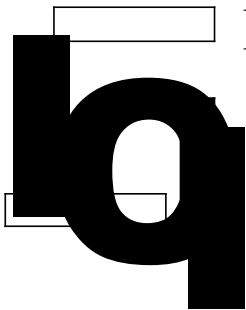
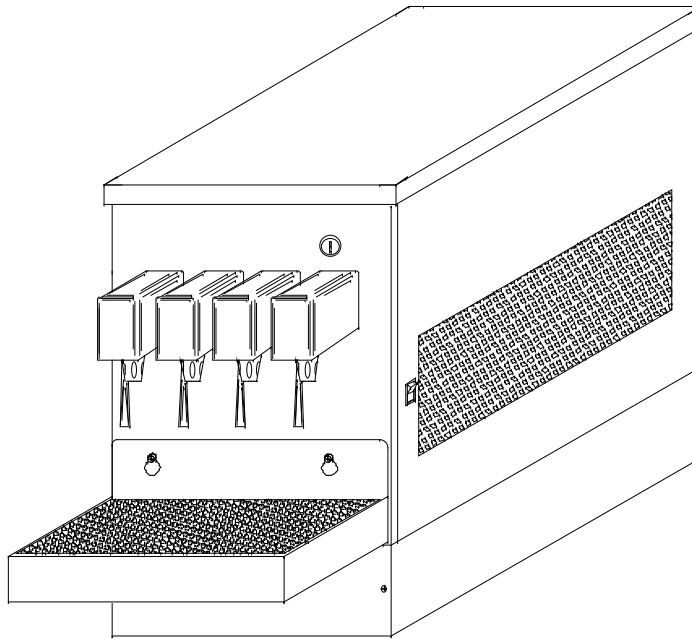


# 'LFMSJPP'

## INSTALLATION AND SERVICE MANUAL



INTERNATIONAL CARBONIC INC.

16630 Koala Rd.

Adelanto, California 92301

800 854-1177

**IMPORTANT: This manual is a guide for installing, operating, servicing and maintaining this equipment. Refer to Table of Contents for page location of detailed information to answer questions that arise during installation, operating, service and maintenance, or installation of this equipment.**

# TABLE OF CONTENTS

	<b>PAGE</b>
<b>PREFACE.....</b>	<b>1</b>
<b>CHAPTER 1</b>	
<b>GENERAL DESCRIPTION .....</b>	<b>2</b>
<b>SYSTEM DESCRIPTION.....</b>	<b>2</b>
<b>DESIGN DATA .....</b>	<b>3</b>
<b>THEORY OF OPERATION .....</b>	<b>3</b>
<b>EXPLODED VIEW.....</b>	<b>5</b>
<b>EXPLODED VIEW DESCRIPTION.....</b>	<b>6 - 7</b>
<b>PFC-II-PP EXPLODED VIEW .....</b>	<b>8</b>
<b>ELECTRIC SCHEMATIC.....</b>	<b>9</b>
<b>CHAPTER II</b>	
<b>UNPACKING AND INSPECTION.....</b>	<b>10</b>
<b>SELECTING LOCATION.....</b>	<b>10</b>
<b>LOCATION RECOMMENDATIONS.....</b>	<b>10</b>
<b>SAMPLE OF POSSIBLE INSTALLATION .....</b>	<b>11</b>
<b>INSTALL WATER FILTER ASSY. ....</b>	<b>11</b>
<b>INSTALL WATER PRESSURE REGULATOR.....</b>	<b>12</b>
<b>INSTALL DRAIN LINE.....</b>	<b>12</b>
<b>INSTALL B.I.B. ....</b>	<b>12</b>
<b>CONNECTING WATER INLET.....</b>	<b>13</b>
<b>ELECTRICAL REQUIREMENTS .....</b>	<b>13</b>
<b>CHAPTER III</b>	
<b>PREPARING SYSTEM FOR OPERATION .....</b>	<b>14</b>
<b>PREPARING AND STARTING REFRIGERATION UNIT.....</b>	<b>14</b>
<b>PURGE DISPENSING VALVE.....</b>	<b>14</b>
<b>ADJUST WATER FLOW RATE .....</b>	<b>14</b>
<b>ADJUST WATER TO SYRUP RATIO .....</b>	<b>14</b>
<b>CHAPTER IV</b>	
<b>OPERATORS INSTRUCTIONS.....</b>	<b>15</b>
<b>DAILY PRE-OPERATION CHECK.....</b>	<b>15</b>
<b>COOLING UNIT MAINTENANCE .....</b>	<b>15</b>
<b>CHECKING WATER BATH.....</b>	<b>15</b>
<b>CHANGING WATER BATH.....</b>	<b>15</b>
<b>CLEANING NOZZLES .....</b>	<b>15</b>
<b>CHAPTER V</b>	
<b>SERVICE AND MAINTENANCE .....</b>	<b>16</b>
<b>PERIODIC INSPECTION AND CLEANING .....</b>	<b>16</b>
<b>PERIODIC CLEANING.....</b>	<b>16</b>
<b>CLEANING CONDENSER COIL.....</b>	<b>16</b>
<b>CHANGING WATER BATH.....</b>	<b>17</b>
<b>CHANGING PERISTALTIC PUMP TUBING.....</b>	<b>18</b>
<b>CLEANING AND SANITIZING.....</b>	<b>19</b>
<b>BRUX INSTRUCTIONS.....</b>	<b>21</b>
<b>TROUBLE SHOOTING .....</b>	<b>22</b>
<b>NOTES .....</b>	<b>26</b>

## **PREFACE**

**INTERNATIONAL CARBONIC INC. has enjoyed over 53 years of manufacturing excellence in the field of carbonation and in the beverage related industry. We have been located in the Southern California area since 1952 and have a long and proud history with quality as our standard and innovation as our goal. Originally started just after World War II in Canfield Ohio as Carbonic Dispensers, we enjoyed patents on the first Sodajet type carbonator. This method of carbonation instantaneously carbonated the water to 100% saturation. We developed the first patented dispensing valve to dispense bulk beverage with carbonation equal to or in excess of bottled beverages. A valve with three flavors and soda was another first. We were the first to incorporate the total post-mix package, i.e., carbonation, refrigeration & the ability to dispense from one self contained unit. We have pioneered many such firsts and will continue to develop advance systems for the future, such as electronic interrogatable portion controls to electronic liquid level controls.**

**We hope you enjoy this product which has been produced to give many years of trouble free service. We thank you for your purchase and hope we may serve you in the future.**

## **LF-MS-J-PP CHAPTER I**

### **GENERAL DESCRIPTION**

**This chapter gives the description, theory of operation, and design data for the LIL FELLA MID SIZE PERISTALTIC PUMP unit, (LF-MS-J-PP), and related components.**

### **SYSTEM DESCRIPTION**

**The LF-MS-J-PP is a complete self-contained Juice unit which when combined with B.I.B containers, will produce a variety of cooled non-carbonated beverages. The LF-MS-J-PP consists of a water bath, refrigeration system, valves, and modular peristaltic pump compartment. The cabinet is housed in an attractive black vinyl and the peristaltic pump module is housed in a rugged stainless steel housing. The LF-MS-J-PP has been designed to eliminate the use of bag in the box pumps and associated components. The LF-MS-J-PP will dispense product with B.I.B.'s at a distance of 100 feet horizontally or 17 feet vertically. THESE DISTANCES ARE ONLY POSSIBLE IF THE SUPPLY LINE HAS COMPLETE INTEGRITY. IF EVEN THE SMALLEST VACUUM LEAK IS ALLOWED THESE DISTANCES ARE NOT POSSIBLE. The LF-MS-J-PP can brix from one to one up to twenty to one by using a state of the art controller/potentiometer adjustment.**

**For proper function the LF-MS-J-PP must have a water supply, and electrical supply and drainage. The LF-MS-J-PP is designed with a unique lift off drain pan that can be emptied at any convenient drain outlet.**

**WARNING: Before shipping or relocating a LF-MS-J-PP into a freezing ambient environment evacuate all plain water. Syrup systems should be flushed, ice bank melted, and water drained from water bath. A freezing ambient environment will cause existing water in unit to freeze possibly resulting in damage to water coil, peristaltic pumps, water bath, valve(s), etc.**

**Water Filter Recommended (Optional) See Manufacturer Specifications for Operating Conditions**

## DESIGN DATA

### LF-MS-J-PP

#### Overall Cabinet/P.P. Base dimensions:

Height	30 1/2
Width	12
Depth	18 3/4

#### Weights:

Shipping	120 pounds
Dry weight	104 pounds
Operational Weight	157 pounds
Peristaltic Pump Base Assembly	27 pounds

#### Capacities:

Unit water bath	5.0 gallons
Refrigerant requirement (R-134a)	6.3 ounces 180 grams

Ambient operating temperature 40 F to 100 F

#### Electrical Requirements:

The cooling unit requires a 115 VAC, single phase, 60 Hertz power circuit.

