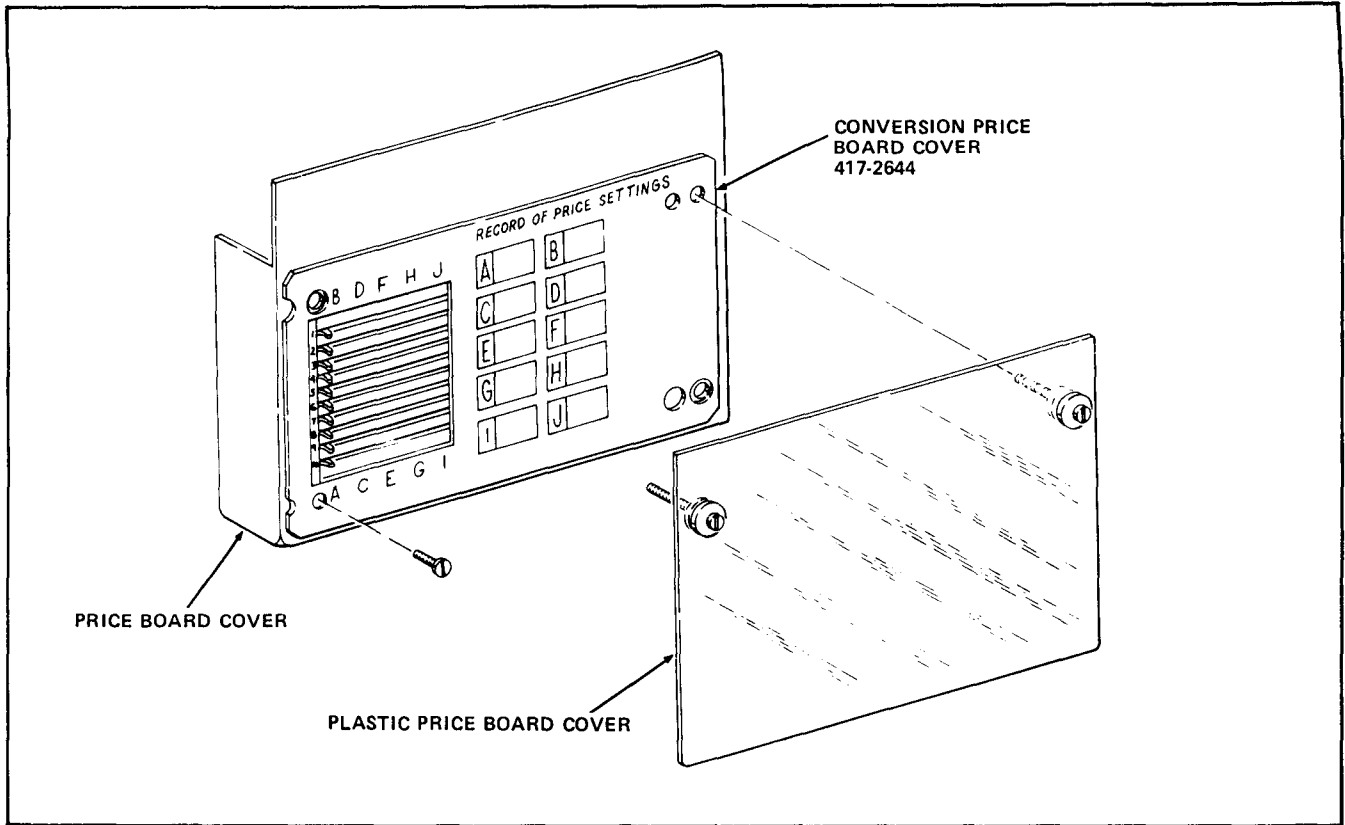


FIGURE 6

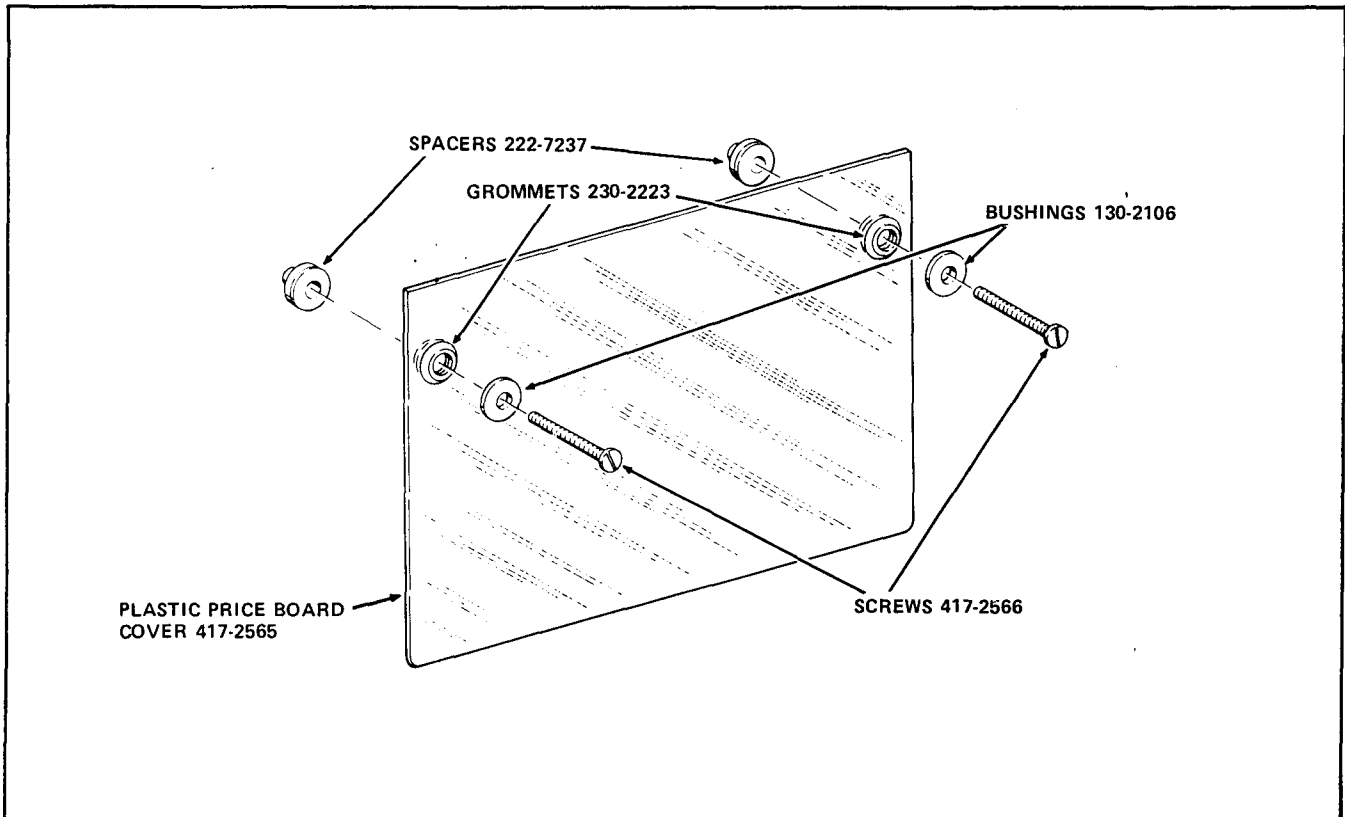


FIGURE 7

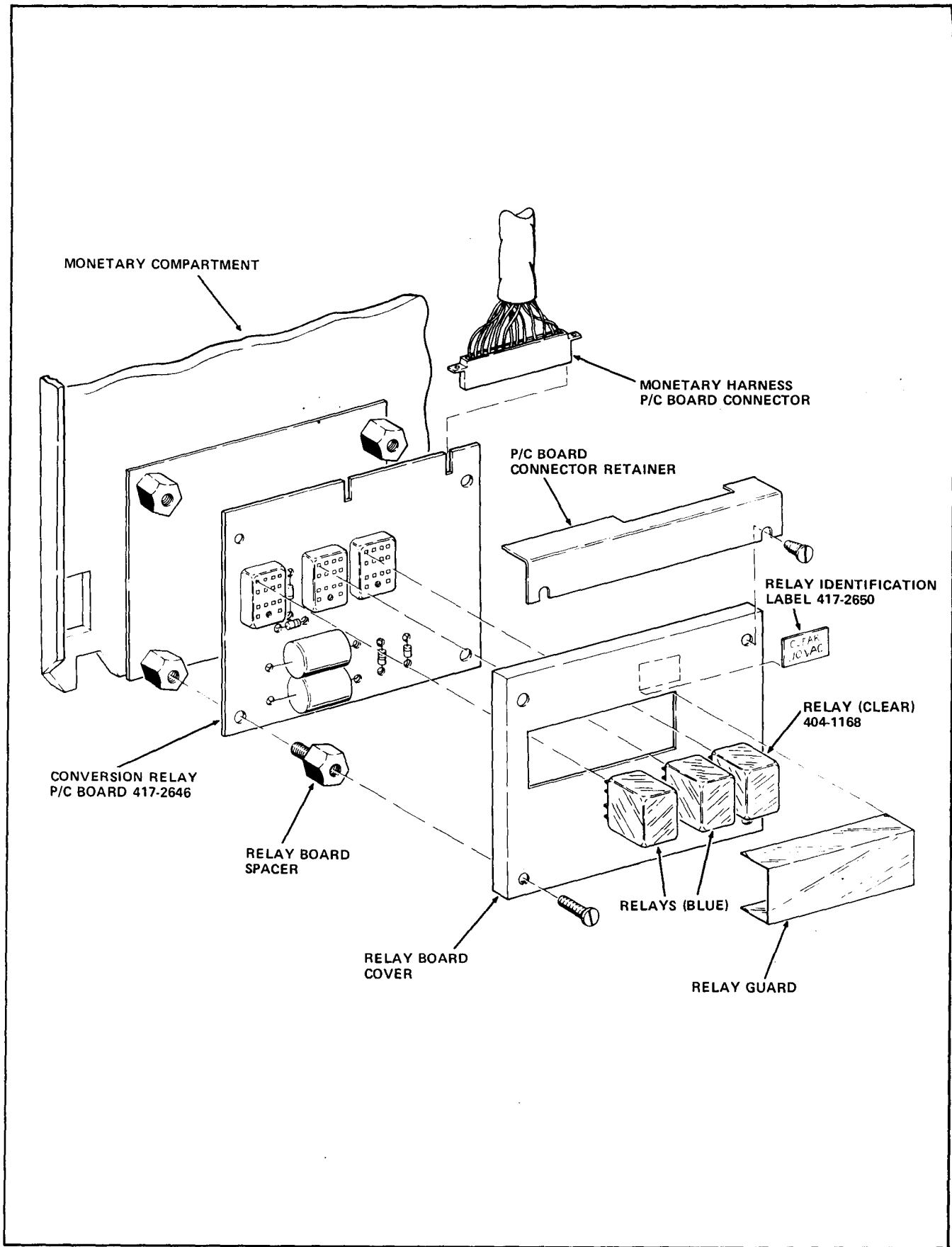


FIGURE 8

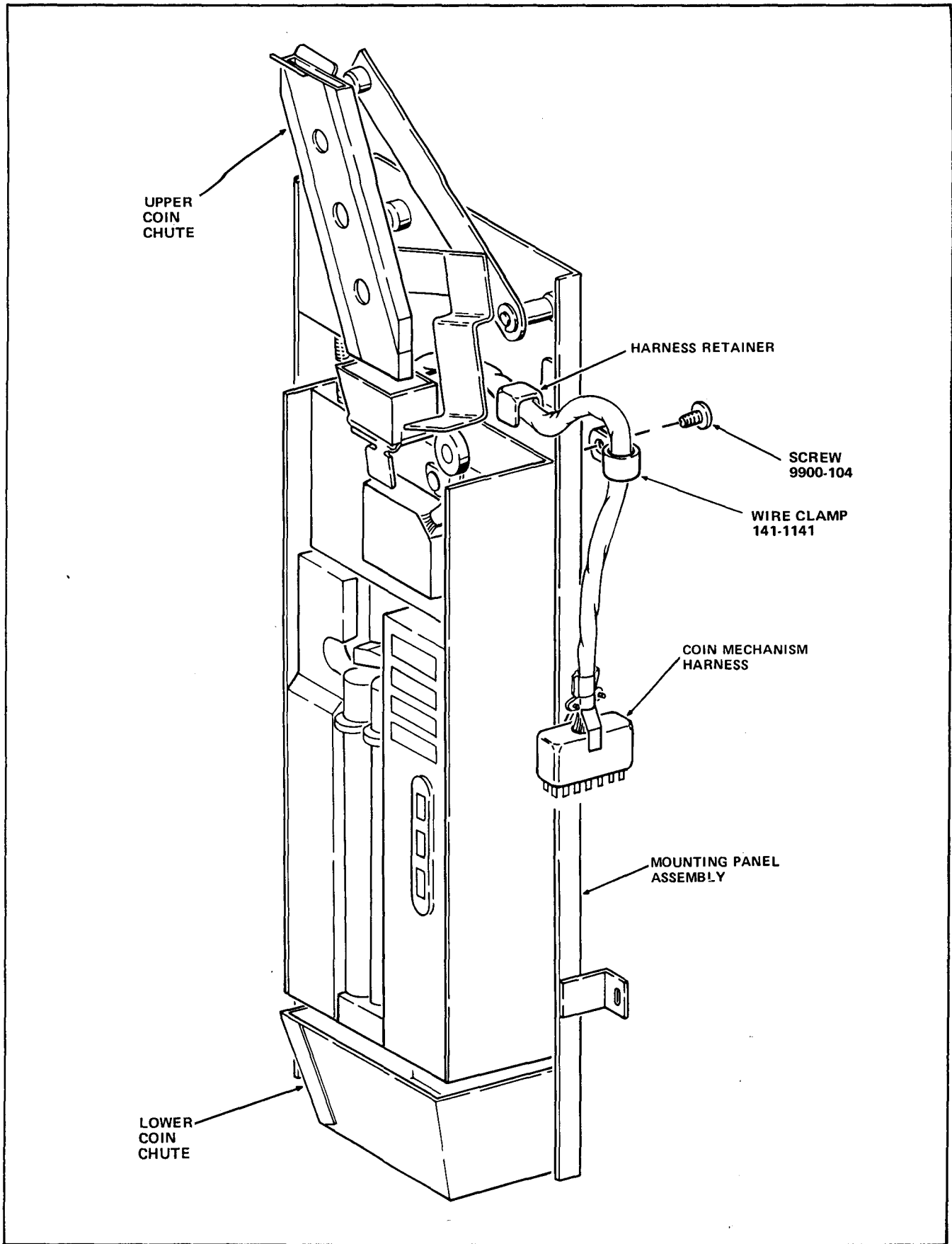


FIGURE 9

22. Install the Mounting Panel and Coin Mechanism in the Merchandiser as follows:
 - a. Remove two attaching Screws and the Upper Coin Chute from the Mounting Panel Assembly. See Figure 9.
 - b. Insert the two hinge pins of the Mounting Panel Assembly in the hinges of the Monetary Compartment.
 - c. Reinstall the Upper Coin Chute and attaching Screws on the Mounting Panel Assembly.

CAUTION

