



JET SPRAY (COLD) TRAINING MANUAL



- ✓ **CARBON DIOXIDE**
- ✓ **WATER**
- ✓ **SYRUP/CONCENTRATE**
- ✓ **MECHANICAL**
- ✓ **REFRIGERATION**
- ✓ **CONTROLS & ELECTRICAL**



Jet Spray (Cold) 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, and mechanical equipment. It is assumed that appropriate safety precautions are taken and that all local safety and construction requirements are being met, in addition to the information contained in this manual.

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TABLE OF CONTENTS

INTRODUCTION	1
Preview Questions	1
Key Things To Know / Do	2
Overview	3
Product Description	3
Product Types	3
Microban®	3
Dimensions & Capacities	4
JS7 Dispensers:	4
JT20 Dispensers:	4
JT30 Dispensers:	4
EJ1 Dispensers:	4
J15 Dispensers:	4
Accessories	5
SYSTEM DETAILS	6
Water	6
Water Quality	6
Mechanical	6
Pump Assembly / Spray Drive Assembly	6
Whipper Assembly	6
Whipper Conversion	7
Spray Verses Circulate	8
Refrigeration	9
Cooling Thermostat	9
Compressor	9
Condenser	9
Condenser Cleaning	9
Filter Replacement	9
Condenser Fan	9
Dryer	9
Evaporators	10
Air Flow	10
Refrigeration Charging	10
Controls and Electrical	11
Switches	11
Spray Drive Motor Assembly	11



TROUBLESHOOTING **12**

 No Spray 12

 Pump assembly 12

 Spray Drive Motor 12

 Noise in Pump Assembly 13

 Impella Spacing 13

 Breaking Magnetic Lock 13

 Pinch Tube Installation 13

 Bowl Leak 14

 Not Cooling 14

 Thermostat 14

 Condenser Cleaning 14

 Condenser Fan Motor 15

 Condenser Fan Blade 15

 System Leak 15

 Refrigeration Troubleshooting 15

ATTACHMENTS **19**

REVIEW **21**



INTRODUCTION

1. PREVIEW QUESTIONS

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

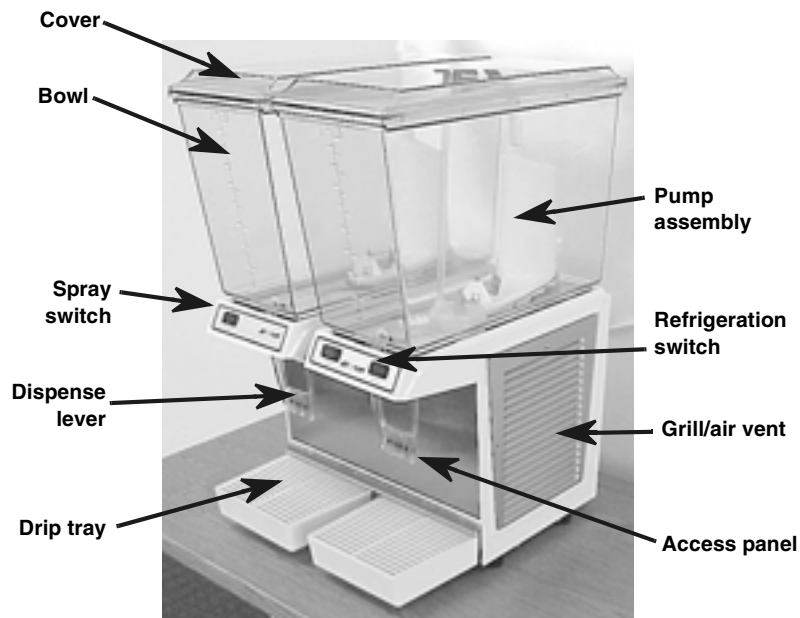
1. The 5 and 3-gallon bowl assemblies are interchangeable on certain models?
 True False
2. Parts that contain Microban need not be cleaned on a regular basis?
 True False
3. All visual cold units use only one type of circulator for all products that are dispensed from the machine? True False
4. Is it possible to add a whipper assembly to a unit after a unit has been purchased and installed? True False
5. The Spray Drive assembly needs to run in order to maintain proper product temperature? True False