Circuit Ampacity	3.4 Amps
Condensing Unit	2.1 Amps
Agitator	.8 Amps
Peristaltic Pump Assembly @ 4 valves	1. Amp

REFRIGERATION 1/5 H.P. capillary air-cooled.

## THEORY OF OPERATION

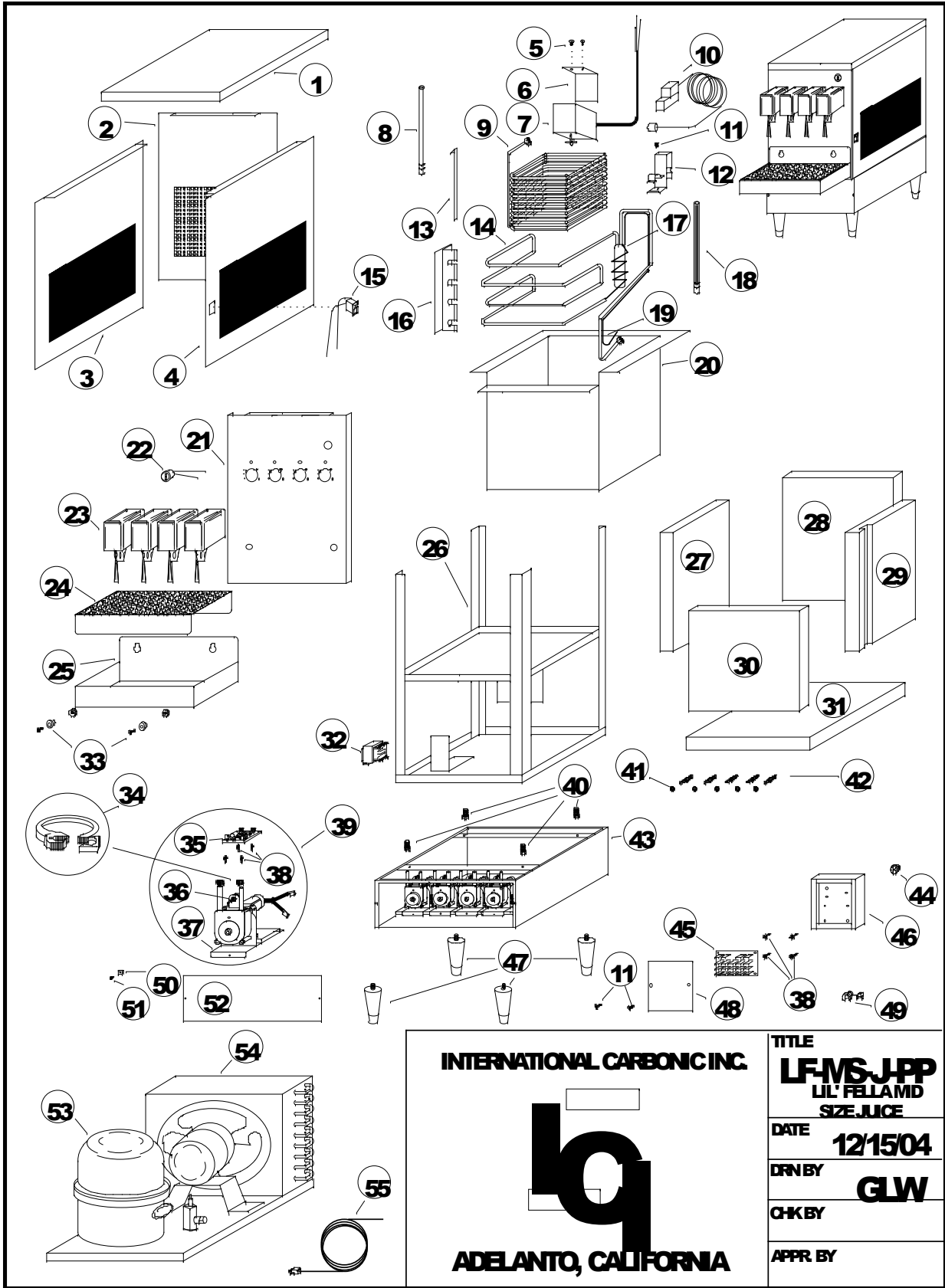
The LF-MS-J-PP was designed to manufacture and dispense non-carbonated beverages much like your local bottling plant that cans or bottles your favorite non-carbonated drink.

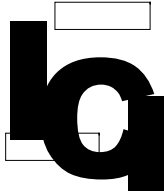
The water bath must be filled with approximately 5 gallons of water. After all connections are made and activation of the refrigeration a certain amount of this water will be transformed into ice, approximately 17 pounds. This water reserve and ice bank will act as a reservoir for refrigeration. This reserve is utilized during peak periods when the BTU output of the compressor is not sufficient to meet the demand of the draw.

**The incoming water is routed through a water coil that is submerged in the above mentioned water bath. The temperature of the incoming water is at ambient temperature as it enters the submerged water coil. As the incoming water passes through the water coil the heat is removed from the water in the water coil and chilled to a temperature acceptable for a quality drink, normally a temperature of 33 to 34 degrees is reached. The water is now directed to a valve where the water and syrup are mixed in proper proportions to dispense a quality drink. Depending on the ratio of water versus syrup the temperature will rise and be dispensed at approximately 40 degrees Fahrenheit.**

**With the incorporation of the peristaltic pump the necessity for an air or CO2 supply is no longer necessary, this includes the low and high-pressure regulators normally needed for a standard juice unit. The peristaltic pumps will pull the syrup concentrate from the B.I.B., (bag in the box), and then push the syrup through syrup cooling coils, (optional), and then to the valve where the syrup concentrate and water are mixed in a proper ratio to dispense a quality drink. The syrup enters the LF-MS-J-PP through a unique 1/4" X 3/8 S-162 bulkhead fitting at the rear of the unit.**

**The water source should be regulated, this is normally performed by the use of an in line water regulator. If the water is not regulated and the water pressure can vary. This variance of water pressure can effect our dispensed product.**



<b>INTERNATIONAL CARBONIC INC.</b>    <b>ADELANTO, CALIFORNIA</b>	TITLE <b>LFMS-JPP</b> LIL' FELLAID SIZE JUICE
	DATE <b>12/15/04</b>
	DRN BY <b>GLW</b>
	CHK BY
	APPR BY