After installing the Coin Mechanism and Mounting Panel Assembly, make sure that the Coin Mechanism Harness does not interfere with the Scavenger Mechanism.

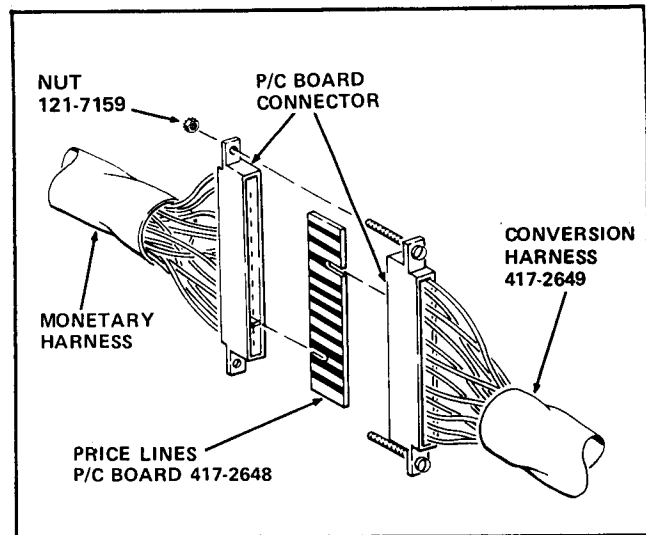


FIGURE 10

23. Fit the Price Lines P/C Board included in the kit, part number 417-2648, into the P/C Board Connector of the Conversion Harness included in the kit, part number 417-2649, and the P/C Board Connector of the Monetary Harness as shown in Figure 10.
24. Connect the two P/C Board Connectors together using the two Nuts included in the kit, part number 121-7159, as shown in Figure 10.
25. Connect the plug of the Coin Mechanism Harness to the matching receptacle of the Conversion Harness. See Figure 11.
26. Connect the 15-circuit plug of the Conversion Harness to the 15-circuit receptacle of the Monetary Harness. See Figure 11.
27. Connect the 3-circuit plug of the Conversion Harness to the 3-circuit receptacle of the Monetary Harness as shown in Figure 11.
28. Remove one Screw attaching the Lower Coin Chute to the Mounting Panel. See Figure 11.
29. Place the .750 Wire Clamp included in the kit, part number 141-1142, around the monetary Harness and the Indicator Light cable of the Conversion Harness as shown in Figure 11.
30. Using the Screw removed in Step 28, attach the No.7 Cable Clamp to the Mounting Panel. See Figure 11.
31. Remove the backing from the Adhesive Clamp included in the kit, part number 720-2056, and, placing the clamp around the P/C Connector cable of the Conversion Harness, attach the clamp to the back of the Mounting Panel. See Figure 11.
32. Place the No. 10 Cable Clamp, part number 424-1250, around the Conversion Harness as shown in Figure 11 and attach to the Mounting Panel with the Screw, part number 9900-023, and Nut, part number 9900-081. All parts included in kit.

