

Crathco® Post Mix Beverage Dispensers

Operation and Instruction Manual

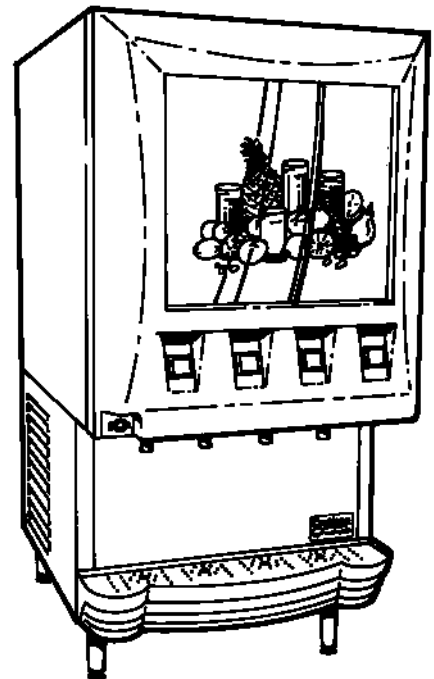
for

Model PM4-B & PM45-B

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Prior authorization must be obtained from Grindmaster Crathco Systems for all warranty claims.



MODEL PM4-B



GRINDMASTER CRATHCO SYSTEMS, INC.

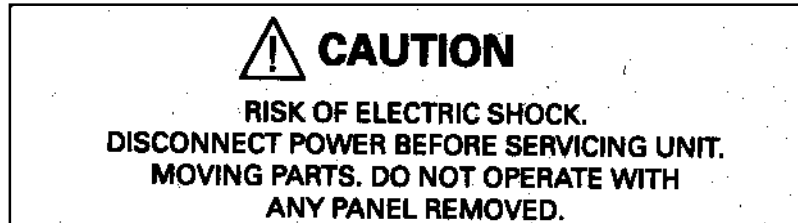
"Global Customer Satisfaction"

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WARNING LABELS AND SAFETY PRECAUTIONS

OPERATOR'S SAFETY PRECAUTIONS

1. Read and understand the operating instructions in this manual thoroughly.
2. Note all warning labels. If any of the warning labels are missing or damaged replace them immediately.
3. Keep operating area clean.



Located on the top of the condenser shroud and on the rear panel.

INTRODUCTION

The GRINDMASTER CORPORATION dispenser is a unique, self contained, counter top style unit with high capacity self-adjusting cooling systems. Both cooling systems: patented cabinet cooling system and ice-bank water cooling system do not require manual adjustment or settings. There are no Electromechanical thermostats to control the cooling systems.

The cabinet cooling system is a frost-free system that maintains not only desired temperature, but also a constant humidity level in the cabinet with exception to the time when the cabinet door is open.

The dispensing buttons are located on the front panel, and are easily accessible by the operator. The system is powered with safe 24 VDC as well as a water inlet solenoid valve and an electronic controller.

The machine has accessible modular construction and has been designed to be simple, yet effective, to provide many years of trouble-free operation.

INSTALLATION

Installation Notice

A water filter is recommended for the water supply to the dispenser, especially in areas where water contains a high level of minerals such as calcium or other solids. Over long periods of time, calcium deposits build on heat-exchanger coils and will lower the cooling capacity of the system. Calcium build up will also occur on the strainers enclosed in the dispensing valves.

The cooling system is provided with copper coils, designed to last the life of the dispenser. However, some chemicals in treated or not treated water, specifically chlorine and sulfur (sulfide) may shorten the life of the coils. The initial investment in the filtering system will pay for itself in quality and by ensuring longer life for the machine.

Unpacking

1. With the unit upright, remove staples from the box at the very bottom around perimeter of the box and on the top of the box.
2. Open the top of the box and remove the accessory box.
3. Slide the box tube upward exposing the machine.
4. Remove supporting corners and front supporting block.
5. The unit must have the legs installed upon removal from the packaging. Legs are supplied in the accessory kit (box on top of the machine in the packaging.)

Failure to install the legs will cause the dispenser refrigeration system to work improperly and burn out as well as possibly damage the water inlet valve.

6. Support all 4 sides, lift and place in an appropriate area. (See location below)

Installing Your Unit



CAUTION: DO NOT ALTER OR DEFORM THE PLUG IN ANY WAY!
ALTERING OR DEFORMING THE PLUG MAY DAMAGE UNIT AND WILL VOID WARRANTY!

1. Location

Position dispenser in a well-ventilated area indoors. Avoid exposure to direct sunlight and/or heat caused by radiation. Ambient room temperature must be in the range of 60°F - 90°F (15-32°C). Do not install unit in an enclosed area where heat build up could be a problem.

Note: Air flow direction and spacing required on Figure B page 4.

2. Plumbing

Connect the dispenser to cold, potable water source suitable for drinking.

Do not install unit on a water softener/softening line. For proper operation incoming supply water pressure must be in the range 29 psig (2 - 2.75 bar), therefore a water pressure regulating valve is recommended.

3. Electrical

This unit is supplied with a 6" (2m) long 2 wire plus ground power cord. The PM45-B connector is suitable for standard single phase 220V/50Hz power supply. PM4-B models should be connected to a 115V 60 Hz power supply. This cord exits the unit out the bottom of the base and should be routed per National Electric Code.

WARNING: Only a qualified service technician should service internal electrical components.

Installing Your Unit (cont.)

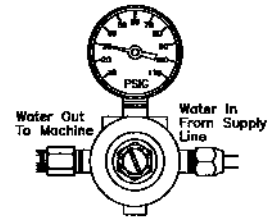
4. Water Hook-up.

It is recommended to provide water connection to the dispenser from a dedicated water line. Without this, consistent water pressure necessary to sustain proper brx levels may not be maintained due to water surges caused by other water-consuming equipment, such as dishwashing machines, other dispensing equipment, coffee machines etc!

The water line supply should be at least 3 2/5" (8 mm) internal diameter and must be rated for 217 psig (15 bar) pressure at 70°F (21°C) water temperature.

Install a water pressure regulator gauge at the inlet to the machine and set it to 29 Psig (2 bar). The water pressure regulator gauge, is included in the Accessory Box. It is important that the gauge is installed accordingly. (See figure A) Failure to comply will damage the gauge and render it inoperable.

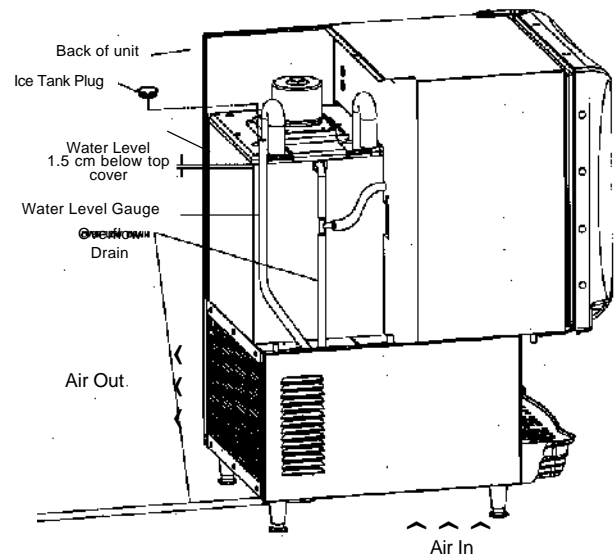
BAR	PSI
1	14
1.5	22
2	29
2.5	36
3	44
3.5	51
4	58
4.5	65
5	73
5.5	80
6	87



(Figure A)

Filling the Ice bank with Water

1. Remove the rear upper panel from the dispenser.
2. Find the Ice Tank Plug (round black rubber plug about 1" (2.5 cm) diameter) on the top of the ice bank cover and remove it.
3. Use the water hose or funnel to fill the tank with cold tap water (18 liters.)
4. Stop filling water once water is flowing from overflow drain.
5. Look at the water level gauge (tank drain clear hose attached to the insulated refrigeration line in upright position.) The water level in the tank is equal to the water level in the water gauge and should be about 1.5 cm below ice bank cover. *(see Figure B)
6. Replace rubber plug and rear upper panel.
7. Turn the power switch ON.



(Figure B)

Minimum Air Space Requirements

Top 12"
Sides 2"
Back 4"

*To assure the proper operation of the dispenser, the water level in the ice bank must be kept at the full fill level explained above. Water level in the ice bank should be checked every couple of months.

WARNING: Do not remove the water level gauge from its position unless you want to drain the water from the ice bank.

Note: If the water level in the ice bank falls substantially (about 2"/5 cm), the refrigeration system will stop operating. Before this happens, the loss of cabinet cooling will be observed.

Installation (cont.)

POWER SUPPLY:	220 VAC 50 Hz	115/60Hz
COMPRESSOR:	HP: 1/4, (630 Kcal, 2500 BTUH)	
REFRIGERANT:	R134a 260 grams/9.1 oz.	
DESIGN LOW PRESSURE:	Max. 9.5 BAR; 140 PSIG	
DESIGN HIGH PRESSURE:	Max. 16.3 BAR; 240 PSIG	
SYSTEM TYPE:	CAPILLARY TUBE, HERMETIC	
IDLE POWER CONSUMPTION	.5A	.8A
RUN POWER CONSUMPTION	4A, 5A (MAX)	7A, 8A (MAX)
FUSE SIZE	6 A Slow Blow Controller	
DISPENSING RATIO	50 ML/SEC	
SUPPLY WATER PRESSURE	2 - 2.7 BAR; 29-40 PSIG	
WORKING AMBIENT TEMPERATURE	15.5°C - 32.2°C 60-90°F(guaranteed performance)	
PRODUCT STORAGE CAPACITY	NOM. 4 LITERS (FOUR 1L TETRAPACK)	

Specifications:

PM45-B

PM4-B

OPERATING AND ADJUSTMENTS

Explanation of terms

All descriptions related to dispensing heads, dispensing buttons, pump motors such as: push button #1, dispensing head #2, pump motor #3 etc. are used in relation to the front of the machine. This relates also to all components inside of the machine that are symmetrically positioned. (See Figure C)

For example:

Push button #1 - Far left positioned dispensing push button.

Push button #4 - Far right positioned dispensing push button.

Dispensing head #3 - All components involved when dispensing caused by depressed push button #3.

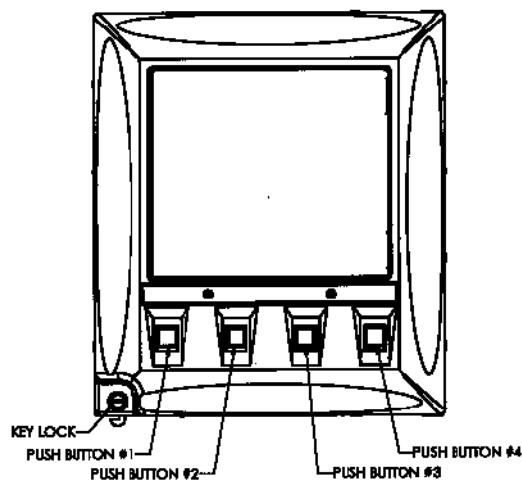
Pump motor #4 - Pump motor that works when push button #4 was depressed and is positioned inside the machine in line with push button.

Brix Setup

If initial concentrate brix is 60 and required mixing ratio is 6+1/6:1 (6 ounces water to one part concentrate), then brix of ready to drink mixture of a concentrate and water should be 10.

To measure brix level, a refractometer is used to show sucrose content in a drink by measuring change of the light diffraction in the water caused by change of viscosity due to sucrose content.

The correct ratio is achieved by controlling water and a concentrate flow to the mixing device, in this case mixing chamber. Brix on each dispensing head is preset in the factory. In the field, the brix needs to be fine-tuned to the



(Figure C)

correct value with the use of a refractometer. Setting brix by taste is an acceptable method and usually gives $\pm 0.5-0.8$ brix error.

Brix Setup (cont.)

Mixing water with a concentrate in this dispenser was designed at the following conditions:

- 1. The initial temperature of a concentrate (syrup) used in the dispenser should be 39-41°F (4-5°C).**
- 2. The initial temperature of the water supplied by the dispenser cooling system is 39°F (4°C).**
- 3. The static water pressure should be set to 29PSIG.**
The pressure regulator gauge should show 29PSIG (2 bar) when there is no water flow.

It is very important to apply the concentrate at the noted temperature since a concentrate changes its viscosity when it cools down. A dramatic change of the viscosity (thickness of concentrate) causes the pumps capacity to change resulting in the need to readjust the brix level.

