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# VIPER (E) 2 FLAVOR, VIPER (E) 3 FLAVOR & VIPER (E) 4 FLAVOR

## Operator's Manual



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# SAFETY INSTRUCTIONS

## READ AND FOLLOW ALL SAFETY INSTRUCTIONS

### Safety Overview

- Read and follow **ALL SAFETY INSTRUCTIONS** in this manual and any warning/caution labels on the unit (decals, labels or laminated cards).
- Read and understand ALL applicable OSHA (Occupational Safety and Health Administration) safety regulations before operating this unit.

### Recognition



## DIFFERENT TYPES OF ALERTS

### **DANGER:**

Indicates an immediate hazardous situation which if not avoided **WILL** result in serious injury, death or equipment damage.

### **WARNING:**

Indicates a potentially hazardous situation which, if not avoided, **COULD** result in serious injury, death, or equipment damage.

### **CAUTION:**

Indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury or equipment damage.

## SAFETY TIPS

- Carefully read and follow all safety messages in this manual and safety signs on the unit.
- Keep safety signs in good condition and replace missing or damaged items.
- Learn how to operate the unit and how to use the controls properly.
- **Do not** let anyone operate the unit without proper training. This appliance is **not** intended for use by very young children or infirm persons without supervision. Young children should be supervised to ensure that they do not play with the appliance.
- Keep your unit in proper working condition and do not allow unauthorized modifications to the unit.

**NOTE:** This dispenser is no designed for a wash-down environment and **MUST NOT** be placed in an area where a water jet could be used.

## QUALIFIED SERVICE PERSONNEL

### **WARNING:**

Only trained and certified electrical, plumbing and refrigeration technicians should service this unit. **ALL WIRING AND PLUMBING MUST CONFORM TO NATIONAL AND LOCAL CODES. FAILURE TO COMPLY COULD RESULT IN SERIOUS INJURY, DEATH OR EQUIPMENT DAMAGE.**

**IF THE SUPPLY CORD IS DAMAGED, IT MUST BE REPLACED BY THE MANUFACTURER, ITS SERVICE AGENT OR SIMILARLY QUALIFIED PERSONS IN ORDER TO AVOID A HAZARD.**

## SAFETY PRECAUTIONS

This unit has been specifically designed to provide protection against personal injury. To ensure continued protection observe the following:

### **WARNING:**

Disconnect power to the unit before servicing following all lock out/tag out procedures established by the user. Verify all of the power is off to the unit before any work is performed.

**Failure to disconnect the power could result in serious injury, death or equipment damage.**

### **CAUTION:**

Always be sure to keep area around the unit clean and free of clutter. Failure to keep this area clean may result in injury or equipment damage.

## SHIPPING AND STORAGE

### **WARNING:**

Do not use dispense spigot to lift or move unit as this could result in personal injury

### **CAUTION:**

Before shipping, storing, or relocating the unit, the unit must be sanitized and all sanitizing solution must be drained from the system. A freezing ambient environment will cause residual sanitizing solution or water remaining inside the unit to freeze resulting in damage to internal components.

## CO<sub>2</sub> (CARBON DIOXIDE) WARNING

### **DANGER:**

CO<sub>2</sub> displaces oxygen. Strict attention **MUST** be observed in the prevention of CO<sub>2</sub> gas leaks in the entire CO<sub>2</sub> and soft drink system. If a CO<sub>2</sub> gas leak is suspected, particularly in a small area, **IMMEDIATELY** ventilate the contaminated area before attempting to repair the leak. Personnel exposed to high concentrations of CO<sub>2</sub> gas experience tremors which are followed rapidly by loss of consciousness and **DEATH**.

## MOUNTING IN OR ON A COUNTER

### **WARNING:**

When installing the unit in or on a counter top, the counter must be able to support a weight in excess of 450 lbs. to insure adequate support for the unit. **FAILURE TO COMPLY COULD RESULT IN SERIOUS INJURY, DEATH OR EQUIPMENT DAMAGE.**

**NOTE: Many units incorporate the use of additional equipment such as ice makers. When any addition equipment is used you must check with the equipment manufacturer to determine the additional weight the counter will need to support to ensure a safe installation.**

## CART INFORMATION AND MOUNTING

The Viper unit may be mounted on a mobile cart (Cornelius part no. 620043075 for 2-barrel unit, 620053990 for 3-barrel unit and 620046556 for 4-barrel unit) which allows some movement of the unit for service and cleaning. There are four captive nuts on the bottom of the Viper to accommodate four 3/8-16 bolts. These bolts must be installed to secure the unit to the cart.

These carts are also designed with movable wheels that act as outriggers to provide stability to the unit when it is being moved.



### **WARNING:**

The above listed mounting bolts must be installed and the wheels extended and locked in the outboard position prior to moving the unit.

**Failure to comply could result in serious injury, death or equipment damage.**

**THE APPLIANCE HAS TO BE PLACED IN A HORIZONTAL POSITION.**

# SYSTEM OVERVIEW

The Viper is a Frozen Carbonated Beverage (FCB) unit. It delivers FCB and FUB drinks from a single machine. The unit provides uniform, high quality, high volume product to the customer. The unit is equipped with a patented Intelligent Defrost™ system for product quality.

The computerized beverage control system provides uniform, high-quality product as well as diagnostic and troubleshooting information for the operator and the service technician.

## CONTROL SYSTEM OPERATION

### Control System Overview

The Viper uses a control system that monitors and controls all of the major systems and components of the machine.

The control system is set up by the service provider to perform the tasks necessary to operate the unit. No additional changes to these settings should be needed. The control system also keeps track of diagnostic information for the machine.

The control system is accessed using the control panel located behind the merchandiser. The control panel consists of the LCD display shown in Figure 1.