# LF-MS-J-PP

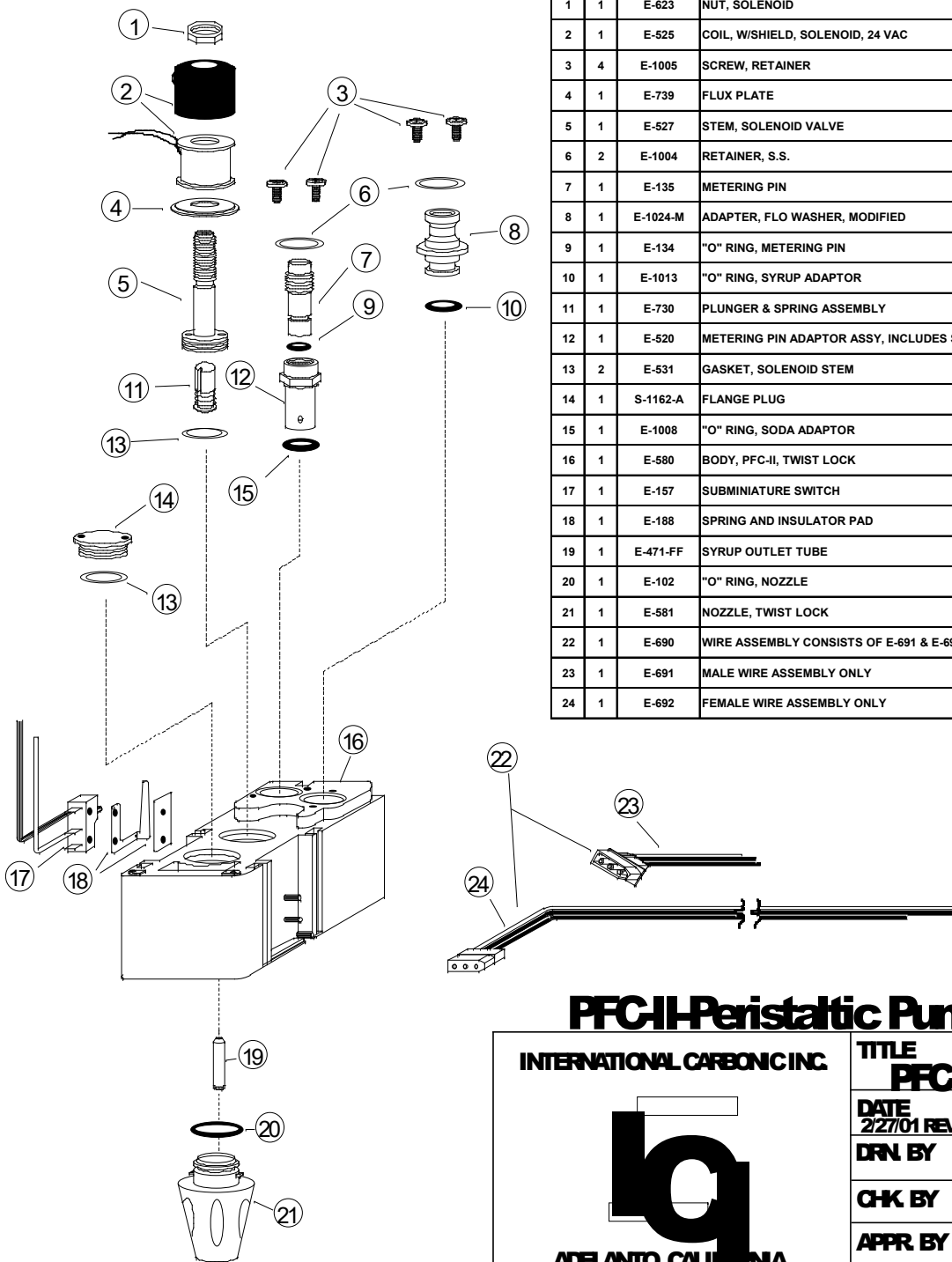
<b>SYM</b>	<b>QTY</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>
1	1	S1340	LID W/INSULATION
2	1	S1337	SERVICE PANEL, REAR
3	1	S1338	SERVICE PANEL, LEFT SIDE
4	1	S1339	SERVICE PANEL, RIGHT SIDE
5	2	''''	SCREW, #8 X 5/16 T.H., S.S.
6	1	S1341-LG	AGITATOR PUMP BRACKET
7	1	S0835	AGITATOR PUMP
8	1	S0657	STANDPIPE, 7 3/4", WHITE
9	1	S1334	WATER COIL, COPPER
10	1	S0513-A	ICE BANK CONTROL
11	3	A0020	SCREW, 8-32 X 3/8 TH SS
12	1	S1304-U	ICE BANK CONTROL BRACKET
13	5	S0661	EVAPORATOR COIL RETAINER
14	1	S1333	EVAPORATOR COIL ASSEMBLY
15	1	S0783	UNIT ON/OFF SWITCH
16	5	S0662	EVAPORATOR SUPPORT BRACKET
17	1	S0509	ACCUMULATOR, 4" VERTICAL
18	1	S0658	OVERFLOW, 8", GRAY
19	1	Z0009	CAP TUBE 12" .042
20	1	S1332	BUCKET ASSY., WITH INSULATION
21	1	S1336-4	VALVE MOUNTING PLATE
22	1	S0768	SWITCH W/KEYS
23	4	PFC-II	VALVE
24	1	S1149-A	CUP REST
25	1	S1149	DRAIN PAN W/CUP REST
26	1	S1331	FRAME COMPLETE
27	1	''''	INSULATION, LEFT SIDE
28	1	''''	INSULATION, REAR
29	1	''''	INSULATION, RIGHT SIDE

# LF-MS-J-PP Cont.

<b>SYM</b>	<b>QTY</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>
30	1	''''	INSULATION, FRONT
31	1	''''	INSULATION, BOTTOM
32	1	S1700	TRANSFORMER, 100VA, 120 VOLT
33	1	S0743	DRAIN PAN MTG HARDWARE
34	8	S1698	SNAP CLAMP
35	4	S1741	CONTROLLER
36	4	S1699	POTENTIOMETER
37	4	S1742	PUMP BASE
38	8	S1335	TERMINAL BOARD SPACER, NYLON
39	4	S1737	PERISTALTIC PUMP ASSEMBLY
40	4	A0045	5/16-18 FLANGE WIZ LOCK SCREW 1/2"
41	5	S0286A	NUT, S.S., LOCKING, HEX HD.1/2-20
42	5	S0162	BULK HEAD FITTING, S.S., 1/4" H X 3/8" H, W/HEX BODY
43	1	S1746	PP BASE ASSEMBLY
44	4	S0046	BUSHING
45	1	S1309	TERMINAL BOARD
46	1	S1308	TERMINAL BOX WITH LID
47	4	S0765	LEGS
48	1	S1310	TERMINAL BOX LID
49	1	E0664	STRAIN RELIEF
50	14	S1325	SQUARE GROMMET NUT
51	14	A0014	SCREW, #10 X 1/2" PHILLIPS T.H. S.S.
52	1	S1747	P.P. BASE COVER
53	1	AEA1360YXA	COMPRESSOR ONLY
54	1	AEA1360YXAXA	CONDENSING UNIT, 1/5 H.P.
55	1	E0141-12	POWER CORD

# PFC-II-PP

SYM	QTY	PART NO.	DESCRIPTION
1	1	E-623	NUT, SOLENOID
2	1	E-525	COIL, W/SHIELD, SOLENOID, 24 VAC
3	4	E-1005	SCREW, RETAINER
4	1	E-739	FLUX PLATE
5	1	E-527	STEM, SOLENOID VALVE
6	2	E-1004	RETAINER, S.S.
7	1	E-135	METERING PIN
8	1	E-1024-M	ADAPTER, FLO WASHER, MODIFIED
9	1	E-134	"O" RING, METERING PIN
10	1	E-1013	"O" RING, SYRUP ADAPTOR
11	1	E-730	PLUNGER & SPRING ASSEMBLY
12	1	E-520	METERING PIN ADAPTOR ASSY, INCLUDES SYM 7,9, & 12
13	2	E-531	GASKET, SOLENOID STEM
14	1	S-1162-A	FLANGE PLUG
15	1	E-1008	"O" RING, SODA ADAPTOR
16	1	E-580	BODY, PFC-II, TWIST LOCK
17	1	E-157	SUBMINIATURE SWITCH
18	1	E-188	SPRING AND INSULATOR PAD
19	1	E-471-FF	SYRUP OUTLET TUBE
20	1	E-102	"O" RING, NOZZLE
21	1	E-581	NOZZLE, TWIST LOCK
22	1	E-690	WIRE ASSEMBLY CONSISTS OF E-691 & E-692
23	1	E-691	MALE WIRE ASSEMBLY ONLY
24	1	E-692	FEMALE WIRE ASSEMBLY ONLY



## PFC-II Peristaltic Pump

INTERNATIONAL CARBONIC INC.



