



# HOSHIZAKI CARE TECH-TIPS

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## ***CORRECTION***

It has been brought to our attention that there was a mistake in the December issue of the Tech Tips. The article on cleaning the KM float switch stated that dip switches # 5 & 6 must be in the "ON" position for pump-out every cycle providing maximum cleaning for the float switch and reservoir. Actually, both switches must be in the "OFF" position for every cycle pump-out and maximum cleaning. Reference the dip switch setting chart in the control board instructions or the Tech Specs pocket guide for complete adjustment information.

## ***FLAKER PARTS CHANGES***

Service Bulletin number SB96-0009 describes recent changes made in F-650 & 1000 model flakers. This article will highlight those changes.

The inlet water valve and the flush valve have been changed to a domestic supplier. Since the new valves mount differently, the mounting bracket and water supply pipe have changed as well.

The flush valve timer also changed to a domestic supplier. The new timer does not have a timer advance which sticks through the wall of the control box. Access to advance the timer is now through the control box cover. A screwdriver can be used to rotate the advance wheel to check the operation.

The previous flush valve was a DC voltage valve. A 24 volt DC rectifier was included in the control box to provide power for this valve. The new valve operates on 24 volts AC. The rectifier circuit is eliminated on units with this new valve.

It is important to note that these new parts are not interchangeable unless all related parts are changed at the same time. You will see the new parts included on all units with a F-1 or later serial number auxiliary code. Be sure to reference the service bulletin for part numbers and check your serial number before ordering these replacement parts.

## ***SYMPTOMS OF A STICKING FLOAT SWITCH***

The float switch in the KM unit provides two functions; control for the low water safety and initiation of the harvest cycle. It consists of a housing with an internal shaft. A single reed switch is sealed inside this shaft. The switch is operated by a magnet mounted in a guide and attached to the float. When the float is up, the switch is closed by the magnet. When the float is down, the switch is open.

Since the float is in the water system it is susceptible to mineral deposits and scale buildup. This scale buildup can cause the magnet guide to hang up or stick along the shaft in either position.

Diagnosis of a sticking float switch is simple once you understand the operation and symptoms. If the float sticks in the up position, the switch never opens to initiate the harvest cycle. The control board has a 60 minute backup timer which automatically initiates the harvest if the float switch does not open within 60 minutes. The result is a consistent 60 minute freeze cycle and larger than normal cube. The cube will be thicker and taller than normal. It may also roll out on the edges. If a 60 minute cycle occurs, you may also

hear a gurgling sound caused by the pump cavitating without water.

If the float sticks in the down position, the switch is open continuously. This causes the unit to shut down on low water safety protection. The control board checks for a closed float switch at the end of the one minute fill cycle and at the end of every harvest cycle. If the float switch is open, the control board shuts down the normal operation and switches to the one minute fill cycle. The board then checks the float switch for a closed circuit every 60 seconds. It will automatically restart when the float switch closes.

A float sticking in the down position will result in no ice production, the compressor does not operate, and the inlet water valve remains energized.

A slight jar of the float switch housing can break the guide away from the switch shaft and allow the float to operate normally for a few cycles. This can occur if the bin door is slammed or if the unit is bumped. The next time, it might stick in the up position. If the customer describes intermittent symptoms like this, check the float switch. A sticking float switch should be cleaned and checked with a quality ohm meter. Replace the float if cleaning does not correct the problem.

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### ***SERVICE Q & A***

Question: My KM unit will not start or fill with water. What do I check?

Answer: **by Rodd Burger** This situation can be caused by several reasons. First we must determine the presents of proper supply voltage and water supplied to the unit. Now that this is confirmed, let's look at the possible problems.

The next item to check is the bin control. Do this by simply moving the toggle switch to the wash position, if the pump runs the bin control is closed. If the pump does not start, check the control with a volt-ohm meter for continuity. Please note that on older KM- DU, DWU, & DSU models, there is a 4 to 5 minute delay before the pump starts.

Now check the K1 connector. Begin with the brown wire #10 on Alpine boards and #1 on "C" board applications. First confirm 115-120 Volts from this point to ground or neutral. Since we have confirmed that the bin control is closed, power should be supplied at this point. If not, there is a problem with the wire or connection between the bin control and the K1 connector.

Now that power is established to the board on the brown wire, check for control voltage to operate the board. Locate the K2 connector and check across the two red wires for 10.5 to 12 volts AC. This voltage is supplied by the low voltage control transformer. If no control voltage is present, check to insure that the wash valve is closed and the handle is depressing the micro switch (interlock). Check for a closed micro switch with a volt meter. (Note: On older "A or B" board units, the control transformer is mounted directly to the board. These boards do not have a K-2 connector. You can check the input and output voltage on back of the board to verify a bad control transformer. The control board must be replaced if this control transformer fails.)

Next check the primary of the control voltage transformer. On most models it will be the black and brown wires. If no primary voltage is present on the transformer you will need to trace the path of the primary voltage supply. Depending on the model, there could be a high pressure, low pressure, discharge temperature, and toggle switches in series in this circuit. If any of these are open, there will be no primary voltage on the control transformer and the unit will not start. The board will not allow start up without proper control voltage.

Having confirmed power to the brown wire on K-1 and proper control voltage on K-2, check for 115-120 volts at the orange wire #6. This wire supplies power to the inlet water valve circuit. If no power is present at this time, the control board is defective. If power is present, check across the orange and white wires on the water valve. With power at the water valve and no water is flowing, either the water valve is bad or the valve inlet screen is plugged. Turn off the water and check the screen. If it is not plugged replace the

defective water valve and check the unit for proper operation.

By following these steps you should be able to discover why the unit will not start or fill.

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

1. Ice Quality
2. Control Board Checker
3. Service Q & A