



# HOSHIZAKI AMERICA, INC.

## SERVICE BULLETIN

**SB03-0005**

August 15, 2003

Page 1 of 4

### **Subject: DCM-500/750 OptiServe™ SENSOR TROUBLE SHOOTING**

The –OS DCM models incorporate touch free optical sensors to control ice and water dispense. This service bulletin will discuss some generic considerations for proper operation and maintenance as well as a troubleshooting guide.

The sensors operate by using an emitter and two receivers encased in a waterproof sensor housing. They are designed to operate in normal lighting conditions. Direct sunlight however may cause the sensors to malfunction. The sensors will work with most shades (colors) of cups with a sensing distance of 45 to 65mm. In certain water conditions, the lenses of the sensor may become scaled. Scale can block the sensor and effect the sensing operation. This scale can be removed by using a solution of Scale Away (6 Fl. Oz per 1 Gal. of water) or other non-abrasive cleaner.

The –OS series of DCMs use a different control board (part number 2A2649-01) than the push button style of DCM. This board provides an internal power source for the sensing circuit and has an additional connector (K5). This board is not interchangeable with the control board used on the push button version. When troubleshooting the sensor operation, we will be concerned with the K5 and K2 connectors on the control board. The K2 connector will supply line voltage (115VAC) to the ice dispensing motor and ice dispensing solenoid and 24 VAC to the water dispense solenoid. The K5 connector provides the input and output from the sensors.

These sensors control three separate operations, water dispense and ice dispense in both the portion and continuous dispense operation. The ice dispense time is limited to 60 seconds regardless of whether the customer is using the “Continuous” or the “Portion Control” function. This non-adjustable, maximum timer prevents continuous dispense if someone has inadvertently left an object in front of the dispense sensor.

If you experience problems with the ice or water dispense on the –OS version of the DCM use the following charts along with the wiring diagram to guide you through your troubleshooting.

The following tables show proper voltage readings for each operation

**SB03-0005**

August 15, 2003

Page 2 of 4

## WATER DISPENSING

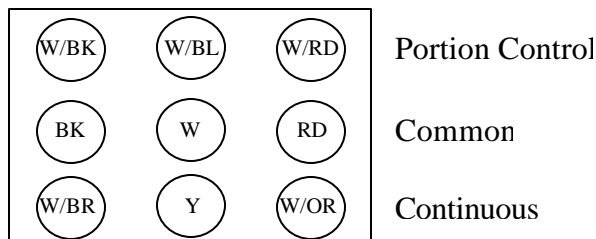
LEAD 1		LEAD 2	DISPENSE	NON-DISPENSE
K2 PIN 8 (DBU)	TO	K4 PIN 2 (LBU)	24 VAC	0 VAC
K5 PIN 7 (RED)	TO	K5 PIN 9 (BK)	5 VDC	5 VDC
K5 PIN 7 (RED)	TO	K5 PIN 8 (WH)	5 VDC	0 VDC

## ICE DISPENSING in “Continuous” Mode

LEAD 1		LEAD 2	DISPENSE	NON-DISPENSE
K2 PIN 6 (LBU)	TO	GND or NEUTRAL	120 VAC	0 VAC
K5 PIN 4 (W/O) or (RED) on sensor	TO	K5 PIN 5 (Y) or (WH) on sensor	5 VDC	0 VDC
K5 PIN 4 (W/O) or (RED) on sensor	TO	K5 PIN 6 (W/BR) or (BK) on sensor	5 VDC	5 VDC

## ICE DISPENSING in “Portion Controlled” Mode:

LEAD 1		LEAD 2	DISPENSE	NON-DISPENSE
K2 PIN 6 (LBU)	TO	GND or NEUTRAL	120 VAC	0 VAC
K5 PIN 1 (W/R) or (RED) on sensor	TO	K5 PIN 3 (W/BK) or (BK) on sensor	5 VDC	5 VDC
K5 PIN 1 (W/R) or (RED) on sensor	TO	K5 PIN 2 (W/BL) or (WH) on sensor	5 VDC	0 VDC



Pictorial layout of portion control switch wiring  
(Front of machine)