2. KEY THINGS TO KNOW / DO

- ✓ Work Safely! Always unplug/disconnect the power to the dispenser before servicing, and get help lifting the unit if it must be removed from the counter !
- ✓ Make certain that you have adequate airflow around the unit for proper operation !
- ✓ Learn to use a good quality volt-ohm meter. Proper electrical trouble shooting is impossible without it !
- ✓ Always read the installation and operation manuals before set up !
- ✓ Visual models are available in 3,5,8, and 15-gallon models !
- ✓ Whipper Assemblies are available for most models !
- ✓ Using the correct impella or circulator with the corresponding product will give you the best visual display for the sale of the product !
- ✓ When product is in the bowls, the refrigeration unit must be operating to preserve the integrity of the product !
- ✓ The Microban protection inhibits the growth of bacteria, mold, and mildew that cause odors and stains !

3. OVERVIEW



3.1 Product Description

Product Types

The visual cold drink dispenser can dispense a premixed drink from the following beverage selections:

- Powder based (sport drinks and Isotonic)
- Syrup based product (non-carbonated)
- Pulpy products (fresh juice from concentrates; orange juice, apple juice, grapefruit juice, lemonade)
- Foamy products (ice teas, grape drinks)

Microban®

Microban is a tasteless, odorless, and colorless antimicrobial agent that inhibits bacterial and fungal growth that cause odors and stains on the Jet Spray unit.

Microban is incorporated directly into the polymer used to mold the Jet Spray bowls. It augments proper equipment cleaning.



3.2 Dimensions & Capacities

JS7 Dispensers:

Flavors: - - - - - One
 Capacity: - - - - - 5 gal. (19 L)
 Voltages: - - - - - 115 volt/60 Hz, 240 volt/50 Hz
 Dimensions: - - - - - 7 3/4" W, 26 5/8" H, 17" D
 - - - - - 197 mm W, 676 mm D, 432 mm D
 Shipping Weight: - - - - - 54 lbs. (24.5 kg)

JT20 Dispensers:

Flavors: - - - - - Two
 Capacity: - - - - - two – 5 gal. (19 L)
 Voltages: - - - - - 115 volt/60 Hz, 240 volt/50 Hz
 Dimensions: - - - - - 16" W, 26 5/8" H, 17" D
 - - - - - 407 mm W, 676 mm D, 432 mm D
 Shipping Weight: - - - - - 75 lbs. (34 kg)

JT30 Dispensers:

Flavors: - - - - - Three
 Capacity: - - - - - three – 5 gal. (19 L)
 Voltages: - - - - - 115 volt/60 Hz, 240 volt/50 Hz
 Dimensions: - - - - - 24 1/2" W, 26 5/8" H, 17" D
 - - - - - 622 mm W, 676 mm D, 432 mm D
 Shipping Weight: - - - - - 93 lbs. (42.2 kg)

EJ1 Dispensers:

Flavors: - - - - - Single
 Capacity: - - - - - 8 gal. (30 L)
 Voltages: - - - - - 115 volt/60 Hz, 240 volt/50 Hz
 Dimensions: - - - - - 16" W, 31" H, 18" D
 - - - - - 407 mm W, 788 mm D, 457 mm D
 Shipping Weight: - - - - - 79 lbs. (35.8 kg)

J15 Dispensers:

Flavors: - - - - - One
 Capacity: - - - - - 15 gal. (57 L)
 Voltages: - - - - - 115 volt/60 Hz, 240 volt/50 Hz
 Dimensions: - - - - - 16" W, 31" H, 18" D
 - - - - - 407 mm W, 788 mm D, 457 mm D
 Shipping Weight: - - - - - 79 lbs. (35.8 kg)

3.3 Accessories



Leg extension kit p/n S4056



No Cup Contact p/n S6469



Locking Kit p/n A3035 (JT-20), p/n A3036 (JT-30)



Spray Drive Motor p/n A1753

SYSTEM DETAILS

1. WATER

1.1 Water Quality

Water quality has an affect on juice dispensing systems.

