



HOSHIZAKI CARE TECH-TIPS

Danny Moore
Writer/Editor

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

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COMPRESSOR CHANGEOUT

In the last two issues we have discussed compressor diagnosis. Once compressor diagnosis is complete, a bad compressor must be replaced. As with any replacement part, the compressor should be an Original Equipment Manufacturer (OEM) part or a manufacturer recommended substitute.

Hoshizaki offers a five year "parts only" warranty for the original compressor. In order to receive this warranty, proper changeout and warranty filing procedures must be followed and the OEM part must be used. Ask your local Hoshizaki distributor for these warranty procedure details. Warranty cannot be paid if a non-OEM compressor is used !

The first step in a changeout is to evacuate the system of all refrigerant. This refrigerant must be recovered using proper refrigeration practices as required by the EPA. If the refrigerant is not contaminated, it may be recycled, cleaned and reused. This is a judgment call that you should make for yourself and will depend on your recovery equipment capabilities.

You will find that some older models do not have a high side access port . In this case install a line tap valve on the high side for use during the refrigerant recovery process. This line tap valve must be removed and replaced with a sweat-on schrader access port once recovery is complete. On systems which have a liquid line valve it is important to open the solenoid during recovery so that all of the refrigerant will be recovered. This can be done by using a 115 volt

cheater cord to energize the coil while recovering the refrigerant.

A compressor burnout will generally cause acid in the system. Acid has a distinct odor which will be noticed when the system is accessed. Acid test kits which will confirm acid in the system are available from your local wholesaler. Clean-up of a system containing acid will require more time and effort than a basic evacuation for a compressor changeout.

During the recovery process you will have time to disconnect the compressor lead connections. First you should check to assure that the power is turned off or that the unit is disconnected from the power supply. Then remove the terminal cover and inspect the terminal connections. You will find in most cases, that the wires are marked C, R, & S at the terminal ends. The general color code for KM compressor connections is black for common, red for run, and gray for start. Check the unit wiring diagram for compressor wiring on other models. Make note of the proper connections and disconnect the terminal ends. Also disconnect the crankcase heater on remote applications.

With the refrigerant removed from the system and the terminals disconnected, it is time to remove the old compressor from the system. Disconnect the suction and discharge lines using proper refrigeration piping practices. Care should be taken to assure that the system is not open for a long period of time. This will be even more important in the future as new more hydroscopic alkylbenzene or polyolester lubricants are used in new compressors. To protect against

excessive moisture entering the system, plug the system lines while you remove the existing compressor and place the new one into position.

Reconnect the compressor lines and solder a new schrader connection on the process tube.

Replace the liquid line drier with the correct OEM part. It is a good practice to cut out the existing drier rather than using a torch to un-sweat it. This will eliminate the possible release of any moisture contained in the drier back into the system. In the case of a burnout, you may deem it necessary to add a suction line filter-drier especially designed to clean up a burnout. This filter-drier should be left in the system for one to two weeks of operation and removed once the system is cleaned. An acid test can be used to verify a clean system. The suction filter should be replaced and checked again in two weeks if the system is still contaminated. The liquid line drier should also be replaced again at this time.

Add a little refrigerant to the system and leak check the new joints. Evacuate the system to 500 microns or lower. A burnout system requires a triple evacuation. Pull the system down to 1500 microns twice and once down to 500 microns or lower. Each time, break the vacuum with the refrigerant to be used in the system to 2 psig or more.

While you are waiting for the evacuation, reconnect the compressor terminals and crankcase heater if used. Install any new start components supplied with the compressor. It is a common practice to change the start components with a new compressor, especially if the failure was electrical in nature. Double check your wiring against the wiring diagram to assure proper connections.

Once evacuated, charge the system weighing in the proper refrigerant amount and type according to the name plate rating. Now you are ready to start the unit up and check it for proper operation.

UNIVERSAL KM FLOAT SWITCH

Have you noticed a difference in the KM float switches lately? The old drab black float switch is now

a bright white polystyrene material. Its the same basic reliable design using a new material. The new float switch is manufactured for Hoshizaki by a company in Connecticut. The assembly line has been installing the new float switch on units for around two months. Also, we are presently shipping the new float switch out as a replacement part.

You will find that there are two different types of float switches on KM units in the field. A single stand pipe and a double stand pipe version are available as a replacement part. The stand pipes connects either to a vent tube or to the pump out power flush line. The style you need will depend on which model you are servicing.

For a universal replacement that will fit any KM model in the field, order the new part number 4A0086-01. This is a double stand pipe float switch. To make it work on a single stand pipe unit , simply **install it on the unit and cap the outside power flush stand pipe.** The protective caps included on a replacement drier # 427061-02 work perfectly for this application. This idea should eliminate the necessity to stock two different float switches in your inventory, saving time, cost, and space.

DRIER REPLACEMENTS

It is considered good refrigeration practice to change the liquid line drier any time a sealed refrigeration system is opened for service. Hoshizaki recommends this practice when servicing our equipment.

The correct drier should always be ordered along with the refrigerant component that needs to be replaced. OEM driers must be used, with only one exception. If you have a system contaminated with non-condensables and no other system component needs replacing, it is acceptable to use a properly sized non-OEM drier from your truck stock. This step will save time and effort on warranty repairs. Remember that this is the only situation where use of a non-OEM part is acceptable.

OEM drier list

Model's	Part #	Size
F-250E	444395-01	3 cu. in.
KM-250, F-450B	437208-01	3 cu. in.
F-251/250/441/440, DCM 240/450B	418462-01	3 cu. in.
KM-280/500	445007-01	3 cu. in.
F-650E/1000E	445006-01	3 cu. in.

KM-450/630/800/1200E, F-450E	427061-02	3 cu. in.
F-1101	418498-01	3 cu. in.
F-650B/1000B/1100B	427061-01	3 cu. in.
KM1200B/1600B/2400B, F-2000	439676-01	5 cu. in.
KM-16000E/2000E	445011-01	5 cu. in.

COMING NEXT MONTH...

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2. ICE STRIPS
3. SIZING ICE MACHINES Volume 127 Page 2