Self-Contained Multiple Evaporator - Symptom #2 - Ice Machine Has Long Freeze Cycle

REFRIGERATION SYSTEM OPERATIONAL ANALYSIS TABLE

S Model Self Contained Multiple Evaporator Ice Machines

This table must be used with charts, checklists and other references to eliminate refrigeration components not listed on the table and external items and problems, which can cause good refrigeration components to appear defective.

Operational Analysis	1	2	3	4	5
Ice Production	Ambient Air-Temperature_____ Water Temperature Entering Ice Machine_____ Published 24 hour ice production_____ Calculated (actual) ice production_____ NOTE: The ice machine is operating properly if the ice fill patterns is normal and ice production is within 10% of charted capacity.				
Installation and Water System	All installation and water related problems must be corrected before proceeding with chart.				
Ice Formation Pattern Evaporators are numbered left to right viewed from the front of the ice machine Evaporator #1_____ Evaporator #2_____ Evaporator #3_____ Evaporator #4_____	Ice formation is normal	Ice formation is extremely thin on outlet of 1 or more evaporators -or- No ice formation on entire evaporator	Ice formation normal	Ice formation normal or No ice formation on entire evaporator	Ice formation is normal
Safety Limits Refer to “Analyzing Safety Limits” to eliminate all non refrigeration problems	Stops on Safety Limit: 2	Stops on Safety Limit: 1 or 2	Stops on Safety Limit: 2	Stops on Safety Limit: 1	Stops on Safety Limit: 2
Freeze Cycle Discharge Pressure _____ _____ _____ 1 minute Middle End into cycle	If discharge pressure is High or Low refer to freeze cycle high or low discharge pressure problem checklist and eliminate problems and/or components not listed on this table before proceeding.				
Freeze Cycle Suction Pressure _____ _____ _____ 1 minute Middle End	If suction pressure is High or Low refer to freeze cycle high or low suction pressure problem checklist and eliminate problems and/or components not listed on this table before proceeding.				
	Suction pressure is **High**	Suction pressure is **Low or Normal**	Suction pressure is **Normal or High**	Suction pressure is **High**	Suction pressure is **High**
Harvest Valve Temperature Wait 5 minutes into the freeze cycle. Compare temperatures of **compressor discharge line** and **harvest valve inlets.**	One harvest valve inlet is **Hot** -and- approaches the temperature of a **Hot** compressor discharge line.	All harvest valve inlets are **Cool** enough to hold and the compressor discharge line is **Hot.**	All harvest valve inlets are **Cool** enough to hold and- the compressor discharge line is **Cool** enough to hold hand on.	All harvest valve inlets are **Cool** enough to hold and- the compressor discharge line is **Hot.**	All harvest valve inlets are **Cool** enough to hold and- the compressor discharge line is **Cool** enough to hold hand on.
Discharge Line Temperature Record freeze cycle discharge line temperature at the end of the freeze cycle _____**°F (°C)**	Discharge line temperature **150°F (65°C) or higher at the end of the freeze cycle**	Discharge line temperature **150°F (65°C) or higher at the end of the freeze cycle**	Discharge line temperature **less than 150°F (65°C) at the end of the freeze cycle or Compressor shell is frosted**	Discharge line temperature **150°F (65°C) or higher at the end of the freeze cycle**	Discharge line temperature **less than 150°F (65°C) at the end of the freeze cycle or Compressor shell is frosted**
Evaporator Outlet Temperature Comparison Attach and insulate temperature probes between evaporator outlet and 90° elbow	Evaporator outlet temperatures are **within 10°F of each other**	Evaporator outlet temperatures are **NOT within 10°F of each other** or **Within 10°F of each other and above 32°F**	Evaporator outlet temperatures are **NOT within 10°F of each other**	Evaporator outlet temperatures are **within 10°F of each other**	Evaporator outlet temperatures are **within 10°F of each other**
Final Analysis Enter total number of boxes checked in each column.	**Harvest Valve Leaking**	**Low On Charge -Or- TXV Starving**	**TXV Flooding**	**Compressor**	**Harvest Pressure Valve Leaking**