UF-1 AND UFB-1 VALVES TRAINING MANUAL

CARBON DIOXIDE
WATER
SYRUP/CONCENTRATE
MECHANICAL
REFRIGERATION
CONTROLS & ELECTRICAL

TECHNICAL SERVICES

UF-1 and UFB-1 VALVES TRAINING MANUAL

The products, technical information, and instructions contained in this manual are subject to change without notice. These instructions are not intended to cover all details or variations of the equipment, nor to provide for every possible contingency in the installation, operation or maintenance of this equipment. This manual assumes that the person(s) working on the equipment have been trained and are skilled in working with electrical, plumbing, pneumatic, and mechanical equipment. It is assumed that appropriate safety precautions are taken and that all local safety and construction requirements are being meet, in addition to the information contained in this manual.

To inquire about current revisions of this and other documentation or for assistance with any Cornelius product contact:

IMI Cornelius Inc.

Internet:
www.cornelius.com

Email:
tech.service@cornelius.com

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INTRODUCTION

1. PREVIEW QUESTIONS

Check your current knowledge by taking a few minutes to answer the following questions:

1. What are the flow capacities of a UF-1 valve? _____

   _____

2. What are the flow capacities of a UFB-1 valve? _____

   _____

3. Which syrup has the greatest pressure drop, diet or sugar? _____

   _____

4. How do juice valves differ from carbonated beverage valves? _____

   _____

5. Can you program "top-off" on a portion control valve? _____

   _____

6. What components must be replaced when retrofitting SF-1 to UF-1 valves? _____

   _____

2. KEY THINGS TO KNOW / DO

- For quality drinks — keep the nozzles and the water/syrup system clean; and have the correct ratio, temperature, and carbonation!
- Set the water/syrup ratio accurately — and leave it alone!
- To set the ratio accurately, **set the water flow first**, then the syrup!
- Be sure to cool below 40°F the syrup and water before setting the ratio.

3. OVERVIEW

3.1 Product Description

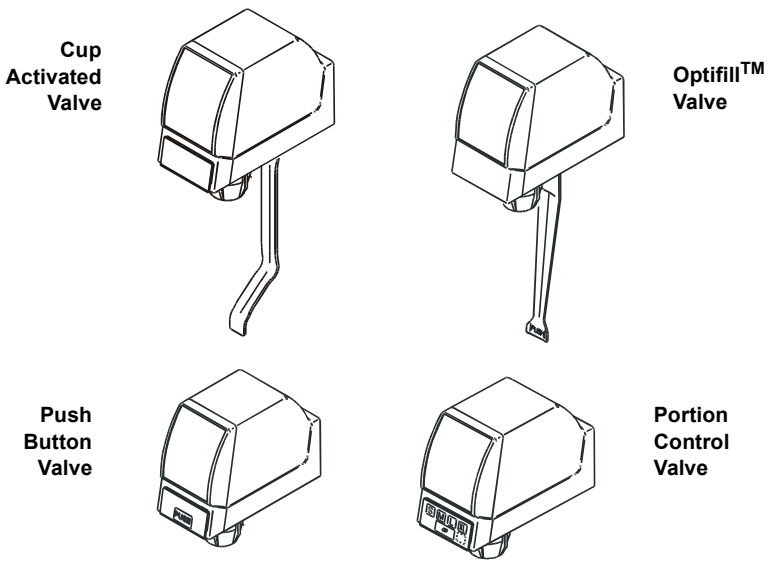
The UF-1 and UFB-1 valve provides accurate flow capability and dependability. The UF-1 and UFB-1 valves are capable of flow rates of 1 ½ to 3 ounces per second (high flow), 2 to 4 ounces per second (UFB-1), or 3 to 4 ½ ounces per second (ultra flow). The valve flow control modules are the only parts that differ in the three versions.

Note: The flow rate is also dependent on the capacity of the dispensing, cooling, and carbonation systems. An ultra flow capacity valve will not make up for a slow system flow rate or inadequate supplies of cooled water and syrup. The following is a list of Cornelius units and the valve flow rates they support:

Fast Flow 1.5 to 3.0 oz./sec.	**Fast Flow, UFB-1, or Ultra Flow 2 to 4 oz./sec. or 3.0 to 4.5 oz./sec.**
Vanguard	Vanguard 245
Value Line 2323 (10 circuit cold plate)	Premium 2323 (12 circuit cold plate)
Venture	2230
Vantage	3030
1522	ED 150
1722	ED 200
2224	ED 250
2230-100	ED 300
DB 90	DF 150
DB 150	DF 200
DB 200	DF 250
DB 250	
DB 275	
TJ 45	
TJ 90	
TJ 150	
TJ 200	
TJ 250	
TJ 300	
TJ 400	

There are four varieties of UF-1 and UFB-1 valves:

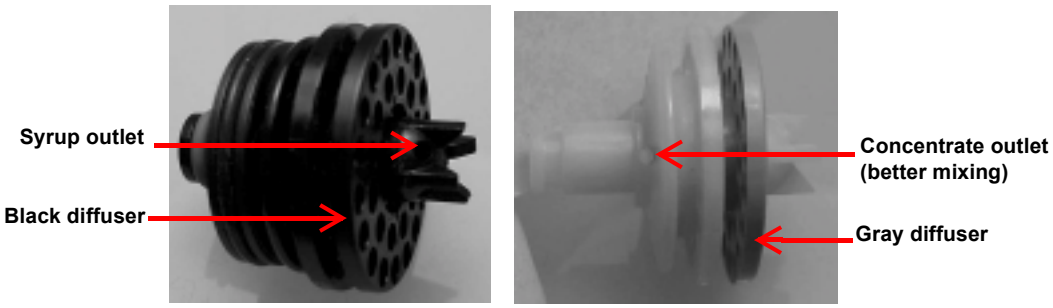
- The cup activated valve dispenses by means of a lever engaged by the cup.
- A push button valve has a press and hold button on the front cover of the valve.
- The Optifill™ valve dispenses with an activation lever but stops after the liquid fills the cup and touches the lever
- A portion control valve has four programmable drink size buttons that provide timed deliveries, top off, and a manual dispensing button.

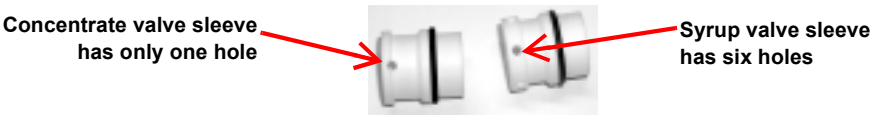


The UF-1 and UFB-1 valves are the same as described above with minor differences for juice applications. In the UF-1 and UFB-1 valve concentrate enters the nozzle assembly higher providing a better mix of concentrate and water in the cup. In addition, the orifices for concentrate are larger to avoid clogging. The concentrate diffuser is gray allowing for easy identification.