33. Move the Vend Service Switch to the ON position.

C. CHECKS AND ADJUSTMENTS

NOTE

The Merchandiser may now be set to vend at any ten different prices between 5¢ and \$3.15 in 5¢ increments. Prices must be set in both the Coin Mechanism and the Merchandiser Price Setting Board. Step C-1 covers setting the prices in the Coin Mechanism. Step C-2 covers setting the prices on the Merchandiser Price Setting Board.

1. On the front of the Coin Mechanism are ten groups of binary price setting switches, each group consisting of six switches. See Figure 12. Each group of switches determines one price setting. The vend price for each group of switches is equal to the sum of switches in the "ON" position. See Figure 13. Set the vend prices in the Coin Mechanism as follows:
 - a. Move all 6 switches of the desired price setting Switch group to the "OFF" position. See Figure 12.
 - b. Move the appropriate switches to the "ON" position until the SUM of the switches in the "ON" position is equal to the desired vend price. See Figures 12 and 13.
 - c. Repeat Step 1-a and 1-b for all prices to be set.
 - d. Located on the Merchandiser Price Setting Board is a Record of Price Settings with ten squares, lettered A through J, arranged to correspond to the ten price setting switch groups. Mark all prices just set in the appropriate squares of the Record of Price Settings, using a non-abrasive marker. See Figure 14.