- odor
- taste
- clarity/foaming

Water filtration is recommended to assure the best beverage taste.

2. MECHANICAL

2.1 Pump Assembly / Spray Drive Assembly

All units designed to spray, including those with optional whippers, incorporate a unique refrigeration design that keeps drinks consistently colder at any bowl level. The beverage is constantly circulated through the pump housing over the cooling evaporators.

2.2 Whipper Assembly

Jet Spray's optional, patented whipper aerates and whips the beverage before it leaves the bowl. This exclusive whipping process is the most sanitary in the industry, keeping the beverage under refrigeration at all times, even during whipping. Each serving is individually whipped and overruns of 35%-40% are obtained with most specially formulated whipped drink bases.

A simple external adjustment allows the amount of overrun or foam head to be varied as desired. The patented whipper is held securely in place magnetically and can be easily slipped in and out of the bowl for changeover from whipped to non-whipped drinks.

If drinks are not being whipped:

- Make sure refrigeration switch is on.
- Assure the whipper motor runs when depressing the dispense lever.
- Make sure whipper chamber assembly is located in the proper position and resting flat on a base of bowl.
- Check whipper magnet. It should turn freely, if not, remove impella support pin and clean all parts with soap and water.

- Check whipper switch for adjustment. If moved too far forward, an air lock may occur, thereby breaking the magnetic lock between whipper motor and whipper chamber assembly.

To adjust whipper switch, loosen screw to the right of the switch. Slide switch in slot to desired location.

NOTE: When switch is moved to the forward position (out towards operator) whipper motor will come on with very little movement of the push handle. When switch is all the way back (towards front panel) whipper motor will not come on, even when the handle is pushed all the way back.

2.3 Whipper Conversion

1. Disconnect power.
2. Drain bowl.
3. Remove pinch tube, bowl, dispense lever, drip tray, switch cover plate, and front panel.
4. Install washer and standoff into the whipper motor mounts on condensate tray.
5. Install whipper motor assembly and fasten with 3 keps nuts.
6. Wire according to diagram.

NOTE: Use existing cable clamps and wire ties provided to route wires away from sharp edges and fan blade.

7. Attach new wiring diagram to new front panel.
8. Install new front panel with existing hardware.
9. Install switch cover plate with switch to condensate tray in front of whipper motor assembly (use 10-32 x 1 1/4" screw and spacer).
10. Attach whipper decal on raised boss of condensate tray where whipper motor was installed.
11. Replace bowl, new dispense lever, pinch tube, and whipper chamber assembly and drip tray. When placing the whipper assembly into the bowl, assure that it is located into the recess directly above the whipper decal. Then insert the 90° elbow into the pinch tube.
12. Connect power, premix product, and add product to bowls.

2.4 Spray Verses Circulate

Certain products are not suited for spraying, including products that have pulp and those that foam. Jet Spray units can be retro-fitted with circulator assemblies for pulpy or foamy products.

- Circulator for foamy products #A1620, including ice tea and coffee from concentrate and some juice.
- Circulator for pulpy products #S6737, including orange juice from concentrate, fresh squeezed lemonade, and any pulp based beverage.



#A1620 foamy circulator



#S6737 pulpy circulator assembly

3. REFRIGERATION

3.1 Cooling Thermostat

There is one thermostat on all of the cold product units. This thermostat is located against the evaporator coil of the unit. On the JT20 and JT30 units the thermostat is mounted against the right hand evaporator coil when facing the front of the unit. The cooling or frost pattern for the JT30 flows from the center to the left then to the right. Upon reaching a predetermined temperature, the unit will cycle. All thermostats are factory set and normally need no adjustment.

3.2 Compressor

Moves the refrigerant through the system. Pressurizes the refrigerant for heat dissipation in the condenser and ultimately heat removal by evaporation in the bowl's evaporator.

3.3 Condenser

Dissipates heat from the compressor and prepares the high pressure refrigerant for the capillary tube and ultimately the evaporator.

