



HOSHIZAKI CARE TECH-TIPS

Danny Moore
Editor

Hoshizaki America, Inc.
618 Hwy. 74 South
Peachtree City, GA 30269
Care Facsimile: (800) 843-1056

Volume 113
January 5, 1995

Cold Room Applications

Hoshizaki Cubers and Flakers are designed to operate in a dry environment, with an ambient temperature range of between 45° and 100°F. Remote condensers can be installed in a wet outside environment with an ambient temperature range of -22° to 122°F.

We have some customers who request that a unit be installed inside a cold room or cooler application. This could be a meat or produce prep room where ice is needed in the preparation process.

Temperatures lower than 45°F can affect the operation of a Cuber or Flaker. The moist damp conditions inside a cooler can also damage electrical components in the unit.

To eliminate any possibility of damage due to the wet and cold conditions, inside the cooler, Hoshizaki **always** recommends that the unit be installed outside of the cooled space. This can be accomplished by installing the unit on top or mounting it on a frame attached to the side of the cooler. A chute is then field fabricated to drop the ice into a storage bin located inside the cooled space. The chute can be made of stainless steel or 6" PVC, if the unit is a Flaker. The bin control is then moved or modified to work with the new chute.

An optional remote bin control (part number 316582A01) is available for the Flaker. The thermostatic bin control used on "S" series units has an

8' capillary tube and can be used in this application for Cubers. Care should be taken to check the remote mounted bin control for proper operation before leaving the installation site.

Why Flakers Grind to a Halt

A Flaker has a continuous ice making process. The ice is formed on the inside of the evaporator, cracked or broken away, moved upward and extruded by a slow turning auger. This auger is turned by a low-speed, low-ratio gear motor.

As you might imagine, the action of turning the auger and extruding the ice exerts a lot of pressure on the auger and gear motor assembly. The design of the complete gear drive assembly and auger and bearing system is critical to the life of a Flaker because of this pressure.

The design must distribute this pressure evenly and also eliminate any possibility of "wobble" in the auger. The clearance between the auger flite and evaporator wall is very small and any wobble or excess vertical movement of the auger will cause scraping and leave metal flakes in the ice flakes. This is not good!!!

Hoshizaki utilizes sleeve type alignment bearings to keep the auger centered, thus reducing the possibility of wobble. The bearings are made of a poly material with a graphite base for constant lubrication. Other brands use steel roller bearings which are lubricated with grease. This grease can leak out into the ice causing the bearings to overheat and seize or allow wobbling of the auger.

As you know, typically the gearmotor assembly is the component which fails most often in a Flaker. This is because the auger gear motor assembly takes a lot of abuse while breaking and moving the ice out of the evaporator. Most manufacturers use an open type gear assembly which means it has an opening or a hole for grease to exit when it overheats due to prolonged operation or excessive heat from the drive motor. This opening also can allow moisture to enter the assembly while it is cooling down. The moisture mixes with the grease to dilute it, eliminating the lubricating effect. Wear of the drive gears and internal bearings is eminent in this case.

Fiber gears are also used and in some cases. The fiber gears act as a safety designed to strip out if an evaporator freeze-up occurs. This would protect the evaporator from spinning, however, it would definitely require a complete rebuild or replacement of the gear motor assembly.

Hoshizaki utilizes a sealed gear motor assembly on all Flaker models. There is **no** hole for grease to exit or for moisture to enter. A lubricant which expands less when heated is sealed inside the housing. A thermal overload is included in the motor windings to protect against overheating. Steel mesh-cut gears are used in the assembly for all but the smallest gear attached to the drive motor shaft. Fiber is used here to cut down on the grinding noise associated with small steel gears.

This complete assembly is also protected by a primary manual-reset, current-type overload located in the control box. If the gear motor receives any excess stress, the amp draw will increase causing the current overload to shut the unit down on its manual safety.

Now that you know how and why our auger and gear motor assemblies are designed the way they are, let me give you the real reason Flakers grind to a halt.

“NO PREVENTATIVE MAINTENANCE”

It’s simple, customers do not understand the importance of Preventative Maintenance on their ice machine.

An annual cleaning and bearing inspection is the best insurance you can sell your customer against

Expensive Repairs and **Down Time**. Sell your customers on the benefits of Preventative Maintenance, **They get the benefit** and **You get the Profit**. With this in mind, maybe now you can stop a Flaker from grinding to a halt.

Hoshizaki Condensers by David Brown

Hoshizaki now manufactures four sizes of remote condensers, URC-6E, URC-12E, URC-20E, and URC-24C. These remote condensers all contain a factory charge of R-22 refrigerant. Care should be taken to assure a refrigerant match between unit, lineset, and condenser before a remote installation is started. The type of refrigerant is clearly marked on the unit specification or model nameplate.

All Hoshizaki URC condensers include a condenser pressure regulator (CPR) or headmaster, except the URC-24C. The CPR for the KM-2400SRB is located in the unit head. The chart below shows:

MODEL	CONDENSER	CPR setting
KM-500/630MRE	URC-6E	190PSI
KM-800/1200MRE	URC-12E	190PSI
KM-1200SRE	URC-12E	190PSI
KM-1600MRE	URC-20E	156PSI
KM-1600/2000SRE	URC-20E	156PSI
KM-2400SRB	URC-24C	140PSI

Hoshizaki remote condensers are designed to operate efficiently in a wide range of ambient conditions ranging from -22° to 122°F.

The power supply for the URC is supplied from the unit and will cycle the fan off when the unit shuts down.

Aeroquip fittings are used for the lineset connections. Pre-charged linesets are available in 25’, 35’, &, 55’ lengths. A stub kit #OS QUICK is also available. The remote lineset must be installed using proper refrigerant piping practices not to exceed the maximum of 100’ equivalent length, 33’ rise, or 10’ drop with the condenser located below the unit. Both lines should be insulated separately for the entire length and additional R-22 must be added for lines over 66’.

Following the installation instructions provided with the unit for remote applications will assure proper condenser operation.

COMING NEXT MONTH...

1. EPA Certification Update
2. Water Cooled Condensers
3. No Muss, No Fuss

Volume 113 page 2