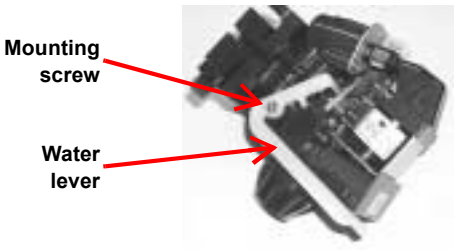
Note: The beverage (syrup) diffuser must be installed in order to use a diversion tube to ratio the concentrate valve.

Note: Concentrate valves have only one hole in their sleeve and are only offered in fast flow capacities of 1.5 to 3.0 oz./sec.





A side water lever kit can be added to a valve allowing for dispensing of water without syrup or concentrate. The side water lever can be added to either a carbonated drink valve or a noncarbonated drink valve.



Post-mix valves control:

- the ON–OFF of syrup and water,
- the flow rates of syrup and water,
- the mixing of the two ingredients as they pour into the cup, and
- in some instances - dispensed portion.

3.2 Dimensions & Capacities

Fast Flow - 1 ½ to 3 oz./sec.
UFB-1 -2 to 4 oz./sec.
Ultra Flow - 3 to 4 ½ oz./sec.

Operational temperature range:- - - - - - - - - - - - - - - - 10°C (50°F) to 43°C (110° F)
Voltage requirements: - 22 to 27 VAC (50/60 Hz)
Transformer (electronic valves) -80 VA min.
Operating Pressure (flowing)- syrup = 20 psi min.
- water = 35 psi min.

Concentrates and juices that contain particulates must be dispensed from a juice valve.

A slanted drip tray is necessary when using an Optifill™ valve.

SYSTEM DETAILS

1. WATER

1.1 Water Quality

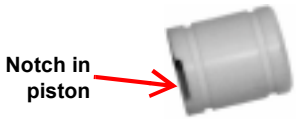
Water quality issues have an affect on dispensing valves. Chloramine, a combination of chlorine and ammonia is responsible for some degradation of rubber components. Chloramine is used in many U. S. water supplies. Its affects can be minimized by installing and maintaining a water filtration system.

Ultra pure water affects the sensitivity of the Optifill™ valve. Because ultra pure water has less mineral content, it reduces the conductivity of the water keeping the circuit open and overfilling the beverage container.

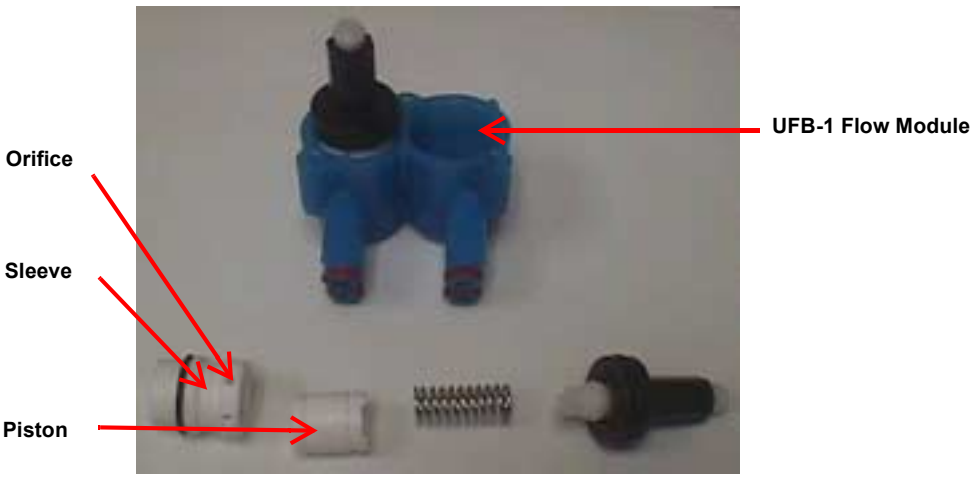
1.2 Water Flow

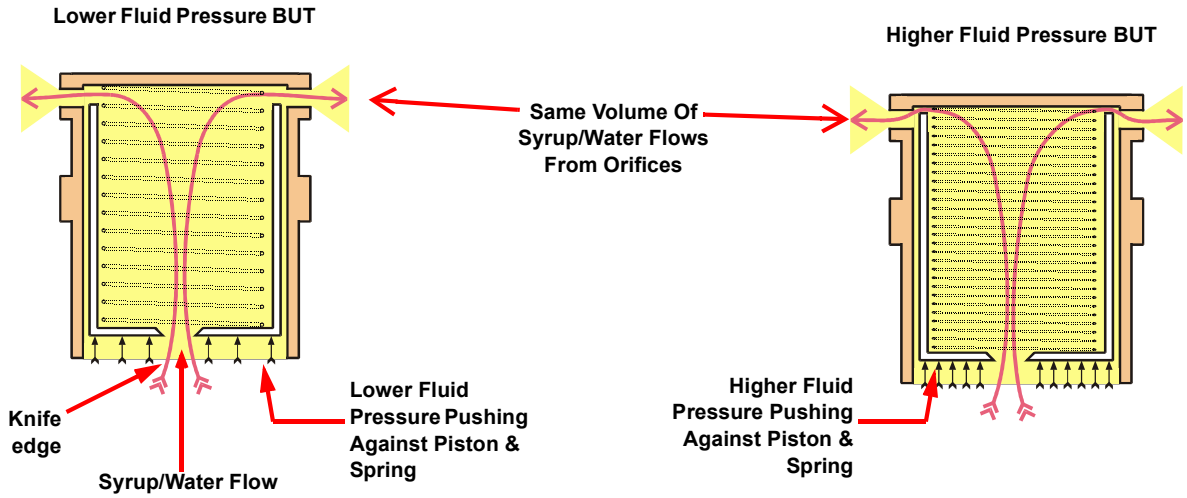
The size of the orifice in the piston varies depending on whether the piston is used for syrup or water, and whether it is high flow or ultra flow valve.

Note: The notched water piston on the Ultra Flow and UFB-1 valve. results in at least one orifice in the sleeve always open. This eliminates pulsating and smooths water flow at higher flow rates.



In operation the liquid flows through the knife–edged orifice in the bottom of the piston and then out the orifices in the sleeve. The outlet orifice size in the sleeve is regulated by the position of the piston. In the illustration, the piston is restricting approximately 1/2 of the outlet orifices.





The position of the piston inside the sleeve is determined by the upward pressure of the liquid against the base of the piston and the downward pressure of the spring inside the piston (not shown here). The pressure of the spring is regulated by the adjusting screw.

If the pressure of the liquid increases, the flow rate through the knife–edged orifice will increase. The piston is moved upward closing off more of the outlet orifices. The same flow rate is thereby maintained.

