



HOSHIZAKI TECHNICAL SUPPORT TECH -TIPS

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NEW REACH-IN MODELS

Several additional reach-in models are in the final approval stages at Hoshizaki. The standard 1, 2, & 3 refrigerator and freezer models are being made available in full and half door applications. “-HD” is added to the end of the model number to designate half door models.

Combination models are also being released. Each section has an independent refrigeration system and separate controls. A communication data connection between the two controls allows the separate systems to cycle alternately to eliminate overload during normal operation or at start-up. An error code of E-10 will flash if this communication connection fails and the different sections will continue to operate independently.

The RFH2-SSB is a combination of an RH1-SSB and an FH1-SSB. The RFH3-SSB is a combination of an RH2-SSB and an FH1-SSB. Both combination models are 115-volt units with a common single power connection that must be field wired. There are three control switches including a common breaker and separate power switch for each section.

Glass door refrigerator models are going through the testing/approval process at this time. The glass door models will have a larger compressor to handle the increased refrigeration load due to heat loss through the doors.

We will keep you updated on new reach-in models, as they become available.

REFRIGERANT OILS

The oil in a refrigeration system plays a very important part in the system operation. It is necessary not only to provide lubrication for the compressor but also, to lubricate the other system components, as it is carried through the tubing along with the refrigerant.

There are three basic types of refrigeration oils used in refrigeration systems today. It is important for the technician to know the different oils and their uses. The oil types and uses are covered below.

1. Until the recent development and use of HCFC and HFC refrigerants, standard mineral based, refrigerant oil was widely used. You will find mineral oil used in any Hoshizaki product that was produced using R-12, R-502, or R-22 refrigerants. The OEM replacement compressors provided for these models include a mineral oil charge. This is important to know if you are replacing a compressor and changing to a replacement refrigerant other than what was originally used in your particular model.

2. Alkylbenzene oil is recommended for use with HCFC replacement refrigerants. It can also be used with the older CFC refrigerants. Alkylbenzene and mineral oil are similar and will mix adequately. When retrofitting a Hoshizaki R-12 or R-502 unit with the

proper Hoshizaki recommended HCFC replacement refrigerant, the oil must be changed to Alkylbenzene.

This is done by either pulling the oil from the compressor crankcase with a special pump or by cutting the compressor out of the system and tipping it over to drain the oil out through the process tube. Obviously, the oil should be changed in a new replacement compressor prior to installing it. This oil should be measured and replaced with the same amount of Alkylbenzene oil. Both compressor and refrigerant manufacturers recommend that the amount of mineral remaining in an alkylbenzene/mineral oil mixture should be 50% or less. According to Copeland, draining the oil by tipping the compressor should remove approximately 95% of the total oil charge.

3. Polyol Ester oil is a synthetic lubricant designed especially for HFC refrigerants. Any HFC must use 100% polyol ester oil. This oil is very hydroscopic, which means it will suck up moisture very quickly if open to the atmosphere. For this reason, polyol ester oil is sold in metal cans only. Polyol ester oil does not mix well with mineral oil or alkylbenzene. Some HCFC refrigerants allow a mixture of no more than 20% mineral or alkylbenzene with polyol ester oil. The lower the %, the better.

Since R-404A is a HFC refrigerant, all Hoshizaki models using R-404A contain polyol ester oil. Care should be taken to use a clean gauge manifold and hoses when servicing an R-404A system. The system should also not be left open to the atmospheric pressure so as not to allow moisture to contaminate the oil. The refrigerant drier should be changed any time the sealed system is serviced to avoid moisture contamination. High moisture content will not likely be removed through evacuation. In this case, the oil should be changed.

SERVICE TIP:

Recently, Kelly Froshier was called to investigate repeated freeze-ups on 2-KM units. The local service company had exhausted all possible causes. The investigation revealed restricted water flow to the units

due to the use of an improper backflow prevention valve. The following article explains:

BACKFLOW PREVENTION By Kelly Forshier

Proper installation of a Hoshizaki ice machine, flaker, or DCM is important. If a unit is not installed properly, the performance of the equipment will be less than satisfactory.

The potable water system must be installed to prevent backflow of any solid, liquid, or gas contaminant into the water supply system at each point of use. An air gap or backflow device must be used on the potable water supply inlet. When using an air gap, the distance between the inlet and the flood level of the reservoir may not be less than 25 mm [1 inch]. Hoshizaki meets this requirement by the use of a ported inlet water solenoid valve for the potable water supply. The inlet water valve is well above the flood level rim of the reservoir.

On water-cooled units, it is necessary to provide a separate water supply to the water-cooled condenser. This is a direct connection to the condenser, without an air gap. Since we do not have an air gap at this connection, plumbing codes require the use of a backflow prevention device. This provides protection against cross contamination of the potable water supply.

The most common type of valve for a water-cooled application is called a reduced pressure zone, or R.P.Z. These devices operate on pressure differential. In the event that there is a higher pressure on the outlet side vs. the inlet side, the valve allows the pressure differential to escape from a drain port. This prevents the contamination of the inlet water supply to the unit. Hoshizaki provides an approved backflow prevention valve as an option through our parts department.

It is very important to inspect the plumbing system when doing a start-up, or servicing a Hoshizaki unit. If an improperly applied backflow device is used, performance of the unit will decline, and service calls will follow. Keep in mind that Hoshizaki does not pay for problems due to improper installation.

Always inquire with governing authorities for local installation requirements. National plumbing codes and local water utility requirements can differ.

COMING NEXT MONTH...

1. IM-51 Installations
2. Flaker Bearings
3. Service Q & A

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