

KIT PART NUMBER 4731313

INSTRUCTIONS FOR INSTALLING A HOT CHOCOLATE KIT IN A REFERESHTRON 3 MERCHANDISER

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

Read these instructions carefully before installing the kit.  
Retain these instructions for part numbers and for future reference.

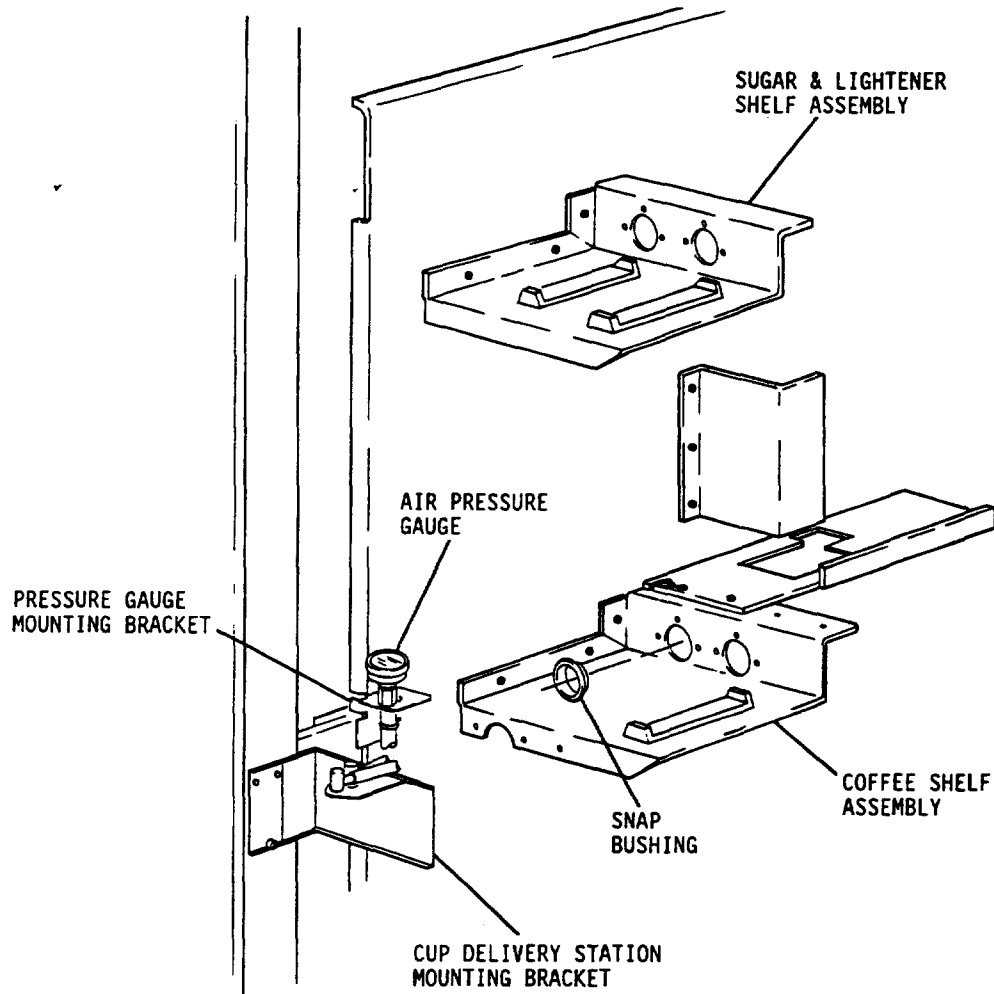
This kit contains the following:

PART NUMBER	DESCRIPTION	QUANTITY
2366055	Speed Clip, Compression Ring	2
3106155	Bushing, Snap	1
3157060	Screw, #8-32 x .31 Hex W/Hd - T/F	5
3617032	Locator, Canister, Foreign	1
3617033	Vent Assembly	1
4730010	Instructions, Installation	1
4731059	Motor Assembly, 200 RPM	1
4731105	Shelf, Canister	1
4731285	Bracket, Pressure Gauge	1
4731306	Harness, Hot Chocolate	1
4731307	IC, Programmed, R3 7 oz.	1
4731308	IC, Programmed, R3 8 oz.	1
4731311	Canister Assembly, Chocolate	1
4732052	Label, Hot Chocolate	1
4751027	Bracket, Mounting, Bowl	1
4751029	Shelf, Canister	1
6107194	Seal, Bushing	1
6107195	Housing, Impeller	1
6107197	Impeller	1
6107198	Spring Assembly, Thrust, Impeller	1
6111054	Clamp, Hose 19/32	1
6117010	Spout, Dispensing	1
6117011	Caplug, Spout	1
6137074	"CHOCOLATE" Label	1
6137076	"SUGAR" Label	1
6137077	"LIGHT" Label	1
6137114	Funnel, Impeller	1
6157054	Motor and Plate Assembly, Chocolate Whipper	1
6157057	Screw, Shoulder	4
6207003	Retainer, Canister, Rght Hand	1
6508053	Tube, .38 ID x .56 OD x 8.25 long	1
9900138	Screw, #8-32 x 1/4 PHS	3
9900081	Nut, #8-32 W L/W	2
9900168	Screw, #8-32 x 3/8 - THS	2

## REMOVING THE OLD PRESSURE GAUGE MOUNTING BRACKET

Refer to Figure 1.

1. Disconnect the tube from the bottom of the air pressure gauge.
2. Remove the pressure gauge.
3. Remove the screw that secures the bracket to the coffee module panel.
4. Remove the bracket.



**FIGURE 1. Original Assembly Locations**

## INSTALLING THE NEW SUGAR AND LIGHTENER SHELF

Refer to figure 2.

1. Remove the sugar and lightener canisters.
2. Disconnect the vent hose from the sugar and lightener vent assembly.
3. Disconnect the water inlet tube from the vent assembly.
4. Remove the vent assembly.
5. Remove the two knurled screws that secure the mixing bowl to the mounting bracket.