1.3 Adjusting Flow Rates

Flow rates of the water and syrup are adjusted based on the desired ratio. For example: if the desired ratio is 5:1, then the flow rate of the water is 5 times that of the syrup.

If the desired finished drink total flow rate is 3.0 ounces per second, then the water flow rate is 2.5 oz./sec and the syrup flow rate is 0.5 oz./sec. (The water at 2.5 oz./sec is five times the 0.5 oz./sec syrup flow rate.)

Note: Always adjust water within its range.

Water Flow Rates At Selected Ratios				
Water To Syrup Ratio	**Water at 1.5 oz./ sec. Total Flow**	**Water at 3.0 oz./ sec. Total Flow**	**Water at 3.75 oz./ sec. Total Flow**	**Water at 4.5 oz./ sec. Total Flow**
2 to 1	1.00 oz./sec.	2.00 oz./sec.	2.50 oz./sec.	3.00 oz./sec.
3 to 1	1.13 oz./sec.	2.25 oz./sec.	2.81 oz./sec.	3.38 oz./sec.
4 to 1	1.20 oz./sec.	2.40 oz./sec.	3.00 oz./sec.	3.60 oz./sec.
5 to 1	**1.25 oz./sec.**	**2.50 oz./sec.**	3.13 oz./sec.	**3.75 oz./sec.**
6 to 1	1.29 oz./sec.	2.57 oz./sec.	3.21 oz./sec.	3.86 oz./sec.
7 to 1	1.31 oz./sec.	2.63 oz./sec.	3.28 oz./sec.	3.94 oz./sec.

1.4 Calculating Flow Rates

The most frequent ratio is 5:1. The charts above list the breakdown for many ratios and flow rates. It is useful to be able to calculate flow rates when a chart is not available.

An example of calculating the water and syrup flow rates given the finished drink flow rate and the water to syrup ratio:

Given:

1. Finished Drink Flow Rate = 3.0 oz./sec.
2. Water to Syrup Ratio = 5 to 1

To calculate Water Flow Rate:

1. Calculate the Total Portions = Water Portion + Syrup Portion
   (example 5 + 1 = 6)

2. Calculate Syrup Flow Rate = Finished Drink Flow Rate ÷ Total Portions
   (example 3.0 oz./sec ÷ 6 = .5 oz./sec)

3. Calculate Water Flow Rate = Finished Drink Flow Rate – Syrup Flow Rate
   (example 3.0 oz./sec - .5 oz./sec = 2.5 oz./sec)

   Prove the calculation is correct by adding water flow rate of 2.5 oz./sec + syrup flow rate of .5 oz./sec = finished drink flow rate of 3.0 oz./sec.

   Water flowing at 2.5 oz./sec and syrup flowing at .5 oz./sec achieves a ratio of 5:1 and 3.0 oz./sec. flow rate.

2. SYRUP/CONCENTRATE

Syrup should always be precooled before setting the ratio. Syrup takes a path through the valve parallel to the water path. It is introduced in the block, travels through a syrup flow control, banjo, valve head and out the nozzle. Note, concentrate is not cooled.

High sugar syrups are more viscous (thicker) than diet syrups and consequently have more pressure drop within a system. This pressure drop results in less flow at the valve and therefore a slower fill time. Increasing the pump pressure will help overcome the pressure drop caused by high sugar syrups.

3. SETTING RATIOS

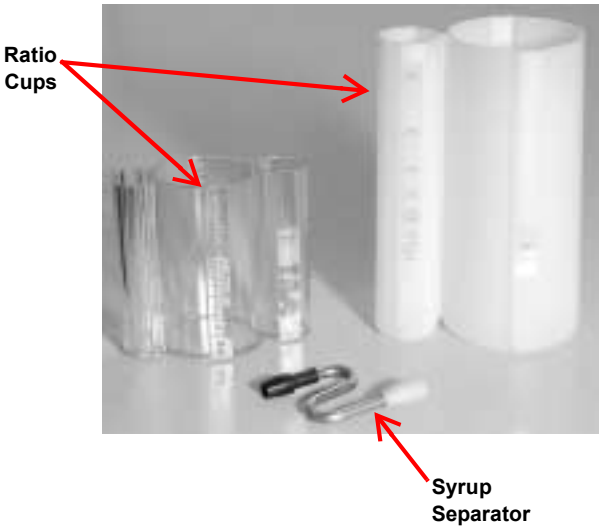
If the ratio varies and must be adjusted often, it is probably the result of a restricted syrup system. It is then time to clean and sanitize the syrup tubing and cooling coils and check for other problems such as syrup pumps, etc.

Note: Try raising the pressure on the pump before cleaning.

Set the water flow rate first, then adjust the syrup to the desired ratio. This gives the most accurate valve flow setting possible. Measure the ratio and adjust the syrup flow, if necessary. This will result in uniform flow, better carbonation retention, and improved drink quality.

When using a ratio cup always take these precautions to ensure accuracy:

- After installing the separator tube, open the valve to fill the syrup tube before starting the ratio test.
- Clean the cup thoroughly between tests so there is no carry–over from one test to the next.
- Fill the cup to approximately 3/4 full and use approximately the same quantity for each test to ensure accurate settings.
- Take another sample to verify the settings.



SYSTEM DETAILS

4. MECHANICAL

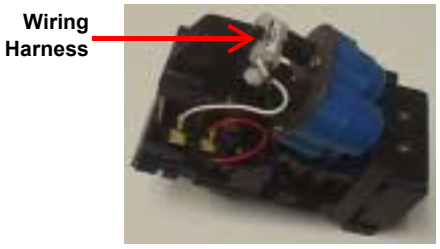
4.1 UF-1 and UFB-1 Valve Disassembly

1. Sequence for disassembly (refer to UF-1 Post-mix Dispensing Valve Illustrated Parts List) is as follows:

2. Remove front cover by lifting.

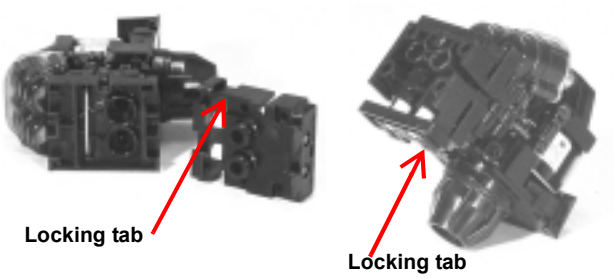
3. Remove valve cover.