The machine provides cooling to keep syrups or concentrates in the correct temperature. If the initial temperature of syrup or concentrate is the room temperature when the brix is set, after approximately one hour the syrup or concentrate will be cooled down to 39-41°F (4-5°C). As a result your brix setting will change. Therefore it is recommended that syrup or concentrate should be refrigerated prior to setting brix.

Brix Set Procedure

The brix number for given flavors is shown in the table. If the table does not include information for a particular flavor, temporarily use the taste method and request information from a concentrate supplier.

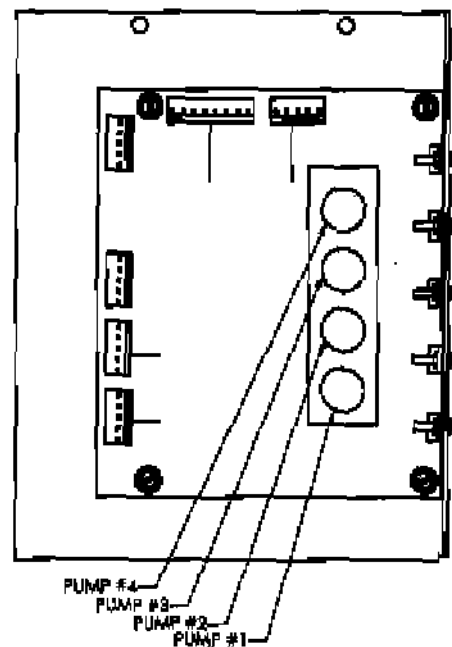
Assuming that correct temperature of orange concentrate is applied to the first dispensing head and syrups are applied to the remaining dispensing heads proceed as follows:

1. Set the water pressure to 2 bar (29 Psig) static.
2. Depress chosen dispensing push button and hold until water from the dispensing nozzle changes color.
3. Release push button. Depress push button again dispensing drink into the cup.
4. Measure a brix level. If the brix is too rich (higher number than expected) the concentrate pump needs to be slowed down by turning corresponding potentiometer on the controller board counterclockwise (potentiometer called Pump #1 on the controller board corresponds with push button #1 and so on.)

The controller board can be found on the right hand side in the front of the machine behind the splash panel. If potentiometer is already all the way to the left, the water pressure must be increased assuming that a concentrate temperature is at 39-41°F (4-5° C). Please, note that water pressure change will cause brix change on other dispensing heads if they were set previously. (See figure D)

If brix is too weak the pump speed must be increased by turning the corresponding potentiometer clockwise.

If there is problem setting up brix, refer to brix problem troubleshooting.



(Figure D)

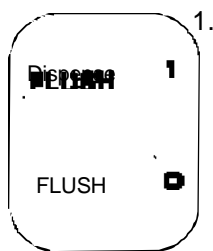
Once the brix is set, use the same flavor set up on each dispensing head. The flavor used on a particular dispensing head can be changed if the brix and viscosity of the syrup remains the same.

Dispenser Operation Tips

1. To dispense the drink, depress and hold dispensing push button as long as needed.
2. After dispensing 2 liters consecutively allow a 15-30 second idling time before next usage.
3. Keep dispenser door closed and do not allow it to be open for a longer time than necessary.
4. Avoid a concentrate spillage inside the cabinet. If spillage occurs, clean immediately. If spillage is left unattended, over time it will dry out and be difficult to clean.

Care and Cleaning

Flushing the Dispensing System.



(Figure E)

1. Open the door cabinet and turn the flush switch to the FLUSH position. The flush switch is located on the inside wall of the door and is labeled:

By turning the switch to the FLUSH position the product pumps are disabled. The machine now can dispense water only.

2. Close the door and depress the far left dispensing switch for 30 seconds. Repeat this operation with all remaining dispensing switches.
3. Open the door and turn the flush switch to the DISPENSE position.

The flushing operation rinses the mixing chamber, static mixer, and dispensing nozzle. The flushing operation is required every day at closing or when the machine will not be in use for more than four hours.

Note: Flushing the dispensing system does not cause loss of cooling capacity.

Washing Parts

Parts such as the dispensing nozzle, static mixer and pick up tube assembly must be washed consistently every week to remove possible product build up. This will help to assure the correct mixing and dispensing of product especially when the product contains a pulp.

Removal of these parts does not require use of any tools. This is a simple hand operation and requires luke warm water and dishwashing detergent.

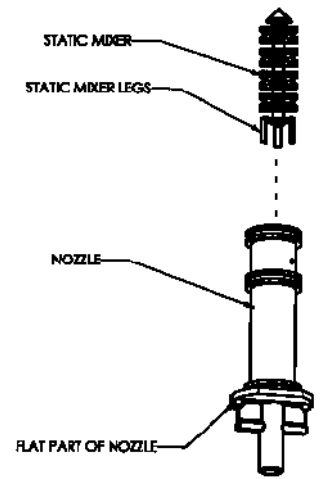
1. Flush dispensing system first.

Washing Parts (cont.)

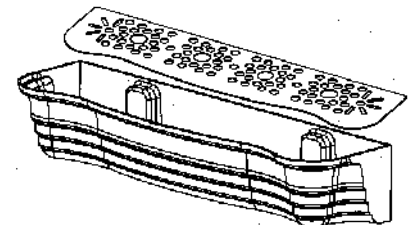
- Remove the dispensing nozzle from the machine by turning it 90° to the left or right side, pulling it down. If there is a problem pulling it down, turn the nozzle with quick short left to right and back motions pulling it down at the same time. Make sure that the nozzle is in the proper position. The flat part of the thin round plate should be between screw heads. Remove product pick up tubes from the product containers.

Note: Static mixer is inside the nozzle. If static mixer is lost, the product will not mix properly. (See Figure F.)

- Turn the dispensing nozzle upside down and remove static mixer. Repeat the same with all remaining nozzles.
- Wash the parts with water mixed with hand dishwashing detergent.
- Rinse all parts thoroughly, **put static mixers into nozzle leg first** and install them back in the machine by inserting into mixing chambers and locking in positions. Failing to lock in position may cause dispensing nozzle static mixer to be pushed rapidly out of the mixing chamber by the



(Figure F)



(Figure G)

locking with the 29 Psig (2 bar) water pressure and splash all surrounding with mixed product. Replace product pick up tubes.

Note: Wash on a regular basis the drip tray and the drip tray grill separately. (see figure G)

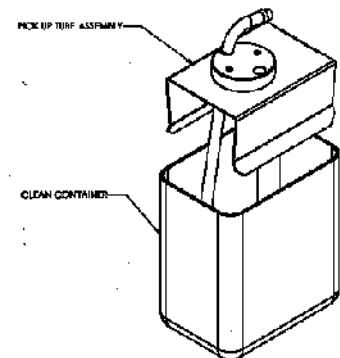
Sanitizing and Cleaning Dispensing System

Product Pumps System Cleaning

The product pumps system cleaning assures the performance of the pumping system and cleans the inside walls of tubing.

The product used is very thick (6+1 concentration or more) and will build up a layer of sucrose and pulp mixture on the inside walls of tubing. This build up narrows the inside diameter of the tubes and will restrict the product flow and will slowly offset the brix. Proper cleaning of the pump system will help prevent and correct this condition.

- Remove the product containers from the dispensing cabinet. Replace each container with any clean container (same capacity as product container) filled with warm water (40-45°C) and insert product pick up tubes



(Figure H)

into clean container. (see figure H)

2. Close the cabinet door and dispense the warm water the same way, as it would be a product. Dispensing should last for no longer than 90 seconds.
3. Repeat the above for all remaining dispensing stations.

Washing Parts

Proceed as described in "Wash Parts" without flushing.

Sanitizing

Prepare sanitizing solution per instruction on the package changing the strength of the solution to be equivalent to 6+1 e.g. If instruction calls to dilute contents of the sanitizer package in 4 liters of water use only 0.6 liters of the water for the solution. Fill the clean container that was used for tubing cleaning with the sanitizing solution.

1. Install container with sanitizer solution in the cabinet and connect pump tubing to product pick up tube assembly.
2. Close the cabinet door and depress dispensing switch corresponding with position of the container with sanitizing solution for 15 seconds.
3. Wait 3 minutes.
4. Lift the pick up tubes assembly to be above the sanitizing solution and depress the same dispensing switch for 2 seconds to avoid sanitizer spillage inside of the cabinet. Rinse the pick up tube assembly and connect it back to the pump tubing.
5. Replace the container containing the sanitizing solution with the product container.
6. Depress dispensing switch. Keep dispensing product until 200 ml is dispensed with correct brix.
7. Repeat steps 1 to 6 for all remaining stations.
8. Turn the flush switch to FLUSH and depress each dispensing switch for 4 seconds.

Note: Do not skip any sanitizing procedure step.

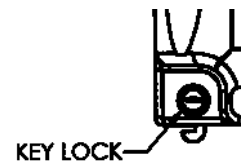
Flushing

Proceed as described in Flushing the Dispensing System. Flushing time is only 4 seconds.

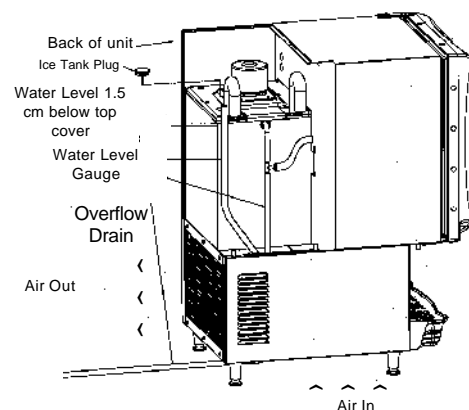
Preventing Unauthorized Dispensing During "Off Hours"

After system flushing, do not turn the flush switch to the DISPENSE position. Lock the door and remove the key from the lock. This will allow dispensing cold water only. (See figure I)

Note: Turn the flush switch to DISPENSE when resuming operation the next day.



(Figure I)



(Figure J)

MAINTENANCE

Daily:

System Flushing (See pages 7-8)

Weekly:

System flushing and washing (See pages 8-9)

MAINTENANCE (cont.)

Biweekly:

Sanitizing (See page 8-9). Ice bank water level check up. (See figure J)

Note: Make sure that water level in the drain tube is even with tank overflow outlet.

Monthly:

1. Check the condenser for dust build up. If necessary clean the condenser with a bristle brush.
2. After sanitizing, remove dispensing base assembly and wipe off the interior of the cabinet with a cloth dampened in sanitizer.
3. Check the platform of the dispensing base assembly and clean it using sanitizer solution. Replace dispensing base assembly.
4. Clean cabinet cooling system drain with a small bottle brush and sanitizer solution.
5. Check water level to ensure it is maintained at a proper fill level (See page 4). Filling the ice bank with water.

Every half of the year:

1. Replace all pump tubing. If pumps are losing their capacity and adjusting pump speed does not correct the problem, replace tubing on a more frequent basis.
2. Remove cabinet cooling system and wash it. Remove cooling fan prior to washing. If necessary separate the cooling coil from the plastic shroud and wash them separately. Rinse thoroughly both parts. Wipe off plastic shroud with dry cloth. Replace the cooling system.

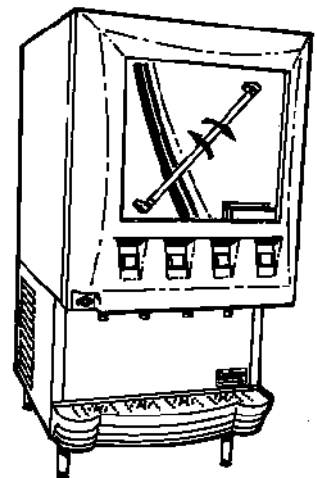
Every two years:

Inspect pump housings and pump rollers. Clean inside pump housings.

