



# HOSHIZAKI TECHNICAL SUPPORT TECH-TIPS

---

Danny Moore  
Writer/Editor

Hoshizaki America, Inc.  
618 Hwy. 74 South  
Peachtree City, GA 30269

Volume 141  
July 17, 1997

Ph: (800) 233-1940 Fax: (800) 843-1056 E-mail: techsupport@hoshizaki.com

---

---

## ***E-MAIL ADDRESS***

The Hoshizaki Technical Support Department now offers access for technical input through e-mail. The address is techsupport@hoshizaki.com. If you have technical questions or comments please forward them at your leisure.

---

---

## ***REACH-IN ALARMS / FEATURES***

At the present time, Hoshizaki is producing two reach-in refrigerators. They are the RH1 (one door) and the RH2 (two door) models. We have more models in the developmental stages including a one and two door freezer. Several built in service features are included to provide ease of maintenance.

An electronic control board provides the control and alert functions for the reach-ins. This board is located in the control box behind the front control panel cover. The box temperature is pre-set to provide an average temperature of 37°F. It is adjustable through a small hole in the front cover. The adjustment range of 33 ~52°F will have a differential of 6 ~7°F. The box temperature is sensed by a thermistor which is mounted on the front wall of the evaporator compartment.

A red LED display is provided to show the box temperature and will alternately flash a code in case of a fault. The control board also provides the following safety alert functions: 1. A High Temperature alert (E1 code) occurs if the box temperature has exceeded 18°F above the set point for more than two hours. 2. A Low Temperature alert (E2 code) occurs if the box temperature drops 5°F below the set point for more

than one hour. These codes will automatically reset when the temperature returns to the set point. 3. Finally, a High Pressure alert (E4 code) occurs if the high pressure control cycles 5 times within one hour. After the high pressure problem has been corrected, the high pressure alert must be manually reset by turning the power off and back on.

Hoshizaki reach-ins also include a cleanable condenser air filter. A clean filter light on the control panel illuminates when the filter needs cleaning. This light circuit is operated by a bi-metal thermostat located on the compressor discharge line. If the condenser air flow is restricted, the compressor discharge temperature will increase. At 220°F, the thermostat will operate a holding relay to turn the light on. Depressing a momentary push button resets the light circuit after the filter has been cleaned.

The reach-ins have off-cycle defrost. Every six hours, the control board checks the evaporator temperature through a thermistor mounted on the coil. If defrost is needed, the compressor and condenser fan stop and allow the evaporator fan to defrost the coil. When the evaporator temperature returns to normal, the compressor and fan restart. A backup defrost thermostat is included to provide additional defrost if needed before the six hour check. This thermostat will stop the compressor only and will reset by evaporator temperature.

The compressor discharge line is used for condensate removal. We have improved this system to avoid any of the normal related failures. The drain pan is made of heavy gauge stainless steel and has an overflow catch

pan for high humidity conditions. A restraining bracket and rubber bumpers eliminate tubing vibration. The discharge

line has a baked on phenolic coating to protect against corrosion.

You will also find a backup set of mullion heaters installed in the door frame which can be connected if the first set fails. As you can see, our Engineers have taken steps to address the most common problems related to reach-ins. That's what Hoshizaki quality is all about.

---

### **LOCATING REMOTE CONDENSERS**

Moving the ice machine heat and fan noise out of the kitchen or storage area provides a definite benefit to the customer. Many customers prefer this remote advantage. The location of the condenser unit is important to the proper operation of the ice machine. Lets take a look at two important aspects of locating the remote condenser unit .

The first consideration is the distance between the condenser and unit head. The maximum distance the refrigerant lines can run is 100 equivalent feet. Exceeding this distance puts extra load on the refrigerant system and exceeds the design specifications. You should remember that the standard factory charge is good for up to 66 ft. Additional refrigerant must be added for lengths between 66 to 100 ft. See the Tech Specs Pocket Guide for additional line set installation instructions.

Second, choose a site that follows the installation guidelines. The remote condenser units are designed to be installed outside. Locate a firm flat site that is dry (doesn't flood during the rainy season) and is well ventilated. A "doghouse" or shed type cover is not necessary however, if one is available, it will improve the efficiency in the hot summer sun and protect the condenser from severe snow and winter weather. Always install the legs on the remote condenser. Raising the condenser off the rooftop allows for

considerably cooler condensing air in the summer and helps to raise it above winter snow.

Wherever the condenser is located, it must be installed in an upright position allowing for proper refrigerant flow and adequate air circulation.

---

### **SERVICE Q & A**

Question: I have ice jammed in the ice drop zone and it is causing freeze-ups. What should I look for?

Answer: *by Kirk Goss*

There are several reasons that this may happen. The most common occurrence is when the bin control sticks in the closed position or is out of adjustment (calibration). This condition allows ice to back up past the bin control bulb mounting and into the ice chute, causing a freeze up condition. Check the bin control calibration by holding ice on the control bulb. The unit should shut down within 6 to 10 seconds. If not, adjust the control to shut down properly.

Another probable cause could be the physical mounting of the bin control. On our stackable series ice machines, the bin control bulb is mounted to an eight inch long bracket. This will put the bulb into the drop zone area in order to properly shut down the unit when the bin is full. A loose or out of position bulb will not allow proper shut down.

On non-Hoshizaki bins, this bracket might not be long enough to reach the drop zone properly. You will need to install a bin extension bracket part # 3A0408-01 to keep ice from backing up into the ice chute. This bracket is included in the accessory package with each KM "S" model machine. The extension bracket is also necessary on any stacked application or when installing a KM-2000 or 2400.

If ice strips form on the evaporator, they can hang up at the ice cube guide just above the ice drop zone. This will cause ice to back up in the evaporator. In this case check for plugged distributor tubes, a leaking water valve, or a float switch stuck in the closed position.

Though this is not as common, scale build-up on the ice cube guide can cause ice to stick so that it does not slide into the bin. If the cube guide or water curtains are out of position or broken, ice can hang up. Look for these possible situations if you notice ice jamming in the ice drop zone.

---

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

1. Truck Stock Kit
2. KM Evaporator
3. Service Q & A

Volume 141 Page 2