3.4 Condenser Cleaning

It is very important to do this on an annual basis and as required. The condenser can be cleaned with a brush or compressed air. There are commercial condenser cleaners on the market that are acceptable.

3.5 Filter Replacement

The Jet Spray unit comes with a foam type filter mounted on the inside of the side panel assembly. JT30 models have a filter mounted inside the rear panel of the chassis. These filters should be periodically removed and washed in warm soapy solution to remove dust and derbies.

3.6 Condenser Fan

Draws air through the condenser coils and over the compressor to facilitate heat removal.

3.7 Dryer

Cleans and removes moisture from the refrigeration system. The dryer should always be replaced whenever servicing or opening a refrigeration system. When ordering a dryer, specify model number and refrigerant type (or serial number) to insure the correct dryer is received.



3.8 Evaporators

There are two types of evaporators on the Jet Spray cold products, coil and dome. It is important on both to remember to keep product above the top of the coils to insure proper cooling of the product and correct operation of the cooling system.

Sometimes there is an ice build up around the evaporator. This is normal.

When operating a multiple bowl unit, it is necessary to have liquid above the level of the evaporators in each bowl, this balances the refrigeration unit. Never run with an empty bowl, fill with water if product is unavailable.

3.9 Air Flow

It is very important to make sure that there is adequate air circulation around the machine. There should be a minimum of three inches of space all around the unit. Refer to the installation and owners manuals for additional information.

3.10 Refrigeration Charging

Charging the capillary tube controlled system requires accurate charging equipment and technique. The amount of refrigerant in the system determines the operating pressures and temperature of the evaporators. It is necessary to utilize a refrigerant scale or graduated charging cylinder when charging the system.

Load, ambient temperature, and operating conditions affect sealed system operating pressures. If the unit appears under charged, check for a dirty condenser. If the unit is running constantly but not cooling, the problem may be a low charge. If a low charge is suspected, it is recommended that the system is evaluated and leak tested.

NOTE: Hooking up a high side hose to a system with a low charge causes a quarter or more of the charge to backup into the hose. This results in an incorrect reading. This is why operating pressures are not normally published.

4. CONTROLS AND ELECTRICAL

4.1 Switches

Separate spray and refrigeration switches are located on the front of each dispenser, excluding the JS7, JW6, and JW5. There are separate switches for each side of multi-bowl models.

These switches can be tested by checking the continuity from one terminal to the other. They are either open or closed depending upon the position of the switch.

4.2 Spray Drive Motor Assembly



To avoid electrical shock and death, use extreme caution when the access panels are removed and the power is ON.

The spray drive motor assembly is located under the condensate tray. It is accessed by removing the front panel.

Check to see if the motor shaft and magnet are rotating. Visually inspect the spray drive motor.

If the power is ON and the motor is not rotating, check for line voltage at the terminal board.

If power is present and the motor is not rotating, the motor will need to be removed to check for continuity.



Disconnect power to the unit before removing the motor.

The spacing of the drive assembly and the underside of the condensate tray are very important. Current production spray drive motor assemblies do not utilize the spacing lugs that are mounted in older units. When replacing the spray drive motor assemblies it is important to check for existing lugs. If they are present remove as per the instruction sheet that is included with the replacement part.

**ADD PICTURE
OF LUGS**

TROUBLESHOOTING

1. No SPRAY

1.1 Pump assembly

Be sure the spray switch is ON

Check impella magnet. Impella should spin freely. If it does not, remove and clean both impella and support pin.

NOTE: Check that the Impella assembly is in upright position, fins facing upward.

Sugar and solids can crystallize and cause impella to bind. Do not allow these materials to dry on parts.

Bearing in impella could be worn causing impella to scrap the base of the bowl. Replace the impella assembly.

NOTE: Switch must be OFF when inserting the impella into the bowl to insure magnetic coupling.

Long pieces of pulp may plug impella and bind the impella blades. Juices with excessive pulp must be strained in order to spray. If it is desired to retain pulp, use the Jet-Spray Circulator #S6737 in place of the pump.

