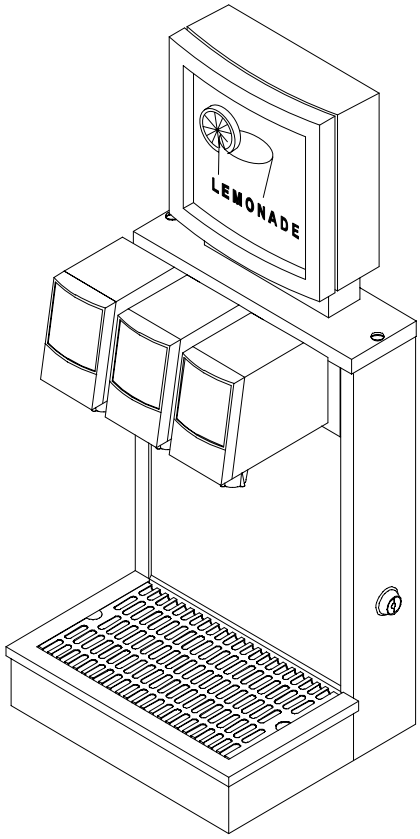
Liquid Base Beverage Dispenser
INSTALLATION & OPERATORS MANUAL



Part No. 630460001
Revised: May 13, 2014
Revision: B

THIS DOCUMENT CONTAINS IMPORTANT INFORMATION
This Installation Manual must be read and understood before starting to install or operate this equipment.

Printed in U.S.A.

TABLE OF CONTENTS

GENERAL DESCRIPTION

UNIT DESCRIPTION

The Three-Flavor Tower is compact and may be island-mounted or installed on a front or rear counter. The Three-Flavor Tower is designed to dispense three, portion controlled, noncarbonated drinks. One concentrate flavor is chilled by a heat exchanger. Cooling for the heat exchanger is provided by the existing soft drink system.

DESIGN DATA

Table 1. Design Data

Overall Dimensions:	
Width	10.75 in.
Height	26.25 in.
Depth	9.12 in.
Ambient Operating Temperature:	
	40 degrees F (4.4 degrees C) to 90 degrees F (32 degrees C)
Electrical Requirements:	
115VAC, 60HZ	
Inlet Water Requirements:	
Minimum Flow Pressure	40 psig
Maximum Static Pressure	55 psig

RECEIVING

Each Unit is completely tested under operating conditions and thoroughly inspected before shipment. At time of shipment, the carrier accepts the Unit and any claim for damage in transit must be made with the carrier. Upon receiving Unit from the delivering carrier, carefully inspect the carton for visible indication of damage. Any damage or irregularities should be noted at this time (not later than 15 days from date of delivery) and immediately reported to the delivering carrier. Request a written inspection from the carrier's claims inspector to substantiate claim. File claim with the delivering carrier not with Cornelius Inc.

UNPACKING AND INSPECTION

CAUTION: Unit must be lifted by the S/S tower to avoid damage. Do Not lift using valve housings.

Unpack a Unit as follows:

1. Open carton.
2. Lift Unit from carton.
3. Retain installation manual, and loose shipped parts.
4. Carefully inspect Unit for evidence of damage. If evidence of damage is found, notify delivering carrier and file a claim against the carrier.
5. Remove loose-shipped parts from carton. Check contents per Table below.

Table 2. Loose-Shipped Parts

90° Drain Elbow
Installation Template
Wire Harness
Power Supply, 115/24 VAC, 75 VA
Valve Decals
Flavor Decals
Installation Manual

LOCATION SELECTION

The Unit may be island-mounted or installed on a front or rear counter provided that the following requirements are satisfied. A hole must be cut in the countertop to permit access for the water, concentrate, drain tube and coolant tubing.

WARNING: All electrical wiring must conform to national and local electrical codes.

1. Locate Unit near a grounded electrical outlet having a dedicated circuit fused at jjsr15 amps (slow-blow) for 115VAC units. Alternate protection using an equivalent HACR (US) circuit breaker may be used. The electrical supply for the tower is furnished by a 115/24 transformer which is mounted near the tower.
2. Locate Unit close to a water inlet supply line with pressure and flow as given in the listing of Physical Characteristics and Requirements.

