



**406Z**

**Cold Drink Vendor**

**with WIN-A-DRINK**

**Field Service Manual**

**and**

**Parts Catalog**



PART NO. 900-40650 L  
TWELFTH EDITION

# RECORD OF REVISION OR CHANGE

In order to assure the availability of the most up-to-date and accurate information, Rowe International, Inc. periodically issues bulletins and supplements describing equipment and manual changes. Use the chart provided below to record any changes that affect this manual or the equipment.

SERVICE BULLETIN NO.	PAGE NUMBER	DESCRIPTION	DATE INCORPORATED

## Warranty

All parts are guaranteed to be free of defects in material and workmanship, and Rowe agrees to repair or replace any part which proves defective, with a similar part without charge, for a period of one year after date of installation. There is a "one way" freight charge on returned items. The customer pays the charge for parts being returned to us and we pay the shipping cost for the replacement parts going back.

In the case of parts supplied to Rowe as components, Rowe extends the same warranty period as extended by the original manufacturer.

The above warranty applies provided that all parts of the machine have been serviced properly as directed in the service manual, and provided the alleged defective part, upon examination by Rowe, shall prove to be thus defective.

This warranty will not apply to any machine or any part which has been subjected to any accident, abuse, or misuse.

ROWE INTERNATIONAL, INC. EXTENDS NO WARRANTY, EXPRESSED OR IMPLIED, TO PURCHASERS OR USERS OF ITS PRODUCTS EXCEPT AS HEREIN SET FORTH, WHETHER BY OPERATION OF LAW OR OTHERWISE.



# **406Z Cold Drink Vendor**

**Field Service Manual  
and  
Parts Catalog**

Part Number 900-40650 L  
Twelfth Edition  
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Printed in U.S.A.

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# SPECIFICATION: 406Z

## SOLID-STATE COLD DRINK VENDOR

### GENERAL

Depth	33 in.
Width	38 in.
Height	72 in.
Net Weight (Empty)	(327 kg) 720 Lbs.
Shipping Weight (Approx.)	(367 kg) 810 Lbs.

### VEND CAPABILITY

Type of Drink	** 9 to 18 oz. Cups Carbonated or Non-carbonated, Iced Tea, with or without Sweetener, with or without Ice.			
Selection Arrangements	See Pages 2-8, 2-9 and 2-10			
Syrup Capacity				
<b>4 Flavors</b>	<b>5 Flavors</b>	<b>6 Flavor</b>	<b>8 Flavors</b>	
Sel's 1 & 2 -- 8 Gal.	Sel's 1 & 2 -- 8 Gal.	Sel. 1 -- 8 Gal.	Sel's 1 & 2 -- 5-1/3 Gal.	
Sel's 3 & 4 -- 5-1/3 Gal.	Sel. 3 -- 5-1/3 Gal.	Sel's 2 & 3 -- 5-1/3 Gal.	Sel's 3 thru 8 -- 2-2/3 Gal.	
	Sel's 4 & 5 -- 2-2/3 Gal.	Sel's 4, 5 & 6 -- 2-2/3 Gal.		

Cup Capacity	Approx. 1,200 9-ounce cups 845 12-ounce cups 570 16-ounce cups
Syrup Portion	Adjustable from 9 to 84 cc.
Coin Mechanisms	See Page iii

### ELECTRICAL SYSTEM

Power Required	120 Volts, 60 Hz., Single-Phase AC
Power Consumption	16 Amps

### WATER SYSTEM

Inlet Water Supply Requirements	5 psi Min., 90 psi Max. (Cold Water Only)
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### CARBONATION SYSTEM

Operating Pressure	38 -- 48 psi
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### ICEMAKER

Type of Ice	Cubed
Storage Capacity	4.4 Lbs.

### REFRIGERATION SYSTEM

Type	3/4 HP, Air-Cooled
Charge	R-12 (28 oz.)

### Cycle Pressures and Current Draw

75° Ambient Temp  
**Water Bath**  
 143/135 High  
 14/13 Low  
**Cycling Current**  
 7.8/7.6 Amp  
**Icemaker**  
 108/98 High  
 6/4 Low

\*\* Reference throughout this manual is to cup size, NOT portion size.

# HOW TO USE THIS MANUAL

This manual is divided into six sections. The front matter contains a table of contents for locating all major topics.

**SECTION 1 - DESCRIPTION** -- A general explanation of vendor operation and illustrations showing where major components are located within the cabinet. Before attempting to unpack or install the vendor, read and completely familiarize yourself with this section and Section 2 - Installation.

**SECTION 2 - INSTALLATION** -- Vendor unpacking instructions and initial checkout and installation procedures. Use these instructions to install and check out the vendor.

**SECTION 3 - ROUTINE SERVICE** -- Cleaning and Sanitizing instructions and directions for replenishing syrups. These procedures can usually be performed by a routeman having no technical training or by someone stationed at the location.

**SECTION 4 - TROUBLESHOOTING** -- Troubleshooting tables and sequence of operation diagrams to aid in isolation and correcting equipment malfunctions easily and rapidly. In addition, water system and refrigeration system diagrams, as well as schematic diagrams, are included. Use the instructions in this section in conjunction with the adjustment and repair and replacement instructions in Section 5 - Maintenance, to isolate and correct vendor malfunctions.

**SECTION 5 - MAINTENANCE** -- Lubrication, adjustment, and repair and replacement procedures. Lubrication should be performed on a regular basis. Adjustment and repair and replacement procedures should be performed only as required. Isolate equipment trouble using the information and diagrams in Section - 4 Troubleshooting before attempting to make adjustments or replace parts.

**SECTION 6 - PARTS CATALOG** -- A complete listing of procurable parts. A separate table of contents and instructions for ordering parts are included. View of each assembly can be used as an aid in locating parts.

## OPTIONAL KITS

PART NUMBERS	DESCRIPTION
408-6013	Individual Product Counter Kit
408-6015	Drier Kit
425-6020	Universal C.B.A. - 2 (U.B.A.) Bill Acceptor Kit
408-6030	Conversion Kit To convert a 6 pump w/ Tea to a 7 pump Tea w/seperate sweetner)

## REPAIR AND MAINTENANCE KITS

421-6048	Check Valve Kit (Has replacement parts for Gorman-Rupp pumps and includes 2 "O" rings, 2 poppet valves, and 1 anti-siphon spring).
406-6047	2-Way Carbonated Water Valve Repair Kit (To repair 406-1222 ValveBody 406-4642) and (406-1229 Valve Body 406-4644)
406-4641	3-Way Carbonated Water Valve Repair Kit
406-4040	Cleaning Brush (Now included in each Vendor with Tea option).
408-6037	3-Way Refrigeration Kit

# COIN MECH. CHART

COIN ACCEPTORS		ROWE VENDING MACH. C/M USAGE											
COINCO		406		425		487		448		5900		548	
		PUMP W/BA		PUMP W/BA		K.A.D.		K.A.D.		K.A.D.		E2	
9300S	SINGLE PRICE \$12.75 MAX 120 VAC	X		X				X					
9340S	SINGLE PRICE \$12.75 MAX 120 VAC	X	X	X	X			X	X				
9360S	SINGLE PRICE \$12.75 MAX 120 VAC	X	X	X	X			X	X				
S75-9800B-907	SINGLE PRICE \$3.15 MAX	X		X				X					
S75-9400B-977	SINGLE PRICE \$1.55 MAX	X		X				X					
F300E-9210	4 PRICE \$3.15 MAX 120V	X	X	X	X			X	X				
F300-9400	4 PRICE \$3.15 MAX 120V	X		X				X					
S300-9410	SINGLE PRICE \$3.15 MAX 120V	X	X	X	X			X	X				
9300L	MICROMECH 110 VPDC					X			X		X	X	X
9302LF	MICROMECH 24 VPDC 15 PIN CONNECTOR										X		
MARS													
TRC6010XV	24 VPDC MICROMECH 15 PIN CONNECTOR										X	X	
MC5000	MICROMECH 117 VPDC \$12.75 MAX					X		X			X	X	X
TRC6000	MICROMECH 117 VPDC \$12.75 MAX					X		X			X	X	X
TRC6200H	W/BA 120 V SINGLE PRICE \$8.35 MAX	X	X	X	X			X	X				
TRC6800H	W/BA 120 V SINGLE PRICE \$10.00 MAX	X	X	X	X			X	X				
MC5802	SINGLE PRICE 110 VAC	X	X	X	X			X	X				
MC5807	SINGLE PRICE 110 VAC	X	X	X	X			X	X				
MC5920	W/BA 110 VAC FOUR PRICE \$8.35 MAX	X	X	X	X			X	X				
MS1600	6 COIN ACCEPTOR EUROPEAN 24 VAC 50 HZ									X	X	X	X
MS1700	6 COIN ACCEPTOR EUROPEAN TROPICALIZED 24 VAC 50 HZ									X	X	X	X
ME1900	9 COIN ACCEPTOR EUROPEAN 24 VAC 50 HZ									X	X	X	X
N B T NATIONAL REJECTOR INC.													
G-26.4400	EUROPEAN P4 VAC 50 HZ									X	X	X	X

\* - USE W/ 406-8027 KIT  
 \*\* - REMOVE R35 FROM MC5920AH WHEN USING CBA-2 B.A.  
 (ALSO NEEDS 425-1855 HARNESS)  
 \*\*\* - EUROPEAN COIN MECH.  
 \*\*\*\* - NEEDS 4 PRICE KIT  
 H - B.A. COMPATIBLE





# SECTION 1 DESCRIPTION

## INTRODUCTION

The model 406Z Cold Drink Vendor by Rowe mixes every type of soft drink, including dietetic types, with high, low or carbonated water. Each cup contains an accurate blend of syrup, carbonated water, and hard ice for a perfect drink with a minimum amount of foam.

Continuous cooling water circulation and an ice bank cooling system ensures a chilled drink every time, even before ice is added.

## Vendor Major Components

The major components are shown and described in the accompanying illustrations. Use this information for maintenance and servicing.

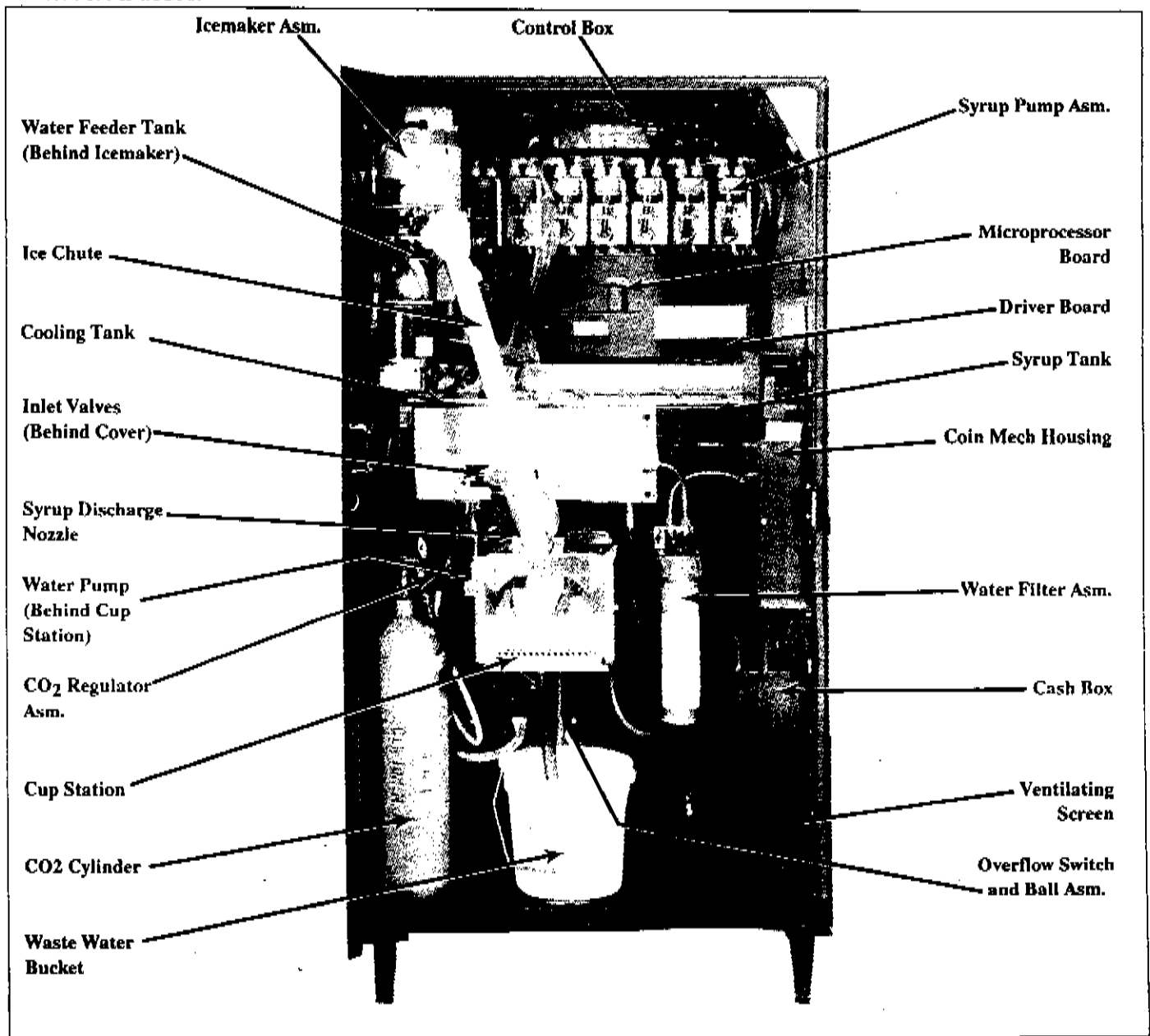


FIGURE 1 - 1 CABINET COMPONENTS

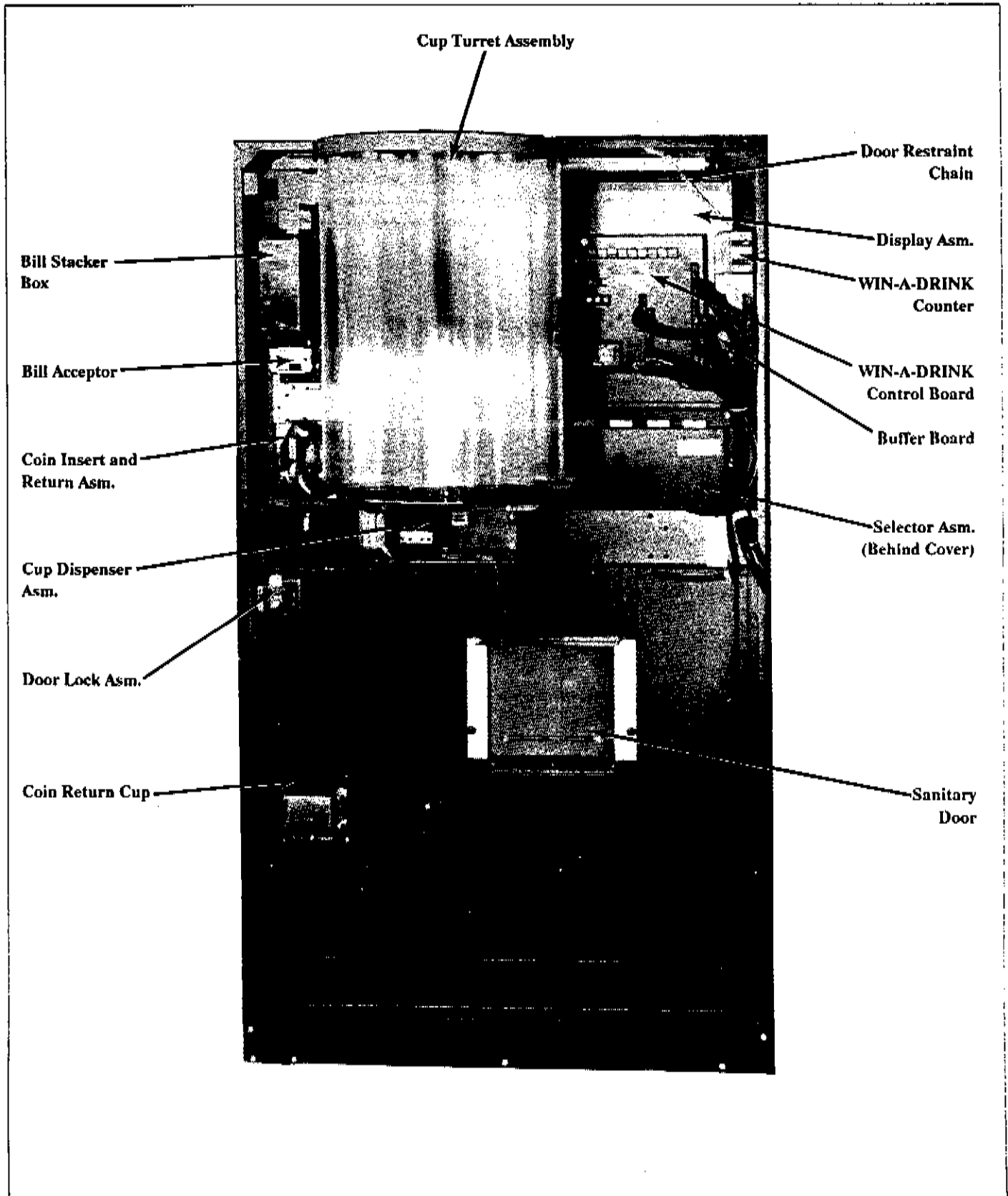


FIGURE 1 - 2 MAIN DOOR COMPONENTS

### WIN-A-DRINK FEATURE

The WIN-A-DRINK feature incorporates a Microprocessor Controller that interfaces a Multi-Price dumb coin mech with a 406Z Cold Drink vendor. The W-A-D Board also interfaces with an optional Bill Acceptor (UBA). This system now permits each selection to be priced separately. Features may be enabled or disabled by the mode DIP switches located on the Controller. Odd ratios for the "Winner" event are programmable from (50 to 1) to (1150 to 1) in increments of (50 to 1). Refer to the illustration below for Controller DIP bank switch functions and location.

When a customer establishes enough credit and makes a selection, the "Winner Display" LEDs will light sequentially (in clockwise rotation) with decreasing speed until only one LED remains lit indicating either a win or a non-winner.

In the case of a non-winner, the vendor will complete the vend as in any other normal cycle (change returned if required). If the last LED remains lit in the center of the circle a "Winner" is indicated and the customer will receive (in the form of coins) all the credit established prior to the vend (a dollar bill will be returned as four (4) quarters).

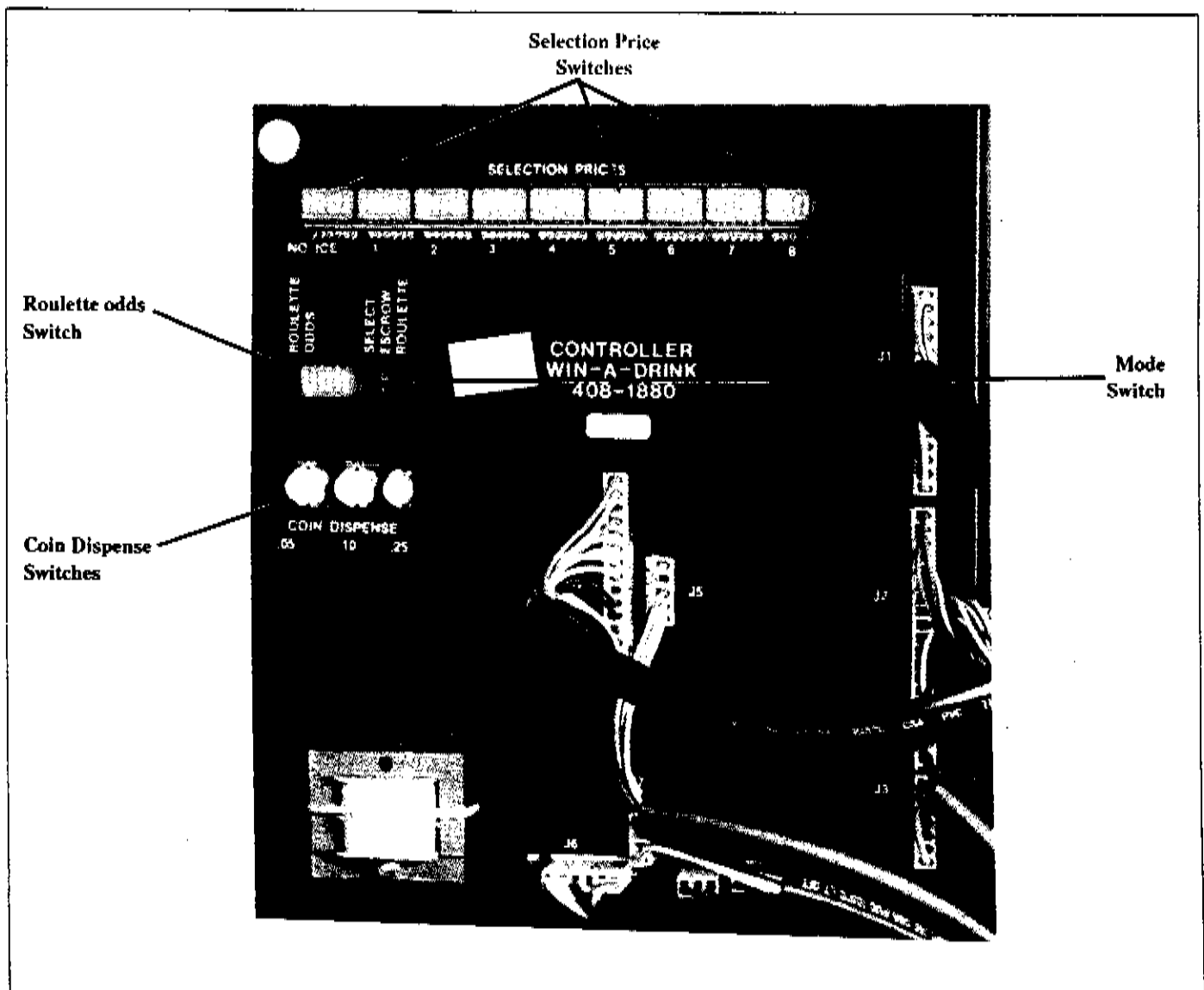


FIGURE 1 - 3 WIN-A-DRINK CONTROLLER

## CUP DISPENSER

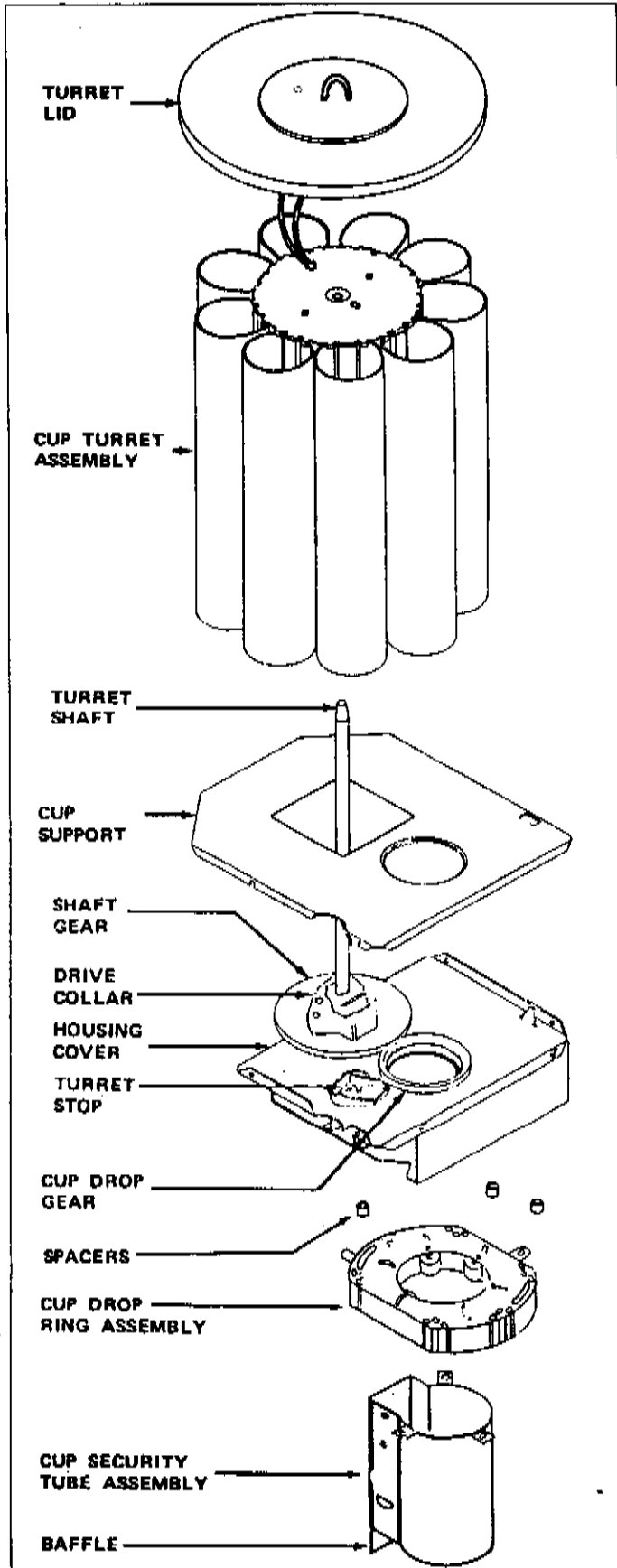
### General Information

The Rowe Cup Dispenser is a result of extensive engineering research, development and testing. It features highly reliable cup dispensing with some outstanding advantages and options.

Included in the mechanism is a new, adjustable cup ring. The ring is adjusted using cup setting gauges or the cup itself, and can accommodate 9 to 18 oz. sizes.

Large-volume cup inventory -- a 9-column, sanitary extruded Cup Turret Stores cups in a minimal, contained space. Cups are dropped immediately, one at a time, on the vend impulse. One column at a time is emptied. Positive indexing moves the next full column precisely into place.

Trouble-free operation -- The design of the Rowe Cup Dispenser is simple and straightforward, with a minimum of electrical components, and a new mechanical feature to provide the ultimate in trouble-free operation and simple maintenance. Highly reliable electrical components, rust-proof metal parts, a rigid base and factory-lubricated motor and drive ensure long life. The complete cup inventory can be removed in one easy operation while maintaining sanitary requirements whenever service is necessary.





# SECTION 2 INSTALLATION

## INTRODUCTION

This section contains instructions for unpacking the vendor and installing it on location. Installation is quickly and easily accomplished.

### Envelope Assembly

Packed with each vendor is a sealable, clear plastic envelope attached to the inside door assembly containing flavor cards and price cards. It is recommended that you leave the plastic envelope assembly, filled with cards and a service manual, in the vendor for future use.

### Unpacking Instructions

The vendor is shipped in one carton with all major assemblies in place, ready for installation. The shipping carton should be opened carefully to prevent the vendor from being scratched or damaged. Inspect the exterior and interior of the cabinet for evidence of damage. In case of damage, please notify the delivering carrier at once to call and examine the vendor regardless of the exterior condition of the boxes. Under the U.S. regulations damage claims must be collected by the consignee. Do not return shipping-damaged merchandise until after your claim has been established. Once your claim has been established, damaged merchandise may be returned to your Rowe Distributor for repair. The invoice for repair charges may then be collected from the carrier. Do not destroy packing material or boxes until the carrier's agent has examined it.

Unpack the vendor as follows:

1. Remove shipping carton from vendor. Inspect exterior of cabinet for damage.
2. Open front door. Inspect cabinet interior for evidence of damage.
3. Remove all tape and packing cardboard from inside of vendor.
4. Remove packing cardboard from under cup turret.
5. Remove shipping tie from feeder tank float arm.
6. (Icemaker Asm.) Disconnect hopper lid and remove packing material in hopper compartment.

## LOCATION SITE REQUIREMENTS

The vendor requires an external source of water and electricity for operation. The minimum requirements for these utilities are as follows:

### Water

The installation site must have a drinking water supply line that can be coupled permanently to the vendor. The water line should be ½ inch diameter minimum and be equipped with a manual shutoff valve no more than six feet from the vendor. Water pressure should be 5 psi minimum to 90 psi maximum for proper operation.

Connect the vendor to the water supply line using the ¾ inch O.D. soft copper tubing and any necessary fittings. Use enough tubing to allow one complete coil approximately 3 feet in diameter between the water supply line and the vendor to reduce noise due to pressure surges and to permit movement of the vendor for cleaning.

### Electricity

A dedicated electrical outlet rated at 120-volts, 60 Hz, single-phase and capable of delivering 20 amperes, must be made available within six feet of vendor. The outlet must be polarized correctly with a good ground connection.

## SET-UP INSTRUCTIONS

The vendor may be prepared for use either at the location site or in the the shop. If the vendor is checked out in the shop, it should be drained of all liquid before being moved to the location. Set up the vendor as follows:

### CAUTION!

*Back of vendor must be at least 9" from wall.  
Be sure that rear screen is unobstructed.*

1. Remove protective cap from water inlet fitting and connect to water supply line. A ¾ inch flare fitting is included with the spare parts assembly.
2. Install QC-4 cartridge filter as described in attached instructions.
3. Make sure that water inlet valve on filter head is in off (up) position (see figure 2 - 1).
4. Open external water supply line shut off valve. Check all fittings for leakage.
5. Set MAIN POWER switch on left end of control box to OFF position.
6. Connect vendor to electric power source.

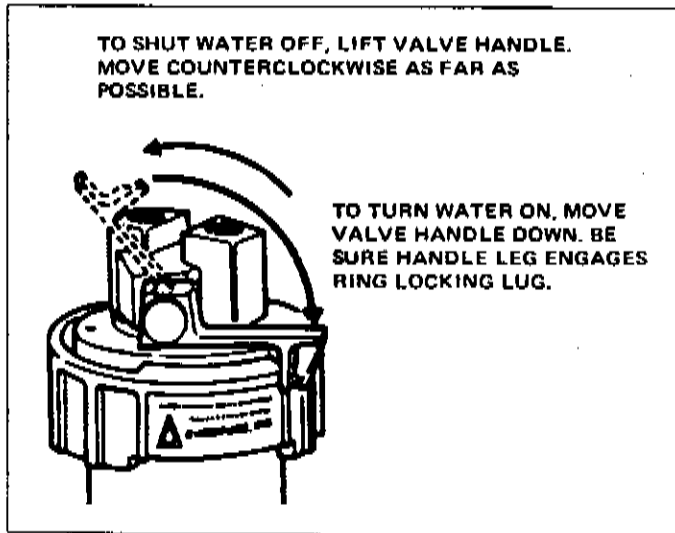


FIGURE 2 - 1 WATER SHUT-OFF VALVE

7. Adjust leveling feet as required until vendor is level from side- to- side and front-to-back. Be sure that all four leveling feet are in contact with the floor to prevent rocking of the machine.

**NOTE:**

*Vendor must be level for proper operation.*

8. Fill water bath as follows:
  - a. Place rinse hose in water bath.
  - b. Open filter water shutoff valve.
  - c. Open rinse hose valve one quarter of a turn .
  - d. Fill water bath to 3/8" below overflow hole, located under mounting bracket of Circulator Motor on right hand tank wall

**CO<sub>2</sub> Tank and Pressure Regulator**

**CAUTION !**

*Remove Cup Compartment before attempting to install Co<sub>2</sub> tank in vendor.*

The CO<sub>2</sub> tank (supplied by the operator) provides a supply of carbon-dioxide gas for making carbonated drinks. The pressure regulator is packed in a small carton taped to the bottom of the cabinet. Referring to figure 2 - 1, install a CO<sub>2</sub> tank and the pressure regulators as follows:

**NOTE:**

*To insure a tight seal between the regulator and tank, be sure that the mating surface on the tank valve is smooth and free of burrs and nicks.*

*Tall CO<sub>2</sub> tanks require using a special bracket, relocating chain and latch assembly.*

1. Install a new fiber sealing gasket between CO<sub>2</sub> tank valve inlet face and mating regulator surface. Install pressure regulator on CO<sub>2</sub> tank. Firmly tighten connector nut.
2. Connect CO<sub>2</sub> hose to pressure regulator outlet. Firmly tighten coupling nut.
3. Remove cup compartment assembly from vendor. (There is a service "hook" on the door for hanging the cup compartment assembly.) Place CO<sub>2</sub> tank in front left corner of vendor between left side of cabinet and tank retaining bracket. Rotate tank so there is no interference between CO<sub>2</sub> regulator and the cabinet. Chain CO<sub>2</sub> bottle in cabinet and reinstall cup compartment.

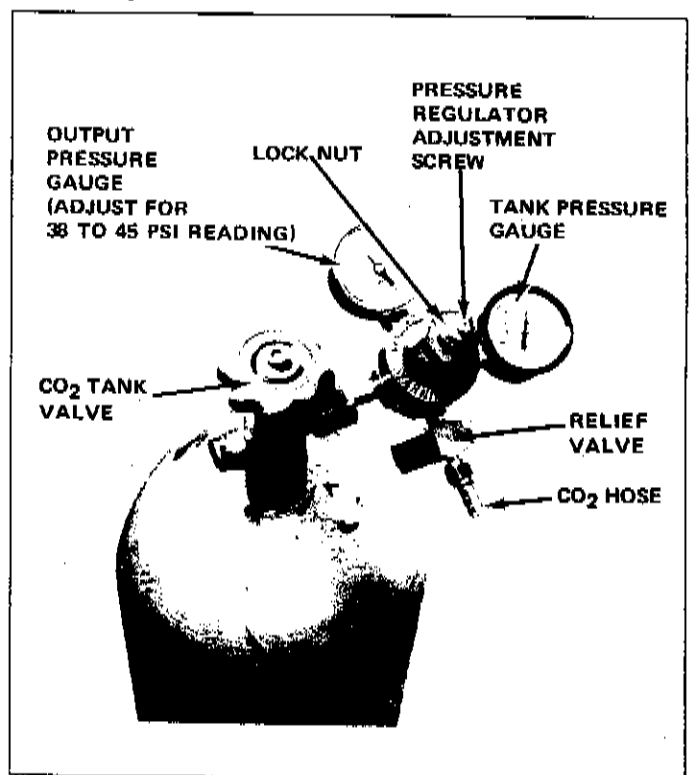


FIGURE 2 - 2 PRESSURE GAUGE INSTALLATION

4. Loosen pressure regulator adjusting screw lockout. Rotate screw counterclockwise until spring tension is relieved.
5. Slowly open CO<sub>2</sub> tank valve until tank pressure gauge on regulator indicates a pressure rise. Then open tank valve to fully open position.
6. Slowly rotate pressure regulator adjusting screw clockwise until regulator output pressure gauge indicates a pressure rise. Momentarily bleed pressure by pushing on button on relief valve (see figure 2 - 2).
7. Adjust screw until pressure gauge indicates 38 - 45 psi and tighten locknut.

8. To check for CO<sub>2</sub> leaks, close CO<sub>2</sub> tank valve. If the tank pressure gauge reading drops before 15 minutes, there is a leak in the system. Determine the source of the leak and repair.
9. Fully back seat CO<sub>2</sub> tank valve.

**Syrup Tanks**

The syrup tank may be cleaned and filled at this point. If the vendor is checked out at the shop, it is recommended that one gallon syrup jugs be used instead of the syrup tanks for test and adjustment purposes. Refer to figure 2 - 3 for syrup tank/syrup pump locations and page 2 - 9 for selection options.

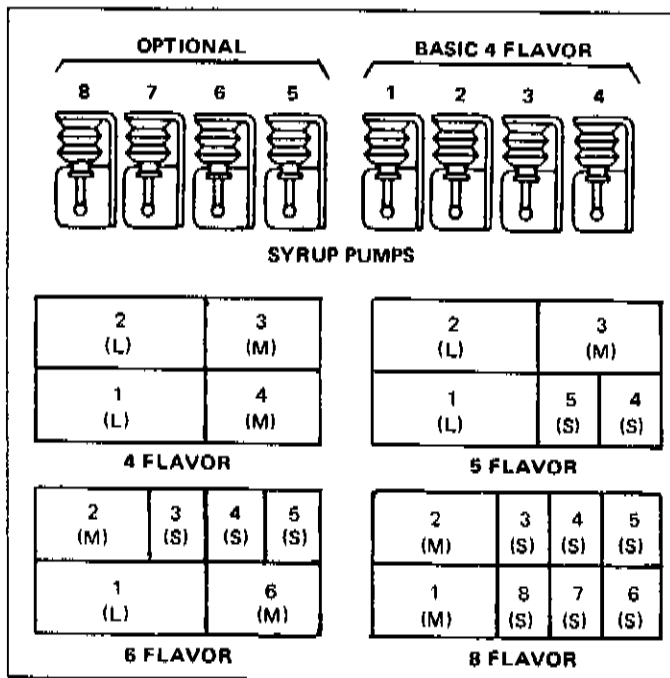


FIGURE 2 - 3 SELECTOR, PUMP and TANK RELATIONSHIP

On an 8 flavor machine, 7 pumps are mounted on the back of the vendor. The 8th. pump is mounted on the left hand side wall. Tea asm. is not available in the 8 pump vendor.

On a 6 x 8 vendor with Tea, the 7th. pump used for Tea sweetener is mounted on the Tea Hopper Asm. and pump No. 6 is mounted on the left hand side wall.

**Fill syrup tanks as follows:**

1. Remove syrup lines and clips from tanks. Remove splash panel assembly and lift syrup tanks out of storage compartment
2. Install syrup tank liners as follows:
  - a. Insert plastic liner into tank.
  - b. Fold over 4 inches at top of bag and pull down over sides of tank as shown in figure 2 - 4.
3. Install tanks in tank storage compartment.

4. Clip dip tube on top lip of tank. Be sure that connecting tubing does not prevent splash panel assembly from seating properly and that tubing is not pinched by splash panel.

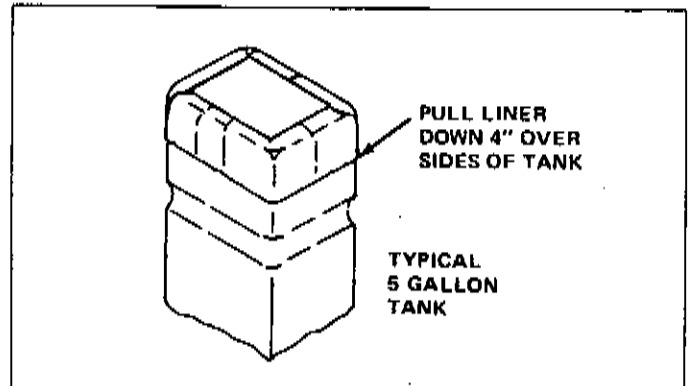


FIGURE 2 - 4 INSTALLING SYRUP TANK LINERS

**NOTE:**

*Suction Line should pass through notch in tank top.*

5. Fill each tank with desired syrup. Install lids and splash panel assembly. (Lids are held in place to splash cover with lid ties.)

**Flavor Cards and Price Cards**

An assortment of flavor cards and price cards are packaged in a plastic bag attached to the inside door assembly. These flavor cards represent a wide variety of brand name colas and flavors as well as plain flavors. Install cards as follows:

1. Open vendor front door and gain access to card holders above selection panel.
2. Insert appropriate price card in top window slot from inside vendor door. Price card is above instruction plate.
3. Insert "No Ice" card in the pushbutton nearest coin insert.
4. Insert appropriate Flavor cards in the selection buttons. See page 2 - 9.

**Filling Cup Dispenser**

The cup dispenser is factory set to vend 16-ounce cups. To fill cup dispenser, see Cup Dispenser Section.

**FINAL PREPARATION AND CHECKOUT**

**NOTE:**

*If any of the following functions do not work, refer to the Troubleshooting or Maintenance section.*

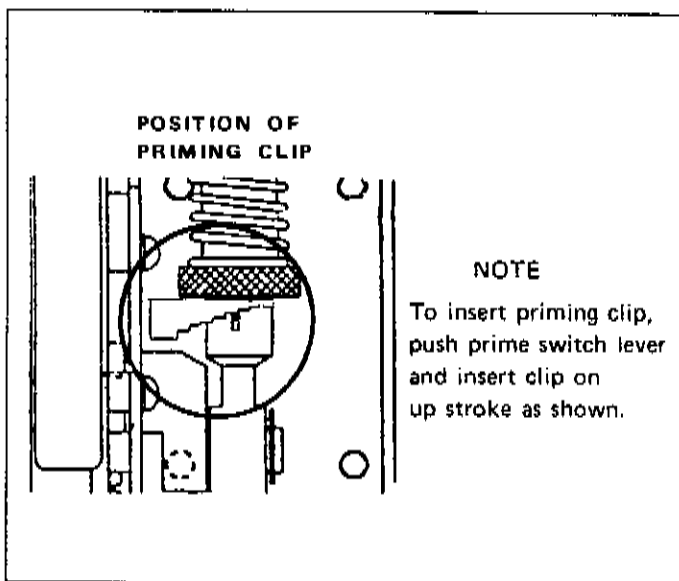
The vendor is now ready for final preparation and checkout before being placed in service. Proceed as follows:

**Coin Mech Check**

1. Install recommended Coin Mech asm. (see Coin Mech. Usage Chart on page i i i).
2. Fill Coin Mech. tubes with change.
3. On the Win-A-Drink Control Board set the Dip Switches to the applicable positions. See page 2 - 6 for 406Z Win-A-Drink Controller Switch functions.
4. Set Main Switch to ON (up) position. The following should occur:
  - Door lamp should light (Display lamp).
  - The reservoir tank should fill. The water pump should operate by filling the carbonator with water.
  - The water pump should cease operation when the carbonator is filled.
  - The dual inlet valve should energize filling the Icemaker and water feeder reservoir.
  - Three LED's should be lit on the Microprocessor Board:
    - a. 15VDC
    - b. Coin Mech.
    - c. Carb enable
5. Insert proper amount of coins into the coin slot. The coins should pass through the slug rejector, through the coin mechanism and into the coin storage tube. "Coin Mech" LED should go out.
6. Set Main Switch to OFF (down) position, then back ON, resetting the microprocessor.

**Prime Syrup Pumps**

Prime syrup pumps and associated tubing with syrup from syrup tanks as follows:

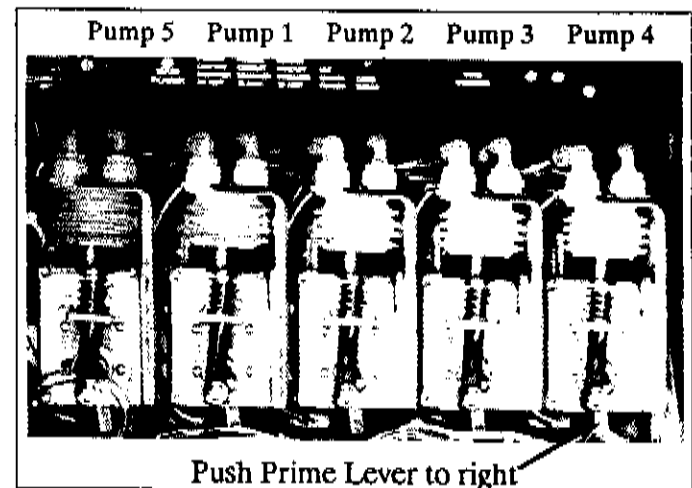


**NOTE:**

*For certain low viscosity syrups, use special priming clip (included in spare parts envelope assembly) to cause pump to deliver maximum volume and eliminate air bubbles in discharge lines.*

Priming is most quickly accomplished by setting the throw adjustment to maximum. Purpose of the priming clip is to temporarily set the pump to maximum throw without disturbing the actual setting. After completion of the priming function, removal of the clip restores the pump to its original setting.

1. Place beverage cup in position of cup delivery compartment.
2. With Main Switch set to ON (up) position, push the Prime Switch Lever (see figure 2 - 5) to the right and hold it until all air is purged from syrup line.
3. Repeat for the remaining syrup pumps. Remove and discard beverage cup. Adjust syrup quantity to syrup supplier's recommendations. See page 2 - 6 for syrup quantity adjustments.



**FIGURE 2 - 5 PRIMING SYRUP PUMPS**

**ICED TEA OPTION**

The Iced Tea asm. has it's own separate syrup pump which is mounted to the side of the Iced Tea asm.. The Iced Tea pump uses the same syrup tank as one of the other selections (Sprite or equivalent) to sweeten the Iced Tea.

1. Place the Tea Powder in the hopper.
2. Prime the Iced Tea sweetener pump and the syrup pump that's using the same syrup pump tank. Continue until all air is removed from lines.
3. After removing air from lines, the syrup pump can be primed separately for syrup amount adjustment.



**NOTE:**

- a. Fill the Tea Hopper according to the amount of tea powder that is used between filling service. This will prevent the tea powder from caking and clogging up the hopper. Tea powder tends to absorb moisture.
- b. The Iced Tea Sweetener Pump is "TEE" connected with the "Sprite" (or equivalent) syrup pump suction and discharge lines. On initial setup, it may be necessary to prime both pumps simultaneously to evacuate all the air from the discharge lines.

**Flush Carbonator**

The carbonator must be purged of all air before placing the vendor in service. Perform the following:

1. Set Main Line Switch to On position.
2. Set Carb Water Switch to "Flush" (down) position until carbonated water is exhausted; allow CO<sub>2</sub> to exhaust for 10 seconds, then set switch to vend position. Carbonator will refill in about 45 seconds.
3. When water pump stops running, set Carb Water Switch to "FLUSH" and repeat the procedure once again to ensure all air is removed from carbonator.

**Refrigeration Operation**

Place refrigeration system in operation as follows:

1. Set Main Switch to OFF position.
2. Turn refrigeration control thermostat between setting 4 and 5. Located on back wall below and to right of reservoir.
3. Set Icemaker switch to ON (up) position.
4. Set Main Switch to ON position.
5. Check that refrigeration unit starts and continues to run.
6. Allow refrigeration system to run 15 to 20 minutes.
7. Place Icemaker switch to the TEST position. The Icemaker door should open and dispense good hard ice to cup compartment assembly.
8. Check frost line to end around bottom quick disconnect (see figure in next column).

**NOTE:**

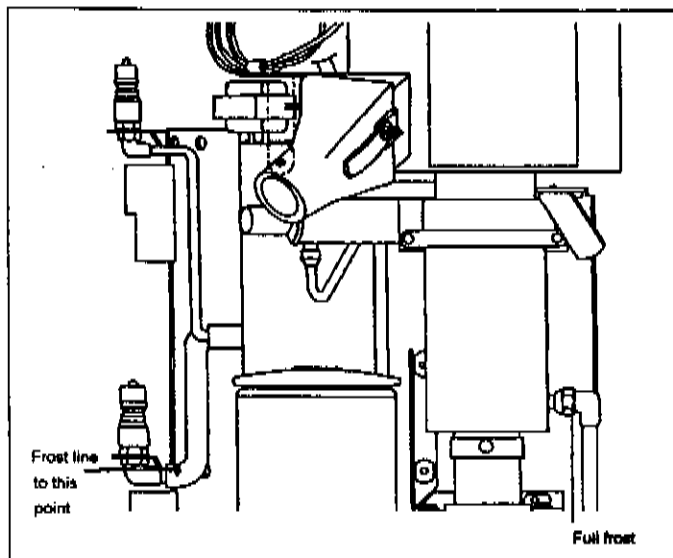
Icemaker power is controlled by a 3-position switch.

- Up "ON" for normal operation
- Middle for "OFF"
- Down for "TEST" (dispense ice check)

The switch must be left in its uppermost position for normal Icemaker operation.

In the "ON" position the Icemaker takes priority of the refrigeration system. Upon ice filling the Icemaker Hopper the refrigeration solenoid will switch to the waterbath for cooling if needed.

9. Set Icemaker switch to OFF (middle) position. Check that the refrigeration unit continues to run, building up a partial ice bank within two hours.
10. A complete ice bank with approximately 1 to 2 inches of ice around evaporator coil should be obtained within 12 hours.
11. Before leaving the location reset Icemaker switch to ON (up) position.



ICEMAKER EXPANSION VALVE ADJUSTMENT

**Check Waste Bucket Switch**

To prevent overflow, the waste bucket switch opens the vend circuit, shutting down the vendor and turning on the sold out light when the waste bucket is full. Check this switch for proper operation as follows:

1. Turn Icemaker switch OFF.
2. Insure that rinse hose drains into waste bucket. Be sure that waste bucket switch float is hanging in bucket and that it is not touching waste bucket wall.
3. Open rinse hose drain cock and allow waste bucket to fill until waste switch shuts down vendor. The waste switch should operate when the waste bucket liquid level is 2 to 3 inches below the top rim. Reform arm of switch if necessary, to insure proper operation.
4. Empty waste bucket and place in position. Make sure that all hoses are inside the bucket and that the rinse hose drain valve is closed. Turn Icemaker back on.

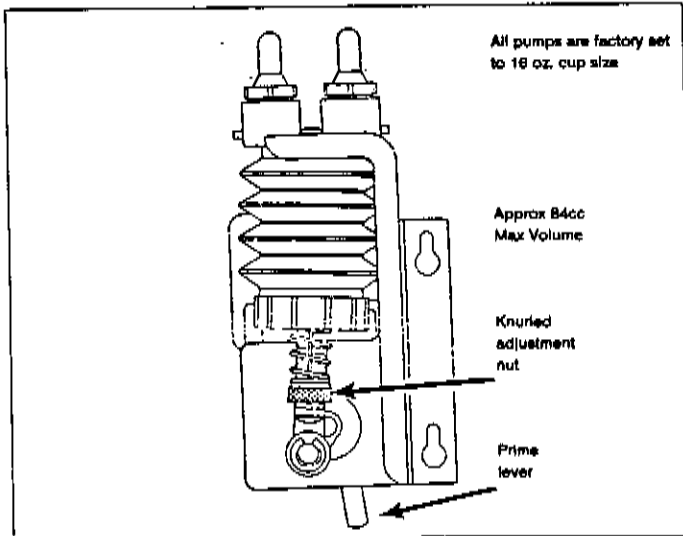
**Syrup Quantity Adjustment**

**NOTE:**

Follow the syrup manufacturers suggested water to syrup ratio for best quality and taste.