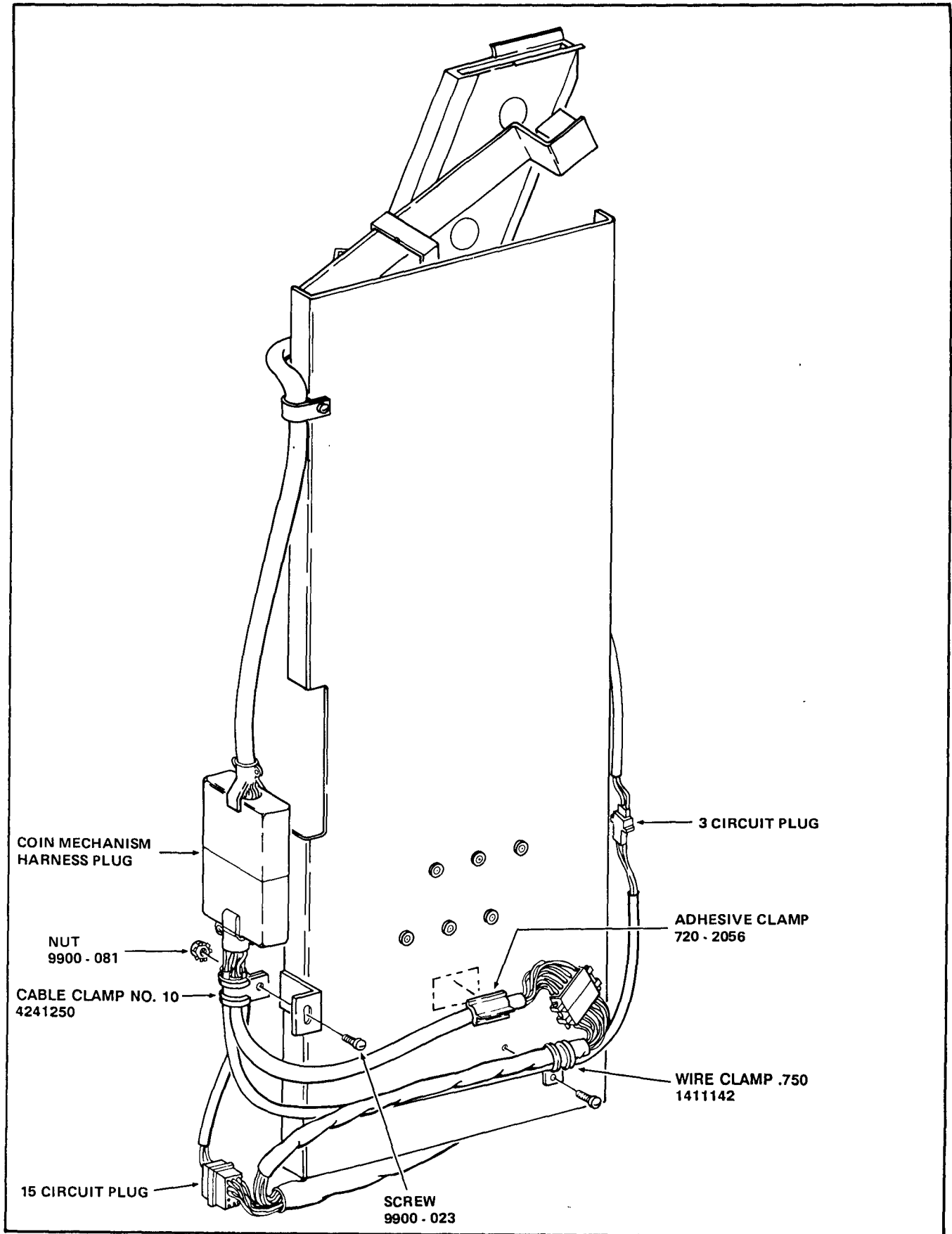


FIGURE 11
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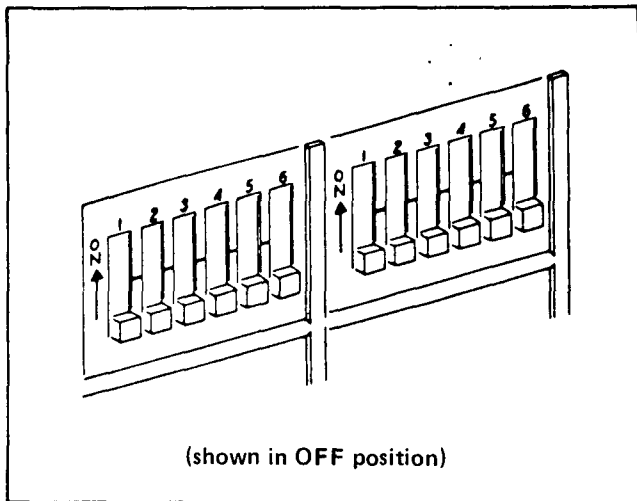


FIGURE 12

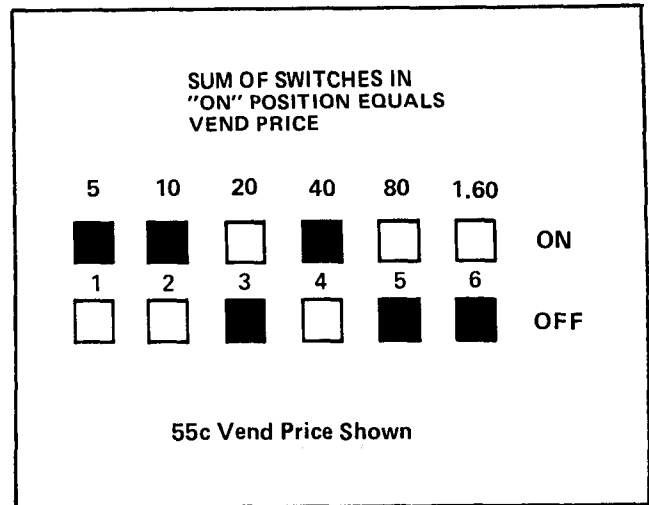


FIGURE 13

2. The Price Setting Board has down its left side the numbers 1 through 10 corresponding to the numbers one (top) through ten Drums. Horizontally, the Price Setting Board is labeled with the letters A through J, corresponding to the ten price settings marked in the Record of Price Setting. Set the Drum prices as follows:

- a. Move the slide for Drum number one horizontally to the desired price setting, A through J. See Figure 14.
- b. Repeat Step 2-a for each remaining Drum. See Figure 14.

3. Check to see that the Lower Coin Chute (See Figure 9) is properly aligned with the Coin Mechanism. If the Chute is not aligned, adjust as follows:

- a. Facing the rear of the Mounting Panel Assembly, loosen the two Screws attaching the Lower Coin Chute to the Mounting Panel Assembly.
- b. Slide the Coin Chute horizontally until it is properly aligned with the Coin Mechanism.
- c. Tighten the two attaching Screws.

