



# HOSHIZAKI AMERICA, INC.

## SERVICE BULLETIN

**SB01-0001**

**March 23, 2001**

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**Subject: MECHANICAL BIN CONTROL KM-280, KM-500, KM-630, KM-900**

In the past the standard KM bin control has been a line voltage thermostatic switch. This switch would shut the machine down in 6 ~ 10 seconds after ice contacted the bulb. Once this switch opened the unit would shut down regardless of what cycle the machine was in.

Beginning in April all KM-280, KM-500, KM-630, KM-900 units and within the next quarter the KML series, will incorporate a new style of bin control. This new bin control is a mechanical "Flapper" style control that uses a magnetic proximity switch, similar to our flaker machines. When the unit is shipped from the factory the actuator portion of the control will be taped in the "bin full" position. Therefore, the unit will not start. You must remove the base cover and insure that all tape is removed and the actuator moves freely.

This new switch connects to the red K-4 connector on the control board. When the ice builds up and pushes the actuator away from the switch it will send a signal of approximately (15.8k-ohms) to the board causing the unit to shut down, within 3 ~ 5 seconds. When the bin level drops, the actuator will connect with the switch. A signal of approximately (7.9k-ohms) is sent to the board and the unit will restart within 3 ~ 5 seconds.

The unit will not start if it is turned on while the bin control is in the "bin full" position. After the unit has started the machine will only shut down at the very end of harvest or within the first five minutes of the freeze cycle. If the switch were to operate after the first five minutes of freeze the unit would complete the freeze cycle, complete the harvest cycle and shut down at the end of harvest.

In order for the new bin control to work, dipswitch number 7 on the control board must be in the ON position. Using the red K-4 connector and turning on dipswitch number 7 will add two additional control board alarms to the board operation.

\*If you get **4 beeps** every 3 seconds the connection between K-4 has a short circuit.

\*If you get **5 beeps** every 3 seconds the connection between K-4 has an open circuit.

To reset the safeties, depress the white alarm reset button while the board is beeping.

**\*\*BIN CONTROL TEST:** The new bin control assembly mounts in the unit using the two thumbscrews that mounted the thermostatic bulb. To test the control, allow the unit to cycle into freeze for approximately 1 minute. Push the actuator to the right and the unit should shut down within 3 ~ 5 seconds. When you remove your hand, the unit should restart in the 1 minute fill cycle within 3 ~ 5 seconds.

If the unit fails to operate properly, first check the position of dipswitch number 7 on the control board. This switch must be in the "ON" position for this bin control to operate. Next check the resistance readings of the bin control assembly. With the wiring harness disconnected from the board, check resistance across the red and black wires on the red connector (harness end). When the switch is in the bin full position you should read approximately 15.8 K-ohms. When it is calling for ice you should read approximately 7.8 K-ohms. If the readings correspond to these, check for a board problem. This type of failure however, is very rare and all other possible possibilities should be checked before replacing the board.

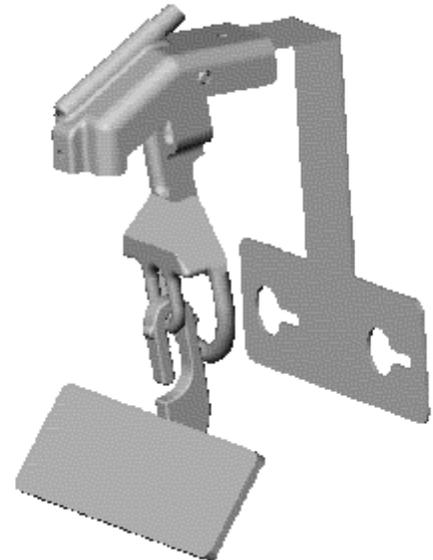
If you do not get the readings above, you must determine which portion of the bin control assembly is at fault. There are two basic parts of this assembly. They are, the resistor wiring harness and the bin control switch assembly.

The **bin control switch assembly**, consist of the actuator and the switch. To test disconnect the switch assembly from the wiring harness. This will isolate the switch assembly. Using your ohmmeter, check between the black and white wires on the connector from the switch (The red wire in the switch connector is not used). When the actuator is in the ice making position you should read a closed circuit. When it is in the bin full position it should read open. If the switch does not react correctly, you should replace the switch portion of the assembly.

After the switch portion has been checked and is working properly the next component to check is the **resistor wiring harness**. The resistor wiring harness must

be disconnected from both the board and the bin control switch assembly. Again, using your ohmmeter test across the black and red wires on the red connector of the wiring harness. You should read approximately 15.8K-ohms. Now, read across the white and black wires on the other end and you should read approximately 31.6 K-ohms. If your readings do not correspond to these then replace the resistor wiring harness.

Note: **After** the unit has started, it will only shut down at the end of harvest or during the first five minutes of the freeze cycle. The unit will not shut down during the one minute fill cycle even when the bin control is in the bin full position.



Wiring Diagram (Bin Full)

Control Board