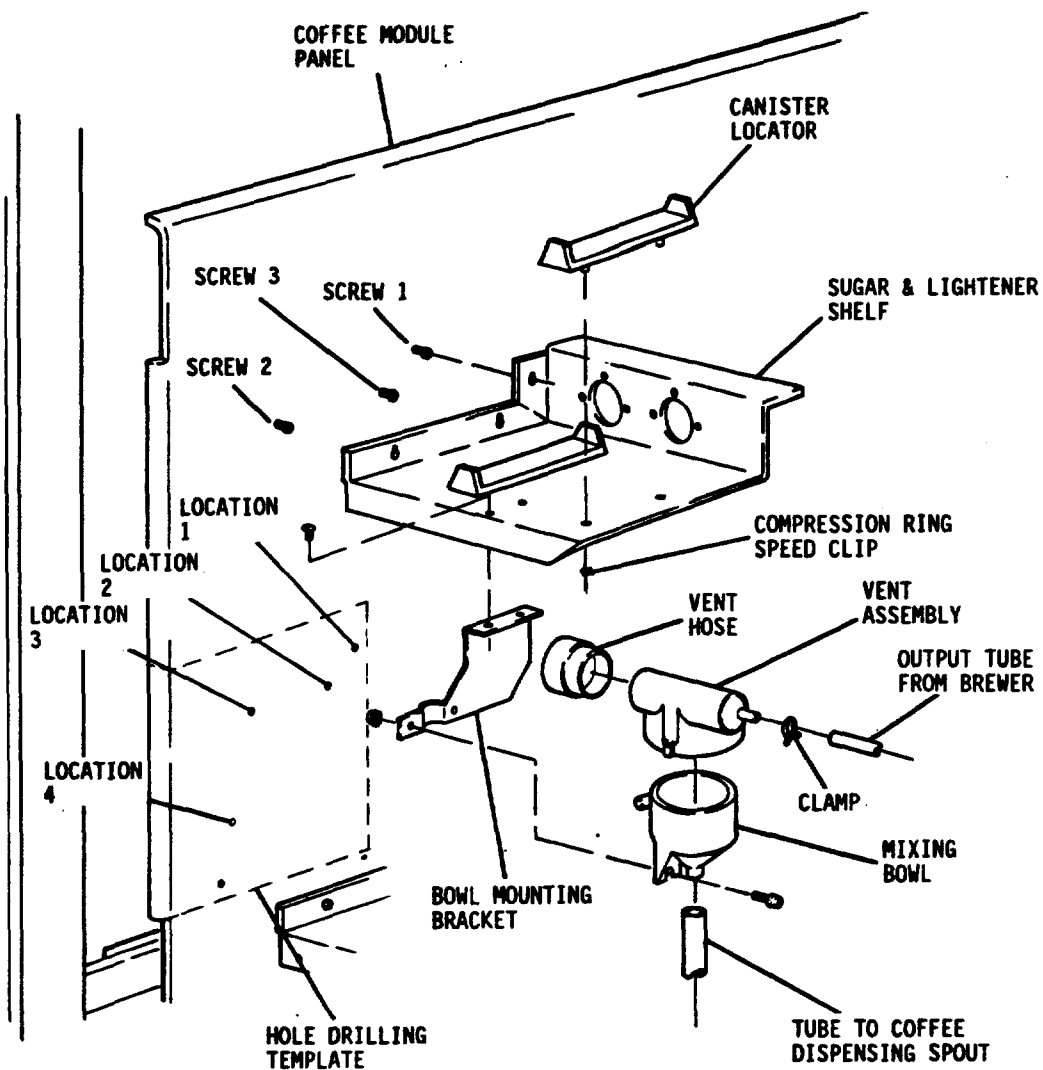


FIGURE 2. Assembly of New Sugar & Lightener Shelf

6. Remove the sugar and lightener mixing bowl.
7. Disconnect the sugar and lightener dispenser motors from the coffee module harness.
8. Remove the screw and clamp that secure the "Y" and tube assembly to the front right corner of the sugar and lightener canister shelf.
9. Loosen screws 1 and 2 and remove screw 3.
10. Lift up and remove the shelf and motor assembly.
11. Remove the lightener motor from the old shelf and install it on the new shelf.
12. Remove the sugar motor from the old shelf and install it on the new shelf.
13. Secure the bowl mounting bracket to the new shelf. Use the #8-32 x 3/8 - THS screws included in the kit.
14. Remove the sugar canister retainer from the old shelf and install it on the new shelf.
15. Remove the lightener canister retainer from the old shelf and install it on the new shelf.

16. Remove the sugar canister locator after removing the two compression ring speed clips that secure it to the old shelf. Install this canister locator on the new shelf.
17. Remove the lightener canister locator after removing the two compression ring speed clips that secure it to the old shelf. Install the canister locator on the new shelf.
18. Place the new shelf assembly over the two mounting screws on the coffee module panel and lower into position.
19. Replace screw 3 and tighten all three screws.
20. Secure the "Y" and tube assembly to the new shelf. Position the assembly in a location similar to the original location.
21. Reconnect the sugar and lightener motors to the coffee module harness.
22. Secure the mixing bowl to the new bowl mounting bracket.
23. Install the new vent assembly on the mixing bowl.
24. Connect the vent hose to the new vent assembly.
25. Connect the tube from the output of the brewer to the new vent assembly. Secure the tube to the vent assembly using the clamp removed previously.