4. Unplug wiring harness.

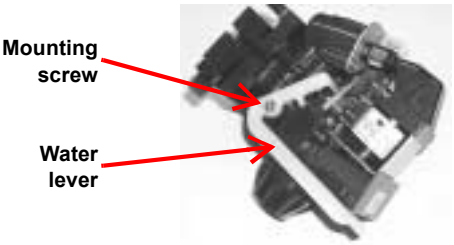


SYSTEM DETAILS

5. Remove valve from mounting block by pushing locking tab to left and push down on top plate of block. .



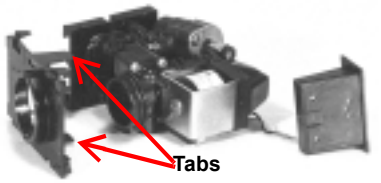
6. Remove water screw and lever (if it is installed on the valve).



7. Remove nozzle – turn left ¼ turn.

8. Remove diffuser assembly.
Note: The diffuser must be cleaned daily. Do not use bleach, do not use detergent, do not put in dishwasher. Use lukewarm water or soak in carbonated water.

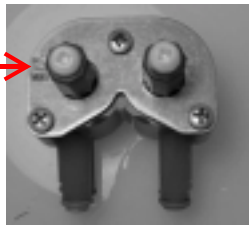
9. Remove bottom plate by disengaging side tabs.



10. Remove U-shaped retainer wire from back of valve.

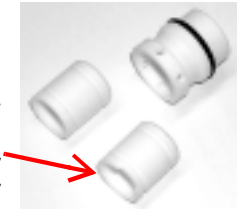
11. Grasp flow control module assembly and pull up.
Note: O-rings on bottom of inlets and outlets.

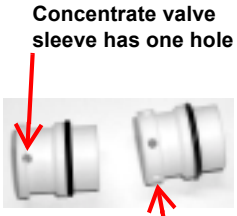
12. Note that the flow rate (1 ½ - 3, 3 – 4 ½ or 1 ½ - 3 juice) and date code are printed on the retainer plate.



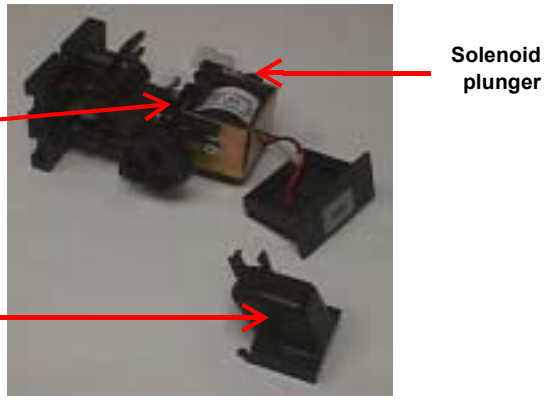
13. To disassemble the flow control: Remove screws and pull retainer forward. Remove top flow control subassemblies exposing flow controls.
Note the difference between high flow and ultra flow valves.

Note: Top Flow control is an assembly and cannot be disassembled.

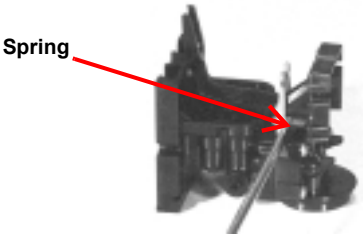




14. Pop off solenoid cover. Remove solenoid assembly from valve body by prying with screwdriver.
Note: Check plunger for corrosion and dirt – replace as necessary.



15. Carefully remove banjo lever springs.



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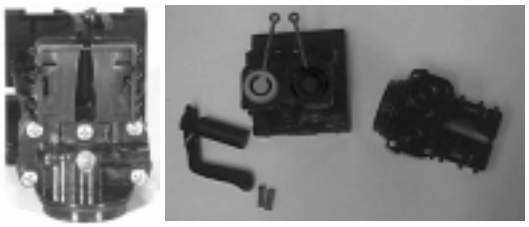
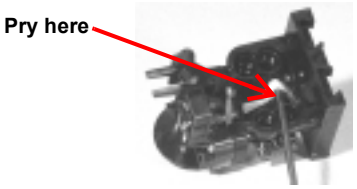
16. Then remove 5 screws that secure the valve head to the valve body.



17. To remove the dispensing lever return spring pry the end of the spring and pull up. This spring stops the lever from vibrating.

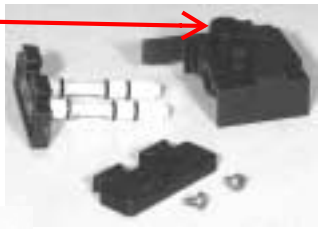


4.2 Mounting Block Disassembly

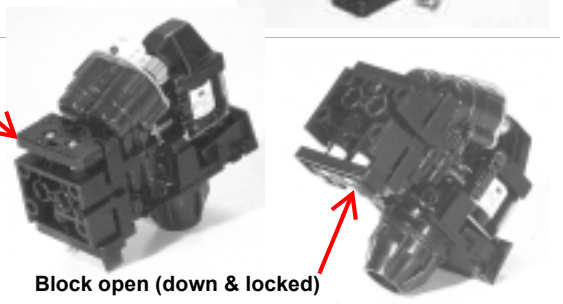
To disassemble mounting block:

1. Turn off water and syrup supplies.

2. Remove 2 screws from top plate and pull spools out from the bottom of the mounting plate exposing spools and O-rings.
   Note: When replacing mounting block use replacement O-rings for the inlet fittings.



3. When installing a new block, make sure it is locked in the open position..



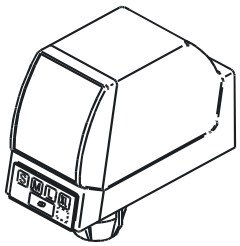
SYSTEM DETAILS

5. Controls and Electrical

All UF-1 and UFB-1 valves have a 24 volt solenoid that should be powered by an 80 kVA rated transformer. Voltage at the coil with the solenoid energized should be 22 and 27 VAC.

5.1 UF-1 and UFB-1 Portion Control Valve

The UF-1 and UFB-1 Portion Control Valves are push and release that dispense for a programmed duration. There are four settings: small, medium, large, and extra-large. There is also a Cancel/Pour rectangular button with red and green arrows. If this button is pressed during dispensing, the flow stops. If the valve is not dispensing and the button is pressed, the valve dispenses as long as the button is held.



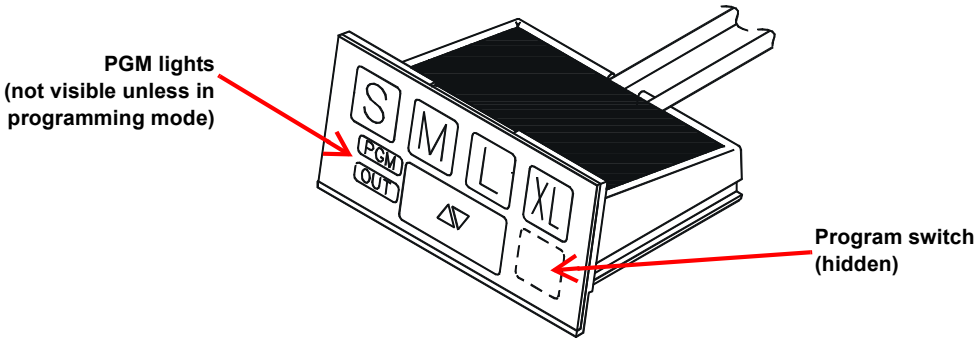
The portion controls are factory programmed to the following default settings:

Portion Size	Pour Time
S	2 sec.
M	3 sec.
L	4 sec.
XL	6 sec.