ADELANTO, CALIFORNIA

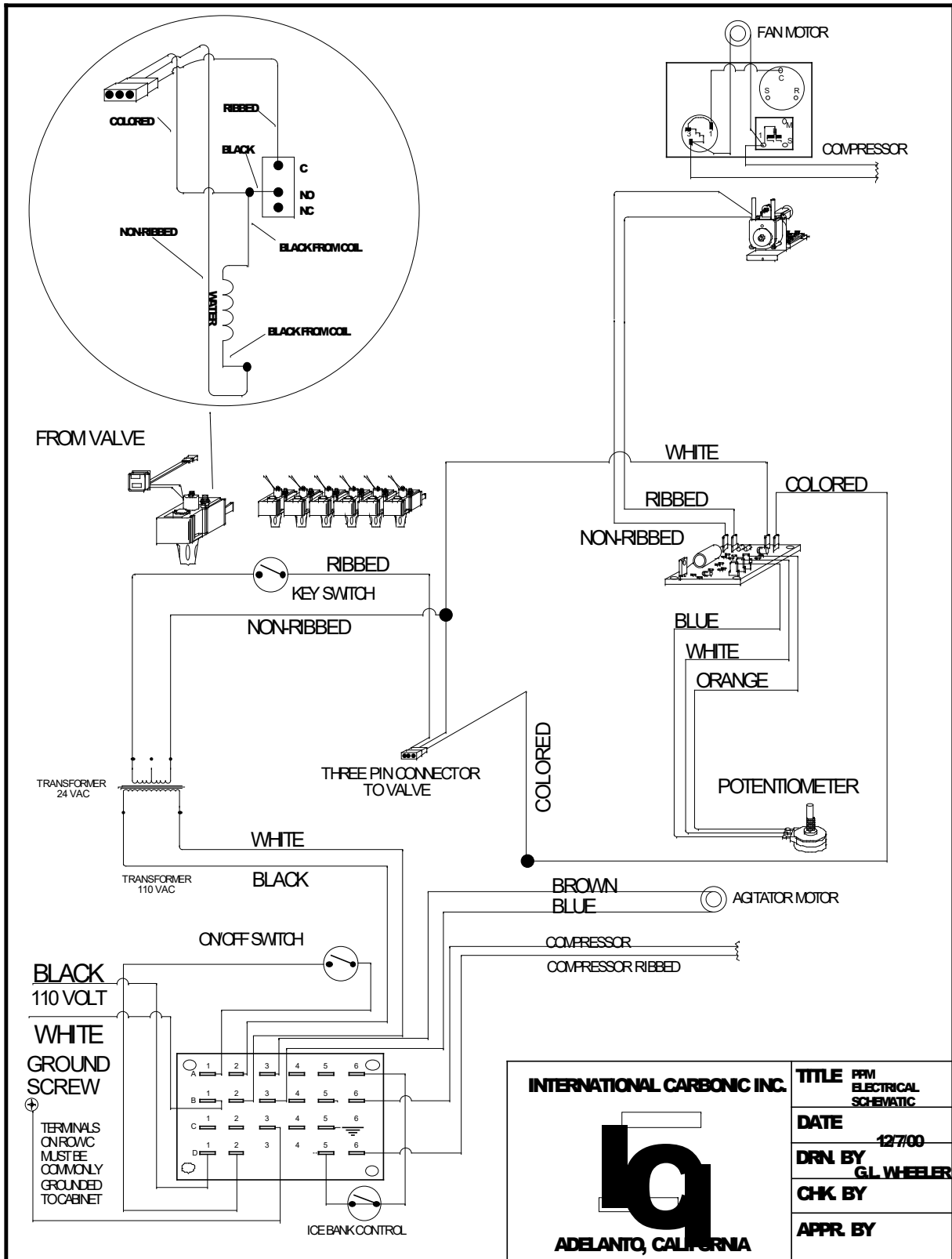
TITLE  
**PFC-II-PP**

DATE  
2/27/01 REVISED 9/27/01

DRN BY  
**GLW**

CHK BY

APPR BY



**CHAPTER II**  
**INSTALLATION**  
**LF-MS-J-PP**

**This chapter covers unpacking and inspection, selecting location, installing LIL FELLA MID SIZE PERISTALTIC PUMP unit, LF-MS-J-PP and related components, and electrical requirements.**

**UNPACKING AND INSPECTION**

**Upon receiving unit, immediately remove LF-MS-J-PP from shipping carton and inspect for shipping damage.**

**NOTE: Before leaving the factory the LIL FELLA MID SIZE PERISTALTIC PUMP unit was carefully inspected and the carrier has accepted and signed for it. Any damage or irregularities should be noted at the time of delivery and immediately reported to delivering carrier. Request a written inspection report from claims inspector to substantiate any necessary claim. File claim with delivering agency, not International Carbonic Inc!**

**SELECTING LOCATION**

**IMPORTANT: Ambient temperature for cooling unit should not exceed 100 degrees "F". Operation of cooling unit in ambient above 100 degrees "F" can and will contribute to early failure of condensing unit and poor quality of finished product.**

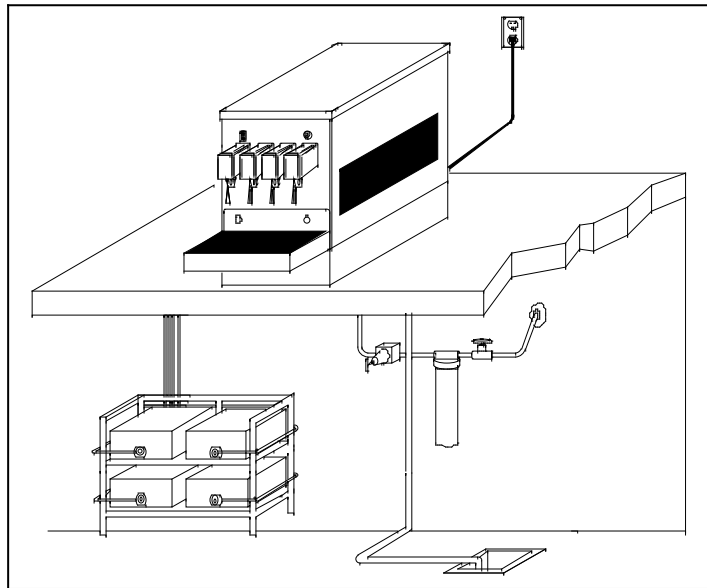
**LOCATION RECOMMENDATIONS FOR LIL FELLA MID SIZE JUICE PERISTALTIC PUMP unit, LF-MS-J-PP**

- 1. Position unit as close as possible to proper electrical source, 115V 60Hz.**
- 2. Position unit with a minimum of 2" space between bulkhead and cabinet for sufficient space for ventilation. Allow enough space between ceiling and unit for lid removal.**
- 3. Position unit as close as possible to floor drain.**
- 4. Position unit as close as possible to B.I.B. racks.**
- 5. Position unit as close as possible to water source. Half inch gate valve recommended for water connection.**

**TABLE 2-1**

**LOOSE - SHIPPED PARTS**

<b>Item No.</b>	<b>Part No.</b>	<b>Name</b>	<b>Qty</b>
1		Installation/Service Manual	1
2	S-1149	Drain pan	1
3	----	Product Decals	1 per flavor
4*		Water filter	1
5*	S-208A	Water Pressure Regulator	1
*	<b>Optional</b>		