The control panel has structured menus. The first menu that is displayed after the unit is powered up and stabilized is the BARREL STATUS menu, shown in Figure 4. This menu is also displayed when the unit is operating normally.

### Beginning Operation

The control panel is located behind the merchandiser, above the dispensing valves. It is accessed by lifting-up/side-opening the merchandiser. See Figure 1.

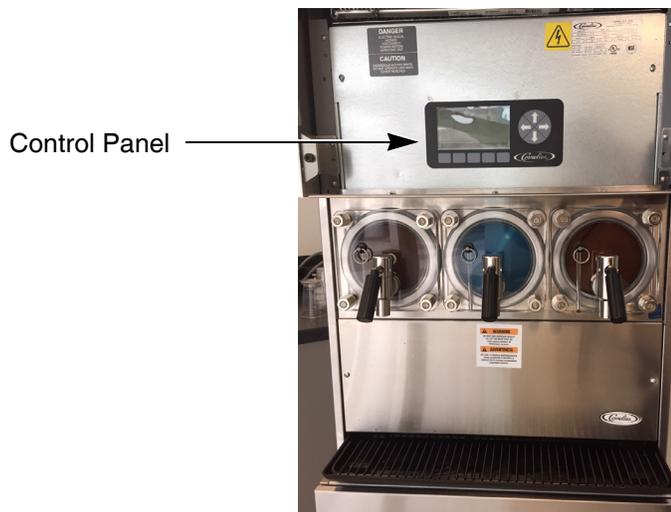


Figure 1.

When the system is initially powered up, the screens in Figure 2 and Figure 3 are displayed temporarily as the unit goes through self-checks.

**If either of these screens remains on, call service.**

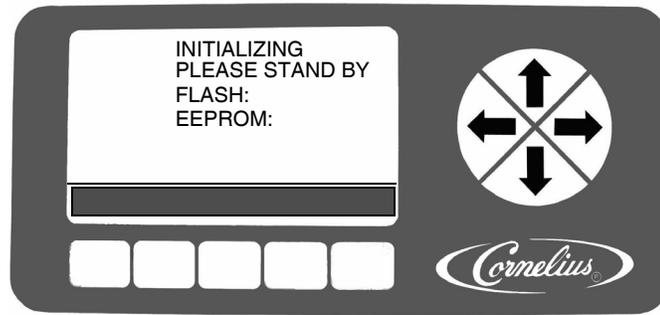


Figure 2.

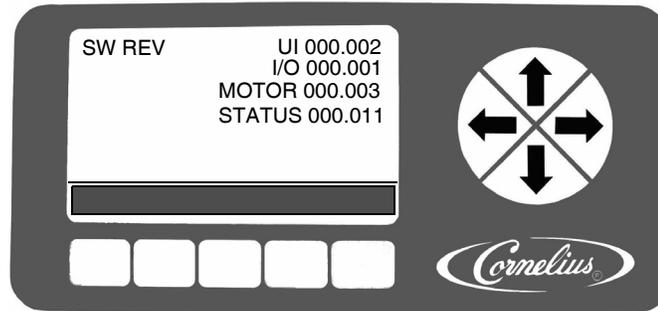


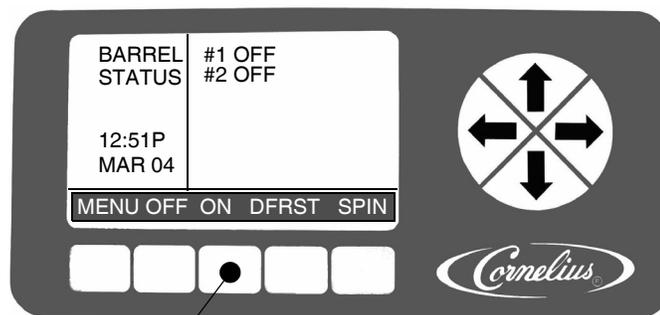
Figure 3.

### Basic Operation

If the system check completes normally, the screen shown in Figure 4 is displayed. This is the home screen (Barrel Status). Whenever the system is running in the normal state, the unit displays this screen. The unit powers up in an off condition. To begin normal operation perform the steps in Table 1.

Table 1.

Step	Action	Procedure
1.	Open the merchandiser	Open the merchandiser and expose the control panel. (Figure 4)
2.	Turn on the barrels	Turn all barrels on by pressing the button labeled ON while highlighting each barrel using the arrow keys, to start operation.
3.	Close the merchandiser.	Close the merchandiser. In approximately 20 minutes or less, product is ready to serve.



ON Button

Figure 4.

While the unit is starting, wash all external surfaces with a mild soap solution and rinse with clean water. Dry all external surfaces with a clean soft cloth. Remove the drip tray (if applicable) and wash with a mild soap solution. Dry the tray thoroughly and replace it. (Do not use abrasive or chlorine based cleaners.)

## Dispensed Product Throughput

FCB equipment is designed to provide a high throughput of frozen carbonated product to meet peak draw demands. Where low product throughput is experienced, there is the potential for product quality to diminish. The information shown in Table 2 outlines the minimum throughput per barrel that must be dispensed on a 24 hour basis.

**Table 2.**

<b>Viper</b>	<b>Viscosity <math>\leq</math> 4</b>	<b>Viscosity <math>&gt;</math> 4</b>
Volume of dispensed product per barrel per 24 hours required to maintain product quality.	48 oz.	60 oz

**NOTE:** Cornelius recommends that, in conditions where the FCB machine is operational and the minimum throughput (as described in Table 2) is not met on a per barrel basis, product should be dispensed and discarded to increase throughput and help assure that product quality is maintained.

**NOTE:** Data in Table 2 assumes equipment has been correctly installed, commissioned and calibrated as per directions contained in all technical literature published by Cornelius and the recommendations contained in this document have been followed.