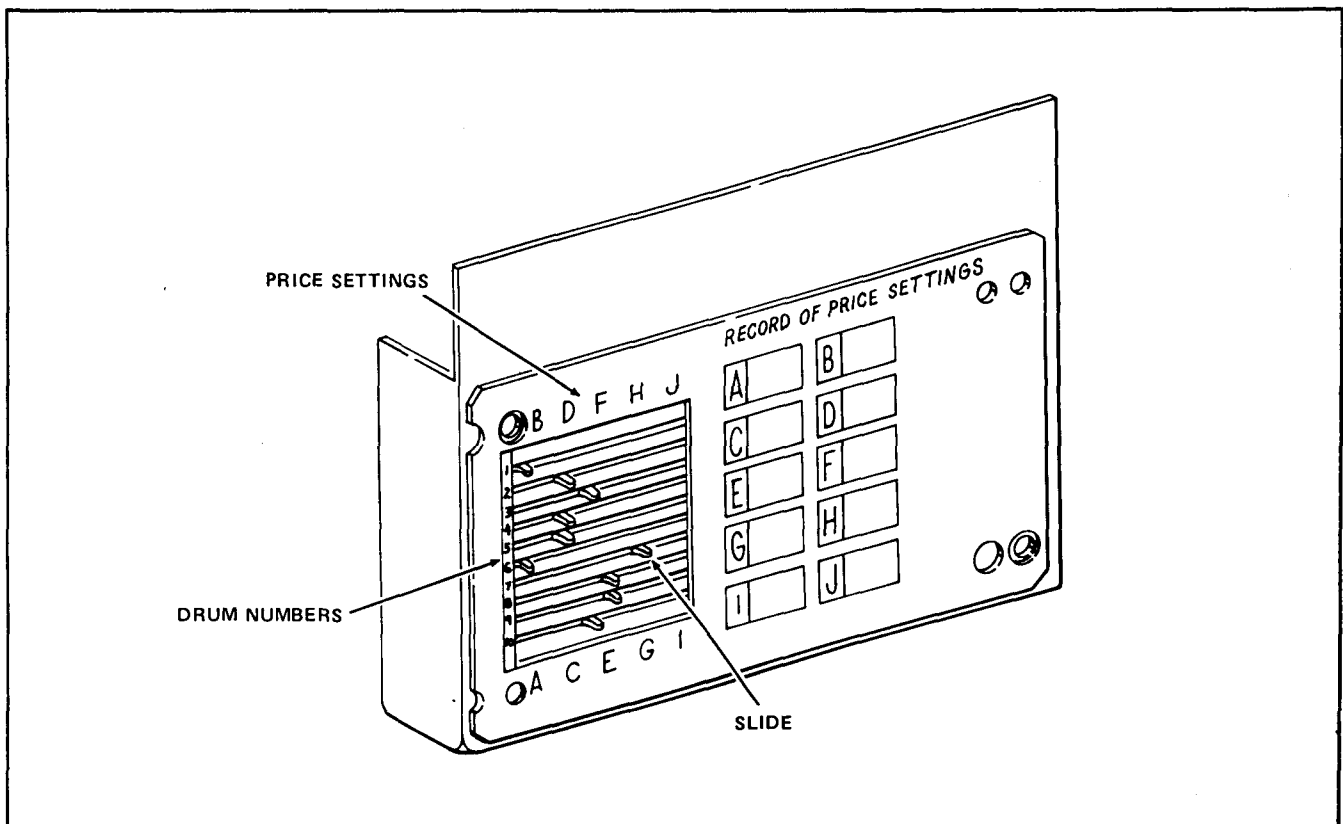


FIGURE 14

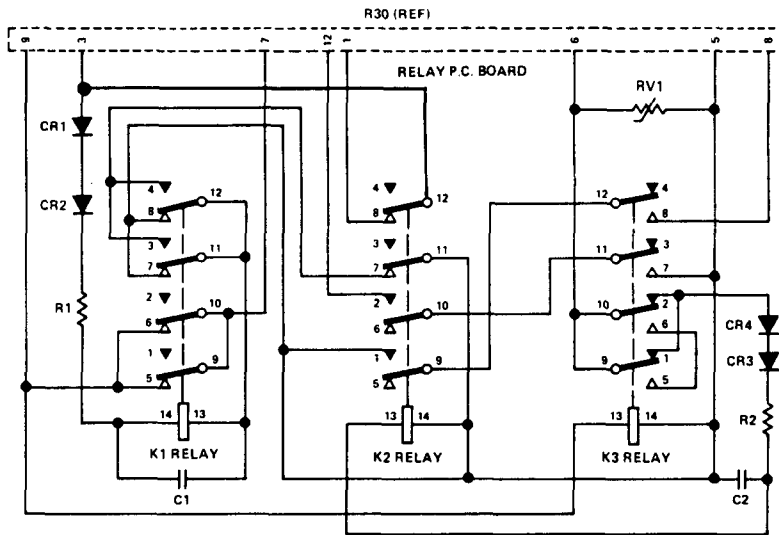


FIGURE 15

NOTE

Figure 15 is the Wiring Diagram for the Conversion Relay P/C Board included in the kit.