**FIGURE 2 SAMPLE OF POSSIBLE INSTALLATION.**

**INSTALLATION**

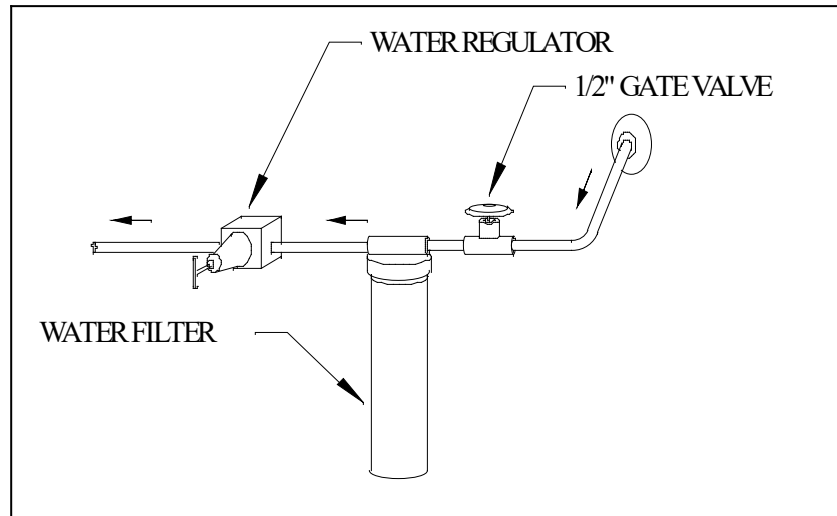
**INSTALL WATER FILTER ASSY. (OPTIONAL)**

- 1. Install water filter assembly on wall or other supporting structure.**
- 2. Connect water filter assembly to inlet of valve on water supply line using minimum 3/8" I.D. water line.**
- 3. Connect water filter assembly outlet to LF-MS-J-PP plain water inlet fitting using minimum 3/8" I.D. water line. See CONNECTING WATER INLET.**

**When a water filter is used, it is important to thoroughly flush prior to making unit connections.**

## **INSTALL WATER PRESSURE REGULATOR (OPTIONAL)**

If water pressure varies, a water pressure regulator or water pressure-reducing valve should be installed on the incoming water supply line. The water regulator must have an orifice of at least 3/16" so as not to restrict the water flow through the valve. Valves that are built with 1/2" pipe thread connection usually have a sufficient orifice opening.



**FIGURE 2-4. SUGGESTED WATER FLOW INSTALLATION**

## **INSTALL DRAIN LINE**

- 1. Connect drain line on LF-MS-J-PP unit with drain using 1/2" I.D. clear plastic tubing to nearest floor drain.**
- 2. Do not reduce drain connection from cabinet outlet.**
- 3. Be sure all connections are water-tight.**

## **INSTALL B.I.B.**

- 1. Place B.I.B. (Bag in the Box), as close as possible to LF-MS-J-PP unit, preferably no farther than 15 feet. The LF-MS-J-PP will dispense product with the B.I.B.'s at a distance of 100 feet horizontally or 17 feet vertically. THESE DISTANCES ARE ONLY POSSIBLE IF THE SUPPLY LINE HAS COMPLETE INTEGRITY. IF EVEN THE SMALLEST VACUUM LEAK IS ALLOWED THESE DISTANCES ARE NOT POSSIBLE.**
- 2. Lay out syrup lines from unit to B.I.B.**
- 3. Connect lines from B.I.B. to inlet on LF-MS-J-PP.**
- 4. Activate Q.C.D.**
- 5. Check all connections for leaks, (see Chapter IV).**

## **CONNECTING WATER INLET**

### **WATER PIPE CONNECTIONS AND FIXTURES DIRECTLY CONNECTED TO POTABLE WATER SUPPLY SHALL BE SIZED, INSTALLED AND MAINTAINED ACCORDING TO FEDERAL, STATE, AND LOCAL LAWS.**

The water connection on the LF-MS-J-PP is made to a flexible water line by means of a 3/8", male hose or barb connection.

After all primary water lines are made up, but prior to connecting water supply to cabinet, be sure to thoroughly flush all incoming water lines to remove all scale and any impurities that may be in the lines. It is imperative that the fresh water-conduit have not less than 3/8" I.D. passageway for any distance greater than ten feet from the LF-MS-J-PP. It can be reduced to 3/8" O.D. copper tubing and connected to the water inlet connection with-in ten feet of the LF-MS-J-PP. All water inlet connections are clearly tagged.

### **ELECTRICAL REQUIREMENTS:**

The LF-MS-J-PP requires a 120 VAC, single phase, 60 Hertz power circuit, and must be wired in accordance with N.E.C. or local ordinance.

**NOTE:** Check CHAPTER I for running amperage and connect to appropriate electrical circuit.



**CHAPTER III**  
**LF-MS-J-PP**  
**PREPARATION**

**All steps in previous chapters should be understood and carried out before proceeding.**

**PREPARING SYSTEM FOR OPERATION**

**Be sure that electrical power is unplugged, valve on water supply line is closed.**

**PREPARING AND STARTING REFRIGERATION UNIT**

- 1. LF-MS-J-PP refrigeration is pre-set at factory and ready to operate.**
- 2. Remove lid.**
- 3. Fill water bath with clean water until water runs out of condensate drain outlet, (S-657), (approximately 1/2" from top of water bath). DO NOT USE DISTILLED WATER.**
- 4. Open water inlet supply line.**
- 5. Plug LF-MS-J-PP power cord into electrical receptacle box, turn power switch to the "ON" position. Make sure compressor, condenser fan motor, agitator motor start. The process of cooling the water bath will commence after filling water bath. With ambient and water temperature of 75 degree "F" initial pull down or formation of complete ice bank will take approximately 3.5 hrs. When full ice bank has been formed, compressor and condenser fan motor will stop. Agitator will continue to operate, circulating water in water bath.**

**PURGE DISPENSING VALVES**

**Dispense water from dispensing valves until all air is purged from water lines.**

**ADJUST WATER FLOW RATE**

**Adjust dispensing valves water flow rate to approximately 6 oz. in 5 seconds.**

**ADJUST WATER-TO-SYRUP "RATIO"**

**Adjust dispensing valves for Water-to-syrup "Ratio". Contact supplier of syrup concentrate for recommended ratio.**

**CHAPTER IV**  
**LF-MS-J-PP**  
**OPERATORS INSTRUCTIONS**

**This chapter covers operators' responsibilities for daily pre-operation check, adjustments, replenishing C02 and cleaning, and sanitizing.**

**DAILY PRE-OPERATION CHECK**

- 1. Make sure B.I.B.'s full and ready to dispense.**
- 2. Make sure nozzles are clean and in place.**
- 3. Make sure electrical power is supplied to unit.**

**COOLING UNIT MAINTENANCE**

**NOTE: Air circulation through the condenser coil required to cool the condenser coil/compressor, is drawn in through grills on cooling unit, through condenser coil and is exhausted out grills on either side and rear of the unit. Restricting air circulation through the cooling unit will decrease its cooling capacity.**

**To avoid needless and sometimes costly repairs, it is imperative to keep condenser fins clean. This may be accomplished by one of three methods. One method is use of a condenser brush (a longhaired, soft bristle brush) to gently sweep fins of condenser clean. Second method is to use a strong vacuum. The third method is to use C02 or an air hose to blow out condenser. The latter method should only be attempted after normal business hours to avoid dust contamination.**

**CHECKING WATER BATH**

**Periodically check water level in water bath. If water level is low, water should be added as instructed for maximum product cooling. This dehydration will normally not occur in normal temperate climate zones. With normal humidity the opposite will occur therefore it is paramount that the condensate drain be installed.**

**CHANGING WATER BATH**

**Drain water bath a minimum of twice a year. This can be accomplished by locating the standpipe in the water bath area and removing by twisting and pulling up. Once water is drained, water bath, water coils, bath walls, etc. should be cleaned. Special care should be taken to clean the ice bank control bulb. Replace standpipe and refill with water. Fill water bath to top of standpipe, (S-657).**

**CLEAN NOZZLES**

**Remove nozzles nightly and let soak in warm water. DO NOT SOAK IN HOT HOT WATER OR BLEACH WATER!**

## **CHAPTER V**

### **SERVICE AND MAINTENANCE**

**This chapter describes service and maintenance procedures to be performed on LIL FELLA MID SIZE PERISTALTIC PUMP JUICE unit systems and related components.**