## Barrel Status Lights

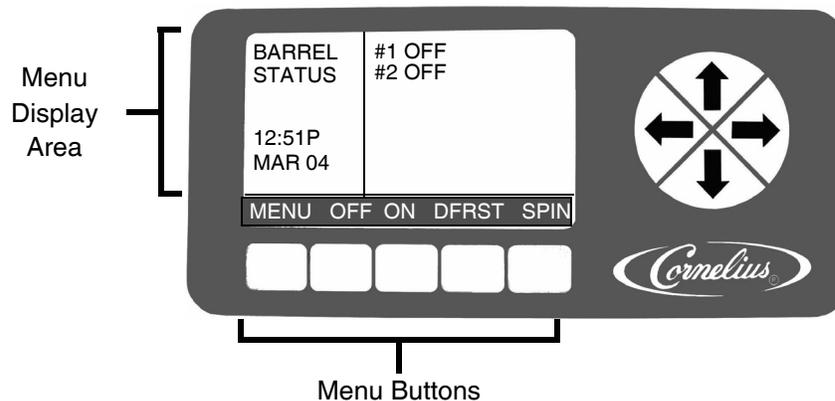
There is a group of three indicator lights above each dispensing valve that indicate the status of the barrel. A description of the three graphic images shown in these indicator is listed in Table 3.

**Table 3.**

Image	Status	Description
	ON	<b>DO NOT</b> Dispense product until light is OFF.
	ON	<b>Call Service. Do NOT</b> dispense product until light is OFF.
	ON	Replenish syrup, CO <sub>2</sub> or water supply. Light will go OFF when product is replenished.

## Control Panel Display

The control panel display has two areas. The Menu Display Area presents information about the status and settings of the machine. It also displays menus of actions that are taken to change the functioning of the machine.



**Figure 5.**

## Control Panel Menu Buttons

The Menu Buttons Area, which is located across the bottom of the control panel and the arrow buttons to the right is used to operate the unit. There are up to five buttons that are activated on a screen to provide various functions using the control system. Each button that is active has a label directly above it. The label describes what the button controls when pressed or the current menu, if highlighted. Refer to Table 4 for a description of the buttons on the Barrel Status menu.

**Table 4.**

Button	Description
MENU	Opens the main menu.
OFF	Turns the highlighted barrel Off.
ON	Turns the highlighted barrel On.
DFRST	Defrosts the highlighted barrel.
SPIN	Turns off refrigeration and turns on the barrel motor.

## REPLENISHING SUPPLIES

### SYRUP

If the system indicates that the syrup is sold out, the procedure in Table 5 should be performed to replace the BIB (Bag-In-Box) syrup source.

Table 5.

Step	Procedure
1.	Replace the empty BIB and wait for the Out of Product indicator light go off.
2.	Fill the barrel by pulling to open the barrel faceplate relief valve for the barrel (See Figure 6). The product will then begin to fill inside the barrel. Continue filling the barrel to the level shown in Figure 6 (approx. half way between the relief valve and the top of the barrel, depending on the product type) for 100-110% overrun.
3.	When the barrel is full, turn on refrigeration. When refrigeration shuts off, the product is ready to serve.

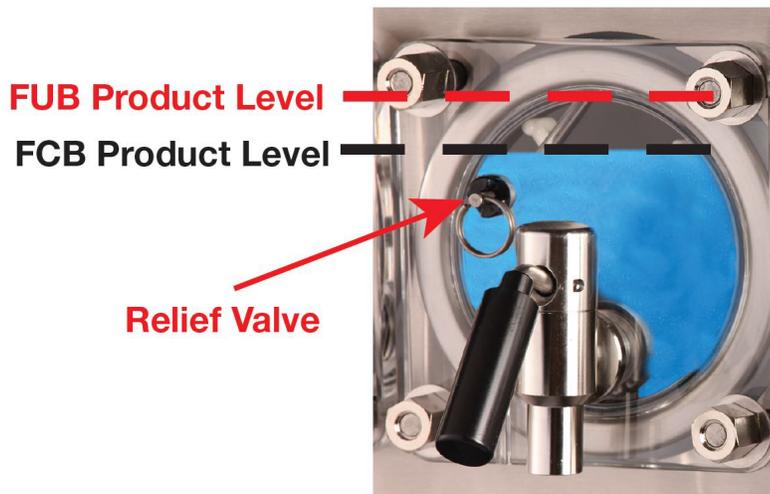


Figure 6.

### Type 1 BIB Syrup Connections

Refer to Table 6 and Figure 7 when replacing a Type 1 BIB container.

Table 6.

Step	Procedure
1.	Unscrew unit connector from the empty syrup box.
2.	Place a new BIB on the rack, with the proper side up, and open the cardboard flap. Be careful not to puncture the bag with any sharp objects.
3.	Pull the bag container out of the box and remove the dust cap.
4.	Rinse the connector in warm water.
5.	Screw the connector (clockwise) onto the bag connector.  <b>IMPORTANT:</b> The connection must be air tight.

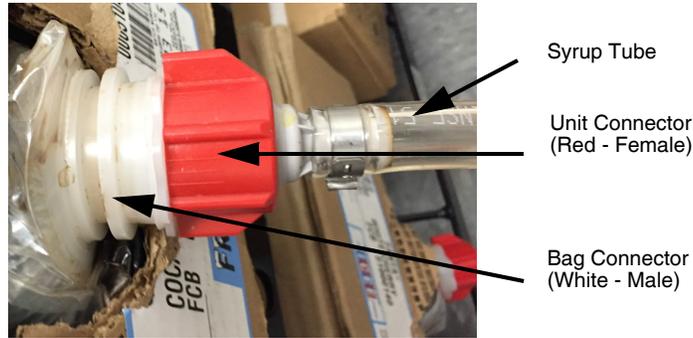


Figure 7.

