



HOSHIZAKI CARE TECH-TIPS

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Open Thermistor??

Sorry, we failed to include the symptoms of an open thermistor in last month's article about thermistor operation.

The symptom of an open thermistor will be long harvest (15 minutes for "C" boards, 20 minutes for Alpine boards). The reason for this is if the control board does not receive the resistance signal of 3.9 K-ohms, a back-up harvest timer takes over and completes the harvest automatically. This will definitely cut production, however the unit will operate on the back-up timer until the thermistor can be replaced.

KM Water System and Cleaning

Before we discuss cleaning the KM series units, let's discuss some differences between Hoshizaki and our competitors. First, the reservoir of the KM series units is larger than any other ice machine on the market. This allows for a larger ice drop weight which relates to longer cycles/fewer cycles per day. Second, the water flows down across the flat surface of the evaporator. This allows pure water to freeze first on the evaporator and eliminates trapping of minerals in the cube during the freeze, providing crystal clear, hard, crescent cubes. Lastly, the sequence of operation allows cleaning of the reservoir twice during each harvest cycle through the pump out and flush period. Obviously, this will keep the water system cleaner for a longer period.

Now let's talk scale. Remember that water conditions vary across the country. In some areas you will find a lime or calcium build-up on evaporators as a white or

yellow, hard crust. It can be transparent when wet. In other areas of the country, you will find a red, rust colored, stain which is caused by iron in the water. That's right, iron, not rust or chlorine stain as you have heard from our competitors. You may also find gel or slime that will be pink, green, black or brown. This is caused by air-borne bacterial and may be found around the ice drop zone. Normally this type of scale does not enter the KM evaporator section because there is no outside airflow into the sealed evaporator compartment.

On any ice machine, when scale accumulates it will insulate the evaporator which impedes heat transfer. This could cause longer freeze cycles or poor harvest which melts ice away or causes cubes to stick and refreeze, resulting in a possible freeze-up. This scale must be removed using an acid based cleaner which is recommended for ice machine applications.

Hoshizaki recommends Lime-A-Way or Hoshizaki brand ice machine cleaner. Any other brand cleaner which is recommended for ice machines can be used due to the durability of the stainless steel evaporator. Nickel safe cleaners, which must be used on plated type evaporators, can be used on Hoshizaki, however they contain a weaker acidic solution and may require longer cleaning times or less dilution with water.

The cleaning instructions are located inside the front panel on every unit, as well as, in the customer's Instruction Manual. Be sure to follow the dilution instructions when mixing the cleaning solution and use warm water. Remove the top panel and insulation to access the evaporator for inspection. Drain the

reservoir. Pour the cleaning solution and turn the machine to the wash position. The pump will circulate the cleaner across the outside of the evaporator and back to the reservoir. Turn the wash handle to the vertical position to allow cleaner to circulate down the inside of the evaporator. After 5 minutes turn the wash handle back to the horizontal position to allow all the cleaner down the outside surface where the scaling is greatest. When the flat surface of the plate is clean, slide the water distributors out approximately 3/8 inch to allow the cleaner to pass down the evaporator ribs or fins. Once the evaporator is clean, drain the system and rinse thoroughly. Some prefer to use a brush through the tip of the evaporator to speed the cleaning process. A nylon or teflon bristle 1 1/2 in. round brush works fine for this. (Sparta brush #413 or 41.) Sanitizing is recommended especially in areas with air-borne bacteria slime. Follow the same procedure using an ice machine sanitizer or 5.25% sodium hypochlorite. Be sure to flush the system thoroughly using clean water before making the first batch of ice. Cleaning and sanitizing time will depend on the amount and type of scale.

Hoshizaki recommends annual cleaning, however, more frequent cleaning may be required depending on local water conditions. A good filter system that is properly maintained will also extend the time between cleanings.

Flaker/DCM Water System & Cleaning

The Flaker and DCM water system is very simple and easy to maintain. An inlet water valve supplies water to a small capacity reservoir. The inlet water valve is controlled by a dual float switch which is mounted in the reservoir. A tube connects the reservoir to the stainless steel evaporator cylinder. A drain hose exits the evaporator and is either capped off, connected to a hand valve or attached to the flush valve solenoid.

The symptoms of a dirty evaporator are as follows: 1. Poor ice production; 2. Poor ice quality-soft, mushy or wet ice; 3. Noisy extrusion; and 4. Ice bridging in the bin.

If these are your symptoms, its time to clean the complete water system, following the instructions on the front panel.

Mix your cleaning solution with warm water in a separate container, turn the incoming water supply off and drain the reservoir. Lift the reservoir cap and turn it to the side so that you can pour in the cleaning solution. Fill the reservoir until it overflows the standpipe, replace the cap and let the unit set for 15 to 20 minutes. The acid cleaner will begin to loosen the scale. Take a bucket and place it under the ice drop area, turn on the unit and make ice with the cleaner. As ice is extruded out, the cleaner will clean the extruding head and top of the evaporator cylinder. Allow the unit to operate until it shuts off on low water safety. The noise you hear from the extruding head is normal.

Be sure to catch all the ice that is made with the cleaner and discard it. When the unit shuts down, inspect the reservoir. If it is clean, the evaporator is clean. If not, pour in more solution and clean again. Flush the system thoroughly and repeat the procedure using sanitizer. After sanitizing, flush the system again, turn on the water supply and start up the unit. Discard the first 10 minutes of ice production to assure clean ice for your customer.

You will notice a definite difference in the quality and quantity of ice after cleaning.

Hoshizaki Refrigeration Driers

A liquid line drier is standard on all model Hoshizaki ice machines. Until recently we have utilized a bullet type OEM drier. We are converting to Sporlan driers. You will find the new Sporlan drier on all KM-500 models and select KM-1600/2000 models. We will convert to Sporlan on all models except the KM-250 in the coming months.

You must keep in mind, that if you are repairing a unit under warranty, you are expected to use the correct standard Hoshizaki OEM part. You should always order a Hoshizaki drier with any refrigeration component replacement part order. However, in the case of a refrigerant leak repair without other component replacement, we will accept the use of a properly sized non OEM drier.

Coming Next Month...

1. TXV Diagnosis
2. KM Pump Assembly
3. Service Seminar Results