#### **PERIODIC INSPECTION AND CLEANING**

##### **Daily:**

- 1. Clean any storage tanks/B.I.B. racks, connecting sockets/Q.C.D.'s and general storage area with warm water.**
- 2. Clean the beverage dispensing area.**
- 3. Remove and clean nozzles and all exposed areas on valves.**
- 4. Wipe exterior of unit with moist towel.**

##### **Weekly:**

- 1. Order syrup to maintain product inventory.**
- 2. Check condenser coil for obstructions or dirt.**

##### **Monthly:**

- 1. Clean condenser fins or filter to make sure the refrigeration unit has adequate air flow.**
- 2. Inspect components of cooling unit water bath for cleanliness.**
- 3. Check entire system for leaks or damaged components. Repair as necessary.**

#### **PERIODIC CLEANING**

**Periodically wash all external surfaces of cooling unit, rinse with clean water, then wipe dry with a clean soft cloth.**

**DO NOT USE ABRASIVE TYPE CLEANERS.**

#### **CLEANING CONDENSER COIL**

**IMPORTANT: Air circulation through the condenser coil required to cool the condenser coil/compressor, is drawn in through grills on cooling unit, through condenser coil and exhausted out grills on the other side of unit. Restricting air circulation through the cooling unit will decrease its cooling capacity.**

**NOTE:** *Cleaning condenser coil should be done during non-business hours.*

- 1. Unplug refrigeration unit power cord from electrical socket.**
- 2. Remove 6 screws securing service panels, 2 screws per service panel. Remove panels in preparation for service.**
- 3. Vacuum or use a soft brush to clean fins of condenser coil. Use low-pressure compressed air or CO2 gas to blow through condenser fins. This should only be performed after normal business hours to prevent dust contamination. A damp cloth on back-side of condenser coil will prevent some dust contamination.**
- 4. Plug refrigeration unit power cord in electrical socket.**

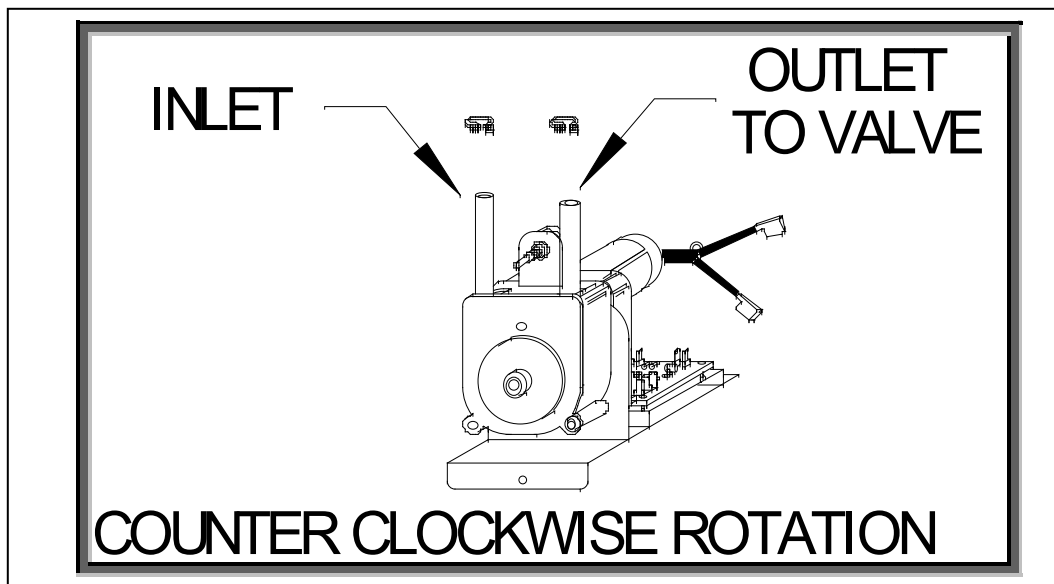
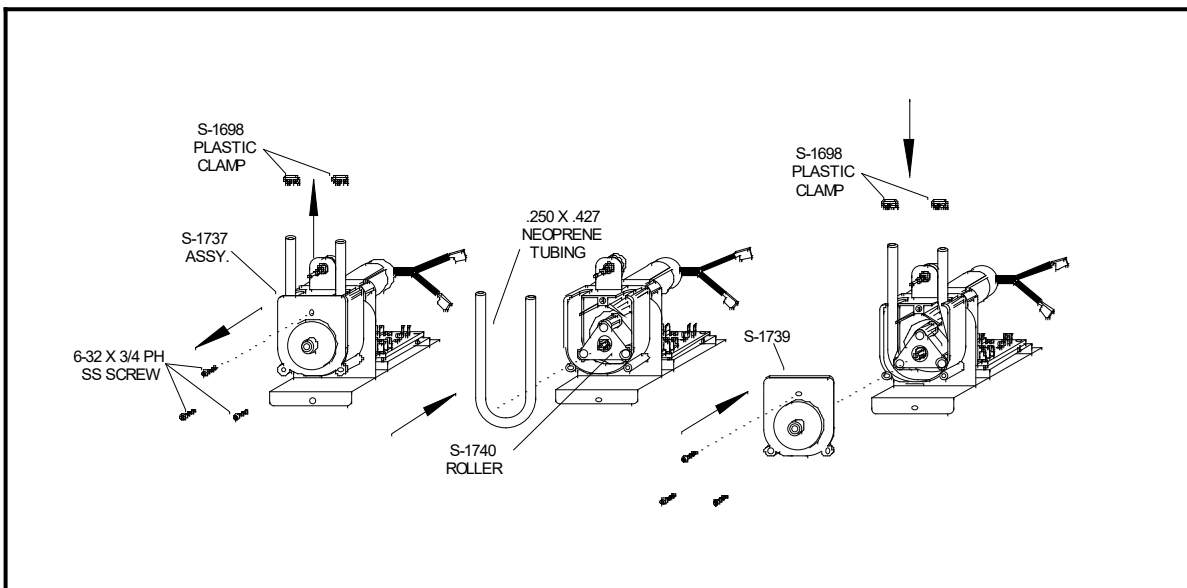
### **CHANGING WATER BATH**

**NOTE:** The water bath should be changed and all components in water bath should be cleaned as often as necessary to keep it clean. A convenient time to perform this operation is when the system is being sanitized.

- 1. Unplug refrigeration unit power cord from electrical socket.**
- 2. Remove lid from water bath.**
- 3. Look down into water bath (if necessary, use flashlight) and inspect water bath, evaporator and all components for cleanliness. Water coil, refrigeration evaporator and all components should be clear and free of foreign particles.**
- 4. Pull out standpipe and allow water to drain.**
- 5. Use fiber brush and carefully clean mineral deposit from all components.**
- 6. Wash evaporator coil with a mild soap. Copper cleans well with mild solution of citric acid (1 cup of citric acid for 2 gallons of water). Stainless steel cleans well with carbonated water. Then rinse with clean water.**
- 7. Rinse out water bath with clean water until water running out of drain hose is clean.**
- 8. Install stand-pipe in drain outlet.**
- 9. Fill water bath to top of stand pipe, (condensate drain), with water.**
- 10. Install lid.**
- 11. Plug LF-MS-J-PP unit power cord in electrical socket.**

## **CHANGING PERISTALTIC PUMP TUBING**

- 1. Remove #10 X 1/2" Phillips TH. Screw. Then slide out S-1027 Assy.**
- 2. Remove three 6-32 x 3/4 PH screws.**
- 3. Remove S-1739 cover.**
- 4. Remove neoprene tubing by pulling tubing while turn S-1740 roller.**
- 5. Replace old neoprene tubing with new.**
- 6. Squeeze new tubing with pliers two insert tubing in between first roller and housing wall. Force tubing into position at second roller by spinning roller while inserting tubing.**
- 7. Reverse procedure to reinstall S-1737 assembly.**



## **CLEANING AND SANITIZING**

**Your local Health Department rules and general area cleanliness should determine the frequency of which the unit should be sanitized.**