## Type 2 BIB Syrup Connections

Refer to Table 7 and Figure 8 when replacing a Type 2 BIB container.

Table 7.

Step	Procedure
1.	Push in on the outer connector tab and pull the syrup hose and stub out to unlock the connector from the BIB.
2.	Pull the connector sideways to disengage the line from the bag connector.
3.	Place a new BIB on the rack and open the cardboard flap. Be careful not to puncture the bag with any sharp objects.
4.	Pull the bag connector out of the box and remove the dust cap.
5.	Rinse the QCD connector in warm water.
6.	Re-install the QCD connector onto the new BIB connector by slipping it onto the connector and pushing the syrup hose and stub down toward the box.  <b>⚠ IMPORTANT:</b> Button should be flush, as shown in Figure 8.

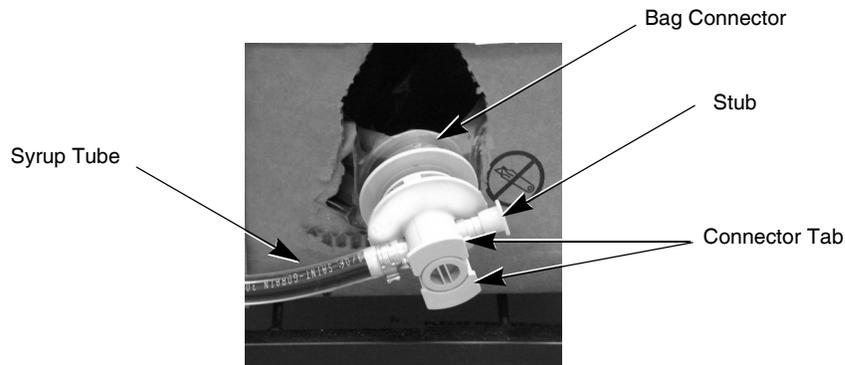


Figure 8.

## CO<sub>2</sub>

### CO<sub>2</sub> (Carbon Dioxide) Warning

**⚠ WARNING:**

To avoid personnel injury and/or property damage, always secure the CO<sub>2</sub> cylinder per local codes.

## **⚠ WARNING:**

CO<sub>2</sub> Displaces Oxygen. Strict Attention must be observed in the prevention of CO<sub>2</sub> gas leaks in the entire CO<sub>2</sub> and FCB system. If a CO<sub>2</sub> gas leak is suspected, particularly in a small area, immediately ventilate the contaminated area before attempting to repair the leak. Personnel exposed to high concentration of CO<sub>2</sub> gas experience tremors which are followed rapidly by loss of consciousness and possible **death**.

## **Replenishing CO<sub>2</sub> Supply**

The Viper unit is designed to operate on a CO<sub>2</sub> input pressure of 70 to 75 psig. If the installation location has either an independent tank and regulator or a bulk CO<sub>2</sub> supply that feeds more than one machine, a shutoff valve and secondary regulator must be placed in the line from the bulk supply to the Viper unit to reduce the CO<sub>2</sub> pressure at the unit to 70-75 psig. Perform the procedure in Table 12 to pressurize the CO<sub>2</sub> system.

The CO<sub>2</sub> supply **MUST** be changed in accordance with local safety procedures. Maximum CO<sub>2</sub> pressure to the Viper unit **MUST NEVER EXCEED 75 psi**. If pressure exceeds 75 psi, **damage to the unit may result**. Minimum CO<sub>2</sub> pressure to the Viper unit is 70 psig.

## **WATER**

Viper requires a minimum water flow rate of 100 gal. per hr. for a 2 barrel unit. Minimum water pressure is 25 psig. Maximum water pressure to the unit is 100 psig.

## **Water Filters**

Water filters are recommended to insure proper operation of the unit. Refer to local procedures for replacement intervals and service.

## **Maintaining Product Quality**

It has been determined that there are three main factors that affect the rate at which product quality diminishes, as indicated by a change in product appearance. These factors are:

1. Dispensed Product Throughput
2. Programmed Defrost Scheduling
3. Viscosity Setting

It is recommended that the following instructions be read and followed relative to operating and establishing settings on the Viper equipment. Anyone who has not been trained to service this equipment should not attempt to modify equipment settings. Contact an authorized service provider.

The following instructions are generic in nature. Your actual water system may vary according to your situation. Please follow any specific instructions for your location.

## **Intelligent Defrost™ System**

The control system in the Viper unit includes a function to automatically defrost product in the cylinder when product throughput is not sufficient to maintain quality. It also allows the service provider to set defrost lockouts during busy times during the day.

## **Sleep Mode Recommendations**

Sleep Mode is recommended when the unit will not have any usage for a period of time over 3 hours. This increases the life of the machine and reduces energy consumption.

A wake time must be programmed to return the unit to normal operation. It is recommended that the unit be programmed to wake up approximately 20 minutes before product is needed. For ambient temperature higher than 75°F, the times may increase as the ambient temperatures increases.

## **Viscosity Setting**

The lowest possible viscosity settings are recommended to achieve desired drink quality. In most typical installations, using sugar-based syrup allows the viscosity to be set slightly higher. Diet syrups freeze much more readily than sugar based syrups, so the viscosity should be set lower for diet products.

This increased viscosity is achieved by freezing the product in the cylinder to a lower temperature, thereby increasing ice crystal size and growth. As the ice crystal size increases, there is a potential for product quality to diminish.

