



HOSHIZAKI TECHNICAL SUPPORT TECH -TIPS

Danny Moore
Writer/Editor

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

Volume 173
June 21, 2000

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

NEW FLAKER GEAR MOTOR

In the past few months, the Quality Control Department has noticed an abnormal amount of gear motor failures on the F-1000 models. Any time the failure rate begins to rise, we begin an investigation to find the reason for failure, and to improve the quality of the part. Through exhaustive tests, we locate the weak areas, and design improvements into the part.

Von Weiss, manufacturers the gear motor assemblies for the F-1000 model and made the internal changes in January of this year. Several internal changes were made to improve the overall strength and tighten tolerances in the gear assembly. The gearbox casing was strengthened to eliminate any possible flexing under pressure. The size of the internal bearings was increased and the bearing tolerances were improved. The color of the gearbox was also changed from black to dark gray so that the new assembly could be easily recognized. Part numbers 4A2193-01 and 4A2194-01 have a black motor and gray gearbox.

The new motor was added on the assembly line in mid February of this year. The beginning serial numbers for the F-1000 are as follows:

Model	Serial #	Model	Serial #
MAF	- K01131B	MWF	- K00286B
MRF	- K00206C	MAF-C	- K00220B
MWF-C	- K00131B	MRF-C	- K00140B
MLF	- K00116C	MAF-22-	K00406D

To make sure that the new motors are used for replacement if a failure occurred, we exchanged the service-parts inventory with the new gear motor assemblies. The old SA0023 with a small output shaft, formerly the replacement for the F-1000M_E models, now subs to SA0026. The 4A1296-01 with a larger output shaft, was the replacement for the F-1000M_F models, and now subs to 4A2194-01. Both the SA0026 and 4A2194-01 include these improvements.

As for inventory of the original gear motors in the field, SA0023 can be used on the F-300BAF, F-500BAF and the 4A2194-01 can be used on the DCM-500BAF, and F-800M_F models without concern. These models require less gear torque and no unusual failures have occurred.

This change is one of the continuous improvements that we make to provide higher quality products.

DM-90 DISPENSER

The DM-90A is a manual fill, counter top dispenser. It is 22 inches wide and 33 inches high. Optional 4- inch legs are available, if required. This dispenser can be mounted on a counter, with, or without the legs, or on the SD-90 stand which was specifically designed for this model.

The storage bin is specially designed to dispense either cubelet or crescent cubes. The storage capacity will vary depending on whether it is used in a manual fill application or when automatically filled by a unit

mounted on top. For cubelet ice, the storage capacity is 44 lbs. for automatic fill and 72 lbs. when manually filled. The DM-90 will store 96 lbs. of crescent cubes for automatic fill and 103 lbs. when manually filled.

Two membrane-switch type, dispense buttons, labeled ICE and WATER, are located on the spouts. Ice or water is dispensed as required, when either dispense button is depressed.

An electronic timer board is used to control the unit and provides adjustment for periodic agitation, as well as other optional features for future models. The periodic agitation is not turned ON when the unit is shipped from the factory. If this feature is needed, it can be turned ON by switching dipswitch number 1 to the ON position. This will provide two seconds of agitation every ninety minutes. Eight dipswitches are located on the board, and are set in the OFF position from the factory. These switch positions should not be changed other than number 1 as mentioned.

There are seven connectors on the timer board. Connector K-1 supplies 24VAC-control voltage to the board from the control transformer. K-2 is the output to the gear-motor, dispense solenoid, and the 24-volt water solenoid. The ICE dispense switch is connected to the K-5 connector, and the WATER dispense switch is connected to the K-6 connector. K-3, K-4, and K-7 are not used in this application.

Other than these changes, along with a reshaped storage bin and auger that allows it to dispense cubelet ice, the DM-90A is a small version of the DB-130. The DM-90A provides the same reliability that you have grown to expect from a quality Hoshizaki product.

SERVICE Q & A:

Question: I understand that Hoshizaki does not recommend the use of a sight glass for charging a remote system. Why?

Answer by Frank Neely: This is a common question for us. There are more factors involved with charge than you might think. Many things have to be taken into consideration when you design an ice machine that makes a certain amount of ice in a certain amount of time. Let's take a look at some of those factors when considering the charge.

Once the components are selected, the first thing that is taken into consideration is selecting the type of refrigerant needed to match the system requirements and designed production. Second, six different charge amounts are weighed in and the operation is checked. The individual results are graphed versus ice capacity, sub cooling, discharge pressures, etc. Next we must take into consideration the compressor manufactures specifications so that we satisfy their requirements for warranty. We must not exceed the manufacturer's limits for dome temperature, discharge pressure, amp draw under maximum load etc.

Finally, the machine is monitored cycle after cycle to insure consistent and accurate batch weight. During this process there is a sight glass installed to help monitor refrigerant flow to the expansion valve. Because the load on the evaporator is changing constantly, it is normal to see bubbles in the sight glass. When charging a refrigeration system that has a more constant load, it is acceptable to charge by clearing the bubbles in the sight glass.

As you know, there are many factors involved in charging any refrigeration system and this is why we refer to our equipment as "critically charged". Charging by sight glass cannot meet the minimum requirements necessary to operate our equipment at maximum efficiency. When charging by site glass, you may clear the sight glass of bubbles, but you will have most likely overcharged the system. Our only recommendation for properly charging any Hoshizaki equipment is by weighing in the correct charge according to the nameplate. If you do encounter a Hoshizaki machine with a sight glass, it has been field installed and should not be used to charge the machine.

COMING NEXT MONTH...

1. Checking a PSC Motor
2. Addressing Hard Water
3. Service Q & A

Volume 173 Page

2