### **SANITIZING PROCEDURES**

**Your local health department rules and general area cleanliness should determine the frequency at which the unit should be sanitized.**

#### **EQUIPMENT REQUIRED:**

- 1. Stainless Steel containers (product tanks), or large volume container.**
- 2. CO2 Supply If applicable (Same as used with dispensing unit).**
- 3. Cleaning Agent.**
- 4. Sanitizing Solution.**
- 6. Phenolphthalein.**

**NOTE: One recommended cleaning agent and sanitizing agent is manufactured by:**

**MT. HOOD CHEMICAL CORP.  
4444 N.W. Yeon Avenue  
Portland, Oregon 97210**

**Trade names are: STAR - CHLORINATED CLEANER  
CROWN - 12.5% SODIUM HYPOCHLORITE BLEACH**

**Use STAR at 18 oz. per 1 gallon of water yields 2% Sodium Hydroxide Solution.**

**Use Crown at 2 ounce per 9 gallons of water (gives 200 PPM of available chlorine) at a minimum contact time of 10 minutes.**

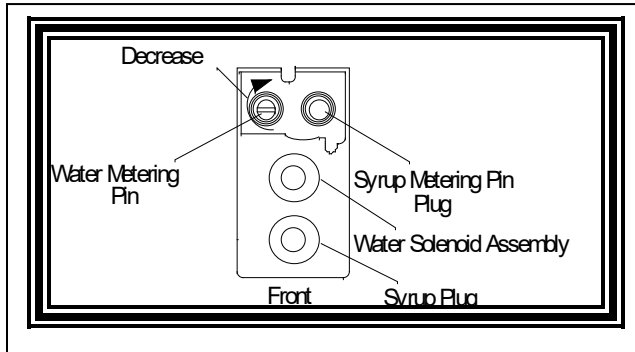
- 1. Disconnect syrup containers and remove product from tubing by purging with carbon dioxide or flushing with warm water.**
- 2. Visually inspect valve by removing nozzle and inspecting nozzle and valve cavity. Clean nozzle with cleaning agent, then sanitizing solution, then with potable water. Inspect valve cavity and if dirty clean with soft bristle brush. Clean exteriors of valve with a soft clothe and warm water. Replace valve nozzle then go to step #3.**
- 3. Fill syrup lines with a caustic-based (low sudsing, non-perfumed, and rinsed) detergent solution, (STAR). The solution should be prepared in accordance with the manufacturers recommendations, but should be at least 2 percent sodium hydroxide. Make sure the syrup lines are completely filled and allow standing for at least 10 minutes.**
- 4. Flush the detergent solution from the syrup lines with clean water. Continue rinsing until testing with phenolphthalein shows that the rinse water is free of residual detergent.**
- 5. Fill the syrup lines with a low PH (7.0) chloride solution containing maximum 200-PPM chlorine. Make sure that lines are completely filled and allow standing for 30 minutes.**

- 6. Reconnect syrup containers and ready Unit for operation.**
- 7. A Draw drinks to refill syrup lines and flush the chloride solution from the dispenser.**
- 8. Taste the beverage to verify that there is no off taste.**

**NOTE: WHEN SANITIZING A TWO FLAVOR VALVE BOTH SYRUPS SHOULD BE FLUSHED SIMUTAINOUSLY, BOTH SYRUPS SHOULD BE CLEANED, (DETERGENT SOLUTION), SIMUTAINOUSLY, BOTH SYRUPS SHOULD BE FLUSHED UNTIL FREE OF DETERGENT SIMUTAINOUSLY AND BOTH SYRUPS SHOULD BE SANITIZED SIMUTAINOUSLY.**

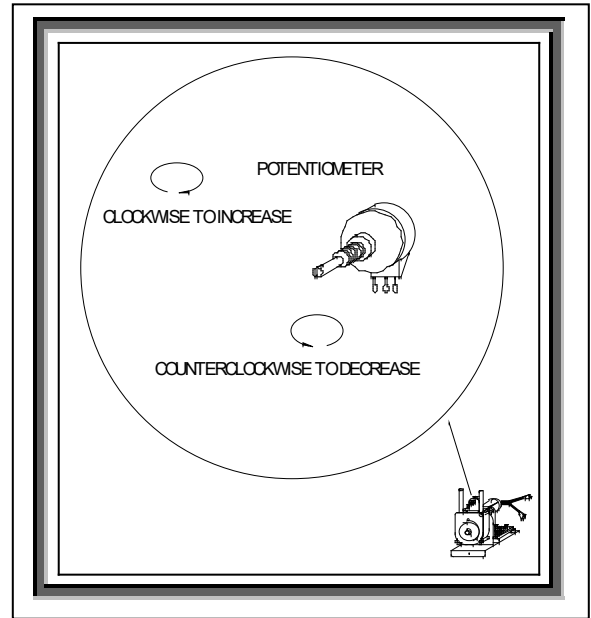
# BRIX INSTRUCTIONS

## BRIXING PFC-II-PP VALVE

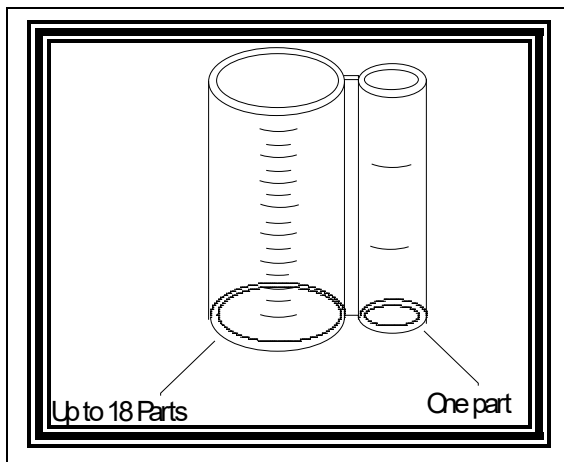


The water and syrup flows are individually adjusted by their respective metering pin / potentiometer.

One recommended method utilizes the ratio brix cup, see illustration. The brix cup is divided into two sections, one to hold up to 9 parts water and the smaller section to hold one or two parts of syrup. When adjusting a flavor with a ratio of more than 9 to 1 syrup 2 line must be used. When using syrup 2 line the waterside is doubled to 18 to 1 vs. 9 to 1.



When facing the valve, the syrup is always to the right and the water/soda is to the left. To decrease syrup or water flow, turn metering pin clockwise. To decrease syrup or water flow, when using flow control valves turn counter-clockwise. To increase, reverse rotation respectively.



The ultimate goal is to achieve a proper ratio of water vs. syrup. This ratio can and will vary with differing products.

Note: Contact product supplier for proper ratio adjustments.



## TROUBLE SHOOTING

**IMPORTANT: Only qualified personnel should service LF-MS-J-PP unit and components.**

**WARNING: To avoid personal injury and or property damage, always disconnect electrical power and shut off plain water before starting any repairs. If repairs are to be made to the water system, bleed water system pressure before proceeding. If repairs are to be made to syrup system, remove quick-disconnects from remove QCD from BIB, then bleed system pressure before proceeding.**

### COOLING UNIT

Trouble		Probable Cause		Remedy
<b>Frozen water bath</b>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> </ol>	<ol style="list-style-type: none"> <li><b>Bad ice bank control.</b></li> <li><b>Agitator pump defective</b></li> <li><b>Under charge on refrigerant.</b></li> </ol>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> </ol>	<ol style="list-style-type: none"> <li><b>Replace bad ice bank control.</b></li> <li><b>Replace Agitator pump.</b></li> <li><b>Find refrigerant leak, repair and recharge.</b></li> </ol>
<b>Cooling or condensing unit non-operational</b>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> <li>5.</li> <li>6.</li> <li>7.</li> <li>8.</li> </ol>	<ol style="list-style-type: none"> <li><b>No electrical power.</b></li> <li><b>No water in water bath</b></li> <li><b>Defective ice bank control.</b></li> <li><b>Dirty water bath.</b></li> <li><b>Dirty condenser unit.</b></li> <li><b>Improper voltage/amperage</b></li> <li><b>Loss of refrigerant.</b></li> <li><b>Bad overload and relay. Compressor bad. Restriction (pinched or crimped line).</b></li> </ol>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> <li>5.</li> <li>6.</li> <li>7.</li> <li>8.</li> </ol>	<ol style="list-style-type: none"> <li><b>Plug power cord into electrical box. Check on/off switch.</b></li> <li><b>Fill water bath with water.</b></li> <li><b>Replace ice bank control.</b></li> <li><b>Change water bath.</b></li> <li><b>Clean condenser unit w/vacuum cleaner.</b></li> <li><b>Check for proper voltage/amperage.</b></li> <li><b>Repair leak and replenish refrigerant.</b></li> <li><b>Replace overload and relay. Replace compressor. Repair, straighten or replace defective line.</b></li> </ol>