# PREVENTATIVE MAINTENANCE

## SUMMARY

There are no daily maintenance procedures required on the Viper unit other than normal cleanup of spills or overspray and emptying the drip tray. Normal equipment maintenance intervals are listed in Table 8. It is recommended that a preventative maintenance procedure be performed every twelve (12) months. This procedure should include all of the maintenance items described in Table 8 and the following sections.

**Table 8.**

Preventative Maintenance Summary	
Maintenance Procedure	Frequency of Maintenance
Clean Air Filter	Monthly or more often, as necessary (See Table 9)
Check BRIX	Every 12 months or when changing syrup types ("BRIX Setup Menu")
Seal Change	Every 12 months
Clean Condenser Coil	Every 12 months or as necessary
Sanitize Unit	Every 12 months or when changing syrup types
Check Water Filter	Every six months or if water pressure in the system is low.
Change or Rotate Scraper Blades	Every 12 months
Check for Leaks	Every 12 months
Clean BIB Connectors & check operation of syrup sold out switches	Every six months or when changing syrup types.
Check Clock Setting	Every six months or when changing to or from daylight savings time
Change caged o-ring on models w/ Motorman Valves.	Lubricate every 6 months or more frequently if valve lever gets tight to operate. Caged O-Rings should be replaced every 12 months or when changing syrup types



### CAUTION:

Only trained and certified electrical, plumbing and refrigeration technicians should service this unit. All wiring and plumbing must conform to national and local codes.

# MAINTENANCE

Maintenance is important to the quality of the product being served. The following sections outline the minimum requirements for periodic maintenance of the unit and the surrounding service area.

**NOTE: Do not use abrasive cleaners on the unit.**

## **⚠ IMPORTANT:**

**Only trained and qualified persons should perform these cleaning procedures.**

## DAILY MAINTENANCE

On a daily basis, clean all external surfaces with a mild soap solution and rinse with clean water. Dry all external surfaces with a clean soft cloth. Remove the drip tray (if applicable) and wash with a mild soap solution. Dry the tray thoroughly and replace it.

## **⚠ CAUTION:**

Do not use chlorine based solutions on stainless steel surfaces.

## MONTHLY MAINTENANCE

### Cleaning Air Filter

The air filter should be cleaned at least once a month (more often in harsh environments). Perform the procedure in Table 9 to clean the air cleaner.

**Table 9.**

Step	Action
1.	Open the merchandiser
2.	Remove the filter by grasping the two tabs (Figure 9) and sliding it straight out the front of the unit.
3.	Carefully wash the filter with clean water. Shake out the excess water. Need to wait for it to fully dry.
4.	Reinstall the air filter.
5.	Close the merchandiser.



**Figure 9.**

## ANNUAL MAINTENANCE

There are several procedures that should be completed on an annual basis. These procedures help to insure proper operation of the system on a long term basis. Refer to Table 8 for a listing of the annual maintenance items.

### Inspecting and Replacing Scraper Blades

Scraper blades should be inspected for wear during the annual maintenance check. To inspect the blades, perform the procedure in Table 10.

Table 10.

Step	Action
1.	Purging a Barrel
2.	When purging is complete, remove power from the unit.
3.	Remove the four (4) 3/4 in. nuts from the faceplate and slowly remove the faceplate from the unit.
4.	Slowly pull the blade assembly out of the barrel.
5.	Rinse and inspect the blade assembly for signs of wear.
6.	If there is significant wear on the blades, Reverse or replace them, depending on the wear pattern.
7.	Replace the blade assembly and bushings (PN 2392) onto the motor shaft in the barrel.
8.	Re-install the faceplate and replace the four (4) mounting nuts. Hand tighten the nuts until the faceplate makes contact with the gasket, then use a wrench to tighten the nuts an additional 1/4 turn. Be careful not to over tighten the nuts or cracking of the faceplate may result.
9.	Refill the barrel with product. "Filling a Barrel".
10.	When barrel fill is complete, perform a motor calibration. "Calibrating a Motor"

### Cleaning the Syrup Connections

Syrup connections should be cleaned at least every six months, or when syrup types are changed. Perform the procedure in Table 11 to clean the BIB connectors.

Table 11.

Step	Action
1.	Open the merchandiser and select OFF for the barrel to be cleaned.
2.	Remove the quick disconnect from the BIB container.
3.	Fill a suitable pail or bucket with soap solution.
4.	Submerge the disconnect in the soap solution and then clean it using a nylon bristle brush. (Do not use a wire brush). Rinse with clean water and dry.

## Servicing Motorman Dispensing Valves

**NOTE:** Dispensing valves with caged o-rings should be serviced (lubricated) every 6 months or more frequently if the valve lever gets tight to operate. Caged O-rings should be replaced every 12 months.

Refer to Figure 10 and perform the procedure in Table 12 to lubricate or change the caged o-rings in each dispensing valve on the unit.

## Suggested Sanitizers

### KAY-5® Sanitizer/Cleaner (100 PPM)

Mix one packet of KAY-5® Sanitizer/Cleaner per 2.5 gallons of tap water [70°-100°F (24°-35°C)] according to manufacturer's instructions to ensure 100 PPM of available chlorine.

### Household Bleach (200 PPM)

For 6% Sodium Hypochlorite bleach, mix 2.5 fl oz (75mL) in 5 gallons of tap water [70°-100°F (24°-35°C)]. For 5.25% Sodium Hypochlorite bleach, mix 2.2 fl oz (66mL) of bleach in 5 gallons of tap water [75°-95°F (24°-35°C)]. This will ensure a bleach solution of 200 PPM of available chlorine.