With the JS/JT/JWT series, assure that the pump housing is locked into place. If either of the tabs located on the bottom perimeter of the pump housing assembly are broken, the pump will not spray properly. With the TJ/EJ/J15 series, the pump cover should be locked under all three bowl lugs. If any of these are broken the pump will not spray properly and will vibrate and be noisy. Replace the bowl assembly or use the Jet-Spray Circulator #S6737.

1.2 Spray Drive Motor

To check the spray power source, remove front splash panel or side panels, depending on the model, by removing the screws. This will expose the spray drive assembly. The drive assembly must spin freely. If shaft or magnet rubs or binds, adjust or replace it.

The spray drive motor must run in a counterclockwise direction.

If the motor is stopped or not up to speed it will affect circulation and temperature of the drink. Replace spray switch or spray drive motor.

2. NOISE IN PUMP ASSEMBLY

2.1 Impella Spacing

Correct installation and maintenance of the impella is very important to efficient operation and the appearance of the product in the bowl.

2.2 Breaking Magnetic Lock

The operation of the spray drive motor and impella is simple. The two magnets, one on the spray drive motor and one on the impella assembly, “lock” these components together. When that lock is broken it creates noise and/or an improper pumping action. The alignment of the two components is to correct and efficient operation.

Problems that cause that loss of magnet alignment include:

- Improper product mix
- Worn bearing on the impella unit
- Worn impella pin or shaft
- Bowl assembly not correctly seated on the chassis
- Impella installed upside down
- Pumps not being run, allowing solids to settle in the bottom of the bowl.

Both the pump refrigeration switches should be on whenever product is in the bowl.

3. PINCH TUBE INSTALLATION

1. Remove pinch tubes from the plastic bag and wash with warm and mild detergent or soap.
2. Visually check for cuts or holes in the pinch tube assembly.
3. Wet bowl spout surface and sealing rings on the pinch tube.
4. With one hand, push back dispense lever until it touches the front panel. With the other hand, pick up pinch tube and carefully insert tube into bowl spout opening, and into lower handle support spout. Make sure end of tube does not get caught on edge above handle support spout opening.
5. Push pinch tube into bowl spout opening with thumb. When end of tube passes beyond bottom of dispense lever support spout opening, pull end of tube for final seating of pinch tube top into bowl spout seat. Make sure the tube is free of wrinkles. Tube should extend ¼" below support spout.
6. Install other pinch tubes on the unit if needed.

4. BOWL LEAK

NOTE: Do not confuse condensation drippings on the outside of the bowl as leaks. High humidity causes more condensation.

1. Be sure the gaskets are properly placed in the grooves on the bowl and that there are no tears or cuts in the gaskets.
2. Check for foreign material around domes where gaskets seat.
3. Check pinch tubes for holes or tears above the pinch off area, or for improper insertion.
4. Be sure condensate washers are around bowl spouts. Condensation will run down the bowl spout/pinch tube area giving the appearance of leaks if they are not in place.

5. NOT COOLING

5.1 Thermostat

The thermostat is pre-set at the factory and will not normally require resetting. The unit will automatically cycle between the high and low temperatures of the thermostat.

A continuity check of the thermostat will determine if it has failed.

Be sure to replace the thermostat capillary tube to the correct depth in the thermal well. This is essential to the sensing of the correct evaporator temperature.

The capillary tube well is sealed with a permagum sealant to protect the bulb of the thermostat from being affected by internal or ambient temperature changes.



NOTE: These thermostats can and often do contain a caustic solution within the bulb and should be disposed of in a professional manner to prevent injury or damage.

5.2 Condenser Cleaning

The condenser must be cleaned periodically to insure efficient operation. The frequency of cleaning will depend on the location. No applicable buildup on the condenser fins should be allowed.

1. Turn switch OFF and unplug the unit.
2. Remove right or left side panel (plus back panel on JT30 model) and clean thoroughly.
3. With a stiff bristle brush or vacuum cleaner, clean condenser. Be sure no loose dirt goes into the dispenser.

