



HOSHIZAKI TECHNICAL SUPPORT

TECH -TIPS

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Volume 148
February 9, 1998

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“E” CONTROL BOARD PART NUMBER

In the last issue of Tech-Tips, we introduced you to the “E” control board. You will find that there are actually two different part numbers associated with this new board. The part number provided in last months issue (2A0863-01) is for the original production board which is installed in the unit on the assembly line. This board does not have the function switch marked “C / ALP” and will not be provided to the field for service replacement.

The universal replacement “E” board # 2A0863-02 will include this function switch and will sub for the Alpine board # 2U0139-01. This one board will replace a “C”, Alpine, or “E” board in the field. Please make this correction in your parts files.

R-404A SCHEDULE

As you may know, Hoshizaki is in the process of changing over production from R-22 (HCFC) refrigerant to R-404A (HFC) refrigerant. At present, we have two R-404A models available for sale. They are the new KM-150BAF self contained cuber and the DCM-240BAF cubelet machine.

Other R-404A units are in the redesign process and will be made available throughout 1998 and into 1999 as the product change over is completed. The complete lineup of cubers, flakers and DCM ice makers will be changed over to R-404A refrigerant.

R-404A models will be made available for sale as they are produced. Obviously this will coincide with the reduction of R-22 equipment inventories. The next KM

models to be produced and released for sale will be the KM-1200SAF / SRF and the

KML-400MWF. These should be made available around mid 1998. Other models will follow the end of the 3rd quarter and beyond.

From a technical standpoint, the R-404A unit will revert back to the simple R-502 refrigerant system design. The compressor discharge temperature is slightly less than that of R-502 so the bypass cooling components will not be included. You will find that the system pressures will increase slightly. While R-404A refrigerant is more efficient in the freeze cycle, the cooler discharge gas will make for a slightly longer harvest time. This balances out to provide total cycle times and production similar to previous models.

An R-404A model Tech-Specs Pocket guide is in the planning stages. We will delay printing until there are enough R-404A units available to generate a complete guide. In the mean time, watch for Service Bulletins which provide technical service information on the new R-404A products.

WATER TREATMENT

Potable water quality differs throughout the country and can vary across town or even across the street. Water related ice machine service problems increase proportionately as water quality declines. Filter manufactures employ water filter experts who specialize in solving water quality issues. These experts are very beneficial in helping to resolve severe water problems.

Fortunately, the KM cuber models have some flexible adjustments on the control board to vary the built-in flush or cleaning ability of the unit. This serves to eliminate the need for filtration in some areas, but not in all. These severe cases require specialized water treatment systems.

If heavy sediment is present, a simple sediment “canister” type filter that is properly sized will suffice. This will remove the big “sticks and stones”. If heavy mineral content or bacteria is present, a specialized treatment may be necessary.

The first step in resolving severe problems is to test the water entering the ice machine. Filter manufacturers can help you with this step. Most provide simple water test kits and charts which lead you to the best option for resolving your specific problem. These tests generally check the pH of the water. Some filter manufacturers provide water sample bottles and can conduct a more elaborate test report on your water quality. These tests will isolate the type of minerals or bacteria in the water sample and the manufacturer will suggest a course of action to correct the problem.

Since different minerals and bacteria levels require different types of treatment, your best bet is to rely on the filter manufacturers for treatment recommendations.

SERVICE Q & A

The next few issues, we will be covering diagnosis of the alarm features of the “E” control board.

Question; What do I check if I am servicing a unit with an “E” control board installed and it is beeping 1 beep every 3 seconds.

Answer by: Chad Darnell. When servicing a unit that has the new “E” control board, there are several audible alarms which could occur. We will be discussing the first alarm feature which is the HIGH TEMPERATURE SAFETY. This safety results in an alarm of 1 beep every 3 seconds.

The HIGH TEMPERATURE SAFETY is activated, when the thermistor which is mounted on the suction

line reaches a temperature of 127° F. When this occurs it will shut the unit down, trigger this alarm, and lock it out on a manual reset safety.

Some of the reasons for a High Temperature safety alarm are as follows. You will find these possibilities included on the control board diagnostic label located in the compressor compartment. Follow the instructions provided on the label to reset the alarm and check these areas to locate the problem.

First, check to see if there is a mechanical problem with the hot gas valve sticking open or with the control board relay sticking. Check for a temperature differential across the hot gas valve. To check for a sticking relay, use a volt meter to check for voltage on pink wire, pin # 2 on the K1 connector.

Hot water migration can also cause this. This typically happens at night when the only piece of equipment requiring water flow is the ice machine. Hot water migration is a tough problem to find and to prove to the customer. The best way to determine that this is happening is to place a temperature recorder on the inlet water line of the ice machine. The recorder will show when migration occurs. Usually hot water migration is due to a defective mixing valve in the existing plumbing. A good place to check is the pre-wash area at the dishwasher.

Another possibility is a stuck head master on a remote air cooled condenser unit operating in a high ambient condition. The best way to check for this is to carefully touch the liquid line connection at the rear of the unit. Also, check for heat at the inlet pipe to the receiver tank. If these areas are hot, the head master is likely stuck in the bypass mode.

The last possibility is a shorted thermistor. If the thermistor reads approximately 500 ohms or less the control board will lock out on this safety. A shorted thermistor will signal zero ohms and cause repeated shut down on HIGH TEMPERATURE SAFETY.

By following these suggestions, you should be able to resolve the problem that caused the HIGH TEMPERATURE SAFETY alarm.

COMING NEXT MONTH...

1. Head Master Diagnosis
2. Polyol Ester Oils
3. Service Q & A

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