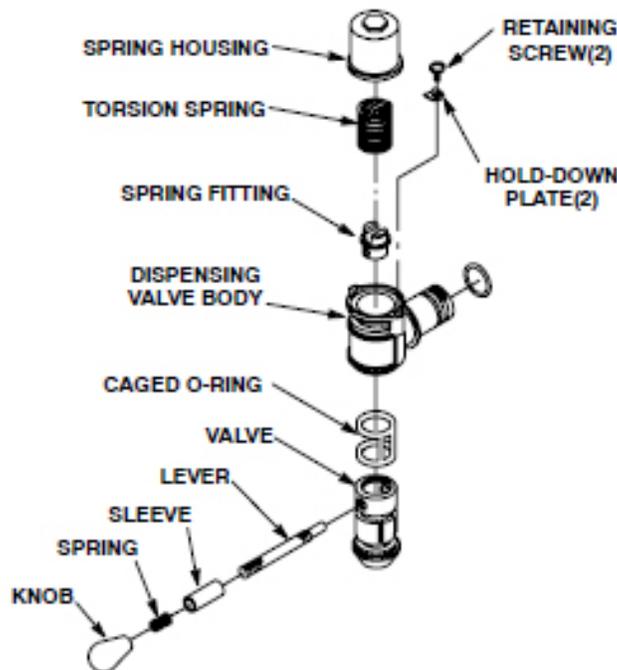


Figure 10. Self-Closing Dispensing Valve

Table 12.

Step	Action
1.	Defrost freeze cylinders, shut unit down, disconnect electrical power from Unit.
2.	Perform the procedure in Table 15 to empty the barrels.
3.	Remove the hex nuts and flat washers securing the faceplate to the freeze barrel, then remove the faceplate from the barrel.
4.	Carefully remove the large o-ring from the faceplate.
5.	Unscrew the relief valve from the faceplate.
6.	Disassemble the dispensing valve (see Figure 10).
7.	Remove ice ball grate from faceplate, if applicable

Table 12.

Step	Action
8.	Remove the two screws and hold-down plates securing the spring housing to the dispensing valve body, then remove the housing.
9.	Remove the torsion spring from the dispensing valve.
10.	Remove the knob, spring, sleeve, and lever from the dispensing valve.
11.	Remove spring fitting from dispensing valve.
12.	Press the valve with the caged O-ring, down and out of the dispensing valve body.
13.	Carefully remove the caged O-ring from the valve.
14.	Wash all the parts in warm water. Remove all traces of syrup and lubricant, especially from the faceplate, o-rings, ice ball grate (if applicable), and dispensing valve. If parts are excessively coated, wipe clean with a paper towel to remove excess syrup and lubricant, especially from caged o-ring and dispensing valve. Use a brush (provided with the unit) to clean the faceplate relief valve passages.
15.	Submerge all the parts in a sanitizing solution according to the suggested sanitizers above for 10 minutes (no more than 15 min).
16.	Remove the parts from the sanitizing solution and place them on clean paper towels.
17.	Assemble the dispensing valve. Rinse them with warm water, and place them on clean paper towels.
18.	Lubricate the caged o-ring. Carefully install the caged o-ring onto the valve from the straight end (opposite tapered end). Lubricate the grooves that the o-ring rides to fill in all void areas around the o-ring.
19.	Carefully install the valve with the caged o-ring in the dispensing valve body.
20.	Install the spring fitting, knob and lever parts, torsion spring and spring housing assembly by reversing the removal procedure. Do not tighten down the hold-down plates securing the spring housing at this time.
21.	After re-installing the faceplate, turn the dispensing valve spring housing to the left (counterclockwise) to put tension on the tension spring. Apply just enough tension so that the dispense valve shaft returns to the closed position after release. Do not overtighten. Overtightening results in a high activation force on the valve.

**NOTE: Use Dow-Corning DC-111 (P/N 321471000) light grade silicone lubricant to lubricate the O-rings.**

## Servicing SPH Dispensing Valves

### Sanitizing the System

The syrup systems should be sanitized every 180 days by a qualified service technician following the sanitizer manufacturer's recommendations or when changing syrup types.

The sanitizing process consists of emptying the barrel, washing the lines and barrel, cleaning the BIB connectors, rinsing and refilling the system.

**NOTE: Sanitizing should only be performed by qualified service technicians.**

### Suggested Sanitizers

#### KAY-5® Sanitizer/Cleaner (100 PPM)

Mix one packet of KAY-5® Sanitizer/Cleaner per 2.5 gallons of tap water [70°-100°F (24°-35°C)] according to manufacturer's instructions to ensure 100 PPM of available chlorine.

#### Household Bleach (200 PPM)

For 6% Sodium Hypochlorite bleach, mix 2.5 fl oz (75mL) in 5 gallons of tap water [70°-100°F (24°-35°C)]. For 5.25% Sodium Hypochlorite bleach, mix 2.2 fl oz (66mL) of bleach in 5 gallons of tap water [75°-95°F (24°-35°C)]. This will ensure a bleach solution of 200 PPM of available chlorine.