4. Replace side panels and restart unit.

5.3 Condenser Fan Motor

The condenser fan motor is sealed at the factory and needs no lubrication. The motor can be checked in two ways; check for continuity, and check to see that power is present at the terminal block or terminal strip.

5.4 Condenser Fan Blade

The condenser fan blade pulls air through the condenser. If the blade is damaged or is not positioned correctly in the condenser shroud, the blade will not pull or push the correct amount of air to cool the condenser coil, reducing refrigeration efficiency.

5.5 System Leak

Symptoms of a refrigerant leak include a running compressor with a hot suction line and the compressor running excessively hot, and an increased amp draw by the compressor. A sweep of the refrigeration system is necessary to determine if there is a leak.

If there is a leak in the system, it must be evacuated and repaired by an certified refrigeration technician. The system must then be pulled down to a vacuum and recharged with the correct level of refrigerant.

6. REFRIGERATION TROUBLESHOOTING

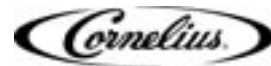
PROBLEM (fault)	CAUSE (diagnosis)	ACTION (remedy)
1. Compressor will not start, no humming noise	A. Line disconnect switch open B. Fuse removed/blown C. Overload protection tripped D. Control stuck in open position E. Control OFF due to cold location F. Wiring improper or loose	A. Close start or disconnect switch B. Replace fuse C. Refer to electrical servicing D. Repair or replace control E. Relocate control F. Check wiring against diagram



PROBLEM (fault)	CAUSE (diagnosis)	ACTION (remedy)
2. Compressor will not start — hums but trips overload protector	<ul style="list-style-type: none"> A. Improperly wired B. Low voltage to unit C. Relay not closing D. Compressor motor winding open or shorted E. Internal mechanical trouble in compressor F. Liquid refrigerant in compressor 	<ul style="list-style-type: none"> A. Check wiring against diagram B. Correct problem C. Correct problem D. Replace compressor E. Replace compressor F. Add crankcase heater and/or accumulator
3. Compressor starts but start winding does not switch off	<ul style="list-style-type: none"> A. Improperly wired B. Low voltage to unit C. Relay failed to open D. Excessively high discharge pressure E. Compressor has winding open or shorted F. Internal mechanical trouble in compressor 	<ul style="list-style-type: none"> A. Check wiring against diagram B. Correct problem C. Correct problem D. Check discharge shut-off valve, possible overcharge, or insufficient condenser cooling E. Replace compressor F. Replace compressor
4. Compressor starts but then short-cycles on overload protector	<ul style="list-style-type: none"> A. Additional current passing thru overload protector B. Overload protector defective C. Excessive discharge pressure D. Suction pressure too high E. Compressor too hot, return gas hot F. Compressor has winding open or shorted 	<ul style="list-style-type: none"> A. Check wiring diagram; check for added fan motors, pumps, etc. connected to wrong side of connector B. Check current, replace protector C. Check ventilation, restrictions in cooling medium or refrigeration system D. Check for possible misapplication, use stronger unit E. Check refrigerant charge and add if necessary (fix leak first) F. Replace compressor



PROBLEM (fault)	CAUSE (diagnosis)	ACTION (remedy)
5. Unit runs OK but short-cycles on	A. Overload protector B. Thermostat	A. See “Compressor starts but then short-cycles on overload protector” above B. Widen differential
6. Unit operates long or continuously	A. Refrigerant low B. Control contacts stuck closed C. Refrigerated or air conditioned space has excessive load or poor insulation D. System is inadequate to handle the load E. Evaporator coil iced F. Restriction in refrigeration system G. Dirty condenser H. Filter dirty	A. Fix leak and charge B. Clean contacts or replace control C. Correct problem D. Replace with larger system E. Defrost F. Determine location and remove G. Clean condenser H. Clean or replace filter
7. Relay defective or burned out	A. Incorrect relay B. Incorrect mounting angle C. Line voltage too high or low D. Excessive short cycling E. Relay mounting loose F. Incorrect run capacitor	A. Replace with correct relay B. Remount in correct position C. Correct problem D. Correct problem (see “Unit runs OK but short-cycles on” above) E. Mount correctly F. Replace with correct capacitor
8. Suction line frosted or sweating	A. Refrigerant overcharge	A. Correct charge
9. Liquid line frosted or sweating	A. Restriction in dehydrator or strainer	A. Replace bad part













