



HOSHIZAKI TECHNICAL SUPPORT

TECH -TIPS

Danny Moore
Writer/Editor

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

Volume 155
September 17, 1998

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

KM-1300S_F

Hoshizaki has recently released a new model number in the KM product lineup. The KM-1200S_E series is now the KM-1300S_F series. This model number change is a result of increased production due to the change over to R-404A refrigerant.

Changing the KM-1200S_E to use R-404A refrigerant required a redesign of the refrigerant system. The bypass valve cooling system for controlling compressor temperature has been eliminated. This simplifies the refrigerant system and eliminates the controls necessary to operate the bypass valve. You will find that the R-404A system is back to the basic components that were used in the original KM R-502 system. Obviously, less components means less possibility of problems and simpler diagnosis if a problem occurs.

As for major components, the R-22 compressor which uses mineral oil is replaced with a R-404A compressor using polyol ester oil. You will notice that system operating pressures will increase. Consequently, the pressure operated components must change. The thermostatic expansion valve, drier, high pressure switch, and headmaster valve in the remote condenser will change. The evaporator plates and condenser coils remain the same.

These component changes along with the increased efficiency of R-404A refrigerant provide an increase in production of approximately 9%. The greatest increase is found at perfect operating conditions of 70° F air and 50° F water. The percent of increase declines as ambient and water temperatures increase. The new

HFC refrigerants tend to lose their efficiency increase under heavier loads and warmer operating conditions. Technical data for all new R-404A models is being provided initially through Service Bulletins and individual Service Manuals. A Tech-Specs pocket guide will be published once enough R-404A models are developed. Be on the lookout for additional model number changes like this for future R-404A products.

FLAKER IMPROVEMENTS

The F-1000M_F and the soon to be released F-650 R-404A model include evaporator, auger, and gear motor improvements. These improvements were made to the basic flaker design to reduce the height of the F-1000, increase the auger strength, reduce gear motor and auger stress, increase efficiency, provide a more balanced operation, and extend bearing life.

Several changes are taking place in these two models. The new F-1000M_F uses the same evaporator as the present F-650M unit which allows for the reduction in height to 25 1/4". The shorter auger length produces less wobble and provides greater balance, reducing bearing pressure and wear. The auger has a dual flight which is cut at an angle to increase ice flow. The size of the lower shaft which includes the bearing surface, is increased to the same size as the upper shaft and bearing surface. The output shaft of the gear motor and the stainless steel coupling have increased the same amount. These changes relate to increased efficiency and strength, less stress, and extended bearing life.

The F-1000M_F production will remain relatively the same even though it is smaller in size. This model will share many common parts with the present F-650M. The conversion of the F-650M model to R-404A refrigerant is almost complete. Preliminary testing shows that production will increase and a model number change is likely. The changes to the lower bearing surface, coupling, and output shaft of the gear motor will take place on this model at the same time as the refrigerant change. The gear motor will be the same part number as the F-1000M_F. The auger will be a different part number as it will have a single flight with the angle cut. These changes will provide the same improved operation and benefits as explained with the F-1000M_F.

As you can see, our Engineering Department is determined to make changes to improve our products. I am sure you will agree, these changes will make the best flaker in the market even better.

CONTROL BOARD TESTER

About 2 years ago, Hoshizaki provided an Alpine control board tester to our distributors. This tester allowed the distributor to run the Alpine board through a series of checks to determine whether or not it was bad. The tester was designed to help eliminate good control boards being returned for warranty. Though it takes time and effort to check each board, the tester is an effective tool.

It is important to note that **the Alpine control board tester will not test a new “E” control board.** Although it connects and operates the ice machine the same as the Alpine board, the test results will not correlate. The lighting sequence for the board LED’s will not match that of the tester, and some confusion may occur.

The “E” board has a built-in test using the test switch marked S3. See Tech-Tips Volume 152 for more information on this board function. The “E” board can be bench tested by using the test stand power supply that came with the Alpine control board tester. To do this, mount the “E” board on the test stand, connect the power supply to K-2, switch S3 to “ON” and turn on

the test stand power switch. The red LED on the “E” board should light when power is supplied.

If the “E” board is good, 5 seconds after power is turned on the green LED 2 should sequence on for 5 seconds, then go out and LED 3 should light. Five seconds later LED 3 will go out and LED 4 will light. Five seconds later LED 4 will go out and LED 1 will light. Five seconds later LED 1 will go out and LED 4 will light and remain on. If this sequence occurs, you can assume the “E” board is good. Any other sequence or timing represents a bad board.

Since the test stand is available at the distributors location, it is recommended that this test be run before condemning the board. It can also be done on the unit by following the same procedure.

SERVICE Q & A

Question; What are the preventative maintenance steps for a KM cuber.

Answer by: Danny Moore Obviously you are concerned with maintaining your customers equipment at peak operating efficiency. Preventative maintenance is the key to accomplishing this. For a Hoshizaki, the preventative maintenance is minimal.

All air cooled units include a cleanable air filter in the louver of the front panel. This filter should be cleaned using warm soapy water at least twice a month, more often in dusty or greasy locations. If the filter is removed and the unit operates, the condenser coil may require cleaning. A visual inspection of the condenser will reveal if cleaning is required. The pump motor and fan motor have sealed bearings so no oiling is required.

The water system should be cleaned or de-limed and sanitized at least annually using either Hoshizaki “ScaleAway” or Economic Labs “Lime Away”. More frequent cleaning may be required in bad water areas. Follow the instructions provided on the cleaning label located on the unit. You should always check the inlet water valve screen when you PM the unit. Also, service any external filter system as required and clean and sanitize the storage bin.

Lastly, wipe down the outside of the unit with a clean soft cloth and mild neutral cleaner.

COMING NEXT MONTH...

1. Remote Condensers
2. Cycle Comparison
3. Service Q & A

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