Adjust syrup quantity by turning the knurled nut on syrup pump drive shaft. This procedure effectively alters the length of the hellow stroke. Adjust syrup pump as follows:

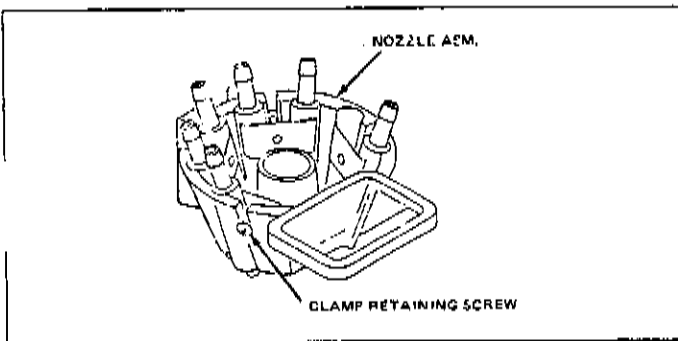
1. Turn knurled nut up toward bellows to decrease quantity.
2. Turn knurled nut down away from bellows to increase quantity.
3. Before taking syrup quantity measurement, prime the pump two cycles with the prime lever switch located at bottom of pump assembly.



**SYRUP QUANTITY ADJUSTMENT**

**Syrup Nozzle Interchangability**

There are two extra syrup nozzles attached to the Syrup Nozzle Assembly (P/N 408-1608) on top of the cup well. The White wide bore nozzle (P/N 408-613 - .190 I.D.) is required to dispense Iced Tea or the heavier fruit flavored syrups, and the clear standard bore nozzle (P/N 408-612 .134 I.D.) is used for the remaining flavors.



**WIN-A-DRINK CONTROLLER SWITCH FUNCTIONS**

**Selection Price Switches**

There are nine DIP switches banks on the W-A-D Controller Board which allows each selection to be priced from \$0.00 (free vend) to \$3.15 (max.) in increments of 5¢. Each DIP bank consists of six rocker switches valued (from left to right) at 5¢, 10¢, 20¢, 40¢, 80¢, and \$1.60.

The vend price equals the value of all rocker switches in the DIP bank set to the "on" position. The far left DIP bank sets the vend price for "Seltzer" in a nine selection machine, and is ignored if the Controller is programmed for an eight or less selection vendor.

**Mode Switch**

This DIP bank consists of three rocker switches labeled (left to right) Select 8/9, Escrow, and Roulette (Win-A-Drink).

**Select 8/9 Switch**

When "off" - sets the Controller for 8 or less selection vendor.

When "on" - sets the Controller for 9 selection operation.

**NOTE:**

*This rocker switch MUST be set to agree with the type of vendor in use.*

**Escrow Switch**

When "OFF", any bills accepted will payout as four (4) quarters if the Coin Return is pressed before a selection is made.

When "ON", the Coin Return function is ignored and a purchase MUST be made after a bill has been accepted.

**Roulette Switch (WIN-A-DRINK)**

When "OFF", the WIN-A-DRINK function is disabled.

When "ON" the WIN-A-DRINK sequence starts immediately after a vend selection has been initiated.

**Roulette "ODDS" Switch**

This DIP bank consists of six rocker switches with the first five doubling in value in left to right progression starting with 50 to 1 odds. Then 100 to 1, 200, 400 and 800 to 1 respectively. The switch values are cumulative allowing the desired odds to be set anywhere from 50 to 1 to 1550 to 1 (in increments of 50 to 1) depending on which switches are set to the "ON" position. If a bank of DIP switches are all set to the OFF position that selection would free vend and disable the WIN-A-DRINK function. Test vends will also disable W-A-D sequence.

Rocker Switch #6 should be set to ON if Dollar Coins are used with the Coin Mech, otherwise set the Rocker Switch #6 to OFF.

Example: 550 to 1 odds

DIP Switch:	$\frac{1}{50}$	$\frac{2}{100}$	$\frac{3}{200}$	$\frac{4}{400}$	$\frac{5}{800}$	$\frac{6}{\$COIN}$
-------------	----------------	-----------------	-----------------	-----------------	-----------------	--------------------

Set to:	ON	ON	OFF	ON	OFF	N/A
---------	----	----	-----	----	-----	-----

$50 + 100 + 400 = 550$

### Coin Dispense Switches

These push-button switches allow coins to be dispensed from the coin mech coin tube inventory. The left hand switch pays out nickels, the center switch dimes, and the right hand switch dispenses quarters. Will not work if unit has cash credit or in Test Vend Mode.

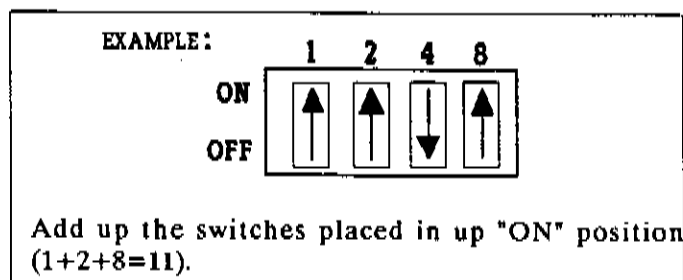
**NOTE:**

When WIN-A-DRINK feature is used in combination with a Bill Acceptor, the quarter level sensing switch must be set to "HIGH".

### MICROPROCESSOR BOARD SWITCH SETTINGS

#### General

All controls on the 406Z microprocessor are in the form of "DIP" switches. (The term "DIP" is an abbreviation for Dual In Line Package", which describes their mounting configuration.) Each package on the board contains either three or four individual switches (poles). A switch is ON in its up position and OFF in its down position. For each package, the value of each switch is marked on the black cover adjacent to it. Ignore any number printed on the switch package itself. To set a given switch group to a number, simply set appropriate switches to the ON position so that their sum equals the desired number.



#### Ice Amount

This is a four pole switch that can be set from 0 to 15; the higher the number, the greater the amount of ice delivered for a given drink.

#### Selection Option

This switch group indicates to the microprocessor the type of drink it should deliver when you press a given selection button on the front of the machine. It also determines what selection number should be assigned to a given button so that carbonation levels and syrup starting times can be set for the drinks associated with a given button.

There are many different possible settings of the selection option switch, however not all binary settings are pertinent. Refer to the full-page chart, page 2 - 8 for functions of recommended binary setting. Consider selection option "0". This is used on a machine that has only four buttons (excluding "No Ice"). Buttons are considered selection

numbers 1 through 4, starting from the left front of the vendor. Each selection has a different syrup pump.

Consider selection option 10. This machine has eight selection buttons. Selections 1 through 5 would be carbonated drinks, selection 6 would be a non-carb drink, selection 7 would be a plain Ice-Tea and selection 8 would be the Ice-Tea sweetener button. See page 2 - 10.

#### Carbonated Water

There are six 3-pole switches that control carbonation levels -- one for each selection number. Each switch can be set from 0 to 7 -- the higher the setting, the higher the carbonation level.

#### Drink Size

This is a 4-pole switch that can be set from 0 to 15. the switch setting corresponds to the cup size, except for the "0" setting which is for 16 ounce cups. Proceed as follows:

1. Set Drink Size dip switches to the appropriate cup sized used.
2. Place credit on unit with Test Vend Switch.
3. Select a carbonated drink with no ice.
4. Check and adjust the liquid level by rotating the Carbonated Water Valve until desired amount is obtained.
5. For non-carb drink follow the same routine as above, except use the Still Water Valve to adjust liquid level.

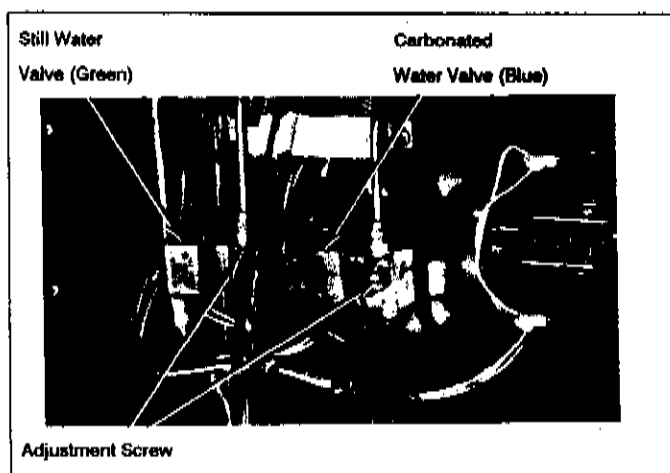


FIGURE 2 - 7 WATER VALVE ADJUSTMENTS

#### Tea Amount

This switch controls the amount of tea powder dispensed when a machine contains the iced tea option. The switch has four poles, any number from 0 to 15 can be set. Maximum tea powder is dispensed with the switch set at 15.

The powder absorbs moisture readily and will cake up if the vendor is transported with the canister filled. For best results do not fill the canister until the vendor is on location and plugged in so that the tea heater is on, and then use only enough product to satisfy the demand from one service to the next.

**Syrup Start Time**

Different syrups may have different viscosities requiring their syrup pumps to start at different times. Each selection number has a switch which is used to determine how long a syrup pump is delayed from coming on after a vend cycle commences. Longer delay is achieved by setting a switch to its highest number. For any size drink, each increment corresponds to 0.25 seconds.

Suggested settings are as follows:

Syrup	Switch Setting
Cola	8
Orange	5
Grape	5
Diet Cola	10
Sprite	9

If unit has more than 6 selections, switch bank 5 will also set selection 7 and switch bank 6 will also set selection 8.

**Drink Size Setting**

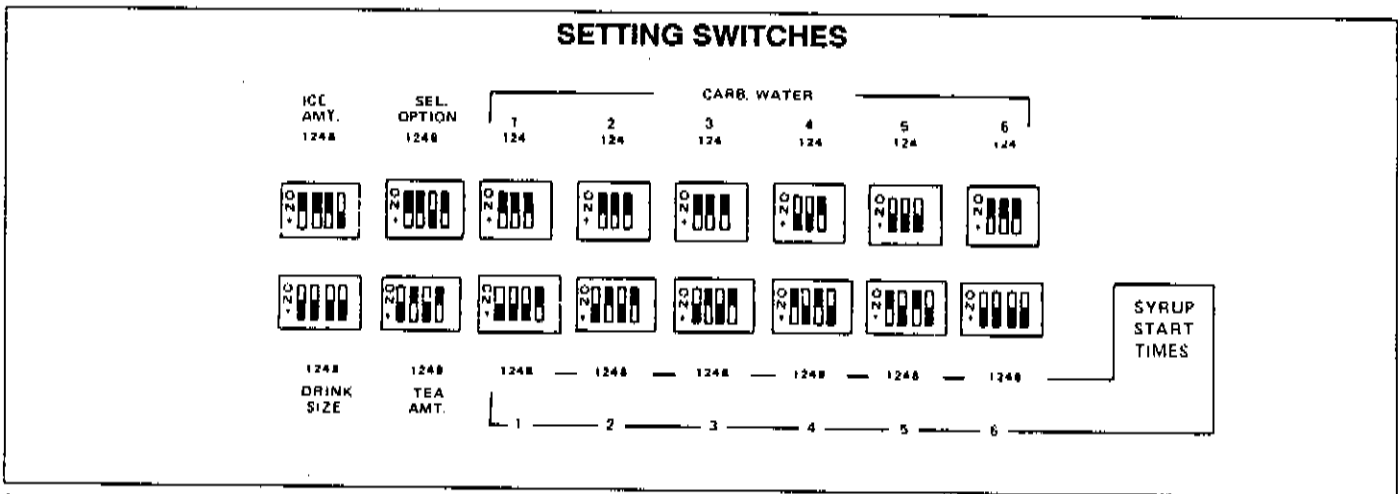
- 0=16-18 oz. cup size
- 9=9 oz. cup size
- 12=12 oz. cup size
- 7=7 oz. cup size

Liquid levels automatically adjust.

**Example:**

Refer to the illustration of the microprocessor controls with the following setting:

- Ice Amount -- 7
- Selection Option -- 10
- Carbonated Water -- Selection 1 - 7
- 2 - 7
- 3 - 7
- 4 - 4
- 5 - 0
- 6 - 7
- Drink Size -- 0 = 16 oz. All switches OFF.
- Tea Amount -- 11
- Syrup Start Timer -- Selection 1 - 8
- 2 - 10
- 3 - 10
- 4 - 5
- 5 - 5
- 6 - 0



**Ice Amount**

- 1=Approx. 10 Grams
- 3=Approx. 23 Grams
- 8=Approx. 49 Grams
- 15=Approx. 92 Grams

No. 7 setting recommended for 16 oz. drinks.

SELECTION OPTION -- See chart next page.

**Carbonated Water**

0= No Carbonation

- 1=
  - 2=
  - 3=
  - 4=
  - 5=
  - 6=
  - 7= High Carbonation
- Proportionately  
Increasing to

If unit has more than 6 selections, switch bank 5 will also set selection 7 and switch bank 6 will also set selection 8.

**Tea Amount**

- 0 = Approx. 0.4 grams (all switches off)
- 6 = Approx. 1 gram
- 10 = Approx. 1.4 grams
- 15 = Approx. 2 grams (all switches on)

Setting No. 10 recommended for 16 oz. drink. Increase or decrease to taste.

**Tea Sweetener Amount**

The recommended amount of sweetener for a 16 oz. drink is 30 cc. Adjust the Tea Sweetener pump in the same manner as other syrup pumps. Be certain all air is purged from the lines before setting the pump.

**Syrup Throw Amount**

Nominal 79 cc recommended for 16 oz. drink. Follow manufacturers suggested syrup mix for best quality and taste.

**406Z SELECTOR ARRANGEMENTS**

\* See below

SEL. OPT.	DESIGNATION	BUTTON POSITIONS									NO. OF SYRUP TANKS	NO. OF SYRUP PUMPS
		1	2	3	4	5	6	7	8	9		
0	4 Flavor - 4 Selection	A SEL. 1	B SEL. 2	C SEL. 3	D SEL. 4					NO ICE	4	4
1	4 Flavor - 6 Selection (with 2 Carb. variations)	A SEL. 1	B SEL. 2	C SEL. 3	D SEL. 4	C Non-Carb. SEL. 5	D Non-Carb. SEL. 6			NO ICE	4	4
2	4 Flavor - 6 Selection (with 1 Carb. variation & 1 Seltzer)	A SEL. 1	B SEL. 2	C SEL. 3	D SEL. 4	D Non-Carb. SEL. 5	Seltzer SEL. 6			NO ICE	4	4
3	5 Flavor - 6 Selection (with 1 Carb. variations)	A SEL. 1	B SEL. 2	C SEL. 3	D SEL. 4	E SEL. 5	E Non-Carb. SEL. 6			NO ICE	5	5
4	5 Flavor - 6 Selection (with 1 Seltzer)	A SEL. 1	B SEL. 2	C SEL. 3	D SEL. 4	E SEL. 5	Seltzer SEL. 6			NO ICE	5	5
5	6 Flavor - 6 Selection	A SEL. 1	B SEL. 2	C SEL. 3	D SEL. 4	E SEL. 5	F SEL. 6			NO ICE	6	6
6	4 Flavor - 6 Selection (with 2 Iced Tea)	A SEL. 1	B SEL. 2	** SEL. 3	D SEL. 4	Iced Tea SEL. 5	Iced Tea w/ sweetener SEL. 6			NO ICE	4	5
7	6 Flavor - 8 Selection (with 2 Iced Tea)	A SEL. 1	B SEL. 2	** SEL. 3	D SEL. 4	E SEL. 5	F SEL. 6	Iced Tea SEL. 7	Iced Tea w/ sweetener SEL. 8	NO ICE	6	7
8	6 Flavor - 8 Selection (with 2 Carb. variations)	A SEL. 1	B SEL. 2	C SEL. 3	D SEL. 4	E SEL. 5	F SEL. 6	E Non-Carb. SEL. 7	F Non-Carb. SEL. 8	NO ICE	6	6

\* Variable carbonation limited to selections 1 to 6. Set switches on Selection Option to equal values shown.

\*\* Must be "Sprite" or equivalent syrup in this selection.

**406Z SELECTOR ARRANGEMENTS**

\* See below

SEL. OPT.	DESIGNATION	BUTTON POSITIONS									NO. OF SYRUP TANKS	NO. OF SYRUP PUMPS
		1	2	3	4	5	6	7	8	9		
†† 8	8 Flavor – 8 Selection	A SEL. 1	B SEL. 2	** C SEL. 3	D SEL. 4	† E SEL. 5	† F SEL. 6	† G SEL. 7	† H SEL. 8	NO ICE	8	8
9	6 Flavor – 8 Selection (with 1 Carb. and 1 Seltzer)	A SEL. 1	B SEL. 2	C SEL. 3	D SEL. 4	E SEL. 5	F Non-Carb. SEL. 6	Seltzer SEL. 7	NO ICE	6	6	
†† 9	8 Flavor – 9 Selection	A SEL. 1	B SEL. 2	** C SEL. 3	D SEL. 4	† E SEL. 5	† F SEL. 6	† G SEL. 7	† H SEL. 8	*** Seltzer NO ICE SEL. 9	8	8
10	5 Flavor – 8 Selection (with 1 Carb. and 2 Iced Tea)	A SEL. 1	B SEL. 2	** C SEL. 3	D SEL. 4	E SEL. 5	E Non-Carb. SEL. 6	Iced Tea SEL. 7	Iced Tea w/ sweetener SEL. 8	NO ICE	5	6
11	5 Flavor – 8 Selection (with 1 Seltzer and 2 Iced Tea)	A SEL. 1	B SEL. 2	** C SEL. 3	D SEL. 4	E SEL. 5	Seltzer SEL. 6	Iced Tea SEL. 7	Iced Tea w/ sweetener SEL. 8	NO ICE	5	6
12	4 Flavor – 8 Selection (with 1 Carb. variation and 1 Seltzer and 2 Iced Tea)	A SEL. 1	B SEL. 2	** C SEL. 3	D SEL. 4	D Non-Carb. SEL. 5	Seltzer SEL. 6	Iced Tea SEL. 7	Iced Tea w/ sweetener SEL. 8	NO ICE	4	5

- \* Variable carbonation limited to selections 1 to 6. Set switches on Selection Option to equal values shown.
- \*\* Must be "Sprite" or equivalent syrup in this selection.
- \*\*\* Ninth button on this option provides seltzer if pushed before making a "Flavored" drink selection. Ice will automatically be delivered to cup. Card P/N 907-2122 is required for this option.
- † The carbonation level set for Selection 5 will automatically set Selection 7. The carbonation level set for Selection 6 will automatically set Selection 8.
- †† The 8 flavor setup option MUST use Microprocessor P/N 408-21000 and Driver Board P/N 408-21001.

## VENDOR OPERATIONAL CHECK

Check for proper operation as follows:

1. Press beverage selector push-button. Check dispensed beverage for flavor, ice quantity and beverage level in cup.
2. Repeat for remaining beverage selector push-buttons.
3. Press NO ICE push-button and beverage selector push-button. Check level of dispensed beverage in cup.
4. Repeat for remaining beverage selector push-buttons.
5. If adjustments are required, refer to the procedure beginning on page 2 - 7.
6. Fill tube in coin mechanism. Test vend using all possible coin combinations.

Check water pump for proper operation as follows: the water pump bypass is adjusted at 140-145 psi. To check the pressure and proper operation of the water pump:

1. Check CO<sub>2</sub> pressure to carbonator (38-45 psi).
2. Turn on carb flush switch.
3. When water stops flowing and gas only is being dispensed.
4. Turn off carb flush switch and check running time of water pump.
  - a. Running time 35 to 48 seconds.
  - b. Amount of water to fill carbonator is 43 ounces.

## TRANSPORTING VENDOR TO LOCATION AFTER CHECKOUT

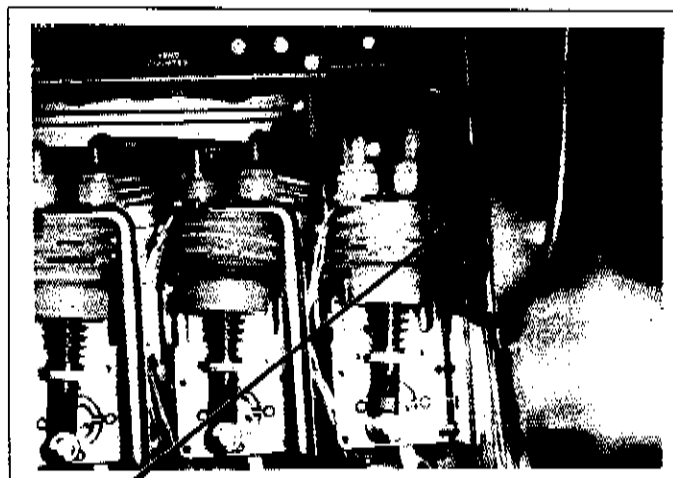
If the vendor is checked out at the shop and must be transported to the location, prepare the vendor for shipment as follows:

1. Flush carbonator until all water and CO<sub>2</sub> gas stops flowing from the delivery nozzle.
2. Set Main Switch and Icemaker Switch to "OFF" position.
3. Disconnect Pressure Regulator output hose and remove CO<sub>2</sub> tank.
4. Disconnect water supply. Close manual inlet valve on QC4 Filter head.
5. Remove QC4 filter element and drain filter element of water. Carefully pack element in packing material. Severe shocks to the wetted element will shake loose charcoal material and plug element. (Carbonation will be affected.)
6. Remove syrups from syrup tank.

### CAUTION !

*If Vendor is stored where temperature is likely to drop below 32° F., be certain that all water is removed from cooling coils, water pump and connecting lines.*

7. Drain water from water bath. See Figure 3 - 2 for drain location.
8. Drain water from icemaker and water feeder tank by disconnecting icemaker feeder hose.
9. Empty waste bucket. Close and lock door.
10. When moving the vendor, be careful not to damage the power cord or water line. (Note: Power cord may be removed for transporting. See Illustration)
11. Perform the applicable steps of this procedure at the installation site. Before leaving the location check for the following:
  - ✓ Water filter installed.
  - ✓ Coin mechanism operating properly.
  - ✓ Coin tubes filled.
  - ✓ Splash panels reinstalled.
  - ✓ Interior of vendor thoroughly cleaned.
  - ✓ Insure rinse hose valve is OFF -- no leakage.
  - ✓ Front door closed and locked.



### NOTE:

*Line cord to service outlet can be unplugged from control box and plugged directly into power cord. This will provide power to service module (Light and service outlet) while machine is electrically disconnected for service.*

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# SECTION 3 SERVICE OPERATION

## INTRODUCTION

The vendor must be cleaned to maintain sanitary conditions and dependable operation. This section presents minimum schedule that should be followed. For heavy customer traffic, more frequent service intervals are required.

Clean with lint-free cloths or disposable towels, brushes and detergent sanitizer acceptable to the local health authority. Follow directions provided by the sanitizer manufacturer for proper chemical concentration.

For optimum cleaning of the machine, three different solutions should be used, these are; an anti-bacterial solution, a detergent solution and a sanitizing solution.

These can be readily located in vending supply houses.

## SANITIZING AND SERVICE PROCEDURES

### Daily/Weekly Sanitizing

1. Remove and empty waste bucket.
2. Remove cup compartment and clean with detergent. Rinse in clear, hot water and dry with a clean cloth or disposable, single-service paper towel.

3. Fill syrup tanks. Wipe syrup compartment splash cover and tank lids, water bath cover, and plastic splash panels. Dry with a clean cloth, or disposable paper towel.
4. Fill cup storage tubes. Wipe outside surface of cup dispenser.
5. Wipe bottom floor shelf and lower panels. Use detergent to remove dirt or syrup deposits. Rinse wipe with hot water, then dry thoroughly.
6. Remove tea mixing bowl. Clean with detergent, rinse in clear hot water and reinstall.
7. Wash waste bucket with detergent. Rinse with anti-bacterial solution.

### NOTE:

*Do not wipe bucket after rinsing. The anti-bacterial solution retards bacteria growth.*

8. Reinstall cup compartment and waste bucket.
9. Wipe and clean inside of cabinet door, compartment slide door and door tracks.
10. Clean cabinet exterior with a mild appliance cleaner.
11. Test vendor for proper operation.

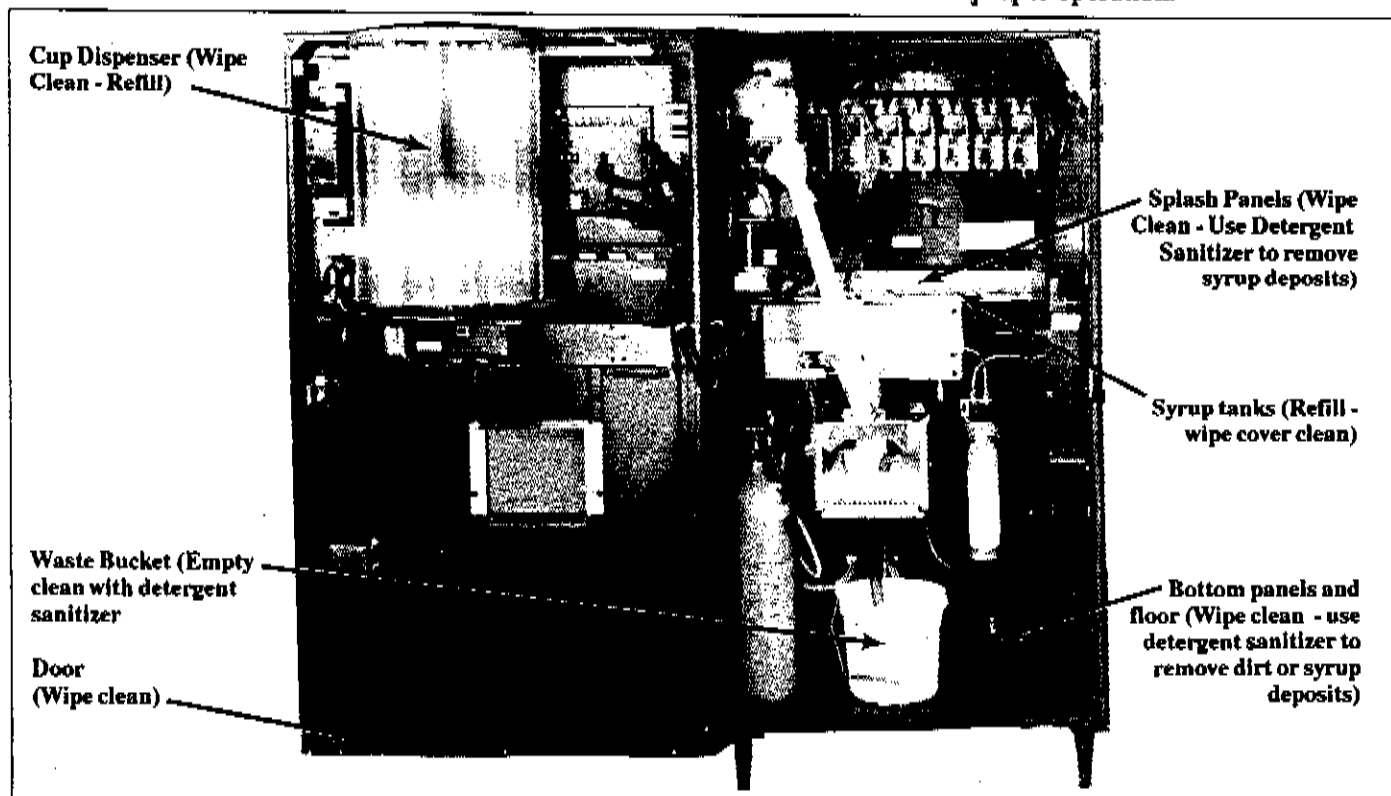


FIGURE 3 - 1 DAILY CLEANING

### Three Month Sanitizing

**NOTE:**

*This procedure is simplified through the use of a Rowe Model MR-1 Sanitizing Kit. (Part No. 406-4550)*

**1. Water Bath Sanitizing**

- a. Turn Main Switch OFF.
- b. Remove and empty waste bucket, replace bucket.
- c. Remove water bath cover and drain water bath using attached fill level/drain tube (See Fig. 3 - 2).
- d. Reattach fill level/drain tube and fill water bath to top overflow hole with anti-bacterial detergent solution. Use Fill Level Drain Tube to empty water bath.
- e. Let sit for 10 minutes. Use clean water to rinse out afterwards.

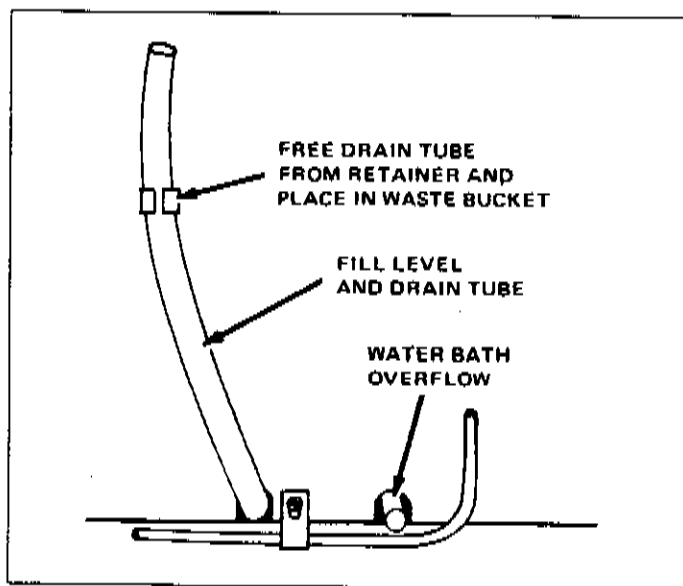


FIGURE 3 - 2 DRAWING WATER BATH

- f. Reposition Fill Level/Drain Tube and fill waterbath to top overflow hole with clean water (see Figure above).
- g. Apply 3 drops of a light non-detergent oil to each agitator motor oil tube if so equipped.
- h. Reinstall water bath cover.

**2. Syrup Pumps and Syrup Tanks**

- a. Remove top syrup compartment plastic splash covers. Remove suction tubes from syrup tanks and remove tanks from storage compartment.
- b. Empty residual syrup from tank into clean syrup jugs or suitable sanitary containers for re-use after the sanitizing procedure has been completed. Remove and discard plastic liners.
- c. Clean tank, cover and lids with hot water and detergent. Rinse with clean, hot water.

- d. Place the largest syrup tank in storage compartment section. Fill with two gallons of sanitizing solution water.
- e. Place all the syrup suction tube ends into the tank containing sanitizing solution.
- f. Operate each of the syrup pump prime levers until syrup-free sanitizing solution flows from suction lines to discharge tubes.
- g. Empty tank containing solution, and rinse with hot clean water, reinstall and fill with 2 gallons of hot clean water.
- h. Place all suction tubes into tank of clean water. Repeat step (g) until all pumps have been flushed of sanitizing solution.
- i. Dump out remaining clean water, invert tank and allow to drip dry.
- j. Clean remaining tanks with sanitizing solution. Rinse out with clean hot water.
- k. Clean tank storage compartment and splash cover with sanitizing solution, rinse thoroughly.
- l. Install new plastic tank liners. Install syrup tanks in compartment and place suction tubes in proper tanks in accordance with identification labels.
- m. Install covers and fill tanks with syrup. Place lids over each tank splash.
- n. Prime syrup pumps using prime levers.

**3. Reservoir Tank, Water Pump and Carbonator Tank**

- a. Set Main Power Switch OFF.
- b. Empty Waste Bucket and temporarily situate above CO<sub>2</sub> tank.
- c. Locate the Reservoir Tank (see parts section). Disconnect the cover assembly and place away from tank.
- d. Disconnect the water hose located at the bottom of the Ice maker hopper and allow water to drain into waste bucket.
- e. Clean out hoses with scrub brush then reinstall.
- f. Place Waste Bucket back under the Cup Compartment assembly.
- g. Fill the Reservoir tank with sanitizing solution.
- h. Reinstall the Reservoir lid assembly.
- i. Set main Power Switch ON.
- j. On the Control box, set the Carb Water Switch to Flush position until air is heard released out from the carb nozzle. Set switch back to the Vend position.
- k. Allow sanitizing solution to sit in system for at least 10 minutes.

- l. Repeat step (j).
- m. Remove reservoir lid filter and clean.
- n. Reinstall all parts back to normal.

#### 4. Clean and sanitize the icemaker as follows:

- a. On the Control Box, depress and hold the Icemaker Power Switch to the Test position until all ice is dispensed from hopper.
- b. Set Main Power Switch OFF.
- c. Disconnect the Icemaker funnel chute.
- d. Locate the water hose tee fitting under the reservoir assembly. Disconnect the line going to the Icemaker and allow to drain.
- e. Place and tape this hose up along side of the Icemaker hopper.
- f. Unscrew the Icemaker bracket holder knob located at left side rear of a assembly and swing Icemaker outward.
- g. Remove Icemaker Hopper cover.
- h. Fill hopper with sanitizing solution.

#### NOTE:

*If Icemaker door leaks, door gasket may need to be replaced.*

- i. Disconnect one of the wire terminals on the refrigeration valve.
- j. Set Main Power Switch ON.
- k. Allow the icemaker motor to run approximately 5 to 10 minutes then set Main Power Switch OFF.
- l. Situate waste bucket above CO<sub>2</sub> tank assembly.
- m. Untape water line from side of Icemaker hopper and drain into waste bucket.
- n. Use a tube scrub brush to clean debris out of hoses.
- o. Retape water line to Icemaker hopper.
- p. Fill Icemaker hopper with clean hot water.
- q. Set Main Power and Icemaker switches ON for approximately two minutes, then set back to OFF.
- r. Repeat steps (l and m).
- s. Reconnect and relocate all parts and assemblies.
- t. Test Vend machine for proper operation.

## CUP DISPENSER

### Functional Operation

The drive motor receives vend pulse and starts drive crank rotating (clockwise) away from drive slide by means of the cup sensing lever moving off the full cycle switch lever, which transfers the switch and keeps the drive motor energized.

Simultaneously, the drive motor shaft rotates the cup drop cam, moving the cup drop link off the cam actuator. The cup drop slide is actuated by the return action of the cup drop switch which, in turn, actuates the cup drop ring to deliver a cup.

If there is a sufficient number of cups (14 or more) in the cup drop tube, the cup sensing lever will not be able to move far enough to actuate (rotate) the cup turret assembly.

When the cup sensing lever is permitted to pass the area in the cup drop tube normally occupied by cups, the action of the drive crank moves the drive slide, engaging the drive sprocket which, in turn, rotates the cup turret one-half an index. Over-travel is limited by a one-way latch (see "Backlash Lock Adjustment" in Maintenance Section). The drive slide is returned by means of the action of the latch spring.

#### NOTE:

*It takes two strokes of the drive slide to index the turret one position.*

Therefore, improper loading of cups, in the cup turret (e.g., skipping more than two consecutive tubes) may not allow the cup dispenser to rotate enough to replenish the cup drop tube, thereby creating a premature "sold-out" condition. (Normally, the sold-out switch actuates with three cups remaining.) The drive crank continues to move, catching inside of the cup sensing lever and returning it to the "home" (stand-by) position.

Simultaneously, the drive motor shaft continues to rotate the cup drop cam, which re-engages the cup drop link, re-setting the cup drop ring.

The point at which the cup drop link stops on the cam actuator is determined by where the full-cycle switch is positioned (see "Full-Cycle Switch Adjustment" in Maintenance Section). At this point, the full-cycle switch actuator is depressed cutting power to drive motor.

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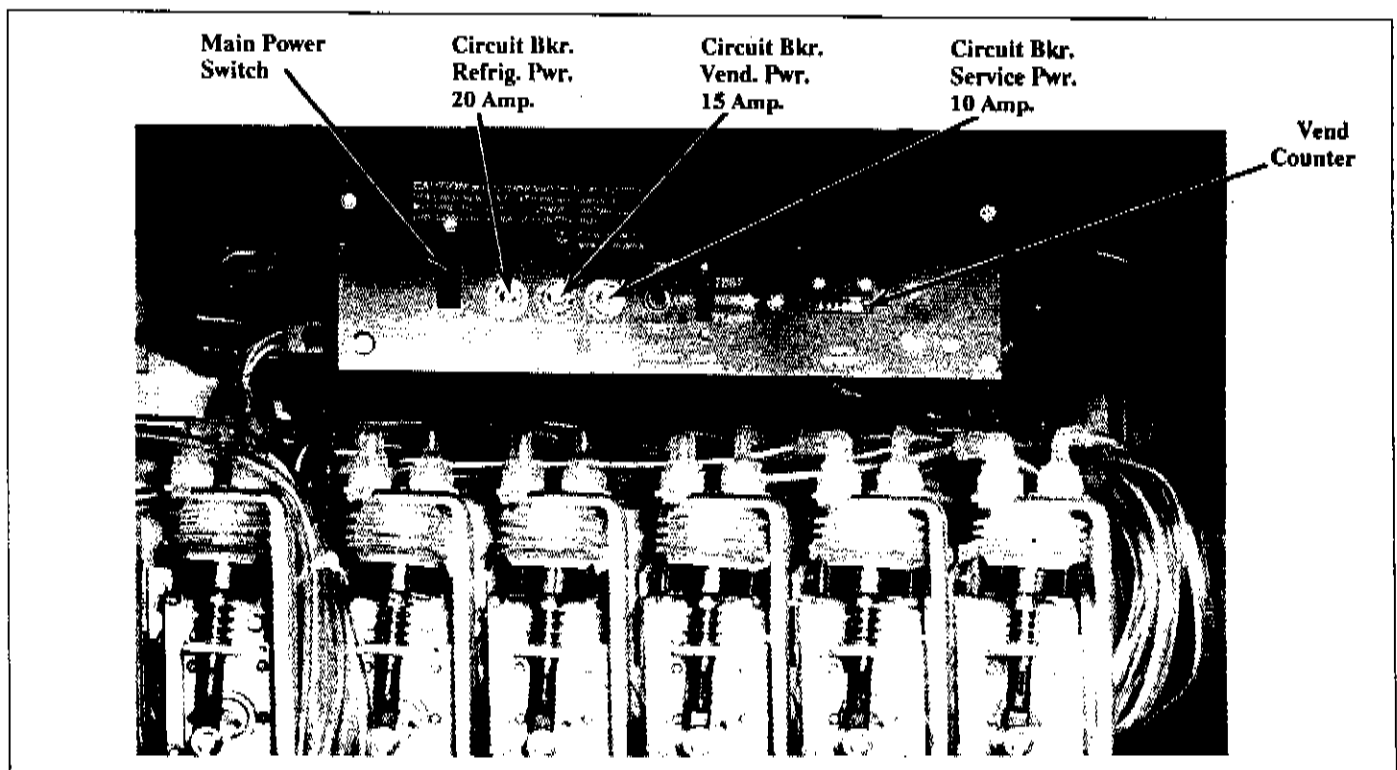


# SECTION 4 TROUBLESHOOTING

## INTRODUCTION

This section contains several troubleshooting aids to help you quickly locate and repair possible problems. When a problem occurs, always look for the obvious solution first. Check the following before attempting or troubleshoot adjustment or replacing any parts:

1. Check power source outlet for proper voltage and polarized socket.
2. Make sure that the Main Power Switch is set to ON.
3. Press all Circuit breaker buttons on control panel.
4. Check that the waste bucket is not full.
5. Check that the water source and shutoff valve are open (shut-off valve is located on the water filter asm.). Pressure to vendor should be between 5 to 90 psi.
6. Check that all connector plugs are firmly seated.
7. Check that all connector pins are not bent or pushed through the back of the connector when mated.
8. Check that wires are not broken at connector pins.
9. Be sure that syrup pumps are primed.
10. Check for crimped or bent syrup and water tubing.
11. Check that syrup dip tubes are properly submerged in syrup tanks.
12. Be sure that the water bath is filled to proper level.
13. Check that cup dispenser contains the correct size cups.
14. Perform an ohm check for applicable component in question (see Ohm Resistance Chart on next page).
15. Check Microprocessor function LED's in standby (see page 4 - 2).



Resistance in Ohms $\pm 10\%$ @ 25° C	Description	Part No.
3450	Carbonation Relay	112-1848
300	Refrigeration Relay	201-1842
<b>SOLENOIDS AND SOLENOID VALVES</b>		
224	3-Way Refrigerant Valve	408-1271
890	Dual Inlet Water Valve	408-1878
360	Flow Valve Coil	55-10559
160	Water Inlet Valve Coil	55-10569
225	Carbonated Water Solenoid	406-1222
165	Still Water Solenoid	406-1229
20	Carbonator Exhaust Solenoid	406-1223
16	Ice Door Solenoid	201-4556
<b>MOTORS</b>		
22	Syrup Pump Motor	408-4500
30	Agitator Motor	408-1810
20	Cup Turret Motor	408-1896

**406 MACHINE LED FUNCTION**

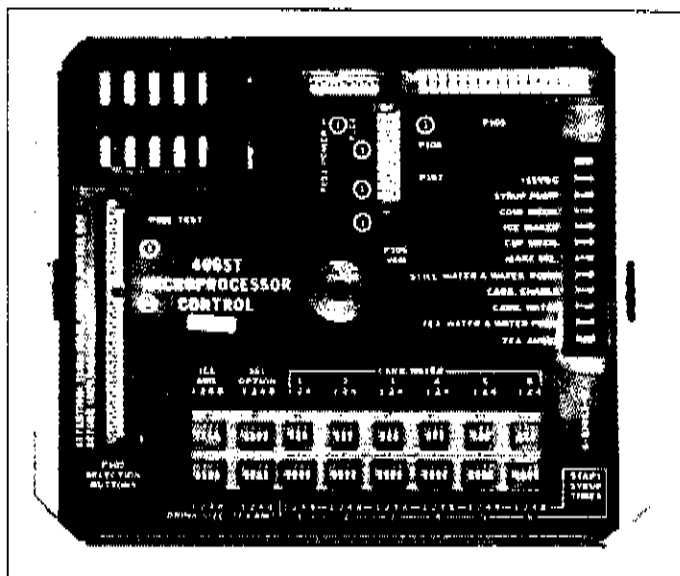
- Syrup** -- OFF at standby. Comes ON with impulse to start any syrup pump. Remains ON for first half of pump cycle (see notes below).
- 15V** -- ON at all times when 15VDC is present on microprocessor control center. If LED is not ON it may indicate faulty connections, faulty step-down transformer or Microprocessor board failure.
- Coin Mech** -- ON in standby. Coin mechanism is enabled for change acceptance. Goes OFF when credit is established by coin insertion or when test switch is depressed (Note -- does not go OFF in Sold Out condition.)
- Water Pump** -- OFF at standby. Comes ON anytime still water is being delivered to cup.
- Ice Maker Door** -- OFF at standby. Comes ON when Icemaker door is energized (see notes - light does not operate with ice test switch).
- Cup Mech** -- OFF at standby. Comes ON to start cup drop cycle (see notes - light does not operate with test switch).
- Make Select** -- OFF at standby. Blinks on at end of vend cycle.
- Still Water** -- OFF at standby. Comes ON when still water valve is energized.
- Carb. Enable** -- ON At standby. Allows carbonator tank to be filled when required. Goes OFF when still water is dispensing to vend cup.
- Carb. Water** -- OFF at standby. Comes ON when Carbonator Water Valve is energized and when dispensing to vend cup.

**NOTE:**

*These LED's will remain ON for the time set on the Microprocessor Board and then go OFF after the elapsed time, even if components do not operate.*

*If the LED's on Microprocessor Board perform in the above described way and the applicable function fails to operate, the problem may be in the Driver Board, faulty connections or a defective component.*

*If LED's DO NOT perform in the above described manner during a normal cycle, problem may lay in the Microprocessor Board.*



**406Z MICROPROCESSOR BOARD**

**TROUBLESHOOTING CHART  
(Problem/Solution)**

This Troubleshooting Chart should be a helpful tool in resolving possible problems which could occur in this machine. The Probable Cause and Solution for one of the particular problems should be followed in the order listed.

<b>Problems</b>	<b>Probable Cause</b>	<b>Solution</b>
<b>All coins returned to coin cup - SOLD OUT Lamp not lit</b>	Vendor not level	Level cabinet.
	VEND POWER circuit breaker tripped	Reset circuit breaker, check for possible shorts.
	Defective Coin Mechanism CREM W-A-D Control Board defective	Substitute another coin mechanism. Replace W-A-D board. Check harness connections.
<b>All coins returned to coin cup - SOLD OUT light is lit</b>	Reservoir low water switch out of adjustment or defective	Check adjustment. Remove power and check switch with ohmmeter.
	Cup empty switch actuator out of adjustment or switch defective	Check adjustment. Remove power and check switch with ohmmeter.
	Waste bucket full or defective bucket overflow switch	Empty bucket. Check switch.
	Out of water	Check water supply to unit, check for clogged filter. Replace defective inlet valve solenoid.
	Feeder Tank level switches	Check feeder tank switches.
<b>Coins accepted, cannot make selection</b>	Defective coin mechanism	Substitute another coin mechanism.
	Defective circuit board; Driver, Microprocessor or W-A-D	a. Observe coin mech LED on microprocessor board for all following steps. b. Establish credit. c. If coin mech LED goes out, replace driver board. d. Momentarily jump P101 pin-2 to 3 on microprocessor board. e. If coin mech LED goes out, replace W-A-D board. f. If coin mech LED stays lit, replace microprocessor board.
	Defective Selector switch or harness cable	Check, repair/replace.
<b>Cup does not drop. (SOLD OUT lamp not lit)</b>	Wrong size cups or cup drop ring adjustment	Check cup size and drop ring adjustment.
	Cup dispenser motor or switch defective	Check full cycle switch and motor.
	Microprocessor or Driver board defective	Check if the cup mech LED on microprocessor board lights after a selection button is pushed. If so, replace driver board. If not, replace microprocessor board.

## TROUBLESHOOTING CHART (Problem/Solution)Cont'd

Problems	Probable Cause	Solution
<b>Icemaker:</b> <b>Ice not dispensing (Ice-hopper full)</b> * See page 4 - 7 for additional information with Ice problems.	<b>Icemaker ON/OFF switch on Control Box set to OFF</b>  <b>Ice door solenoid/circuit breaker tripped</b>  <b>Defective Microprocessor or Driver Board</b>	Set switch to ON.  a. Reset circuit breaker. b. Check door solenoid resistance. c. Check door linkage assembly for binding. d. Replace Driver board.  During a vend cycle, check the Icemaker door LED to light. If it does, replace Driver board. If it does not, replace Microprocessor board.
<b>Icemaker:</b> <b>Poor or no ice is being provided</b> * See page 4 - 7 for additional information on Icemaker problems.	<b>Incorrect Icemaker water level</b>  <b>Mineral build up in Icemaker</b>  <b>Poor hopper insulation</b>  <b>Refrigeration system</b>  <b>Unable to adjust pressures with expansion valves</b>	Check water level at Icemaker drain hose to be about ¾ of an inch below hopper.  Sanitize system (see Maintenance Section).  a. Check hopper lid for proper installation and seal. b. Check exterior hopper assembly for cracks. Replace if needed. c. Check door gasket for good seal.  a. Check refrigeration pressures: 3½ to 5½ psig on low side. 132 to 142 psig on high side. If readings are low, check for possible freon leak. b. Check frost line, if down to compressor, replace bottom quick disconnect (male and female). c. Check voltage at 3-way refrigeration valve to be 110 VAC. If missing, check ice hopper level switch. If present, check refrigeration valve operation. Rebuild or replace as needed.  Power OFF system. Heat up expansion valve with heat blower. Power up system and check pressures. If no change, replace expansion valve. If the pressure readings change significantly, then moisture has contaminated the system. Evacuation and recharge must be performed.

*NOTE: When evacuating system for moisture, a minimum of four hours vacuum is required.*



**TROUBLESHOOTING CHART  
(Problem/Solution)Cont'd**

Problems	Probable Cause	Solution
<p>(continued)  <b>Icemaker:</b>  <b>Poor or no ice is being provided -</b>                      * See page 4 - 7 for additional information with Ice problems.</p>	<p>Icemaker motor not running</p>	<p>a. Check Icemaker ON/OFF switch.                      b. Check refrigeration relay.                      c. Icemaker in thermal overload.                      Check Icemaker Troubleshooting Guide Page 4 - 7.</p>
<p><b>Improper water level in beverage cup</b></p>	<p>Restriction in water lines                       Drink size switch setting on microprocessor board incorrect                       Defective still water or carbonator valve                       Defective water pump</p>	<p>Check for crimped water lines and tubing.                       Check switch setting on the microprocessor board.                       Adjust output flow knobs.                       Check pump pressure. See procedure given in operational check page 2 - 11.</p>
<p><b>No syrup or too little syrup</b></p>	<p>CO<sub>2</sub> gas missing                       Syrup tank empty                       Tank suction tube blocked                       Syrup tubes crimped or blocked                      Syrup pump out of adjustment                       Syrup pump assembly defective                       Air in syrup line                       Microprocessor or driver board defective</p>	<p>Check and adjust Regulator Asm..                      Check CO<sub>2</sub> tank for gas level.                       Check level of syrup in tanks and refill if necessary.                       Un-block; cut tube end from syrup tank to form chisel shape.                       Check tubing; straighten as necessary.                      Adjust for required syrup throw.                       Check pump operation with prime lever. If pump fails to cycle, check voltage across pump terminal for 110VAC. If voltage is present, replace syrup pump. If voltage is missing, check full cycle switch.                       a. Prime syrup pump to push air out.                      b. If air returns, tighten hose fittings on syrup pump.                      c. If air returns, replace check valves on syrup pump.                      d. If air returns, replace syrup lines.                       Check to see if Syrup Pump LED on microprocessor board comes on during vend cycle. If not, replace microprocessor board. If it comes on, replace driver board.</p>

### TROUBLESHOOTING CHART (Problem/Solution)Cont'd

Problems	Probable Cause	Solution
<b>Water pump always running</b>	Bad ground wire connection on top of the carbonator assembly	Check green wire connection. Perform ohm test to cabinet for dead short reading.
	Defective carb relay	Unplug. If motor stops replace relay.
	Defective sensor probe in carbonator assembly (carb relay staying energized)	a. Sanitize Carbonator to remove mineral buildup. b. Replace sensors.
<b>Water pump will not run</b>	Defective water pump triac	On carb relay pop off plastic clear cap. With a non-metallic device, push in relay contacts. If motor does not run, replace triac.
	Defective isolation transformer	Check transformer for approx. 140 VAC across the green and blue wire. Replace if voltage missing.
	Defective carb relay	On carb relay pop off plastic clear cap. With a non-metallic device, push in relay contacts. If motor runs replace relay.
	Defective water pump	Check water pump voltage for approx. 115 VAC across terminals. If present replace water pump.
	Defective driver board	Replace.
<b>Bill Acceptor not accepting - Status LED on</b>	Empty or low on coins in Coin Mech	Check coin mech tube levels. If "Use Coin Only" lamp is lit and coin mech tube levels are more than ¼ full, replace coin mech.
	Bill Acceptor switch settings	Check bill acceptor DIP switch setting to be all OFF.
	Bad connection	Check all harnesses and connections between W-A-D board (J5 and J7) to Bill Acceptor. Check between coin mech socket plug to buffer board and then W-A-D board (J4) to Buffer bd.
	Defective Bill Acceptor	Check Bill Acceptor motor speed. Self test bill acceptor by setting Bill Acceptor DIP switches 1, 2, 3 and 4 to up ON position. If bill is not accepted, replace bill acceptor unit.
	Defective Win-A-Drink board	Replace.