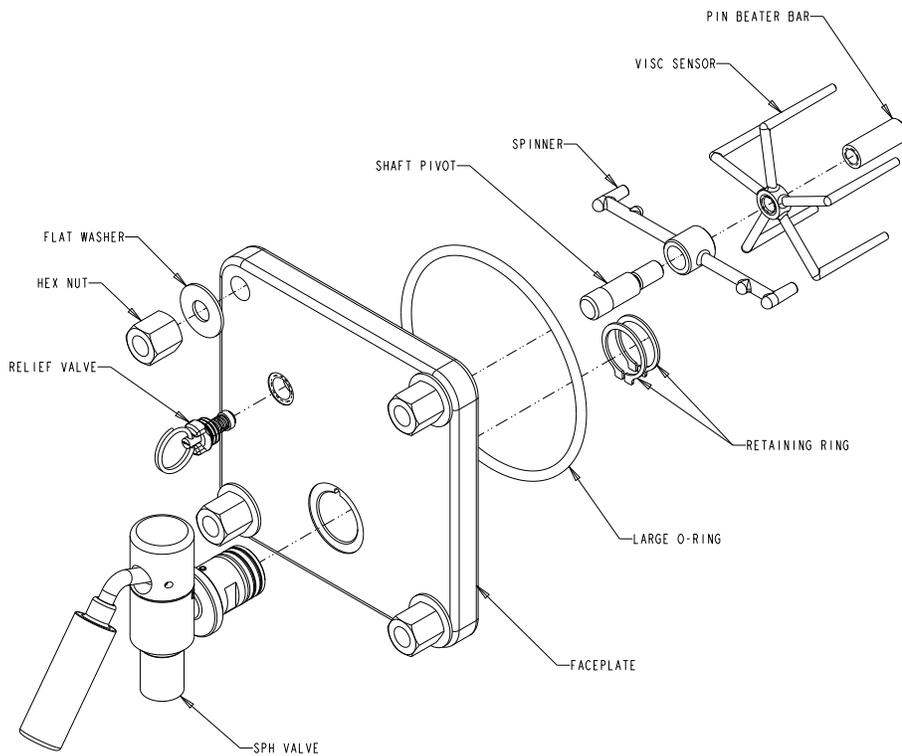


Figure 11.

Table 13.

Step	Action
1.	Defrost freeze cylinders, shut unit down, disconnect electrical power from Unit.
2.	Perform the procedure in Table 14 to empty the barrels.
3.	Remove the hex nuts and flat washers securing the faceplate to the freeze barrel, then remove the faceplate from the barrel. 4. Carefully remove the large o-ring from the faceplate.
4.	Unscrew the relief valve from the faceplate.
5.	Disassemble the dispensing valve (see Figure 11).
6.	Remove Ice Ball Grate from faceplate, if applicable.
7.	Wash all the parts in warm water. Remove all traces of syrup and lubricant, especially from the faceplate, o-rings, ice ball grate (if applicable), and dispensing valve. If parts are excessively coated, wipe clean with a paper towel to remove excess syrup and lubricant, especially from caged o-ring and dispensing valve. Use a brush (provided with the unit) to clean the faceplate relief valve passages.
8.	Submerge all the parts in a sanitizing solution according to the suggested sanitizers above for 10 minutes (no more than 15 min).
9.	Remove the parts from the sanitizing solution, rinse them with warm water, and place them on clean paper towels.
10.	Carefully re-install the valve and corresponding parts into the faceplate, and re-install the faceplate onto the machine.

**NOTE: Use Dow-Corning DC-111 (P/N 321471000) light grade silicone lubricant to lubricate the faceplate O-ring.**

## Emptying a Barrel

To empty the barrel, perform the procedure in Table 14.

**Table 14.**

Step	Action
1.	From the Barrel Status menu, press the DFRST button.
2.	When the barrel is defrosted, go to the Maintenance menu. If the security feature is active, access the Maintenance menu by pressing and holding the far left and right buttons simultaneously for approximately five seconds.
3.	Remove the splash panel. See "BRIX Setup Menu".
4.	Turn the Product/BRIX valve 90 degrees clockwise to shutoff product to the barrel.
5.	Place a large waste container under the dispense valve and drain as much product as possible from the barrel.
6.	When the pressure in the barrel drops, from the Barrel Maintenance menu, press the PURGE button to repressurize the barrel with CO <sub>2</sub> . As product level lowers in the barrel, partially close the valve to avoid spurting.
7.	Disconnect the BIB from the unit.

**NOTE: The unit should be sanitized every 180 days by a qualified service technician following the sanitizer manufacturer's recommendations.**

## Flushing the System of Syrup

After emptying the barrel, the barrel should be flushed of product before proceeding with the sanitizing procedure. Perform the procedure in Table 15.

**Table 15.**

Step	Action
1.	Fill a clean 5-gallon pail with plain water.
2.	Connect a sanitizing fitting (p/n cc 28688) to the BIB connector. Put the connector in the bucket of water.
3.	Make sure the Product/BRIX valve is in the BRIX position.
4.	Hold a waste container under the Brix tube to collect syrup from the syrup line and open the manual syrup flow valve. to start filling the syrup line with plain water. Continue to hold the manual syrup flow valve open until clean water starts coming out of the BRIX tube.
5.	Release the manual syrup flow valve and turn the Product/BRIX valve to the Product position.
6.	Open the manual water flow valve to start filling the barrel with water. At the same time, open the faceplate relief valve until water comes out.
7.	When the barrel is full, press the SPIN button on the Barrel Status menu, while highlighting the appropriate barrel. This starts the scraper blade. Allow blade to operate for fifteen seconds.
8.	Turn barrel OFF by pressing the OFF button.
9.	Place a waste container under the barrel dispensing valve. Open the dispensing valve and dispense all wash water from the barrel. When the pressure in the barrel drops, from the Barrel Maintenance menu, press the PURGE button to re-pressurize the barrel with CO <sub>2</sub> . As the wash water level lowers in the barrel, partially close the valve to avoid spurting.
10.	Perform rear barrel seal replacement. See "Barrel Motor Seal Replacement".
11.	Perform inspection and replacement of scraper blades. See "Inspecting and Replacing Scraper Blades".
12.	Perform a leak test on the barrel. See "Motor Seal Leak Test".

## Sanitizing the Barrel

Sanitize the syrup system and barrel by performing the procedure shown in Table 16.

