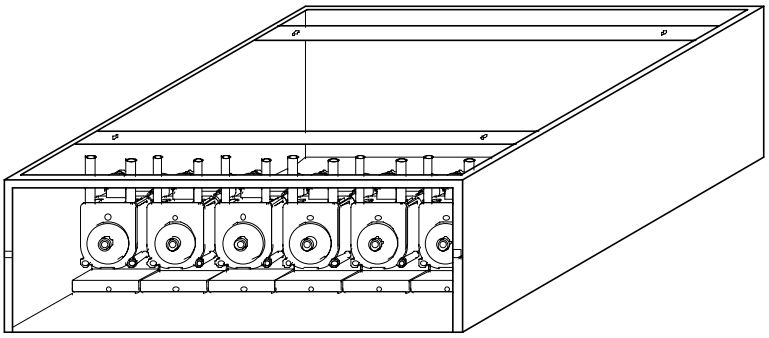
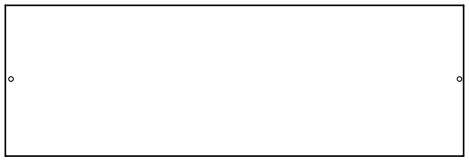
PPM

Peristaltic Pump Module
Installation Instruction





INTERNATIONAL CARBONIC INC.
16630 Koala Rd.
Adelanto, California 92301
800 854-1177

1/02

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

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.

GENERAL DESCRIPTION

This section gives the description, theory of operation, and data on conversion from a standard unit over to peristaltic unit.

SYSTEM DESCRIPTION

The peristaltic module is a complete system ready to adapt to an existing postmix unit. When added to a standard postmix unit we create a compact self-contained unit that eliminates external bag in the box pumps and associated parts for the bag in the box operation.

DESIGN DATA

PERISTALTIC PUMP MODULE, PPM

The module no matter what size or number of flavors will be identified by PPM. PERISTALTIC PUMP MODULE.

To further identify the PPM the PPM will be followed by a – number that will indicate the module width. For an example the PPM-12 will indicate a module 12” wide.

To further identify the PPM the width will be followed by – second number, that will indicate the number of flavors. As an example the PPM-12-4 will indicate a PERISTALTIC PUMP MODULE 12 INCHES WIDE WITH 4 FLAVORS. If the identification of PPM-17-6 is used, this identification will indicate a PERISTALTIC PUMP MODULE 17 INCHES WIDE WITH 6 FLAVORS.

Ambient operating temperature	40 F to 100 F

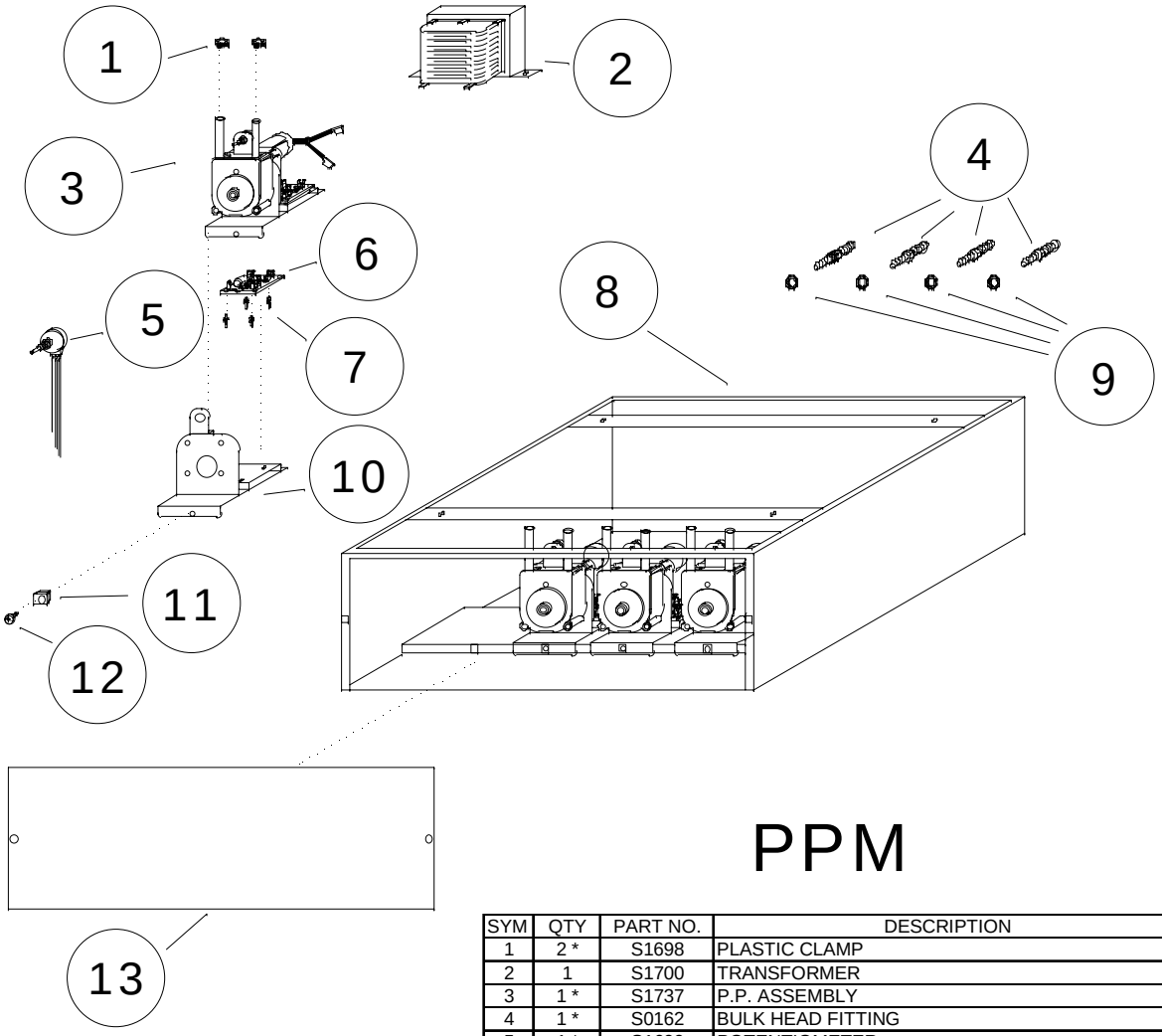
Electrical Requirements:
The cooling unit requires a 115 VAC, single phase, 60 Hertz power circuit.