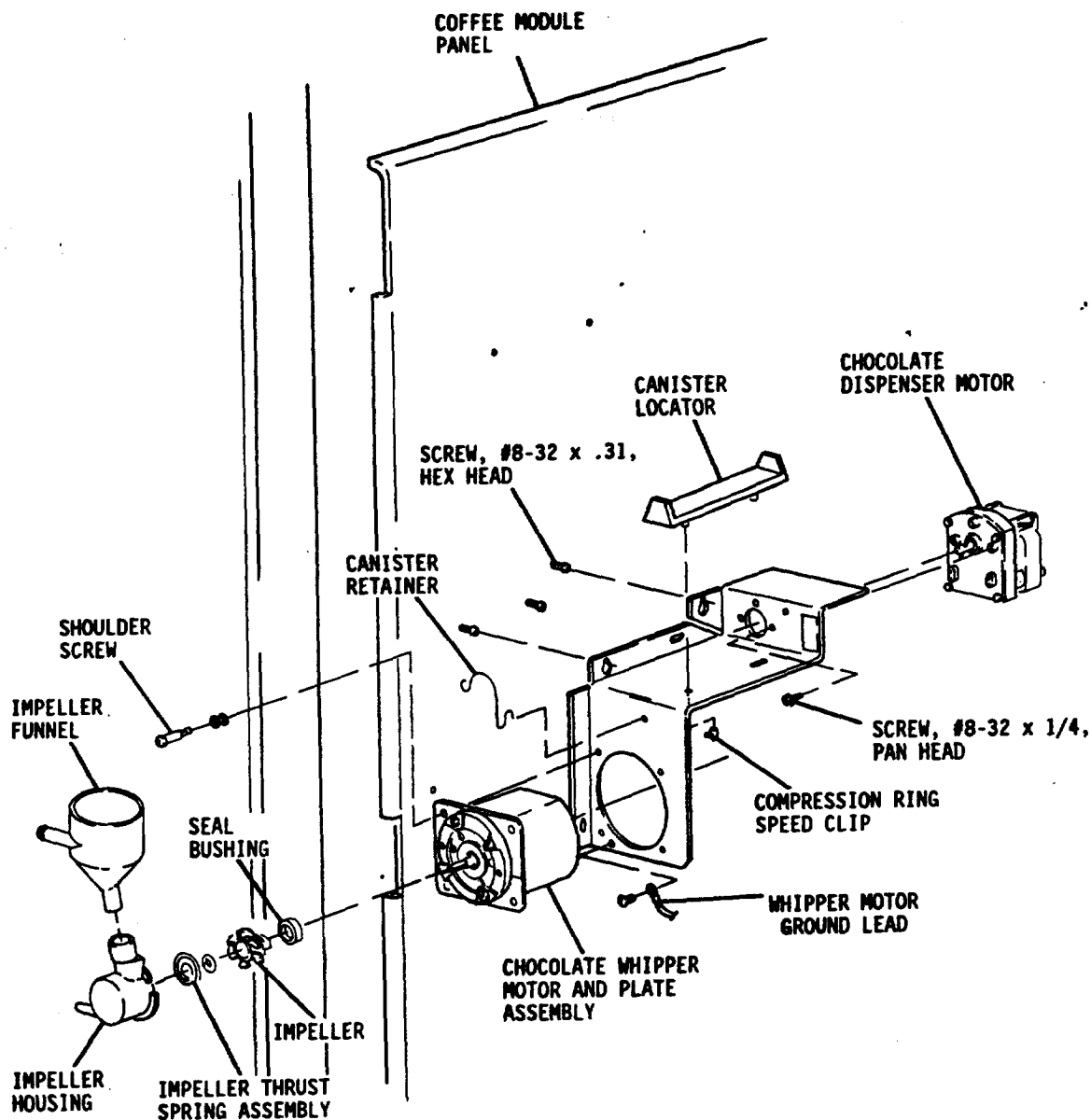
### ASSEMBLING THE HOT CHOCOLATE SHELF UNIT

Refer to Figure 3.

1. Secure the chocolate dispenser motor to the hot chocolate shelf. Use the three #8-32 x 1/4 pan head screws included in the kit.
2. Secure the canister locator to the shelf. Use the two compression ring speed clips included in the kit.
3. Secure the whipper motor and plate assembly to the shelf. Use the four shoulder screws included in the kit.
4. Install the seal bushing, impeller, impeller thrust spring assembly and the impeller housing as shown.
5. Install the canister retainer in the position shown.
6. Insert the impeller funnel in the top of the impeller housing.

### INSTALLING THE HOT CHOCOLATE SHELF

1. Tape the hole drilling template to the coffee module panel. Place it in the position shown. Refer to Figure 2.
2. Center punch the panel at the four hole locations marked on the template.
3. Drill a 9/64 (.1406) hole at each location.
4. Remove the tape and the template.
5. Carefully examine the cabinet and remove all of the metal chips created by the drilling.
6. Partially install screws at locations 1 and 3 as shown. Use two of the #8-32 x .31 hex, washer head, thread forming screws.
7. Mount the chocolate dispenser motor as shown.
8. Mount the whipper motor assembly as shown.
9. Connect the hot chocolate kit harness to the whipper motor and to the chocolate dispenser motor.
10. Secure the whipper motor ground lead to the chocolate shelf at the location shown in Figure 3. Use one of the #8-32 x .31 Hex W/Head screws.
11. Place the chocolate shelf over the two mounting screws and lower into position. Refer to Figures 2 and 3.
12. Install the remaining #8-32 x .31 Hex W/Head screw at location 2.
13. Tighten all four shelf mounting screws.



**FIGURE 3. Assembly of Hot Chocolate Shelf Module**

**CONNECTING THE HOT CHOCOLATE KIT HARNESS**

1. Disconnect the coffee and hot water dispensing spouts from the cup delivery station mounting bracket assembly.
2. Remove the cup delivery station.
3. Remove the cup delivery station mounting bracket assembly.
4. Disconnect all tubes from the brewer.
5. Remove the brewer from the cabinet.
6. Install the snap bushing in the large hole to the left of the coffee dispenser motor.

### **WARNING**

**Disconnect the merchandiser from its power source before you complete the rest of this installation procedure. Failure to do so may result in personal injury.**

7. One of the remaining ends of the hot chocolate harness has only one connector. Feed this connector through the hole with the new bushing.

### **NOTE**

The coffee module harness was designed to accommodate a second brewed selection. This second selection has never been used. As a result, there is an unused connector behind the coffee shelf.

8. Join the unused connector with the end of the harness which was passed through the coffee shelf in step 7.

### **NOTE**

There is an orange and a yellow lead in the remaining branch of the harness. Each of these leads ends in two connectors.

### **WARNING**

**Allow the water tank to cool down before you complete the harness installation. Failure to do so may result in personal injury.**

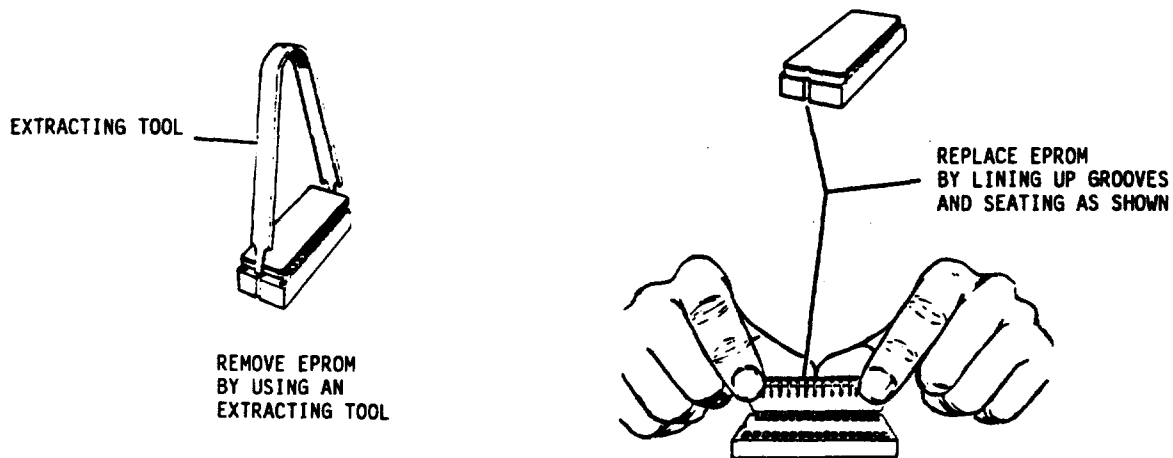
9. Disconnect one of the leads from the top water valve.
10. Join this lead to the mating connector for the wire of the same color in the hot chocolate harness.
11. Join the other connector for this wire color to the available terminal on the water valve.
12. Repeat steps 9-11 for the other lead connected to the top water valve.
13. Replace the brewer.
14. Replace the cup delivery compartment mounting bracket assembly.