Portion Control Valve Programming

To set the amount of beverage dispensed, follow this procedure:

1. Press the hidden program switch until the PGM light turns on. (This light shows only when the programming mode is turned on.)
2. Put desired amount of ice in cup. Press and hold a portion button until the desired level in the appropriate sized cup is reached. Release the button.
3. Continue with other portion buttons that need programming. Portion buttons may be reprogrammed as many times as necessary. Only the last time values entered for each button will be saved when exiting the programming mode.
4. Press the program switch until the PGM light turns off.



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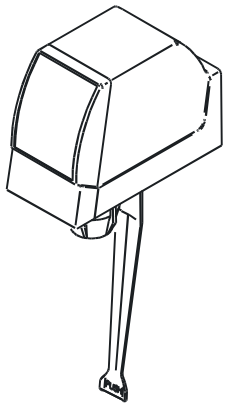
NOTE: The portion control valve does not have a top-off function.

NOTE: When in programming mode, press and release any of the portion size buttons to return to the factory portion settings.

NOTE: Portion controls will not operate below 22 volts. This is known as the "brown-out feature".

5.2 UF-1 and UFB-1 Optifill™ Valve



The Optifill™ Valve is activated by pressing a cup against the dispensing lever. The valve dispenses only until foam from the cup touches the lever*. If a top-off delay is set, the valve will dispense again after a preset delay. This "topping-off" fills the cup after the foam settles. The top-off delay is can be adjusted from 0 to 15 seconds, the factory default is 2 seconds.

*Note: A metal rivet in the valve body supplies electricity through the beverage being dispensed. When the foaming beverage comes in contact with the metal dispensing lever it completes the electrical circuit and the flow module closes the dispensing valve — even though the lever is still activated.

Note: The cup must stay in place against the lever for the top-off to operate.

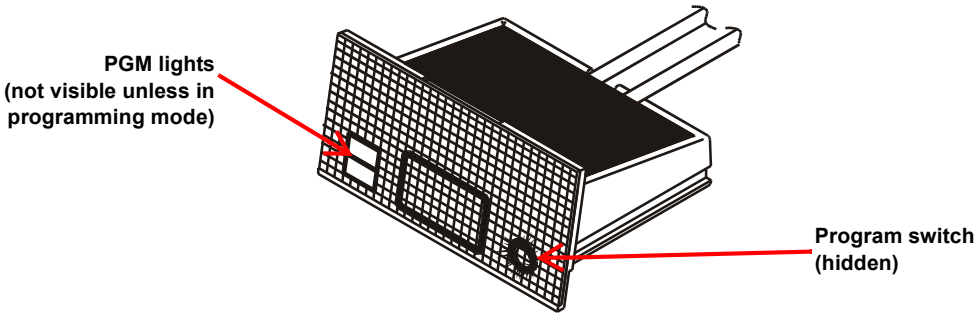
Note: A slanted cup rest must be used with an Optifill™ valve.

Optifill™ Valve Programming

The Optifill™ module provides a timed dispensing function to set water flow rates. To access this function:

1. Press the program switch until the LED turns on.
2. Hold a graduated cup under the valve nozzle without touching the lever. Press the large rectangular switch. The valve dispenses for 2 seconds. The dispensed liquid divided by 2 equals the oz./sec dispensed rate.
3. Press the program switch to exit the program.
4. To program the top off function follow this procedure:
5. Remove the front valve cover.
6. Press the program switch until the LED turns on (can be seen from the top of the module.)
7. Place cup against the lever for initial dispensing. When the foam touches the lever the valve stops and the LED flashes.

8. When the foam in the cup has lowered, press and release the large rectangular button. The valve dispenses a top-off and shuts off when the foam again touches the lever. The LED is now on steady.
9. Press the program switch until the LED turns off.
10. If you wish to disable the top-off, follow steps 1 through 3. Remove the cup from the lever. This will enter a zero value for the delay time and disable the top-off fill. Press the program switch for 3 seconds.



Note: The Optifill^{TM} valve does not have an adjustment for sensitivity.

INSTALLATION

CAUTION — Only trained and certified technicians should service this unit. ALL WIRING AND PLUMBING MUST CONFORM TO NATIONAL AND LOCAL CODES.

1. INSTALLATION REQUIREMENTS

1.1 Requirements Summary

The beverage dispenser that the UF-1 or UFB-1 valve(s) will be installed on should be capable of supplying an adequate flow of water (for the beverage and for cooling) and syrup.

environment: . . . . . .indoor installation only

temperature: . . . . . .50 to 110° F ambient temperature

syrup BIB: . . . . . .60 to 80 psi

carbonated water:. . . .65 to 110 psi

plain water:. . . . . .50 to 110 psi

electrical: . . . . . .24 volts AC (22-27 volts), 80 VA, 50/60 Hz

1.2 Electrical Requirements

Before connecting electrical power to the beverage dispenser refer to nameplate to see if it requires 50 or 60 Hz power.

DANGER — To avoid possible serious injury or death the ELCB (earth leakage circuit breaker) must be installed in the electrical circuit of all 50 Hz units.

WARNING — To avoid possible electrical shock the unit must be electrically grounded using the green grounding screw provided inside the electrical contractor box.

CAUTION — The wiring must be properly grounded and connected through a 15-amp disconnect switch (slow–blow fuse or equivalent HACR circuit breaker). ALL WIRING MUST CONFORM TO NATIONAL AND LOCAL CODES. MAKE SURE UNIT IS PROPERLY GROUNDED.

2. INSTALLATION & START-UP

2.1 UF-1 and UFB-1 Valve Installation Procedure

1. Shut off syrup, unplug carbonator, shut off CO_2 and water supply to the unit.
2. Release pressure in lines by activating valves and lifting relief valve of carbonator

3. Detach current valves:
   – Remove front cover by lifting.
   – Remove valve cover.
   – Unplug wiring harness.
   – Remove valve.

3. INSTALLATION CHECKLIST

1. Voltage and proper grounding.
2. Valve properly secured (latched) to block.
3. CO_2 pressure to carbonator.
4. Water flow rate.
5. Syrup delivery pressure.
6. Finished product temperature less than 40°F.
7. Water to syrup ratio.
8. Portion size / top-off.
9. Water, syrup, CO_2 leaks.
10. Cover secured to valve.
11. Valves flavor correctly marked.