Peristaltic Pump Assembly @ 4 valves	1. Amp

THEORY OF OPERATION

The PERISTALTIC PUMP MODULE, PPM was designed to replace existing B.I.B. pumps and the necessary components related to the B.I.B. such as CO2, air compressors, regulators, and quick couplers.

With the incorporation of the peristaltic pump the necessity for an air or CO2 supply is no longer necessary, this includes the elimination of 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 PERISTALTIC PUMP MODULE, PPM through a unique 1/4” X 3/8 S-162 bulkhead fitting at the rear of the unit.



PPM

SYM	QTY	PART NO.	DESCRIPTION
1	2 *	S1698	PLASTIC CLAMP
2	1	S1700	TRANSFORMER
3	1 *	S1737	P.P. ASSEMBLY
4	1 *	S0162	BULK HEAD FITTING
5	1 *	S1699	POTENTIOMETER
6	1 *	S1741	CONTROLLER
7	4 *	S1335	PLASTIC STANDOFF
8	1 **	**	BASE, MODULE
9	1 *	S0286-A	NUT, SS, LOCKING, 1/2" X 20 (USEW/S-162)
10	1 *	S1742	BASE, PUMP
11	1 *	S1325	SQUARE GROMMET NUT
12	1 *	A0014	SCREW #10 X 1/2" PHILLIPS HD S.S.
13	1 **	**	COVER, MODULE BASE
*PER FLAVOR, SPECIFY NUMBER			
** = SPECIFY NUMBER/MODEL TYPE			

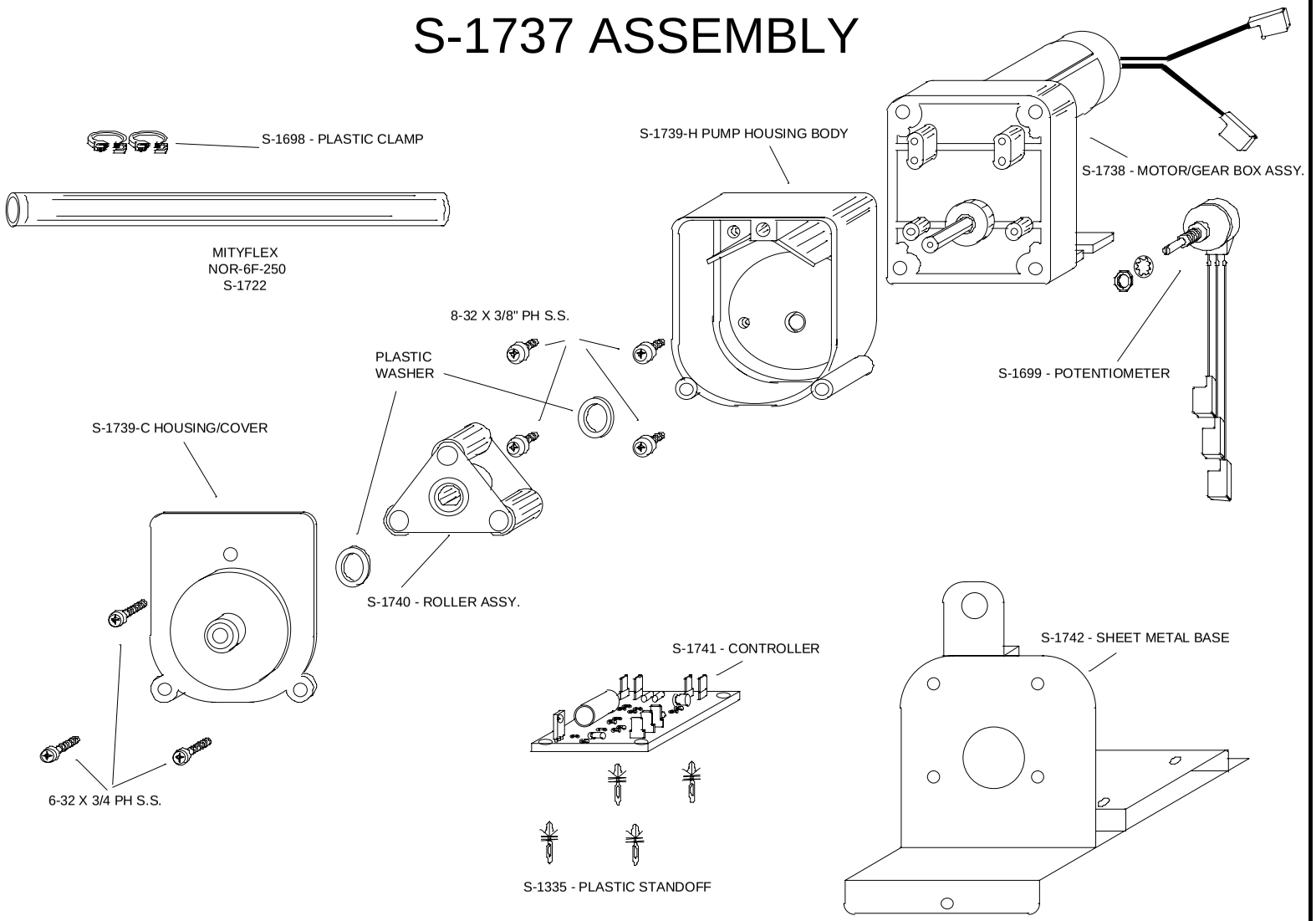
INTERNATIONAL CARBONIC INC.