Merchandiser Bulb Replacement

WARNING: *Disconnect machine from branch electrical supply before changing the light bulb.*

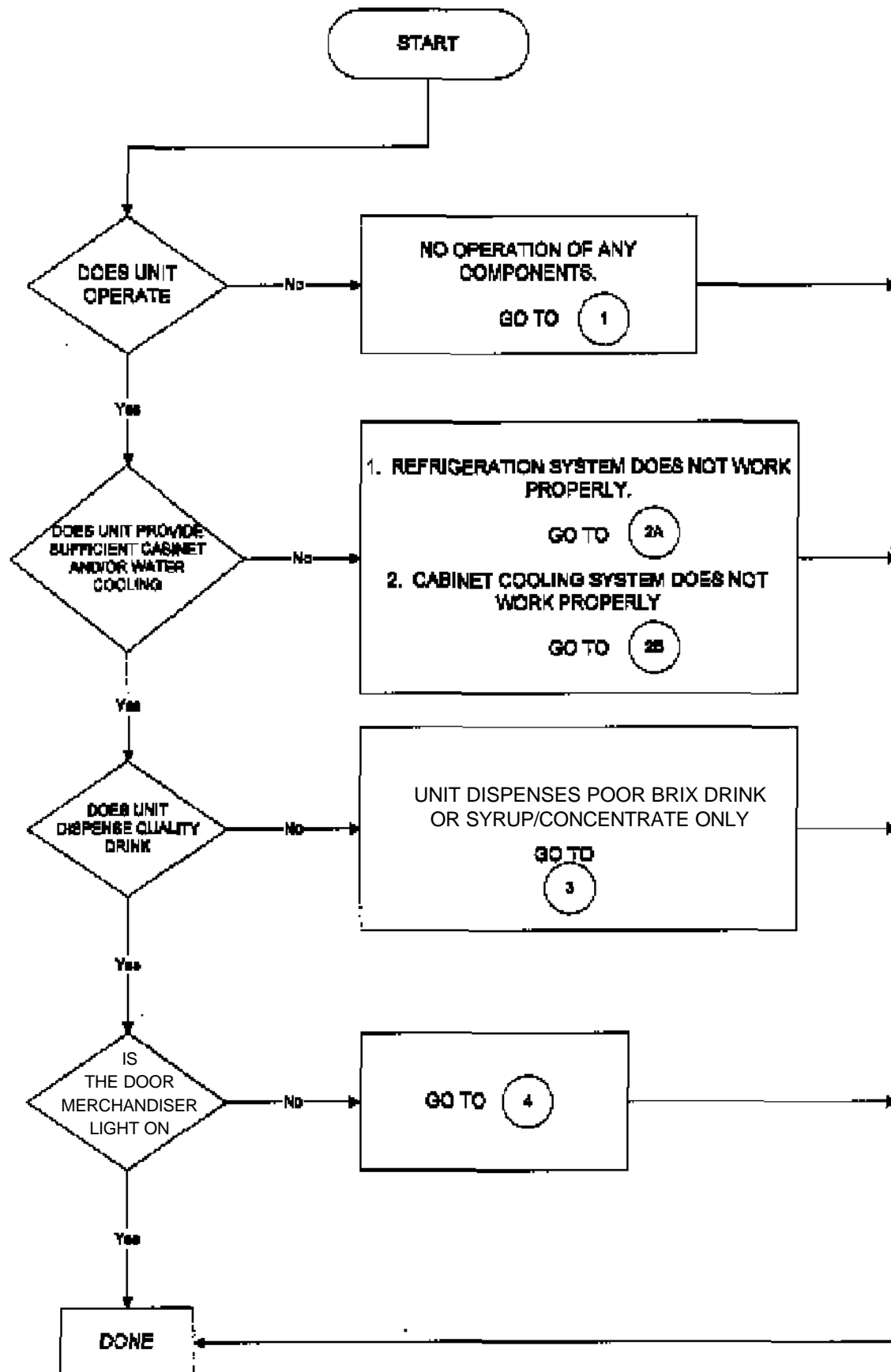
1. Remove merchandiser graphic by pushing its edge towards the center of the merchandiser causing it to bow.
2. Repeat the same with clear plastic graphic reinforcement.
3. Remove the old light bulb by gently turning the lightbulb 1/4 turn to the left and pulling the bulb from the socket. (See figure K)
4. Install the new bulb by lining up the pins on either end of the bulb parallel with the socket opening.
5. Gently insert both ends of the bulb into the socket and turn the bulb 1/4 turn to the right until the bulb locks into place.
6. Replace the merchandiser photo and cover.



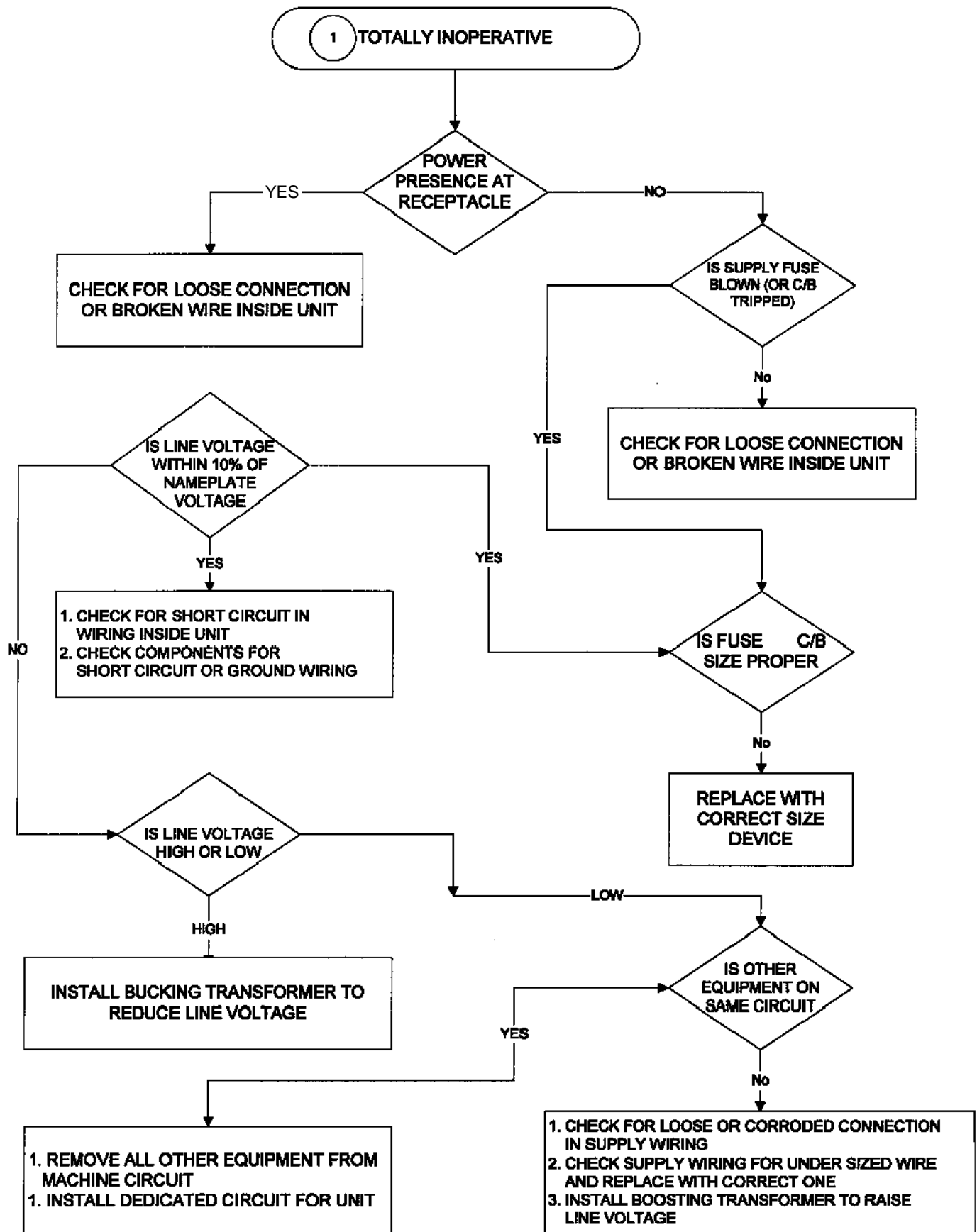
(Figure K)

TROUBLESHOOTING

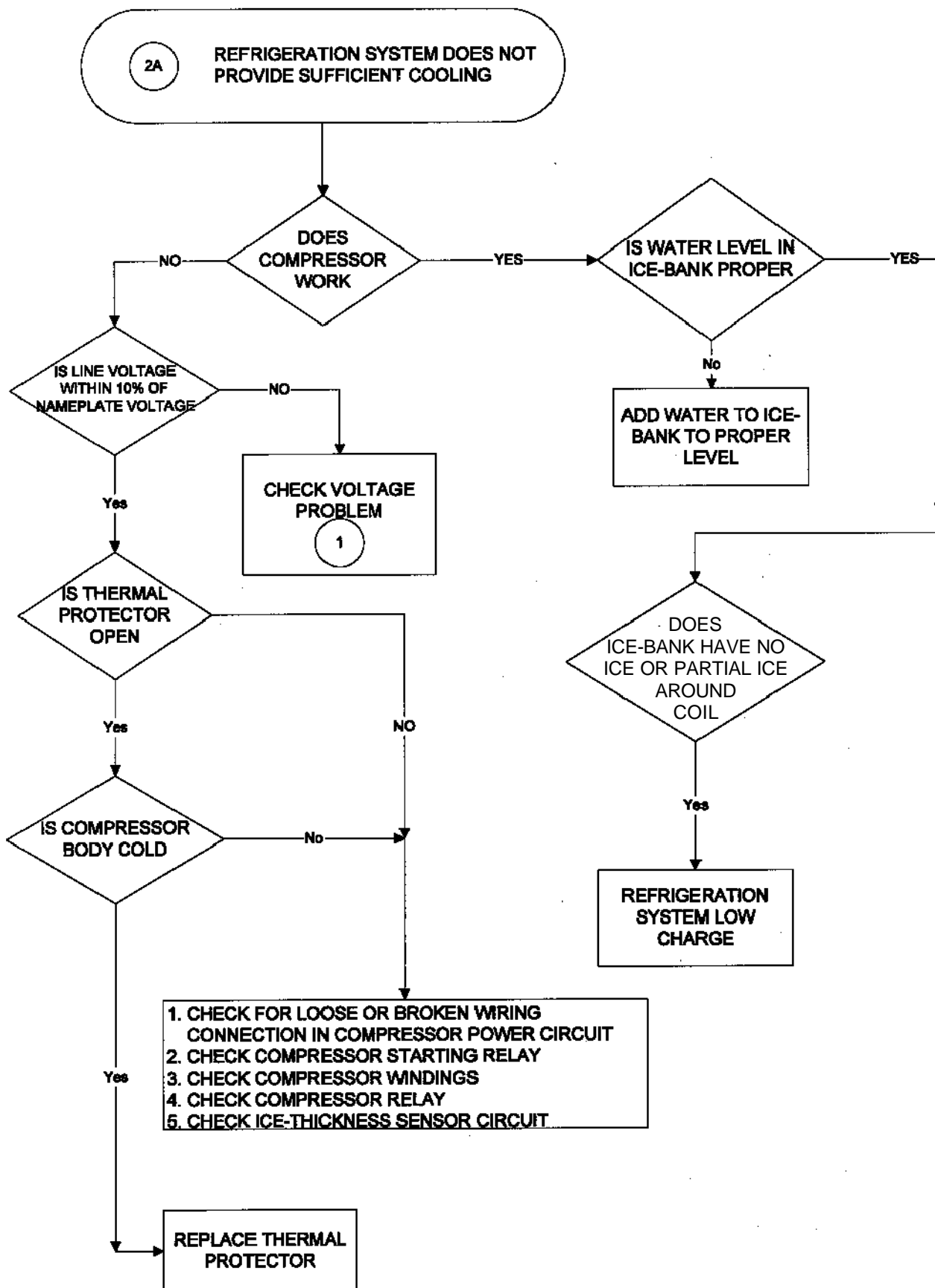
WARNING: Only a qualified service technician should perform Electrical and mechanical adjustments of repairs. Always disconnect power before attempting any maintenance procedures.