## ICEMAKER TROUBLESHOOTING GUIDE

### Will not dispense ice

1. Dispensing Mechanism Failure
  - a. Solenoid burned out.
  - b. Electrical connection.
  - c. Dispensing Circuit within vendor.
  - d. Linkage and/or springs broken (lack of lubrication).
2. Transmission Fails to Run
  - a. Door mechanism switch fails.
  - b. Jammed or stripped gear.
  - c. Transmission start relay.
  - d. Transmission out on overload.
3. Hopper Empty
  - a. Failure of ice level switch.
  - b. Rotating freeze.
  - c. Compressor will not start; out of gas/out on overload.
  - d. Transmission not running.
4. Ice Bridges in Storage Container
  - a. See Bridged Ice.

### Bridged Ice

1. Soft Ice
2. Failure of Ice Level Switch
  - a. Storage hopper will over-fill.
3. Transmission running continuously, will break ice down
  - a. Compressor on overload.
  - b. Transmission start switch.
4. Water level
  - a. Too high - wet ice.

### Soft Ice

1. Unit needs sanitizing
2. Refrigeration System
  - a. Plugged condensor.
  - b. Condensor fan motor
  - c. Compressor's defective.
  - d. Low on gas.
  - e. Expansion valve.
  - f. Ambient temperature.
3. Water conditions
  - a. Total dissolved solids (approx. 500 p.p.m.).
  - b. Soften water (approx. 262 p.p.m. of sodium chloride).
  - c. Water temperature.
4. Evaporator
  - a. Water soaked insulation.
  - b. Evaporator tube scored.
  - c. Evaporator tube oversized.

5. Auger
  - a. Rework auger - machine undersized.
  - b. Auger that is scored.
6. Water level too low

### Rotating freeze

Transmission and compressor running - no ice coming out of evaporator. Ice is turning with the auger - intermittently makes a squealing noise.

1. Ice Maker needs sanitizing.
2. Water feed to icemaker; air or sediment in line starving ice maker for water.
3. Upper lead on auger rough
  - a. Lack of cleaning.
  - b. Poor copies or reworks.
  - c. Damaged.
4. Evaporator Tube Too Smooth
  - a. Reworked Honed or Polished.
5. Refrigeration System
  - a. Expansion valve set wrong.
  - b. Low on refrigerant.
6. Water soaked insulation on evaporator
  - a. Retains cold. if unit has been off the right amount of time could have a solid block around auger.
7. Water Conditions
  - a. Water refuses to freeze.

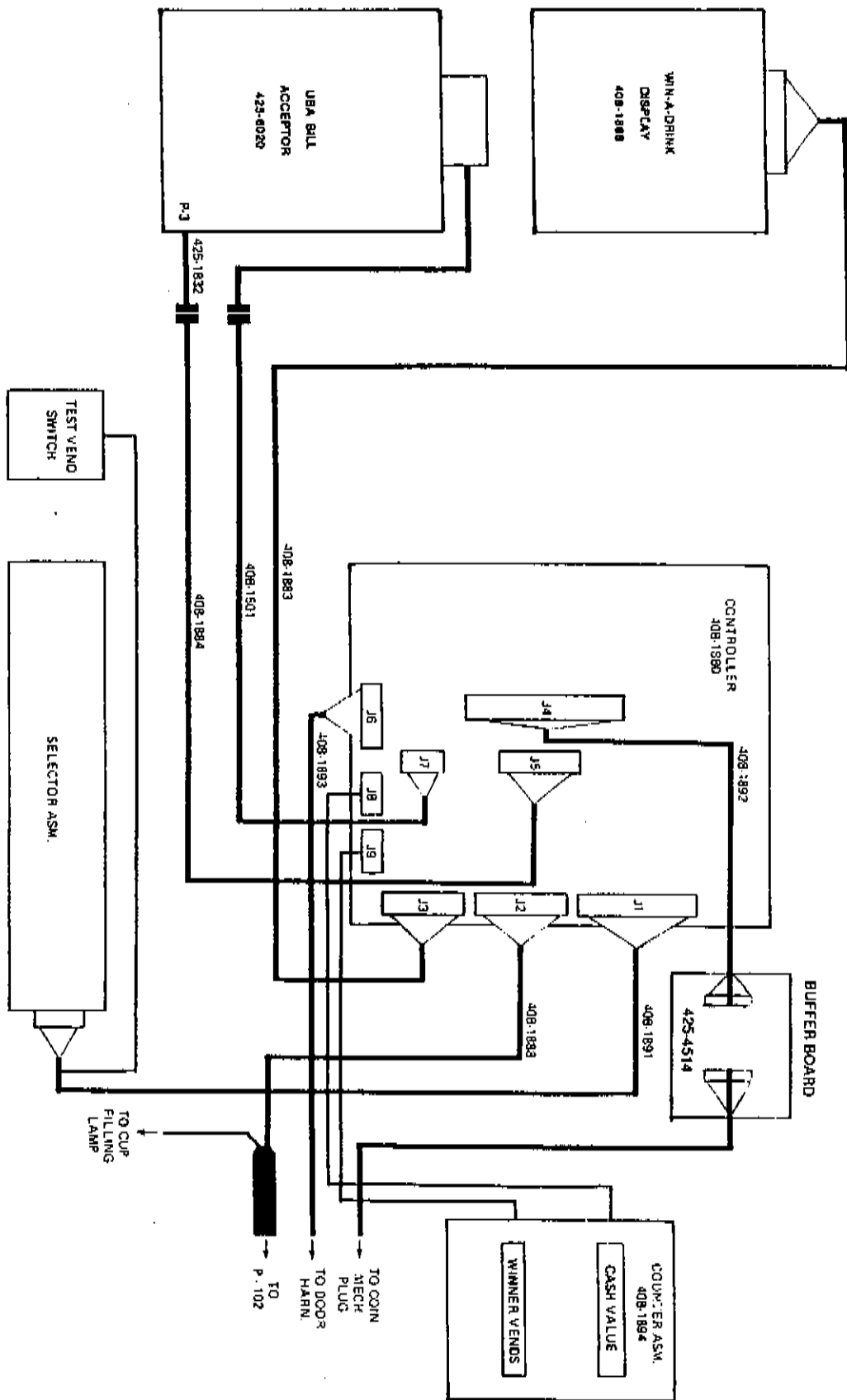
### Solid Freeze-Up

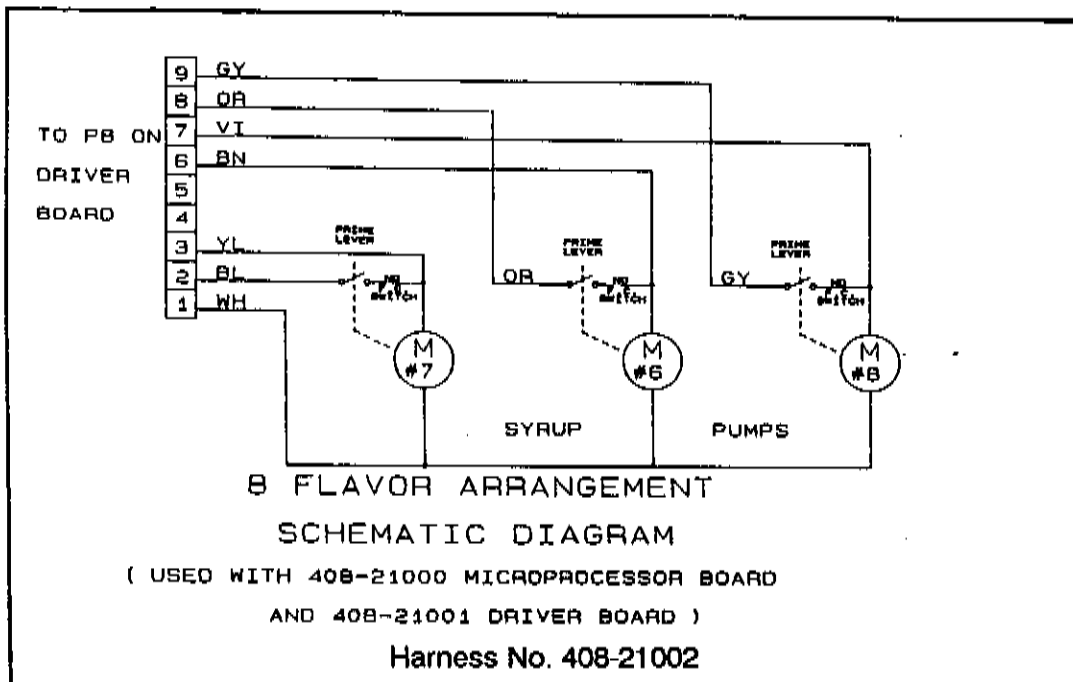
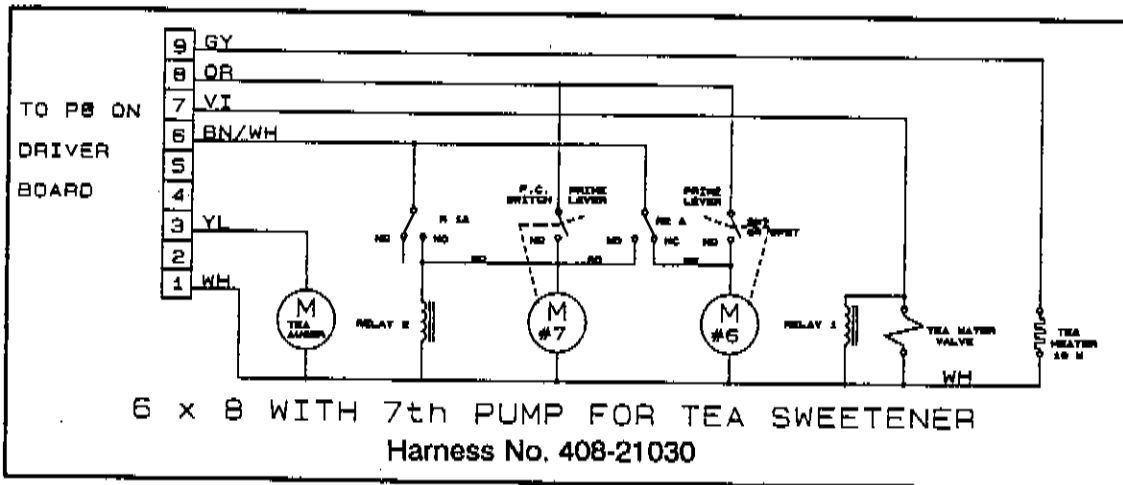
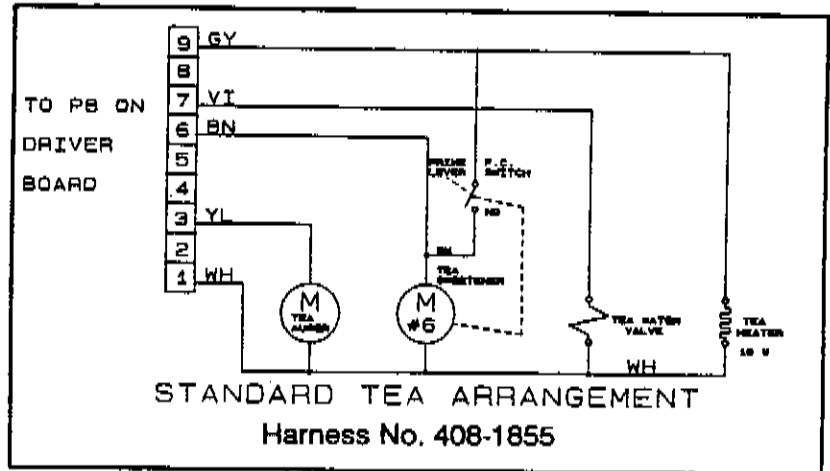
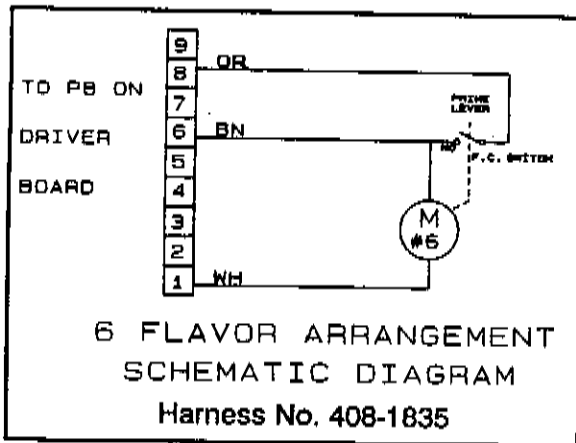
1. Ice Maker needs sanitizing
2. Water level control failing
3. Transmission electrical or mechanical failure
4. Scored auger and/or evaporator
  - a. Causes erratic ice build-up.
5. Upper bearing worn out allowing auger to touch output shaft.
6. Ice level switch failed
7. Poor copies of auger
8. Evaporator Tube Too Smooth
  - a. Reworked Honed or Polished.
9. Insulation

### Bent Agitator Blades

1. Ice level switch
  - a. Sheared agitator hub.
2. Soft ice
  - a. Sheared agitator hub.

# 406 "WINNER" Mode Main Door Harness Wiring Diagram



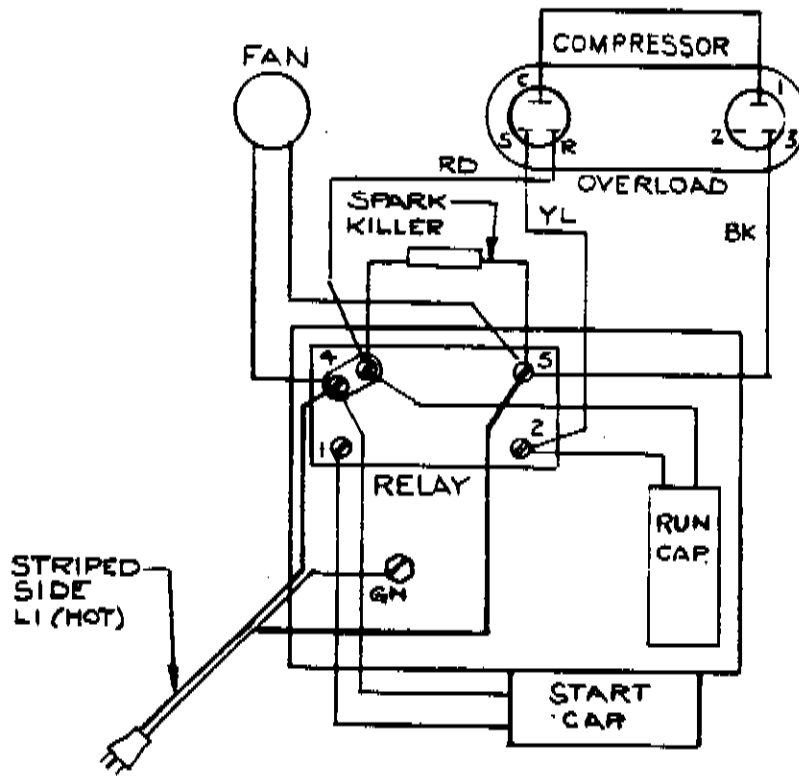


## Tea Options Schematic Diagrams

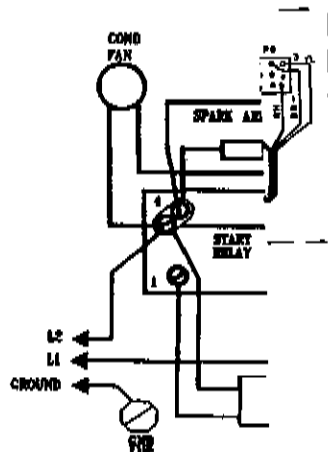
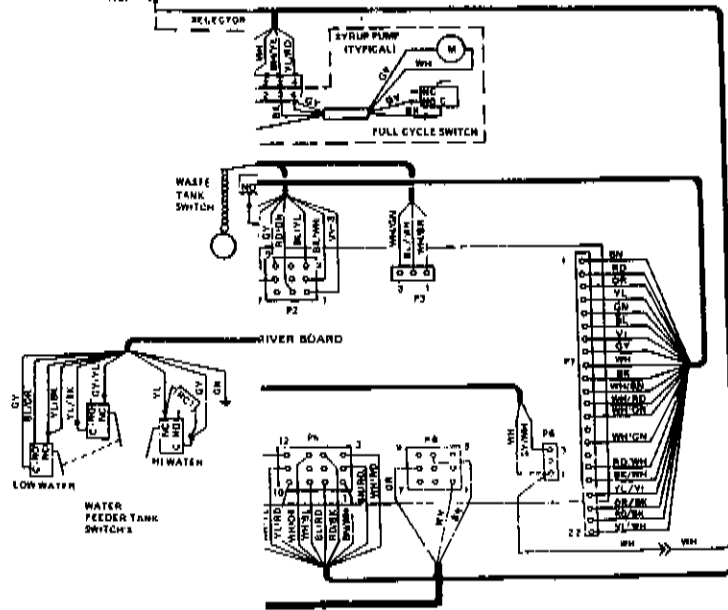
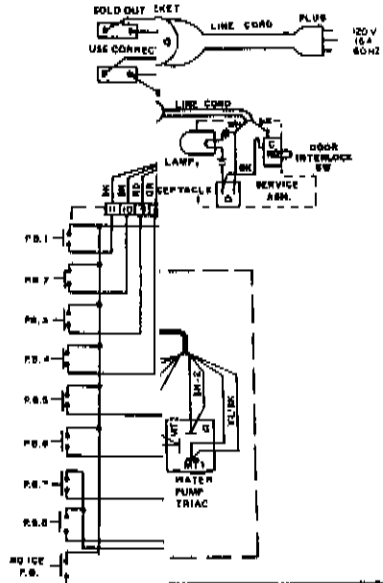
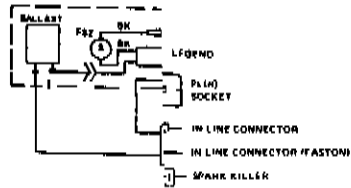
ALTERNATE RELAY

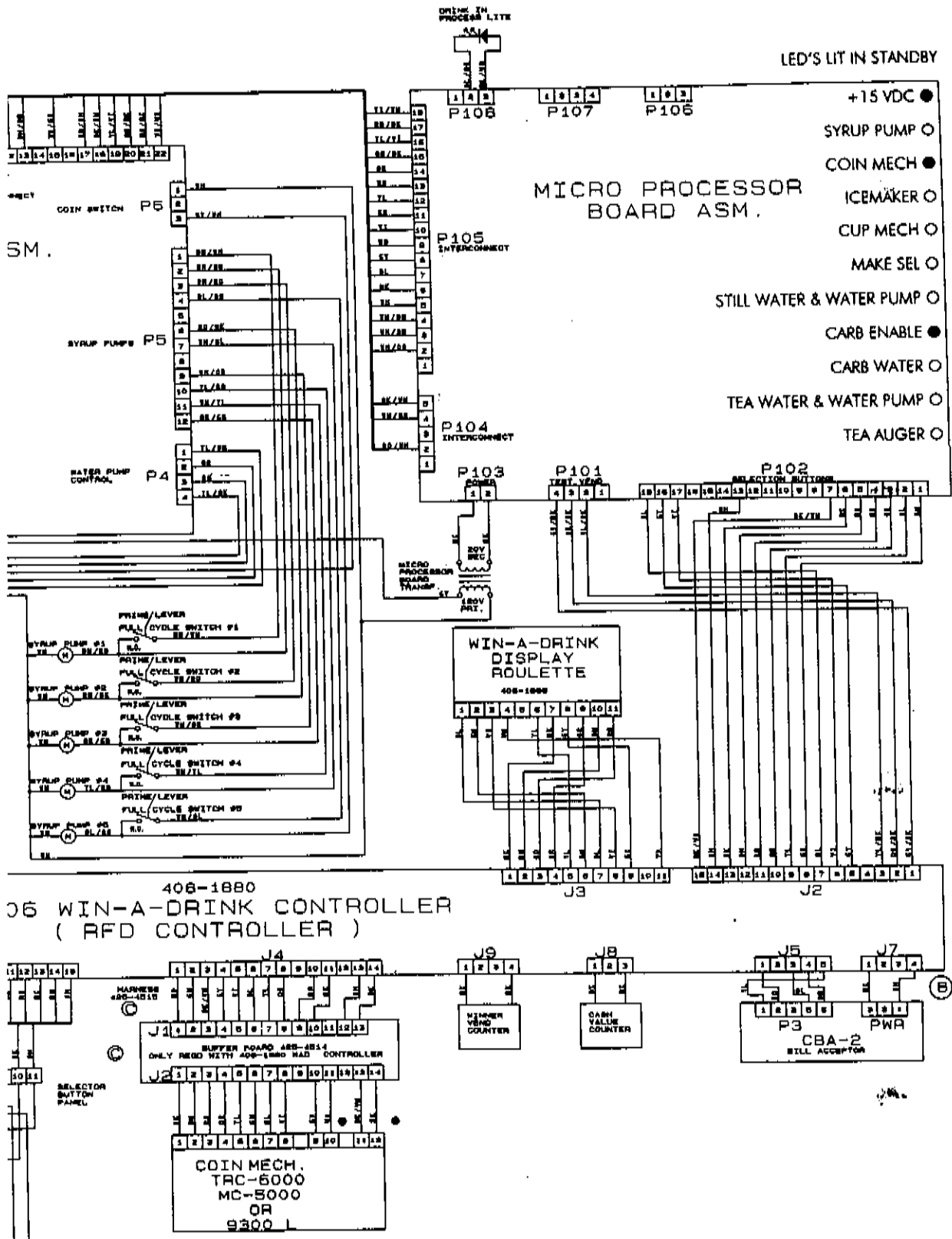


RELAY HOOKUP DOES NOT CHANGE  
WHEN THIS ALTERNATE RELAY IS USED.



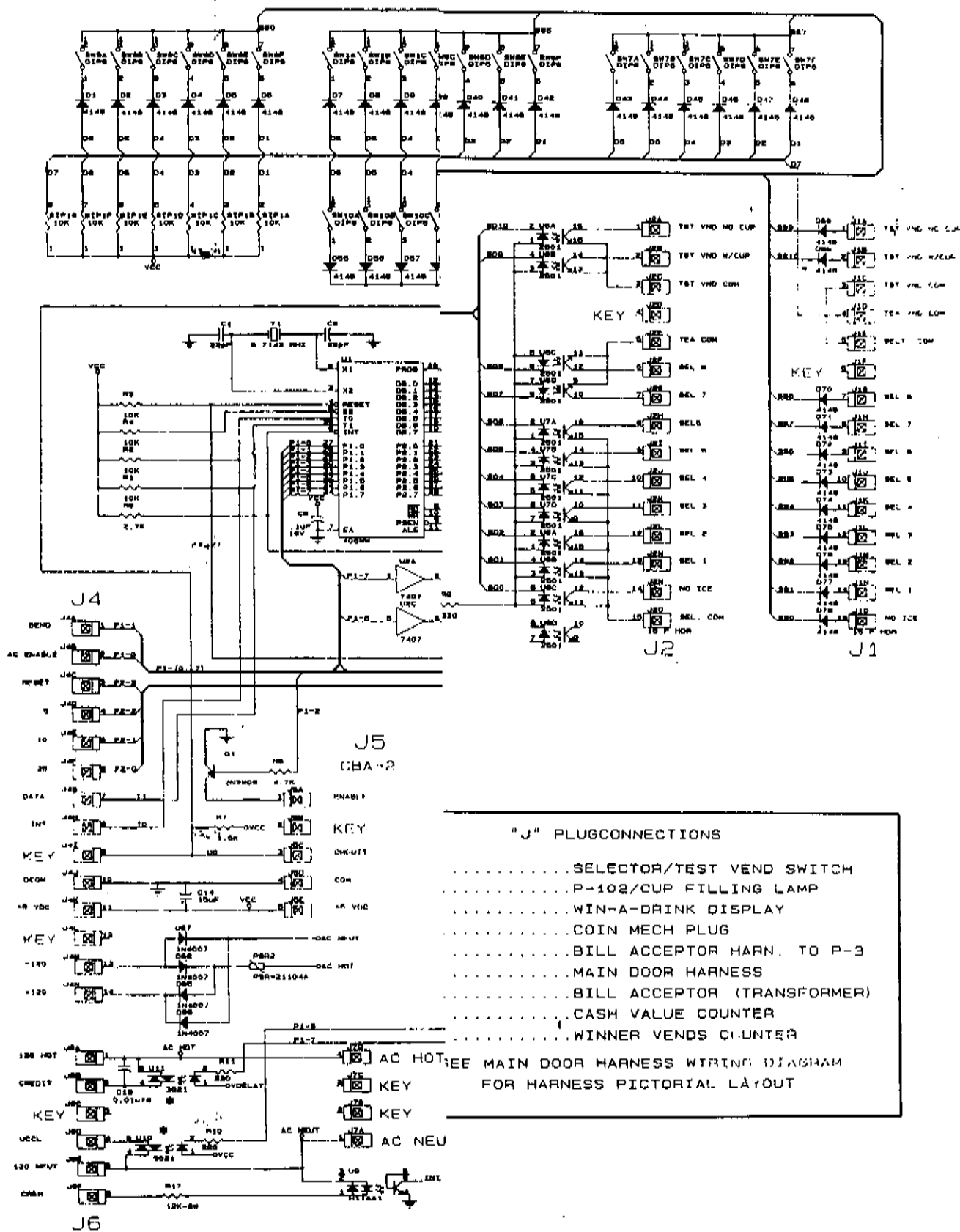
**Compressor Wiring**

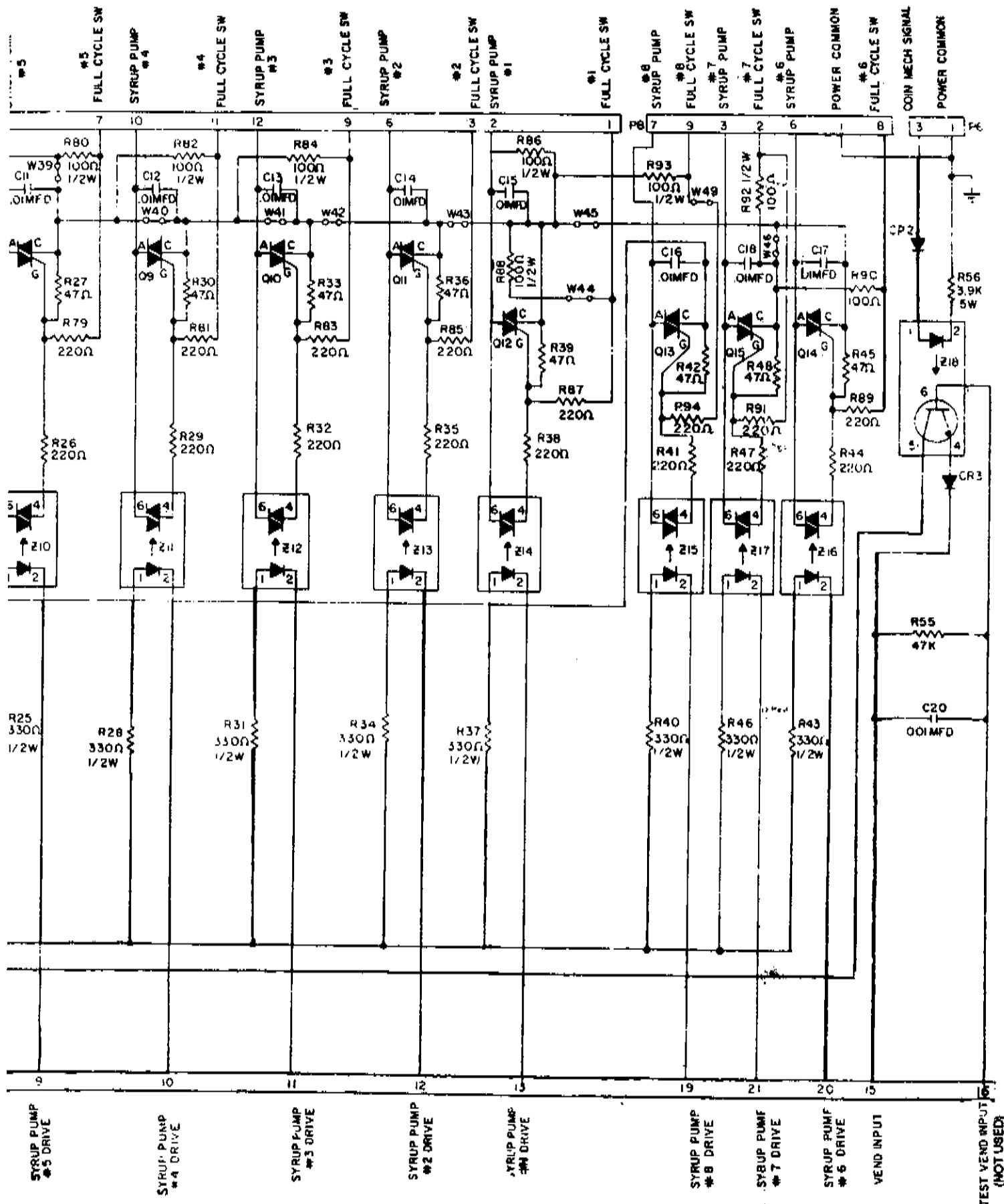




406Z Cold Drink w/ WIN-A-DRINK Schematic Diagram 900-40662C



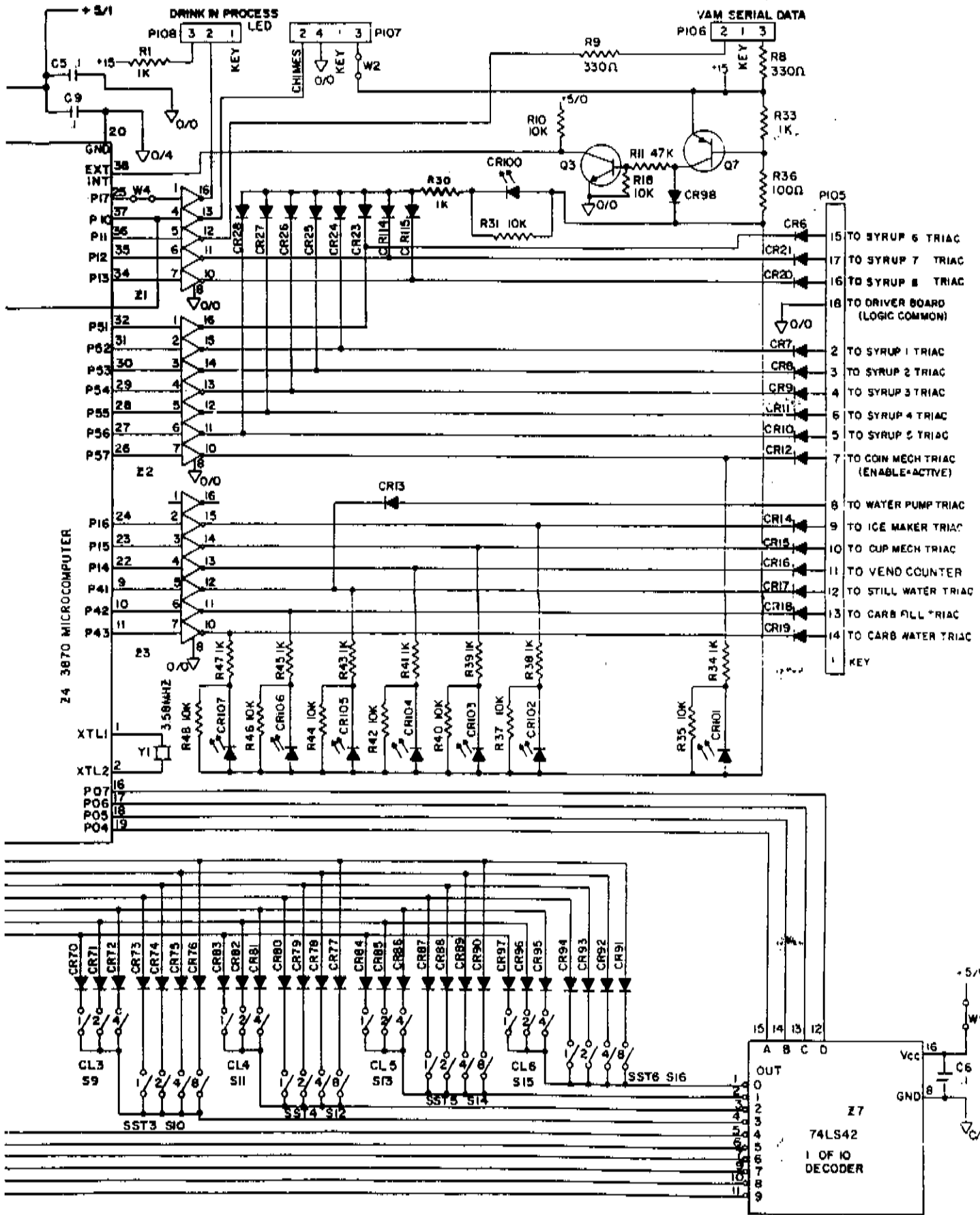




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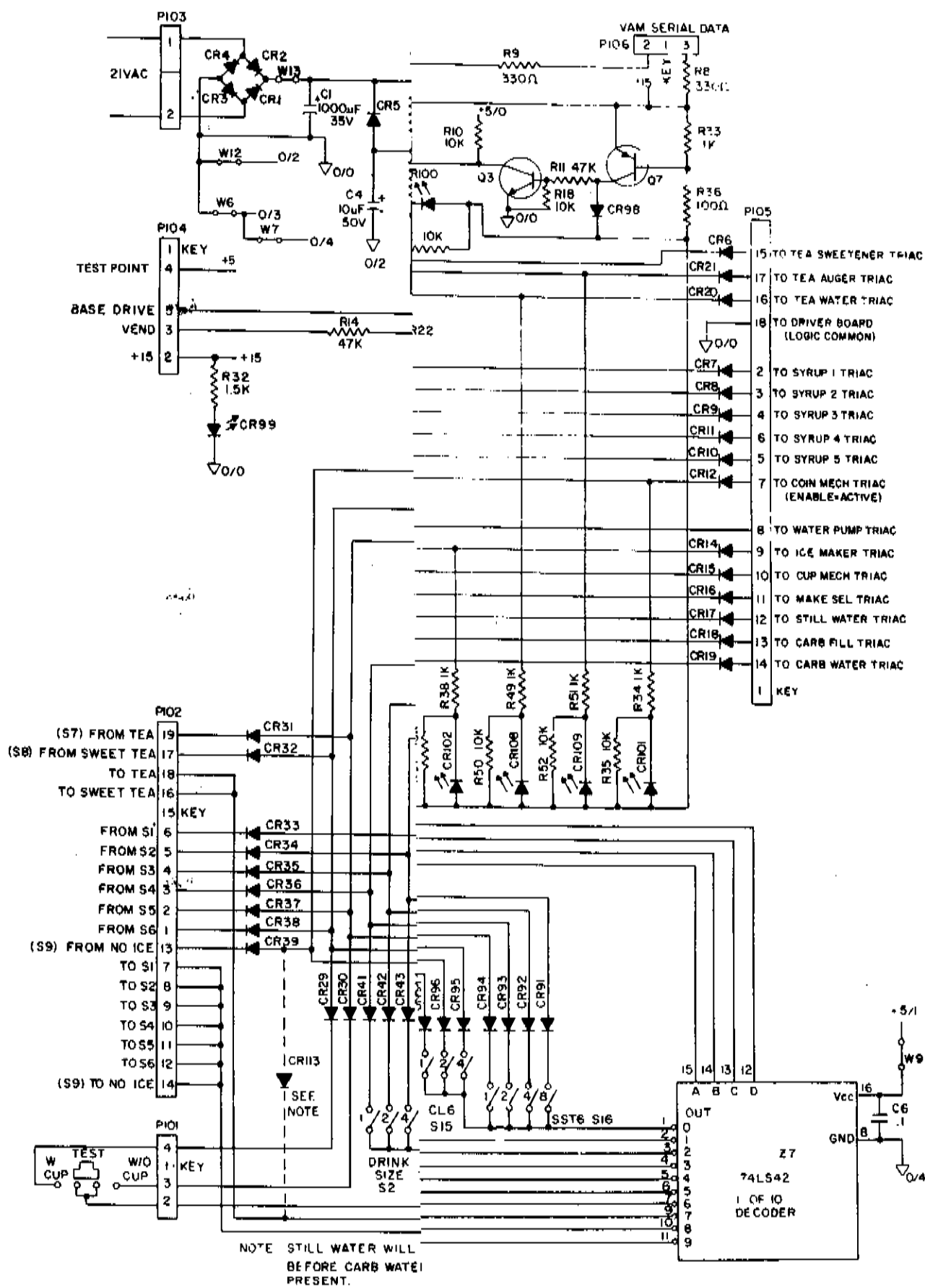
ROWE International, Inc.





agram (8x8) & (8x9) 60793004Q2

ROWE International, Inc.



TEST POINT  
BASE DRIVE  
VEND  
+15

(S7) FROM TEA  
(S8) FROM SWEET TEA  
TO TEA  
TO SWEET TEA  
FROM S1  
FROM S2  
FROM S3  
FROM S4  
FROM S5  
FROM S6  
(S9) FROM NO ICE  
TO S1  
TO S2  
TO S3  
TO S4  
TO S5  
TO S6  
(S9) TO NO ICE

15 TO TEA SWEETENER TRIAC  
17 TO TEA AUGER TRIAC  
16 TO TEA WATER TRIAC  
18 TO DRIVER BOARD (LOGIC COMMON)  
2 TO SYRUP 1 TRIAC  
3 TO SYRUP 2 TRIAC  
4 TO SYRUP 3 TRIAC  
6 TO SYRUP 4 TRIAC  
5 TO SYRUP 5 TRIAC  
7 TO COIN MECH TRIAC (ENABLE=ACTIVE)  
8 TO WATER PUMP TRIAC  
9 TO ICE MAKER TRIAC  
10 TO CUP MECH TRIAC  
11 TO MAKE SEL TRIAC  
12 TO STILL WATER TRIAC  
13 TO CARB FILL TRIAC  
14 TO CARB WATER TRIAC  
1 KEY

74LS42  
1 OF 10  
DECODER





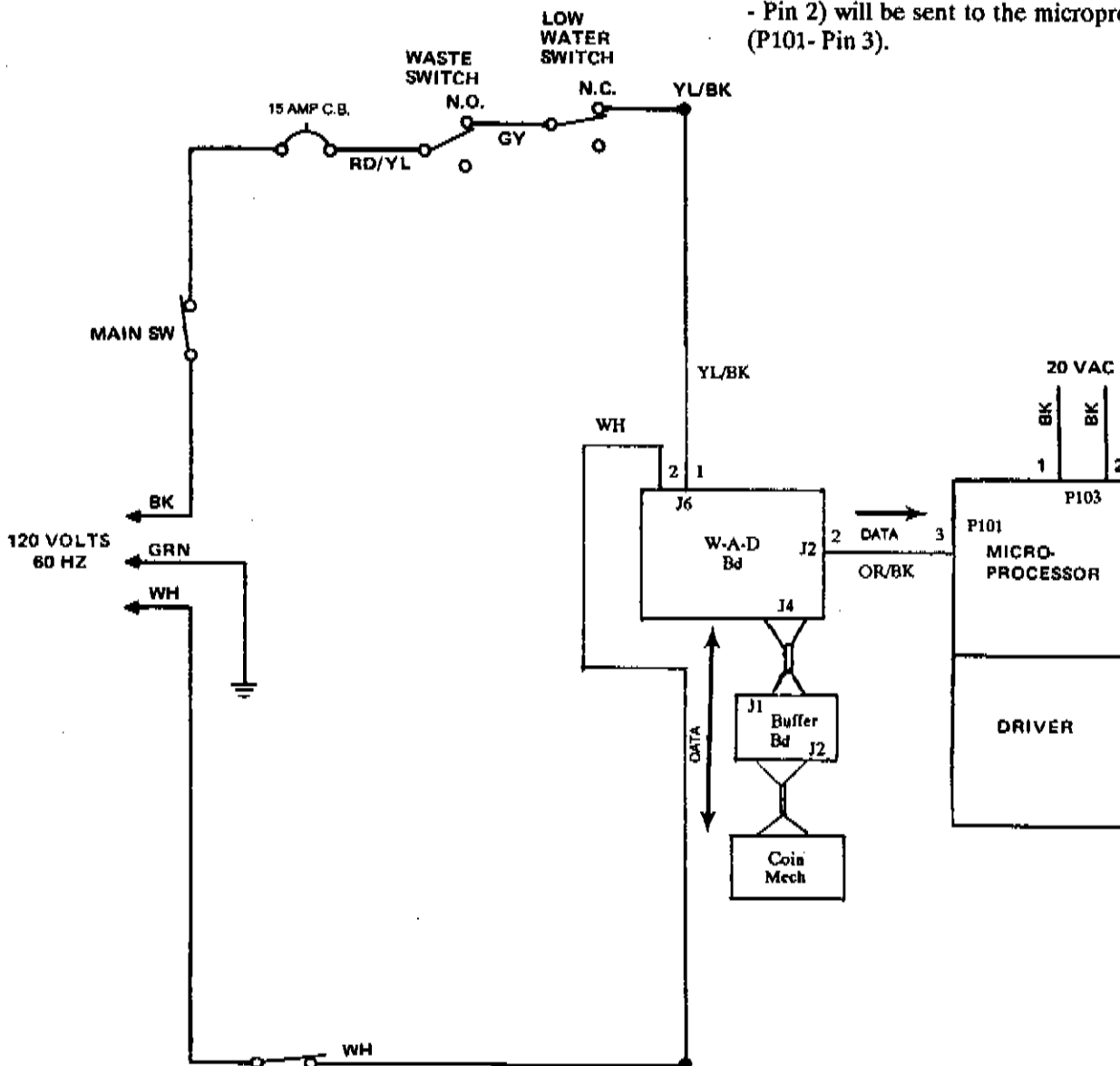
# **SEQUENCE of OPERATION**

# 1-Customer Deposits Coinage

## SEQUENCE OF OPERATION DIAGRAMS

The sequence of operation diagrams which follow illustrate the wiring and components which are energized during each stage of the vend cycle. The circuit path begins at the center extreme left side of the diagram at the black lead that is connected to the 120V, 60 Hz., power source. The path is then directed through circuit components and returns to the ground side of the power line through the white lead at the far left side. Each diagram shows only the circuits which are energized for the particular stage in the vend cycle. See page 4 - 13 for the complete vendor schematic diagram.

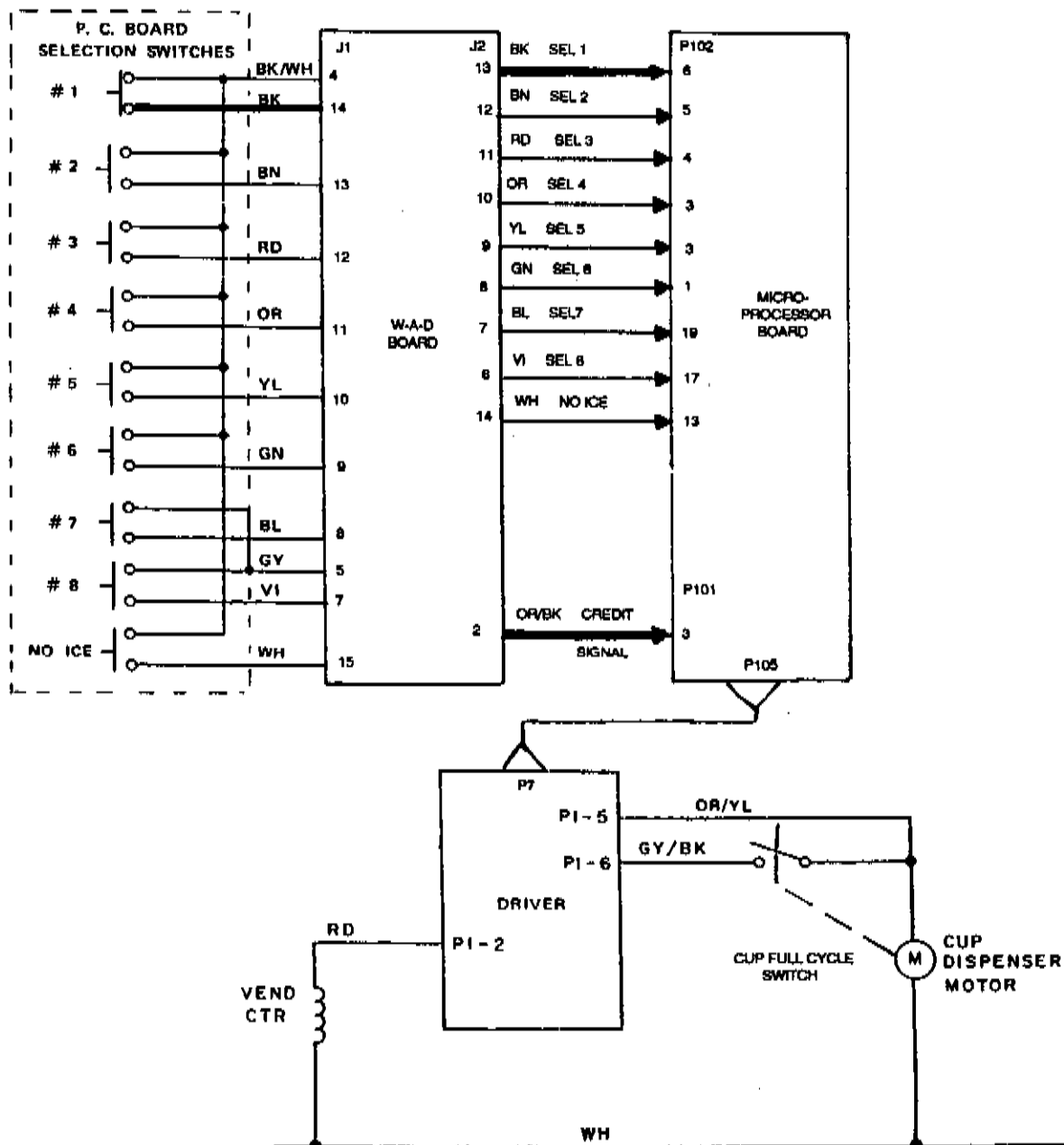
1. Coin mech C.R.E.M. is energized by the following:
  - a. 120 VAC to W-A-D board (J6 - Pin 1).
  - b. W-A-D board enables Coin Mech.
  - c. 110 VPDC is developed in W-A-D board for the Coin Mech.
  - d. 110 VPDC from W-A-D board goes to (Pin 10 and 12) of Coin Mech socket.
2. Customer deposits coins in coin mech.
  - a. The amount of coins accepted is tabulated in the W-A-D board. This amount must match or exceed the price setting set on the W-A-D board for the applicable drink selection when made.
  - b. If credit amount matches or exceeds selection being made, a credit signal from W-A-D board (J2 - Pin 2) will be sent to the microprocessor board (P101- Pin 3).





## 2-Customer Makes Selection

1. Customer presses selection pushbutton No. 1.
  - a. Selection key switch # 1 sends a signal to the W-A-D board (J1 - Pin 14).
  - b. The W-A-D board determines if the # 1 selection made meets or exceeds the credit amount inserted.
  - c. If proper credit is established the W-A-D board sends a credit pulse from (J2 - Pin 2) to the microprocessor board (P101 - Pin 3).
  - d. At the same time the # 1 selection signal from the W-A-D (J2 - Pin 13) is sent to the microprocessor board (P102 - Pin 6).
  - e. W-A-D board removes the C.R.E.M. voltage from the Coin Mech which will reject any more coins for the entire vend cycle. (Coin Mech LED goes off).
  - f. Microprocessor board sends signal to driver board to drop a cup (Cup Mech LED momentarily blinks).
  - g. Driver board starts Cup Dispenser Motor by sending a 120 VAC pulse from (P1 - Pin 5). The Cup Full Cycle switch carries over the voltage from (P1 - Pin 6) completing cycle.
  - h. Microprocessor sends signal to increment vend counter through Driver Board sending 120 VAC pulse from (P1 - Pin 2).