4. RETROFITTING

UF-1 and UFB-1 valves will retrofit any valve with an identical mounting block screw pattern.

Note: Replacement of mounting block inlet fitting O-rings (part # 4073) is required when retrofitting valves.

4.1 Mounting Block Removal

To remove valve mounting block from the front panel, take out and save 4 screws.

IMPORTANT: Before installing block replace O-rings on each outlet fitting. Lubricate with Dow 111 or equivalent silicone lubricant. Do not use petroleum jelly.

SERVICE

CAUTION — Only trained and certified technicians should service this unit. ALL WIRING AND PLUMBING MUST CONFORM TO NATIONAL AND LOCAL CODES.

1. PREVENTATIVE MAINTENANCE

1.1 Preventative Maintenance Procedures

Preventative Maintenance Procedure

Procedure	Frequency
1. Check valve operation (does it dispense properly)	6 months
2. Replace worn or missing parts	6 months
3. Clean valves	6 months
4. Check voltage (22 to 27 VAC with the valve activated)	6 months
5. Check product temperature (less than 40°F)	6 months
6. Check water flow rate (use syrup bypass tube and ratio cup)	6 months
7. Check ratio	6 months
8. Check portion size / top-off	6 months
9. Check for leaks	6 months

NOTE: These procedures should be performed every six months OR after a service call.

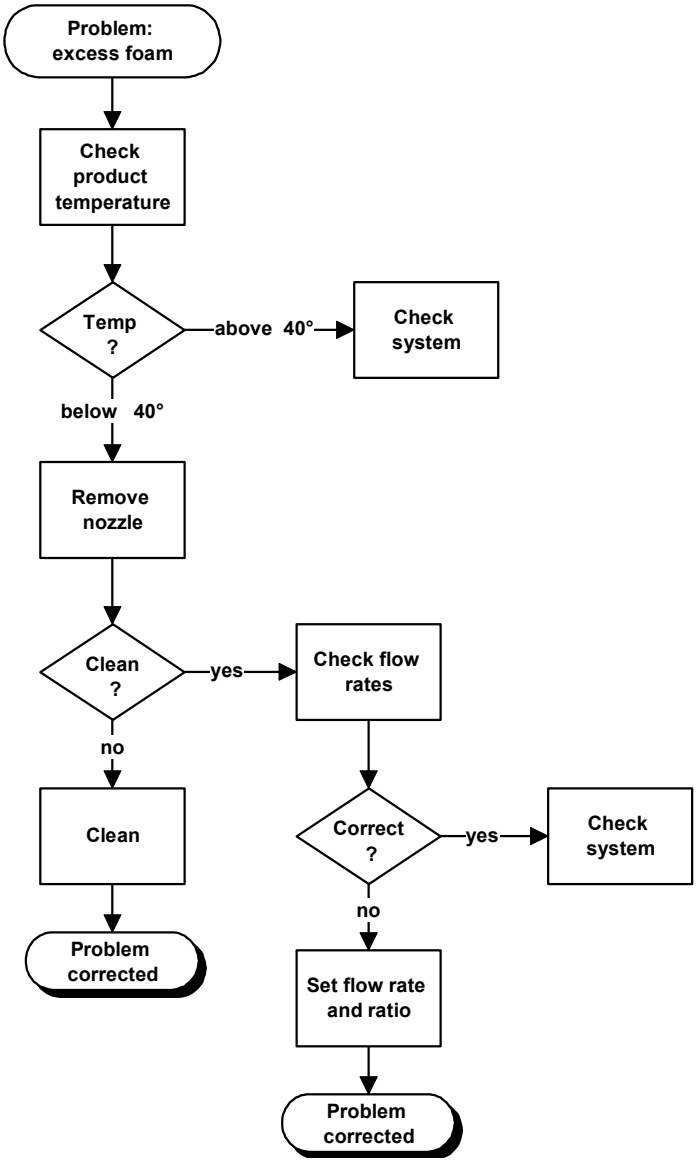
1.2 Cleaning Valve

1. Remove the valve nozzle and the syrup diffuser.
2. Wash the nozzle and diffuser in water. Soak in carbonated water overnight if possible. Use a soft brush as needed to remove any accumulated syrup deposits.
3. Remove cover and bottom plate and clean with a soft cloth and warm soapy water.
4. Wipe the valve surface with a clean soft cloth.

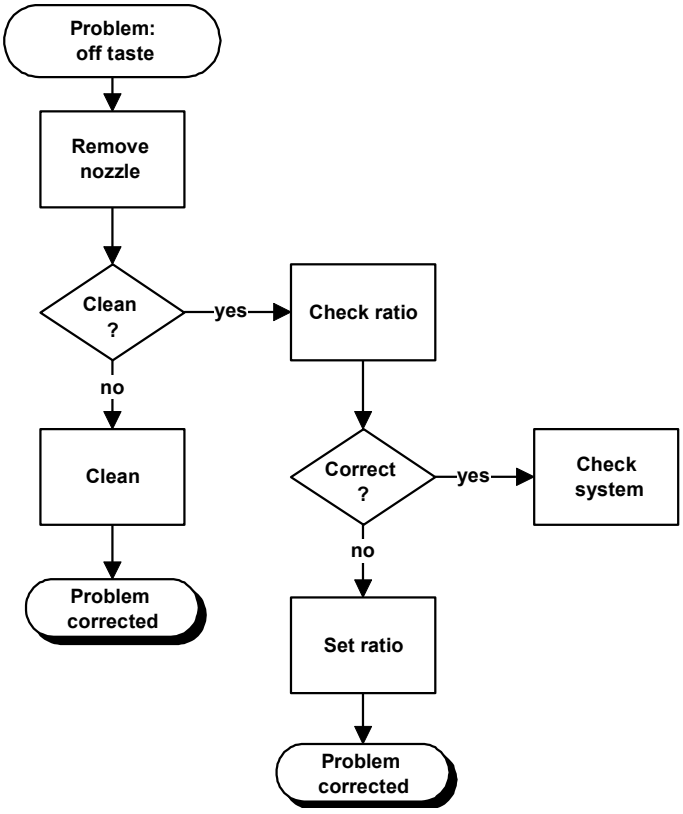
CAUTION — Do not soak valve components in chlorine.