PROBLEM (fault)	CAUSE (diagnosis)	ACTION (remedy)
9. Unit noisy	A. Loose parts or mounting B. Tubing rattle C. Bent fan blade vibrating D. Worn fan motor bearings	A. Tighten B. Reform tubing C. Replace blade D. Replace motor

ATTACHMENTS

The following attachments should be included with this lesson:

JetSpray Care And Cleaning Instructions

JET SPRAY		CARE AND CLEANING INSTRUCTIONS JET SPRAY VISUAL DISPENSERS
<p>1 TURN OFF ALL SWITCHES REFRIGERATION AND SPRAY</p> <p>DRAIN REMAINING BEVERAGE FROM BOWLS</p> 	<p>9 LOCK PUMP HOUSING INTO BOWL Push straight down until pump snaps into place. PUMP HOUSING MUST LOCK SECURELY INTO BOWL</p> <p>CAUTION: BOTH TABS MUST SNAP INTO PLACE.</p> 	
<p>2 REMOVE THE PINCH TUBE Push handle back until it stops. This will release the tube which can then be lifted out.</p> 	<p>10 REPLACE BOWL Slide bowl assembly over cooling coils, push down solidly to secure.</p> <p>IMPORTANT: BE SURE BOWL GASKET AND BOWL SPOUT GASKET ARE IN PLACE AND WET BEFORE INSTALLING BOWL.</p> 	
<p>3 REMOVE PUSH HANDLES Push handle back until it stops, grasp the white clips and squeeze. Pull handle straight down.</p> 	<p>11 REPLACE PUSH HANDLES Push straight up through opening until the clips snap into place.</p> 	
<p>4 a. REMOVE CONDENSATE DRAIN Squeeze both sides and pull straight down. b. REMOVE DRIP TRAY ASSEMBLY Pull straight out from base of unit.</p> 	<p>12 REPLACE PINCH TUBES a) Wet tube, push handle back, insert tube through hole inside bowl. Tube end should pass below the end of the spout. b) Grasp end of tube and pull down, this will seat the tube in the bowl.</p> 	
<p>5 DISASSEMBLE BOWL ASSEMBLY Remove bowl cover, pump housing assembly and bowl from base. Check impeller to be sure it spins freely. If not remove and clean.</p> 	<p>13 REPLACE CONDENSATE DRAIN Insert into space provided. Drain snaps into place.</p> <p>BE SURE THE SLOTTED OPENING IS PLACED TOWARD FRONT PANEL OF UNIT.</p> 	
<p>6 THOROUGHLY CLEAN ALL PARTS IN WARM WATER USING A MILD NON-ABRASIVE DETERGENT, RINSE THOROUGHLY</p> <p>CAUTION: ABRASIVE WILL SCRATCH PLASTIC PARTS</p>	<p>14 REPLACE DRIP TRAY ASSEMBLY Insert straight into slots provided on front of base.</p> 	
<p>7 RE-ASSEMBLE PUMP HOUSING ASSEMBLY a) Spray tube locks in by pushing down and turning clockwise b) Re-install impeller and pin.</p> <p>BE SURE IMPELLER SPINS FREELY ON SHAFT.</p> 	<p>15 REFILL BOWL Follow beverage manufacturer's directions. Turn on refrigeration and spray switches. Beverage should be cold enough to serve in approx. 2 hrs.</p> <p>NOTE: TO INSURE EFFICIENT OPERATION DISPENSER SHOULD REMAIN ON 24 HOURS PER DAY.</p>	
<p>8 WITH BOWL UPSIDE DOWN INSERT GASKET INTO GROOVE AND PRESS INTO PLACE Wetting the gasket eases installation.</p> 	<p>For more information call or write to:</p> <p style="text-align: center;">JET SPRAY</p> <p><small>All CorneliusJetSpray Corp. 2421 N. Palmer Drive, Schaumburg, IL 60196 US & Canada (ph) 1-800-248-5369 Outside the US (ph) 1-630-638-5050 US & Canada Fax: 1-800-244-3801 Outside the US Fax: 1-630-638-5360</small></p>	

Microban Antibacterial Protection



What is Microban Antimicrobial Protection?