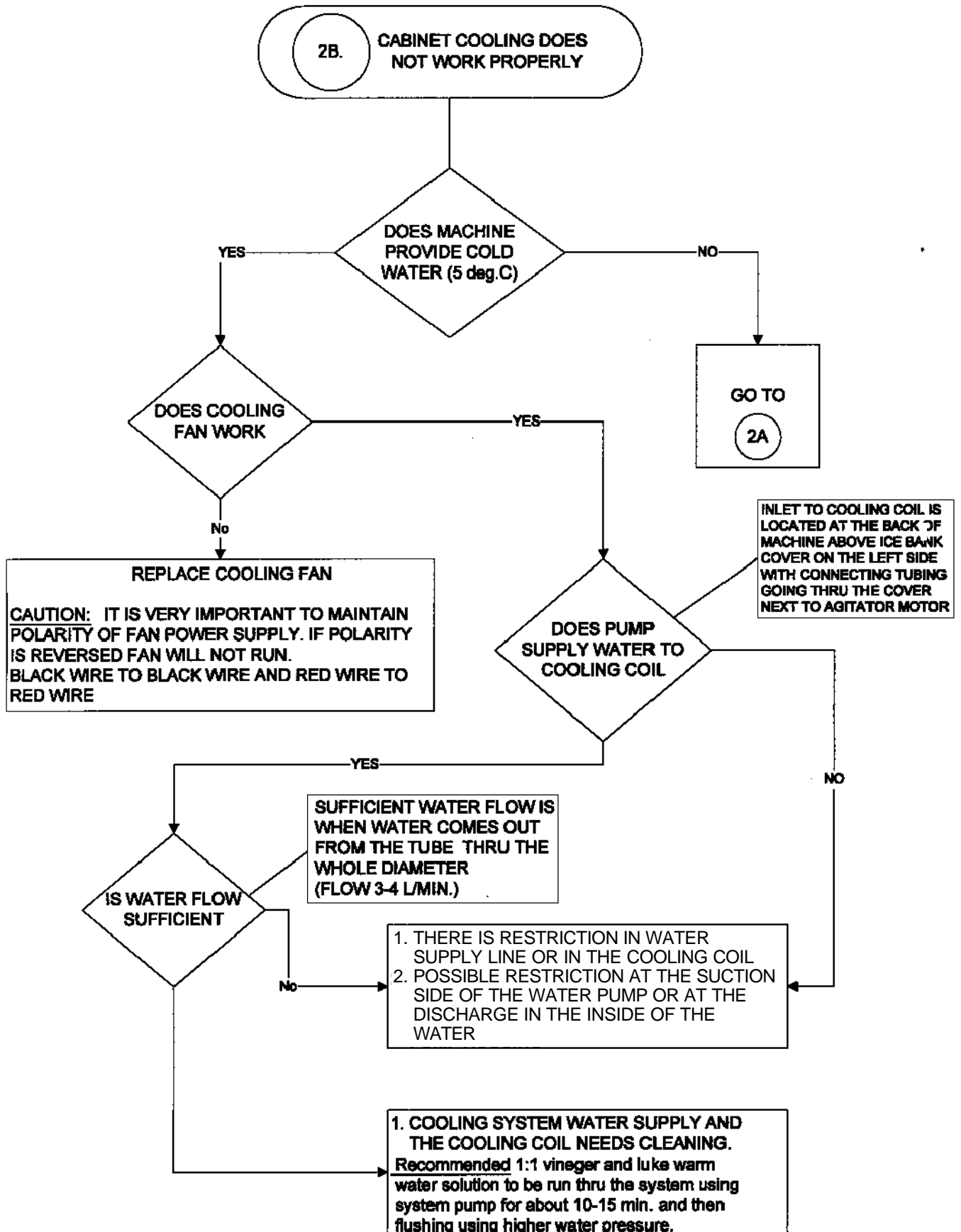
TROUBLESHOOTING (con't.)



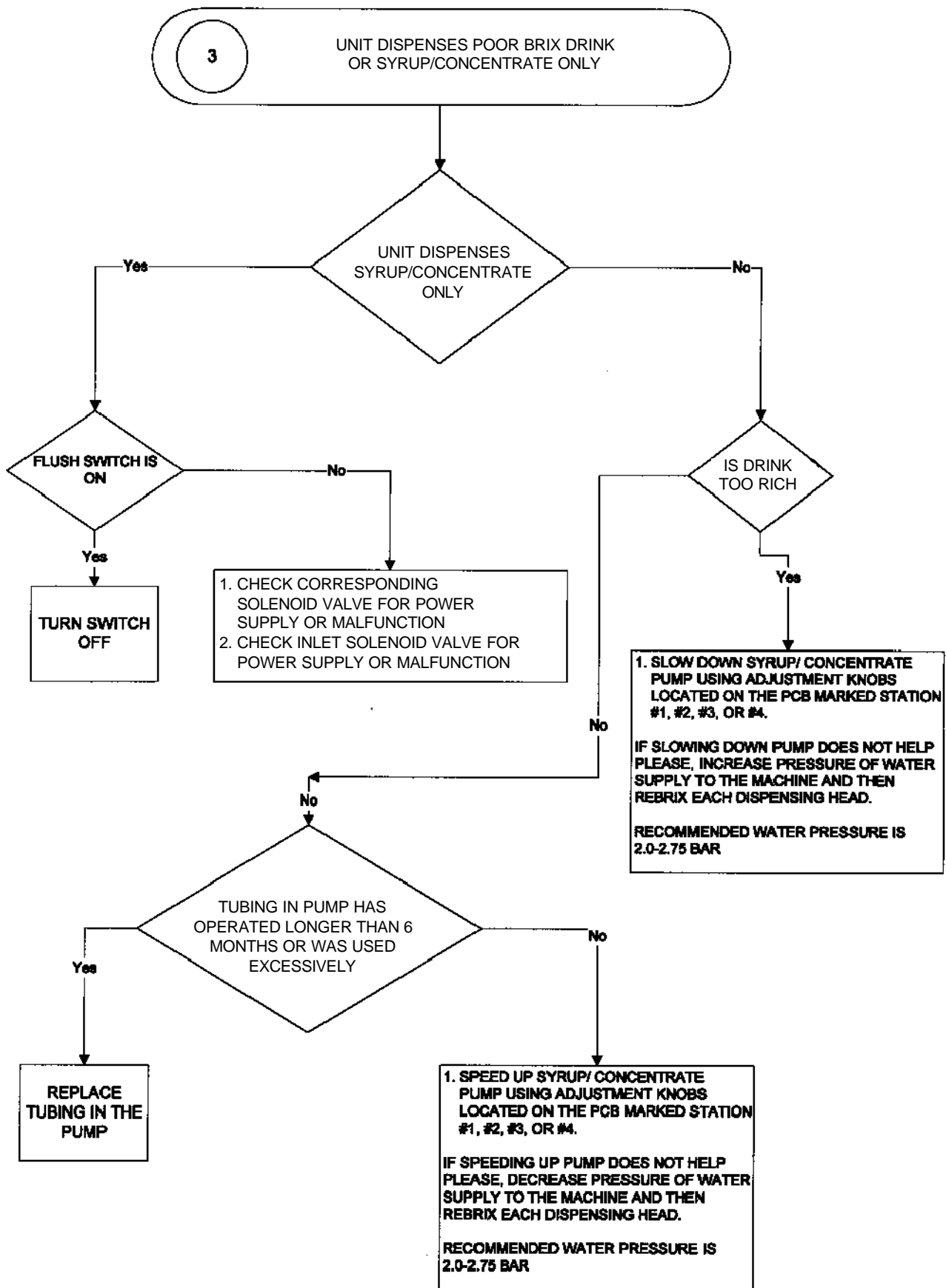
TROUBLESHOOTING (con't.)



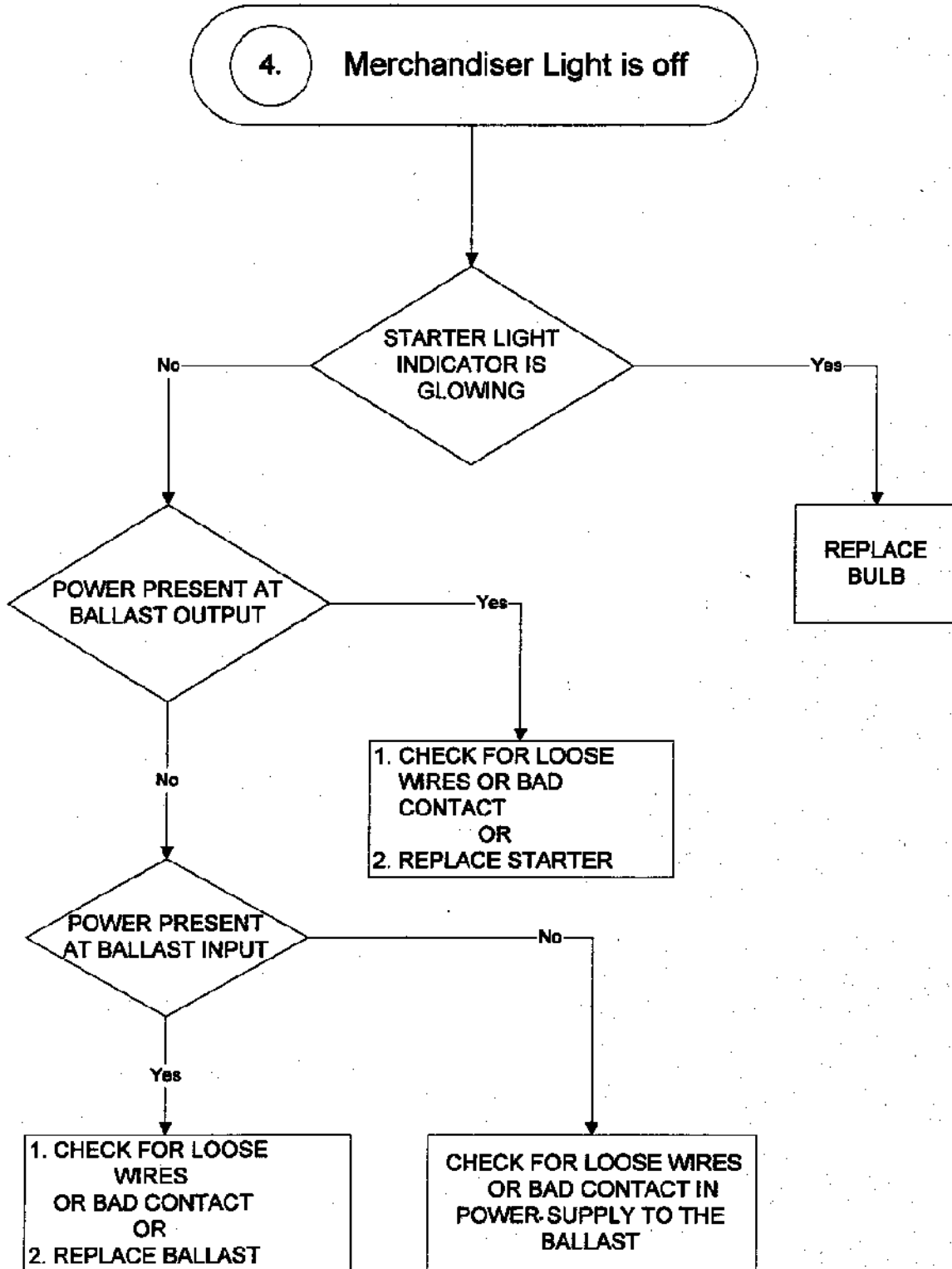
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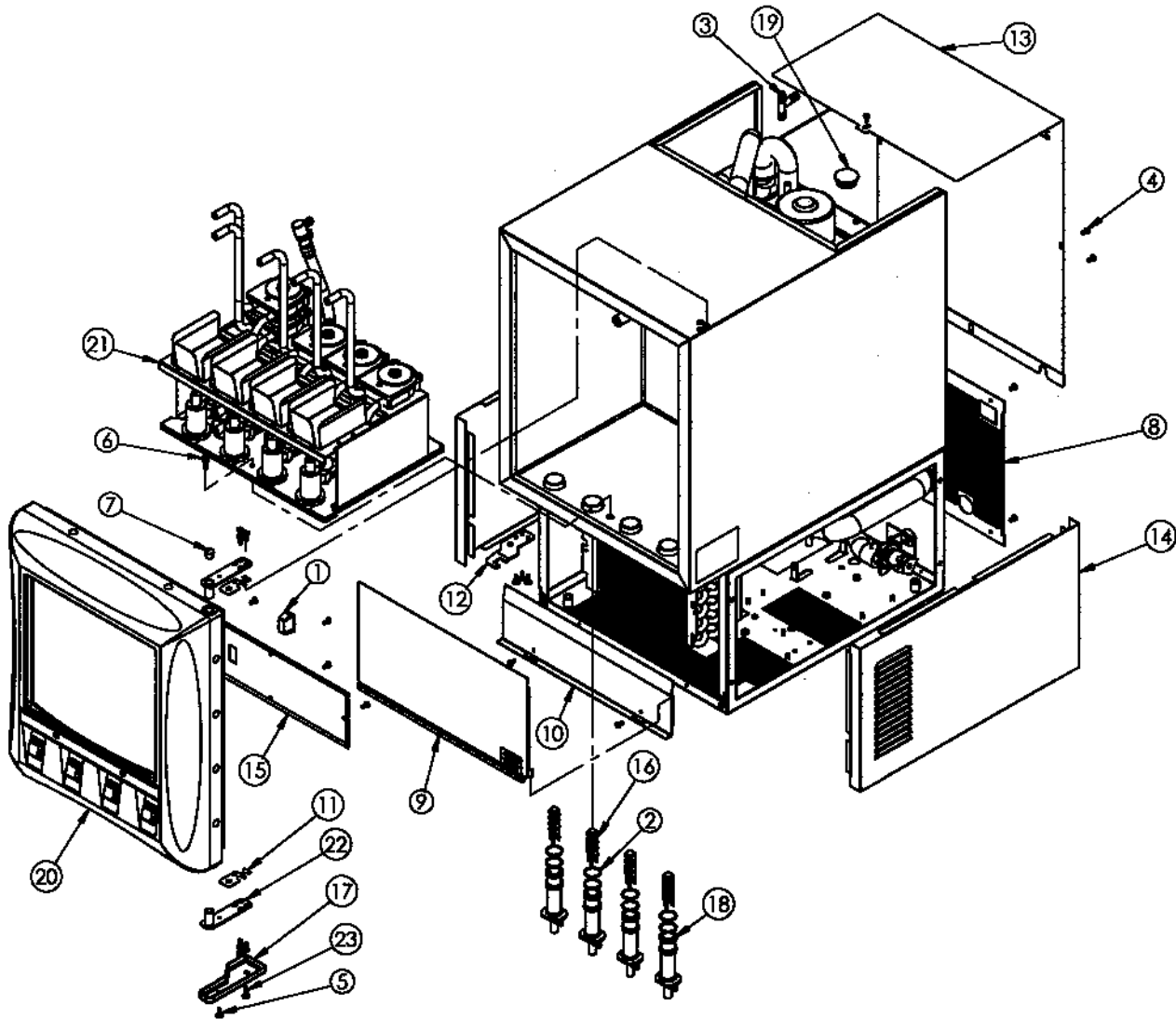
TROUBLESHOOTING (con't.)