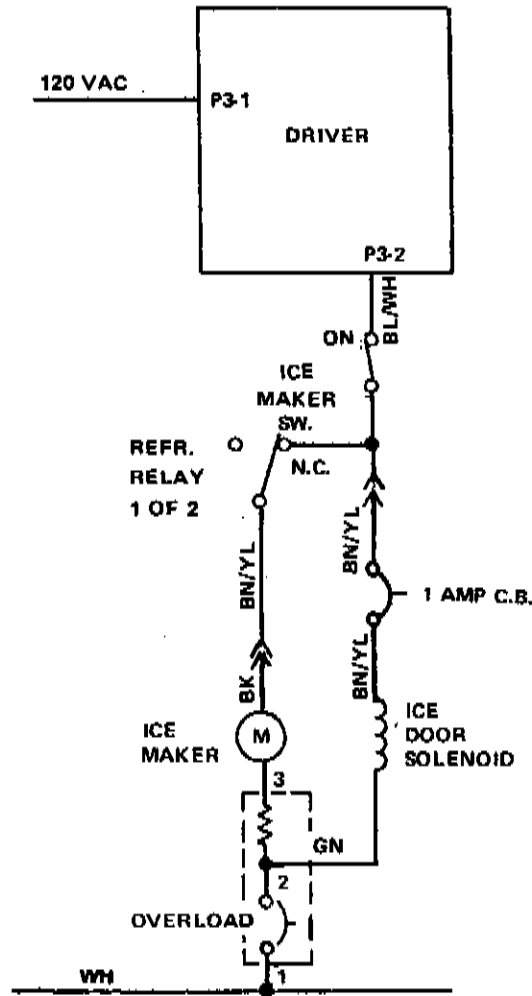


### 3-Ice Delivered to Beverage Cup

Microprocessor sends a timed signal to the Driver Board to energize the Icemaker motor and ice door solenoid. This voltage duration is determined by the microprocessor board ice amount switch setting.

1. Microprocessor Function
  - a. Icemaker LED lights during Icemaker operation.
  - b. Timed 5 VDC output signal from (P105 pin 9) to driver board (P7 pin 1).

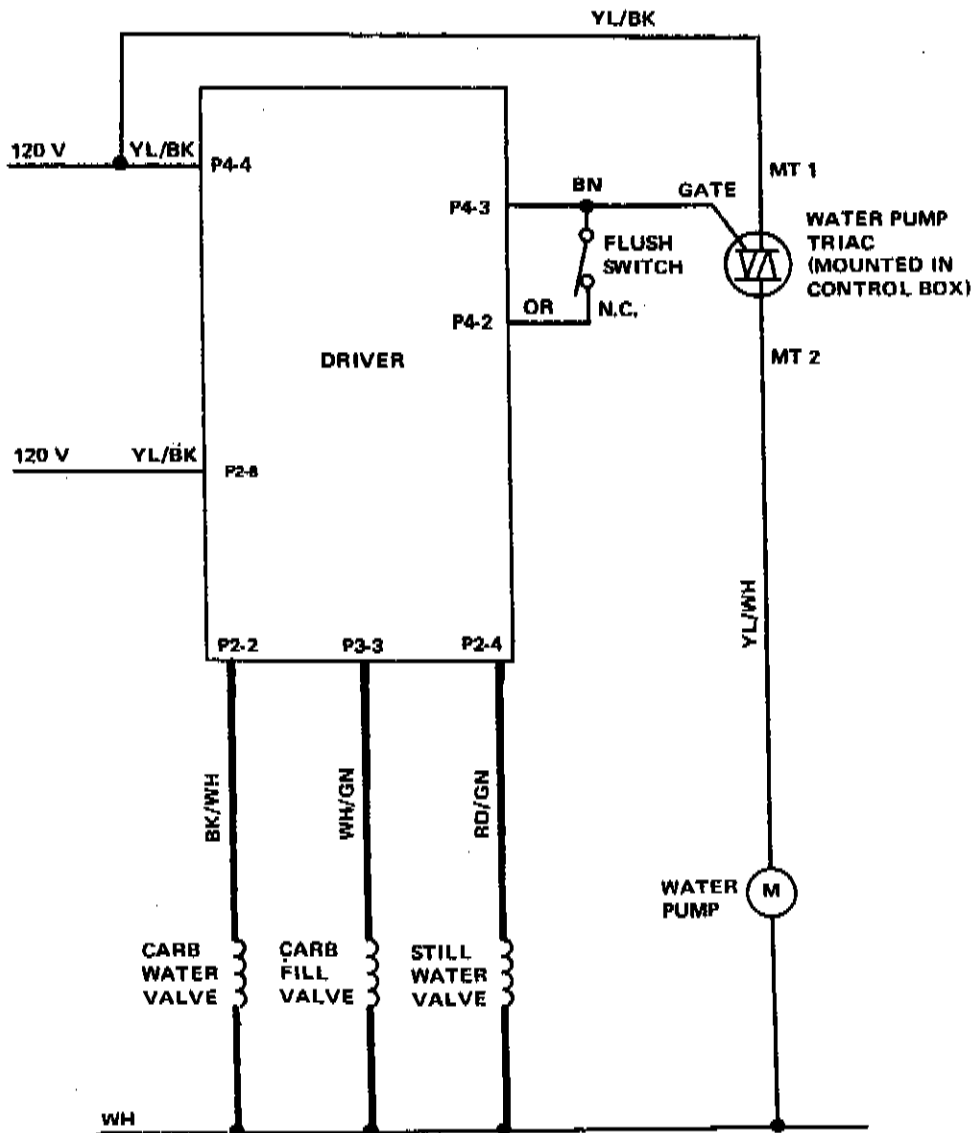
2. Driver board sends 120 VAC signal from (P3 pin 2) to Icemaker assembly.
3. 120 VAC goes through Icemaker switch, refrigeration relay contacts, 1 amp circuit breaker and energizes the Icemaker motor and door solenoid.
4. Ice particles are delivered to the cup.



1. On the microprocessor board, the Carb. Water Dip Switch setting will determine how much carbonated and/or still water will be delivered to the vend cup.
2. The amount of carbonated water will increase with higher setting of the Carb. Water Dip Switch (max. setting = "7" for 100% carb. water). The amount of still water will increase with lower setting of Carb. Water Dip Switch (min. setting = "0" all off for 100% still water).

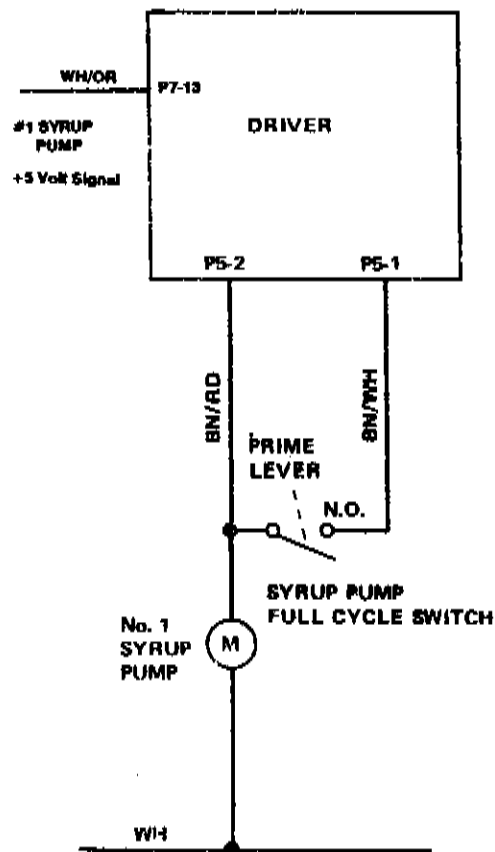
### 4-Water Delivered to Beverage Cup

3. Whenever the still water valve is energized (the still water LED is lit), the water pump also runs due to a signal being applied from P4-2 or P4-3 to the triac's gate which, in turn causes the triac to switch ON. This applies power YL/BK to the water pump motor YL/WH (the water pump LED is lit).
4. The carb. fill valve may be energized from P3-3 during a vend, but goes "OFF" when still water is going to the cup. This eliminates a possible short cup, should the carbonator be filling at this time.



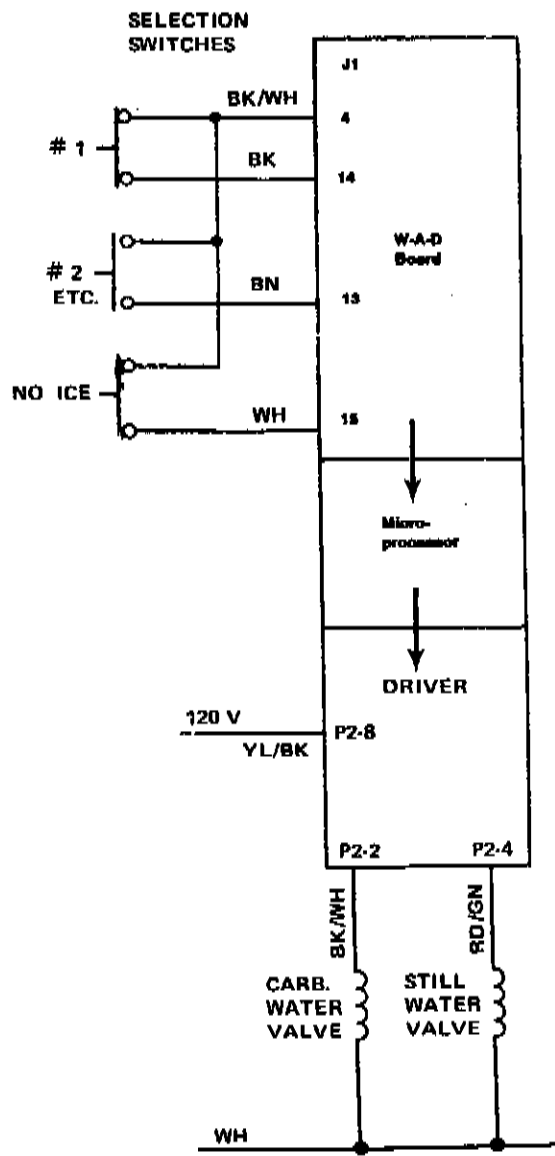
## 5-Syrup Delivered to Beverage Cup

1. Number 1 selection has been made.
2. Depending on the setting of the syrup start time switch setting the microprocessor will send a timed start signal to P7-pin 13 of Driver Board (Syrup pump LED should illuminate).
3. The Driver Board outputs a 115 VAC signal pulse from P5-pin 2 to start the syrup pump.
4. The Full Cycle Switch closes keeping the motor running through P5-pin1 to deliver required syrup to cup.



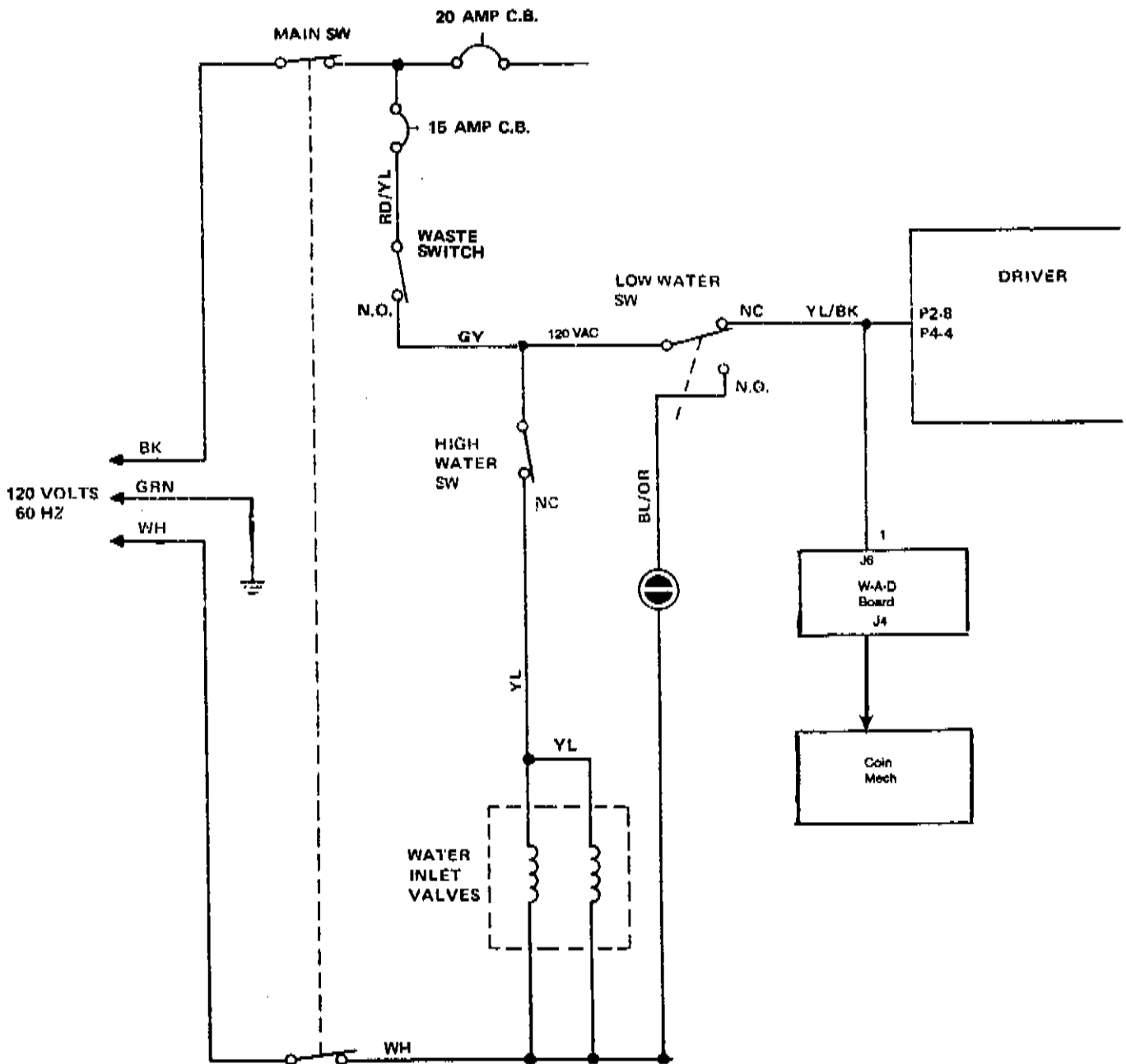
## 6-Water Delivered to Beverage Cup - with No Ice Selection

1. When the NO ICE pushbutton is pressed, the microprocessor board changes its timing to increase the carb and/or still water time, which is sent to the driver board input. Thus the driver board output provides additional carb or still water to make up for the lack of ice.



### 7-Water Reservoir Tank Level Control

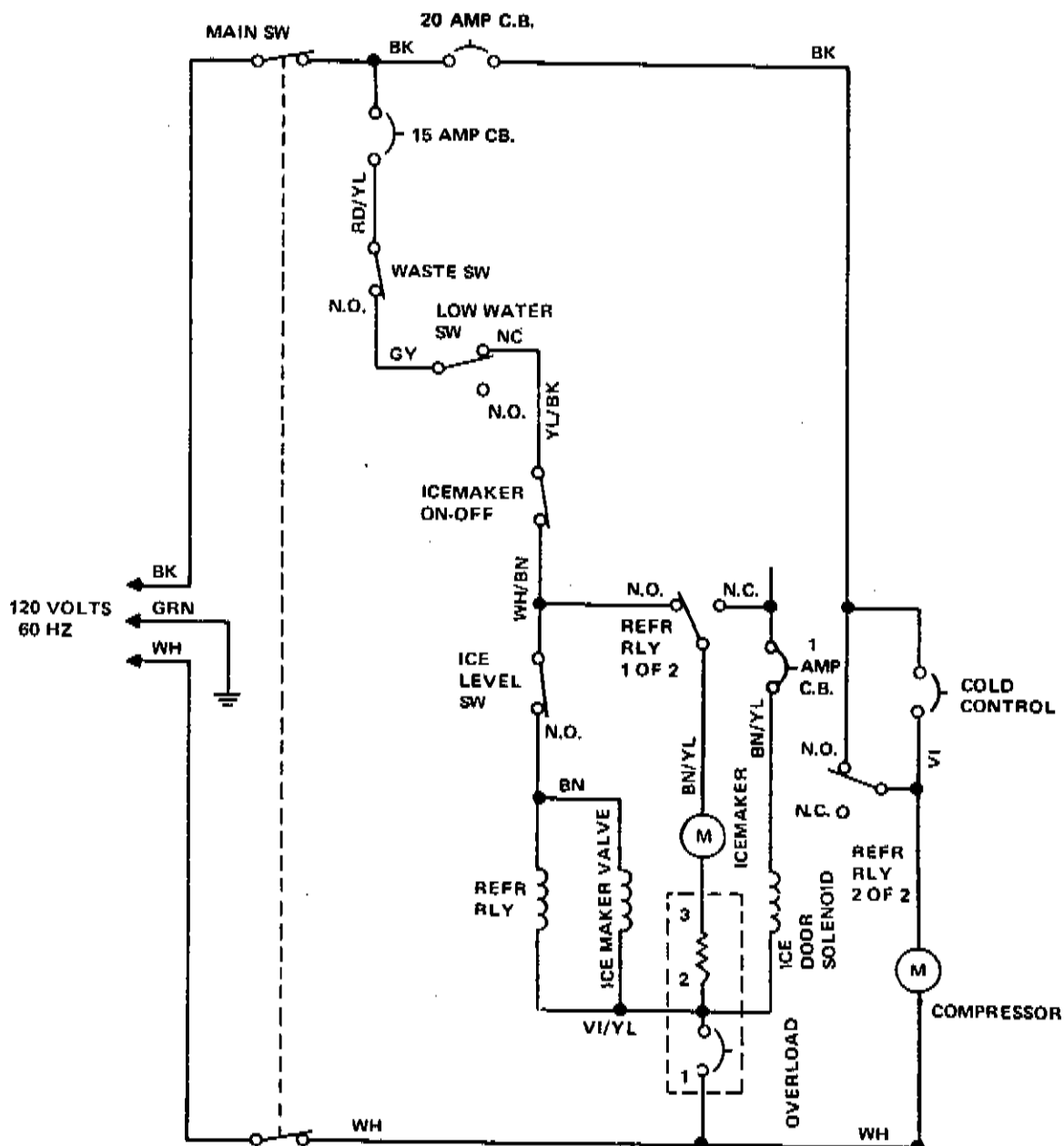
1. When the water in the Feeder Tank drops to a certain point the float in the tank closes the high water switch, energizing the water inlet valves.
2. When the water level reaches the high level limit, the high water switch opens, de-energizing the inlet valves.
3. If the Feeder Tank is starved of water, the float will transfer the low water switch causing the following:
  - a. The low water switch opens the power to driver board causing loss of vending circuit power.
  - b. The 120 VAC to the W-A-D board is removed causing the C.R.E.M. in the Coin Mech to de-energize, preventing the acceptance of coins.
  - c. Sold Out Lamp lights.





### 9-Icemaker Control and Refrigeration

1. When the ice level in the Icemaker hopper drops, the ice level switch closes, energizing the 3-way refrigeration valve and refrigeration relay.
  2. Refrigerant is routing through the Icemaker evaporator.
  3. Refrigeration relay, contacts 1 of 2 close, energizing the icemaker motor.
  4. Refrigeration relay, contacts 2 of 2 transfer, opening the circuit to the icebank valve and energizing the compressor motor. The icebank valve is closed whenever the icemaker circuit is energized, preventing refrigerant flow to the icebank evaporator.
  5. When the ice level in the hopper is high enough to open the ice level switch, the refrigeration relay and icemaker valve are de-energized. The Icemaker Valve will now be opened allowing refrigerant to flow through the Icemaker evaporator.
- The Refrigeration Relay 2 of 2 contacts will now be in the N.C. position, this allows the Cold control thermostat operation of the refrigeration unit compressor when the water bath requires cooling.
6. When the thermostat in the water bath senses correct temperature its contacts open, de-energizing the refrigeration unit compressor.





## PRINCIPLES OF OPERATION

The following paragraphs contain a complete explanation of vendor operation. Use this text together with the sequence of operation diagrams to isolate and correct malfunctions.

### Cup Dispenser

The cup dispenser is a self-contained unit that automatically delivers one cup for each vend. The dispenser can be adjusted to deliver 9 to 18 ounce cups. One 115V 60 cycle motor drives the dispenser, rotating the cup drop cam to release one cup at a time; as well as, under the right conditions, indexing a full cup storage tube into position, over the cup delivery funnel to replenish the supply. When the level of cups is low enough to permit full travel of the cup sensing lever, the turret will move one-half an index. It takes two strokes of the drive slide to index the turret one position, therefore improper loading of cups in the turret (i.e., skipping more than two consecutive tubes) may not allow the dispenser to replenish.

#### NOTE:

*Turret rotates clockwise, load tubes counterclockwise.*

If the cup supply is completely depleted a micro-switch, normally held in the open position, will transfer de-energizing the coin return electro-magnets (C.R.E.M.) placing the vendor in a sold-out condition.

### Coin Mechanism

The coin mechanism slug rejector subjects each coin to inspection before passing the coin to the coin mechanism. Each coin is checked for size, thickness and metallic content. Unacceptable coins are either immediately passed to the coin return cup, or held until the coin return pushbutton is operated. Accepted coins are routed to coin inventory tube for storage and are used for changemaking. If the coin inventory tubes are full, the coins go directly to the cashbox. The Win-A-Drink board monitors and controls the Coin Mech. When making a drink selection the Win-A-Drink control board will establish a credit signal to the microprocessor board acknowledging proper money amount accepted by Coin Mech.

### Syrup System

The syrup system contains four, five, six, seven, or eight positive displacement bellows-type pumps. Each pump is equipped with its own drive motor and full cycle switch.

### Tea System

Tea can be dispensed with or without sweetener. The instant tea product is loaded into the tea hopper. Sweetener is dispensed through its own pump sharing syrup with a standard selection (Sprite or similar product is generally used for this purpose).

Tea powder and sweetener (if selected) are blended in the mixing bowl located just under the tea hopper and from there flows through its own spout into the cup.

Tea powder amount is regulated on the microprocessor board (see pages 2 - 7 and 2 - 8). Sweetener amount is regulated by adjusting the sweetener syrup pump as described on page 2 - 6.

### Water and Carbonation System

The water filter removes impurities, and undesirable smells and tastes from the water, which could be harmful to water system components or affect the taste or quality of the beverage.

### Dual Inlet Valve

The dual inlet valve consists of two solenoid-operated valves in a single body. Both valves are normally in the closed position. Switches in the water feeder tank automatically open and close the valves to maintain a constant water level in the tank.

Both valves open and close simultaneously and both must be open to allow water flow. In addition, the dual inlet valve provides positive flood protection, in the event of an inlet section valve failure. The flow control section of the valve has a flow rate of 0.5 gallons per minute.

### Water Reservoir Tank (Feeder Tank)

The water reservoir tank supplies water by gravity to the water pump and icemaker. Water enters the tank through a removable screen-enclosed air gap. This air gap is required by a majority of municipal plumbing codes. A float within the tank monitors water level and operates the dual inlet valve to maintain water level.

In the event of a water supply failure, the low water switch de-energizes the coin lockout electro-magnets, preventing the vendor from accepting coins, energizes the SOLD OUT lamp and opens the circuit to the icemaker.

### Water Pump

The positive displacement-type pump is driven by a ¼ hp electric motor. Water is introduced into the pump by gravity feed from the water feeder tank. Water output from the pump is first routed through 50 feet of coiled tubing immersed in the water bath. This ensures a sufficient reserve of cold water for high volume sales. The pump delivered water at a pressure of 140 - 145 psi through the 2-way still water valve and 3-way CO<sub>2</sub> exhaust valve to the carbonator.

Water is routed through the still water valve directly into a delivery tube for use in non-carbonated beverages.

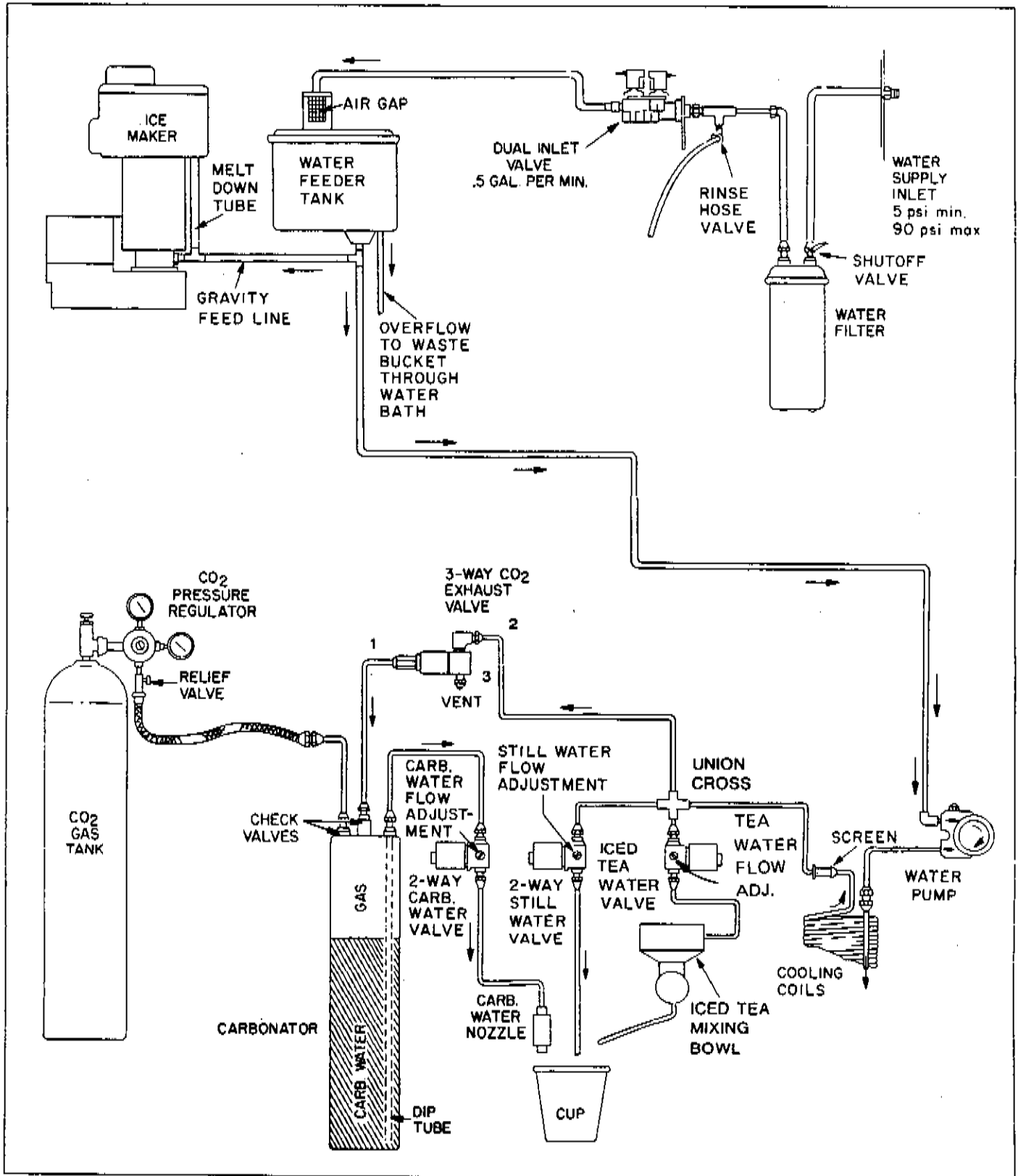


FIGURE 4 - 1 WATER AND CARBONATION SYSTEM

The pump motor is controlled automatically by water level electrodes in the carbonator, to maintain water level. When a low carbonation or non-carbonated beverage is selected, the driver board energizes the pump motor and opens the still water valve to deliver still water under pressure. An adjustable restrictor in the still water valve controls the flow rate of water into the cup.

### Carbonator

Carbon dioxide gas (CO<sub>2</sub>) and still water are mixed in the carbonator to form carbonated water. The carbonator also stores a constant reserve of carbonated water for immediate use. The carbonator is immersed in the water bath to insure delivery of cold carbonated water even during high volume dispensing. A non-adjustable pressure relief valve set to relieve pressure in excess of 155 psi is incorporated into the carbonator.

Installed in the carbonator is a dip tube, extending almost to the bottom of the housing. Carbonated water is drained from the carbonator through this dip tube for delivery to the beverage cup. The water inlet fitting and the CO<sub>2</sub> inlet fitting are both equipped with check valves, allowing free flow into the carbonator and preventing reverse flow from the carbonator back into the connecting tubes. The carbonator also contains two electrodes, one extending almost to the bottom of the carbonator, the other extending approximately one-fourth of the length to the bottom of the carbonator. These electrodes automatically energize and de-energize the water pump circuit to maintain the water level in the carbonator.

Figure 4 - 2 shows the direction of the flow through tee installed downstream of the 2-way still water valve and 3-way CO<sub>2</sub> exhaust valve when both valves are de-energized.

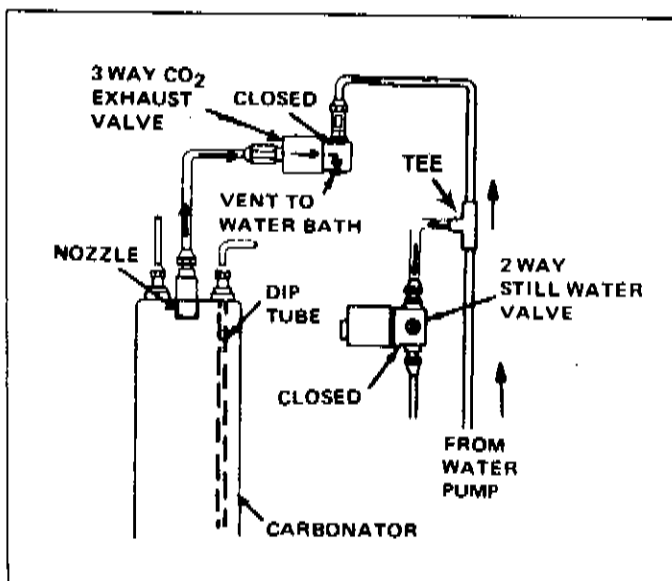


FIGURE 4 - 2 DIRECTION OF FLOW THROUGH VALVE BOTH VALVES DE-ENERGIZED

In the event of a check valve failure in the carbonator water inlet line, CO<sub>2</sub> gas is routed through the 3-way CO<sub>2</sub> exhaust valve to the water bath, where the gas dissipates to the atmosphere. This fail safe feature prevents CO<sub>2</sub> gas from entering the water system, should check valve failure ever occur.

Figure 4 - 3 shows the direction of flow through the 2-way still water valve and 3-way CO<sub>2</sub> exhaust valve during filling of the carbonator. The 2-way still water valve is deenergized and the 3-way CO<sub>2</sub> exhaust valve and water pump motor are energized. In the event of a check valve failure in the carbonator water inlet line during filling of the carbonator, the CO<sub>2</sub> gas under a maximum pressure of 70 psi cannot back up into the water system against a water pressure of 145 psi.

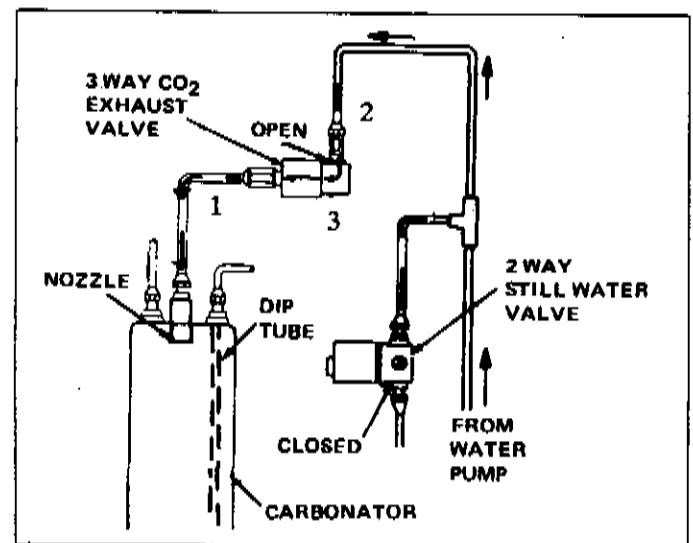


FIGURE 4 - 3 DIRECTION OF FLOW THROUGH VALVE DURING FILLING OF CARBONATOR

The solenoid-operated water valve installed in the carbonator outlet line is normally closed. When a beverage selection requires carbonated water, the valve is energized to the open position allowing carbonated water to flow into the cup. An adjustable water restrictor built into the carbonator water valve body controls the water flow rate into the cup and provides a fine adjustment for finished drink level in cup.

### Refrigeration System

A single refrigeration unit supplies both icebank and icemaker evaporators on a "priority" basis.

When the icemaker switch on the control box is in the "ON" position, the icemaker has priority over the icebank anytime the level switch is actuated.

The compressor is ½ hp air cooled by a forced draft condensing unit fan. The system utilizes an "automatic" expansion valve (icemaker) and a thermostatic expansion valve (icebank).

A receiver tank is also incorporated to compensate for the differences in the icebank and icemaker evaporator sizes and operating requirements.

**Refrigeration System Operation**

A temperature sensing bulb mounted on the icebank evaporator monitors the icebank temperature and initiates starting and stopping of the refrigeration unit as required to maintain the proper icebank.

When the ice level in the icemaker storage compartment drops, the icemaker level switch automatically starts the icemaker motor, the refrigeration unit, and energizes the 3-way refrigeration valve.

The solenoid-operated 3-way valve installed in the refrigerant line prevents the refrigeration unit from cooling both the icemaker and icebank evaporators at the same time. When the icemaker level switch energizes the icemaker motor and refrigeration unit, the 3-way valve is

also energized and refrigerant is supplied to the icemaker evaporator only. The icebank refrigerant flow stops.

When the icemaker level switch is satisfied, the icemaker motor stops. The 3-way valve is de-energized and the refrigerant can flow to the icebank evaporator if the cold control is not satisfied and calling for cooling. Refrigerant is supplied to the icebank evaporator until the temperature sensor is satisfied.

If the icemaker starts while refrigerant is being supplied to the icebank evaporator, The 3-way valve is energized and refrigerant is supplied to the icemaker even if the icebank temperature sensor still senses a need for refrigerant. Giving the icemaker first priority ensures a constant supply of ice during the peak vending periods. If the icemaker is full and the icebank temperature is satisfactory, the refrigeration unit will not run any longer and the 3-way valve will be de-energized.

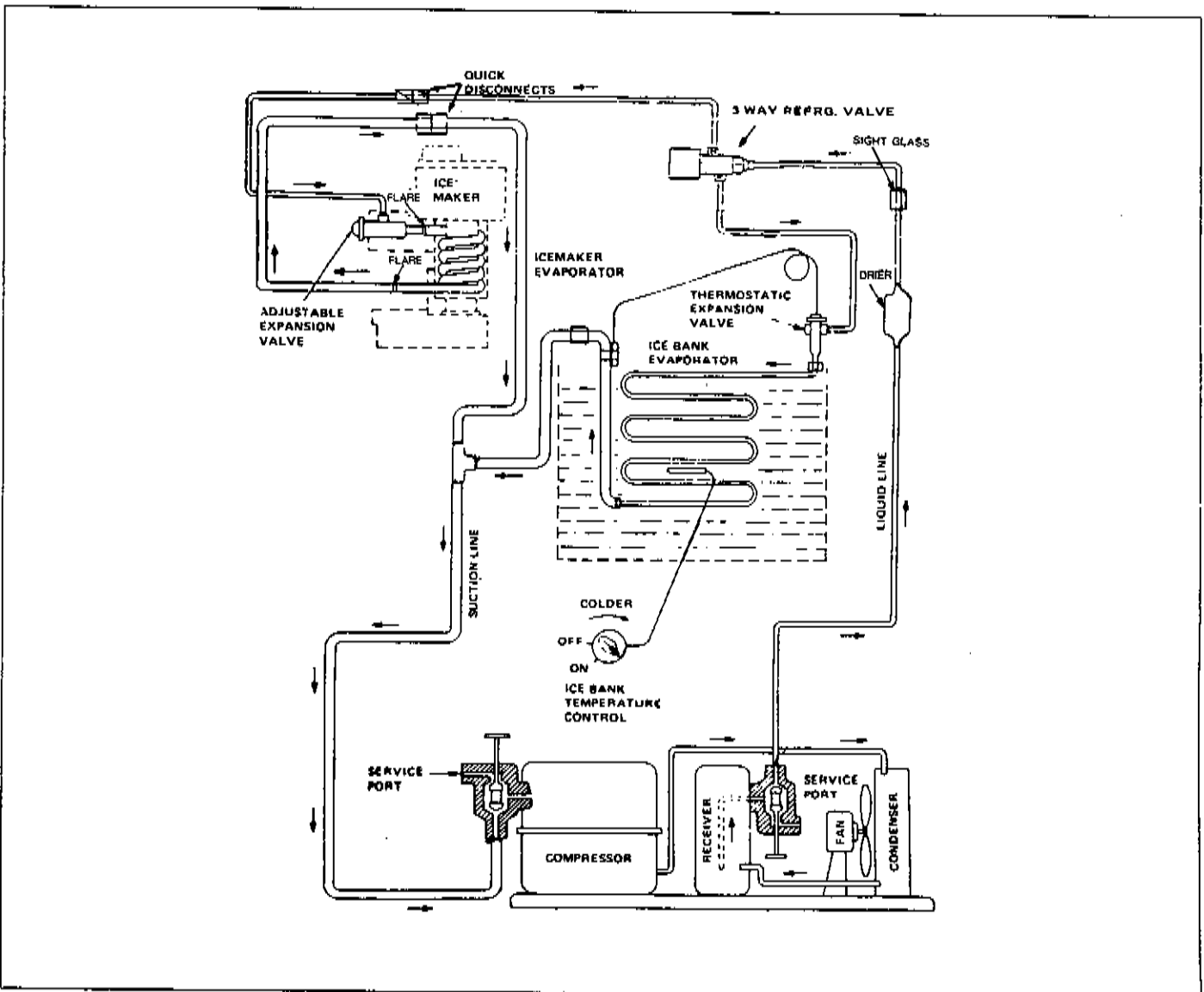


FIGURE 4 - 4 COLD CONTROL REFRIGERATION SYSTEM



# SECTION 5 MAINTENANCE

## INTRODUCTION

This section contains preventive maintenance, lubrication, adjustment and repair and replacement procedures for the 406Z vendor. Preventive maintenance should be performed at regular intervals to insure uninterrupted operation. Adjustment, repair and replacement procedures should be performed in accordance with the applicable section.

## PREVENTIVE MAINTENANCE

Preventive maintenance consists of preventing major troubles by performing minor maintenance at specific intervals. By establishing and following a regular preventive maintenance program, costly repairs will be minimized, if not eliminated. The following program will save time and money for the operator who institutes it:

### Icemaker

At each routine service call:

Each time the location is visited by either a routeman or serviceman, check for the following:

Observe the base of the Icemaker just above the transmission for leaks or discoloration. Discoloration may be white, green or black depending on the mineral content of the water supply.

### CAUTION!

*Request all routemen to report any icemaker leakage or discoloration immediately.*

If leakage or discoloration is evident, disassemble the Icemaker and examine the shaft seal and o-ring.

### NOTE:

*Anytime Icemaker is disassembled, please refer to page 5-4 and 5-5 for correct reassembly procedure.*

### Refrigeration System

Check the Refrigeration System periodically as follows:

1. Unlock and open door; Set Main Power Switch to OFF (down) position.
2. Remove screen weld assembly in bottom right of cabinet and clean.
3. Clean condenser coils.
4. Check Refrigeration Unit for indications of oil or refrigeration leakage.

5. Refer to manufacturer's instructions for additional refrigeration system maintenance instructions.

### Water Filter

Every 25,000 vends, or more often if beverage quality warrants it, replace the water filter cartridge. See Section 2 -- Installation.

### Dual Inlet Valve Screen

The dual inlet valve screen should be cleaned every six months if local water conditions warrant. A clogged valve will cause a drop in water pressure. It should not be necessary to clean this valve in most locations. Proceed as follows:

1. Set Main Switch to OFF position. Close water inlet valve at filter.
2. Remove splash panel.
3. Open rinse hose drain cock to relieve water pressure.
4. Remove inlet water line from valve. See Fig. 5 - 2.
5. Remove four screws securing valve to mounting plate.
6. Remove screen from valve; clean and reinstall. Reassemble valve.
7. Close rinse cock and open inlet valve at filter. Check for leaks. Set Main Switch to ON and replace splash panel.

## LUBRICATION

### Water Bath Agitator Motor

1. Apply three drops of SAE No. 10 oil to each oil tube every three months.

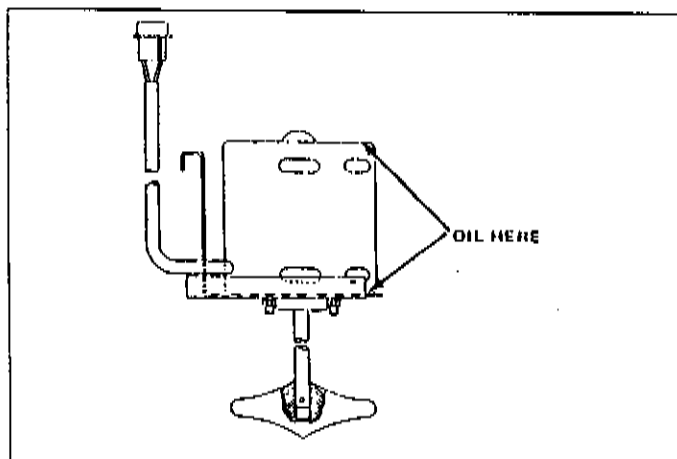


FIGURE 5 - 1 AGITATOR MOTOR LUBRICATION

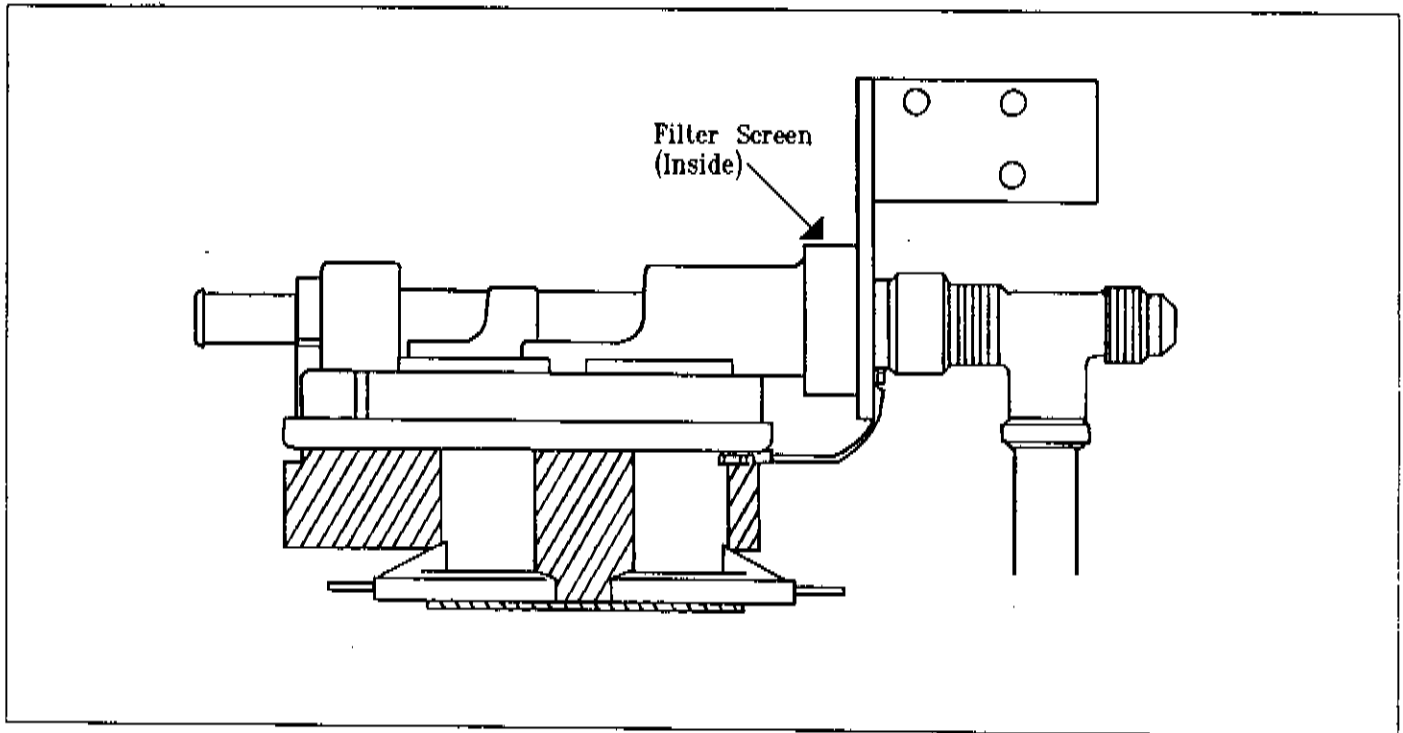


FIGURE 5 - 2 REMOVING DUAL INLET VALVE SCREEN FOR CLEANING

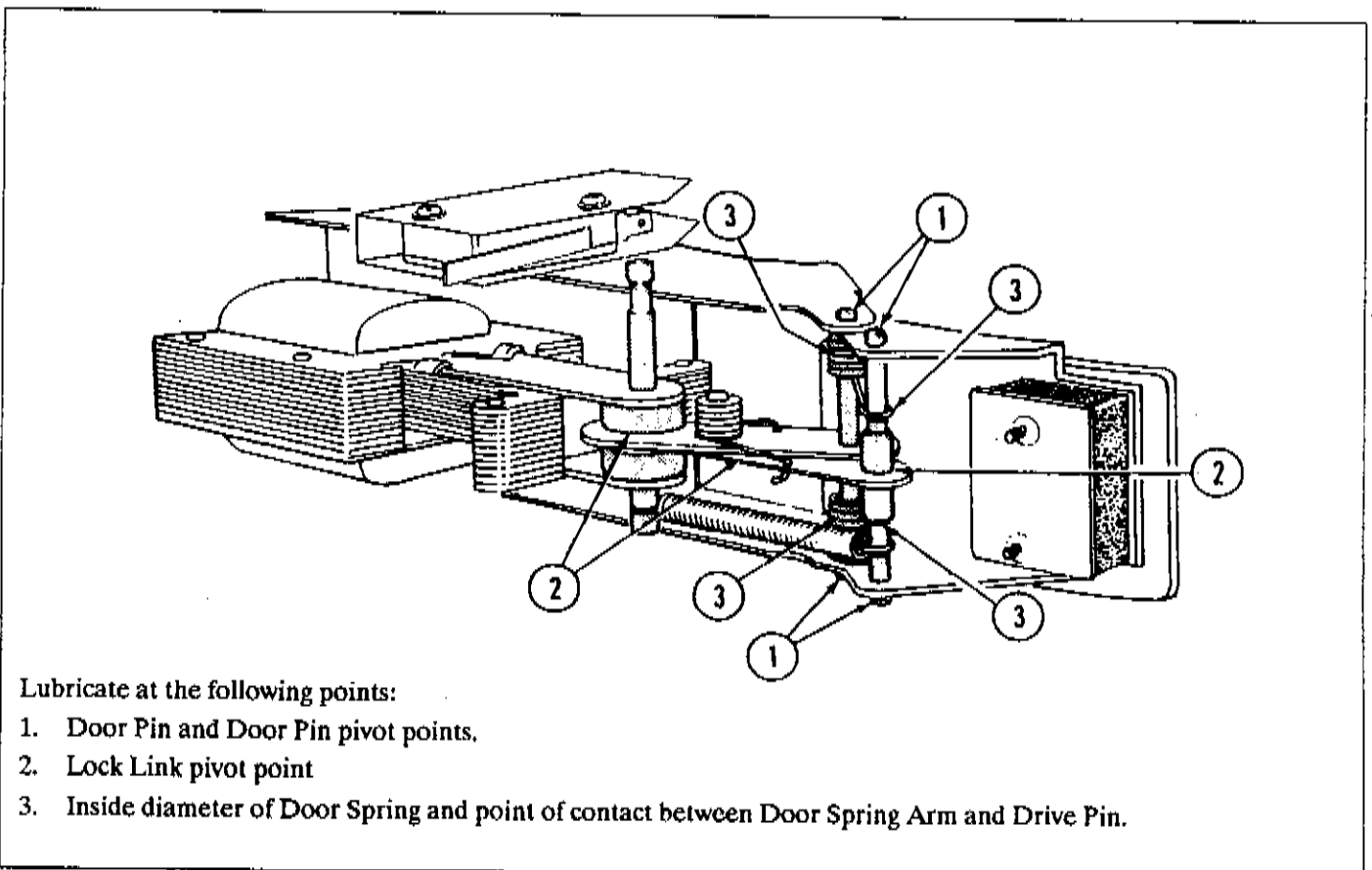


FIGURE 5 - 3 LUBRICATION OF DOOR MECHANISM

## Icemaker

1. Apply a light coating of Lubriplate Grease, or equivalent, to ice door mechanism every six months. Be careful not to contaminate door, door seal, or adjacent areas with grease.
2. Every six months, remove Gear Case screw located on side of transmission case. If oil does not seep out of the screw hole, add Darina 05 oil (Rowe Part No. 966-32) through filter port on the transmission case. Replace screw when oil begins to seep from hole. Do not over-lubricate.

## Syrup Pump

Apply small amount of lithium or silicon lubricant to crank pin of each syrup pump motor every six months.

## Water Pump

Apply 3 to 5 drops of SAE # 10 oil to left & right lube ports.

### NOTE:

*Before removing Water Pump housing to reinstall, mark or scar location for alignment.*

## ICEMAKER EXPANSION VALVE ADJUSTMENT

The Icemaker has been factory adjusted to produce quality ice; however, local conditions may warrant additional adjustment of the expansion valve.

1. Adjust the hex screw as required to alter suction pressure. Turn the screw clockwise to increase pressure.
2. Move the screw 1/16 of a turn at a time and wait five minutes for pressure to stabilize at new setting.
3. For optimum Icemaker performance, the frost line should form on the suction line (see Figure 5 - 4).