## INSTALLING THE NEW EPROM

### CAUTION

Electro-Static-Discharge control procedures should be followed when handling and installing the EPROM. Failure to do so may damage the EPROM.

1. Loosen the screw to the left of the service panel.
2. Slide the service panel forward.
3. Remove the two outer screws on the front of the panel.
4. Remove the two screws from the back of the panel.
5. Carefully remove the service panel cover.
6. Remove EPROM U6.



### NOTE

Two EPROMS are supplied with this kit. Part number 4731307 is used for 7 oz. cup applications. Part number 4731308 is used for 8.25 oz. cup applications.

7. Install the new EPROM for the desired cup size.
8. Carefully replace the service panel cover and secure it with the four screws removed previously.
9. Slide the service panel back into place and secure by tightening the screw on the left side.

## INSTALLING THE NEW PRESSURE GAUGE BRACKET

1. Install the new pressure gauge bracket in the place previously occupied by the old bracket. Use the screw previously removed to secure the new bracket to the coffee module panel.
2. Insert the gauge through the front hole in the bracket.
3. Rotate the gauge until the face of the dial is in an easy to read position.
4. Reconnect the vacuum tube to the bottom of the gauge. Secure the tube with the clamp used previously.

## COMPLETING THE INSTALLATION

1. The tube from the top water valve should be routed to the chocolate impeller funnel.

### **CAUTION**

The tube must be routed so there are no traps which could retain water between vend cycles.

2. Cut the tube to length as required by the routing.
3. Slide the hose clamp over the free end of this tube.
4. Connect the tube to the funnel and slide the clamp into position so the tube is held in place.
5. A length of tubing is included in the kit. Connect one end of this tube to the bottom of the chocolate impeller housing.
6. Connect the other end of this tube to the dispensing spout included in the kit.
7. Install this dispensing spout in the dispensing spout mounting bracket.
8. Install the coffee dispensing spout in the bracket also.
9. Install the spout caplug in the top of the hot chocolate dispensing spout.
10. Connect the brew water tube to the top of the brew barrel.
11. Connect the vacuum tube to the top of the brew barrel.
12. Replace the cup station.
13. Install the *SUGAR* and *LIGHT* labels on the new sugar and lightener shelf. Use the old shelf as a guide for placing these labels on the new shelf.
14. Similarly, install the *CHOCOLATE* label on the hot chocolate shelf.
15. Install the *HOT CHOC* label on the front of the door. It should be placed over the words "HOT WATER".
16. Load the canisters with the appropriate products and place them on their shelves.



**SETTING DRY INGREDIENT TIMES**

The amount of dry ingredient dispensed is controlled by using the DIP switches on the service panel. The switches control the amount of time that the dispensing motors operate. The amount of ingredient dispensed increases as the time increases. Different brands of ingredient require different amounts to produce the desired taste. Therefore it is necessary to experiment in order to identify the best time for your installation. For both of the cup sizes, each ingredient has a set of four times. The correct switch settings for these times are shown in the tables that follow.

**7 oz CUP INGREDIENT TIMES**

		SWITCH 1	
		UP	DOWN
SWITCH 2	UP	2.00	2.50
	DOWN	2.35	2.70

**8.25 oz CUP INGREDIENT TIMES**

		SWITCH 1	
		UP	DOWN
SWITCH 2	UP	2.50	2.90
	DOWN	2.70	3.20

**CHOCOLATE SWITCH 3**

		SWITCH 3	
		UP	DOWN
SWITCH 4	UP	2.70	4.50
	DOWN	2.90	5.30

**CHOCOLATE SWITCH 3**

		SWITCH 3	
		UP	DOWN
SWITCH 4	UP	3.10	5.30
	DOWN	3.35	6.20

**SUGAR SWITCH 5**

		SWITCH 5	
		UP	DOWN
SWITCH 6	UP	1.50	1.95
	DOWN	1.65	2.30

**SUGAR SWITCH 5**

		SWITCH 5	
		UP	DOWN
SWITCH 6	UP	1.50	1.95
	DOWN	1.65	2.30

**LIGHTENER SWITCH 7**

		SWITCH 7	
		UP	DOWN
SWITCH 8	UP	1.60	2.35
	DOWN	1.95	2.70

**LIGHTENER SWITCH 7**

		SWITCH 7	
		UP	DOWN
SWITCH 8	UP	1.60	2.35
	DOWN	1.95	2.70

### AIR COMPRESSOR TIME

The air compressor operating cycle time is now fixed at 10 seconds.

### SETTING WATER VOLUME

The water valves remain open for a fixed amount of time. This time is controlled by the software. The volume can be adjusted within a narrow range by adjusting the water valve. Refer to "Adjustment of the In-Cup Water and Coffee Beverage Throw" in the REFRESHTRON 3 Set-Up Manual. Water volume should be set as follows:

	CUP SIZE	
	7 oz	8.25 oz
COFFEE	165-175 ml	195-205 ml
CHOCOLATE	140-150 ml	165-205 ml

### TEST THROW PROCEDURE FOR CHOCOLATE INGREDIENT AND CHOCOLATE WATER

Two of the membrane switches on the service panel have new functions.

- \* The *HOT WATER* switch is now used to test the volume of water dispensed for hot chocolate.
- \* The *DECAF PRODUCT* switch is now used to test the throw weight of the chocolate ingredient.

### SETTING THE HOT CHOCOLATE PRICE

Follow the price setting procedure in the REFRESHTRON 3 Set-Up Manual. Use G5 as the selection number for hot chocolate.