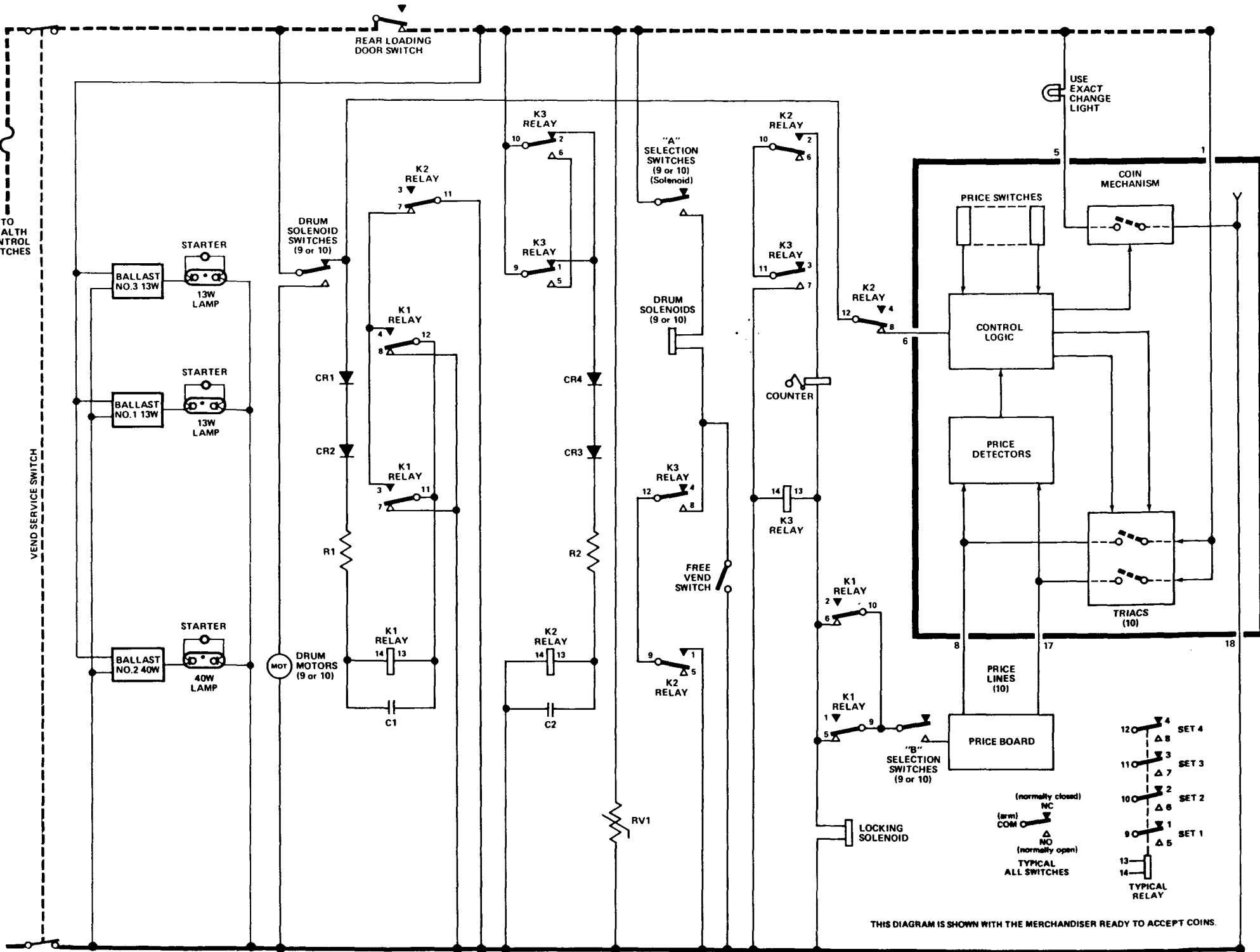
Figure 16 is the Vend Circuit Schematic Diagram for a Mars-equipped Merchandiser.

4A MTH
VEND FUSE

TO HEALTH
CONTROL SWITCHES

FIGURE 16
15 of 15

VEND SERVICE SWITCH



THIS DIAGRAM IS SHOWN WITH THE MERCHANDISER READY TO ACCEPT COINS.

PART NO. 9985886		PART NAME STRAIN RELIEF - RIGHT ANGLE			DATE 2-17-92		-TOLERANCES- UNLESS OTHERWISE SPECIFIED FRACTIONAL $\pm \frac{1}{4}$ DECIMAL $\pm .005$ ANGLES $\pm \frac{1}{2}^\circ$ CONCENTRICITY T.I.R. .010 DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED DO NOT SCALE	DATE 2-25-92	REVISION ECO NO. M-4746	CHECKED BY DI
NO. REQ'D. PER MACHINE	MATERIAL SEE NOTE			FINISH X						
NATIONAL VENDORS® 5055 NATURAL BRIDGE AVE. A DIVISION OF UMC INDUSTRIES, INC. ST. LOUIS, MO. 63115		DRAWN BY JW	DESIGN CHECKED BY DcL	DRAWING CHECKED BY	SCALE 2:1					

QTY.	ASSEM.

NOTE:
RIGHT ANGLE HEYCO
PART NO. SR-11-2
D. J. CAMPBELL CO., INC.
CABLE SIZE .325-.355