TROUBLESHOOTING (con't.)



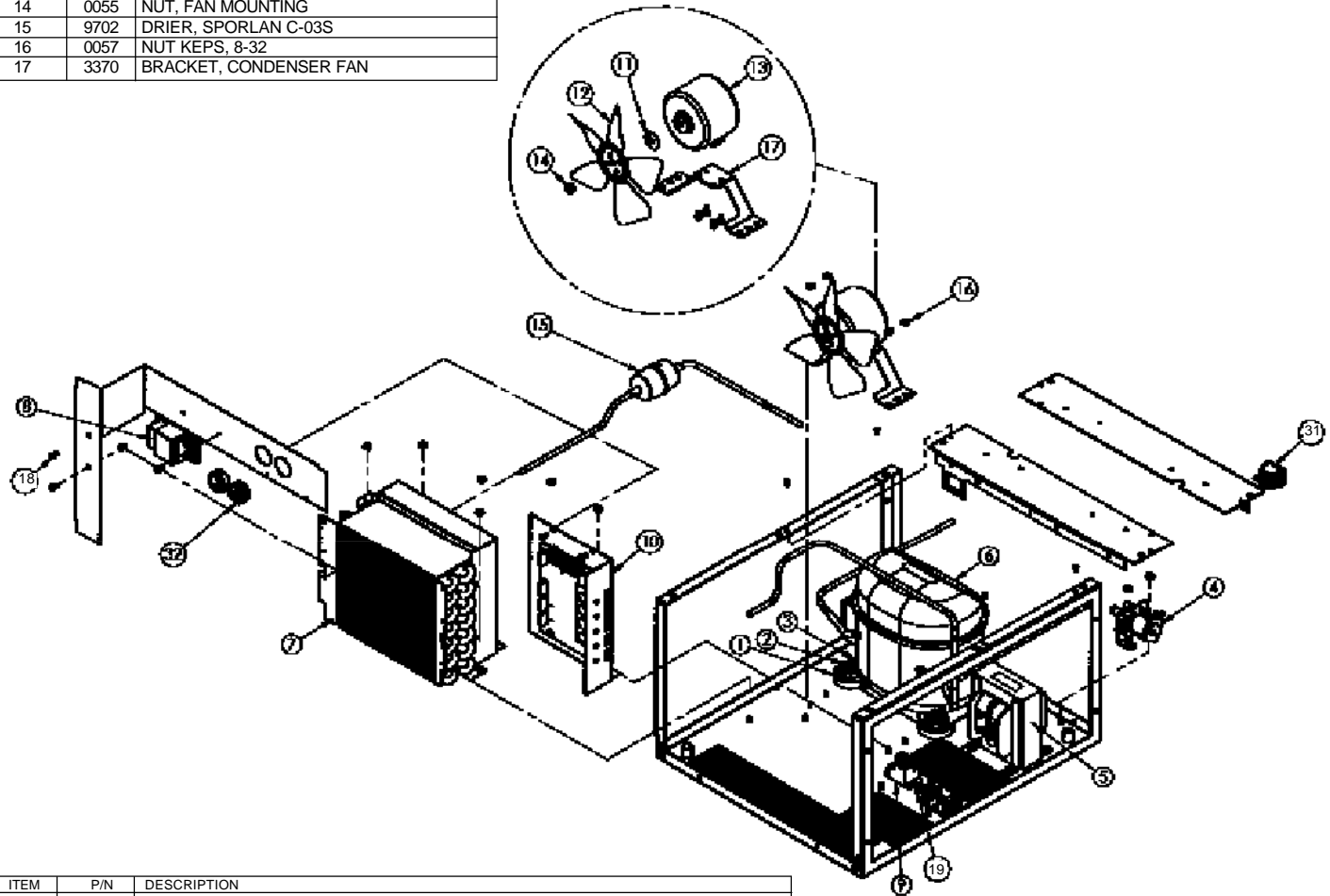
FINAL ASSEMBLY EXPLODED



ITEM	P/N	DESCRIPTION
1	3373	SWITCH, ROCKER
2	9105	O-RING, .864 ID X .070 W
3	9108	FITTING, 3/8 X 3/8 X 3/8 BARB PLASTIC TEE
4	9137	SCREW, 8-32 X 3/8 TAPTITE II SS BLACK
5	0069	SCREW, 8-32 X 1/2 PH TR HD TYPE F 410 SS
6	9110	SCREW, 8-32 X 5/8 PLAIN THUMB SS
7	9126	PLUG, HEYCO 2633
8	9304	PANEL, BACK LOWER
9	9307	PANEL, UPPER SPLASH
10	9308	PANEL, LOWER SPLASH
11	9311	SPACER, HINGE
12	9315	PLATE, DOOR GUIDE
13	9316	PANEL, BACK UPPER
14	9319	PANEL, SIDE
15	9322	PANEL, ACCESS
16	9803	MIXER, STATIC
17	9811	COVER, HINGE
18	9814	NOZZLE
19	9193	PLUG, ICEBANK LID
20	9213	MERCHANDISER DOOR ASSEMBLY, STD
	9233	MERCHANDISER ASSEMBLY
21	9214	DISPENSING PLATFORM ASSEMBLY
22	9204	HINGE ASSEMBLY, DOOR
23	0073	SCREW, #10 PN HD PH ZINC

CONDENSING UNIT EXPLODED VIEW

ITEM	P/N	DESCRIPTION
1	1828	GROMMET, COMPRESSOR 3250
2	1830	WASHER, COMPRESSOR
3	1831	CLIP, COMPRESSOR
4	9506	VALVE, INLET 2.2 GPM 24VDC
5	9517	TRANSFORMER 220VAC TO 28VAC, 150VA
	9532	TRANSFORMER 115VAC TO 28VAC
6	3250	COMPRESSOR 240/220V 50 Hz
	3247	COMPRESSOR 115V/60Hz
7	3371	CONDENSER
8	9521	BALLAST, LAMP F8T5 P/N 61118
	8218	BALLAST, 120V
9	9522	RELAY, 12VDC COIL
10	9205	CONTROLLER ASSEMBLY
11	1000	SILENCER, FAN BLADE
12	1459	CONDENSER FAN BLADE
13	1584	FAN MOTOR 220V
	1336	FAN MOTOR 115V
14	0055	NUT, FAN MOUNTING
15	9702	DRIER, SPORLAN C-03S
16	0057	NUT KEPS, 8-32
17	3370	BRACKET, CONDENSER FAN



ITEM	P/N	DESCRIPTION
18	9411	SCREW, #8 X 1/2 HEX HD SELF DRILL ZINC
19	9137	SCREW, 8-32 X 3/8 TAPTITE II SS BLACK
20	1783	POWER CORD, 1.5 M (NOT SHOWN) 220V
	1072	POWER CORD 18-3 115V
21	9503	HARNESS, TRANSFORMER TO CONTROLLER 28 VAC (NOT SHOWN; SEE NOTE 1)
22	9507	HARNESS, COMPRESSOR RELAY COIL (NOT SHOWN; SEE NOTE 1)
23	9508	HARNESS, COOLING FAN (NOT SHOWN; SEE NOTE 1)
24	9509	HARNESS, FILL VALVE (NOT SHOWN; SEE NOTE 1)
25	9510	HARNESS, DISPENSE SWITCH (NOT SHOWN; SEE NOTE 1)
26	9512	HARNESS, DISPENSING CABINET (NOT SHOWN; SEE NOTE 1)
27	9514	HARNESS, TRANSFORMER TO TERMINAL BLOCK (NOT SHOWN; SEE NOTE 1)
28	9504	HARNESS, FLUSH SWITCH (NOT SHOWN; SEE NOTE 1)
29	9516	LEADS, LIGHT ASSEMBLY (NOT SHOWN; SEE NOTE 1)
30	9515	HARNESS, TERM BLOCK TO COMP. AND RELAY (NOT SHOWN; SEE NOTE 1)
31	8213	SWITCH, DOUBLE POLE ON/OFF
32	9166	GROMMET, SNAP IN HEYCO
33	9530	HARNESS, PWR SWITCH TO PWR CORD(NOT SHOWN; SEE NOTE1)

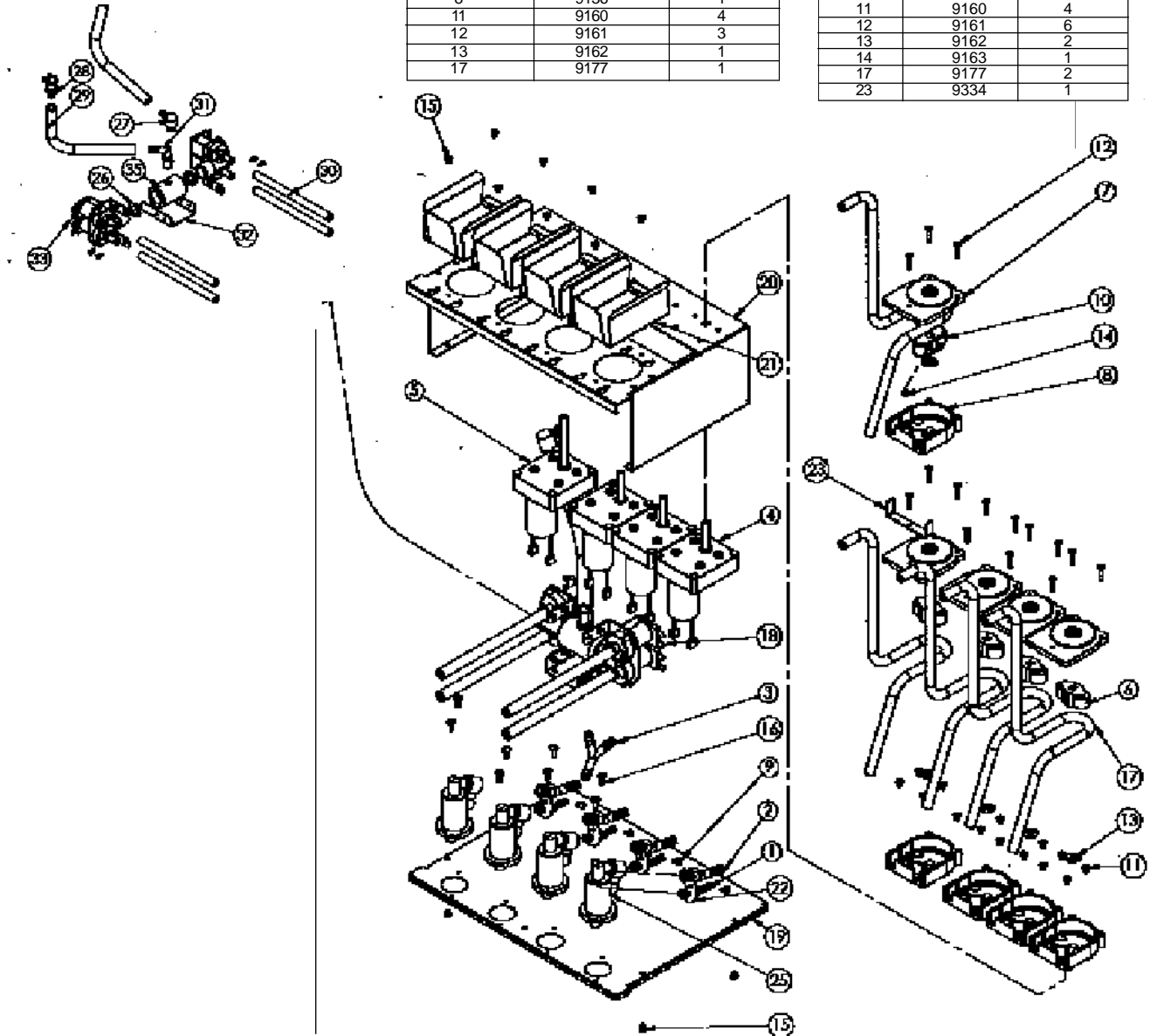
NOTES:
1) ALL HARNESS HOOK UP LOCATIONS
ARE DETAILED IN WIRING DIAGRAM P/N 9165

DISPENSING BASE EXPLODED VIEW

REPLACEMENT PUMP KITS MAY BE ORDERED AS FOLLOWS:

P/N 9400	KIT PERISTALTIC PUMP SINGLE	
ITEM	P/N	QTY
6	9134	1
7	9135	1
8	9136	1
11	9160	4
12	9161	3
13	9162	1
17	9177	1

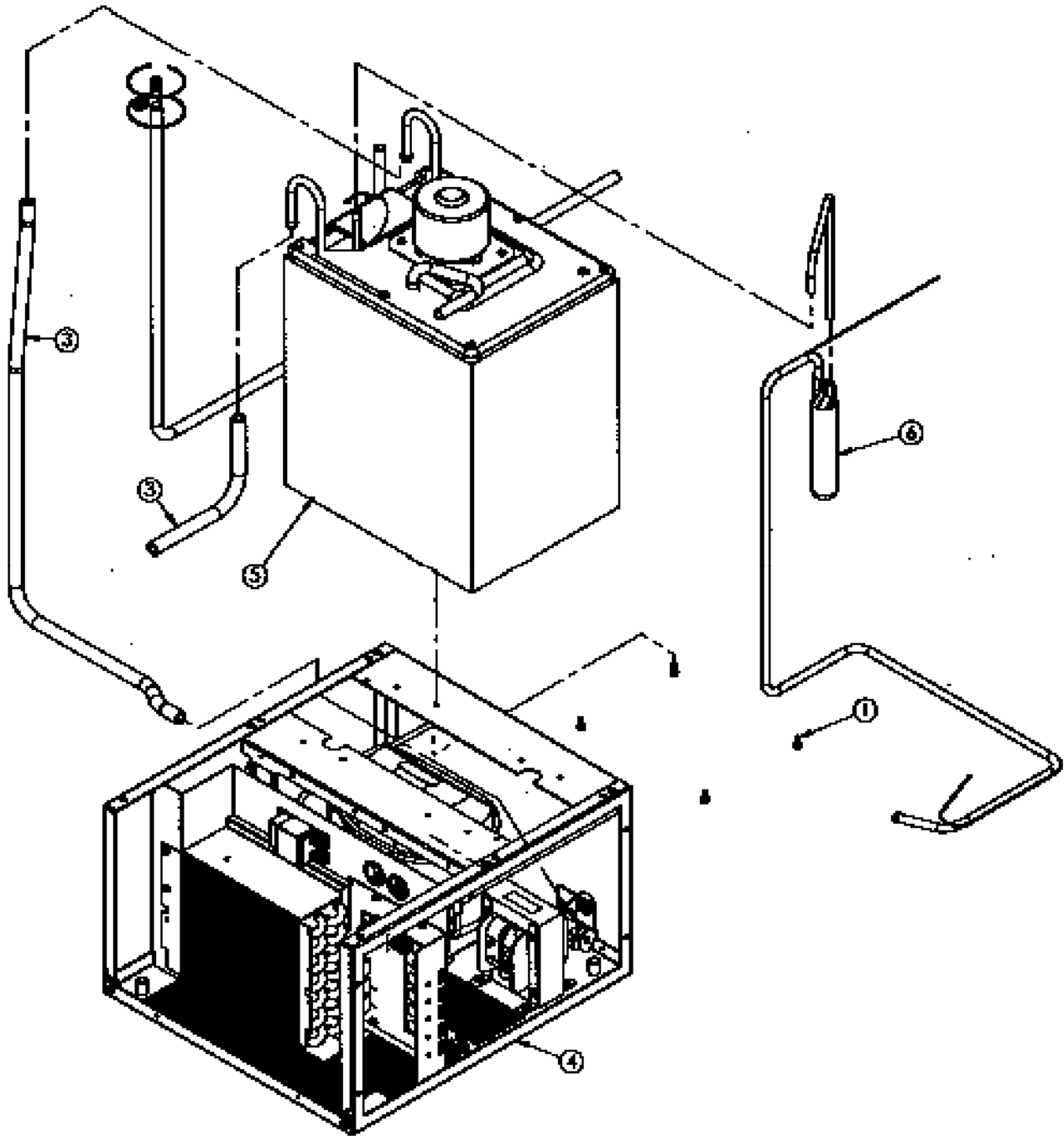
P/N 9401	KIT PERISTALTIC PUMP DUAL	
ITEM	P/N	QTY
6	9134	1
7	9135	2
8	9136	2
10	9141	1
11	9160	4
12	9161	6
13	9162	2
14	9163	1
17	9177	2
23	9334	1



ITEM	P/N	DESCRIPTION
1	9103	FITTING, ELBOW 45 1/4 X BARB
2	9123	FITTING, ELBOW 45 3/8 X BARB DOUBLE O' RING
3	9124	FITTING, Y BARB X 1/4 ID
4	9132	GEAR MOTOR, SHORT SHAFT 24V DC NOM
5	9133	GEAR MOTOR, LONG SHAFT 24V DC NOM
6	9134	ROLLER ASSY, SYRUP, PERISTALTIC PUMP
7	9135	COVER, ANKO PERIST, PUMP 810
8	9136	HOUSING, ANKO PERIST, PUMP 810 REAR
9	9137	SCREW, 8-32 X 3/8 TAPTITE II SS BLACK
10	9141	ROLLER ASSY, JUICE TOP PUMP, PERISTALTIC
11	9160	SCREW, 8-32 X 5/16 PH PN HD SS
12	9161	SCREW, 6-32 X 3/4 SS PH PH
13	9162	WASHER, SPACER, PUMP HOUSING
14	9163	SET SCREW, ANKO PUM PROLLER
15	9164	SCREW, 8-32 X 1/4 PH PN HD 18-8 SS
16	0069	SCREW, 8-32 X 1/2 PH TR HD TY PE F 410 SS
17	9177	TUBING NORPRENE, 810 ANKO PERISTALTIC PUMPS
18	9212	DUAL VALVE ASSEMBLY

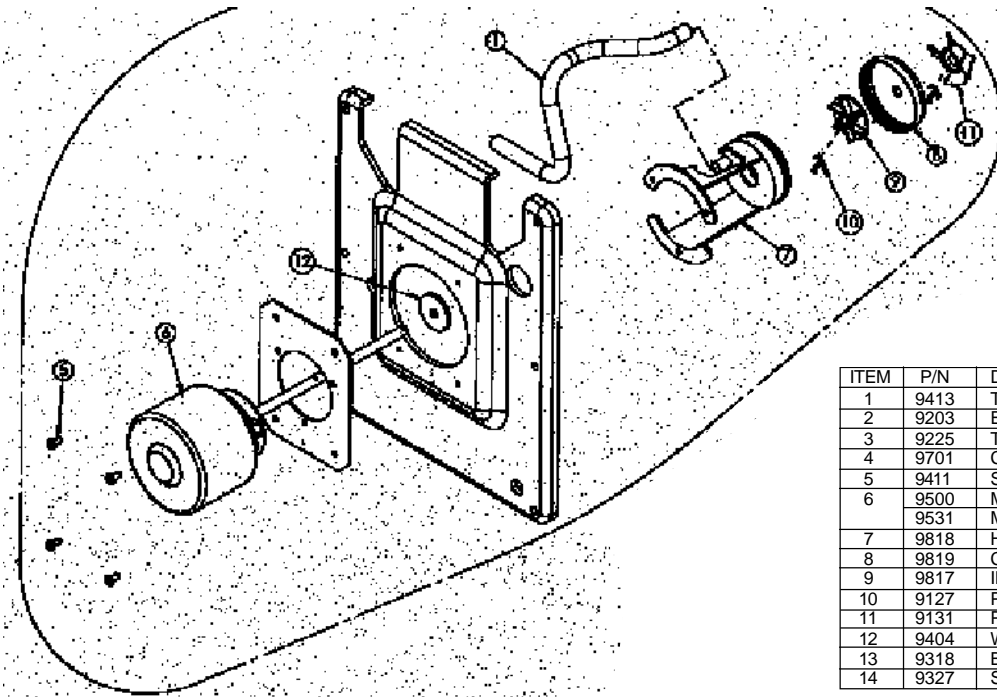
ITEM	P/N	DESCRIPTION
19	9312	BASE, DISPENSING
20	9314	SHELF, DISPENSING
21	9324	BRACKET, TETRA PACK HOLDER
22	9330	BRACKET, FITTINGS HOLDER
23	9334	BRACKET, PERIST PUMP RETAINER
24	9513	HARNES, DISPENSING PLATFORM (NOT SHOWN)
25	9816	CHAMBER, MIXING
26	9104	GASKET, MANIFOLD
27	9118	FITTING, 3/8" ID CPC ELBOW W/SHUTOFF
28	9119	FITTING, 3/8" ID CPC STRAIGHT
29	9153	TUBING, 3/8" ID INNERBRAIDED PV C
30	9143	TUBE, 1/4 X 1/8 WALL TY GON (B-44-4X)
31	9190	FITTING, 1/4 NPT X 3/8 BARB ELBOW
32	9328	BRACKET, DUAL WATER VALVE
33	9502	VALVE DUAL OUTLET, 1.0 GPM 24V DC COIL
34	9511	HARNES, DAISY JUMPER (NOT SHOWN)
35	9806	MANIFOLD, DUAL VALVE

REFRIGERATION SYSTEM EXPLODED VIEW

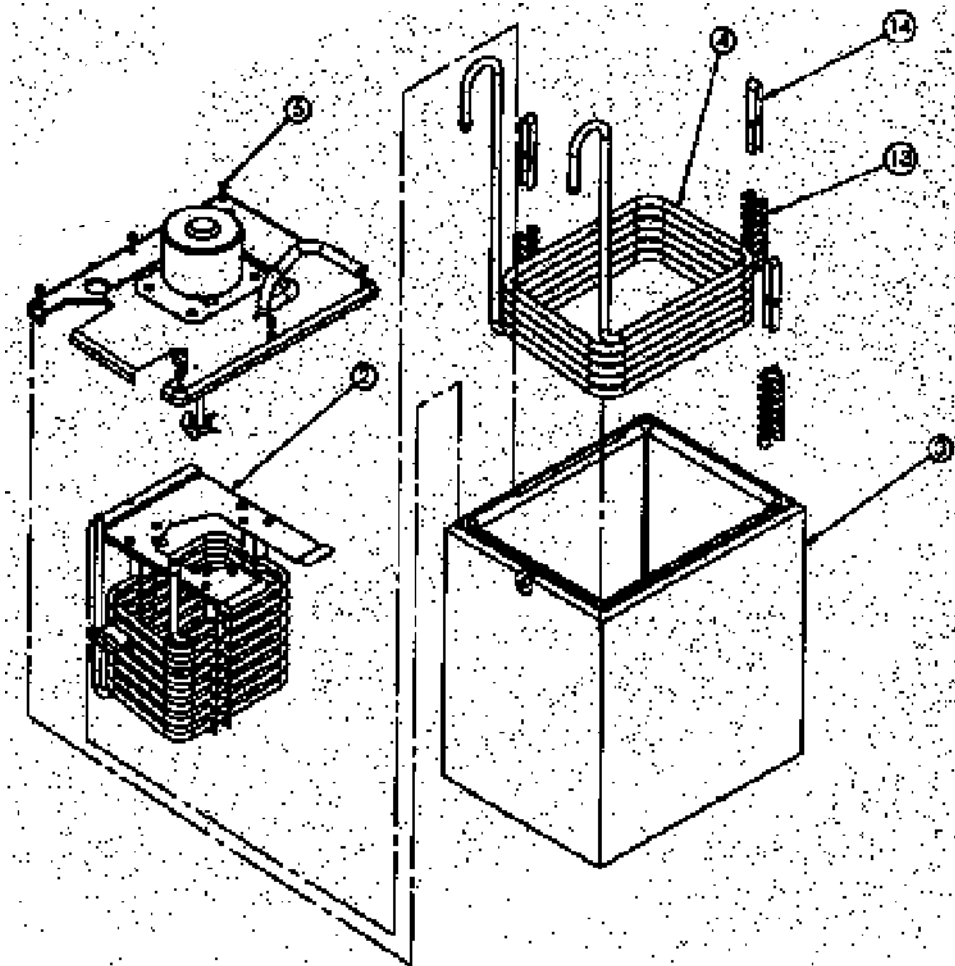


ITEM	P/N	DESCRIPTION
1	9137	SCREW, 8-32 X 3/8 TAPTITE II SS BLACK
2	9109	TUBING, 3/8 D X 1/16 WALL TY GON B-44-4X
3	9153	TUBING, 3/8 D INNERBRAIDED PVC
4	9201	CONDENSING UNIT ASSEMBLY 220V
	9227	CONDENSING UNIT ASSEMBLY 115V
5	9202	ICE-BANK ASSEMBLY 220V
	9228	ICE-BANK ASSEMBLY 115V
6	9703	ACCUMULATOR, 1 3/16 OD X 8"