INSTALLATION

CONCENTRATE SOURCE INSTALLATION

IMPORTANT: This instruction does not include instructions for the installation of the concentrate source system. This should be done to suit the location.

COUNTERTOP HOLE LOCATION (TUBING ACCESS)

1. Using the template provided, layout the location of the access hole.
2. Cut the access hole in the counter. Be sure there are no sharp edges to damage the tubing.
3. Move the Unit into position over the hole and attach the tower to the counter.
4. Route all tubing (concentrate, water, coolant and drain) through the access in the countertop.

MAKING WATER, CONCENTRATE, AND ELECTRICAL CONNECTIONS

Make Water Connections as follows:

CAUTION: If water source exceeds 65 psig a water pressure regulator kit must be used to ensure correct Unit operation. Refer to Installation Kits paragraph for part number.

CAUTION: Do not use a saw to cut tubing, use a tubing cutter or knife to avoid contamination of tubing with particles of material.

CAUTION: Water pipe connections and fixtures directly connected to a potable water supply shall be sized, installed and maintained according to federal, state, and local laws.

1. Check water pressure. If water pressure is greater than 65 psig, install a water pressure regulator. Regulate the water pressure to 50 psig.
2. Connect tubing marked “Water” to water source, but do not turn-on at this time. Additional tubing may have to be added to the existing water tubing from the dispenser.
3. If additional tubing is used, flush the tubing thoroughly by running four gallons (15 liters) of water to a drain or suitable container.
4. Connect to the tower water tubing.
5. Turn on the water supply and check for leaks.

COOLANT CONNECTION FOR HEAT EXCHANGER

Note: The inlet and outlet fittings on the Heat Exchanger are 1/2″. Use 1/2″ tubing from the existing python to the Heat Exchanger. The tubing connections must be leak checked and then insulated to prevent condensation. Tubing, fittings, clamps and insulation to be supplied by the installer.

1. Select best location to tap into existing recirculating cold carbonated water tubing in the soft drink python.
2. The soft drink system must be shut down and all pressure relieved from the carbonator and associated carbonated water tubing.
3. Python insulation must be opened to permit access to the tubing.
4. Find the recirculating cold carbonated water line from the cooling unit.
5. Cut the cold carbonated water line and remove approximately 3″ of the tubing to permit the installation of the elbows.
6. Connect tubing as shown in Figure 1.