# HOLE DRILLING TEMPLATE

HOLE LOCATION  
NUMBER 1



HOLE LOCATION  
NUMBER 3



HOLE LOCATION  
NUMBER 2



USE A 9/64 DRILL BIT FOR ALL HOLES

FOLD UNDER ALONG THIS LINE

HOLE LOCATION  
NUMBER 4



CENTER OVER HOLE USED TO SECURE  
PRESSURE GAUGE MOUNTING BRACKET  
TO THE COFFEE MODULE PANEL



CUT ALONG THIS LINE

	SECURED TO	WITH	QTY
Motor & Plate Assembly	Chocolate Canister Shelf	615 7057	4
Chocolate Dispenser Motor	Chocolate Canister Shelf	990 0138	3
Y" cond Tube Assembly and Clamp	Sugar & Lighter Shelf	Screw previously removed 1451097	1
Sugar & Lighter Shelf	Coffee Module Panel	Screws previously removed	3
Air pressure Gauge mounting bracket	Coffee module Panel	Screw previously removed.	1
Chocolate Canister Shelf	Coffee module Panel		
Bowl Mounting Bracket	Sugar & Lighter Shelf		
Sugar & Lighter Bowl	Bowl Mounting Bracket	Screws previously removed 220 6028	2
Foreign Canister Locator	Chocolate Canister Shelf	2366055	2

	SECURED TO	WITH	QTY
Previously Removed Foreign Canister Locators	Sugar & Lighter Shelf	Speed clips previously removed.	4
Chocolate Canister	Chocolate Shelf	Rit Canister Retainer 620 7003	1
Sugar Canister Lighter Canister	Sugar & Lighter Shelf	Canister retainers previously removed	2

Received from Bob G.  
10-18-89

4731307

FIXED DRY PRODUCT TIMES SET BY DIP SWITCHES

BOTH SWITCHES UP = MIN TIME  
LEFT DOWN, RIGHT UP = 3RD TIME

LEFT UP, RIGHT DOWN = 2ND TIME  
BOTH SWITCHES DOWN = MAX TIME

~~COFSET EQU \$80  
CHOCSET EQU \$84  
SUGSET EQU \$88  
LHTSET EQU \$8C~~

~~SWITCHES 1 & 2  
SWITCHES 3 & 4  
SWITCHES 5 & 6  
SWITCHES 7 & 8~~

140-150 ml  
Water

~~ORC \$80~~

~~FCB 40, 47, 50, 54  
FCB 54, 53, 90, 106  
FCB 30, 33, 39, 46  
FCB 32, 37, 47, 54~~

~~COFF TIMES = 2.00, 2.35, 2.50, 2.70  
CHOC TIMES = 2.70, 2.90, 4.50, 5.30  
SUG TIMES = 1.50, 1.65, 1.95, 2.30  
LHT TIMES = 1.60, 1.95, 2.35, 2.70~~

*ORC* D,U U,D D,D

*Give times for settings: different products will require  
different weights for desired taste*

4731308

FIXED DRY PRODUCT TIMES SET BY DIP SWITCHES

BOTH SWITCHES UP = MIN TIME  
LEFT DOWN, RIGHT UP = 3RD TIME

LEFT UP, RIGHT DOWN = 2ND TIME  
BOTH SWITCHES DOWN = MAX TIME

~~COFSET EQU \$80  
CHOCSET EQU \$84  
SUGSET EQU \$88  
LHTSET EQU \$8C~~

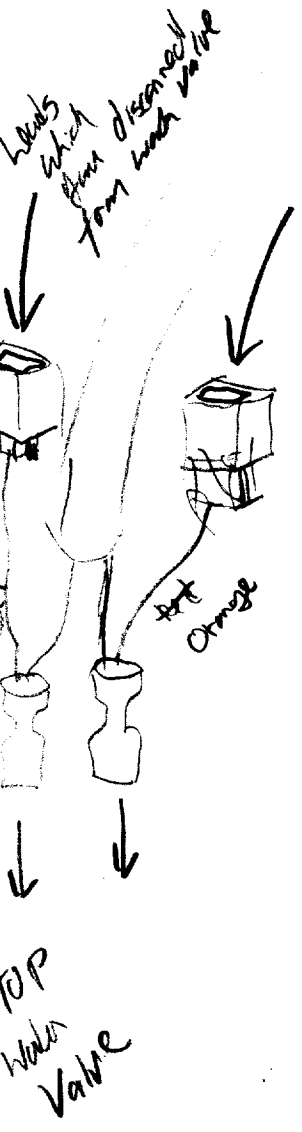
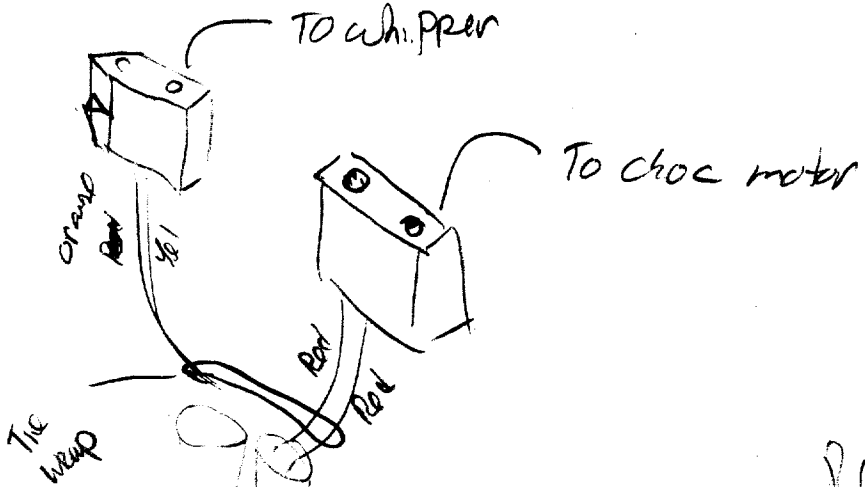
~~SWITCHES 1 & 2  
SWITCHES 3 & 4  
SWITCHES 5 & 6  
SWITCHES 7 & 8~~

165-175 ml  
Water

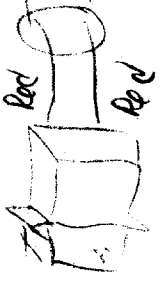
~~ORC \$80~~

~~FCB 50, 54, 58, 64  
FCB 62, 67, 106, 124  
FCB 30, 33, 39, 46  
FCB 32, 37, 47, 54~~

~~COFF TIMES = 2.50, 2.70, 2.90, 3.20  
CHOC TIMES = 3.10, 3.35, 5.30, 6.20  
SUG TIMES = 1.50, 1.65, 1.95, 2.30  
LHT TIMES = 1.60, 1.95, 2.35, 2.70~~