ICI

ADELANTO, CALIFORNIA

TITLE	Peristaltic Module
DATE	8/14/00
DRN BY	GLW
CHK BY	GLW
APPR. BY	GLW

S-1737 ASSEMBLY



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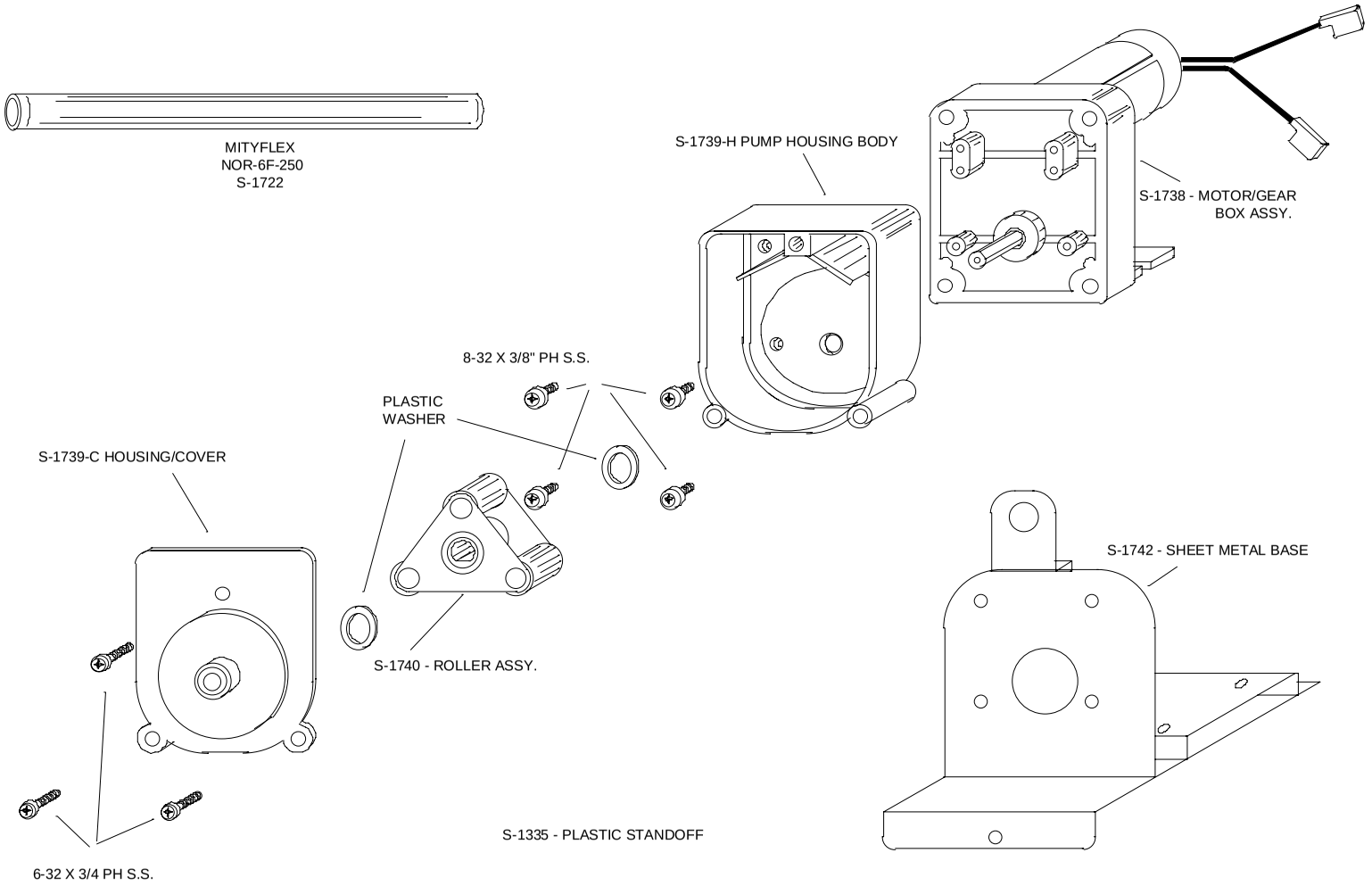
S-1743 REPLACEMENT ASSEMBLY



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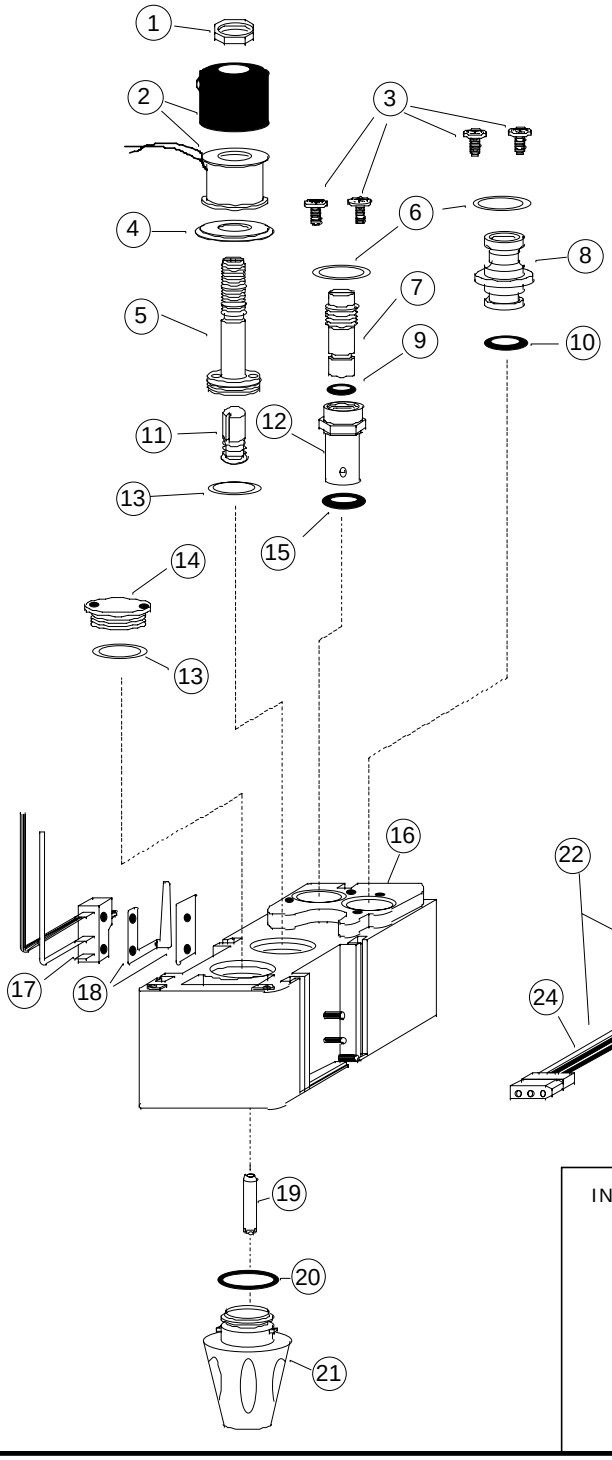
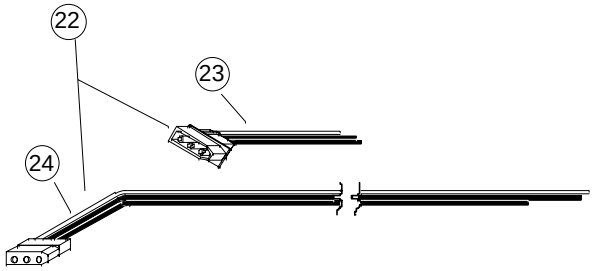
PFC-II-PP