7. Check all connections for leaks before insulating the tubing.

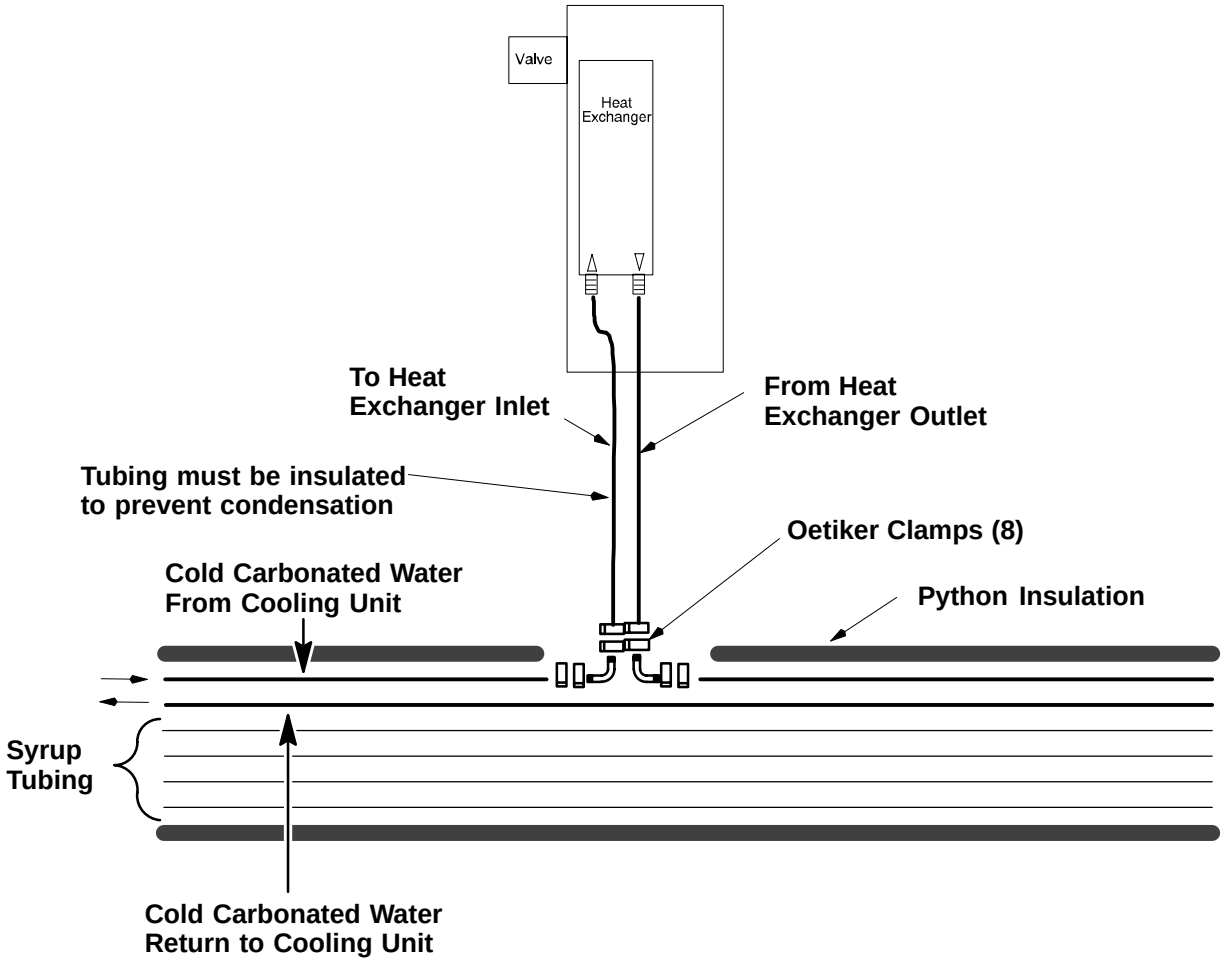


FIGURE 1. CONNECTION TO EXISTING SODA SYSTEM COOLANT

CONNECT CONCENTRATE TUBING

Connect concentrate tubing to the Unit as follows:

1. Sanitize all concentrate systems after connecting concentrate tubing following instructions below. Refer to sanitizing procedure in this manual.

IMPORTANT: All concentrate systems must be sanitized before unit is put into operation.

2. Route one concentrate tubing for each product up through the hole in the countertop.

3. Apply product decals from the kit to dispense switches to correspond to the product dispensed.

SEALING UNIT BASE TO COUNTERTOP (USA)

To comply with the requirements of the NSF International, (NSF), the base of a Unit must be sealed to the countertop and all access holes to the inside of the Unit must be closed off with a mastic material. To seal a Unit to the countertop, proceed as follows:

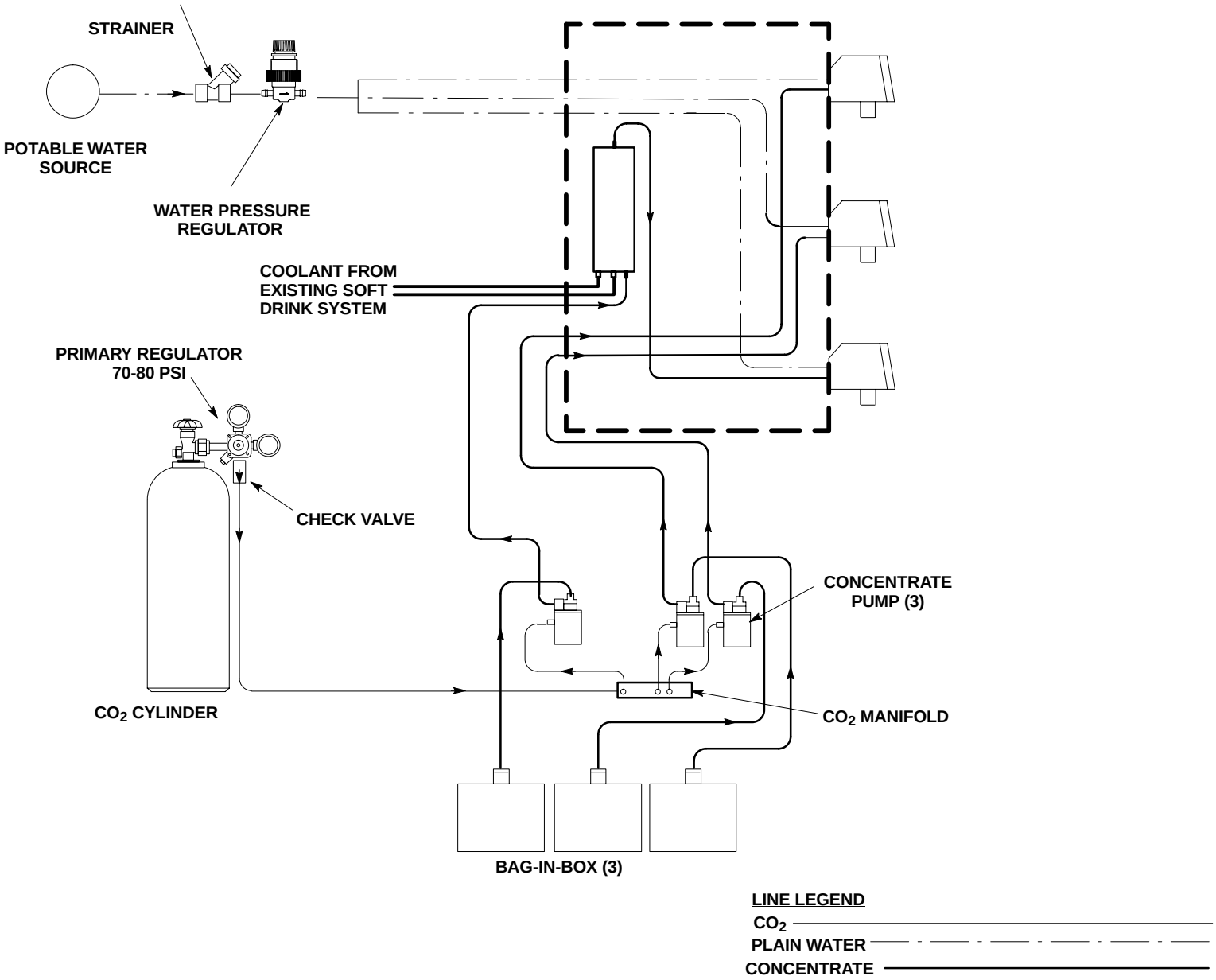
1. The tower must be fastened to the countertop using sheet metal screw or machine screws,whichever is desired. Before sealing the tower, locate and drill holes for screwing the tower to the countertop.

2. Carefully tilt the connected Unit up to expose the base.
3. Apply a silastic sealant e.g. Dow Corning RTV 731 or equivalent on all base edges.
4. Lower Unit into exact operating position on the countertop.
5. Fasten the tower to the countertop.
6. Apply additional sealant around the Unit so that the sealant has a minimum radius of 1/2 inch.
7. Seal the lines and plug the remaining opening with mastic material such as Permagum, or equivalent.

NOTE: When Unit is lowered into place, do not move it, or seal will be broken.

NOTE: All connections should be made before the Unit is sealed to the countertop.

MULTI-FLAVOR TOWER
B-I-B INSTALLATION



Connect concentrate tubing to concentrate Sources

Connect concentrate tubing to concentrate sources for bag-in-box (or tank).

Make Electrical Connections

Mount the transformer beneath the tower and route the 24V lead up into the tower and connect to the plugs in the tower for the valves and merchandiser.

PREPARATION FOR OPERATION

All Units as shipped will dispense only non-carbonated drinks.

Purging the Concentrate Systems

1. Place a cup or other container under the nozzle.
2. Operate each valve in turn by pressing the Cancel/Pour button and observe concentrate flow. Purging is completed when all air is removed from the system. If concentrate continues to show air bubbles, check tightness of tubing connections.

Purging the Water System

1. Place a cup or other container under the nozzle.
2. Operate each valve in turn by pressing the Cancel/Pour button and observe water flow. Purging is completed when all air is removed from the system.

ADJUSTING WATER-TO-CONCENTRATE RATIO OF DISPENSED PRODUCT

Note: The water flow rate must be set before any attempt is made to set the water-to-concentrate ratio.

Concentrate must be disconnected while setting the water flow rate. Water should be dispensed by pressing the Cancel/Pour switch on the control panel.

