

PROTECTION OF CARBON STEEL FREEZING SURFACE USING REFRIGERATION

There are two methods of protecting the carbon steel freezing surface of North Star ice makers from corrosion when not producing ice. For long term shut down, the freezing surface should be protected by a grease as described in our operating manual. For short periods of shut down, the best procedure is to keep the ice making surface below freezing (32°F or 0°C).

If the ice maker is connected to a larger, common refrigeration system the procedure is relatively simple. Simply de-energize the ice maker water pump when the machine is either stopped through a full level control in the storage bin or manually turned off. This will allow a frost coating to build up on the freezing surface and protect it from oxidation. The ice maker drive is kept energized to prevent the rotor from freezing in place. With the freezing surface coated with a frost layer it is insulated from the elements and therefore, absorbs very little heat into the refrigeration system.

If the ice maker is connected up to its own compressor, then it is a matter of adjusting the low pressure cut-out switch so that the compressor cycles on and off between some low pressure cut-out point and a cut-in pressure equivalent to the freezing point for that particular refrigerant. Again, this will provide a constant frost build up on the freezing surface during the time when the ice maker is not producing ice.