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



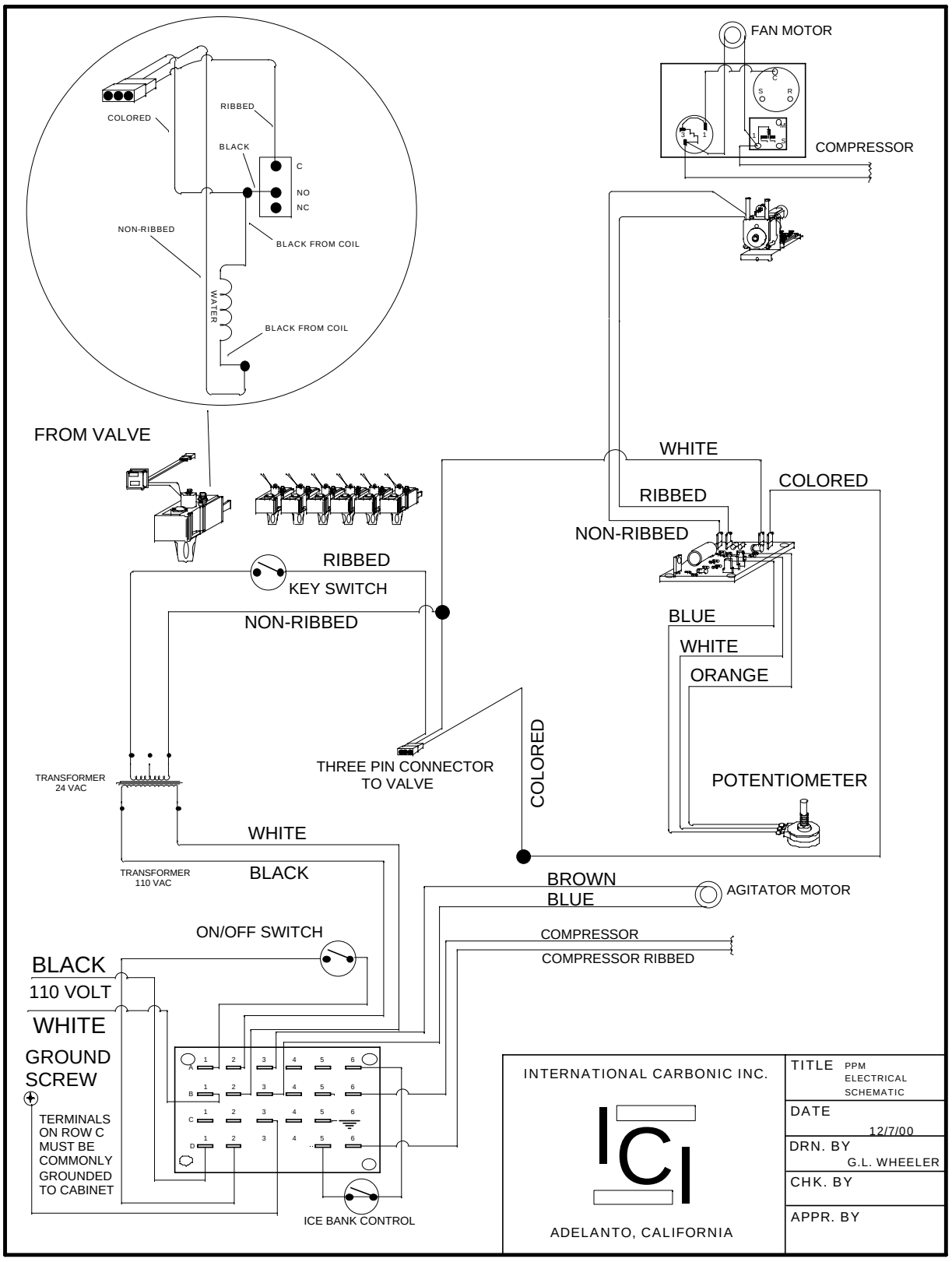


PFC-II-Peristaltic Pump

INTERNATIONAL CARBONIC INC.