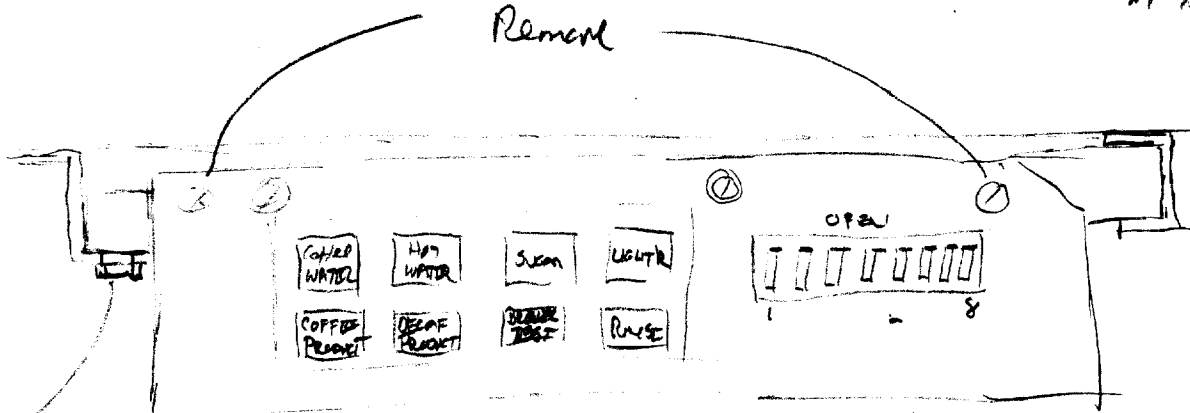


Feed - through oblong hole hole



TO Decat Connector  
which is currently unused

③ Remove  
④ Remove 2 screws in Back



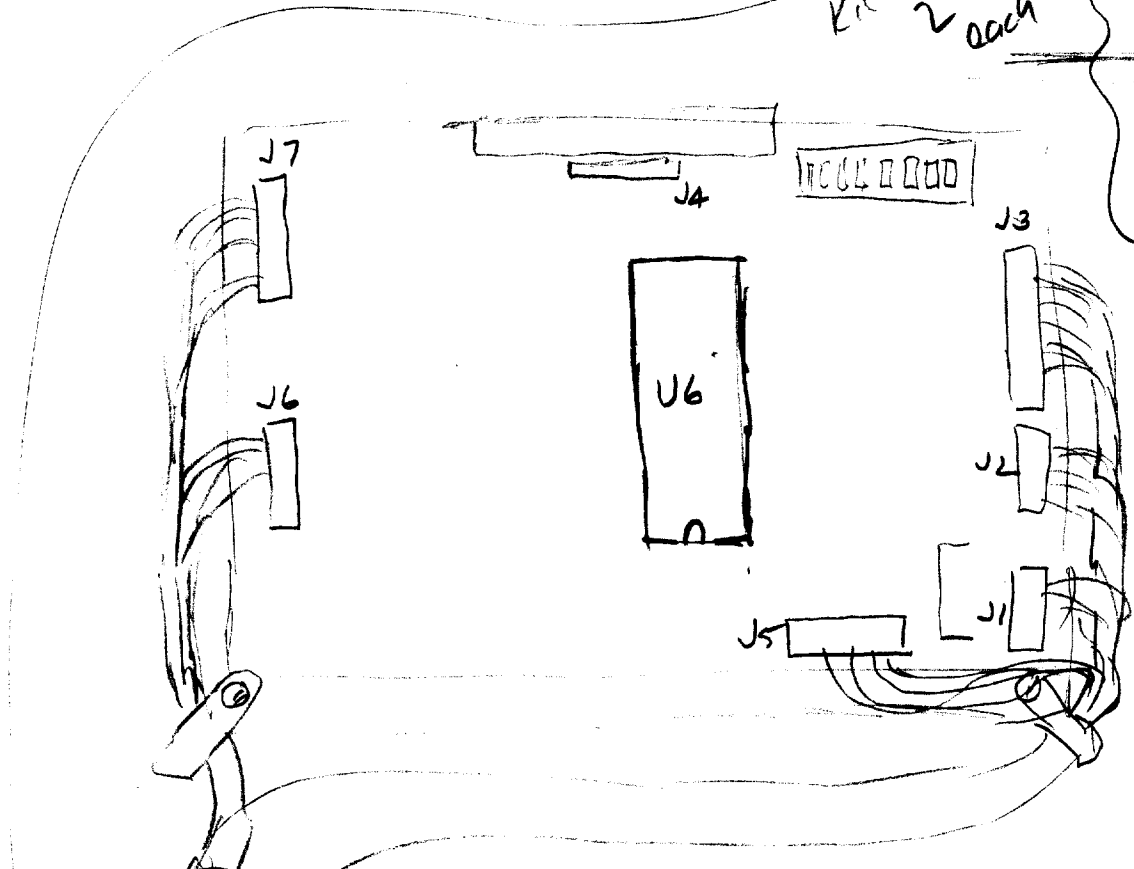
① LOOSE

② SLIDE UNIT OUT

Kit will contain both opams  