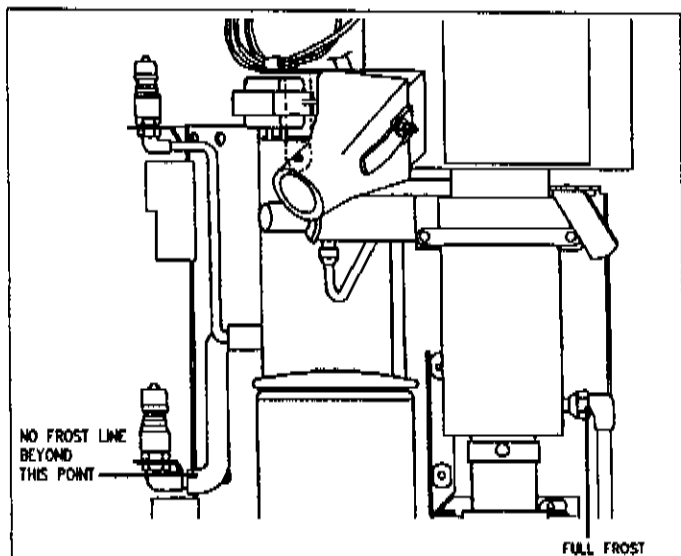


FIGURE 5 - 4 ICEMAKER EXPANSION VALVE ADJUSTMENT

The presence of a frost line could be the determining factor in adjustment of the expansion valve.

A snow line (not as cold) that appears, especially on hot humid days, is not acceptable.

Adjustment to the expansion valve should be made slowly, allowing time for pressure to stabilize.

### NOTE:

*Raise low side pressure to move "frost line" further from Icemaker (toward compressor). Reduce to pressure to move "frost line" back toward Icemaker.*

*An acceptable check for a "frost line" : Moisten your finger and touch the fitting of suction or low side line, if the finger "sticks" you have a frost line.*

It takes at least 5 minutes with Icemaker running to stabilize frost line.

## REPAIR AND REPLACEMENT

Most of the repair and replacement procedures for the vendor are of an obvious nature. The following paragraphs are provided to aid service personnel in repairing and replacing parts that require additional information.

### Icemaker Replacement

1. Place Icemaker switch in test position to purge ice from hopper.
2. Set Main Switch to OFF.

### CAUTION !

*Relieve pressure before removing CO<sub>2</sub> tank in the following step.*

3. If a tall CO<sub>2</sub> tank is used, remove tank to gain access to Icemaker assembly.
4. Remove ice chute.
5. Remove water line between Icemaker and water reservoir tank at Icemaker side. Drain water into water bath or one-quart container.
6. Remove melt-down tube at Icemaker.
7. Unlatch and swing out Icemaker.
8. Remove Icemaker electrical plug from harness receptacle.
9. Dis-engage quick disconnect fittings (Figure 5 -5).
10. Lift Icemaker mounting bracket up from mounting pins. Entire assembly can now be removed.
11. Install replacement Icemaker on mounting pins.

12. Lubricate quick disconnect fittings with a light coating of one of the following materials:
  - a. Refrigeration Oil.
  - b. Vacuum Oil.
  - c. Vacuum Pump Grease.
  - d. Silicone Grease.

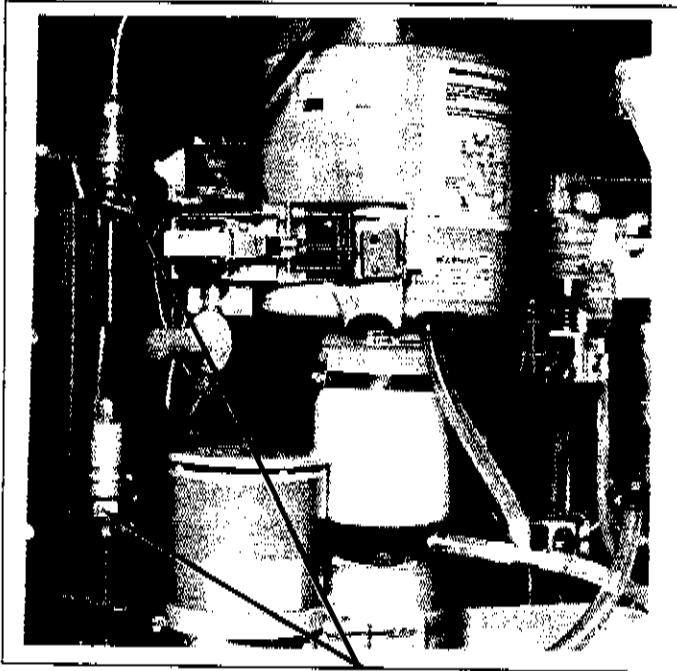


FIGURE 5 - 5 ICEMAKER QUICK DISCONNECT FITTINGS

13. Install Icemaker electrical plug in receptacle. Engage quick disconnect fittings.
14. Swing Icemaker back into place and secure with screw-in holding knob.
15. Connect water feeder line to Icemaker.
16. Connect melt-down line to Icemaker.
17. Install ice chute and CO<sub>2</sub> tank.
18. Set Main Switch to ON.
19. Operate vendor and check Icemaker for proper operation. Check frost line

#### DIS-ASSEMBLY PROCEDURE FOR ICEMAKER

When reassembling the Icemaker, the correct assembly procedure is a major key for a long operating life.

The following steps outline this procedure:

1. After the unit has been disassembled, Check all the parts for wear. Discard worn parts and replace with authorized parts only.
2. Lubricate the inside of coupling (2) with a light coating of Lubriplate 630-AA. Place coupling onto the output shaft of Transmission (1).

3. Place lower Bearing (3) into housing (4), (see installation lower bearing and housing).
4. Place Housing (4) onto Transmission (1) and secure with bolts (5).
5. Place Gasket (6) on top of Bearing (3), (see installation lower bearing and housing).
6. Locate Ceramic Seal (7) on top of Housing (4).
7. Install Shaft Seal (8) onto bottom of journal Auger (9). For proper installation see "Shaft Seal Replacement".
8. Carefully set the Auger and Seal Assembly down onto the Ceramic Seal and lower Housing, and load seal. See Loading section of Shaft Seal Replacement.
9. Slide Evaporator Assembly (10) down over Auger and Housing. Use P-80 rubber lubricant or water on the "O" ring that is around the Ceramic Seal.
10. Secure Evaporator to Housing and bolts (11).
11. Check threaded holes in the Extruder Head. Make sure they are clean and moisture free.
12. Place Extruder Head down into the Evaporator Tube.
13. Place Hopper onto the Evaporator Tube.
14. Treat Extruder Head Bolts with Grade "C" loctite, make sure threads are clean and moisture free.
15. Hold down the Auger and screw Bolts into the Extruder Head, thru the neck of the Hopper. Hand tighten. Tighten Extruder head Bolts evenly and in sequence.
16. Replace Insulation around the neck of the Hopper.
17. Install Door Mechanism, Cutter, "O" Ring, Drip Ring, Agitator, and Ice Level Control.
18. Install Icemaker in machine and check operation.

#### RE-ASSEMBLY PROCEDURE FOR REYNOLDS ICEMAKER

When re-assembling the Reynolds Icemaker, the correct assembly procedure is a major key for a long operating life.

The following steps outline this procedure:

1. After the unit has been disassembled, check all the parts for wear. Discard worn parts and replace with authorized Reynolds parts only.
2. Install shaft seal, mount, drive pin and evaporator assembly. (Refer to shaft seal replacement.)
3. Having evaporator assembly secured to transmission, place hopper assembly (408-4559) on top of evaporator flange. Install drip ring (408-4047) into hopper and secure with three 1/4-20 seal coated screws (408-4042).



**NOTE:**

Special hopper screws P/N (408-4042 1/4-20 screws seal coated). Should be replaced at major cleaning or if reused approximately three (3) times.

4. Carefully set auger (408-4048) into evaporator assembly and turn until notch in auger engages with drive pin in transmission shaft.
5. Install extruding head assembly (408-4565) onto upper shaft of auger. Three long ribs on head should engage with evaporator notches.

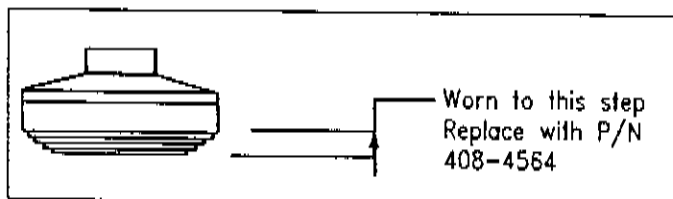
**NOTE:**

Inspect extruding head bearing for wear using Reynolds plug gage - 408-4064.

6. Spin thrust washer assembly (408-4564) onto auger shaft thread (hand tight). Agitator assembly (408-4566) fastens on top of remaining thread of auger shaft.

**NOTE:**

Inspect thrust washer for wear indicator.



7. Install Dispense mechanism (408-4562).
8. Place ice level control (408-4563) on hopper, align arrows and fasten with thumb screws (408-4036).
9. Connect icemaker to condensing unit, water and drain lines and check for operation.
10. Replace insulation collar (408-4061) between transmission and evaporator assembly. See Parts Section.

### SHAFT SEAL REPLACEMENT

If a water leak is detected at the evaporator mounting or transmission area, the shaft seal and O-ring should be checked. Continuous leaking will result in damage to the transmission.

#### Replacement of Shaft Seal:

1. Shut OFF Main Line Switch.
2. Disconnect water supply hose and drain Icemaker Assembly.
3. Remove the four (4) evaporator mounting bolts and washers and lift the evaporator assembly up to reveal seal area.
4. Remove drive pin from transmission shaft and slide off the lower spacer and washer. Pull off the shaft seal mount along with seal. See figure 5 - 6.

5. Reassemble unit - place shaft seal mount (408-4057) with O-ring (408-4058) on to the transmission shaft. Install shaft seal (408-4053) onto shaft and into seal mount with carbon seat up and ceramic washer down. (Wet seal for ease of assembly.)
6. Slide the lower washer (408-4056) and the lower spacer (408-4055) over the shaft. Insert drive pin (408-4054) through hole in transmission shaft.
7. Carefully set the evaporator assembly back in place onto the transmission. Fasten down with bolts and lock washers and tighten securely. (Ref. Mfg'r. spec. 10-12 ft. lbs. torque).

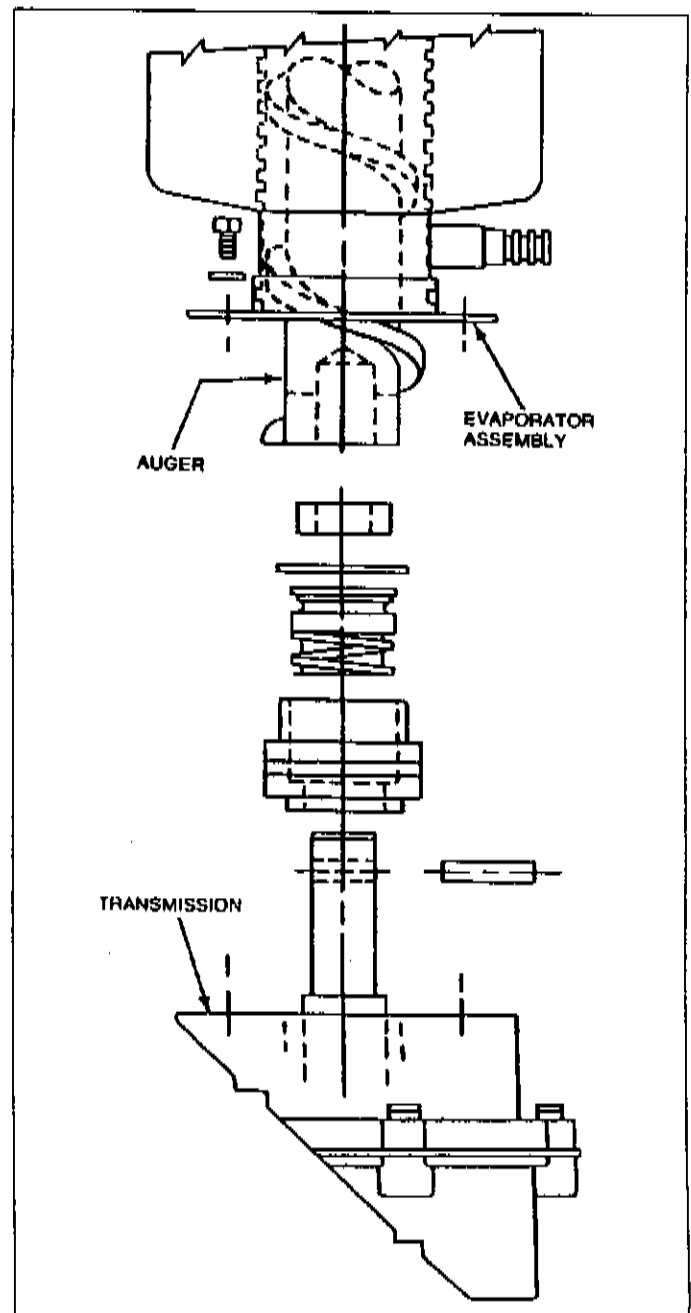


FIGURE 5 - 6 SHAFT SEAL

**Icemaker Dis-assemble Procedures:**

1. Place Icemaker switch in test position to purge ice from hopper.
2. Set Main Power switch to OFF.
3. Disconnect water lines between Icemaker and water feeder tank at Icemaker side.
4. Release and swing out Icemaker.
5. Drain and clean Icemaker.
6. Remove cover, agitator and cover. See Parts Section.
7. Remove leads from Icemaker door solenoid and ice valve solenoid.
8. Remove four collar screws securing Icemaker to transmission.
9. Remove two screws securing transmission to support assembly and set the transmission aside.
10. Remove water assembly inlet bank and three bolts at bottom of evaporator.
11. Remove housing, seal and bearing.
12. Inspect bearing and seal for wear and replace if necessary.

**NOTE:**

See pages 5 - 4 & 5 - 5 for replacement procedures.

13. Carefully remove auger from evaporator. Save collar if it did not come off in the transmission.
14. If the auger or the evaporator wall are not damaged, order 201-6093 Reconditioned Icemaker Top Assembly Kit (less transmission, cover, agitator cover and screen).
15. If the bearing is not water damaged and the auger and the evaporator wall are not scored, reassemble the Icemaker.
16. Install bearing, seal and housing. Check that bearing and seal are properly seated; Then secure with three bolts.

**Check upper bearing for wear as follows:**

1. Insert a 0.010-inch wire feeler gauge between the auger journal and the bearing that is part of the extruding head. See Parts Section.
2. A set of feeler gauges (0.010 and 0.014-inch) for measuring extruding head clearance is available. Order Icemaker gauges, Rowe part no. 301-4524.

3. If the gauge fits into the space, replace the extruding head as a preventive measure. Order 201-6049 Reconditioned Extruding Head Kit.  
This kit contains a replacement extruding head plus installation instructions.
4. Install a water assembly inlet band.

**CAUTION !**  
*Operating an Icemaker in this condition will result in damage to the transmission or motor, necessitating replacement.*

**CUP DISPENSER**

**To Remove Cup Turret**

1. If empty, simply lift turret straight up.
2. If loaded:
  - a. Release primary latch located on cup turret base.
  - b. Release secondary latch located on cup turret support bracket
  - c. While firmly holding lid, withdraw loaded turret from base.

**Cup Mech Disassembly**

1. Remove turret.
2. Remove stainless steel cup base (loosen 4 screws - slotted).
3. Mark position of gear teeth and relative position to base.
4. Remove E-ring on bottom of turret axle shaft.
5. Lift off axle shaft - gear assembly up and remove.
6. Tilt cup base assembly to secondary latch position and loosen 4 Philips head screws.
7. Lift off sub base.
8. Cup sold out switch, motor full cycle switch, index drive link, cup drop test switch and motor arc accessible.

**NOTE:**

*If drive slide is removed, mark position of spring.*

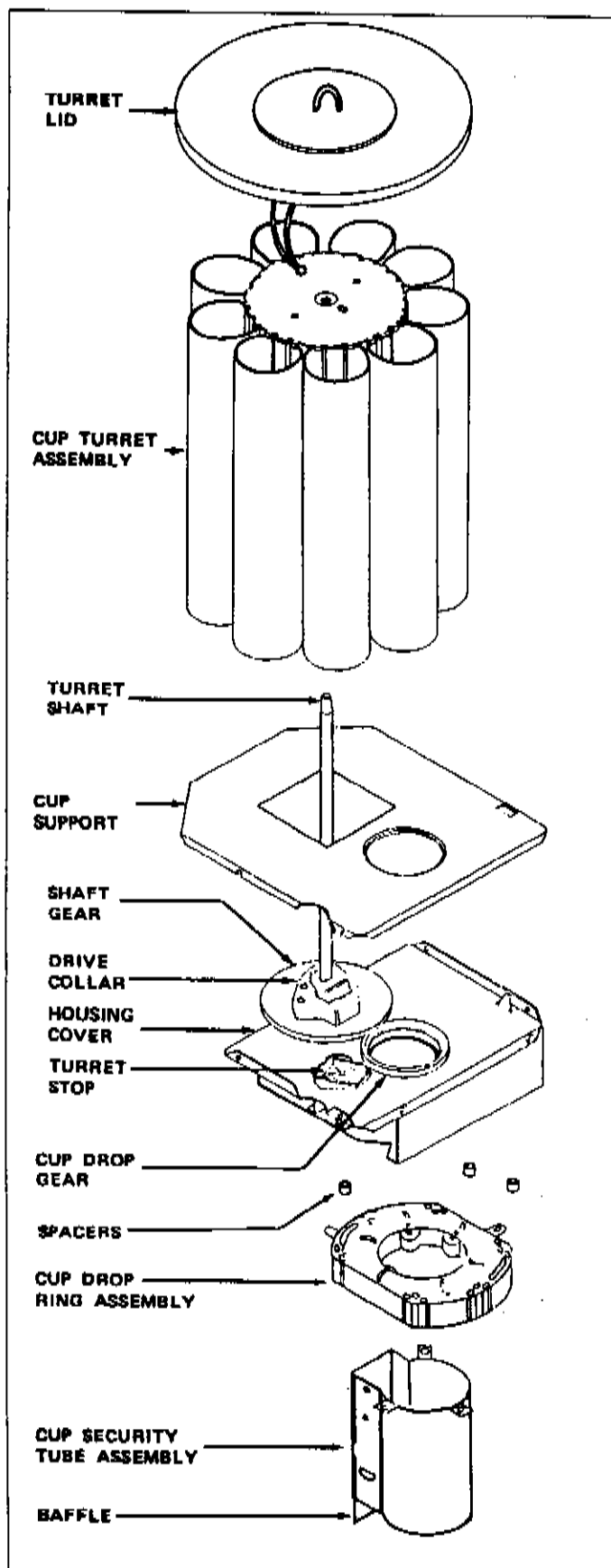


FIGURE 5 - 7 CUP DISPENSER

### To Remove Cup Head

1. Remove turret.
2. Remove base pivot rod. Turret can now be rotated so that it is completely upside down.
3. Remove 3 screws holding security ring and remove.
4. Remove 3 screws holding cup ring - be careful to reserve 3 plastic stand offs.
5. Motor mounting screws are now also accessible.

### Drive Motor Replacement

1. Remove spring.
2. Remove screw holding plastic cam to motor shaft.
3. Remove 4 screws holding motor.

### NOTE:

*Note position of cam and cam stop on plastic housing before dismantling.*

### Backlash Lock Adjustment

If you experience excessive play in the drive sprocket (located under cup drop gear) follow these steps for adjustment:

1. Remove Turret Lid.
2. Grasp cup turret assembly at top and bottom and lift assembly from turret shaft.
3. Loosen (but do not remove) four (4) Phillips-head screws securing cup support to housing cover. The cup support carries slots that permit easy removal by lifting up.
4. Locate 1-inch diameter hole next to cup drop gear. This hole falls directly over the cup stop, which is located in the base under this housing cover.
5. With a spintite wrench, loosen (but do not remove) two (2)  $\frac{1}{4}$ " hex head screws on turret stop. One screw is located in a slot which will permit adjustment.
6. Rotate turret stop counterclockwise until tab on stop is snug against a tooth of drive sprocket. (Care should be taken not to use excessive force.)
7. Tighten both screws, and using cup drop switch, cycle the cup mechanism. Once cycle is complete, grasp sprocket gear with your hand and gently move gear back and forth in normal cycle direction. If turret stop has been adjusted properly, there should be only slight movement ( $\frac{1}{64}$ " or less). If there is more than  $\frac{1}{64}$ " movement, repeat steps 5, 6, and 7.
8. When adjustment is complete, replace cup support, cup turret assembly and turret lid.

**Cup Turret to Drop Ring Relationship**

If you experience a problem with improper indexing of the cup tube in relation to the drop ring, follow these simple corrective adjustments:

1. Unlatch and invert cup dispenser to remove turret and cups. Return cup dispenser to vend position.
2. Using No. 2 Phillips driver, loosen 4 screws securing cup support. Lift and remove cup support.
3. Using needle-nose pliers, remove "E" ring from turret shaft. Do not remove shaft at this point.
4. Using 5/16" spintite driver, remove 2 screws securing existing drive collar to gear shaft assembly. Retain screws for Step 5. Remove drive collar by lifting clear of turret shaft.
5. Mount new drive collar to gear shaft assembly, utilizing the holes marked with numeral 1. Secure with 2 screws from Step 4.
6. Lift turret shaft and gear free from mating cup drive gear and align drive collar tab with center of cup drop tube.

**NOTE:**

*If tab is too far right or left of center, mark mating teeth with china marker or crayon and follow steps listed in chart.*

7. Replace E-ring removed in Step 3.
8. Replace cup support and tighten screws loosen in Step 2.
9. Replace cup turret.
10. Using cup drop switch, cycle turret through two vends. Cup turret automatically advances to next tube. Check for proper indexing by sighting down cup storage tube.

**NOTE:**

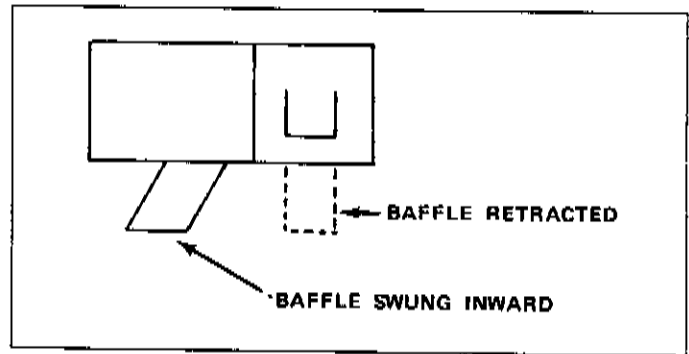
*Turret rotates in 1/2 tube increments. A full tube of cups will rotate into position after two consecutive vends.*

11. Fill Cup storage tubes.

**NOTE:**

*Cup should be loaded to fill each tube at least half in order to assure proper operation.*

*For 9 oz. cups the baffle on the cup security tube must be extended inward. For all other sizes, the baffle is retracted.*

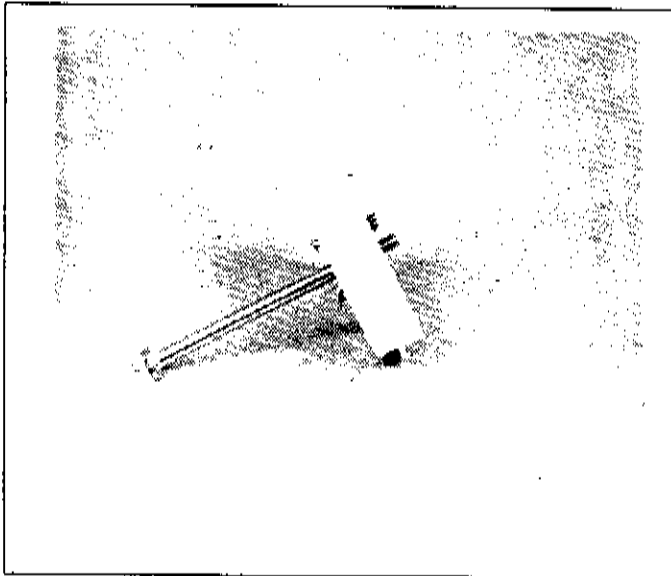


**Setting Cup Sizes**

A gauge for setting the cup drop ring is shipped in the waste bucket. This gauge is suitable for most major cup suppliers' cups in the 9, 12, and 16/18 oz. sizes.

Assemble the gauge as shown below. If the 9 oz. cup ring is to be dispensed, the gauge must be assembled with the numeral "9" facing away from the head of the bolt. A 12 oz. cup would require the gauge to be assembled with the numeral "12" facing away from the head of the bolt.

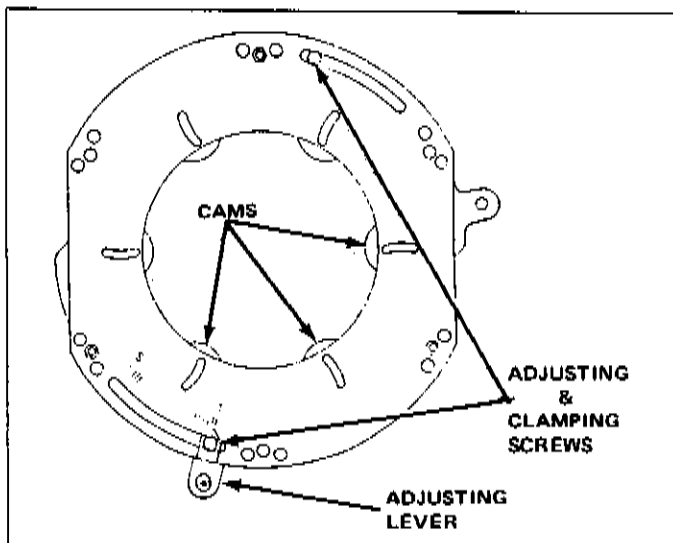
<b>ALIGNMENT CHART</b>	
<b>Tab too far right of center</b>	<b>Tab too far left of center</b>
<p>Lift turret shaft with gear and move one tooth in a counter-clockwise direction.</p> <p>Check Alignment.</p> <p>Too far Left? Remount drive collar using numeral 2 holes (step 5).</p> <p>Check Alignment.</p>	<p>Remount drive collar using numeral 2 holes (step 5).</p> <p>Check Alignment.</p> <p>Too far left? Remount drive collar using numeral 1 holes.</p> <p>Lift turret shaft &amp; gear and move tooth in a clockwise direction.</p> <p>Check Alignment.</p>



Tilt the cup mechanism as far as it will go by releasing both latches. Remove turret. Loosen the two adjusting and clamping screws on the bottom of the cup drop ring. (See illustration.) Insert the gauge through the security tube into the bottom of the cup drop ring. Holding the gauge in place, rotate the adjusting lever until the gauge is held snugly by the cams and tighten the two adjusting and clamping screws.

**NOTE:**

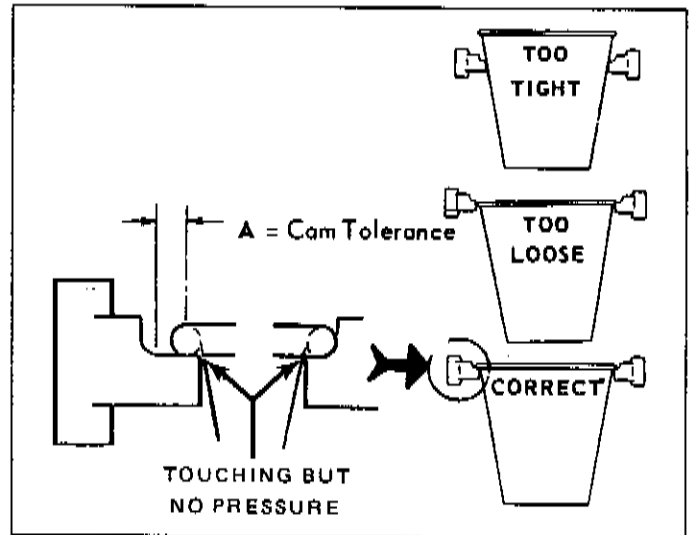
*Moving the pointer of the adjusting lever towards the "S" decreases the drop ring cam opening, moving it towards the "L" increases the cam opening.*



Replace the cup turret, latch the cup mechanism in the upright position and test for proper operation. If cups do not drop correctly the particular brand in use may not have the same dimensions as the gauge. If this is the case, refer to the following method of adjustment.

### Setting Cup Size -- No Gauges

If a setting gauge for the cup to be used is not available, proceed as follows: Adjust cup drop ring so that it just touches the cup to ensure proper operation.



### Security Tube Position and Adjustments

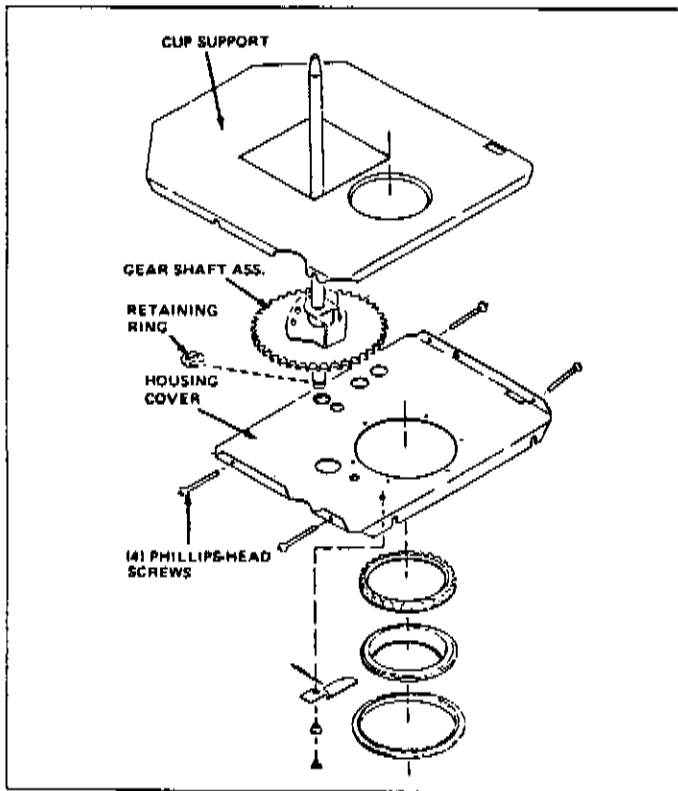
The relationship of the security tube and the cup drop ring is important. Any time the security tube is removed, it **MUST** be reinstalled with the baffle housing and baffle closest to the letter "S" stamped on the bottom of the cup drop ring. Any other mounting position will cause a malfunction of the vendor.

When dispensing a 9 oz. cup, the baffle must be extended toward the center of the security tube. See illustration on Page 5 - 8. To adjust baffle, grasp both springs and spread apart so the baffle can be extended inward.

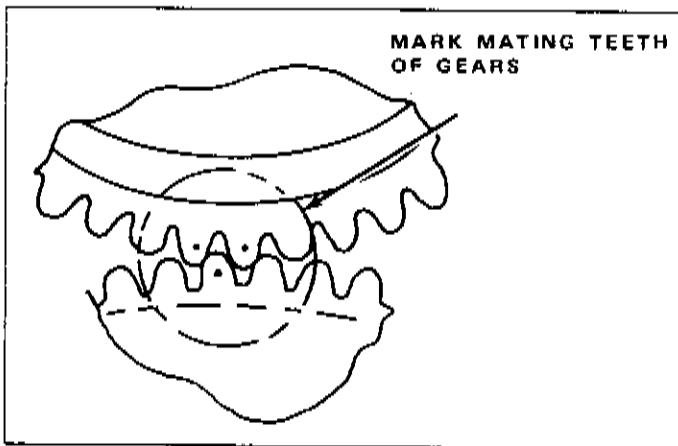
All other cup sizes must have the baffle in the retracted position to insure proper operation.

### FULL-CYCLE SWITCH ADJUSTMENT

1. Remove turret lid.
2. Grasp cup turret assembly at top and bottom and lift assembly from turret shaft.
3. Loosen (but do not remove) four (4) Phillips-head screws securing cup support to housing cover. The cup support carries slots that permit easy removal by lifting up.
4. Remove retaining ring (see illustration on next page).

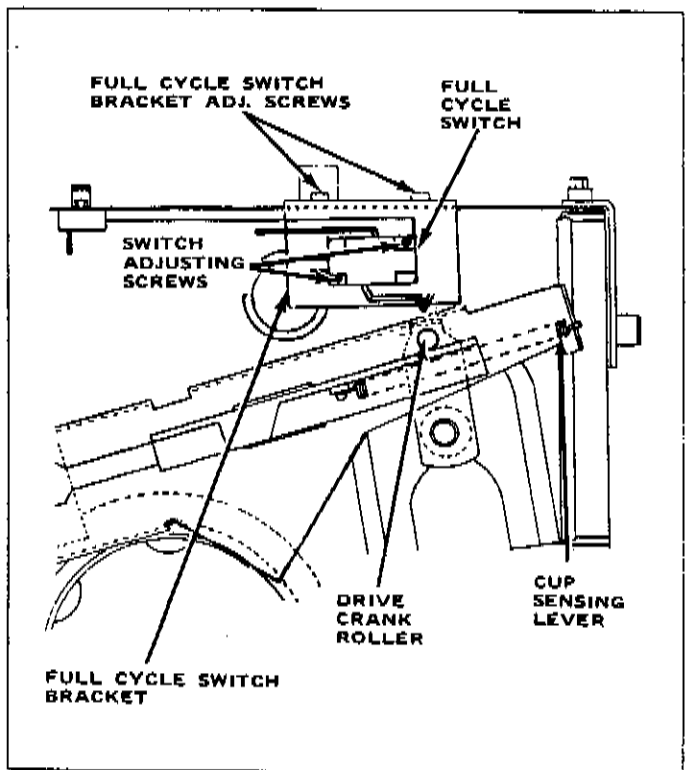


5. Mark mating teeth of gears (See illustration) and remove spindle with gear (gear shaft assembly).

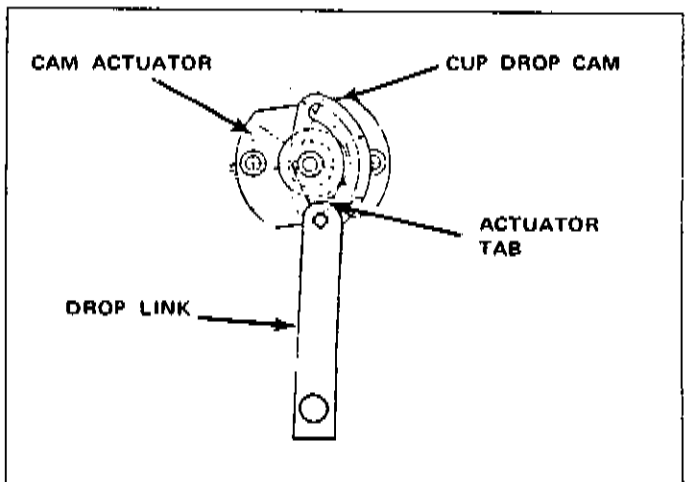


6. Full-cycle is now accessible thru cut-out, but removal of housing cover is recommended for better visual observation.
7. Loosen switch adjusting screws and move full cycle switch in toward drive crank until the switch plunger is 1/32" from bottoming. See illustration in next column.
8. Reassemble.

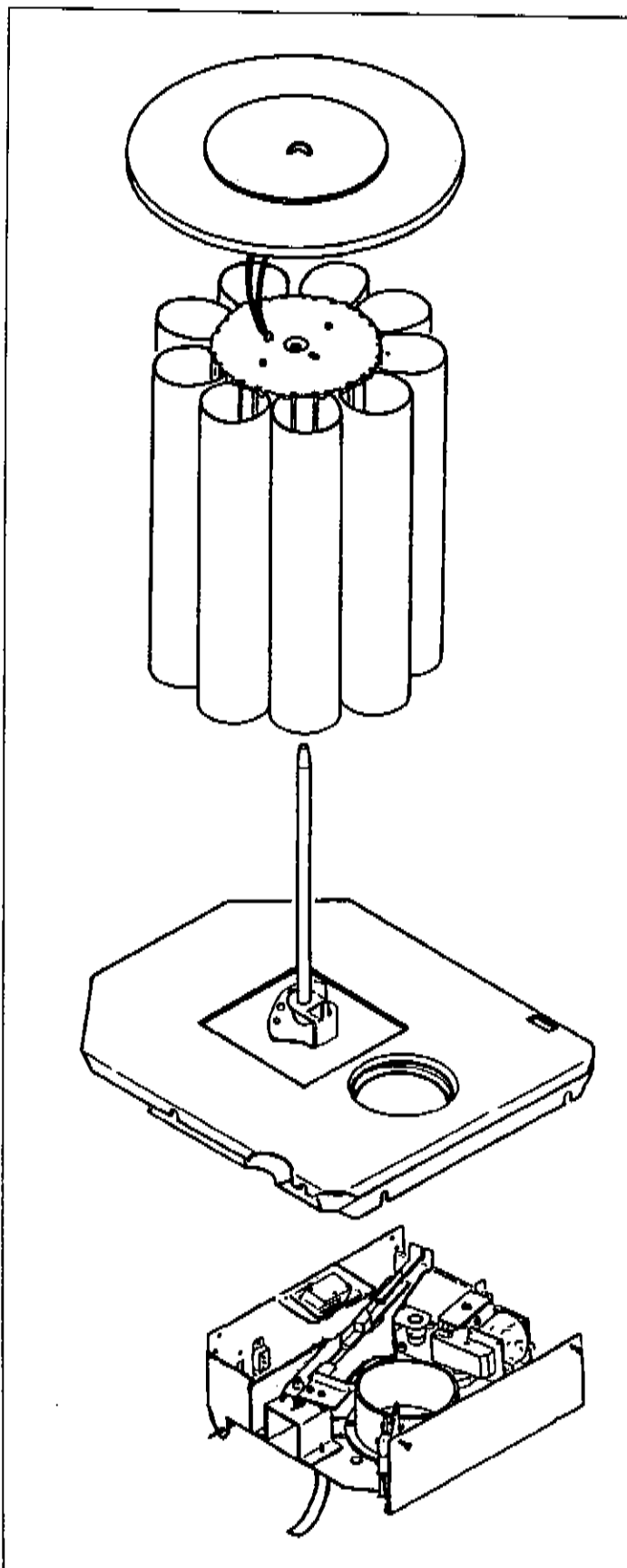
9. Loosen full-cycle switch bracket adjusting screws and slide the full cycle switch bracket left or right in its elongated holes. (See illustration below.)



10. Make a test vend, then look at underside of the cup mech. Pin on drop link must be in position shown in illustration below.
11. If relationship of drop link pin and actuator tab is incorrect repeat step 9 until the position is correct.



Cup Dispenser Assembly



408-4533  
Cup Turret Assembly

408-4536  
Upper & Lower Frame  
Assembly

408-4534  
Upper Frame Assembly

408-4535  
Lower Frame Assembly

(408-1610) - Cup Turret Assembly consists of all of the above.

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# PARTS CATALOG

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# OPTIONAL KITS

<b>PART NUMBERS</b>	<b>DESCRIPTION</b>
408-6013	Individual Product Counter Kit
408-6015	Drier Kit
425-6020	Universal C.B.A. - 2 (U.B.A.) Bill Acceptor Kit
408-6030	Conversion Kit
	To convert a 6 pump w/Tea to a 7 pump Tea w/seperate sweetner)

## REPAIR AND MAINTENANCE KITS

421-6048	Check Valve Kit
	(Has replacement parts for Gorman-Rupp pumps and includes 2 "O" rings, 2 poppet valves, and 1 anti-siphon spring).
406-6047	2-Way Carbonated Water Valve Repair Kit (To repair 406-1222 ValveBody 406-4642) and (406-1229 Valve Body 406-4644)
406-4641	3-Way Carbonated Water Valve Repair Kit
406-4040	Cleaning Brush (Now included in each Vendor with Tea option).
408-6037	3-Way Refrigeration Kit



# SECTION 6 PARTS CATALOG

## INTRODUCTION

This parts catalog contains a list of replacement parts for the vendor that are available from Rowe Distributors. Each list contains an index of the part, Rowe Part Number, a description of the part and the quantity required for the assembly. Separate parts of riveted or welded assemblies are not available from the factory as replacement parts.

### Parts Breakdown

Each table in the Parts Breakdown contains four columns. Following is a description of each column in the order of appearance on the Parts Breakdown tables.

### Fig. and Index No.

This column lists the figure number as the first entry on each page. An index number keys the part to the figure.

### Rowe Part No.

This column lists the part number of the item that should be used for ordering. The same part, whenever used, retains the same number.

### Description

This column gives the name of the assembly or part.

### Qty. Per Asm.

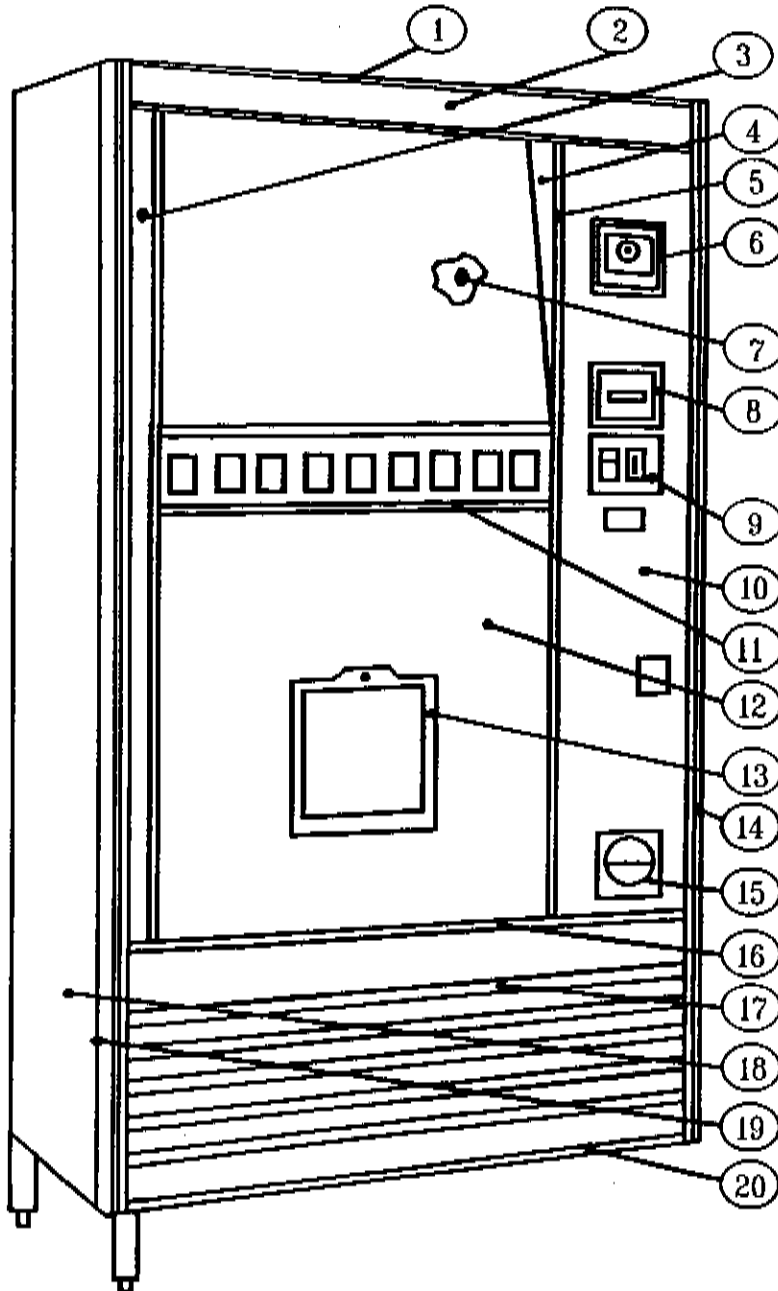
This column contains the exact quantity of the item required for its next higher assembly.

## ORDERING REPLACEMENT PARTS

All parts must be ordered from an authorized Rowe Distributor. Parts ordered are often delayed because of inadequate or incomplete ordering information. Be sure to include all required information which consists of:

1. Rowe Part Number and Description exactly as it appears in the Parts Catalog. State color if applicable.
2. Quantity being ordered..
3. Model and Serial Number of vendor for which the part is required. This is necessary because of Manufacturing changes.
4. Complete shipping address including ZIP code.
5. Specify shipping instructions. It is advisable to indicate an alternate shipping method if the packages may exceed the size and weight limits established by the shipping agency of your choice.

# Main Door Trim and Panels



MODEL & STYLE →	406Z GENESIS	406Z AWARD
1. Header Channel	983-1	Same
2. Header Insert	985-2-9	"
3. Panel L/H Vertical	985-31-9	985-31-7
4. Panel, Display L/H	408-502	Same
Panel, Display R/H	408-503	"
5. Trim, Vertical Display L/H & R/H	983-221 (2)	983-202 (2)
6. Overlay, Bezel - W.A.D.	408-533	Same
7. Display	408-1433	408-1423
8. Overlay, Bezel - B/A	425-428	Same
Overlay, Bezel - no B/A	425-437	"
9. Overlay, Coin Insert	408-508	"
10. Overlay, R/H W.A.D.	408-530-9	408-530-7
Overlay, R/H	408-541-9	408-541-7
11. Trim, Selection - Horizontal	408-408 (2)	Same
12. Panel, Door Center	985-43-78	985-43-7
13. Bezel, Cup Compartment w/Cup Filling Lamp	425-430	Same
14. Vertical Trim, L/H & R/H Side	983-101 (2)	"
15. Overlay, Coin Return Cup	408-506	"
16. Trim, Lower Door Panel	983-220	983-200
17. Lower Door Panel	425-1435	985-21-1
18. Cabinet W/A	408-1301-246	Same
19. Door W/A	425-1401-246	"
20. Trim, Main Door Bottom	408-504-239	408-504-246

There are many combinations of panel and overlay finishes based on individual company preferences. Part numbers for the Styling overlays and panels are generally the same with the exception of the last dash number which denotes the finish of the part. For example, item No. 2 above is 985-4-1 (Header Insert- Roweswood). If this part were desired in a Presidential Walnut finish the part number would be 985-4-2. The chart below lists the dash numbers and the corresponding finish.