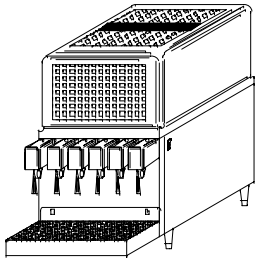
ADELANTO, CALIFORNIA

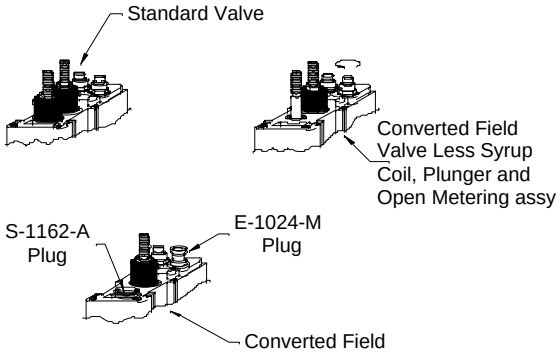
TITLE	PFC-II-PP
DATE	2/27/01 REVISED 9/27/01
DRN. BY	GLW
CHK. BY	
APPR. BY	

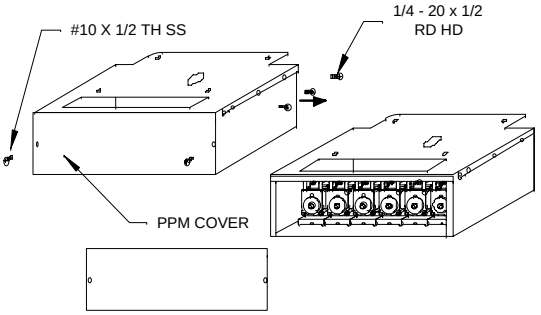

COLORED
RIBBED
BLACK
C
NO
NC
NON-RIBBED
BLACK FROM COIL
WATER
BLACK FROM COIL
FAN MOTOR
COMPRESSOR
FROM VALVE
WHITE
COLORED
RIBBED
NON-RIBBED
RIBBED
KEY SWITCH
NON-RIBBED
BLUE
WHITE
ORANGE
TRANSFORMER
24 VAC
THREE PIN CONNECTOR
TO VALVE
COLORED
POTENTIOMETER
WHITE
TRANSFORMER
110 VAC
BLACK
BROWN
BLUE
AGITATOR MOTOR
ON/OFF SWITCH
COMPRESSOR
COMPRESSOR RIBBED
BLACK
110 VOLT
WHITE
GROUND
SCREW
TERMINALS
ON ROW C
MUST BE
COMMONLY
GROUNDED
TO CABINET
ICE BANK CONTROL
INTERNATIONAL CARBONIC INC.
ADELANTO, CALIFORNIA
TITLE PPM ELECTRICAL SCHEMATIC
DATE 12/7/00
DRN. BY G.L. WHEELER
CHK. BY
APPR. BY

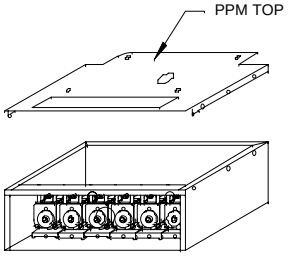
INSTALLATION:
Field Conversion

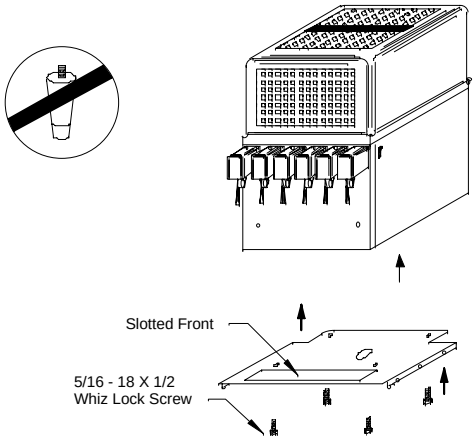
1. Prepare unit to be converted by draining water bath, removing and flushing all syrup from syrup lines, disconnect electrical.
2. Remove all existing syrup lines from unit.
3. Remove existing incoming water line, from water coil.
4. Remove power cord from unit to be converted.
5. Remove all valve syrup solenoid coils, (front coil), from all valves.
6. Remove E-527 syrup solenoid stem from each valve.
7. Remove E-730 plunger from E-527 stem and reinstall E-527 stem without plunger to valve or use S-1162-A plug.
8. Rotate syrup metering pin counter clockwise to allow maximum flow or install an optional syrup metering plug on each valve, E-1024-M.
9. Remove PPM, (Peristaltic Pump Module), cover.
10. Remove six, (6), 1/4-20 x 1/2 screws from PPM top. Separate top from PPM bottom.
11. Remove existing legs from unit to be converted.
12. Position PPM top on base of unit to be converted. Note: Pumps towards front of unit to be converted.
13. Install four (4) 5/16-18 x 1/2 screws mounting PPM top to unit to be converted.
14. Pull power cord through rear of PPM power cord hole and extend out past front of module.
15. Partially route units drain hose through drain hole in rear of PPM in preparation of mating top and bottom.
16. Place unit on PPM, and attach in place with supplied screws, six, (6), 1/4-20 x 1/2 screws. Note at this time install legs if required.