2 times each

1000 opam for 7oz cup

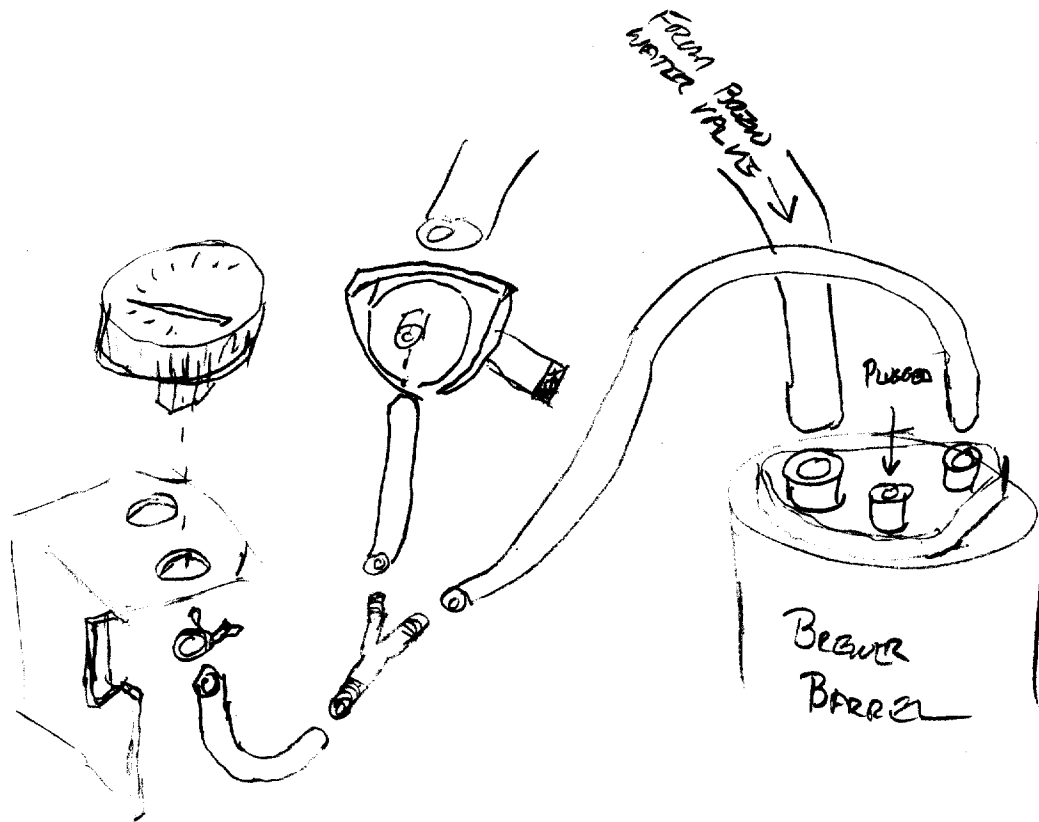
1 opam for 8 1/4 oz cup

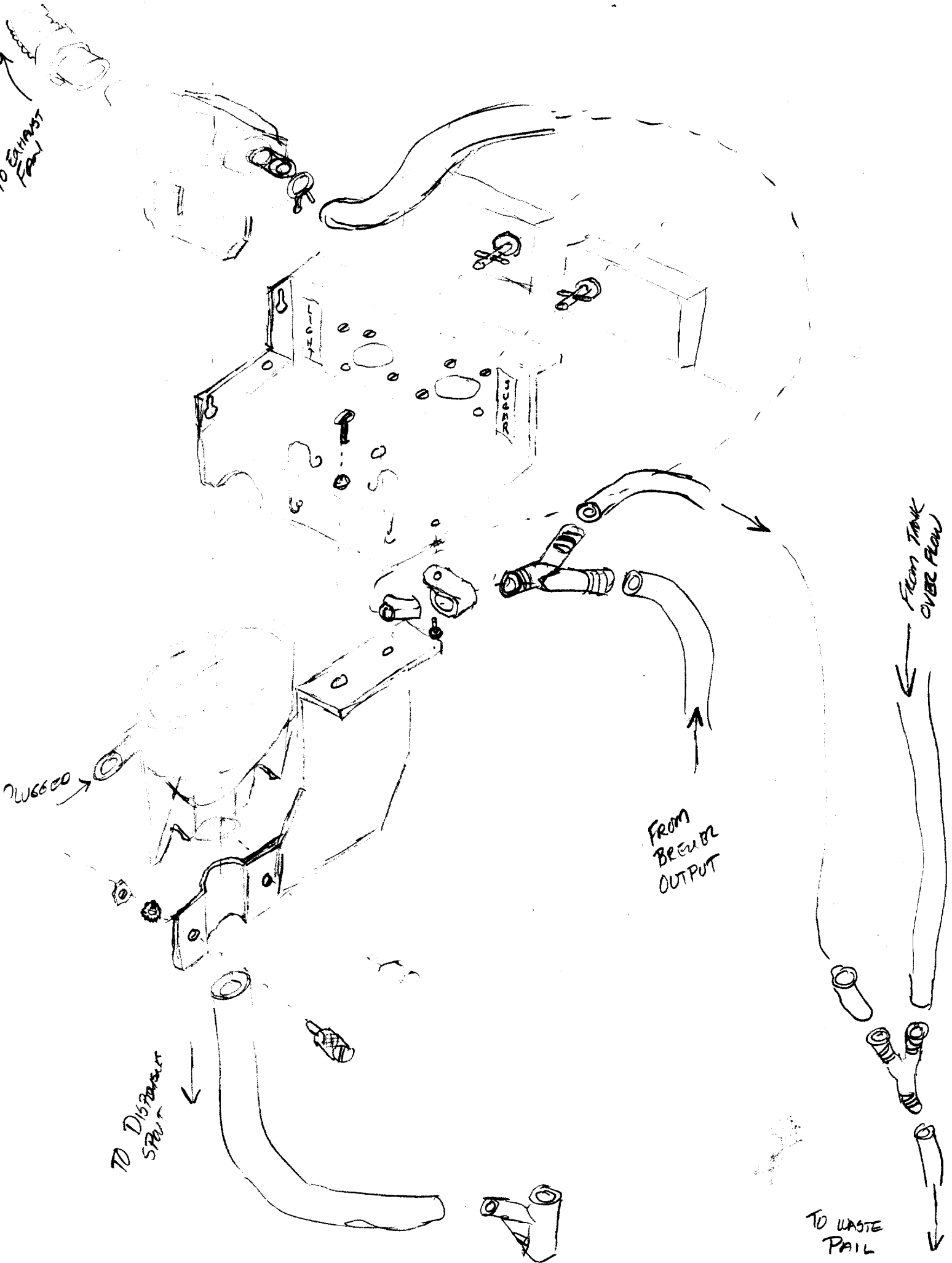


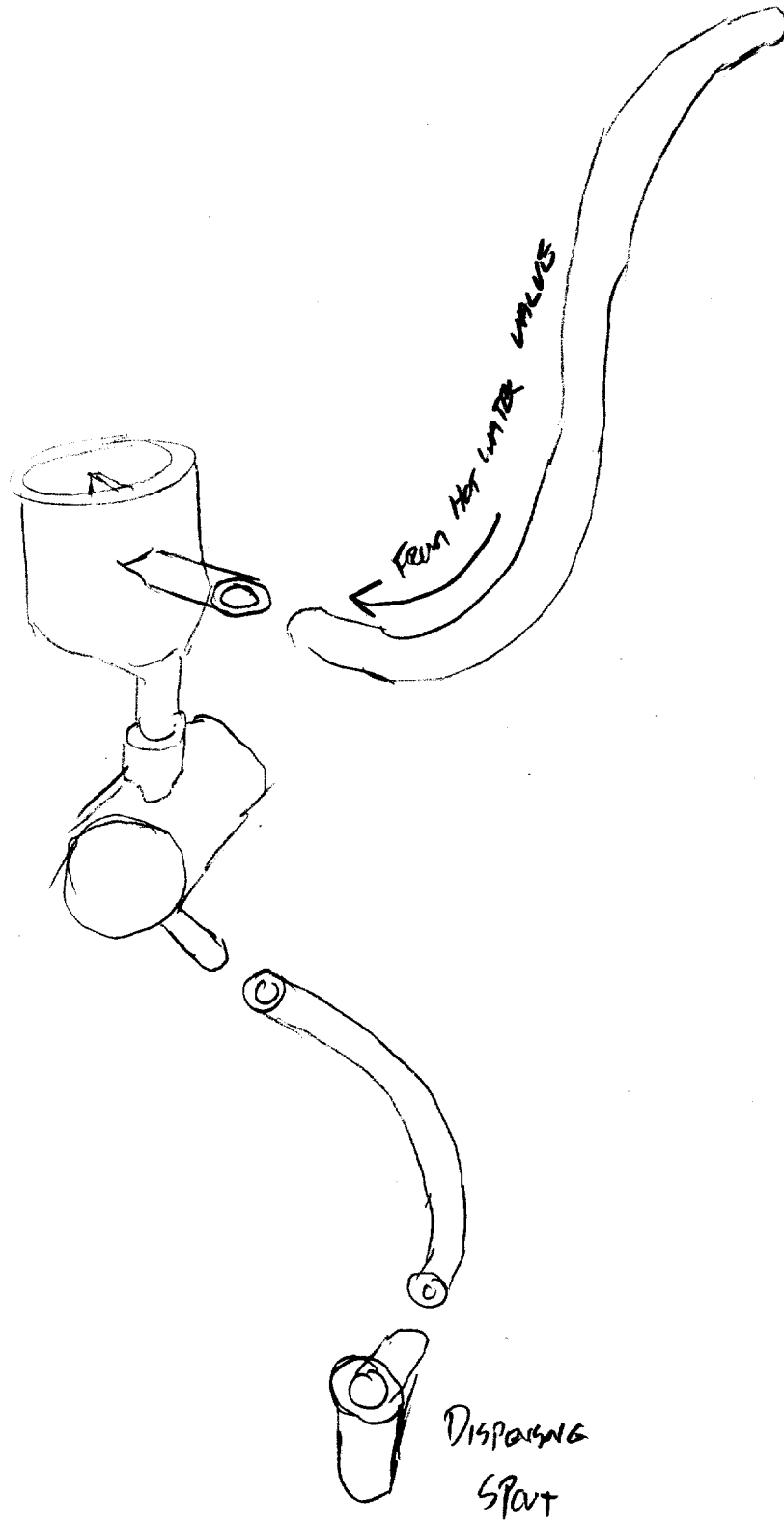
Switch 4  
Compressor Switch is  
now used for  
Chocolate Menu