HORIZONTAL PANELS			VERTICAL PANELS		
- 1	Roweswood	-13	Stainless Steel Mylar	- 2	Presidential Walnut
- 2	Presidential Walnut	-29	Teak	- 7	Shadow Silver
- 3	Regency Walnut	-32	Terra Cotta	-11	Brushed Bronze
- 4	Kashmir Walnut	-69	Chamois	-12	Port-Au-Prince
- 9	Black	-80	Gold (Stellar)	-13	Stainless Steel Mylar
-10	Golden Leather			-29	Teak
				-79	Charcoal Brown

# Main Door (Exterior)

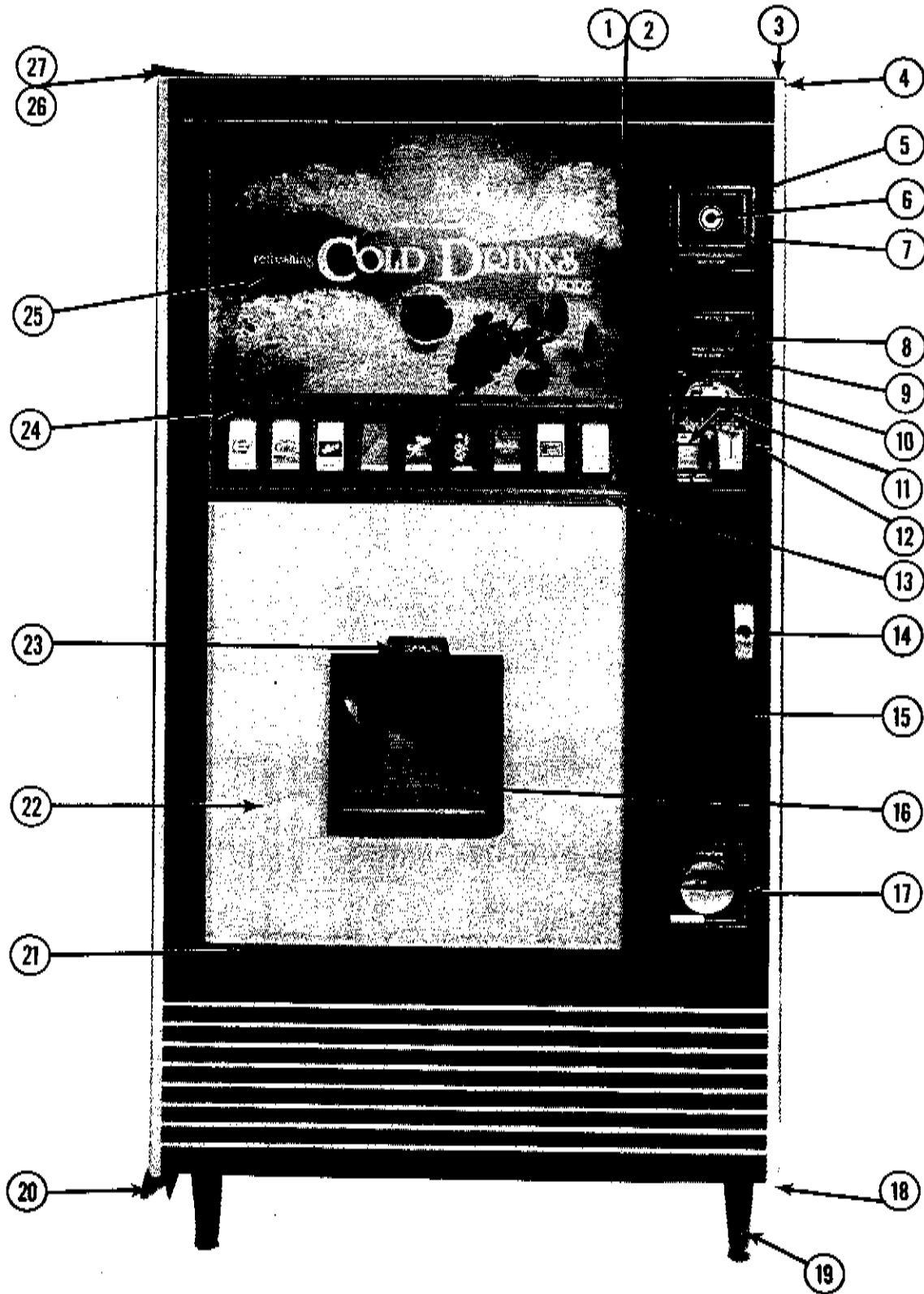


Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	408-1425	Main Door Final Asm.	REF
	425-1401-246	Main Door Weld Asm.	REF
1	983-202	Vertical Trim, L/H & R/H Display	2
2	983-327	Retainer, Vertical Trim	2
3	408-511	Cap, Vertical Trim - Top	1
4	983-325	Retainer, Vertical Trim	2
5	408-495	Bezel, Display	OPT
6	408-1432	Silk Screen Display	OPT
	493-4010	W.A.D. Display Mounting Bracket	OPT
7	408-1885	Display Asm.	OPT
8	425-6037	Bill Acceptor Kit --- See Service Manual 900-42547 for complete parts listing and service procedures	OPT
9	408-495	Bezel, Bill Acceptor	OPT
10	425-428	Overlay, Bill Acceptor Bezel	OPT
	493-1473	Overlay - (When Bill Acceptor is removed for service.)	ALT
	425-21100	Plate Asm., Instruction Overlap	ALT
11	490-470	Slide, Coin Return	1
12	490-436	Bezel, Coin Insert	1
13	408-408	Trim, Selector Horizontal	2
	408-406	Retainer, Horizontal Trim	2
14	479-1420	Handle, Pop Out	1
15	425-426-7	Panel, R/H Vertical - W/ or W/O Bill Acceptor (Standard)	1
	408-530-7	Panel, R/H Vertical - W/or W/O Bill Acceptor (Win-A-Drink)	1
16	209-485	Door, Sanitary	1
17	490-408	Bezel, Coin Return Cup	1
18	408-510	Cap, Vertical Trim - Bottom	1
19	408-1316	Leg Weld Asm.	4
	408-352	Screw, Leveling Leg	4
20	490-1415	Bottom Pivot Plate Rivet Asm.	1
21	983-200	Trim, Lower Door Panel - Top	1
	983-326	Retainer, Trim	1
22	985-43-7	Panel, Door Center	1
23	408-1825	"Cup Filling" Lamp Asm.	1
24	408-461	Overlay, Selection Button - 8 Selection	1
	408-462	Overlay, Selection Button - 6 Selection	ALT
	408-463	Overlay, Selection Button - 4 Selection	ALT
	408-1921	Price Card Assortment	1
		For Flavor Cards see page 6 - 57.	
25	408-1433	Display Asm. (See Fig 3)	1
26	490-1309	Top Pivot Plate Rivet Asm.	1
27	490-1360	Main Door Pivot Bracket Rivet Asm.	1

# Display Assembly



8

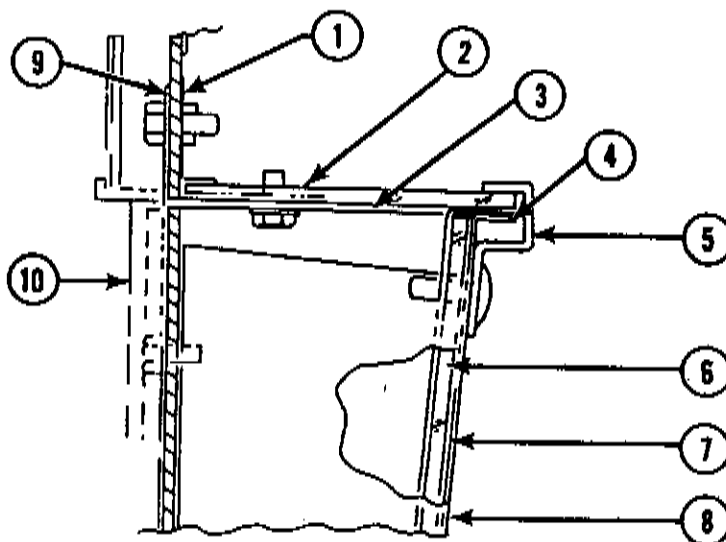


Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
1	408-452	Display Back-up Panel	1
2	408-465	Light Diffuser Retainer	1
3	408-466	Light Diffuser Retainer	1
4	408-467	Light Shield	1
5	408-503	Display Panel -- Right Side	1
	408-502	Display Panel -- Left Side	1
6	408-458	Upper Display Trim	1
7	408-464	Light Diffuser Retainer	1
7	408-450	Display Cover	1
8	408-1433	Silk Screen Display	1
9	425-401	Display Back-up Panel	1
10	983-327	Trim Retainer, Vertical Display	2



# Selector Assembly

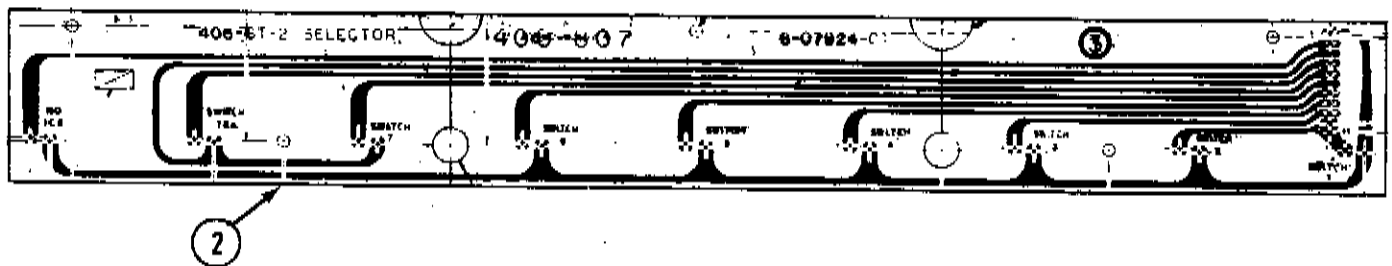
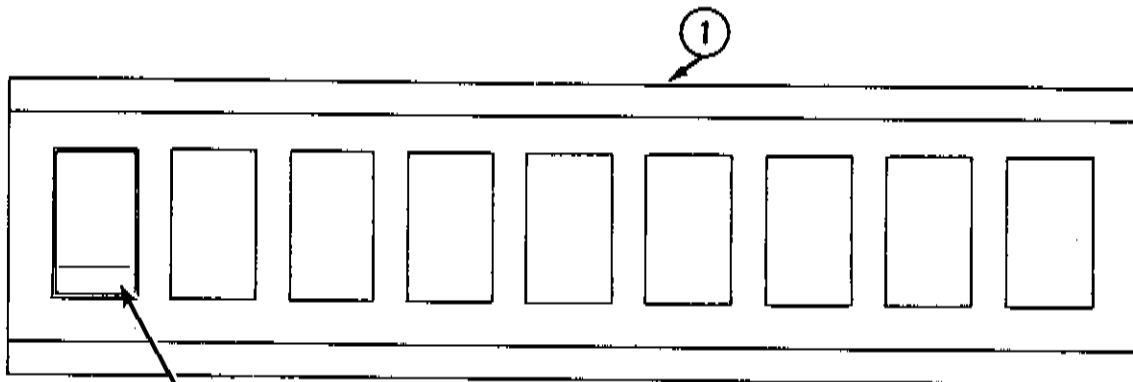


Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	408-1425	Door Final Assembly	
1	010-40763-901	Selector Assembly	1
2	408-807	Selector P.C. Board Assembly (Supplied as part of 408-1807)	1
3	490-1861	Selector Switch (Behind Button)	9
4	408-412	Selector Button	9
5	408-444	Selector Button Pin	9
6	408-445	Selector Button Spring	9
	408-443	Selector Button Mounting Bracket (Not Shown)	9

# Main Door (Interior)

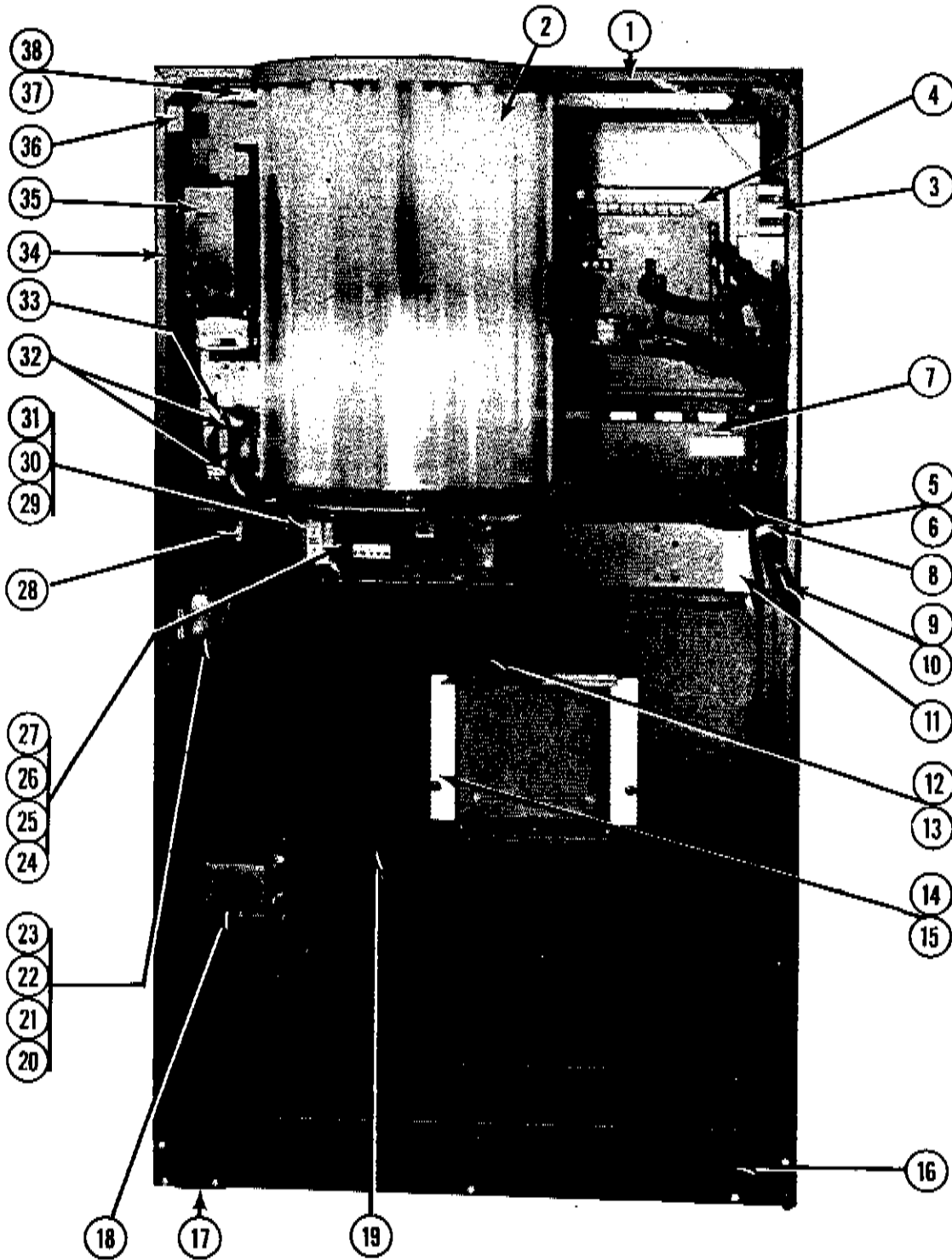


Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
1	301-1915	Door Check Chain Rivet Assembly (Not Shown)	1
2	408-1601	Cup Dispenser Assembly - 9 oz. (See Fig. 10)	REF
	408-1610	Cup Dispenser Assembly - 16 oz. (See Fig. 10)	REF
3	408-1894	Counter Assembly, W-A-D	1
	408-1897	Counter and Plug Assembly, W-A-D	1
	408-1896	Counter and Plug Assembly, Cash	1
4	408-1880	Controller Asm. (Win-A-Drink)	OPT
5	010-40763-901	Selector Board Assembly (Behind Cover) See Figure 4.	1
6	408-1405	Selector Mounting Panel Weld Assembly (Behind Cover)	1
7	408-446	Selector Cover	1
8	975-104	Wire Clip	1
9	408-1831	Cabinet to Driver Board Harness Assembly	1
10	408-1832	Selector to Microprocessor Harness Assembly	1
11	406-522	Cup Station Hanger	1
12	408-1624	Cup Security Tube Weld Assembly	1
13	408-432	Security Baffle	1
14	408-404	Vend Door Rail	2
15	408-431	Torque Knob	4
16	408-447	Door, Drip Cover	1
17	448-739	Door Ramp	1
	934-380	Self Tapping Screw	2
18	490-1404	Coin Return Cup & Flap Assembly	1
19	408-448	Cup Turret Gusset	1
20	111-428	Door Lock Cam	1
21	408-493	Hat - Lock Cam Guide	1
22	408-1413	Lock Cam Guide Rivet Assembly	1
23	903-16	Carriage Bolt	2
	924-37	Nut, Handle Mounting	2
24	408-655	Stiffener - Turret Mounting Bracket	1
25	408-1408	Turret Mounting Bracket Rivet Assembly - Right Hand	1
26	408-434	Turret Mounting Bracket - Left Hand	1
27	406-658	Tilt Stop	2
28	975-545	Splash Plate Clip	1
29	406-1886	Test Vend Switch	1
30	408-457	Test Vend Switch Bracket	1
31	406-508	Lock, Switch	1
32	490-21321	Indicator Light	2
33	493-1463	Coin Insert & Return Assembly	1
	490-5	Roller	1
	493-509	Bushing, Roller	1
	490-1406	Coin Chute & Bracket W/A	1
	490-435	Pivot, Coin Return	2
	490-498	Spring, Coin Return	1
	493-508	Lever, Coin Return	1
	493-1467	Angle & Stud Assembly	1
34	425-1401-246	Door Weld Assembly	1
35	425-6037	Bill Acceptor, Universal	OPT
36	408-433	Light Switch Actuator	1
37	408-1406	Ballast & Socket Assembly	1
38	917-105	Fluorescent Lamp 15 Watts	1
	794-461	Starter, Fluorescent Lamp 15 Watts	1

# Cup Turret Assembly

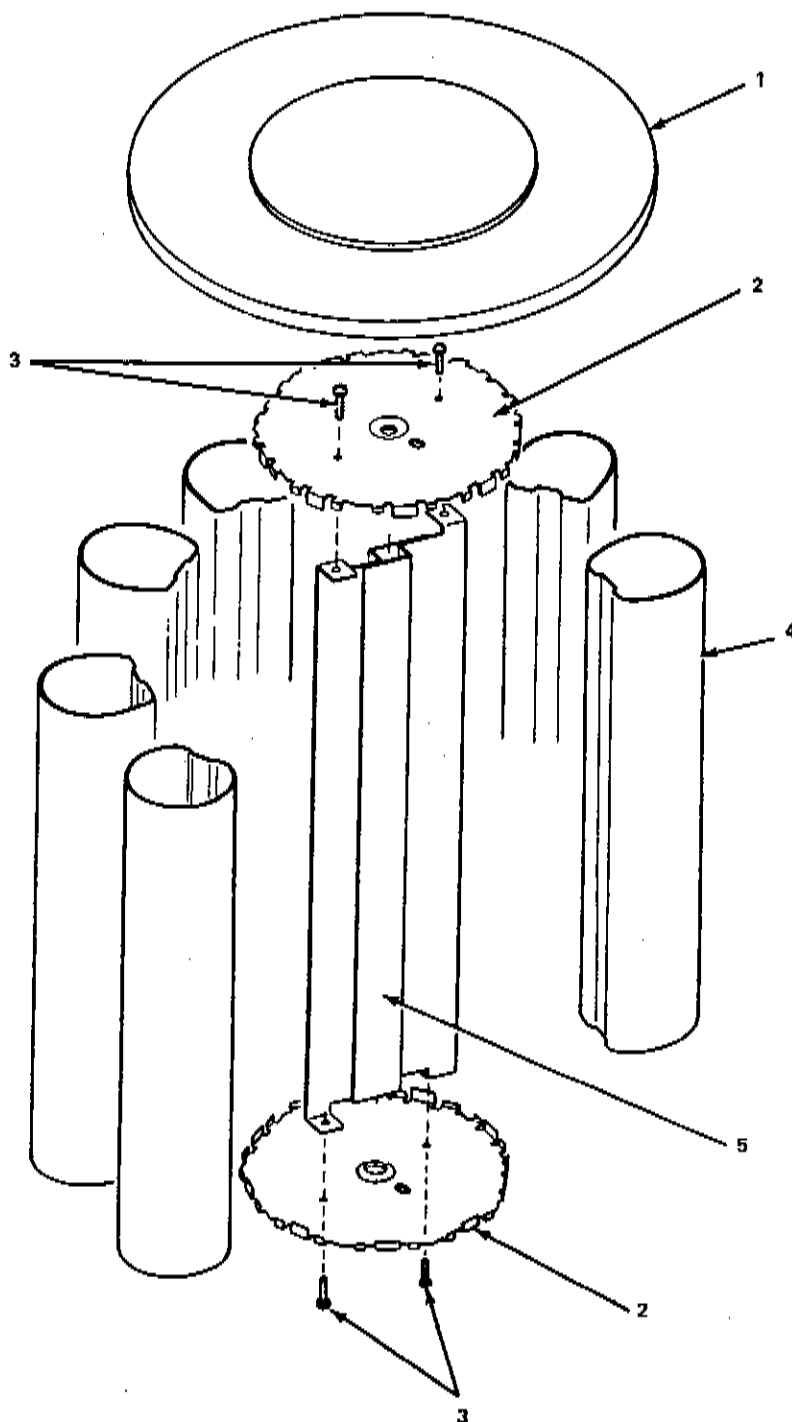


Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	408-4533	Cup Turret Asm.	1
1	408-1622	Turret Lid and Retainer Assembly	1
2	408-626	Cup Turret End Cap	2
3	934-307	Machine Screw	4
4	408-627	Cup Tube	9
5	408-1606	Cup Turret Coulmn Weld Assembly	1

# Upper Frame Assembly

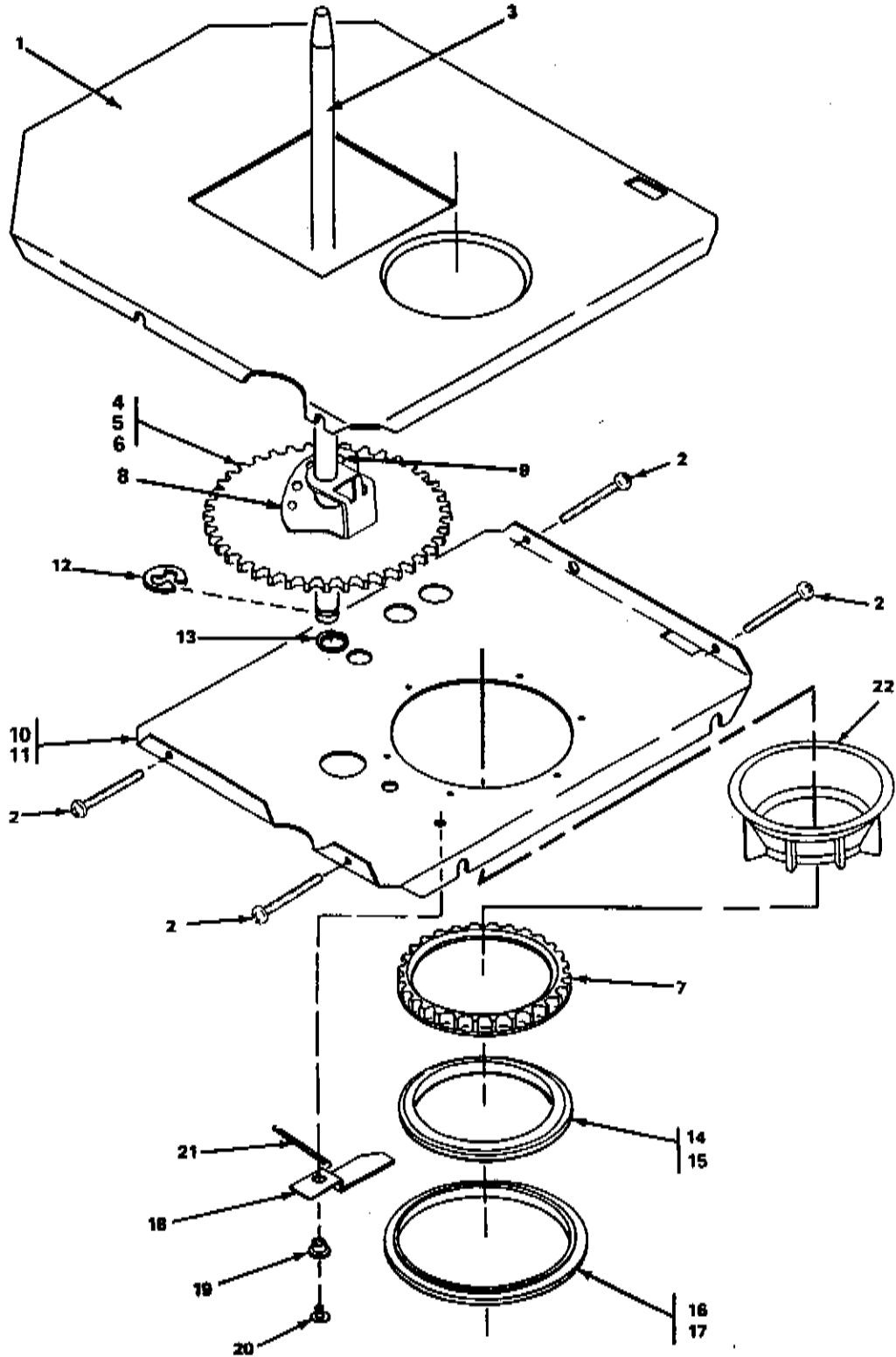


Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	408-4534	Upper Frame Assembly	1
1	408-617	Cup Support	1
2	934-428	Self Tapping Screw	5
3	408-625	Turret Shaft	1
4	406-1616	Gear, Turret Shaft Assembly	1
5	406-659	Gear, Shaft	1
6	932-20	Roll Pin	1
7	408-629	Cup Drop Gear	1
8	406-643	Drive Collar	1
9	921-254	Machine Screw	2
10	408-616	Housing Cover	1
11	-----	Not Available	--
12	933-27	Retaining Ring	1
13	926-22	Nylon Bearing	1
14	408-628	Drive Sprocket	1
15	934-496	Self Tapping Screw	9
16	408-630	Cover Insert	1
17	929-13	Rivet	6
18	406-642	One Way Latch	1
19	485-26	Unlatch Pivot Bushing	1
20	934-428	Self Tapping Screw	1
21	447-821	Latch Spring	1
22	408-666	Adapter Funnel (Used for 9 and 12 oz. cups only)	1
		Not included in 408-4534 - Upper Frame Assembly	

Fig. 8

# Lower Frame Assembly (Internal)

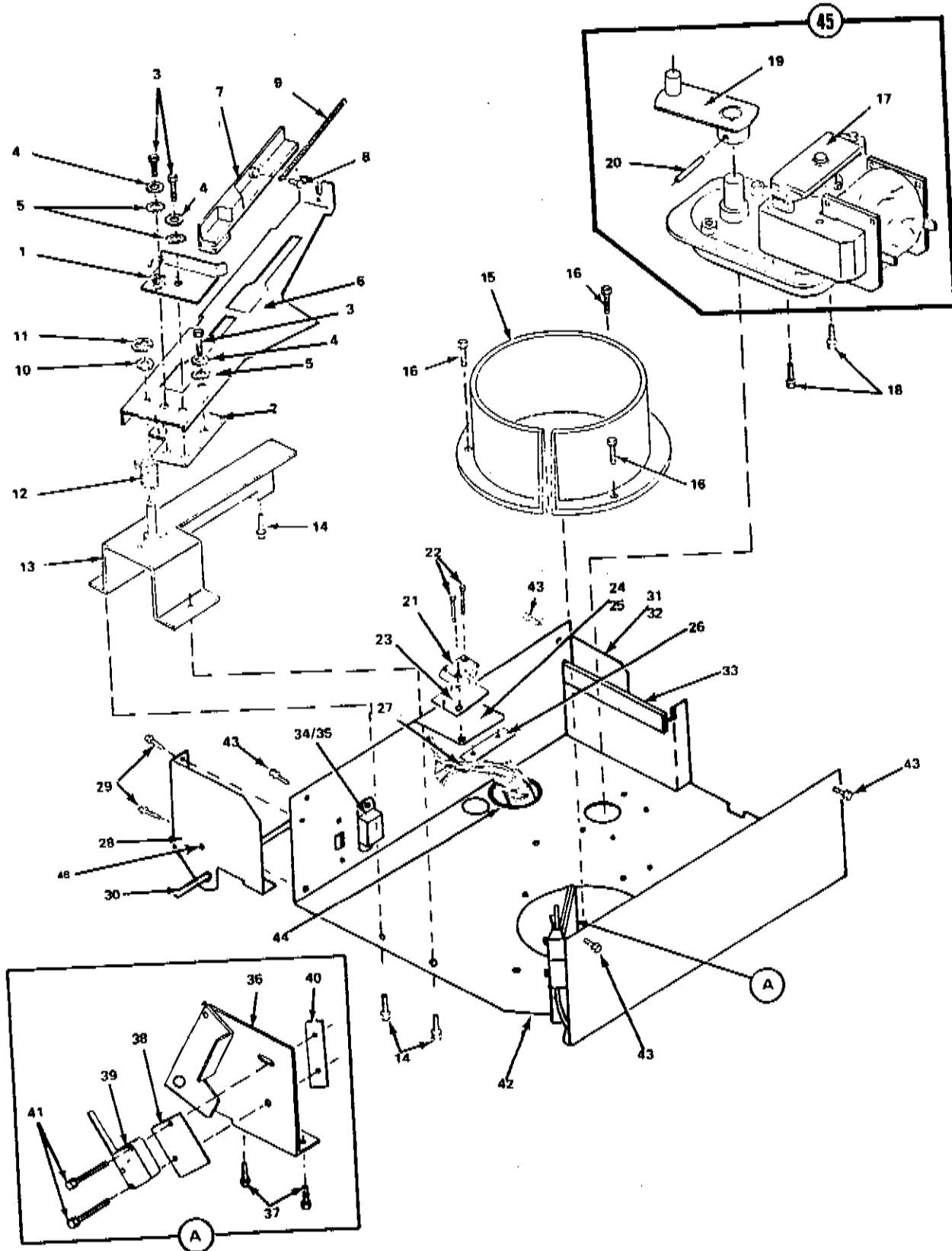




Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	408-4535	Lower Frame (16 oz.)	1
1	408-623	Turret Stop	1
2	408-622	Drive Stop	1
3	934-256	Self Tapping Screw	3
4	950-52	Washer	3
5	950-153	Washer	3
6	408-1612	Cup Sensing Lever Rivet Assembly	1
7	406-617	Drive Slide	1
8	909-2	Drive Pin	1
9	14-132	Pawl Spring	1
10	950-15	Washer	1
11	933-5	Retaining Ring	1
12	406-618	Cup Sensing Lever Spring	1
13	406-1613	Pivot Bracket Rivet Assembly	1
14	934-307	Machine Screw	4
15	408-631	Cup Drop Tube	1
16	934-307	Machine Screw	3
17	406-1896	Drive Motor (6 R.P.M.)	1
18	921-256	Machine Screw	2
19	406-1640	Drive Crank Rivet Assembly	1
20	05-1023	Roll Pin	1
21	408-1847	Cup Mech Cycle Switch	1
22	921-230	Machine Screw	2
23	939-954	Insulator	1
24	408-624	Full Cycle Switch Bracket	1
25	934-154	Self Tapping Screw	2
26	941-51	Speed Nut	1
27	406-1500	Cup Dispenser Harness	1
28	408-618	Pivot Bracket Rivet Assembly, L.H.	1
29	934-307	Machine Screw	2
30	408-664	Pivot Stop Rod	1
30A	933-4	Pivot Stop Rod Retaining Ring (2 required)	2
31	408-619	Pivot Bracket Rivet Assembly, R.H.	1
32	934-307	Machine Screw	2
33	928-1528	Gasket Wear Strip	1
34	301-1814	Test Vend Switch	1
35	921-320	Machine Screw	2
36	408-1620	Empty Sensor Rivet Assembly	1
37	934-307	Machine Screw	2
38	939-954	Insulator	1
39	301-1812	Sold Out Switch	1
40	941-51	Speed Nut	1
41	921-230	Machine Screw	2
42	408-1611	Housing Weld Assembly	1
43	934-307	Machine Screw	4
44	916-57	Nylon Bearing	1
45	408-4544	Drive Motor Asm. --- Service Part Asm.	1
46	924-201	Bearing (Left and Right)	2
	934-219	Screw	1

# Lower Frame Assembly (External)

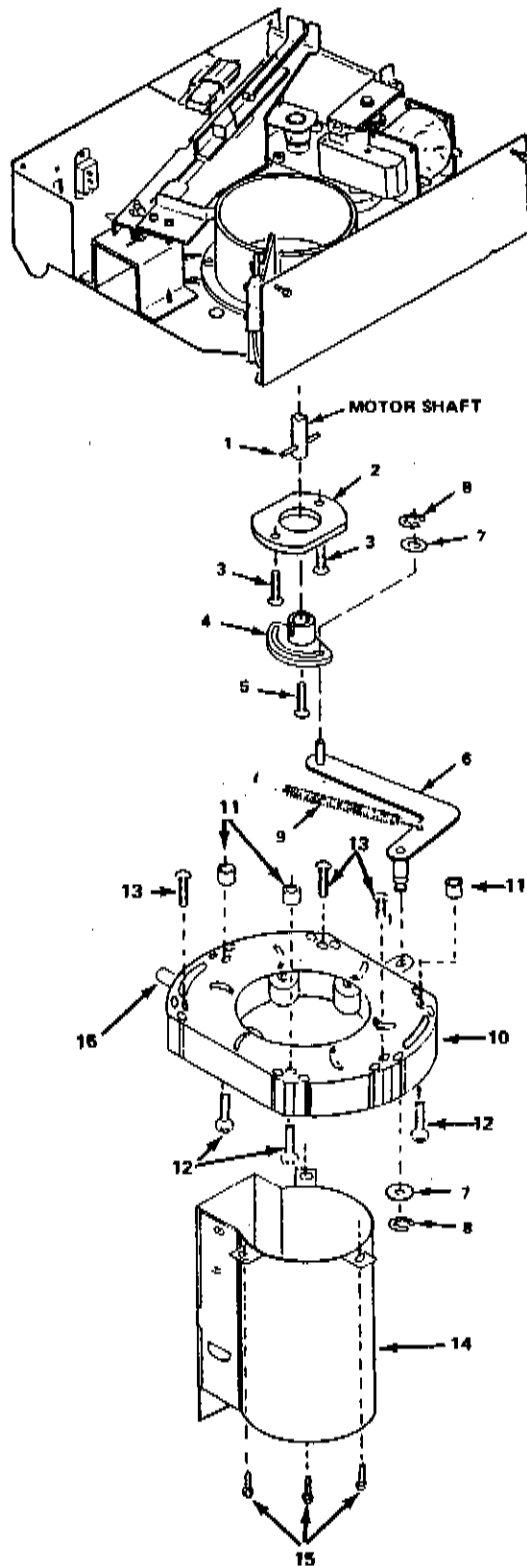


Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	408-4535	Lower Frame	1
1	05-1023	Roll Rin	1
2	406-667	Cam Actuator	1
3	921-499	Machine Screw	2
4	406-655	Cup Drop Cam	1
5	921-508	Self-Locking Screw	1
6	408-1621	Cup Drop Link Rivet Assembly	1
7	950-15	Washer	2
8	933-5	Retaining Ring	2
9	406-668	Cup Drop Spring	1
10	408-1615	Adjustable Cup Drop Ring	1
11	408-657	Cup Ring Spacer	3
12	934-456	Self Tapping Screw	3
13	921-153	Machine Screw	3
14	408-1624	Cup Security Tube Assembly	1
15	934-307	Self Tapping Screw	3
16	408-653	Spacer (Not Shown)	1
	921-153	Machine Screw	1

# Cup Compartment Assembly

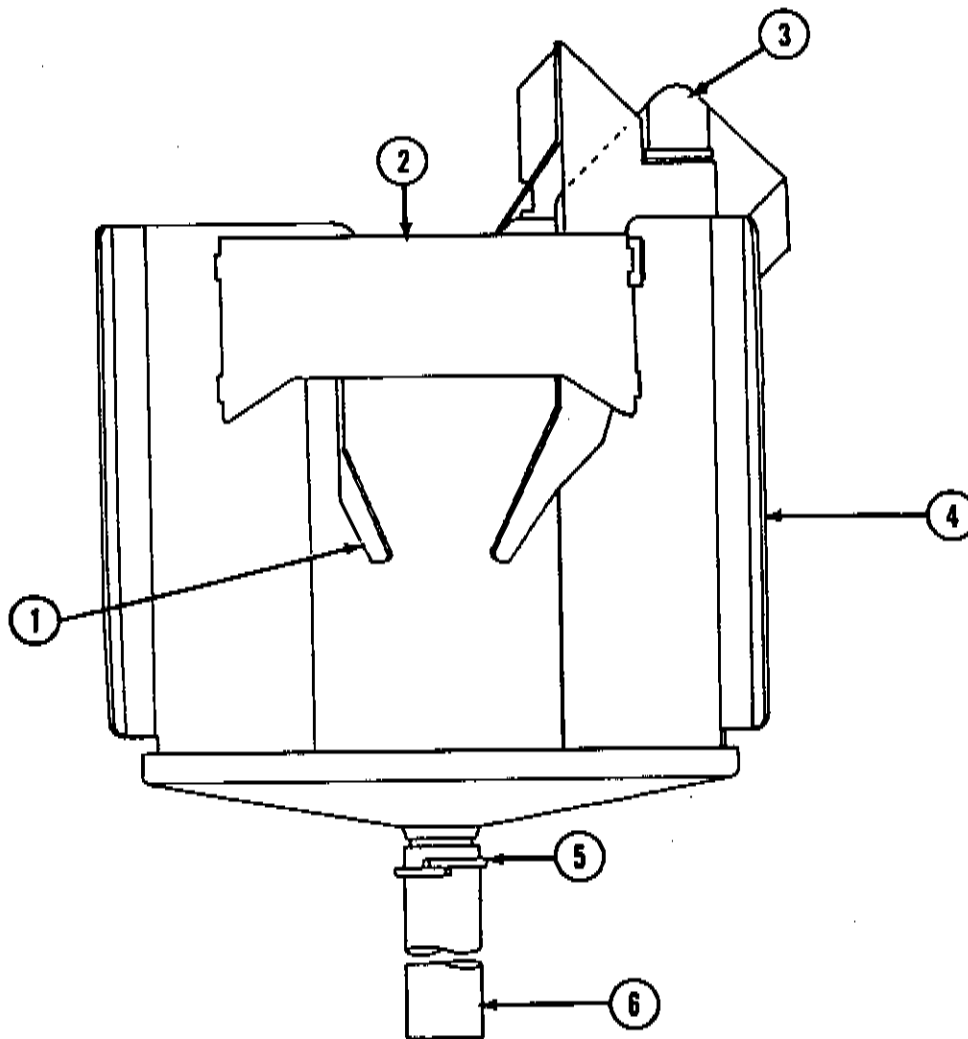


Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	408-1616	Cup Compartment Assembly	REF
1	408-635	Cup Chute Left Hand	1
	209-604	Spring, Flap Return (Not Shown)	1
2	408-637	Cup Compartment Baffle	1
	209-603	Spring, Baffle Retaining (Not Shown)	1
3	408-636	Cup Chute Right Hand	1
4	408-1617	Cup Compartment Weld Assembly	1
5	975-538	Hose Clamp	1
6	939-353	Tubing	1
	408-1618	Cup Support Rivet Assembly (Not Shown) Sec page 6 - 29.	1
	209-241	Cup Compartment Latch Lever (Not Shown)	1

# Cabinet Components (Sheet 1)

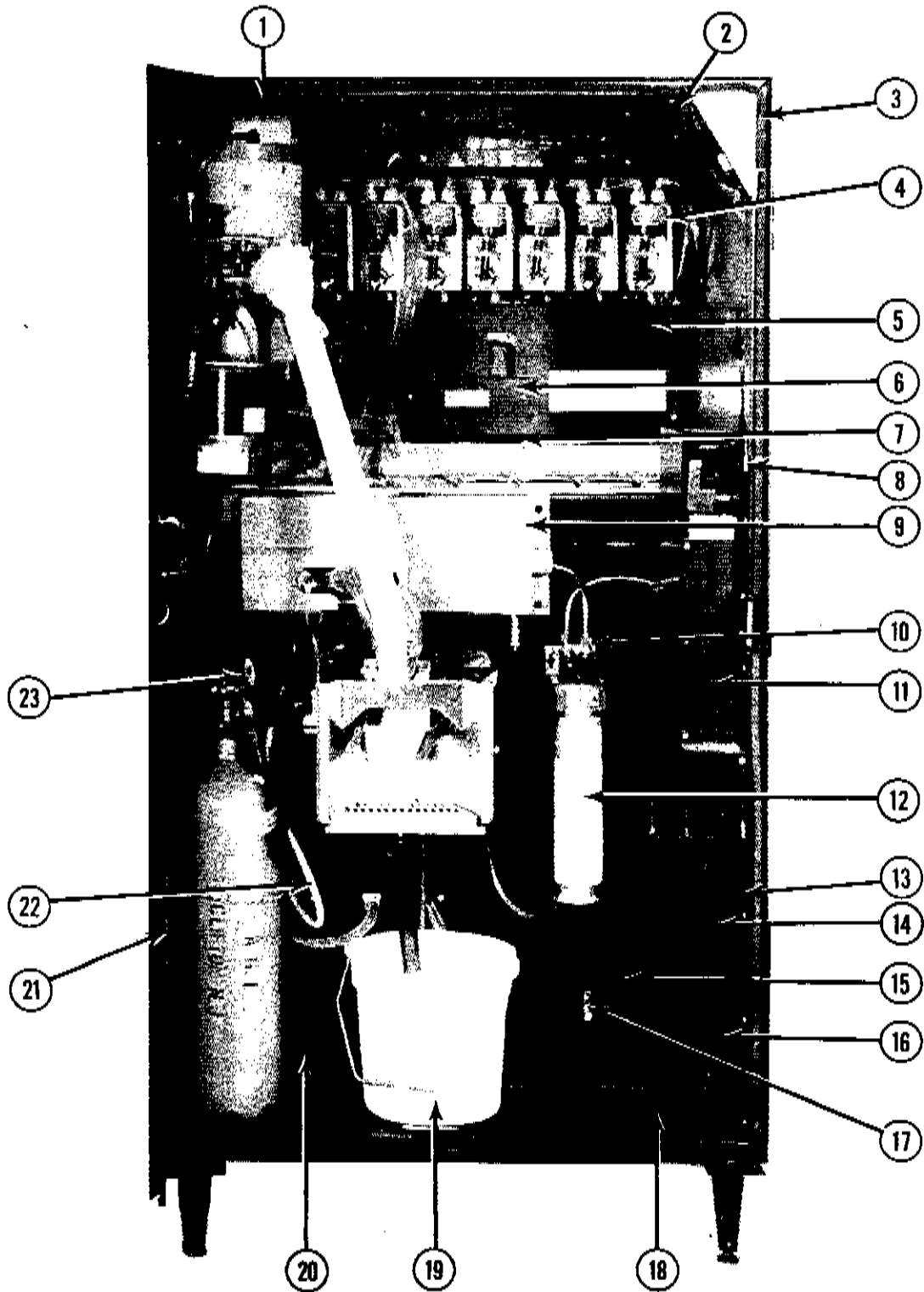


Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	408-1900	Machine Final Assembly	REF
1	408-343	Cabinet Chain Bracket	1
2	408-812	Line Cord Cover Plate	1
3	866-55001	Rubber Channel (Top, Bottom, Right Side)	A/R
4	408-1008	Syrup Pump Assembly (See Figure 20)	5
5	408-814	Microprocessor Cover	1
6	408-815	Microprocessor Access Cover	1
7	408-941	Syrup Tube Retainer	1
8	408-337	Hinge	2
9	408-902	Valve Cover	1
10	406-1940	QC-4 Filter Assembly (See Figure 15)	1
	981-751	Elbow, Water Inlet (Not Shown)	1
11	408-1310	Coin Mech. Box Assembly	1
12	405-1903	Quick Change Charge	1
13	448-12403	Cash Box Bracket Weld Assembly	1
14	448-1916	Cash Box Weld Assembly	1
15	408-926	Screen Cover	1
16	408-1314	Air Inlet Filter Weld Assembly	1
17	408-349	Filter Cover Clip	1
18	408-903	Base Liner	1
19	201-1225	Waste Bucket	1
	408-1904	Bag Assembly	1
	408-942	Priming Clip	1
	803-4801	Strip	1
	408-1906	Flavor Card Assortment	1
	408-1908	Coca Cola Envelope Assembly	1
	408-1916	Pepsi Flavor Labels	1
	408-1918	Bag Assembly	1
	408-1910	Price Card Assortment	1
	908-2372	Ice Tea w/Sweetener Flavor Card	1
	908-2373	Ice Tea w/o Sweetener Flavor Card	1
	408-1914	Tag & Spare Nozzle Assembly	1
	408-930	Tall CO <sub>2</sub> Bracket	1
20	408-920	Compressor Cover	1
21	406-923	CO <sub>2</sub> Retainer Chain	1
22	201-210	CO <sub>2</sub> Flexible Tube	1
23	201-1268	CO <sub>2</sub> Regulator Assembly	1

# Cabinet Components (Sheet 2)

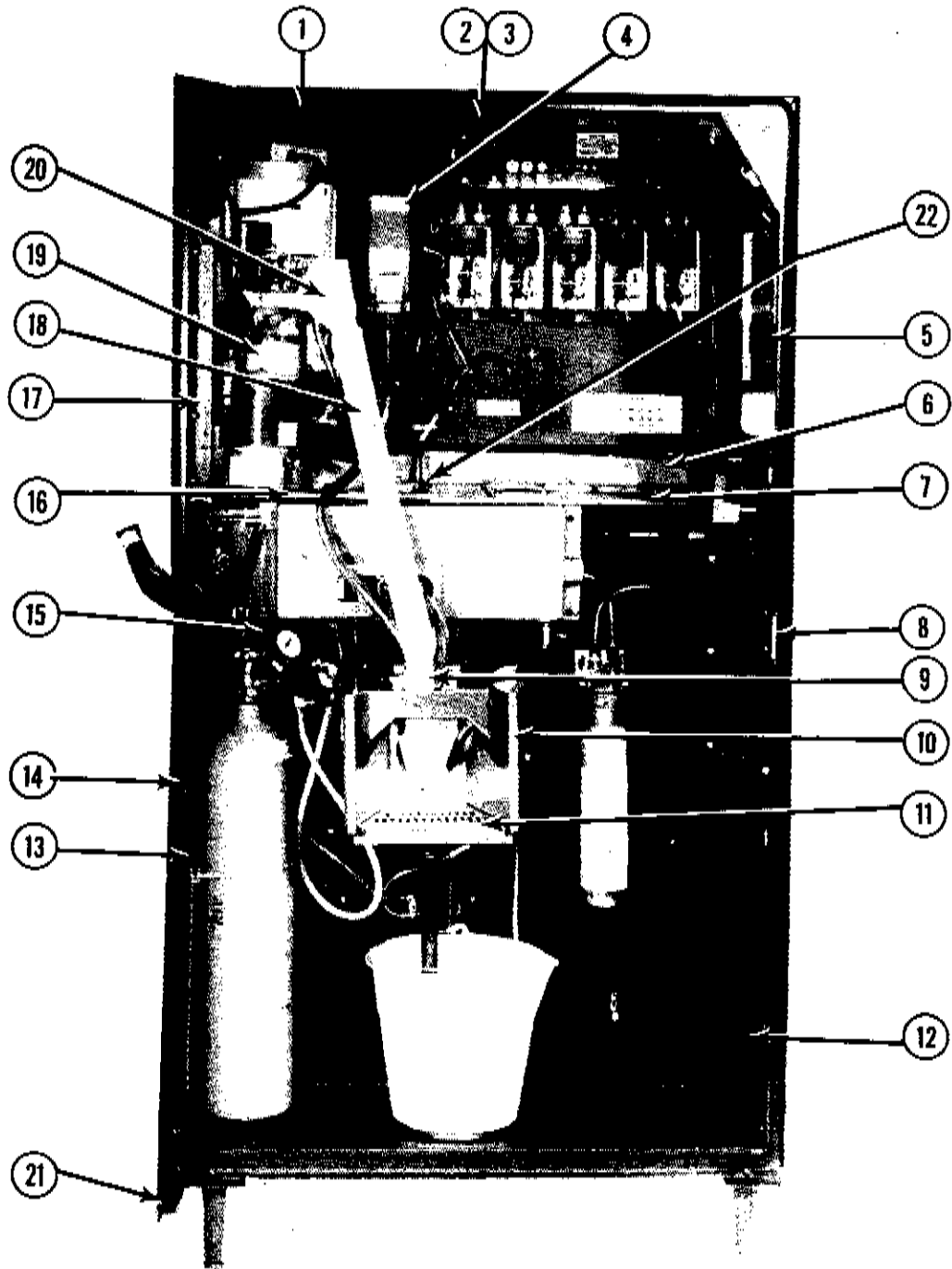




Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	408-1900	Machine Final Assembly (Cont'd)	REF
1	408-820	Top Harness Cover	1
2	406-947	Harness Shelf	1
3	408-929	Harness Shelf Cover	1
4	408-1010	Iced Tea Assembly (See Fig. 21)	1
5	408-479	Coin Mech. Plug Bracket	1
6	408-915	Syrup Tank Cover -- 6 Flavors	1
	408-916	Syrup Tank Cover -- 5 Flavors	1
	408-917	Syrup Tank Cover -- 4 Flavors	1
	408-20025	Syrup Tank Cover -- 8 Flavors	1
7	408-909	Fill Port Cover	4
	406-911	Lid (Cover) Holder	1 per tank
8	408-1315	Door Lock Guide Bracket Rivet Assembly	1
9	406-20022	Ice Chute Funnel -- Bottom	1
10	408-1616	Cup Compartment Assembly (See Fig. 10)	1
11	408-638	Cup Compartment Drain Tray	1
12	408-919	Cabinet Baffle -- Right Side	1
13	408-918	Cabinet Baffle -- Left Side	1
14	866-68002	Gasket Left Side	A/R
15	408-1308	Bulk Head Weld Assembly	1
16	408-904	Cold Water Bath Cover	1
	408-1250	Water Bath Housing (Not Shown)	1
17	408-1105	Ice Maker Hinge Bracket	1
18	408-943	Ice Chute	1
19	408-1110	Ice Maker Assembly	1
20	201-250	Ice Chute Funnel -- Top	1
21	490-1360-246	Bottom Pivot Bracket (Brown)	1
	490-1360-239	Bottom Pivot Bracket (Black)	1
22	408-933	Knob, Cover Hold-down	1
	408-934	Bracket, Hold-down	1
	408-935	Chain, Hold-down Bracket	1
	928-5041	"O"-Ring	1

# Cabinet Components (Sheet 3)

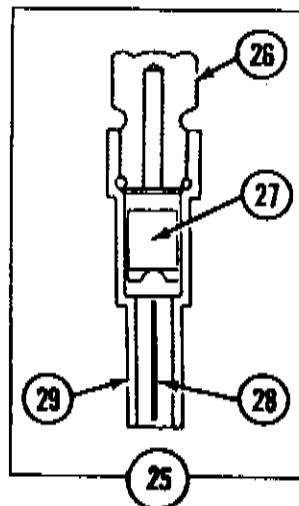
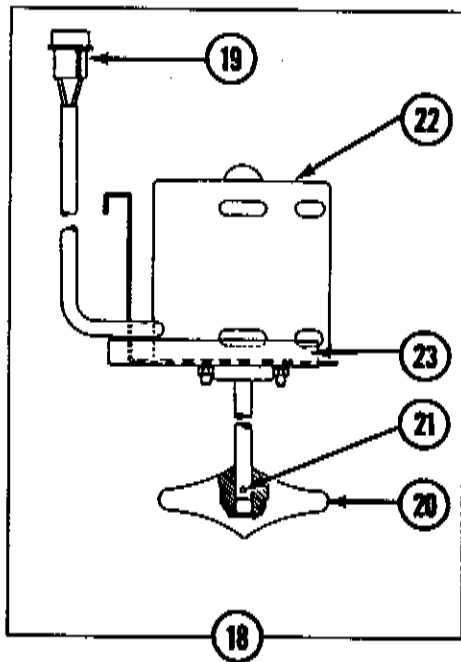
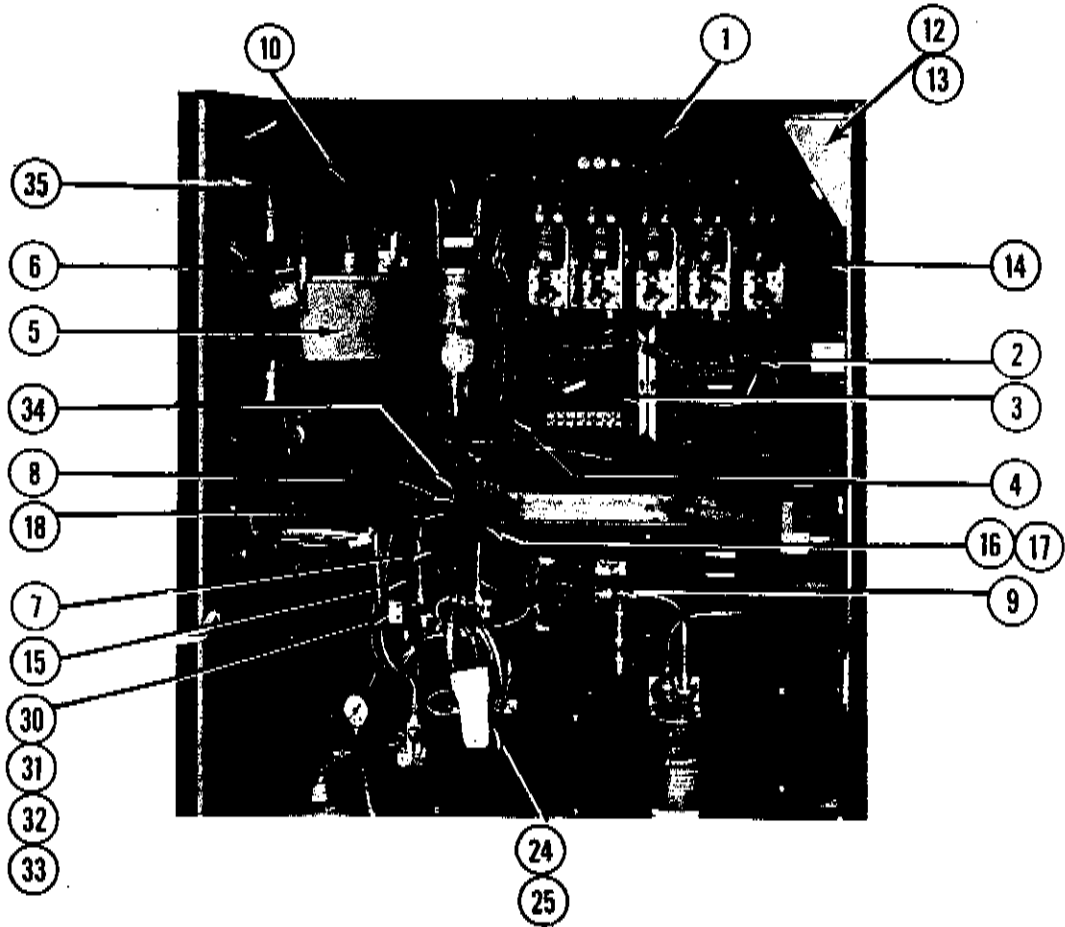


Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	408-1900	Machine Final Assembly (Cont'd)	REF
1	408-1800	Control Box Assembly (See Figure 22)	1
2	010-60744-903	Driver Board Assembly (See Figure 24)	1
3	408-1877	Microprocessor Board Assembly (See Figure 28)	1
4	408-813	Microprocessor Cover Channel	1
5	406-1227	Reservoir Tank Assembly (See Figure 16)	1
6	408-1008	Ice Tea Syrup Pump (See Figure 21)	1
7	408-20026	Syrup Tube Bracket -- Front	1
8	408-940	Syrup Tube Bracket -- Back	1
9	408-1225	Inlet Valve Assembly (See Figure 14)	1
10	408-21005	Back Cabinet Panel Weld Assembly	1
11	408-1301	Cabinet Weld Assembly	1
12	408-819	Light Shield	1
13	408-1822	Switch Bracket Assembly	1
14	408-821	Harness Cover -- Right Hand	1
15	408-826	Harness Cover -- Left Hand	1
16	406-244	Carbonator Strap	1
17	408-1202	Carbonator & Valve Assembly (See Figure 12)	1
18	408-1845	Agitator Motor & Mount Assembly	1
19	979-102	2 Circuit Plug	1
20	408-810	Agitating Propeller	1
21	932-42	Roll Pin	1
22	408-1846	Agitator Motor	1
23	408-1258	Motor Mount Weld Assembly	1
24	408-1608	Syrup Nozzle Assembly	1
	408-612	Nozzle -- Standard Bore (Syrup)	5
	407-612	Nozzle -- Standard Bore (Still Water)	1
	408-613	Nozzle -- Wide Bore (White, Shipped seperately)	2
	408-1015	Ice Tea Nozzle	1
	407-614	Nozzle Clamp	4
	407-609	Nozzle Holder	1
	921-502	Screw	4
25	406-1604	CO <sub>2</sub> Nozzle Assembly	1
26	406-1602	CO <sub>2</sub> Inlet Brazing Assembly	1
27	406-611	CO <sub>2</sub> Nozzle Flow Control	1
28	406-610	CO <sub>2</sub> Nozzle Blade	1
29	406-609	CO <sub>2</sub> Nozzle Outlet	1
30	406-1222	2-Way Carbonator Water Solenoid Valve	1
	406-6047	Valve Rebuilding Kit (See Fig. 12)	REF
31	406-1229	2-Way Still Water Solenoid Valve	1
	406-6047	Valve Rebuilding Kit (See Fig. 12)	REF
32	408-229	Filter Screen	1
33	408-1209	Valve Bracket Assembly	1
34	408-1230	Ice Tea Valve Assembly (Beneath Ice Tea Assembly)	1
	406-1229	Solenoid Valve	1
	408-257	Ice Tea Valve Bracket	1
	408-264	3-Way Valve Bracket	1
35	408-1282	3-Way Refrigeration Valve (Not Visible)	1
	408-1218	Cross - Iced Tea Valve Tube (Stainless Steel)	1

# Cabinet Components (Sheet 4)

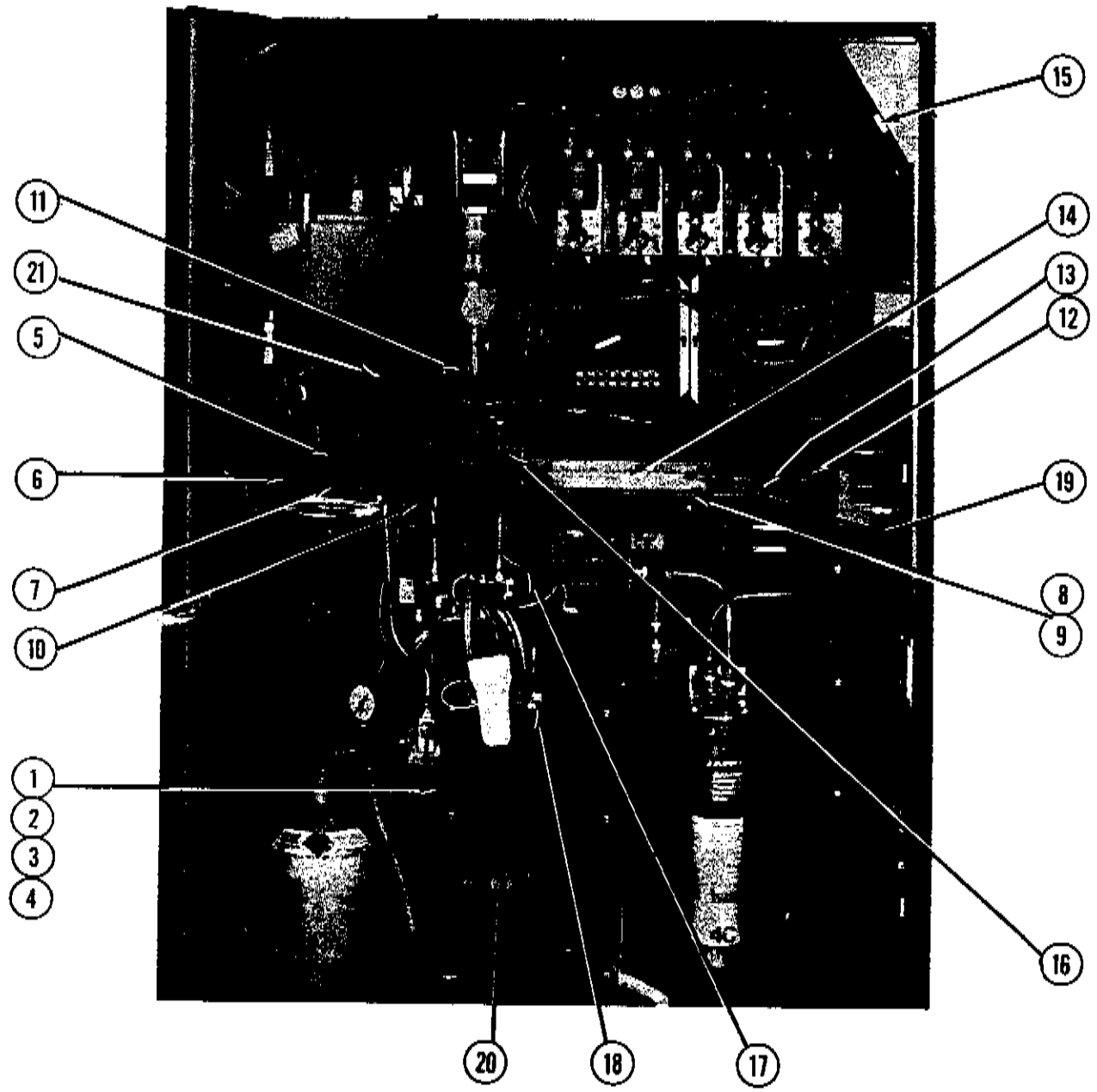


Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	408-1900	Machine Final Assembly	
1	408-1623	Mounting Bracket Rivet & Weld Asm., Syrup Nozzle	1
2	408-611	Cup Compartment Adjust Bracket	1
3	408-641	Cup Compartment Mounting Plate	1
4	209-1241	Cup Compartment Support Angle Assembly	1
5	408-260	Breaker Strip -- Rear	1
6	408-258	Breaker Strip -- Left Side	1
7	408-261	Breaker Strip -- Left Front	1
8	408-263	Breaker Strip -- Right Front	1
9	408-259	Breaker Strip -- Right Side (Not Shown)	1
10	408-262	Breaker Strip -- Center Front	1
11	408-1837	Cold Control Assembly	1
	406-1534	Cold Control - only	1
12	408-913	2-2/3 Gal. Syrup Tank -- 5 Flavor	2
		2-2/3 Gal. Syrup Tank -- 6 Flavor	3
		2-2/3 Gal. Syrup Tank -- 8 Flavor	6
13	408-912	5-1/3 Gal. Syrup Tank -- 4, 6 & 8 Flavor	2
		5-1/3 Gal. Syrup Tank -- 5 Flavor	1
14	408-911	8 Gal. Syrup Tank -- 4 & 5 Flavor	1
		8 Gal. Syrup Tank -- 6 Flavor	1
15	212-1712	Convenience Socket	1
16	408-219	Dip Tube, Syrup Pre-cooling (4-Flavor)	4
		Dip Tube, Syrup Pre-cooling (5-Flavor)	5
		Dip Tube, Syrup Pre-cooling (6-Flavor)	6
		Dip Tube, Syrup Pre-cooling (8-Flavor)	8
17	939-2145	Tube Asm., Water Inlet Valve to Feeder Tank	1
18	408-639	Cup Compartment Top Mounting Plate	1
19	406-968	Clip, Tube Retainer	1 Per Tank
20	408-1618	Cup Compartment R/A	1
21	981-1425	Plastic "T" Fitting	3
	869-3188	Clear Plastic Hose - Syrup Discharge 5/16" ID X 1/2" OD (100 Ft. Roll)	
	869-3109	Clear Plastic Hose - Syrup Suction 1/4" ID X 3/8" OD (100 FL. Roll)	
	869-3111	Clear Plastic Hose - Syrup Discharge 3/8" ID X 5/8" OD (100 FL. Roll)	
	939-745	Hose from Reservoir to Icemaker (Precut)	
	939-2013	Water Feeder Input Hose (Precut)	
	957-9	Plastic Syrup Bag 3 1/3 Gal.	
	957-8	Plastic Syrup Bag 5 Gal.	
	957-10	Plastic Syrup Bag 6 2/3 Gal.	
	957-11	Plastic Syrup Bag 10 2/3 Gal.	
	957-12	Plastic Syrup Bag 8 Gal.	

# Cabinet Components (Sheet 5)

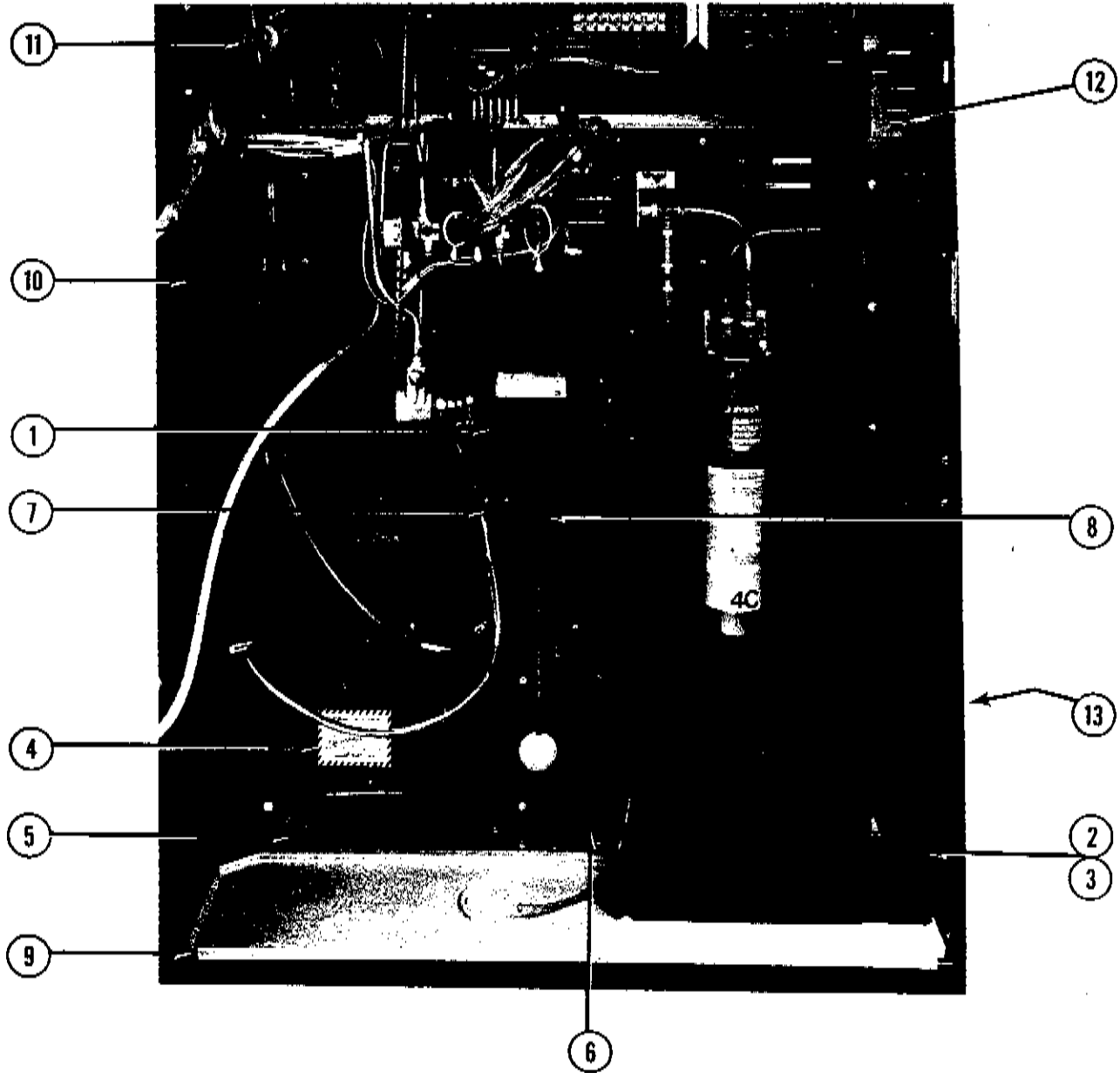


Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	408-1900	Machine Final Assembly (Cont'd)	1
1	408-1905	Pump & Motor Assembly (See Figure 17)	1
	408-1619	Water Pump Box Cover	1
2	408-1307	Screen Frame Weld Assembly	1
3	408-1309	Slide Filter Weld Assembly	1
4	408-1255	Condensing Unit Final Assembly (See Figure 25)	1
5	406-371	Hold-Down Bracket -- Front	1
	406-4064	Hold-Down Bracket -- Rear (Not Shown)	1
6	408-925	Baffle -- Condenser, Front	1
	408-936	Baffle -- Condenser Assembly (Not Shown)	1
7	408-822	Overflow Switch Mounting Bracket	1
8	406-1310	Overflow Switch Assembly	1
	214-1314	Ball and Rod Assembly	1
	414-1898	Overflow Switch	1
	856-1	Chain	1
9	408-923	Insulation -- Bottom	1
10	408-924	Insulation -- Side	2
	408-922	Insulation -- Front (Not Shown)	1
	408-921	Insulation -- Rear (Not Shown)	1
11	408-1222	Moisture/Liquid Indicator	1
	408-1272	Liquid Line Filter Drier (Not Shown) (Sweat Type S/N <24584)	1
	408-4537	Liquid Line Filter Drier (Not Shown) (Flare Type - Current)	1
12	490-465	Coin Return Plate	1
	408-1619	Water Pump Box Cover (Not Shown)	1
13	408-1307	Refrigeration Screen (Rear Exhaust)	1
	981-751	Fitting, Water inlet Elbow	1

# Cabinet Components (Sheet 6)

Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	408-1900	Machine Final Assembly (Cont'd)	
	406-1888	Lower Cabinet/Water Bath Harness Assembly	1
	979-79	Plug	1
	975-549	Cable Tie	1
	979-1102	Socket	1
	408-1827	Icemaker to Control Box Harness Assembly	1
	975-549	Cable Tie	1
	979-73	Connector -- Plug	1
	979-1068	Socket	1
	408-1828	Driver Board to Microprocessor Harness Assembly	1
	975-549	Cable Tie	4
	979-1187	Socket -- 5 Contacts	1
	979-1190	Socket -- 18 Contacts	1
	979-1210	Socket	1
	408-1875	Water Level Harness Assembly	1
	975-549	Cable Tie	1
	979-124	Plug	1
	408-1830	Control Box to Driver Board Harness Assembly	1
	975-549	Cable Tie	10
	979-74	Connector -- Plug	1
	979-124	Plug	1
	979-195	Plug -- 3 Contacts	2
	979-196	Plug -- 4 Contacts	1
	979-197	Plug -- 6 Contacts	1
	979-198	Plug -- 9 Contacts	1
	979-1191	Socket -- 2 Contacts	1
	408-1831	Cabinet To Driver Board Harness Assembly	1
	975-549	Cable Tie	1
	979-120	Plug	1
	979-1026	Socket -- 6 Contacts	1
	979-1072	Connector -- Socket	1
	979-1102	Socket	1
	408-1832	Selector to Microprocessor Harness Assembly	1
	979-549	Cable Tie	4
	979-203-	Plug	2
	979-207	Keying Plug	1
	979-1102	Socket	1
	979-1180	Socket	1
	979-1186	Socket -- 3 Contacts	1
	979-1211	Socket	1
	979-1222	Socket -- Electrical	1
	408-1833	Coin Mech. Harness Assembly	1
	975-549	Cable Tie	5
	972-72	Connector -- Plug	1
	979-1054	Receptacle	1

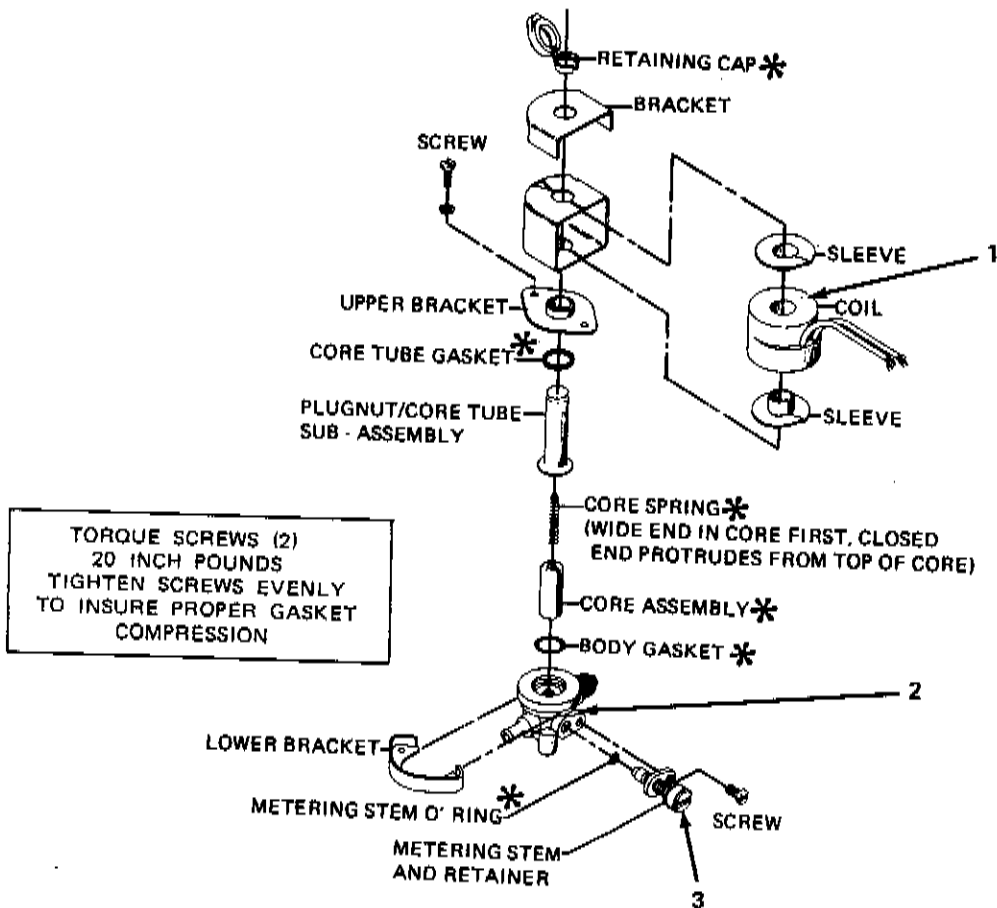


# Cabinet Components (Sheet 7)

Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	408-1900	Machine Final Assembly (Cont'd)	
	408-1836	Driver Board to Syrup Pump Harness Assembly	1
	975-549	Cable Tie	8
	979-199	Plug -- 12 Contacts	1
	979-1103	Socket	5
	408-1855	Ice Tea Harness Assembly	1
	979-195	Plug -- 3 Contacts	1
	979-198	Plug -- 9 Contacts	1
	979-1103	Socket	1
	408-1213	Carbonator/Carbonator Valve Tube Assembly	1
	408-1214	Carbonator/3-Way Valve Tube Assembly	1
	408-1215	Carbonator/CO Tank Tube Assembly	1
	408-1210	Water Inlet/Filter Tube Assembly	1
	408-1211	Filter/Dual Valve Tube Assembly	1
	939-2011	Water Pump/Reservoir Tube Assembly	1
	408-1216	Water Pump/Water Coil Tube Assembly	1
	408-1217	Tube Asm., Between Cross/Still Water Valve	1
	408-1219	Tube Asm., Between Cross/3-way Valve	1
	408-1218	Tube Asm., Between Cross/Ice Tea Valve	1
	939-2146	Ice Tea Discharge Pump Tube Assembly with 7th. pump	1
	939-830	Ice Tea Discharge Valve Tube Assembly	1
	408-1276	Refrigeration Tube Assembly	1
	406-4040	Sanitizer Brush	1
	408-1626	Gauge Plug Bag Assembly	1
	408-665	Gauge, Cup Drop Ring	1
	921-507	Machine Bolt	1
	953-57	Wing Nut	2
	408-1282	3 Way Refrigeration Valve (Current Production)	1
	405-4043	Nylon Seal Flarred Bushing 1/4 inch	1
	405-4044	Nylon Seal Flarred Bushing 3/8 inch	1

# Valve Assembly - Carbonator & Stillwater

Parts included in Spare Parts Kit  
Number 406-6047 \*



**SPECIAL NOTE:**

406-4507

Valve Assembly (Carbonator Valve) - Less Coil

406-4508

Valve Assembly (Still Water Valve) - Less Coil

Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
1	406-4506	Coil	
2	406-4642	Valve Body -- Carbonator Valve	1
	406-4644	Valve Body -- Still Water Valve	1
3	406-4509	Metering Stem -- Carbonator Valve	1
	406-4510	Metering Stem -- Still Water Valve	1

NOTE: "O" Ring included in both of the above stems

# Valve Assembly - Carbonator Fill/Exhaust

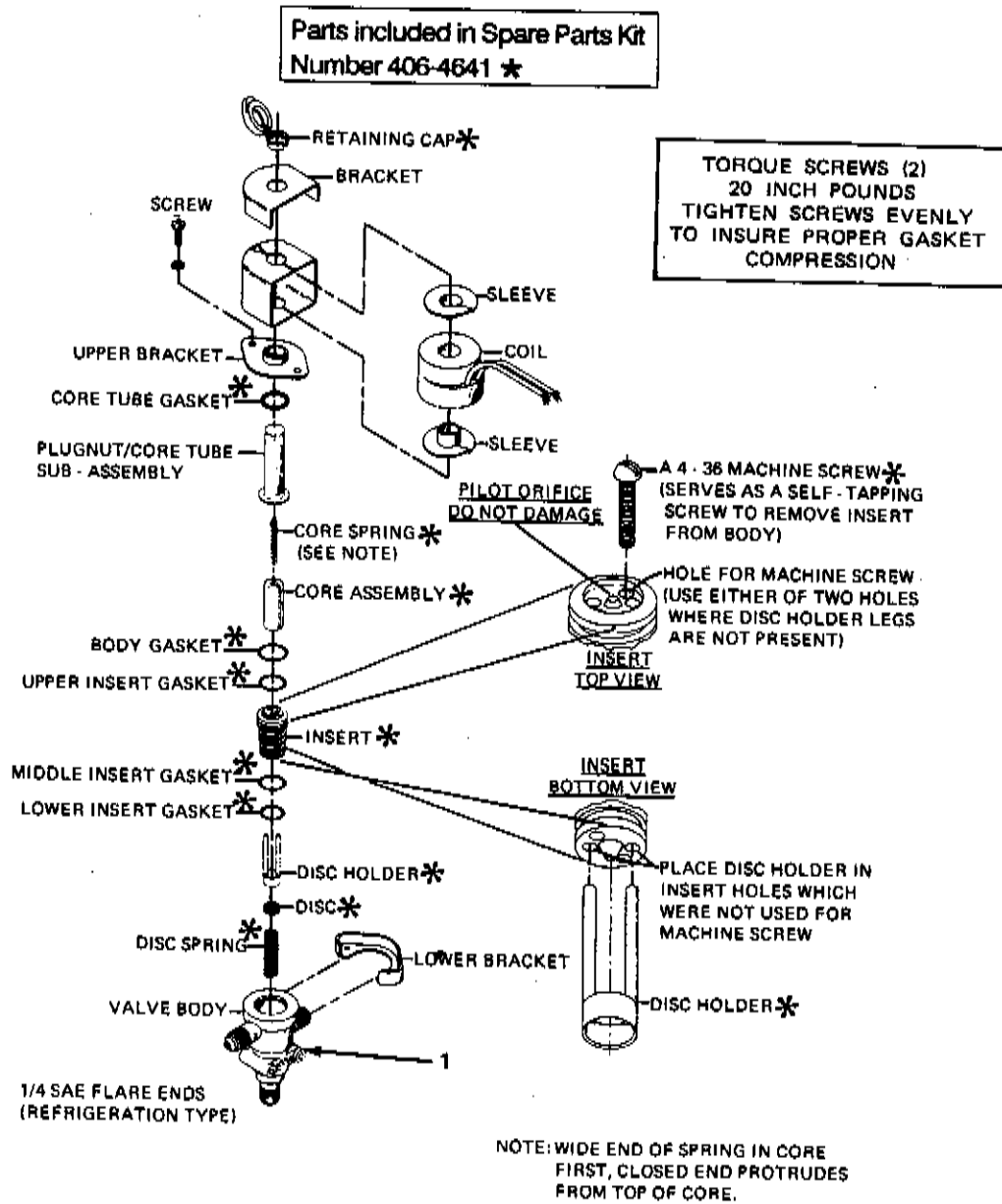


Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	406-1223	Valve Assembly, 3 Way - Complete	REF
1	406-4643	Valve Body Only, 3 Way	1

# Inlet Valve Assembly

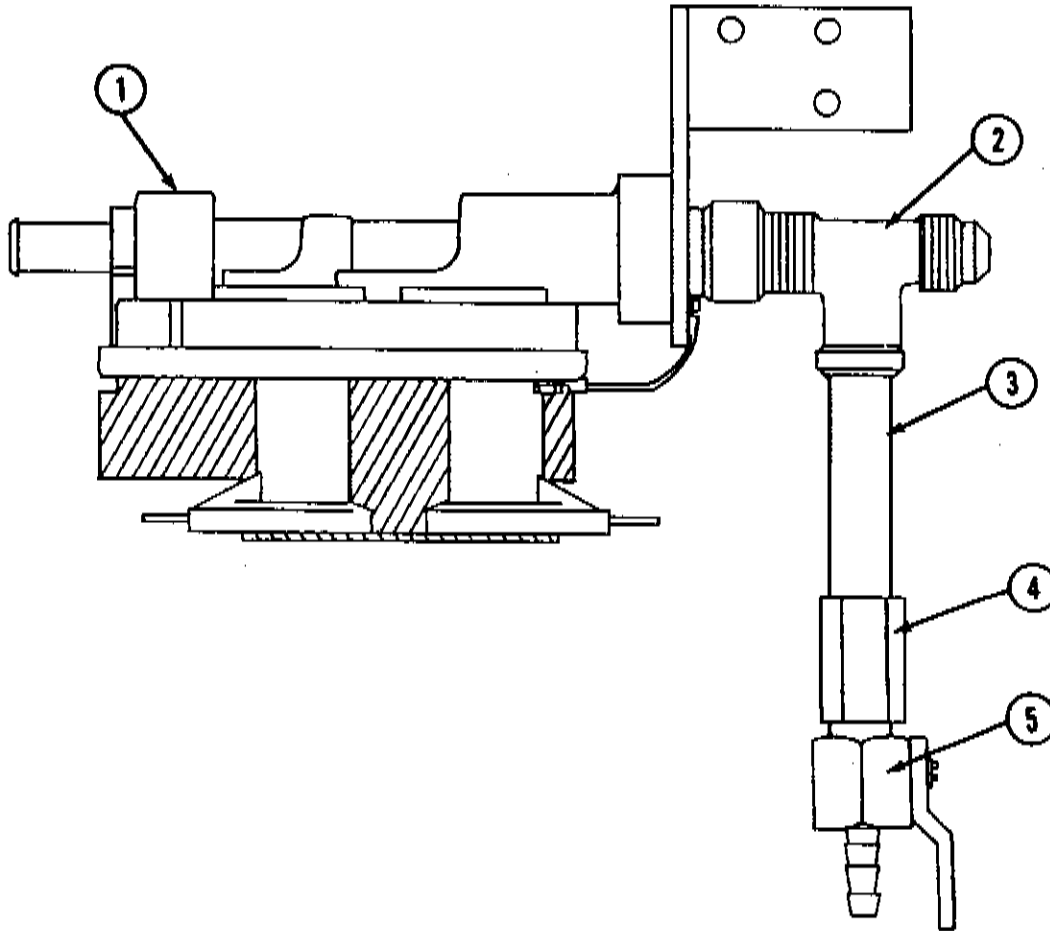


Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	408-1225	Inlet Valve & Ball Valve (Rinse Hose Valve) Assembly - Complete	REF
1	301-1717	Inlet Valve Asm. - (Individual valve parts are not available. Order as an assembly)	1
2	981-1925	Fitting	1
3	981-2000	Fitting	1
4	981-591	Fitting	1
5	406-1906	Ball Valve (Rinse Hose Valve)	1
	851-751	Elbow, Water Inlet (on back of Vendor)	1

# QC-4 Filter Assembly

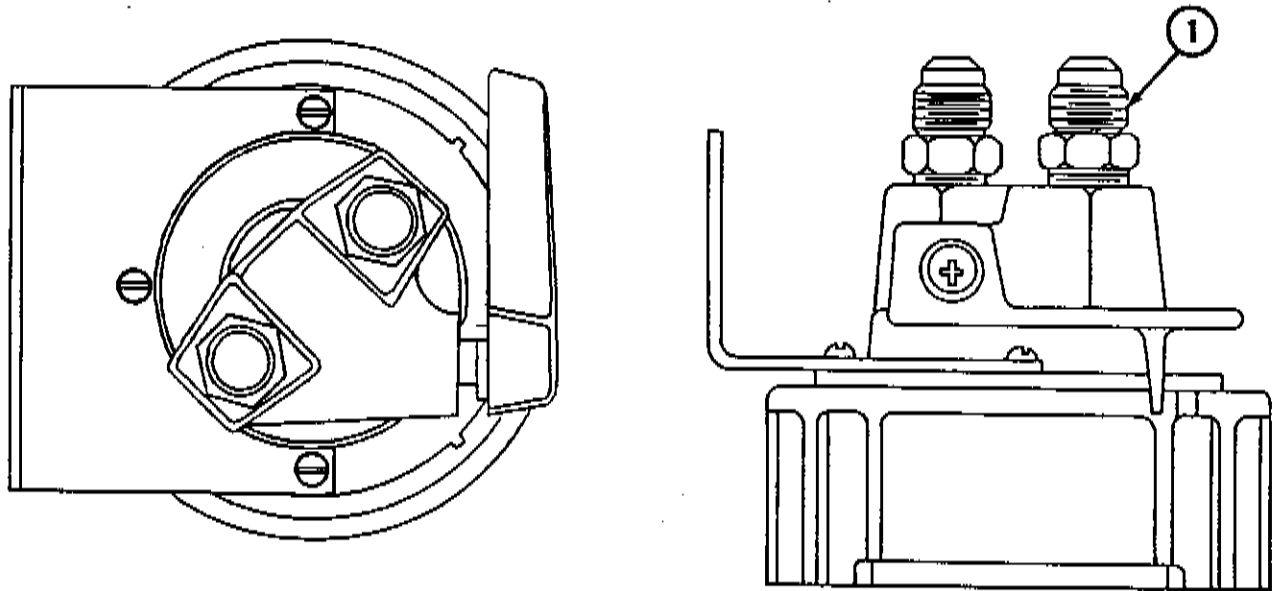


Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	406-1940	QC-4 Filter Assembly	REF
1	981-551	Male Coupling	2
	*4C	Filter Cartridge (Not Shown)	

\* Order from local Everpure Distributor or:

Everpure Headquarters

Everpure, Inc.

660 Blackhawk Drive

Westmont, Illinois 60559-9005

Phone: (708) 654-4000

Fax: (708) 654-1115

# Reservoir Tank Assembly

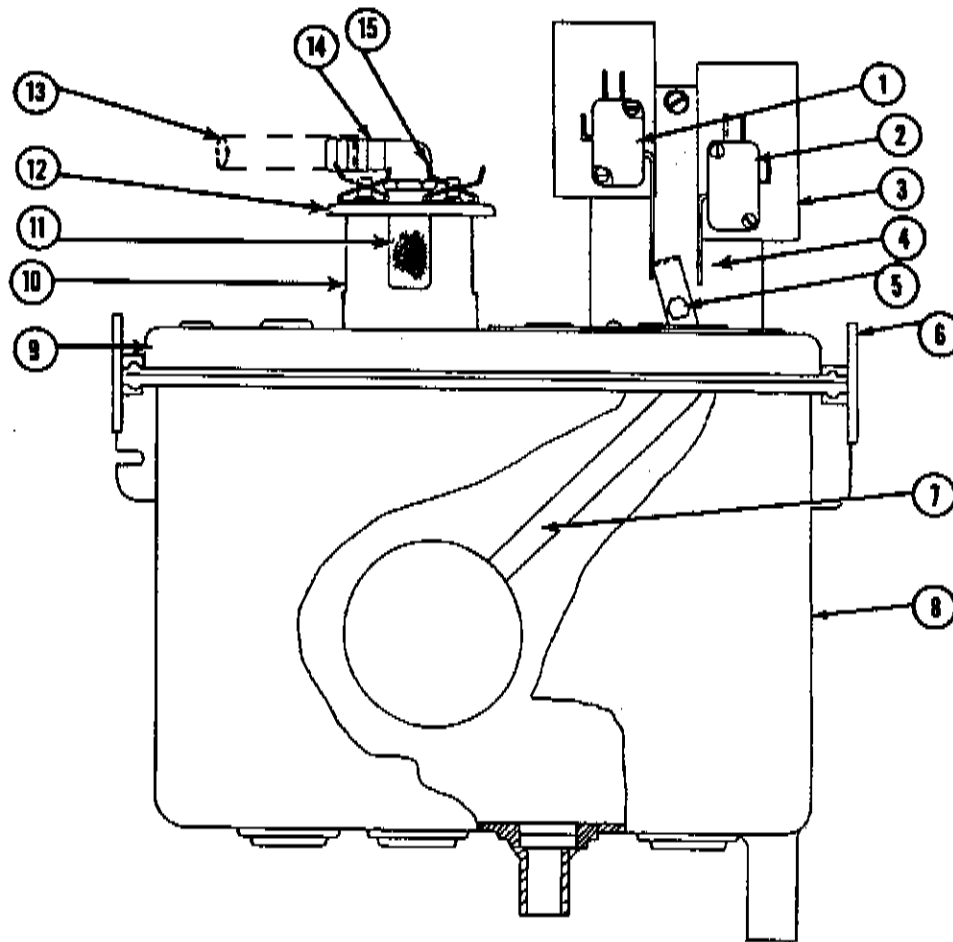


Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	406-1227	Reservoir Tank Assembly	REF
1	301-1811	Switch, Float, L.H.	2
2	301-1812	Switch, Float, R.H.	1
3	301-270	Insulator, Float Switch	2
4	301-267	Switch Bracket	1
5	406-263	Reservoir Tank Float Stud	1
6	212-1329	Retaining Clip & Pin Assembly	2
7	301-1218	Reservoir Tank Float Assembly	1
8	406-230	Reservoir Tank	1
9	301-261	Reservoir Tank Cover	1
10	301-262	Air Break Feeder Tank	1
11	212-188	Filter	1
12	212-1027	Cap Plate Assembly	1
13	939-2013	Inlet Hose	1
14	981-507	Elbow	1
15	941-49	Speed Nut	2

# Pump and Motor Assembly

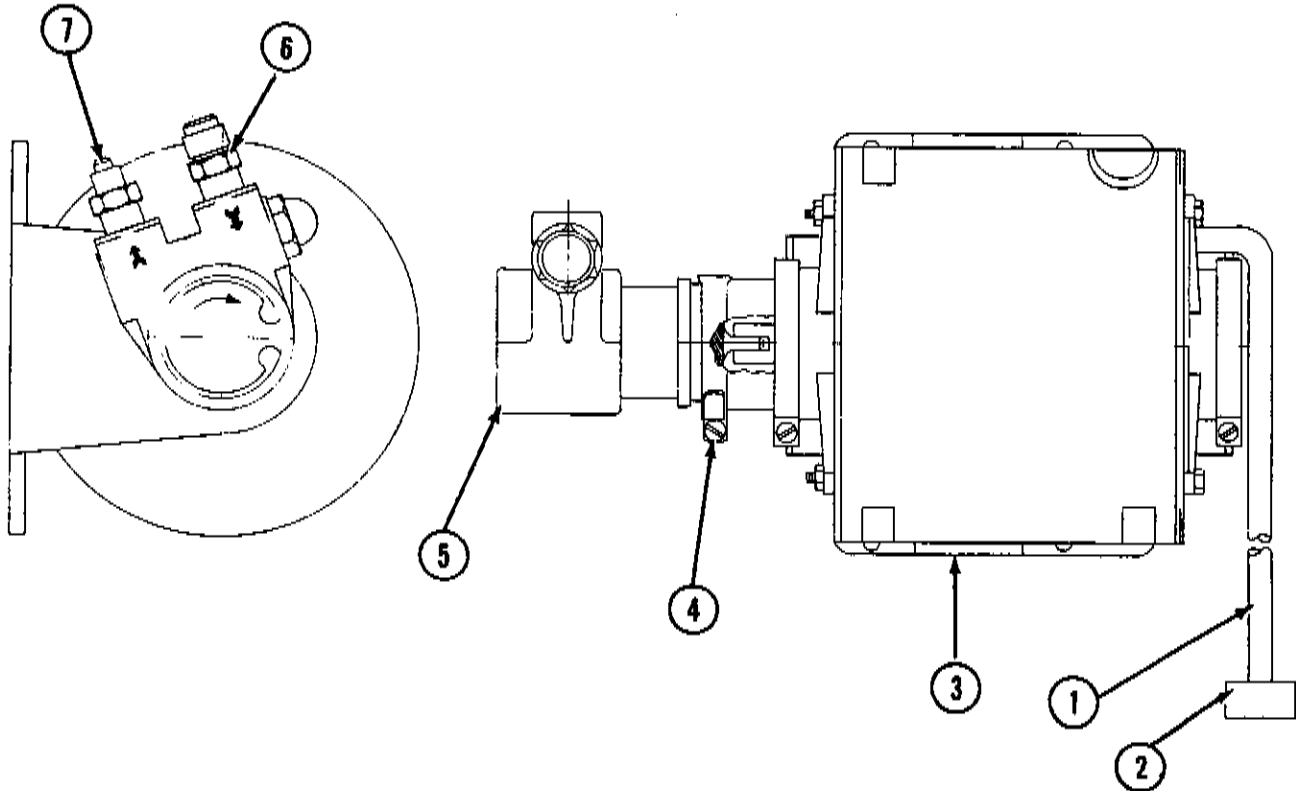


Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	408-1905	Water Pump & Motor Assembly	REF
1	406-1828	Water Pump Harness Assembly	1
2	979-102	Plug	1
3	201-1948	Pump Motor	1
4	201-1254	Water Pump Clamp Assembly	1
5	201-1266	Water Pump	1
6	981-517	Male Coupling	1
7	981-557	Fitting	1

# Carbonator and Valve Assembly

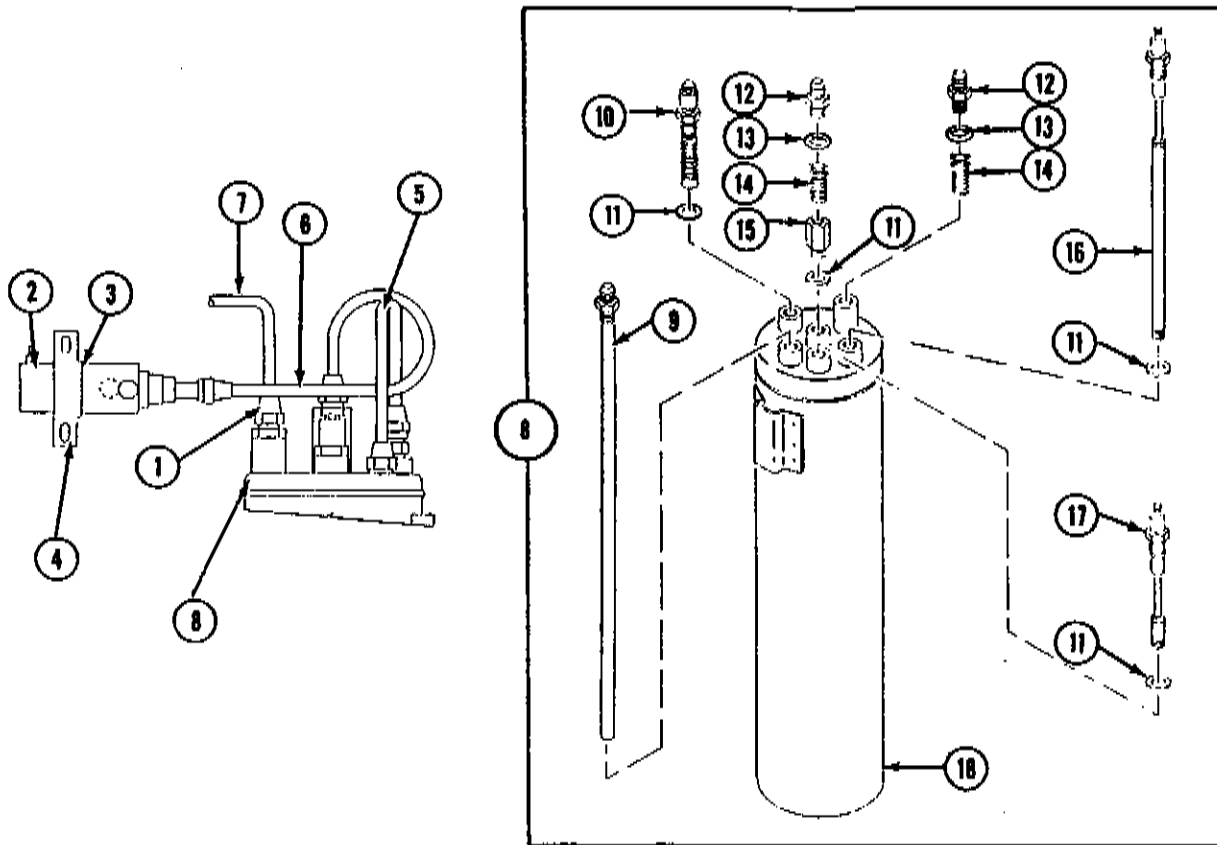


Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	408-1202	Carbonator and Valve Assembly	REF
1	405-4043	Flared Fit Tube Seal	3
2	406-1223	3-Way Solenoid Valve	1
	406-4641	3-Way Solenoid Valve Rebuilding Kit (See Fig. 13)	REF
3	950-320	Ext. Tooth Washer	1
4	408-264	3-Way Solenoid Valve Bracket	1
5	408-1213	Tube Assembly (Carbonator to Carbonator Valve)	1
6	408-1214	Tube Assembly (Carbonator to 3-Way Valve)	1
7	408-1215	Tube Assembly (Carbonator to CO <sub>2</sub> Tank)	1
8	201-1205	Carbbnator Assembly	1
9	55-10266	Dip Tube Assembly	1
10	55-10247	Pressure Relief Valve Assembly	1
11	55-10222	Gasket, Nylatron	4
12	55-10264	Jet Connector	2
13	55-10151	O-Ring	2
14	55-80104	Check Valve Outlet Seal	2
15	55-10265	Jet Body	1
16	55-10213	Electrode Assembly, Long	1
17	55-10214	Electrode Assembly, Short	1
18	55-10263	Body Assembly	1



# Evaporator Coil Assembly and Water Coil Assembly

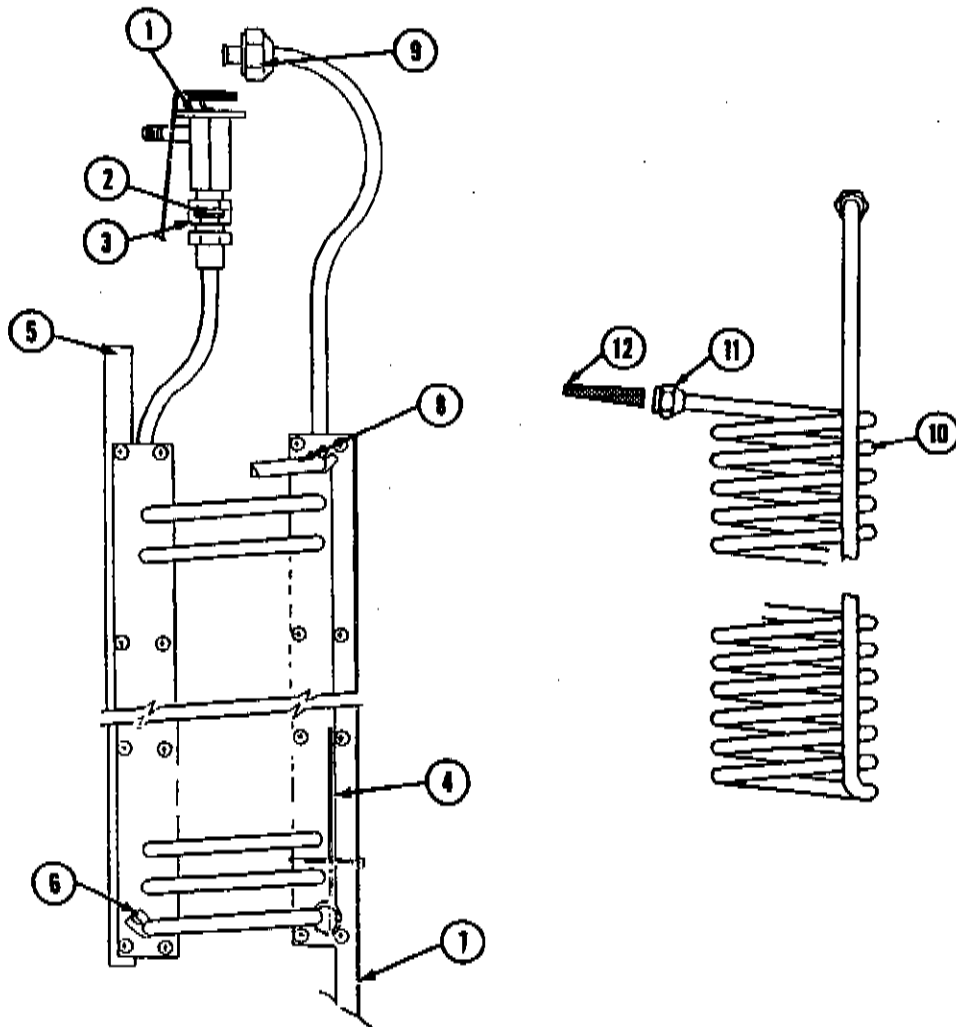


Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	408-1200	Evaporator Coil Final Assembly	REF
1	406-1291	Expansion Valve	1
2	406-4093	Seal - Supplied with 406-1291 (Not Shown)	1
3	406-1292	Rotolock Sweat Adaptor	1
4	408-212	Evaporator Coil Deflector Plate	2
5	408-215	Evaporator Coil Channel	1
6	408-213	Evaporator Coil Mounting Guide	6
7	408-214	Evaporator Coil Angle Guide	1
8	408-1205	Evaporator Coil Assembly	1
9	981-100	Flare Nut	1
	406-1208	Water Coil Assembly	REF
10	408-1229	Water Cooling Coil	1
11	981-103	Flare Nut	2
12	201-1209	Filter Screen	1