TROUBLE SHOOTING

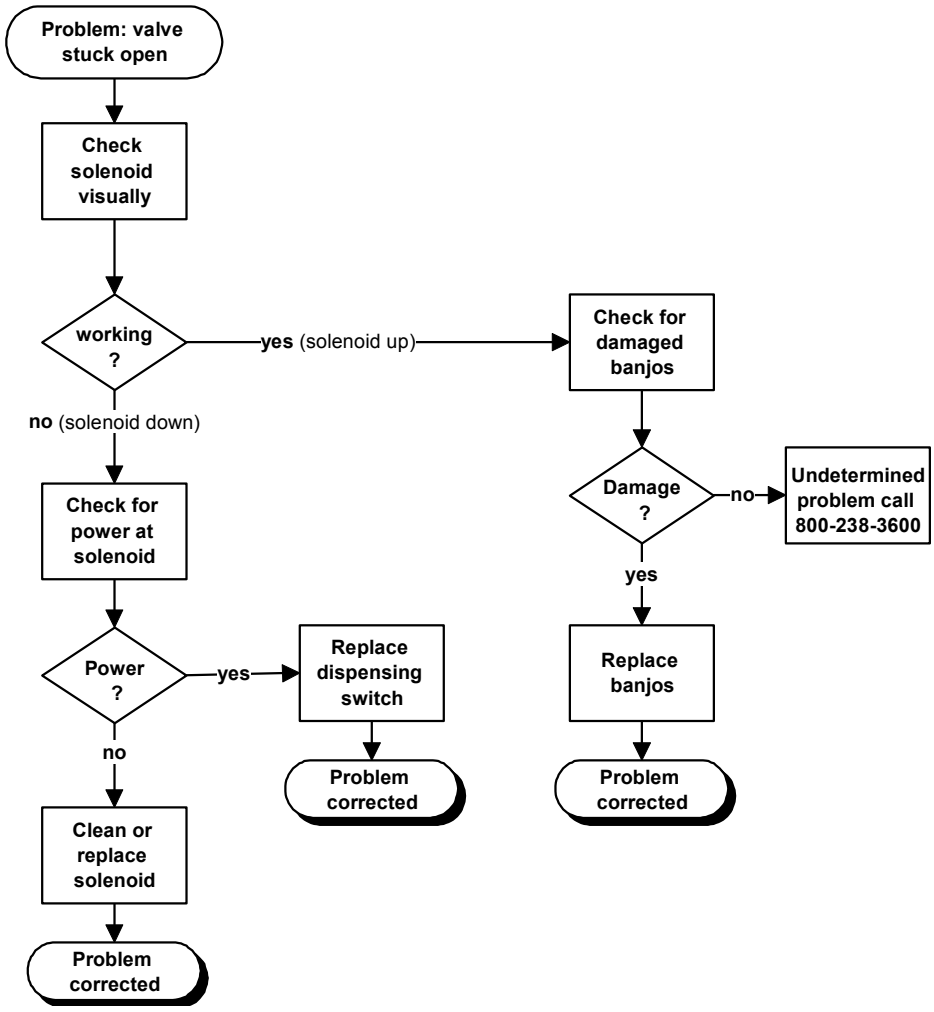
Excess Foam



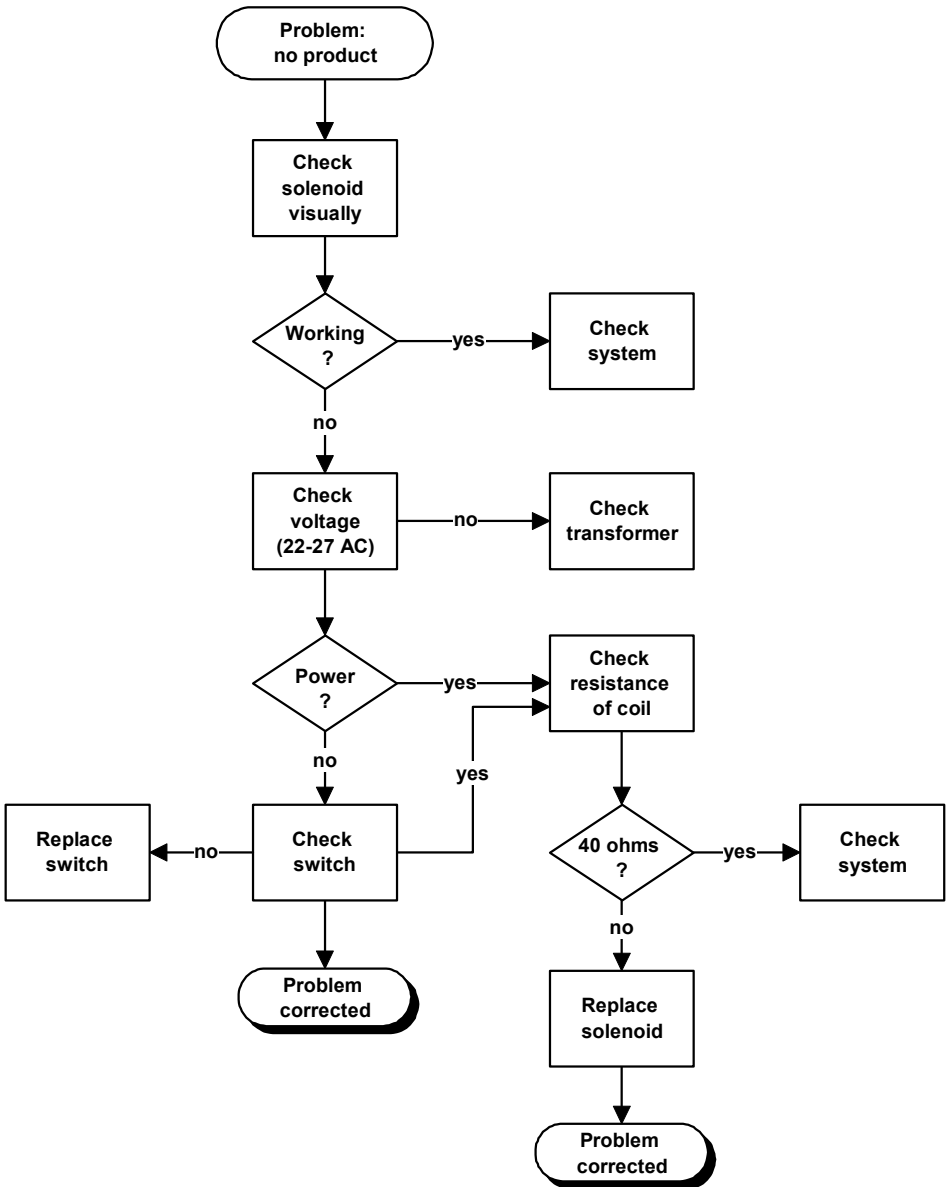
Off Taste



Valve Stuck Open



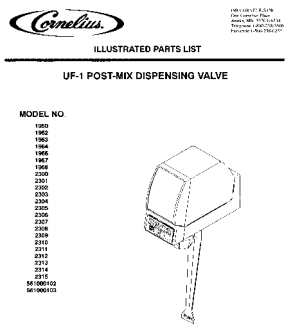
No Product



ATTACHMENTS

The following attachments should be included with this lesson:

UF-1 Post-Mix Dispensing Valve
Illustrated Parts List

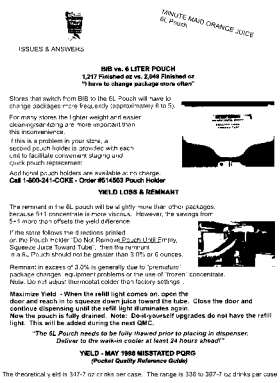

ILLUSTRATED PARTS LIST

UF-1 POST-MIX DISPENSING VALVE

MODEL NO.