EVAPORATOR ASSEMBLY/CABINET COOLING PUMP EXPLODED VIEW

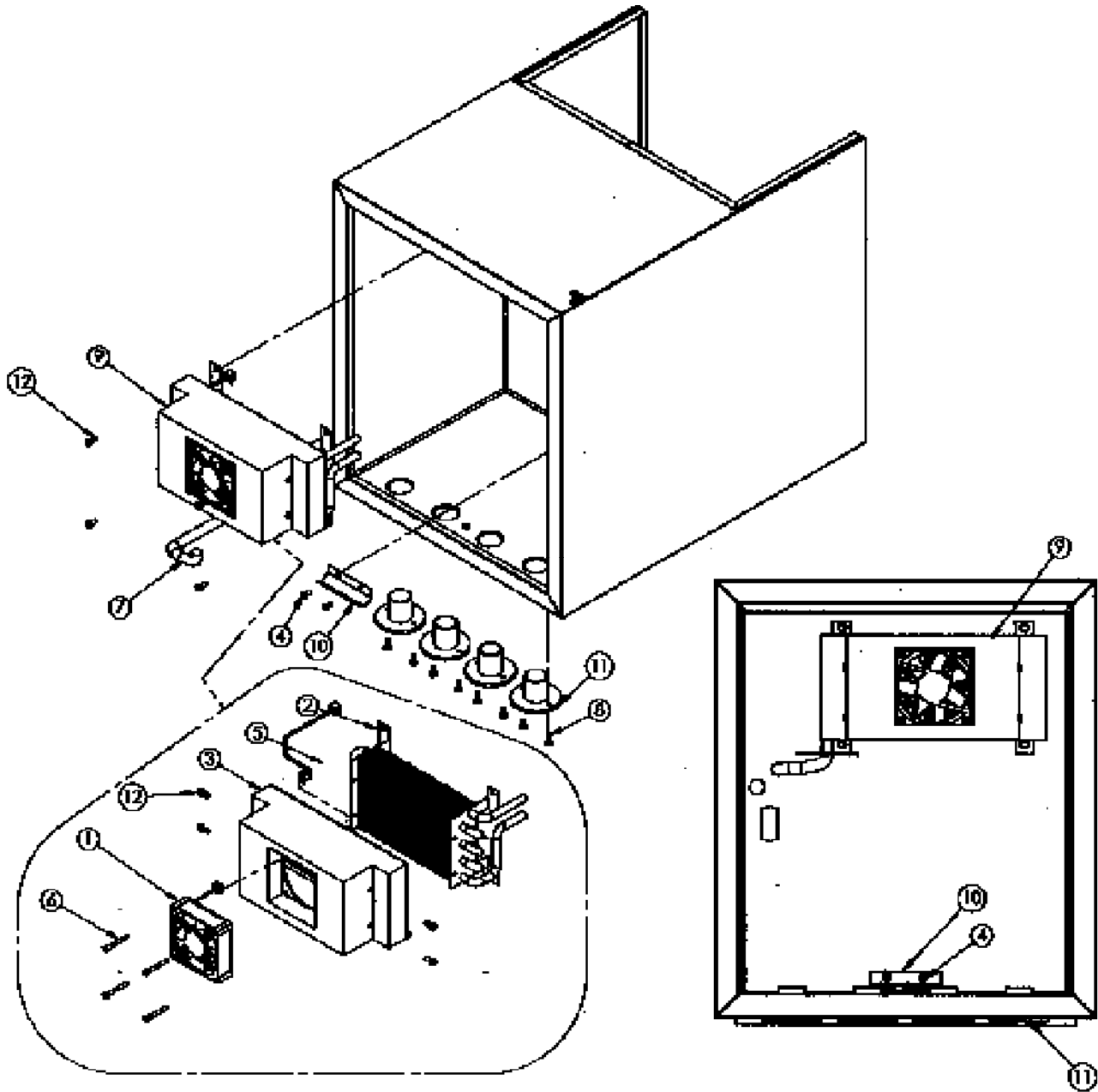


ITEM	P/N	DESCRIPTION
1	9413	TUBING, 3/8 D X 1/16 WALL TYGON
2	9203	EVAPORATOR ASSEMBLY, ICE-BANK
3	9225	TANK FOAMED, ICE-BANK
4	9701	COIL, WATER COOLING HEAT EXCHANGER
5	9411	SCREW, 8-32 X 3/8 TAPTITE II SS BLACK
6	9500	MOTOR AGITATOR 220V 50Hz
	9531	MOTOR AGITATOR 115V/60Hz
7	9818	HOUSING, WATER PUMP
8	9819	CLOSURE, WATER PUMP
9	9817	IMPELLER
10	9127	P/N COTTER, .062 DA X 1"
11	9131	PROPELLOR
12	9404	WASHER, 1.25 OD X .310 ID X .120 THK NYLON
13	9318	BRKT, SPACER WATER LINE
14	9327	STRIP, COIL RETAINING



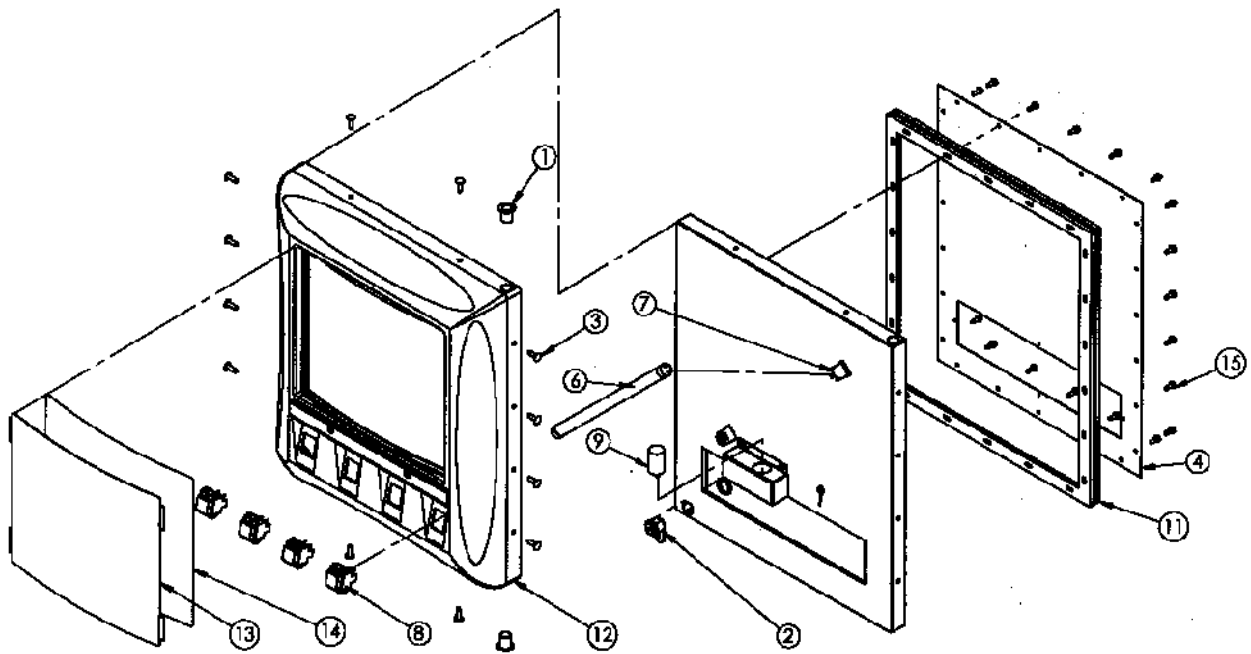
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UPPER CABINET EXPLODED VIEW



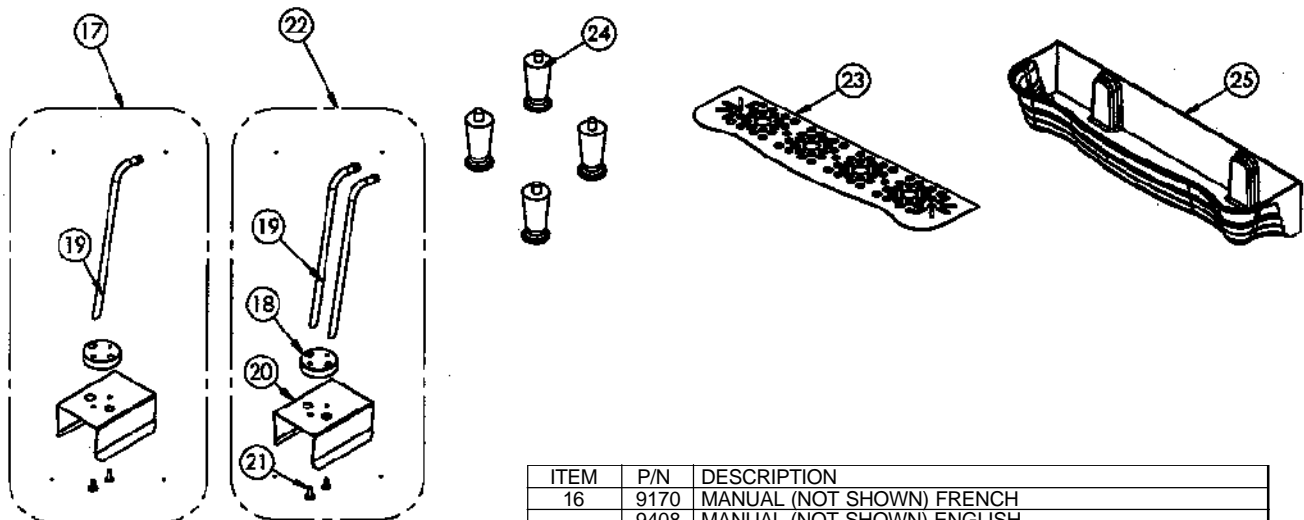
ITEM	P/N	DESCRIPTION
1	9505	FAN, COOLING 20-27 VDC
2	9718	COIL, CABINET COOLING
3	9813	SHROUD, CABINET COOLING
4	9137	SCREW, 8-32 X 3/8 TAPTITE II SS BLACK
5	9519	HARNESS, COOLING FAN EXTENSION
6	9138	SCREW, #8 X 1 1/2 PH PN HD ZINC PL
7	9109	TUBING, 3/8 ID X 1/16 WALL TYGON
8	9140	SCREW, 8-32 X 1/2 PH TR HD TY PE F 410 SS
9	9217	CABINET COOLING SYSTEM
10	9313	BRACKET, RETAINER
11	9815	BUSHING
12	9411	SCREW, #8 X 1/2 HEX HD SELF DRILL