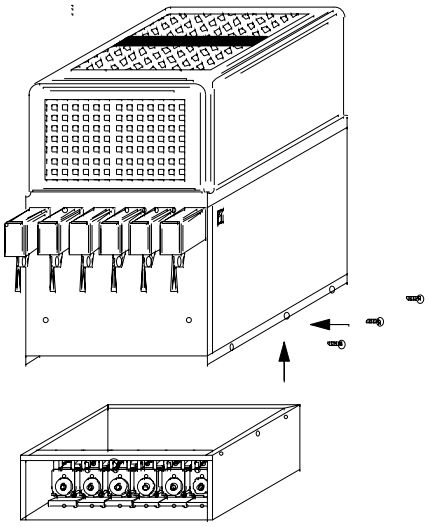


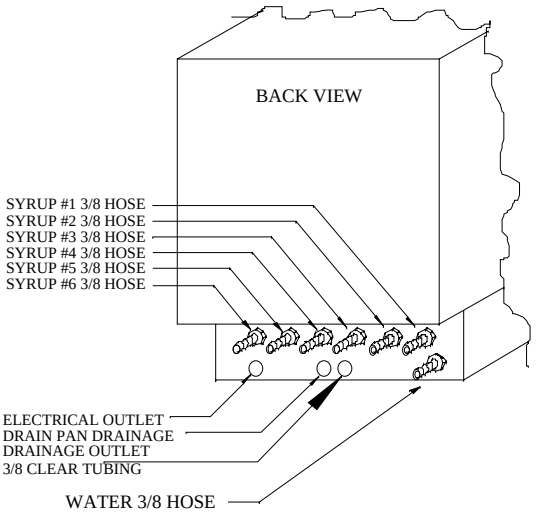


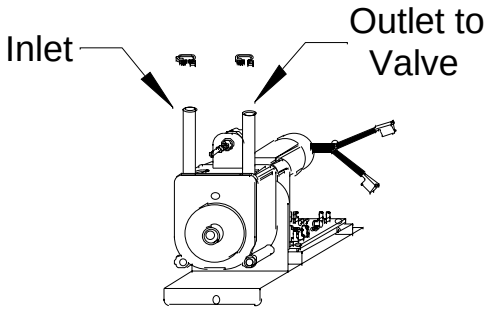




17. Pull drain hose through rear of PPM. Install water line from PPM to water coil in unit.
18. Snake power cord to control box passing through rectangular slot in module.
19. Reinstall syrup lines, cut to length, and attach to corresponding peristaltic pump.
20. Use supplied S-38-L, S-1698 Plastic clamp and stainless steel clamp.
21. Re-wire per wiring schematic.
22. Install incoming syrup lines with syrup couplers to S-162 bulkhead fittings respectively.
23. Connect incoming water supply to S-162 bulkhead fitting.
24. Re-fill water bath. No distilled water.
25. Plug power cord into appropriate electrical socket.
26. Check to make sure that refrigeration and agitator pump activate.
27. Actuate all valves checking correct electrical connections. Note: when activating valve the corresponding peristaltic pump will also activate.
28. Check rotation of the peristaltic pump at time of activation, the pump should be turning counter clockwise.
29. Syrup will now dispense from valve.
30. Brix converted unit.







Counter Clockwise Rotation

INSTALLATION
PERISTALTIC PUMP MODULE, PPM

UNPACKING AND INSPECTION

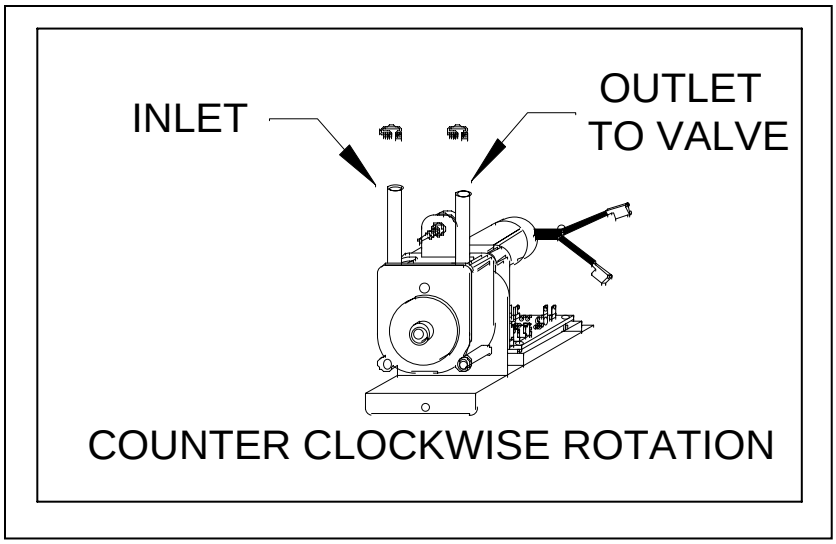
Upon receiving unit, immediately remove PERISTALTIC PUMP MODULE, PPM from shipping carton and inspect for shipping damage.

NOTE: Before leaving the factory the PERISTALTIC PUMP MODULE, PPM 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**!

INSTALLATION:

1. Prepare unit to be converted by draining water bath, removing and flushing all syrup from syrup lines, disconnect electrical.
2. Remove all existing syrup lines from unit and discard.
3. Remove existing incoming water line, from water coil.
4. Remove existing drain line from cabinet base of unit to be converted.
5. Remove power cord from unit to be converted.
6. Remove all valve syrup solenoid coils, (front coil), from all valves, see exploded view.
7. Remove E-527 solenoid stem from each valve.
8. Remove E-730 from E-527 and reinstall E-527 to valve.
9. Rotate syrup metering pin counter clockwise to allow maximum flow or install an optional syrup metering plug.
10. Remove PPM module cover.
11. Remove peristaltic pump assemblies from module to facilitate installation of module to base of unit.
12. Remove existing legs from unit to be converted and position unit on peristaltic module.
13. Place unit on PERISTALTIC PUMP MODULE, PPM, and bolt in place with supplied bolts. Note at this time install legs if required.
14. Install supplied water line to water coil from PERISTALTIC PUMP MODULE, PPM.
15. Reinstall drain line and power cord.
16. Reinstall peristaltic pump assembly.
17. Attach supplied syrup lines from PERISTALTIC PUMP MODULE, PPM to valves on unit. Note: if syrup coils are utilized new syrup lines must be fabricated. It is recommended to eliminate all syrup coils in juice applications.
18. Re-wire per wiring schematic, see valve electrical schematic.
19. Install B.I.B. to S-162 bulkhead fittings respectively.
20. Connect incoming water supply to S-162 bulkhead fitting.
21. Re-fill water bath.

22. Plug power cord into appropriate electrical socket.



23. Check to make sure that refrigeration and agitator pump activate.
24. Actuate all valves checking correct electrical connections. Note: when activating valve the corresponding peristaltic pump will also activate.
25. Check rotation of the peristaltic pump at time of activation, the pump should be turning counter clockwise. See above illustration.
26. Syrup will now dispense from valve.
27. Follow supplied brixing instructions.