1960
1962
1963
1964
1965
1967
1968
2300
2301
2302
2303
2304
2305
2306
2307
2308
2309
2310
2311
2312
2313
2314
2315
56 1960103
56 1960133

Post Mix Valves Critical Grounding Information
Service Bulletin


MINUTE MAID ORANGE JUICE
6L Pouch

ISSUES & ANSWERS

BIB vs. 6 LITER POUCH
1,217 Finished oz vs. 2,048 Finished oz
"I have to change package more often"

YIELD LOSS & REMNANT

Maximize Yield - When the refill light comes on, open the door and reach in to squeeze down juice toward the tube. Close the door and continue dispensing until the refill light illuminates again. Now the pouch is fully drained. Note: Do-it-yourself upgrades do not have the refill light. This will be added during the next GMC.

"The 6L Pouch needs to be fully thawed prior to placing in dispenser. Deliver to the walk-in cooler at least 24 hours ahead!"

YIELD - MAY 1998 NISSTATED PQRG
(Pocket Quality Reference Guide)

The theoretical yield is 347-7 oz drinks per case. The range is 336 to 387-7 oz drinks per case

REVIEW

DATE: _____

NAME: _____

LOCATION: _____

The following questions summarize important points in the training lesson on UF-1 and UFB-1 Valves and the UF-1 and UFB-1 Product Manual.

1. What component(s) differ between High Flow and Ultra Flow valves?
   (*circle the correct answer*)
   A. Sleeve
   B. Piston
   C. Spring
   D. All of the above.

2. What two things determine the position of the flow control piston inside the sleeve?
   (*circle the correct answer*)
   A. Flowing pressure and spring pressure
   B. Syrup and water pressure
   C. Temperature and pressure
   D. Syrup and water flow.

3. How might chloramine affect a dispensing valve?
   (*circle the correct answer*)
   A. Restriction in the flow controls
   B. Color of the valve body
   C. Cracking of the flow control
   D. Degradation of rubber components.

4. If a ratio setting changes, what should you check for?
   (*circle the correct answer*)
   A. Syrup pressure
   B. Water pressure
   C. Line restriction
   D. All of the above.

5. Which flow rate should be set first?
   (*circle the correct answer*)
   A. Syrup
   B. Water
   C. Either syrup or water
   D. Both at the same time.

6. What functions does the Cancel/Pour Button on the Portion Control Valve perform?
   (*circle the* **two** *correct answers*)
   A. Cancel portion
   B. Manual portion
   C. Reset default
   D. All of the above.

7. UF-1 valves control?
   (*circle the correct answer*)
   A. On-Off of syrup and water
   B. Flow rates of syrup and water
   C. Mixing of syrup and water
   D. All of the above.

8. When replacing the UF-1 valve mounting block you must?
   (*circle the correct answer*)
   A. Drill new holes
   B. Replace the wiring harness
   C. Replace the inlet fitting
   D. Replace the inlet fitting O-rings.

9. If the finished drink flow rate is 4.0 oz./sec. and the desired ratio is 7 to 1. What should the water flow rate be?
   (*circle the correct answer*)
   A. 3.0
   B. 3.5
   C. 4.0
   D. 2.5.

10. What is the function of the notch in the Ultra Flow water piston?
    (*circle the correct answer*)
    A. Let dirt pass through
    B. Prevent carbonation loss
    C. Used in manufacturing process
    D. Eliminates pulsing and smooths water flow.

11. Which of the following will cause the valve ratio to change?
(*circle the correct answer*)
A. Flow control restrictions
B. Low CO_2 pressure
C. Weak BIB pump
D. All of the above.

12. What two things are different between a concentrate diffuser and a syrup diffuser?
(*circle the* **two** *correct answers*)
A. Color
B. Position of the product outer holes
C. Size
D. Shape.

13. How can you identify a concentrate sleeve?
(*circle the correct answer*)
A. Number of outlet holes
B. Color
C. Shape
D. Size.

REVIEW

14. What is the flow rate range of a Fast Flow valve?
(*circle the correct answer*)
A. 1.0 to 2.5 oz./sec.
B. 1.5 to 3.0 oz./sec.
C. 2.5 to 4.0 oz./sec.
D. 3.0 to 4.5 oz./sec.

15. What is the flow rate range of a Ultra Flow valve?
(*circle the correct answer*)
A. 1.0 to 2.5 oz./sec.
B. 1.5 to 3.0 oz./sec.
C. 2.5 to 4.0 oz./sec.
D. 3.0 to 4.5 oz./sec.

16. What is the range of a concentrate valve?
(*circle the correct answer*)
A. 1.0 to 2.5 oz./sec.
B. 1.5 to 3.0 oz./sec.
C. 2.5 to 4.0 oz./sec.
D. 3.0 to 4.5 oz./sec.

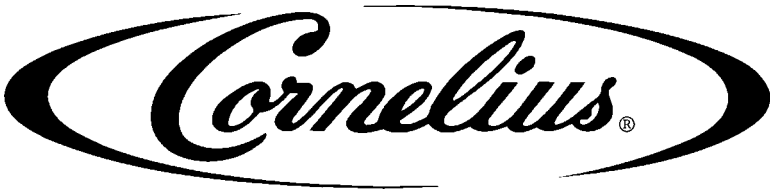
17. What are the three basic steps to set the ratio on a valve?
(*circle the* **three** *correct answers*)
A. Adjust syrup ratio
B. Set water flow rate
C. Set portion size
D. Cool product.

18. How can you identify the valve flow rate?
(*circle the correct answer*)
A. Decal on inside of cover
B. Printed on valve body
C. Color of valve
D. Printed on flow control retainer.

19. What is the minimum VA transformer required for a valve?
(*circle the correct answer*)
A. 40
B. 60
C. 80
D. 100.

20. At what intervals (frequency) should maintenance procedures be performed?
(*circle the* **two** *correct answers*)
A. Every 30 days
B. Every 3 months
C. Every 6 months
D. After every service call.

NOTES:



IMI Cornelius Inc.
www.cornelius.com

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February 2, 2005

TECHNICAL SERVICES