



HOSHIZAKI TECHNICAL SUPPORT TECH -TIPS

Rodd Burger
Writer/Editor

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

Volume 178
April 17, 2001

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

INTRODUCING THE F-1001M_F

The F-1001M_F is the newest version of our 1000-pound flaker. The main difference in this unit when compared to our older F-1000M_F series is in the gear motor/box and lower bearing assembly. We are now using a new style gear motor/box assembly. This larger gear motor manufactured by Fuji has stronger gears and bearings, which improves the reliability of the unit. Along with the larger gear motor you will also see a larger lower bearing housing. Since there is a physical size difference in the gear motor/box there is a slight difference in the outside dimensions of the unit. The new unit is 26.0" tall while the F-1000M_F series was 25 ¼" tall. The width and depth remain the same.

You will also notice that with the change in the gear motor/box we have also changed the size of the gear motor protect fuse. The new fuse is 3 amp, instead of the 1.5 or 2 amp fuse used on previous models. This fuse is set to open very close to the run load amps of the motor. This allows the fuse to open quickly to prevent damage in the event that the gear motor begins to draw high amperage. There are several reasons for high amperage, such as evaporator scaling, bin control malfunction, worn bearings, low voltage, etc.

Other than these changes the unit controls and operation remain the same as the F-1000M_F.

KM-MECHANICAL BIN CONTROL

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, the KM-280, KM-500, KM-630, and KM-900, and within the next quarter, the KML series, Hoshizaki will incorporate a new style of bin control. This new bin control is a mechanical "Flapper" style control and uses a low voltage, magnetic proximity switch, similar to our Flaker machine. Ambient temperatures will not effect this control. 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 until this tape is removed.

BIN CONTROL TEST: The new bin control assembly mounts in the unit using the two thumbscrews that mounted the thermostat. 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. During this test the unit will shut down within 3 ~ 5 seconds but only during the first five minutes of the freeze cycle

For more detailed information on this unit refer to Service Bulletin SB01-0001

SERVICE TIPS

For the next couple of issues we will discuss some items that will help your service calls go more smoothly.

ACCURACY IN YOUR EQUIPMENT

By Mike Morse

As the busy season approaches and PM checks are being scheduled, it becomes more important to insure that the instruments that you use every day are in good

condition and perform accurately. Gauges, meters, scales, thermometers and other equipment can skew the most careful diagnostic checkout if they are not working or out of calibration. If they give you the wrong information, you will reach the wrong conclusion, wasting your time and the customer's money. If you cannot trust the accuracy of a piece of test equipment, it should be recalibrated or discarded.

Manifold gauge sets used on our R-404A icemaking equipment should be specific to HFC and polyolester oil use. Separate manifolds should be used for CFC and HCFC machines. Care should be taken to seal the manifolds when not in use to prevent moisture from entering manifolds between uses. Many checks can be used to assure that gauges are accurate. Checking your gauges using the saturation pressure of a known pure refrigerant sample at a known temperature, is one. Comparing your gauge to a nitrogen tank manifold is another. The results of such a test can be enlightening. How many gauge sets have needles that do not go to 0 psig? Bent needles? Loose or missing lenses? Worse, loose or missing screws on the back? If a gauge is 10 psig off at atmosphere, it may not carry the same error throughout its range. Frequent calibration checks and regular renewal of this vital device is the mark of a true professional.

Another vital piece of testing equipment is your multimeter and/or amprobe. Just because you use an electronic digital device does not guarantee 100% accuracy. Thousands of miles, a couple of drops and repeated exposure to temperature and humidity extremes, take their toll. Check a known resistance, take an amperage reading on a fixed resistance such as an electric heater. Do your readings make sense? Compare voltage test readings with other instruments. Remember that ohmmeters usually use a low voltage to test resistance and dirty, pitted, or loose leads can affect the reading. Of course, for your own safety, test leads should be replaced if damaged. Many electronic test devices can be sent to a repair station for checking or repair, at a cost that is less than a few hours of unbillable wasted time. Temperature testing equipment should be appropriate for the test being performed. Ice water is 32° Fahrenheit. Does your thermometer

read properly? Can it measure suction temperature accurately without thermal gain or loss from ambient conditions? Give it a checkup. Remember the temperature vs. resistance scale in your Hoshizaki pocket guide; compare the resistance of a good thermistor to your reading. Often, a few degrees make a difference between an accurate diagnosis and an error.

Scales, vacuum gauges, charging cylinders and other service equipment should be accurate and well maintained too. Learn how to use a vacuum gauge to detect moisture and leaks. It's always a good idea to stock up on the appropriate batteries for your meters, thermometers etc.

Callbacks, errors in diagnosis, wasted or duplicated effort and high maintenance bills affect you, your company, the industry and Hoshizaki's reputation. Errors from the service tools you use can cause improper diagnosis that leads to frustration and wasted effort.

Remember that a call to 1-800-233-1940 between 8 A.M. and 5 P. M. Eastern Time gets you to a Technical Advisor. He is available to bounce ideas back and forth, provide information and assist you in your service call on our products. Make sure to record readings, model and serial numbers, and operation of the machine before your call.

AS ALWAYS...

If you have any comments or suggestions for Tech Tips please send them to:

Techsupport@hoshizaki.com or

Fax to 1-800-843-1056 ATTN: Tech Tip editor

COMING NEXT MONTH...

1. The Most Valuable Tool...
2. Service School Results
3. Reach-In door reversal update