1. Using a graduated cup and a stop watch or second hand on your watch, set the flow rate to 2.5 ounces per second. This is equal to 10 ounces in 4 seconds

Note: After the water flow rate is set, DO NOT adjust the water flow rate unless the flow rate is wrong. DO NOT adjust the water flow rate to set the water-to-concentrate ratio. Anytime the water flow rate is changed the water-to-concentrate ratio must be checked and adjusted as necessary.

The water-to-concentrate ratio is measured by use of a ratio cup having two chambers into which the water and concentrate are dispensed. The ratio, if incorrect, is adjusted by turning the related concentrate flow regulator adjusting screw located on each concentrate valve.

1. **Dole Dispensing Valve**

   A. Remove dispensing valve cover (pull from bottom edge).

   B. Remove nozzle from the dispensing valve by turning and pulling down.

   C. Place the syrup/water separator on the dispensing valve by pushing up and turning to tighten.

   D. Press valve cover CANCEL/POUR switch (see Figure 1) momentarily to fill separator with syrup.

   E. Place the brix cup under the separator, the large section of the cup under the large round body of the separator and the small section of the cup under the extended arm, which is the syrup tube.

   F. Press valve cover CANCEL/POUR switch and fill the brix cup to approximately 3/4 of the cup capacity.

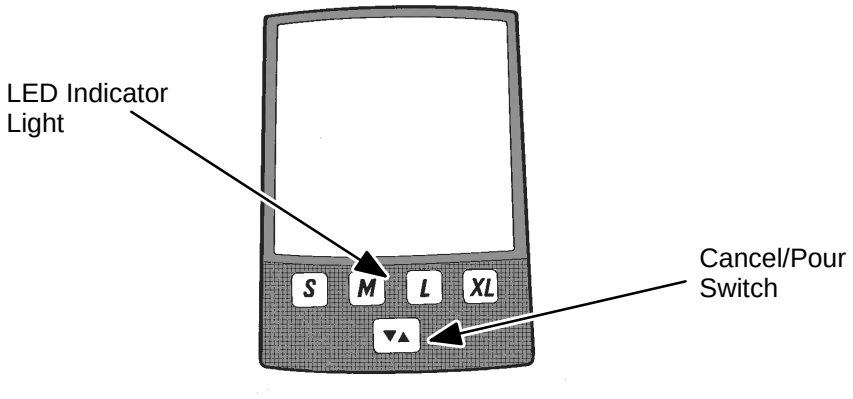


Figure 1

Note: Check local specifications for dispensed product water to syrup ratio specifications.

G. If the ratios are correct, proceed to Step I. If the ratios are not correct, proceed to step H.

H. Turn valve syrup flow control labeled “S4” (right-side control) adjusting screw to the left (COUNTER-CLOCKWISE) for less syrup or to the right (CLOCKWISE) for more syrup.

I. Remove the syrup/water separator by turning and pulling down.

J. Reinstall the nozzle by pushing up and turning until it is locked.

K. Repeat Steps E through J until the ratios are correct on all dispensing valves. Syrup calibration check is complete.

L. Install dispensing valve front cover.

2. Adjust the ratios for the remaining valves following the same procedure.

3. Replace the valve covers.

SETTING THE PORTION CONTROL

Note: In case of electrical power failure, the portion control has full memory function.

1. Press and hold “S” (small) and “XL” (extra-large) dispense switches at the same time on the front cover until for 3 seconds, after that time the portion control ”set mode” has been activated. The “set mode” will be confirmed by a flashing red LED.

2. Fill the cup to be used for small drinks with desired amount of ice, then place the cup under the dispensing valve nozzle.

3. Press and hold switch labeled “S” (small) on dispensing valve cover until cup is filled to the desired level, then release the switch.

4. Repeat Steps 2 and 3 to program the “M” (medium), “L” (large), and “XL” (extra-large) dispense switches.

5. After adjusting all dispensed drink volumes, press and release CANCEL/POUR switch to cancel portion control “set mode” and return to normal operation.

Dispensing of a portion control drink may be stopped by pressing the CANCEL/POUR switch. Drinks may be manually dispensed (non-portion control) by pressing the CANCEL/POUR switch.