<b>Compressor does not operate</b>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> <li>5.</li> <li>6.</li> <li>7.</li> <li>8.</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>No power source.</b></li> <li>2. <b>Electrical power to cooling unit turned off.</b></li> <li>3. <b>Low voltage.</b></li> <li>4. <b>Loose, disconnected, or broken wire.</b></li> <li>5. <b>Inoperative ice bank control.</b></li> <li>6. <b>Inoperative overload protector or start relay.</b></li> <li>7. <b>Inoperative compressor.</b></li> <li>8. <b>Full ice bank.</b></li> </ol>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> <li>5.</li> <li>6.</li> <li>7.</li> <li>8.</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Plug power cord to electrical box. Check line voltage.</b></li> <li>2. <b>Turn on power switch to unit.</b></li> <li>3. <b>Voltage must be at least 110 V at compressor terminals at start.</b></li> <li>4. <b>Tighten connection or replace broken wiring.</b></li> <li>5. <b>Replace ice bank control.</b></li> <li>6. <b>Replace defective part.</b></li> <li>7. <b>Replace compressor.</b></li> <li>8. <b>Refrigeration not called for.</b></li> </ol>
<b>Compressor works continuously but does not form ice bank.</b>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> <li>5.</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Cooling capacity is exceeded by over drawing.</b></li> <li>2. <b>Cooling unit located in excessively hot area.</b></li> <li>3. <b>Air circulation through condenser coil is restricted</b></li> <li>4. <b>Loss of refrigerant or insufficient charge.</b></li> <li>5. <b>Dirty water bath/Probe tip.</b></li> </ol>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> <li>5.</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Reduce amount of drinks taken per given time of install higher voluum unit.</b></li> <li>2. <b>Relocate cooling unit.</b></li> <li>3. <b>Check and if necessary, clean condenser coil.</b></li> <li>4. <b>Repair leak and/or recharge with sufficient refrigerant.</b></li> <li>5. <b>Clean water bath/probe tip.</b></li> </ol>
<b>Compressor will not stop after forming ice bank</b>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Ice bank control capillary tube kinked or broken.</b></li> <li>2. <b>Ice bank control stuck in closed position.</b></li> </ol>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Replace ice bank control.</b></li> <li>2. <b>Replace ice bank control.</b></li> </ol>
<p><b>Note: During overload protector shut off condenser fan motor will continue to work. Otherwise, troubleshooting condenser fan motor problems is the same as “Compressor does not operate”, paragraph in addition to the following.</b></p>				
<b>Condenser fan motor not operating</b>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Electrical cord loose or disconnected from condenser fan motor or compressor terminals.</b></li> <li>2. <b>Fan blade obstructed.</b></li> <li>3. <b>Inoperative condenser fan motor.</b></li> </ol>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Tighten connections or replace cord.</b></li> <li>2. <b>Remove obstruction.</b></li> <li>3. <b>Replace condenser fan motor.</b></li> </ol>

<b>DISPENSING VALVES</b>			
<b>Water leaking from nozzle after actuation</b>	<b>1.</b>	<b>Foreign debris under plunger seat or bent, creased stem water only.</b>	<b>1.</b> <ol style="list-style-type: none"> <li><b>a. Disconnect water from affected valve.</b></li> <li><b>b. Relieve pressure by activating valve.</b></li> <li><b>c. Remove E-623 nut from water solenoid.</b></li> <li><b>d. Remove E-525 coil assembly from E-527 stem.</b></li> <li><b>e. Remove E-527 stem from valve body.</b> <b>Note: care should be taken not to dent smooth E-527 wall.</b></li> <li><b>f. Valve stem seat should be inspected for any foreign debris. If debris is found remove at this time, also check E-730 stem. Movement should be unrestricted and free.</b></li> <li><b>g. Inspect E-730 plunger seat for damage, replace if damaged.</b></li> <li><b>h. Reassemble by reversing above procedure.</b></li> </ol>
<b>No water, no syrup being dispensed from valve</b>	<b>1.</b>          <b>2.</b>          <b>3.</b>          <b>4.</b>          <b>5.</b>          <b>6.</b>          <b>7.</b>          <b>8.</b>	<b>No electrical power.</b>          <b>Frozen water bath.</b>          <b>Pinched or crimped lines.</b>          <b>Broken sub-miniature switch.</b>          <b>Bad transformer.</b>          <b>Disconnected wire.</b>          <b>Defective S-1737 assy.</b>          <b>Worn or defective neoprene tubing in S-1737 assy.</b>	<b>1.</b> <b>Plug power cord into electrical box. Check line voltage.</b>          <b>2.</b> <b>See “Frozen water bath”.</b>          <b>3.</b> <b>Repair defective line.</b>          <b>4.</b> <b>Replace defective switch.</b>          <b>5.</b> <b>Replace defective transformer.</b>          <b>6.</b> <b>Attach disconnected wire.</b>          <b>7.</b> <b>Replace S-1737 assy.</b>          <b>8.</b> <b>Replace defective tubing.</b>

<b>No syrup being dispensed</b>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> <li>5.</li> <li>6.</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Syrup container empty.</b></li> <li>2. <b>Syrup lines crimped.</b></li> <li>3. <b>QCD of syrup installed incorrectly.</b></li> <li>4. <b>S-1737 Assy defective.</b></li> <li>5. <b>Defective neoprene tubing.</b></li> <li>6. <b>Defective S-1700 transformer.</b></li> </ol>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> <li>5.</li> <li>6.</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Replenish syrup supply.</b></li> <li>2. <b>Straighten syrup lines.</b></li> <li>3. <b>Re-install QCD correctly.</b></li> <li>4. <b>Replace S-1737 Assy.</b></li> <li>5. <b>Replace neoprene tubing.</b></li> <li>6. <b>Replace S-1700 transformer.</b></li> </ol>
<b>No water being dispensed</b>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> <li>5.</li> <li>6.</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Plain water inlet supply shutoff closed.</b></li> <li>2. <b>Water filter fouled/clogged.</b></li> <li>3. <b>Pinched or crimped line.</b></li> <li>4. <b>Loose electrical connection, 24 volt.</b></li> <li>5. <b>Defective E-276 transformer.</b></li> <li>6. <b>Frozen water bath.</b></li> </ol>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> <li>5.</li> <li>6.</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Open plain water inlet supply line shut off valve.</b></li> <li>2. <b>Replace filter or cartridge.</b></li> <li>3. <b>Repair defective line.</b></li> <li>4. <b>Tighten connection and or repair open circuit.</b></li> <li>5. <b>Replace defective E-276 transformer.</b></li> <li>6. <b>See "Frozen water bath".</b></li> </ol>
<b>Water-to-syrup ratio to low or too high</b>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Syrup adjusted to low.</b></li> <li>2. <b>Syrup B.I.B. placement to far away for P.P. Pumps.</b></li> <li>3. <b>S-1737 Pump assy defective.</b></li> </ol>	<ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Adjust water-to-syrup ratio (see brixing instructions).</b></li> <li>2. <b>Move B.I.B. closer to unit.</b></li> <li>3. <b>Remove and repair S-1737 pump assy.</b></li> </ol>