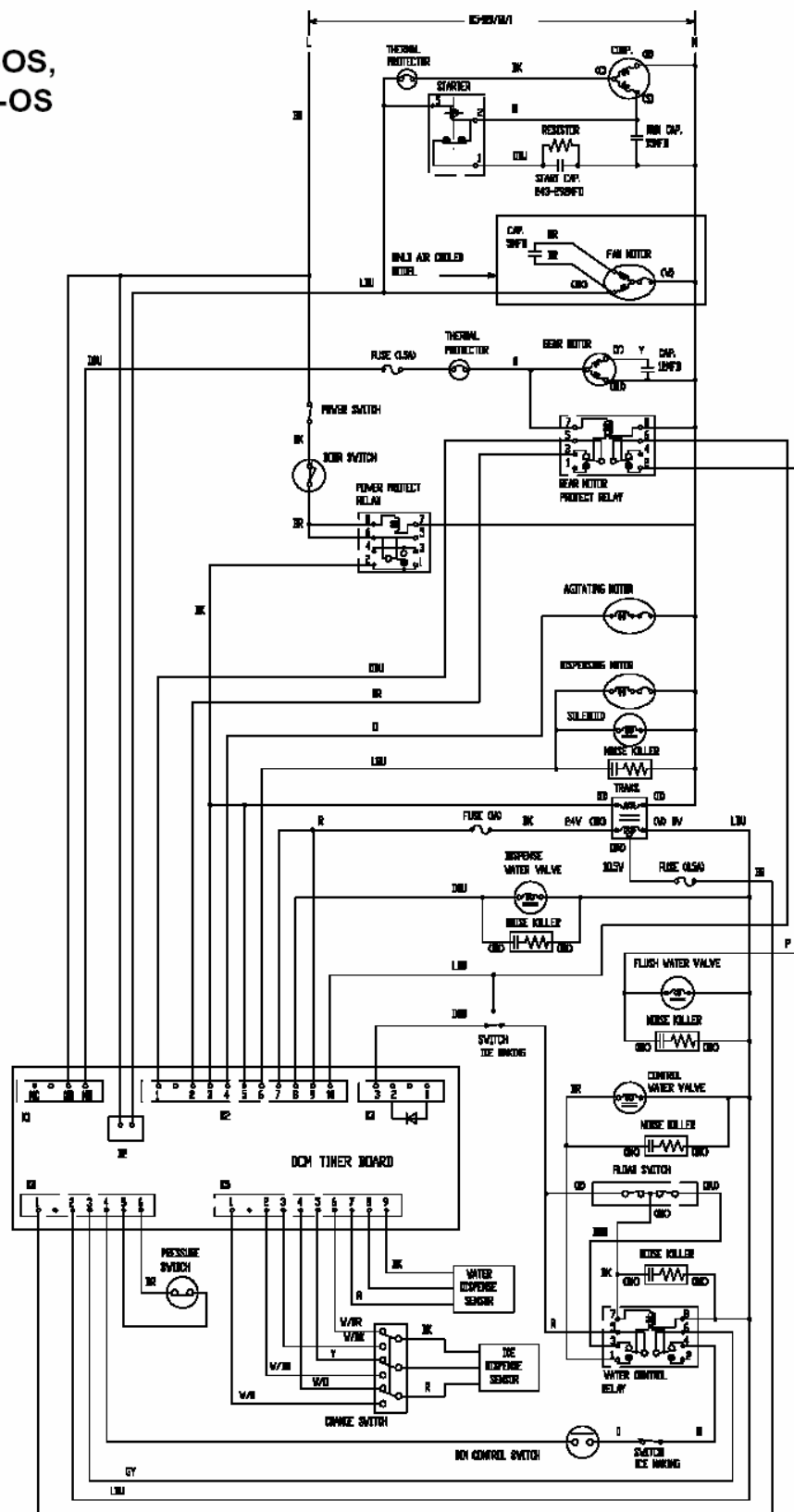
The K2 connector will supply voltage to the ice and water dispense motors and solenoids through pins 4, 6, 8. The K2 connector also has the Gear motor protect circuit on pins 1, 2 the flush valve circuit on pins 9, 10 and voltage inputs on pins 3, 5, 7.

The K5 connector is used exclusively for the input and output signals for the Optical sensors.

## 2. WIRING DIAGRAM

DCM-500BAH-OS,  
DCM-500BWH-OS

BK	BLACK
BR	BROWN
DBU	DARK BLUE
GY	GRAY
LBU	LIGHT BLUE
Y	YELLOW
O	ORANGE
P	PINK
R	RED
V	VIOLET
W	WHITE
W/R	WHITE/RED
W/BR	WHITE/BROWN
W/O	WHITE/ORANGE
W/BU	WHITE/BLUE
W/BK	WHITE/BLACK



## DCM-750BAH-OS, DCM-750BWH-OS

### WIRE COLOR CODE

BK -BLACK  
BR -BROWN  
BU -BLUE  
DBU -DARK BLUE  
GY -GRAY  
LBU -LIGHT BLUE  
O -ORANGE  
P -PINK  
R -RED  
V -VIOLET  
W -WHITE

W/BK-WHITE/BLACK  
W/BR-WHITE/BROWN  
W/BU-WHITE/BLUE  
W/O-WHITE/ORANGE  
W/R-WHITE/RED