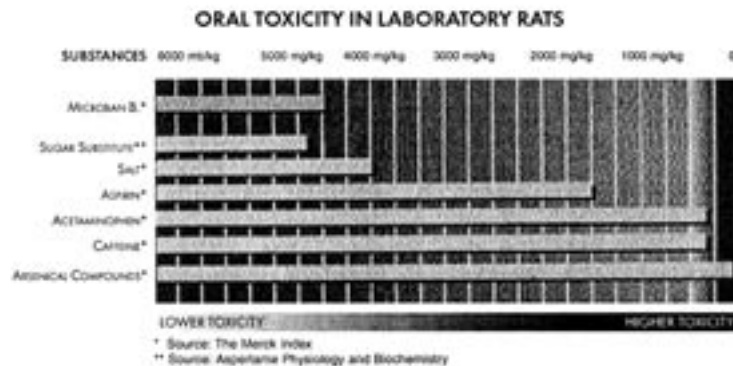
Microban antimicrobial protection utilizes a broad spectrum antimicrobial agent, effective against a wide range of Gram positive and Gram negative odor and stain causing bacteria, fungi and yeast. Our Microban additive "B" ingredient is registered with the EPA and is incorporated in specific medical product applications which have been registered with FDA.

How does it work?

The Microban additive inhibits the growth of microorganisms by utilizing an electro-chemical mode of action to penetrate and disrupt their cell walls. Upon cell wall penetration, leakage of essential metabolites occurs and other key cell functions are disrupted. These cells are then unable to reproduce, virtually eliminating the growth of the organism.

Why is it Safe?

Microban only affects the cell walls of microorganisms; our own cells, as well as those of all other red-blooded animals, are unaffected. A comparison of relative toxicities of common substances (below) to that of the Microban additive at its 100% level, demonstrates the benign nature of the Microban ingredient. The common levels at which the Microban additive is incorporated are significantly lower than the 100% form shown in the chart – typically a fraction of one percent. In addition, once incorporated into the polymer, our antimicrobial is bound to the material, making it a durable part of the finished product, both inside it and at its surface.



The four factors above (mode of action, low toxicity level in its pure state, low actual use levels, and binding to the product) are what make Microban antimicrobial protection safe for the many applications involving contact with humans in our everyday environments.

*Microban and the Microban logo are trademarks of Microban Products Company, Huntersville, NC



REVIEW

DATE: _____

NAME: _____

LOCATION: _____

The following questions summarize important points in this training lesson.

1. It is acceptable to run the system with only one of the two bowls with product in it.

_____ True
_____ False

2. Pinch tubes should be cleaned regularly and replaced twice a year.

_____ True
_____ False

3. Whipper assemblies are can not be added to a unit after it has left the factory.

_____ True
_____ False

4. Plastic components are dishwasher safe.

_____ True
_____ False

5. Microban is tasteless, colorless, and odorless.

_____ True
_____ False

6. With Microban added to components it is no longer necessary to clean and sanitize units.

_____ True
_____ False

7. Describe the three types of circulators for Jet Spray units.



8. What direction does the refrigerant flow during initial startup?

9. What direction does the refrigerant flow during the cooling cycle?

10. When do thermostats need to be adjusted?

11. Do pump assemblies need to be inside the bowl to keep the product cool?

12. Ice buildup on the evaporator is:
A. normal
B. due to the thermostat being set too low
C. an indication of improper product mix
D. all of the above.
13. It is recommended that the pump mix the product instead of pre-mixing it?
_____ True
_____ False

REVIEW

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