



HOSHIZAKI TECHNICAL SUPPORT TECH -TIPS

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REACH-IN NOMENCLATURE

There is much information that can be derived from the units model number. In last months issue we looked at the significance of each letter in the ice machine model number. This month, let's look at the reach-in.

RFH 2-S S B-HD

UNIT TYPE _____

RH - Refrigerator
FH - Freezer
RFH - Refrigerator/Freezer Combination

NUMBER OF SECTIONS _____

1 - One Door
2 - Two Door
3 - Three Door

EXTERIOR FINISH _____

S - Stainless
A.-. Aluminum

INTERIOR FINISH _____

S - Stainless
A - Aluminum

GENERATION _____

A - R-22 two digit display (Refrigerator only)
B - R-404a (Four digit display)
C - R-134a (Two digit display)

TYPE OF DOOR _____

No letter - Stainless doors (One per section)
HD - Half Door (Two per section)
GD - Glass Door (One per section)

In the past, the largest self-contained air-cooled ice machine we have offered was the KM-1300SAF. In some applications, we would need a larger ice machine. Depending on the application, a remote system would not work due difficulties with the location of the remote condenser or problems with running the line set. Water-cooled units represent an option, however, in some areas the cost of water and sewage prevent this from being a cost-effective solution.

It is important to remember that this unit does produce a considerable amount of heat. This heat will be expelled into the area around the ice machine. Care must be taken when installing the KM-1800SAH to avoid over taxing the air conditioning system that may or may not be designed to handle this extra load. Always consider the ambient conditions and methods to overcome this heat load prior to choosing this model.

SERVICE Q & A

Question: I have a KM model that is running long harvest cycles. Do you think I should replace the thermistor or what should I look for?

Answer by Frank Neely: This is a question that comes up often in the wintertime because of colder water conditions. Though the thermistor is a possibility since it is the component that begins defrost termination, let's not be too quick to condemn it.

First, let's take a look at what happens to our harvest cycle under cold water conditions (45 degrees or less). Remember that we bring in all of ice making water during the harvest cycle. The inlet water passes through

KM-1800SAH1/3

What is a KM-1800SAH 1/3? This is a new unit, added to the Hoshizaki line of ice machines. It is a self-contained air-cooled model that uses the KM-2000S_F chassis and water circuit. The 48 inch width allows it to be stacked with other "S" model machines.

the middle of the evaporator plates. This allows us to achieve good even heat distribution across the entire evaporator surface. We call this system a hot-gas, water assisted harvest.

As mentioned earlier the thermistor is what begins defrost termination. The thermistor is mounted on the suction line where it is waiting to sense 48 degrees. At this point it will initiate the defrost completion timer on the control board. After the adjustable defrost timer times out, the unit will end harvest. The harvest however, will not end for a minimum of two minutes. The board controls this function. If we are bringing in water that is colder than our minimum spec, it will take longer to reach 48 degrees on the suction line. This gives us a longer harvest cycle in cold water situations. The use of the thermistor is one of the reasons that our machines do not require seasonal adjustments. (See Tech tip 109)

The inlet water valve will only stay energized for 6 minutes during the harvest cycle. In cold water conditions, stopping the water flow will allow the heat to build in the evaporator and on the suction line. This allows us to reach our target temperature at the thermistor and start the defrost completion timer in the board. You will find that it is not abnormal to see an 8~10-minute harvest cycle when experiencing cold water conditions.

Now, let's discuss what happens if you are having long harvest cycles regardless of the water temperature. It is important to keep in mind that our harvest cycle is temperature and time terminated. When you are having a problem with long harvest, the easiest way to troubleshoot the problem is to perform the "3 step check" (or at least that's what I call it). Let's take a minute and discuss these 3 steps.

Step 1: Turn off power to the machine and strap a good surface probe from your digital thermometer to the suction line. It should be as close as possible to the thermistor, without disturbing it's mounting. Next unplug the thermistor from the white K3 connector on the board and turn the machine back on. Let the machine go through the one minute fill and cycle into

the defrost mode. Watch your thermometer, if or when it reaches 50 degrees you have completed step 1. This determines that the defrost portion of your refrigeration cycle is working properly. If it does not reach 50 degrees then you have established that you have some type of refrigeration problem. You will want to look at items that would prevent you from heating your evaporator to 48 degrees such as low charge, hot gas valve not open, line valve leaking by (if it is applicable to your model) etc...

Step 2: Once you have reached 50 degrees ohm out your thermistor which should read 3.9 K ohms or less depending on how much above 50 degrees you are reading. (Refer to the "component checks" page of your Tech Spec for a temperature resistance chart). If you do have the correct reading, you have established that your thermistor is operating properly. If your thermistor reading is out of spec, the thermistor is either mounted incorrectly or is defective. Check the mounting first. It is very uncommon to have a thermistor fail in this manner. In the rare cases of a thermistor failure, it is typically either open or shorted.

Step 3: Once you have established that there are not any problems with the refrigeration cycle and the thermistor, then simply plug the thermistor back to the K3 connector and start timing. The machine should come out of harvest in a maximum of 3 minutes. It could come out in 60, 90, 120 or 180 seconds depending on the setting of dipswitches number 1 and 2. If the machine fails to end harvest in 3 minutes, you probably have a board problem.

Well there you have it, "the 3 step check". Hopefully the next time you have a problem with defrost on a Hoshizaki KM cuber, these 3 steps will point you in the right direction for a correct diagnosis.

COMING NEXT MONTH...

- 1.F-1001M_F
- 2.KM- Mechanical bin control
3. Service Q & A