# Syrup Pump Assembly

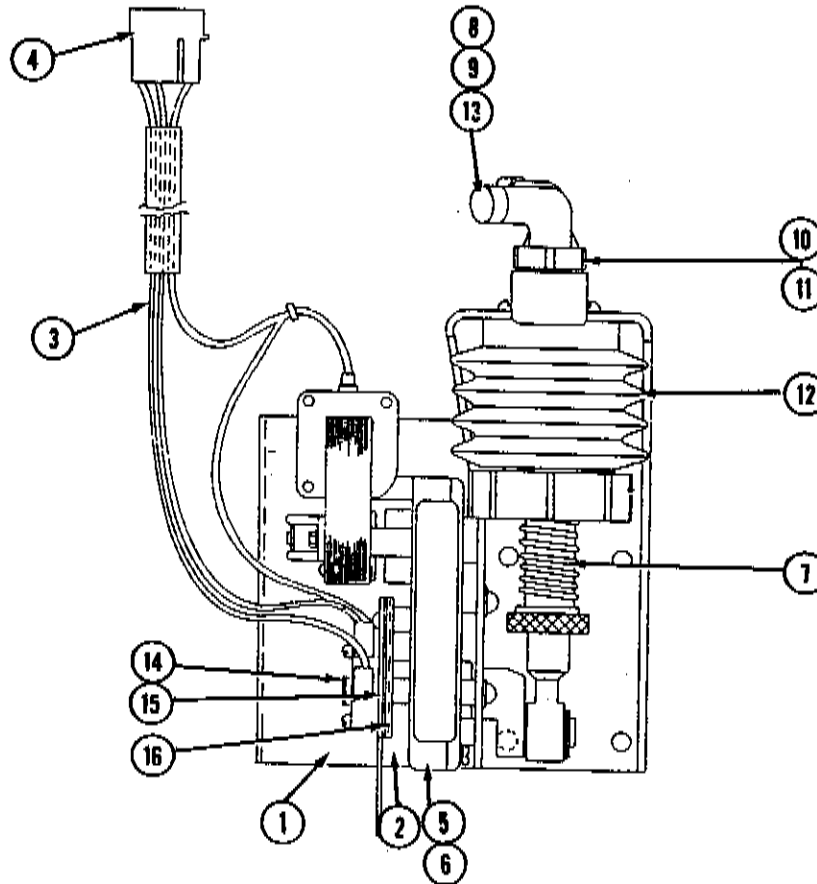


Fig. Index Number	ROWE Index Number	Description	Qty. Per Asm.
	408-1008	Syrup Pump Assembly	REF
1	406-4	Syrup Pump Bracket	1
2	406-1002	Syrup Pump Priming Assembly	1
3	406-1517	Syrup Pump Harness Assembly	1
4	979-103	Plug	1
5	408-1009	Pump and Motor Assembly	1
6	408-4500	Motor Assembly	1
7	421-4505	Drive Shaft and Spring Assembly	1
8	421-4009	Hose Elbow - Inlet	1
9	408-4000	Hose Elbow - Outlet	1
10	421-4011	Hose Connector Nut	2
11	406-4003	Anti-Siphon Spring	1
12	421-4012	Bellows	1
13	421-4504	Valve Repair Kit (Valve, Spring and O-Ring)	1
14	421-4503	Syrup Pump Switch	1
15	405-4075	Switch Spacer	1
16	405-4074	Switch Mounting Bracket	1

408-1

6th. Pump Left-Side Mounting Bracket

1

# Ice Tea Assembly

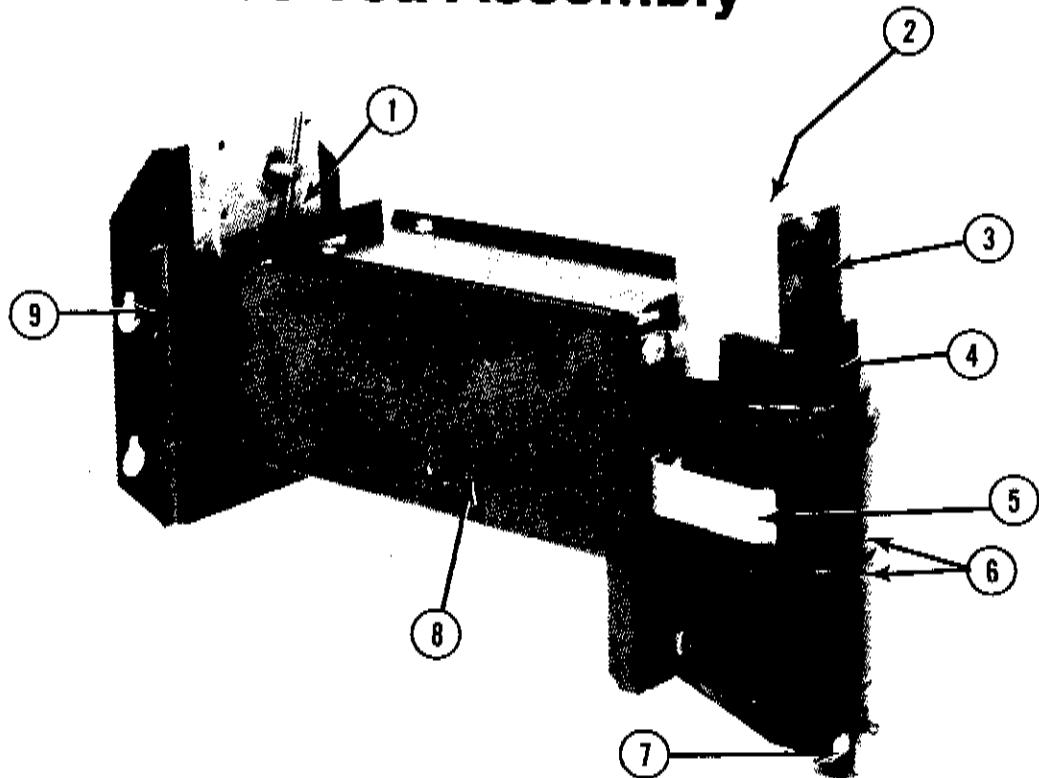


Fig. Index Number	ROWE Index Number	Description	Qty. Per Asm.
	408-21029	Ice Tea Assembly	REF
1	425-1808	Motor and Pin Assembly	1
	921-256	Machine Screws 8-32 x 5/16	4
	408-1012	Iced Tea Canister Assembly (Not Shown - Order separately)	1
2	408-1013	Heater Assembly (Behind Cover)	1
	934-196	Screw, Self-tapping (Behind Cover)	2
3	408-525	Cover, Heater Assembly	1
	934-428	Screw, Self Tapping	2
4	408-513	Top, Mixing Bowl	1
5	408-524	Retainer, Mixing Bowl	1
	934-428	Screw, Self-tapping	2
6	408-514	Tea Mixing Bowl (Stacked)	2
	939-2095	Tubing, Nozzle (Not Shown)	1
	408-1015	Tube Assembly, Nozzle (Not Shown)	1
7	408-519	Support, Mixing Bowl	1
8	112-1848	Relay Assembly	1
	406-818	Spring, Relay Retainer	1
	214-20020	Mounting Bracket, Retainer	1
9	408-1011	Ice Tea Housing Weld Assembly	1
	408-1008	Syrup Pump Assembly (See Figure 20)	1
	408-21030	Ice Tea Harness (Inside)	1
	408-1218	Pipe Tubing, Between Tea Valve and Cross Fitting	1

**Fig. 22**

406Z Cold Drink Vendor

# Control Box Assembly

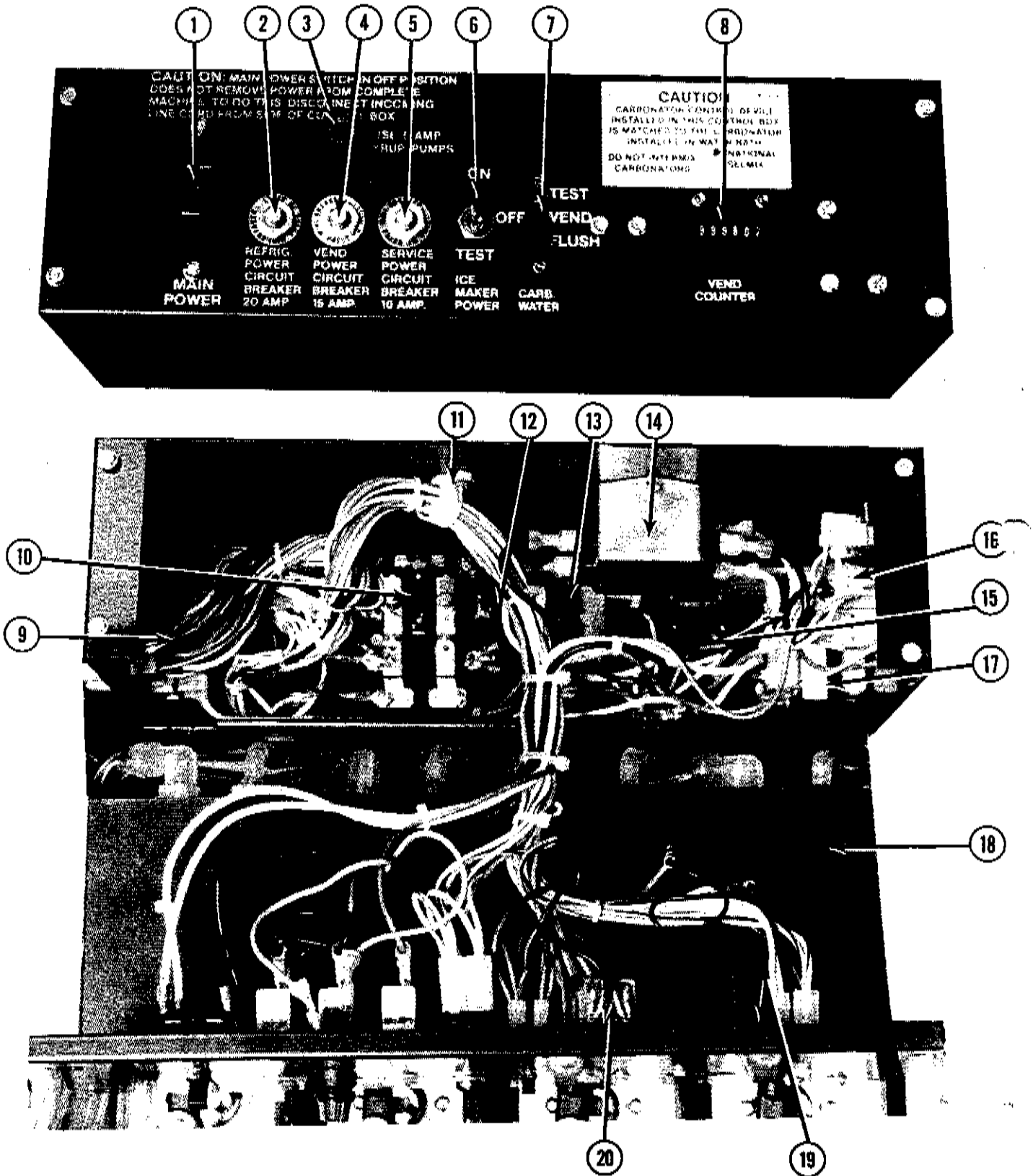
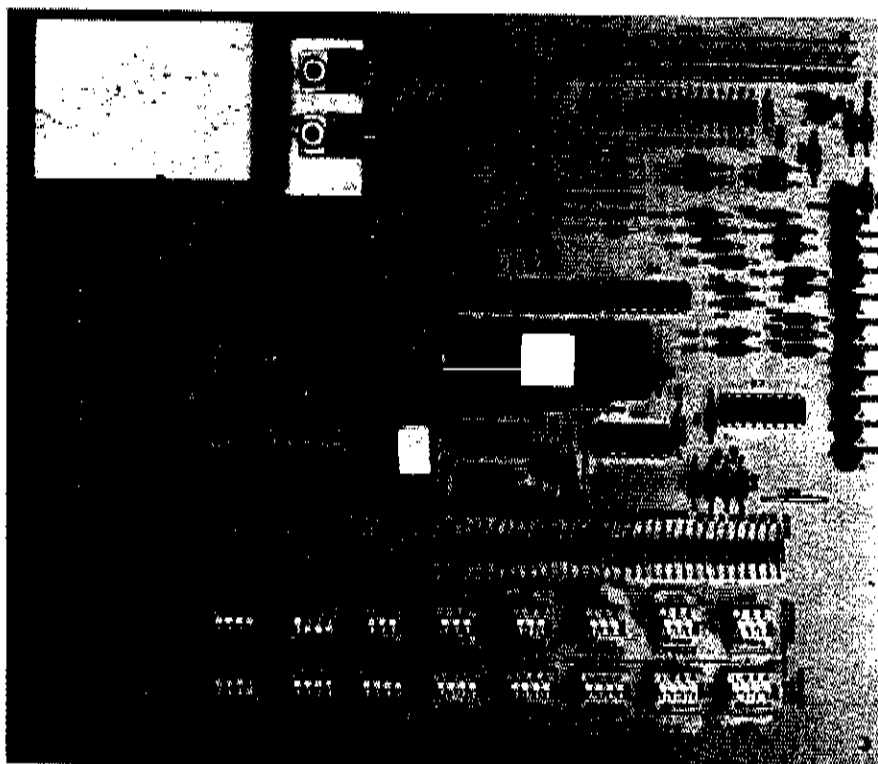
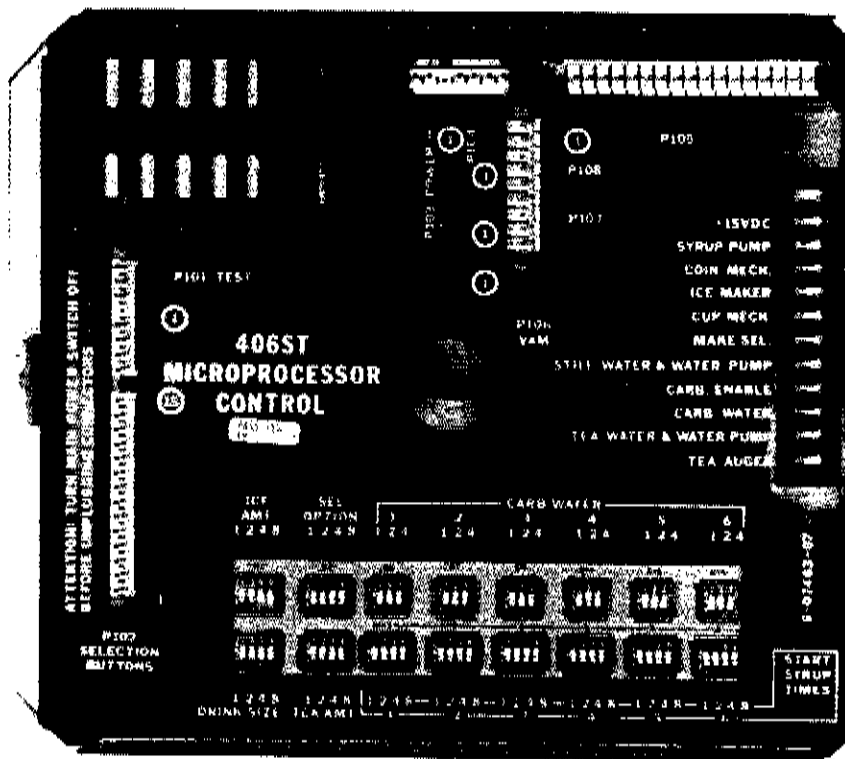


Fig. Index Number	ROWE Index Number	Description	Qty. Per Asm.
	408-1800	Control Box Assembly	REF
1	301-1711	Switch Toggle	1
	921-287	Machine Screw	2
2	912-49	20 Amp Circuit Breaker	1
3	912-40	5 Amp Circuit Breaker	1
4	912-47	15 Amp Circuit Breaker	1
5	912-46	10 Amp Circuit Breaker	1
6	408-1842	Ice Tea Switch	1
7	408-1874	Flush Switch - 3 Position	1
8	408-1841	Counter	1
	921-314	Machine Screw	2
9	408-1802	Control Box Harness Assembly	1
10	201-1842	Refrigeration Relay	1
11	975-104	Wire Clip	1
12	406-21377	Spark Killer Assembly	2
13	406-1817	Solid State Transformer (20 VAC)	1
14	938-5000	Line Filter	2
15	406-1827	Capacitor Board Assembly	1
16	405-801	Capacitor Mounting Bracket	1
17	200-1884	Isolation Transformer (120/150 VAC)	1
18	408-1803	Control Box Panel Assembly	1
19	406-1814	Quick Disconnect Triac	1
20	112-1848	Relay	1

# Microprocessor Board Assembly



408-1877	Microprocessor Asm.*
010-69793-002	Microprocessor C/B Asm.
408-21000	Microprocessor Asm. - 8 Flavor Vendors*
010-60793-004	Microprocessor C/B Asm. - 8 Flavors

R1	7-9901-102	.. Carbon Resistor - 1K ohm, ¼W, 5%	C1	7-00235-16	.. Electrolytic Capacitor - 1000 MFD, 35V
R2	7-9901-103	.. Carbon Resistor - 10K ohm, ¼W, 5%	C2	7-00238-05	.. Electrolytic Capacitor - 2.2 MFD, 50V
R3	7-9901-223	.. Carbon Resistor - 22K ohm, ¼W, 5%	C3	7-00285-11	.. Ceramic Capacitor - .1 MFD, 50V
R4	7-9901-102	.. Carbon Resistor - 1K ohm, ¼W, 5%	C4	7-00238-08	.. Electrolytic Capacitor - 10 MFD, 50V
R5	7-9901-104	.. Carbon Resistor - 100K ohm, ¼W, 5%	C5-C6	7-00285-11	.. Ceramic Capacitor - .1 MFD, 50V
R6	7-9901-223	.. Carbon Resistor - 22K ohm, ¼W, 5%	C7-C8	7-00285-18	.. Ceramic Capacitor - .001 MFD, 50V
R7	7-9901-472	.. Carbon Resistor - 4.7K ohm, ¼W, 5%	C9	7-00285-11	.. Ceramic Capacitor - .1 MFD, 50V
R8-R9	7-9901-331	.. Carbon Resistor - 330 ohm, ¼W, 5%	CR1-CR5	7-00350-05	.. Silicon Diode
R10	7-9901-103	.. Carbon Resistor - 10K ohm, ¼W, 5%	CR6-CR97	7-00350-12	.. Silicon Diode
R11	7-9901-473	.. Carbon Resistor - 47K ohm, ¼W, 5%	CR98	7-00350-05	.. Silicon Diode
R12	7-9901-103	.. Carbon Resistor - 10K ohm, ¼W, 5%	CR99-CR109	7-00353-03	.. Light Emitting Diode
R13	7-9901-273	.. Carbon Resistor - 27K ohm, ¼W, 5%	CR110	7-00355-24	.. Zener Diode - 5.6V
R14	7-9901-473	.. Carbon Resistor - 47K ohm, ¼W, 5%	CR111	7-00355-03	.. Zener Diode - 16V
R15	7-9901-103	.. Carbon Resistor - 10K ohm, ¼W, 5%	CR112	7-00355-08	.. Zener Diode - 6.2V
R16-R17	7-9901-102	.. Carbon Resistor - 1K ohm, ¼W, 5%	P101	7-00750-08	.. Polarizing Wafer - 8 Position
R18-R20	7-9901-103	.. Carbon Resistor - 10K ohm, ¼W, 5%	P102	7-00750-14	.. Polarizing Wafer - 14 Position
R21	7-9901-472	.. Carbon Resistor - 4.7K ohm, ¼W, 5%	P103/4	7-00750-07	.. Polarizing Wafer - 7 Position
R22-R29	7-9901-103	.. Carbon Resistor - 10K ohm, ¼W, 5%	P105	7-00750-17	.. Polarizing Wafer - 17 Position
R30	7-9901-102	.. Carbon Resistor - 1K ohm, ¼W, 5%	P106/7/8	7-00750-09	.. Polarizing Wafer - 9 Position
R31	7-9901-103	.. Carbon Resistor - 10K ohm, ¼W, 5%	Q1	7-00301-04	.. Transistor - Silicon PNP
R32	7-9901-152	.. Carbon Resistor - 1.5K ohm, ¼W, 5%	Q2-Q5	7-00300-08	.. Transistor - Silicon PNP
R33-R34	7-9901-102	.. Carbon Resistor - 1K ohm, ¼W, 5%	Q6-Q7	7-00301-04	.. Transistor - Silicon PNP
R35	7-9901-103	.. Carbon Resistor - 10K ohm, ¼W, 5%	Q8-Q9	2-16284-03	.. Transistor - Silicon NPN
R36	7-9901-101	.. Carbon Resistor - 100 ohm, ¼W, 5%	S1-S4	7-00430-08	.. DIP Switch - 4 Switches
R37	7-9901-103	.. Carbon Resistor - 10K ohm, ¼W, 5%	S5	7-00430-07	.. DIP Switch - 3 Switches
R38-R39	7-9901-102	.. Carbon Resistor - 1K ohm, ¼W, 5%	S6	7-00430-08	.. DIP Switch - 4 Switches
R40	7-9901-103	.. Carbon Resistor - 10K ohm, ¼W, 5%	S7	7-00430-07	.. DIP Switch - 3 Switches
R41	7-9901-102	.. Carbon Resistor - 1K ohm, ¼W, 5%	S8	7-00430-08	.. DIP Switch - 4 Switches
R42	7-9901-103	.. Carbon Resistor - 10K ohm, ¼W, 5%	S9	7-00430-07	.. DIP Switch - 3 Switches
R43	7-9901-102	.. Carbon Resistor - 1K ohm, ¼W, 5%	S10	7-00430-08	.. DIP Switch - 4 Switches
R44	7-9901-103	.. Carbon Resistor - 10K ohm, ¼W, 5%	S11	7-00430-07	.. DIP Switch - 3 Switches
R45	7-9901-102	.. Carbon Resistor - 1K ohm, ¼W, 5%	S12	7-00430-08	.. DIP Switch - 4 Switches
R46	7-9901-103	.. Carbon Resistor - 10K ohm, ¼W, 5%	S13	7-00430-07	.. DIP Switch - 3 Switches
R47	7-9901-102	.. Carbon Resistor - 1K ohm, ¼W, 5%	S14	7-00430-08	.. DIP Switch - 4 Switches
R48	7-9901-103	.. Carbon Resistor - 10K ohm, ¼W, 5%	S15	7-00430-07	.. DIP Switch - 3 Switches
R49	7-9901-102	.. Carbon Resistor - 1K ohm, ¼W, 5%	S16	7-00430-08	.. DIP Switch - 4 Switches
R50	7-9901-103	.. Carbon Resistor - 10K ohm, ¼W, 5%	W1-W2	0-05039-00	.. Jumper Wire
R51	7-9901-102	.. Carbon Resistor - 1K ohm, ¼W, 5%	W4-W15	0-05039-00	.. Jumper Wire
R52-R61	7-9901-103	.. Carbon Resistor - 10K ohm, ¼W, 5%	Y1	2-51675-05	.. Crystal - 3.58 MHz
R62	2-16280-07	.. Wire Wound Resistor - 680 ohm, 2W	Z1-Z3	7-00369-01	.. IC - Darlington Array
R63	7-9901-102	.. Carbon Resistor - 1K ohm, ¼W, 5%	Z4	7-00390-09	.. Microcomputer - 3870
			Z5-Z6	7-00368-01	.. IC - Quad Comparator
			Z7	7-00371-01	.. IC - BCD to 1 of 10 Decoder

\* Numbers above are for direct purchase. For advance replacement, order with Grand Rapids numbers.

408-1877 = 60746307      408-21000 = 60746309

**Fig. 24**

406Z Cold Drink Vendor

# Driver Board Assembly

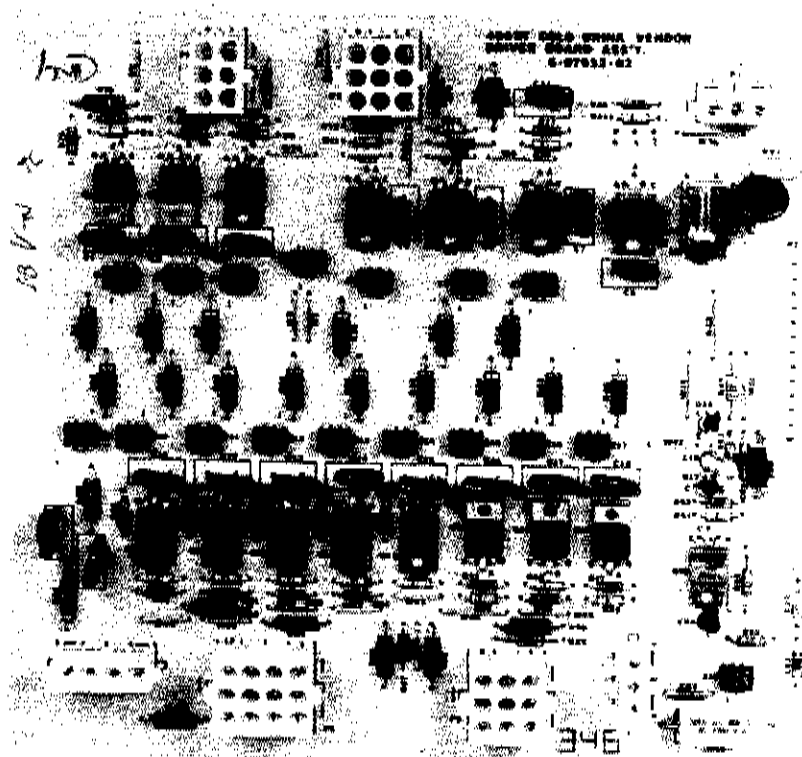
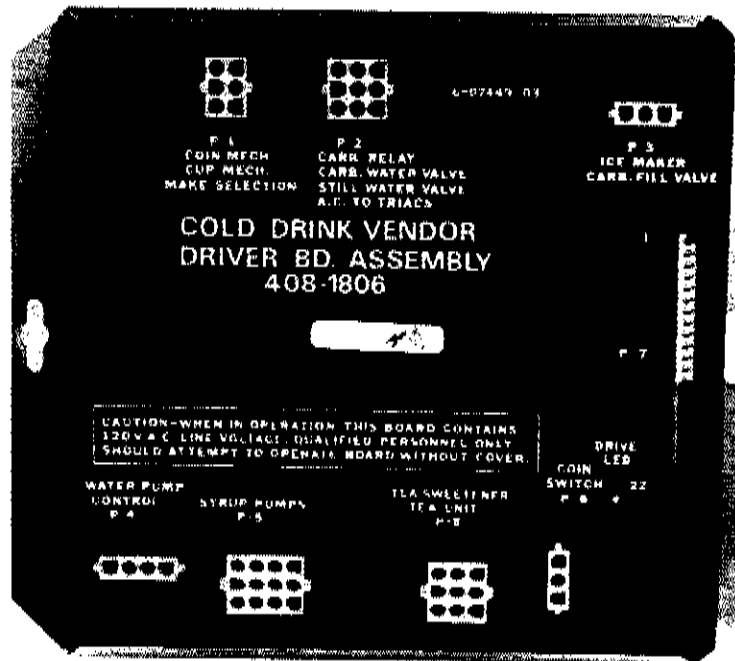




Fig. Index Number	ROWE Index Number	Description	Qty. Per Asm.	
408-1806	Driver Board Asm.*			
408-4504	Driver C/B Asm.			
408-21001	Driver Board Asm. - Flavor Vendors*			
408-21026	Driver C/B Asm. - 8 Flavors			
C1	7-00240-09	.. Mylar Capacitor - .01 MFD	R30 7-9901-470	.. Carbon Resistor - 47 ohms, 1/4W, 5%
C4-C18	7-00240-09	.. Mylar Capacitor - .01 MFD	R31 7-00107-19	.. Carbon Resistor - 330 ohms, 1/2W
C19	7-00238-05	.. Electrolytic Capacitor - 2.2 MFD	R32 7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%
C20	7-00285-18	.. Ceramic Capacitor - .001 MFD	R33 7-9901-470	.. Carbon Resistor - 47 ohms, 1/4W, 5%
C21	7-00240-09	.. Mylar Capacitor - .01 MFD	R34 7-00107-19	.. Carbon Resistor - 330 ohms, 1/2W
CR2-CR3	7-00350-05	.. Silicon Diode	R35 7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%
CR4	7-00353-03	.. Light Emitting Diode	R36 7-9901-470	.. Carbon Resistor - 47 ohms, 1/4W, 5%
CR5	7-00350-05	.. Silicon Diode	R37 7-00107-19	.. Carbon Resistor - 330 ohms, 1/2W
K1	3-04287-02	.. P.C. Board Relay	R38 7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%
P1	3-07635-04	.. Header - PCB (6 Ckts)	R39 7-9901-470	.. Carbon Resistor - 47 ohms, 1/4W, 5%
P2	3-07365-05	.. Header - PCB (9 Ckts)	R40 7-00107-19	.. Carbon Resistor - 330 ohms, 1/2W
P3	3-07365-02	.. Header - PCB (3 Ckts)	R41 7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%
P4	3-07365-03	.. Header - PCB (4 Ckts)	R42 7-9901-470	.. Carbon Resistor - 47 ohms, 1/4W, 5%
P5	3-07365-06	.. Header - PCB (12 Ckts)	R43 7-00107-19	.. Carbon Resistor - 330 ohms, 1/2W
P6	3-07365-02	.. Header - PCB (3 Ckts)	R44 7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%
P7	7-00750-08	.. Polarizing Wafer Assy (8 Ckts)	R45 7-9901-470	.. Carbon Resistor - 47 ohms, 1/4W, 5%
	7-00750-13	.. Polarizing Wafer Assy (13 Ckts)	R46 7-00107-19	.. Carbon Resistor - 330 ohms, 1/2W
P8	3-07635-05	.. Header - PCB (9 Ckts)	R47 7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%
Q1-Q15	7-00381-02	.. Triac Thyristor	R48 7-9901-470	.. Carbon Resistor - 47 ohms, 1/4W, 5%
Q16	7-00300-08	.. Transistor - NPN	R49 7-9901-103	.. Carbon Resistor - 10K ohms, 1/4W, 5%
Q17	7-00302-02	.. Transistor - NPN (Darlington)	R50 7-00107-01	.. Carbon Resistor - 560 ohms, 1/2W
Q18	7-00304-01	.. Transistor - PNP Power	R51 7-9901-472	.. Carbon Resistor - 4.7K ohms, 1/4W, 5%
R1	7-00107-19	.. Carbon Resistor - 330 ohms, 1/2W	R52 7-9901-103	.. Carbon Resistor - 10K ohms, 1/4W, 5%
R2	7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%	R53 7-9901-470	.. Carbon Resistor - 47 ohms, 1/4W, 5%
R3	7-9901-470	.. Carbon Resistor - 47 ohms, 1/4W, 5%	R54 7-9901-102	.. Carbon Resistor - 1K ohms, 1/4W, 5%
R4	7-00107-19	.. Carbon Resistor - 330 ohms, 1/2W	R55 7-9901-473	.. Carbon Resistor - 47K ohms, 1/4W, 5%
R5-R6	7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%	R56 7-00110-09	.. Wire Wound Resistor - 3.9K ohms, 5W
R7	7-00107-19	.. Carbon Resistor - 330 ohms, 1/2W	R75 7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%
R8	7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%	R76 7-00109-16	.. Carbon Resistor - 33 ohms, 1/2W
R9	7-9901-470	.. Carbon Resistor - 47 ohms, 1/4W, 5%	R77 7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%
R10	7-00107-19	.. Carbon Resistor - 330 ohms, 1/2W	R78 7-00102-22	.. Carbon Resistor - 100 ohms, 1/2W
R11	7-9901-470	.. Carbon Resistor - 47 ohms, 1/4W, 5%	R79 7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%
R12	7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%	R80 7-00102-22	.. Carbon Resistor - 100 ohms, 1/2W
R13	7-00107-19	.. Carbon Resistor - 330 ohms, 1/2W	R81 7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%
R14	7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%	R82 7-00102-22	.. Carbon Resistor - 100 ohms, 1/2W
R15	7-9901-470	.. Carbon Resistor - 47 ohms, 1/4W, 5%	R83 7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%
R16	7-00107-19	.. Carbon Resistor - 330 ohms, 1/2W	R84 7-00102-22	.. Carbon Resistor - 100 ohms, 1/2W
R17	7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%	R85 7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%
R18	7-9901-470	.. Carbon Resistor - 47 ohms, 1/4W, 5%	R86 7-00102-22	.. Carbon Resistor - 100 ohms, 1/2W
R20	7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%	R87 7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%
R21	7-9901-470	.. Carbon Resistor - 47 ohms, 1/4W, 5%	R88 7-00102-22	.. Carbon Resistor - 100 ohms, 1/2W
R22	7-00107-19	.. Carbon Resistor - 330 ohms, 1/2W	R89 7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%
R23	7-00109-16	.. Carbon Resistor - 33 ohms, 1/2W	R90 7-00102-22	.. Carbon Resistor - 100 ohms, 1/2W
R24	7-00106-02	.. Carbon Resistor - 47K ohms, 1/2W	RV1-RV2 7-00375-03	.. Metal Oxide Varistor
R25	7-00107-19	.. Carbon Resistor - 330 ohms, 1/2W	W2, 5, 6 0-05039-00	.. Jumper Wire
R26	7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%	W8, 9, 10 0-05039-00	.. Jumper Wire
R27	7-9901-470	.. Carbon Resistor - 47 ohms, 1/4W, 5%	W30-W47 0-05039-00	.. Jumper Wire
R28	7-00107-19	.. Carbon Resistor - 330 ohms, 1/2W	Z1-Z7 7-00337-05	.. IC - Opto-Triac Photocoupler
R29	7-9901-221	.. Carbon Resistor - 220 ohms, 1/4W, 5%	Z9-Z11 7-00337-05	.. IC - Opto-Triac Photocoupler
			Z18 7-00337-02	.. IC - Opto-Isolator Photocoupler

\* Numbers above are for direct purchase. For Advance Replacement, order with Grand Rapids numbers.

408-1806 = 60744903 408-21001 = 60744904

# Condensing Unit Assembly

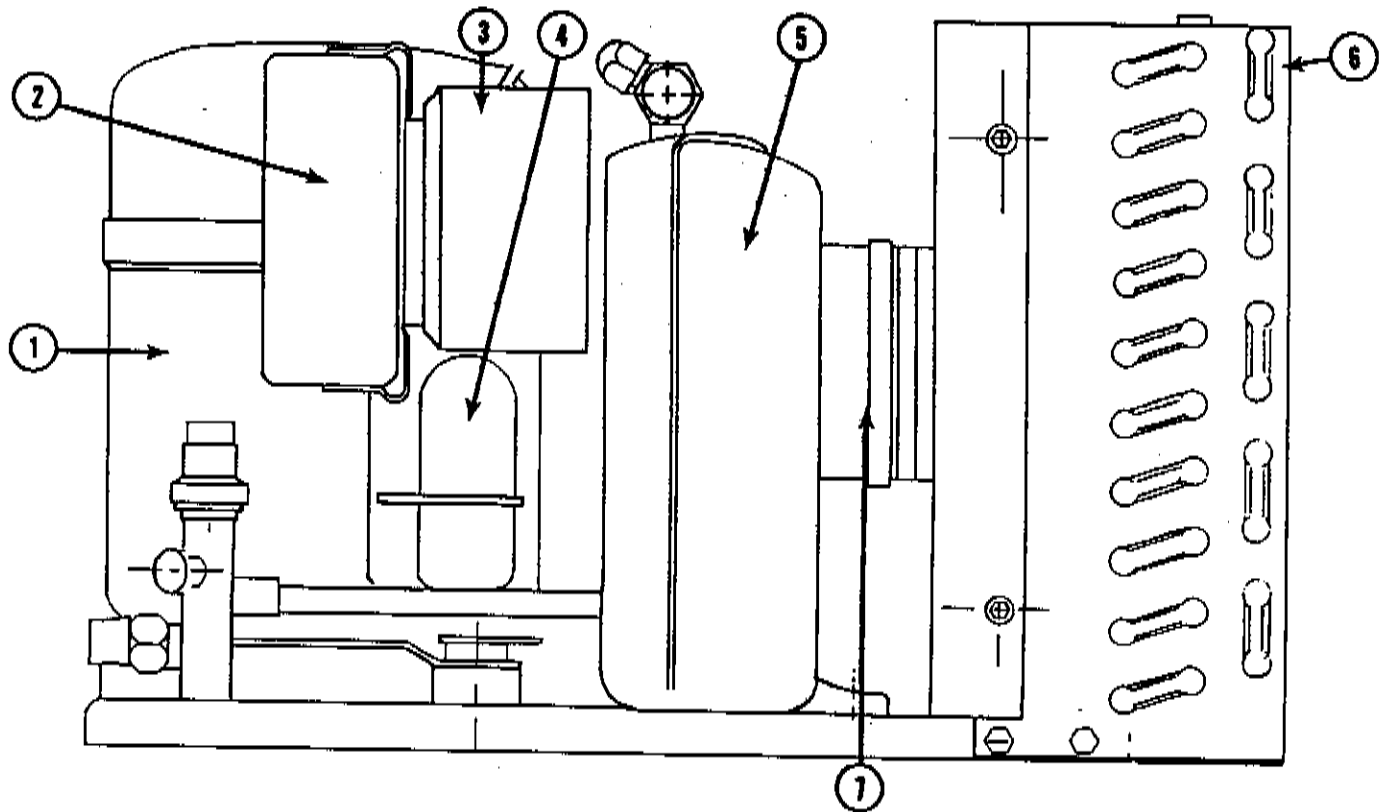


Fig. Index Number	ROWE Index Number	Description	Qty. Per Asm.
	408-1281	Condensing Unit (with Machine S/N beginning at 30718)	REF
	408-1255	Condensing Unit (with Machine S/N below 30718)	REF
1	408-4555	Comp. Dome (incl. Thermo Overload)	1
2	408-4552	Start Capacitor	1
3	408-4553	Start Relay	1
4	408-4554	Thermal Over-load Protector	1
5	406-4634	Receiver Tank Assembly w/Valve	1
6	406-4631	Fan Blade	1
7	406-4632	Fan Motor	1

# Icemaker Assembly

## Table of Contents

Icemaker Final Assembly	6 - 52
Icemaker Assembly	6 - 54

# Icemaker Final Assembly

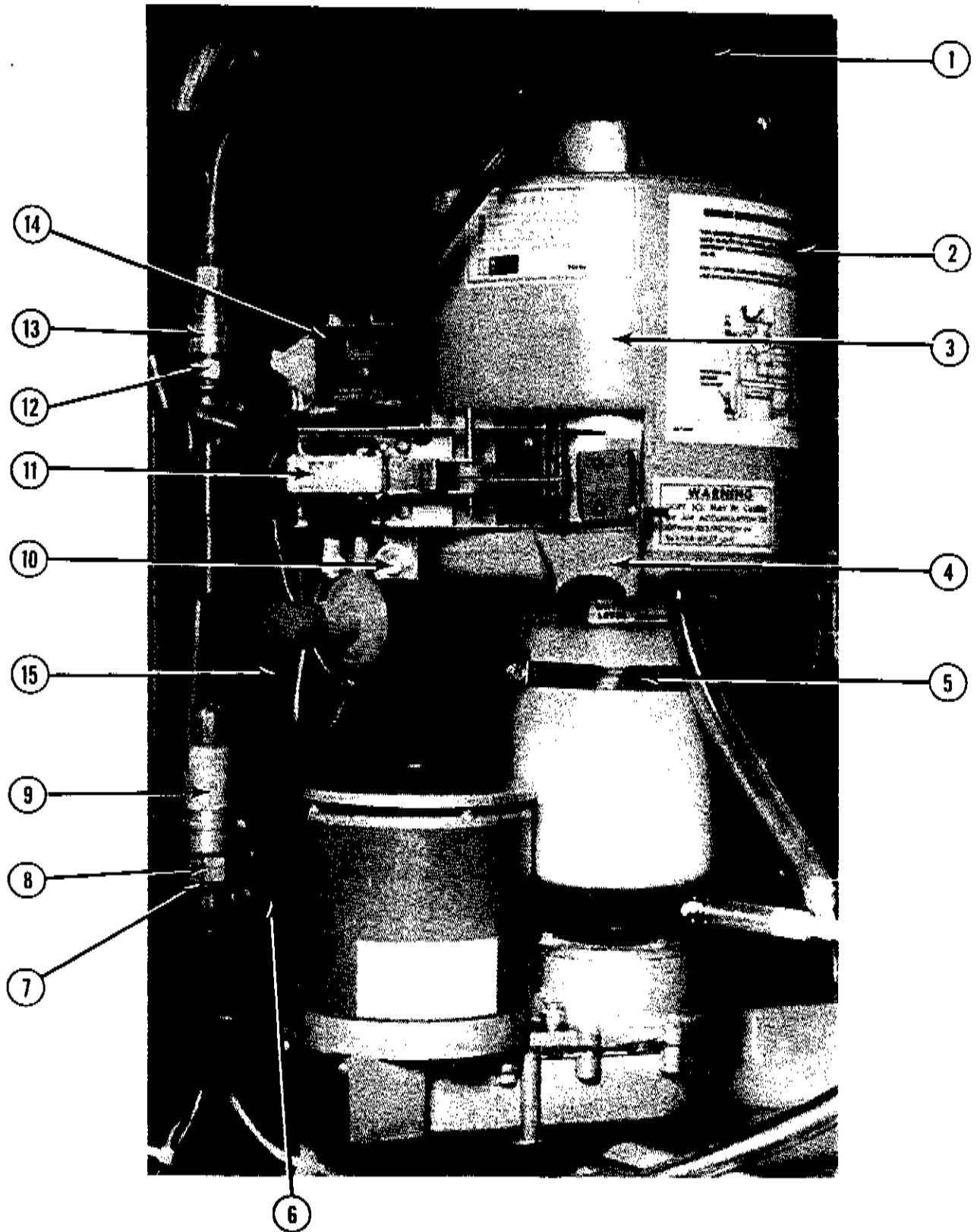


Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	408-1110	Icemaker Final Assembly	REF
1	406-21377	Spark Killer Asm.	1
2	907-2023	Icemaker Adjust Label	1
3	408-1112	Icemaker Asm.	1
4	201-250	Ice Chute Funnel (Not Shown)	1
	975-104	Wire Clip	1
5	408-116	Clamp, Icemaker	1
6	408-1116	Icemaker Tube Asm.	1
7	408-106	Quick Disconnect Coupling Bracket (Lower)	1
	408-107	Quick Disconnect Coupling Bracket (Upper) (Not Shown)	1
8	981-1783	Fitting - Male	1
9	981-1778	Fitting - Female	1
10	912-58	Circuit Breaker - 1 Amp	1
11	408-4562	Dispense Solenoid & Door Asm.	1
12	981-1775	Fitting - Male	1
13	981-1777	Fitting - Female	1
14	408-1890	Time Delay Relay	1
	408-108	Icemaker Spring (Not Shown)	1
	408-109	Icemaker Knob (Not Shown)	1
15	408-1101	Icemaker Mounting Plate	1
	981-1425	Plastic Tee, Input	1

# Icemaker Assembly

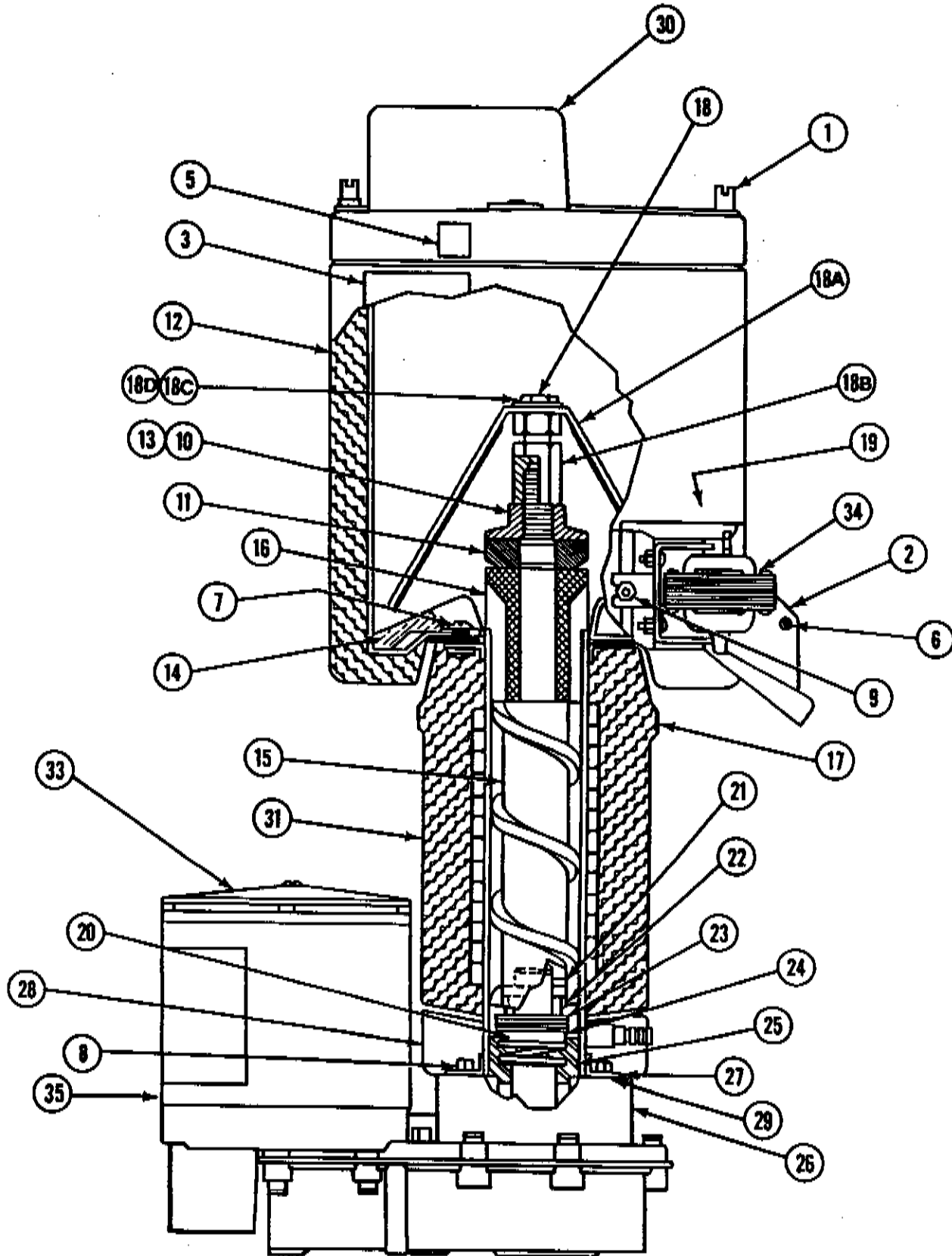


Fig. & Index Number	ROWE Part Number	Description	Qty. Per Asm.
	408-1112	Icemaker Assembly	REF
1	408-4036	Screw, Thumb	2
2	408-4037	Chute Removable	1
3	408-4038	Warning Label	1
4	408-4039	Label Warning, Evaporator (Not Shown)	1
5	408-4040	Ice Level Position Label	1
6	408-4041	Screw 10-32 x 5/8 SOC HD Cap	1
7	408-4042	Screw 1/4 - 20 x 5/8 THMS SS SPECIAL	3
8	408-4043	Screw 1/4 - 20 x 3/4 HHMS	4
9	408-4044	Nut 8-32 ESNA	3
10	408-4045	Shoulder Screw BRG to Nut	2
11	408-4564	Bearing Assembly DCF-300	1
12	408-4559	Hopper Assembly	1
13	408-4046	Auger Nut Mach.	1
14	408-4047	Drip Ring	1
15	408-4048	Auger 300-30	1
16	408-4565	Extruding Head Assembly 300-30	1
17	408-4049	Label-Water Level	1
18	408-4566	Agitator Assembly	1
18a	408-4050	Agitator Blade	1
18b	408-4035	Hub-Agitator	1
18c	408-4051	1/4 Washer Stainless Steel	1
18d	408-4052	Screw 1/2-20 x 3/8 HHMS	1
19	408-4567	Hopper Baffle Assembly (Not Shown)	1
20	408-4053	Seal, Shaft	1
21	408-4054	Drive Pin	1
22	408-4055	Lower Spacer	1
23	408-4056	Washer, Lower	1
24	408-4057	Shaft Seal, Mount	1
25	408-4058	"O" Ring	1
26	408-4059	Gearmotor	1
27	408-4060	Mounting Plate	1
28	408-4061	Lower Collar	1
29	408-4062	Washer 1/4 Split Lock	1
30	408-4563	Ice Level Assembly	1
31	408-4560	Evaporator Assembly	1
33	408-4561	Transmission Assembly	1
34	408-4562	Dispense Mech.	1
35	201-4560	Gearmotor Assembly	1

# Harness List

## ASSEMBLY INTERNAL HARNESESSES

Part Number	Description	Assembly Part No.
408-1802	Control Box Assembly	408-1800
408-1873	Tea Hopper Assembly	408-1000
406-1500	Cup Turret Assembly	408-1610

## POINT TO POINT HARNESS

Part Number	From →→→→→→→→→→→→→→→→	To
408-1833	Cabinet/Main Door Harness	Coin Mechanism
408-1830	Control Box Assembly	Driver Board Assembly
408-1832	Selector Assembly	P-101, P-102, P-108
408-1828	Microprocessor P-104	Driver Board Asm. P-7
408-1836	Driver Board Asm. P-5	Syrup Pump Assemblies
408-1827	Ice Maker Assembly	Control Box Assembly
406-1888	Water Bath	Control Box Assembly
408-1855	Tea Auger Motor	Driver Board Asm. P-8
408-1875	Control Box	Water Feeder Tank
408-1835	6th. Syrup Pump Asm.	Driver Board Asm. P-8
425-1831	Cabinet Harness/Coin Mech	C.B.A. - 2 Asm./Interface
425-1832	P-2 Interface Board	P-3 on C.B.A.-2 Asm.

## WIN-A-DRINK OPTION

Part Number	From →→→→→→→→→→→→→→→→	To
408-1501	J-7 on Controller	B/A Transformer
408-1883	J-3 on Controller	WIN-A-DRINK Display
408-1884	J-5 on Controller	Bill Acceptor
408-1888	J-2 on Controller	P-102 & Cup Filling Light
408-1891	J-1 on Controller	P/B Selector/Test Vend Sw.
408-1892	J-4 on Controller	Coin Mech.
408-1893	J-6 on Controller	Main Door Harness