SANITIZING THE SYSTEM (USA)

IMPORTANT: Only trained personnel should perform sanitizing procedures.

WARNING: Wear protective eyewear to avoid eye injury.

The syrup systems must be sanitized once every six months; whenever there is a flavor change, or an off flavor is noted in the product. This is the ‘‘ambient’’ sanitizing procedure whereby syrup is first flushed from the system with water, then a detergent is introduced, followed by a second water flush. A sanitizer is next placed in the system and it is finally purged with concentrate.

SANITIZING THE BAG-IN-BOX CONCENTRATE SYSTEMS

This is a procedure for sanitizing concentrate systems of the Liquid Base Beverage Dispenser.

SANITIZE THE BAG-IN-BOX SYSTEM AS FOLLOWS:

1. Disconnect the concentrate tube-end connectors from the bag-in-box containers.
2. Wash each tube-end fitting in warm water to remove any concentrate accumulation.
3. Install a bag valve (this can be cut from an empty bag-in-box container) on each concentrate tube-end connector. This opens the tube-end fitting so detergent, sanitizing solution and flush water can be pumped into the system.
4. Fill a clean plastic 5-gallon container with potable (drinking) water.
5. Place the tube-end connectors (with installed bag valves) into the water.
6. Place a waste container under the valve dispensing nozzle.
7. Operate each concentrate valve by pressing the Canel/Pour button to cause concentrate to flow from the nozzle.
8. Operate each valve until only water is dispensed.
9. Remove the concentrate tube-end connectors from the water.
10. Fill the 5-gallon container with potable (drinking) water at room temperature (70 degrees to 100 degrees F) and add 3/4 ounce per gallon of water (6 ml per liter) of Diversey DIVOFLOW 185, or equivalent detergent.

    Detergent must contain sodium hydroxide, be non-perfumed, and have low-sudsing characteristics. The detergent should be able to be rinsed off easily. The sodium hydroxide should be between 2 percent and 10 percent in the concentrated detergent.
11. Mix the contents of the container thoroughly.
12. Place the concentrate tube-end connectors (with bag valves installed) into the detergent.
13. Operate each valve until the water is displaced by the detergent.

CAUTION: To avoid damage to metallic parts of the system, do not allow the detergent solution to remain in a concentrate system longer than 15 minutes.

14. Allow the detergent to remain in the concentrate tubing for at least 10 minutes, but no longer than 15 minutes.

15. Remove the tube-end connectors from the detergent.

16. Dispose of unused detergent in a sanitary sewer, not in a storm drain. Wash the container thoroughly.

17. Fill the 5-gallon container with potable (drinking) water. Place the tube-end connectors in the water.

18. Hold each dispensing valve open until the detergent is displaced by the water.

WARNING: Phenolphthalein must be kept away from children. It is a powerful laxative and may cause serious illness if taken internally.

19. Dispense a one-ounce sample of water from the nozzle. Test the sample using a drop of phenolphthalein indicator. (This indicator becomes pink-colored in the presence of even small amounts of detergent) When the indicator remains clear, all detergent has been removed.

20. Remove the tube-end connectors from the water.

21. Fill the 5-gallon container with 4 gallons (15.1 liters) of water at a temperature between 70 degrees F. to a maximum of 100 degrees F.

22. Add 1.0 oz. (29.57 ml) of H.B. Fuller Monarch C–S or equivalent sanitizer [to provide a 200 ppm (200 mg/liter) active quaternary sanitizing solution] to the container. Mix thoroughly.

23. Place the concentrate tube-end connectors in the sanitizing solution.

24. Operate each valve until only the sanitizing solution is dispensed.

CAUTION: To avoid damage to metallic parts of the system, do not allow the sanitizing solution to remain in the concentrate systems longer than 15 minutes.

25. Allow the sanitizing solution to remain in the concentrate systems from 8 to 10 minutes.

26. Remove concentrate tube-end connectors from the sanitizing solution and remove the bag valves from the tube-end connectors. (Save the bag valves).

27. Connect each concentrate tube-end connector to the preselected concentrate source.

28. Operate each valve until the concentrate purges the sanitizer from the tubes, and only concentrate is dispensed.

29. Dispense and taste each product for off-taste.

30. Dispose of the waste sanitizing solution in the sanitary sewer, (not in storm drain). Rinse both containers.