**Table 16.**

Step	Action
1.	Use a clean 5-gallon pail filled with a sanitizing solution and water at a temperature of 90° F to 110° F (32° C to 43° C). Prepare the sanitizing solution according to the instructions in the "Suggested Sanitizers" section above.
2.	Connect a sanitizing fitting (p/n cc 28688) to the BIB connector. Put the connector in the bucket of sanitizing solution.
3.	Make sure the Product/BRIX valve is in the BRIX position.
4.	Hold waste container under the BRIX tube to collect flush water from the syrup line and open the manual syrup flow valve to start filling the syrup line with sanitizing solution. Continue to hold the syrup flow valve open until sanitizing solution starts coming out of the BRIX tube.
5.	Turn the Product/BRIX valve in the Product position.
6.	Manually override (open) the syrup flow valve to fill the barrel with sanitizing solution.
7.	Fill the barrel with sanitizing solution by opening the faceplate relief valve until sanitizing solution comes out of the relief port.
8.	Hold a 16 oz. cup under the dispense valve. Hold the dispense valve fully open until the cup is full.
9.	Use the brush provided with the unit to clean the relief port and clean the outlet of the dispense valve with sanitizing solution.
10.	From the Barrel Status menu, press the SPIN button while highlighting the appropriate barrel. This starts the scraper blade. Allow blade to operate for minimum of 10, but no more than 15 minutes. Turn the scraper blade off by pressing the OFF button.
11.	Place a large container under the dispense valve and drain as much sanitizing solution as possible from the barrel.
12.	When the pressure in the barrel drops, from the Barrel Maintenance menu, press the PURGE button to re-pressurize the barrel with CO <sub>2</sub> . As sanitizing solution level lowers in the barrel, partially close the valve to avoid spurting.

## Flushing the System

Flush the wash water from the system by performing the procedure in Table 17.

### CAUTION:

Flush the system thoroughly, residual sanitizing solution left in the system may create a health hazard.

**Table 17.**

Step	Action
1.	Turn the Product/BRIX valve to the Product position.
2.	Manually open the manual water flow valve to start filling the barrel with wash water. At the same time, open the faceplate relief valve until water comes out.
3.	From the Barrel Status menu, press the SPIN button while highlighting the appropriate barrel. This starts the scraper blade. Allow the blade to operate for fifteen seconds, then turn barrel OFF by pressing the OFF button.
4.	To drain the water from the system, turn the barrel OFF.
5.	Place a container under the barrel dispensing valve. Open the dispensing valve and dispense all rinse water from the barrel. When the pressure in the barrel drops, from the Barrel Maintenance menu, press the PURGE button to re-pressurize the barrel with CO <sub>2</sub> . As the wash water level lowers in the barrel, partially close the valve to avoid spurting.

Table 17.

Step	Action
6.	Remove the sanitizing fitting (p/n cc 28688) from the BIB connector and connect a BIB containing syrup to the syrup line.
7.	Rotate the Product/BRIX valve to the BRIX position and open the valve at the end of the tube.
8.	Hold a waste container under the BRIX tube to collect the sanitizing solution from the syrup line and open the manual syrup flow valve to start filling the syrup line with syrup. Continue to hold open the syrup flow valve until syrup starts coming out of the BRIX tube.
9.	Perform a BRIX setup. See "BRIX Setup Menu".
10.	Fill the barrel with product as described.
11.	Perform motor calibration. See "Calibrating a Motor"

# TROUBLESHOOTING

Table 18.

<b>Problem</b>	<b>Probable Cause</b>	<b>Remedy</b>
Unit will not run.	A. Unit not plugged in B. Circuit breaker	A. Plug in unit. B. Reset/replace circuit breaker
"Sleep" display on Barrel Status menu	A. Sleep time set B. Clock incorrectly set C. No or incorrect wake up time set	A. Check programming B. Check programming C. Check programming
Barrel Status OFF	A. Not activated B. Error has shut down barrels C. Unit in diagnostics	A. Turn barrels to ON or SPIN B. Correct error & turn barrels to ON C. Exit diagnostics & turn barrels ON
No water pressure	A. Water source not turned on B. Filter blocked C. Other	A. Turn on water B. Change filter C. Call Service

# SPECIFICATIONS

**Table 19.**

Line Voltage		215-245VAC
Max. Current Draw (FLA):		2 Barrel: 16 amps 3 Barrel: 20 amps 4 Barrel: 20 amps
Minimum Circuit Ampacity		2 Barrel: 20 amps 3 Barrel: 30 amps 4 Barrel: 30 amps
Syrup Tubing Size		3/8 in. I.D., 75 ft. max.
Syrup Pressure		75 Psig (0.52 MPa) max.
Water Inlet Size		1/2 in. I.D., 75 ft. max.
Water Flow Rate	2 barrel unit	100 gal. per hr. at 25 psig min. flowing pressure
	3 barrel unit	100 gal. per hr. at 25 psig min. flowing pressure
	4 barrel unit	100 gal. per hr. at 25 psig min. flowing pressure. 25 psig, min.; 90 psig(0.62 MPa) max.
Ventilation Clearance, Standard Condenser		2" on both sides or back 12" on top of the unit
Equipment Weight:		2 Barrel: 410 lbs 3 Barrel: 465 lbs 4 Barrel: 500 lbs
CO <sub>2</sub> Tubing Size		1/4 in. I.D., 75 ft. max
CO <sub>2</sub> supply pressure to Viper should never exceed 75±1 psig		
CO <sub>2</sub> Pressures	To Unit	75 ±1 psig (0.52 MPa)
	To BIB Pumps	75 psig
	To Barrels	36-40 psig typically for FCB
	To Expansion Tank (non-adjustable)	30 psig
Product Flow Rate		2 oz./sec.
BRIX		13 +/- 1 standard
Viscosity Setting Range		1-9
Height		37 in
Width		2 Barrel- 17 in
		3 Barrel- 22.75 in
		4 Barrel- 29 in
Depth (including drip tray)		32.5 in
Operating Temperature		55 to 95° F



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