Air compressor now fixed  
at 10 sec









1000 1116 741116

No. 1



No. 2



No. 3

USE A 9/64 DRILL  
BIT FOR ALL HOLES

CUT ALONG THIS LINE

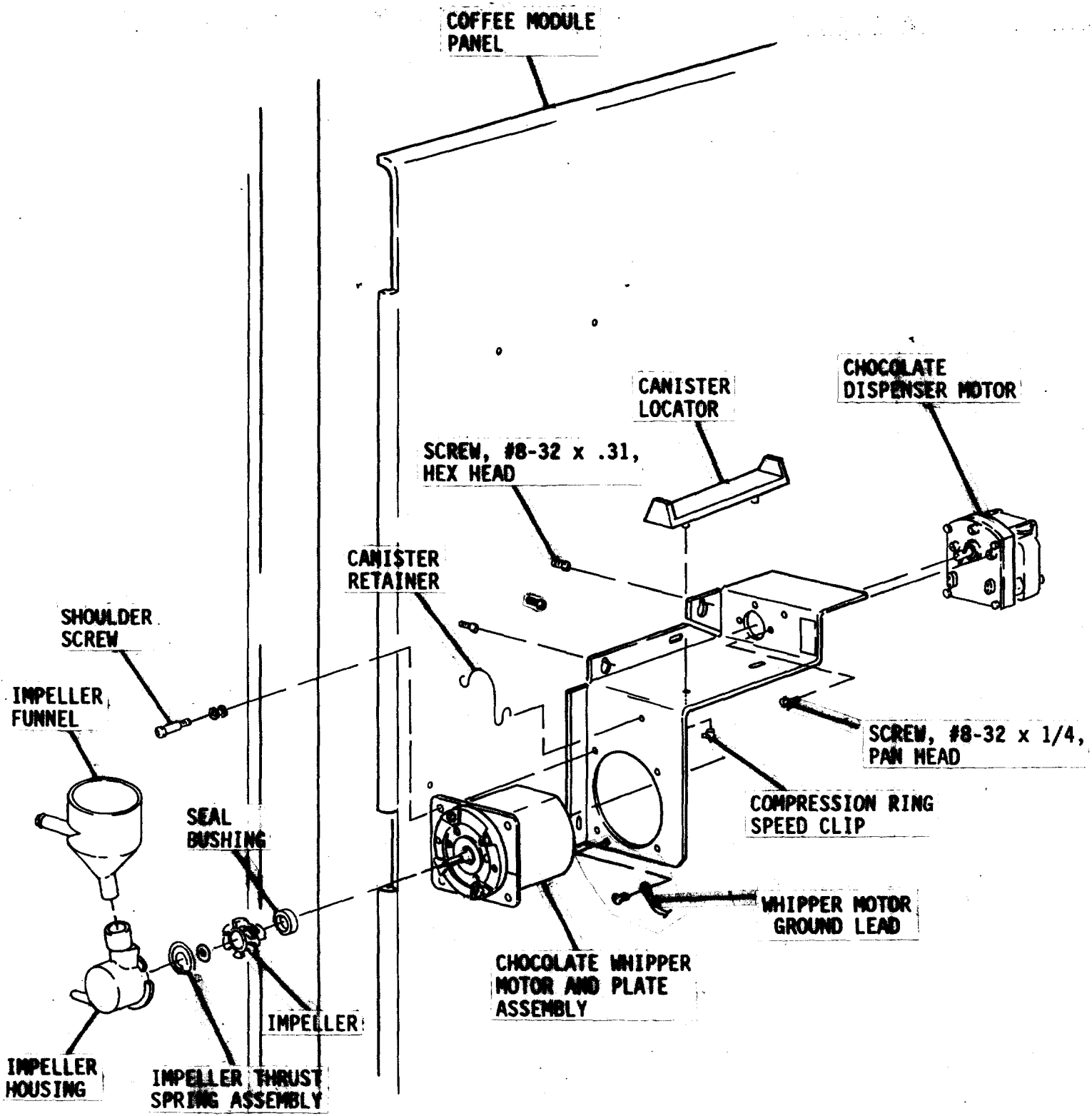


No. 4

USE THE CASE TAPE (3W) TO SECURE



CUT ALONG THIS LINE



COFFEE MODULE  
PANEL

CANISTER  
LOCATOR

CHOCOLATE  
DISPENSER MOTOR

SCREW, #8-32 x .31,  
HEX HEAD

CANISTER  
RETAINER

SHOULDER  
SCREW

IMPELLER  
FUNNEL

SCREW, #8-32 x 1/4,  
PAN HEAD

SEAL  
BUSHING

COMPRESSION RING  
SPEED CLIP

WHIPPER MOTOR  
GROUND LEAD

IMPELLER  
HOUSING

IMPELLER THRUST  
SPRING ASSEMBLY

IMPELLER

CHOCOLATE WHIPPER  
MOTOR AND PLATE  
ASSEMBLY

