



## HOSHIZAKI CARE TECH-TIPS

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**Volume 119**  
**July 5, 1995**

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### ***KM ICE QUALITY***

Recently, in the state of Florida, a federal agency conducted a test on bagged ice. Bag ice was tested from different locations across the state for ice quality and purity. The testing agency noted the different ice shapes and inspected the cleanliness of the machine, that produced the ice .

The results showed the KM crescent shaped cube to be clearer and purer than some ice cubes. Some of the ice inspected had traces of bacteria and minerals. The KM units inspected had a clean sanitary appearance. This prompted the testing agent to question our local distributor "Why?". In answer to this question I submit the following reasons.

Stainless steel is known for its durability and sanitary qualities. The flat freezing surface of the KM stainless steel evaporator offers no restriction to the water flow. Water flows quickly and smoothly down this flat surface. Pure water freezes first and the contaminants are "washed" out in this freezing process. The speed at which the water flows down the plate will directly effect ice purity, clarity, and hardness. Consider that any restriction which slows the water flow allows time for the contaminates to freeze into the cube. Water which must flow into a grid cell, or across a restrictive separator or barrier , can be slowed to the point where cube purity suffers.

At the end of the freeze cycle, the reservoir contains a high concentration of contaminants. If these

contaminants are not removed , they mix with the incoming water and the next batch of ice will suffer in purity. To reduce contamination, Hoshizaki units

clean the reservoir twice during the harvest. KM units pump out these contaminants at the beginning of the harvest cycle and flush the reservoir by overflowing the stand-pipe at the end of the harvest cycle. The pump-out can be adjusted to occur every cycle or to skip 2, 5, or 10 cycle to reduce water usage in good water areas. The flush removes additional contaminants and can be lengthened to provide additional cleaning of the reservoir.

A small ice drop zone also helps to prevent algae growth. Most ice machines have a large ice drop zone which allows air to circulate from the bin upwards and around the evaporator. When the bin door is opened to remove ice, air-born bacteria enters the bin cavity. As the ice releases and drops into the bin, the air circulates up around the evaporator and the air-born bacteria adheres to the wet surfaces of the evaporator. This is what causes "slime" growth in the water system.

The KM evaporator section is insulated and sealed to provide a pressurized cavity. The small ice drop zone and this positive pressure helps to eliminate air flow around the evaporator reducing the possibility of contamination by air-born bacteria.

These exclusive features provide Hoshizaki customers with hard, crystal clear, purified, KM crescent shaped cubes.

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## **CONTROL BOARD MIX-UPS**

We have established through previous issues of Tech Tips that there are four different control boards in the field. Consequently, the possibility exists that the

wrong board could be installed in a KM cuber. Let's explore the possibilities, symptoms, and solutions, should this occur.

Misapplication 1: Older model units (KM-451/601/631/1201) came from the factory with an "A" or "B" board. If an attempt is made to install a "C" or Alpine board in one of these units, you will find that the unit will not operate. The unit has a 9 pin connector and the board has 10 pins. The K-2 connector on the board cannot be connected because there is no separate control voltage transformer. Your only choice here is to order a "B" style board for this application.

2: The unit you are servicing was manufactured with a "C" board. You have a "B" board on the truck and decide to give it a try. Guess what, it won't work. The 10 pin unit connector will slide over the 9 pins on the board but it doesn't match up properly. There is no place on the "B" board to connect the control voltage transformer. You have two choices here, you may still find a "C" board in the distributors inventory or you can use the Alpine replacement board. Both are direct replacements.

If you use an original Alpine board or an Alpine universal replacement board with the RO65 jumper wire cut, the unit will not start for 3 minutes and then will not have the correct sequence. **The jumper must be in place when using an Alpine board to replace a "C" board.**

3: The unit you are servicing was manufactured with an original Alpine board part # 2U0127-01. This original board is now available as a service part or you can use a universal Alpine part # 2U0139-01 if you cut the black jumper wire across resistor RO65. It is important to note that if you fail to cut the jumper wire

the unit will work fine until you cut the power switch off. At that time the contactor will remain energized to keep the compressor on. This is not good! Always check to assure the contactor de-energizes when you flip the power switch to off, before you leave the site.

To avoid board mix-ups follow these simple rules.

1. If the unit came originally with an "A" or "B"

board, replace it with a "B" board.

2. If the unit came originally with a "C" board, replace it directly with a **universal Alpine** board.

3. If the unit came with an Alpine "original" board, replace it with an "**Alpine original**" or a **universal Alpine with the jumper cut**.

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## **WATER SYSTEM SANITATION**

Sanitation is a vital step in the process of cleaning an ice machine. It is important to remember that ice is a food product. Since this food product goes directly into the customers cup or glass, it is critical to assure that it is clean and bacteria free.

A good water filter system will help neutralize water-born bacteria and slow mineral build-up. Even with the best filter system, routine maintenance, including cleaning and sanitizing, is a must.

Cleaning the ice machine with an acid based scale remover gets rid of the mineral build-up which forms on the evaporator. A clean freezing surface provides better efficiency. Once the system is de-scaled or de-limed, it should also be sanitized to inhibit the growth of air-born bacteria. This will retard algae or slime growth in the ice drop zone and evaporator compartment.

Algae growth is common in a business that bakes bread or has open beer bottles sitting close to the ice machine due to yeast spores in the air. The use of a commercial sanitizer will definitely extend the time between cleanings.

Frequency and scheduling of preventative maintenance cleaning and sanitizing will depend on the local water conditions. Sanitizing can be considered a

health issue. Service technicians should make recommendations and sell the customer on the benefits of this important service.

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***COMING NEXT MONTH...***

1. Contactors.
2. Leak Checking Methods.
3. Why Longer Cycles?      Volume 119 page 2