MERCHANDISER EXPLODED VIEW

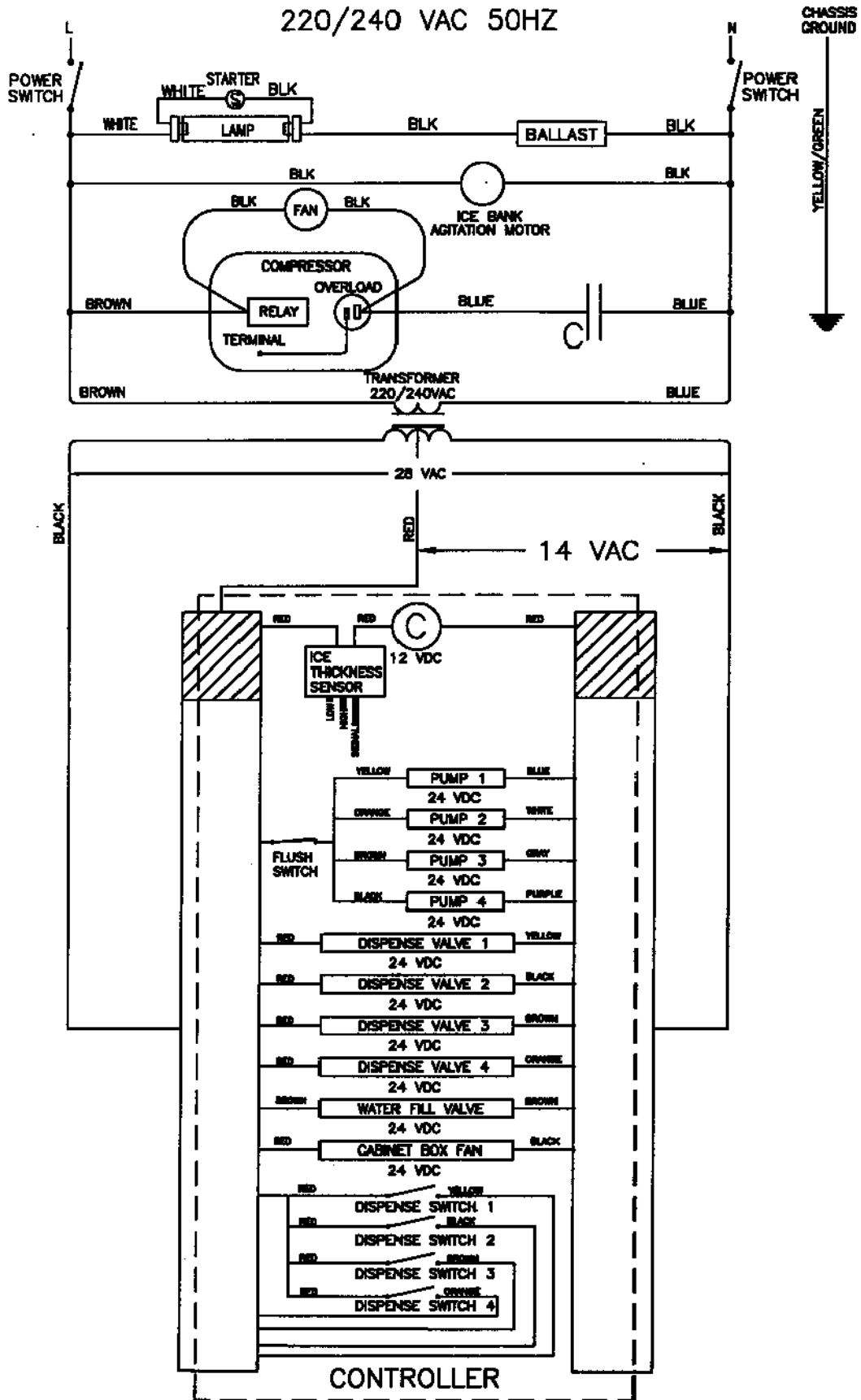


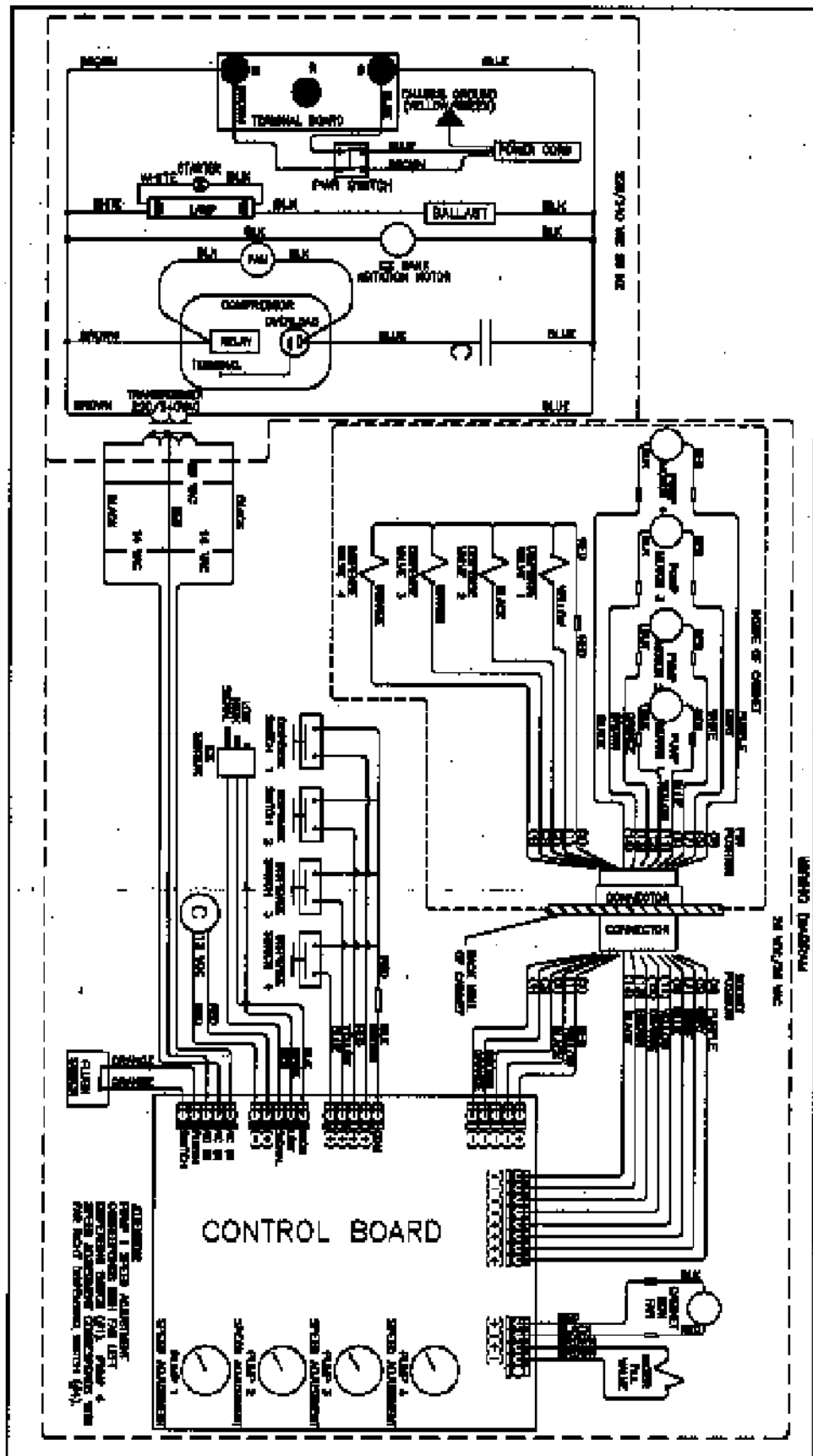
ITEM	P/N	DESCRIPTION	ITEM	P/N	DESCRIPTION
1	9128	BEARING, HINGE	9	9528	STARTER
2	9167	KEYED DOOR LOCK	10	9529	HARNES, LIGHT KIT (NOT SHOWN)
3	9173	FEATHER FASTNER-FASTEX, TRUSSHEAD	11	9800	GASKET DOOR, PVC
4	9323	PANEL, GASKET RETAINING	12	9807	MERCHANDISER, DOOR
5	9511	HARNES, DAISY JUMPER (NOT SHOWN)	13	9809	COVER PLEXI, GRAPHIC
6	9524	LAMP, F8T5 FLUORESCENT	14	9821	GRAPHIC
7	9525	HOLDER, MINI-BI PIN	15	9411	SCREW, #8 X 1/2 HEX HD SELF DRILL ZINC
8	9527	SWITCH, DISPENSING			

ACCESSORY KIT EXPLODED VIEW

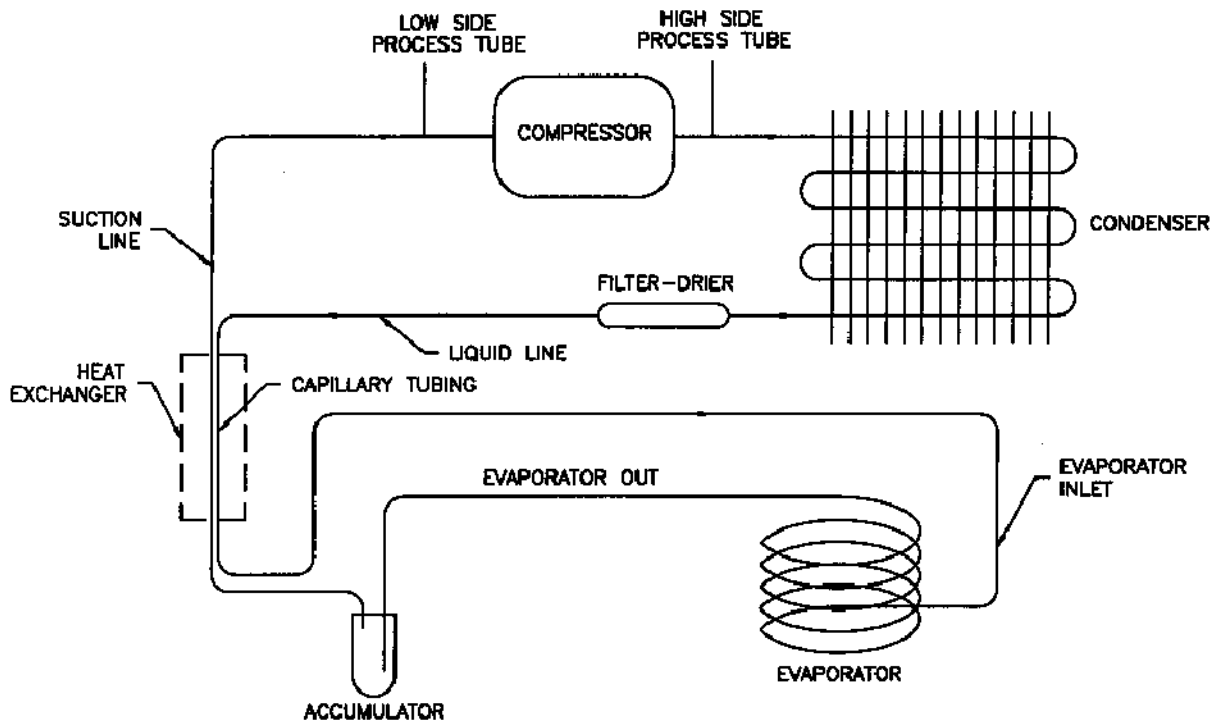


ITEM	P/N	DESCRIPTION
16	9170	MANUAL (NOT SHOWN) FRENCH
	9408	MANUAL (NOT SHOWN) ENGLISH
17	9211	PICK UP TUBE ASSEMBLY, SYRUP
18	9812	HOLDER, DUAL PICK UP TUBE
19	9106	PICK UP TUBE CONCENTRATE
20	9326	BRACKET, PICK-UP TUBE
21	0069	SCREW, 8-32 X 1/2 PH TR HD TYPE F 410 SS
22	9216	PICK UP TUBE ASSEMBLY, JUICE
23	9325	GRILL, DRIP PAN
24	9192	LEG, 2 1/2" CHROME
25	9808	DRIP TRAY

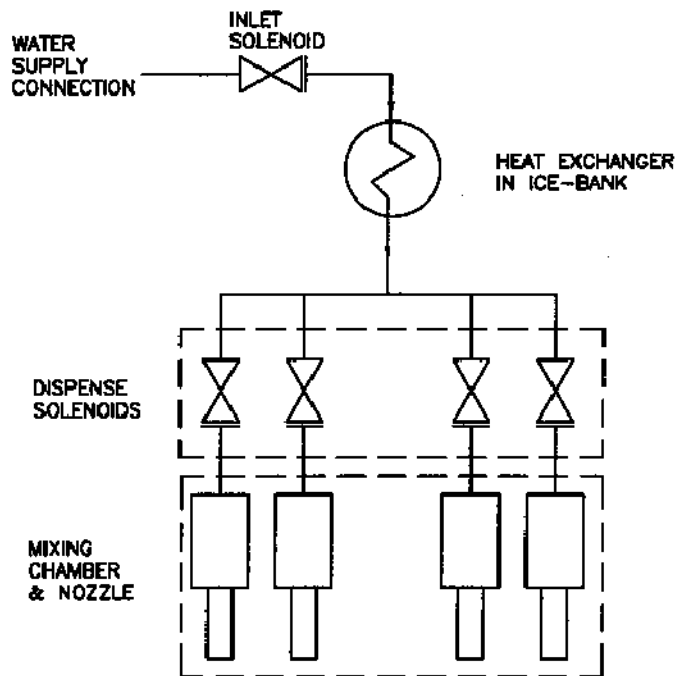




REFRIGERATION DIAGRAM



PLUMBING DIAGRAM



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