LOOSE - SHIPPED PARTS

Item No.	Part No.	Name	Qty
1		Installation Instruction	1
2	A-45	5/16 x 18 FLANGE WIZ LOCK SCREW 3/4	4

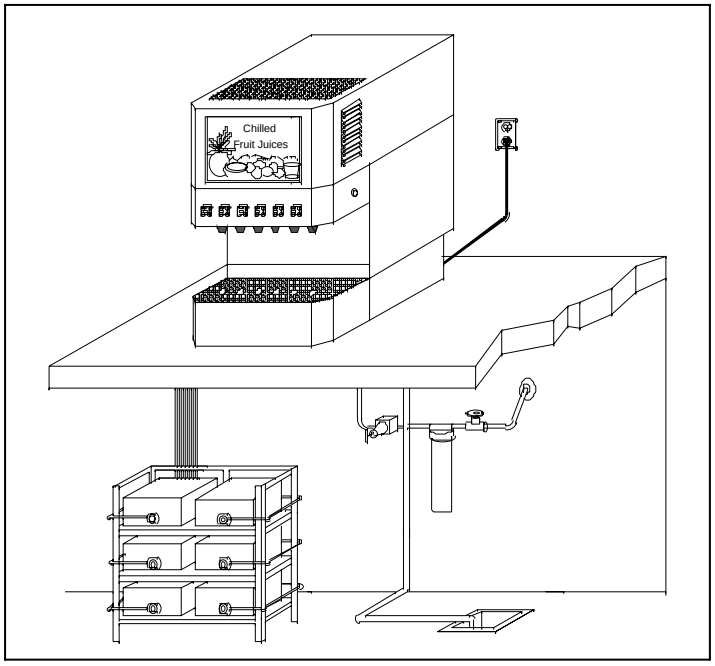


FIGURE 2 SAMPLE OF POSSIBLE INSTALLATION.

INSTALL B.I.B.

1. Place B.I.B. as close as possible to PERISTALTIC PUMP MODULE, PPM unit, preferably no farther than 15 feet. The PERISTALTIC PUMP MODULE, PPM 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 PERISTALTIC PUMP MODULE, PPM.

4. Activate Q.C.D.

5. Check all connections for leaks.

CONNECTING WATER INLET

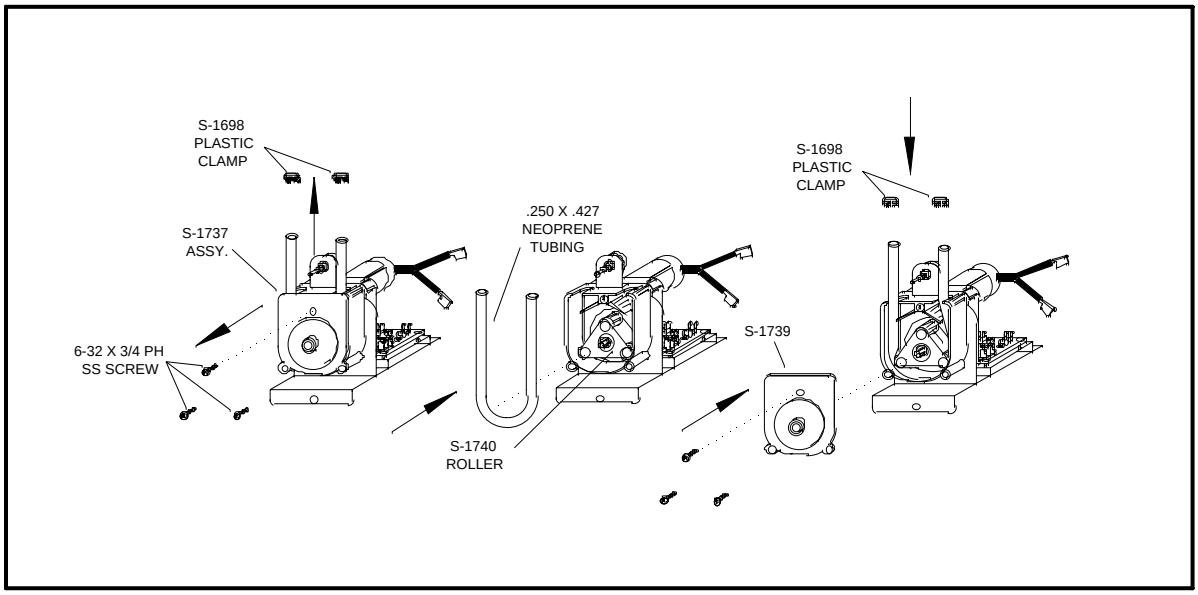
WATER PIPE CONNECTIONS AND FIXTURES DIRECTLY CONNECTED TO POTABLE WATER SUPPLY SHALL BE SIZED, INSTALLED AND MAINTAINED ACCORDING TO FEDERAL, STATE, AND LOCAL LAWS.

The water connection on the PERISTALTIC PUMP MODULE, PPM is made to a flexible water line by means of a 3/8", 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 has not less than 3/8" I.D. passageway for any distance greater than ten feet from the PERISTALTIC PUMP MODULE, PPM. It can be reduced to 3/8" OD copper tubing and connected to the water inlet connection with-in ten feet of the PERISTALTIC PUMP MODULE, PPM. All water inlet connections are clearly tagged.

ELECTRICAL REQUIREMENTS:

The PERISTALTIC PUMP MODULE, PPM requires a 120 VAC, single phase, 60-Hertz power circuit, and must be wired in accordance with N.E.C. or local ordinance.

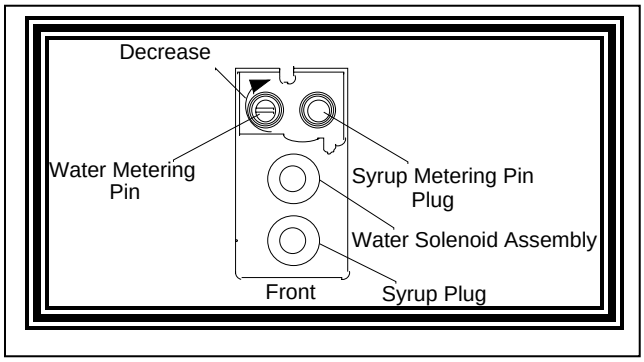


CHANGING PERISTALTIC PUMP TUBING

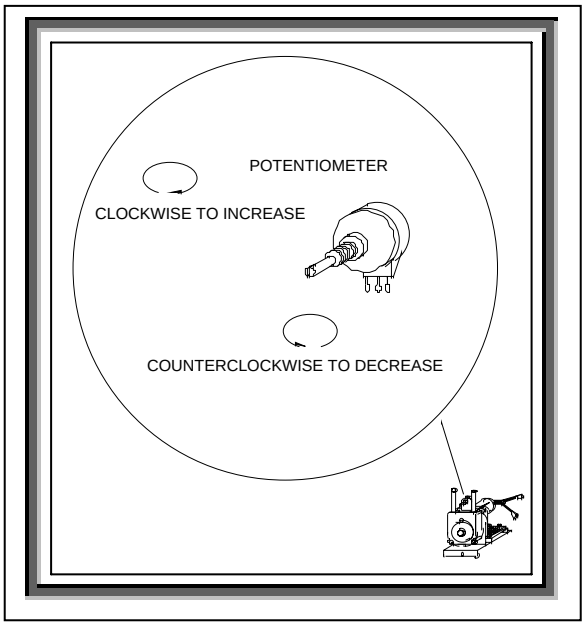
1. Remove #10 X 1/2" Phillips TH. Combo Screw. Then slide out S-1027 Assy.
2. Remove three 6-32 x 3/4 PH screws.
3. Remove S-1739 cover.
4. Remove neoprene tubing by pulling tubing while turn S-1740 roller.
5. Replace old neoprene tubing with new.
6. Squeeze new tubing with pliers two insert tubing in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

BRIX INSTRUCTIONS

BRIXING PFC-II-PP VALVE

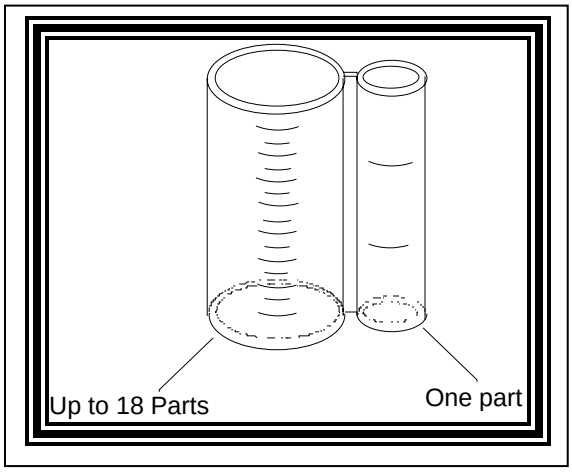


The water and syrup flows are individually adjusted by their respective metering pin / potentiometer.



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 PERISTALTIC PUMP MODULE, PPM 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 BIB, then bleed system pressure before proceeding.

Trouble		Probable Cause		Remedy
DISPENSING VALVES				
Water leaking from nozzle after actuation	1.	Foreign debris under plunger seat or bent creased stem water only.	1.	a. Disconnect water from affected valve. b. Relieve pressure by activating valve. c. Remove E-623 nut from water solenoid. d. Remove E-525 coil assembly from E-527 stem. e. Remove E-527 stem from valve body. Note: care should be taken not to dent smooth E-527 wall. 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. g. Inspect E-730 plunger seat for damage, replace if damaged. h. Reassemble by reversing above procedure.

No water, no syrup being dispensed from valve	1.	No electrical power.	1.	Plug power cord into electrical box. Check line voltage.
	2.	Frozen water bath.	2.	See “Frozen water bath.”
	3.	Pinched or crimped lines.	3.	Repair defective line.
	4.	Broken sub-miniature switch.	4.	Replace defective switch.
	5.	Bad transformer.	5.	Replace defective transformer.
	6.	Disconnected wire.	6.	Attach disconnected wire.
	7.	Defective S-1737 assy.	7.	Replace S-1737 assy.
	8.	Worn or defective neoprene tubing in S-1737 assy.	8.	Replace defective tubing.
No syrup being dispensed	1.	Syrup container empty.	1.	Replenish syrup supply.
	2.	Syrup lines crimped.	2.	Straighten syrup lines.
	3.	QCD of syrup installed in-correctly.	3.	Re-install QCD correctly.
	4.	S-1737 Assy defective.	4.	Replace S-1737 Assy.
	5.	Defective neoprene tubing.	5.	Replace neoprene tubing.
	6.	Defective S-1700 transformer.	6.	Replace S-1700 transformer.
	7.	Rotation of PP motor in correct.	7.	Reverse PP wires at controller.
	8.	Syrup tubing at PP pump reversed.	8.	Remove and reconnect tubing at PP correctly.
	9.	Vacuum leak in PP inlet line.	9.	Repair vacuum leak.
No water being dispensed	1.	Plain water inlet supply shutoff closed.	1.	Open plain water inlet supply line shut off valve.
	2.	Water filter fouled/clogged.	2.	Replace filter or cartridge.
	3.	Pinched or crimped line.	3.	Repair defective line.
	4.	Loose electrical connection, 24 volt.	4.	Tighten connection and or repair open circuit.
	5.	Defective E-276 transformer.	5.	Replace defective E-276 transformer.
	6.	Frozen water bath.		See “Frozen water bath.”
Water-to-syrup ratio to low or too high	1.	Syrup adjusted to low.	1.	Adjust water-to-syrup ratio (see brix instructions).
	2.	Syrup B.I.B. placement to far away for P.P. Pumps.	2.	Move B.I.B. closer to unit.
	3.	S-1737 Pump assy defective.	3.	Remove and repair S-1737 pump assy.
	4.	Vacuum leak in PP inlet line.	4.	Repair vacuum leak.

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 SIMUTAINEOUSLY, BOTH SYRUPS SHOULD BE CLEANED, (DETERGENT SOLUTION), SIMUTAINEOUSLY, BOTH SYRUPS SHOULD BE FLUSHED UNTIL FREE OF DETERGENT SIMUTAINEOUSLY AND BOTH SYRUPS SHOULD BE SANITIZED SIMUTAINEOUSLY.