

## LED flashing red light status: (viewable through the front grille on the main control board)

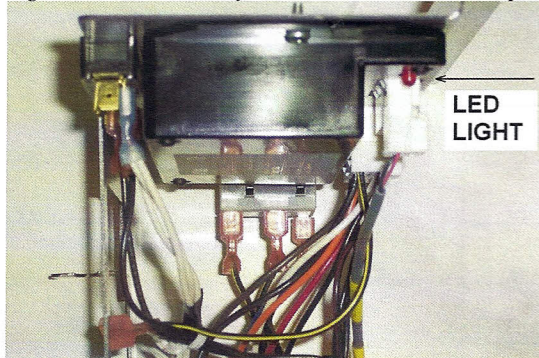
No light on – operations are normal

Light on for 10 seconds at the start of the clean cycle

Light flashes 2 times every 5 seconds – bin sensor out of range

Light flashes 3 times every 5 seconds – evaporator sensor out of range

Light flashes 4 times every 5 seconds – both bin and evaporator sensors out of range



## Thermistor resistance vs. temperature chart

Temperature (C)	Temperature (F)	Resistance (KOHMS)
-18	0	13.020
-15	5	11.350
-10	14	8.918
-5	23	6.700
0	32	5.630
5	41	4.520
10	50	3.652
15	59	2.970
20	68	2.430
25	77	2.000
60	140	.5904

(Acceptable tolerance is +/- 4% of value)

## Quick suggestions on what to look for: (\*For more detailed diagnostic help please see the service manual)

1. Is the machine making too much ice? Check the bin thermistor resistance values and compare to chart.
2. Is the machine not running at all? Check the bin and evaporator thermistor resistance values and compare to chart. Either thermistor if open, shorted, or outside of a parameter range will shut down all loads to the machine. For the bin thermistor that range is 25 – 140 F. and for the evaporator thermistor 0 -140 F.
3. Is the machine making a thick slab of ice but not going into harvest mode? Check the evaporator thermistor resistance values and compare to chart. Be sure the thermistor is tight to the bracket on the underside of the evaporator and that the bracket welds are not cracked or broken.
4. Is the machine making thin slabs of ice? Check that the drain valve is seating properly. A “leak by” condition will cause water to drain from the reservoir during the production cycle. With water escaping the reservoir the circulation pump will begin struggling to pick up water to pump over the plate usually making a distinct gurgling sound as the impeller picks up air and water together. Water should not leave the reservoir until the beginning of the harvest cycle. \*Do not confuse normal ice water melt off from the bin with water escaping from the reservoir due to a leaking drain valve. Normal production cycle times for this machine is between 45 and 90 minutes. Cycle times considerably less resulting in thin slabs and a noisy circulation pump is typically due to a leaking drain valve.
5. Is the machine stacking slabs on the cutter grid? Check to see if the machine is installed with a Marvel drain pump. If it is the drain pump may be at fault causing minor power interruptions thus never allowing the machine to go into a harvest cycle. This would prevent the cutter grid from being activated and the slabs would stack.
6. Is the machine running water over the plate but is not cooling? If the compressor is not running check that the machine is not set in the clean position. Check the wiring to the ON / OFF / CLEAN switch to determine if they have been reversed. Compare to the diagram on the fan shroud behind the grille.
7. Is the machine running, getting cold, bringing water into the reservoir but water is not flowing over the plate? Check the circulation pump 3 prong plug is fully seated into the electrical receptacle located in the rear wall.

## The setpoints are as follows:

Stop ice: 35.0 deg. F +/- 2 deg. F

Start ice: 43.0 deg. F +/- 2 deg. F

Harvest: 11.0 deg. F +/- 2 deg. F

Production: 45.0 deg. F +/- 2 deg. F

Setpoint vs Temperature and voltage (120VAC): +/- 3 deg. F

## Service tips:

1. The cutter grid is only powered up (12 VAC) at the start of the harvest cycle and remains powered for only 35 minutes.
2. When changing a drain valve be sure to remove any foreign matter or putty found in the reservoir to prevent the new drain valve from failing due to these items.
3. If a drain pump is being used, be sure the vent line is properly attached up the back panel and is not restricted.
4. This machine is not recommended to be used with an RO water system.
5. Any interruption of power to the machine greater than 25 milliseconds will cause the control to recycle to the start of a new production cycle and lock out the compressor for up to 9 minutes.

## Refrigeration Temperature –Pressure Chart for R-134A

F.	PSI	F.	PSI
-12	1.1	36	31.3
-8	2.8	38	33.2
-4	4.5	40	35.1
0	6.5	42	37
2	7.5	44	39.1
4	8.5	46	41.1
6	9.6	48	43.3
8	10.8	50	45.5
10	12	52	47.7
12	13.1	56	52.3
14	14.4	60	57.5
16	15.7	64	62.7
18	17	68	68.3
20	18.4	72	74.2
22	19.9	76	80.3
24	21.4	80	86.8
26	22.9	84	93.6
28	24.5	88	100.7
30	26.1	92	108.2
32	27.8	96	116.1
34	29.5	100	124.3

## Diagnosing by “dry cycling”

Dry cycling is an excellent way to diagnose this ice machine. Dry cycling can be achieved by turning the water supply off to the machine or pulling the black drain plug from the underside of the reservoir. Without water flowing over the plate there is less heat being removed and the machine will reach its harvest set point usually within 5 minutes after the start of the recirculating pump at the beginning of a production cycle. This will cause the control to switch into harvest cycle. \*See cycle map on the opposite side of this sheet for sequencing and component on / off states for each cycle. If the control does not cycle into harvest check the evaporator plate for a full uniform frost pattern. Any void indicates a leak of refrigerant or sealed problem. Check the evaporator plate temperature for 9 F. or lower. Check evaporator thermistor resistance value and compare to chart. If harvest cycle initiates verify evaporator plate temperature rises to 45 F. +/- 2 F. before cycling back into a production cycle. Verify that the cutter grid wires begin to feel warm to the touch. Repeat observation. See a more complete description of how to run this test on line at Servicepower.com.

\*The ice bin temperature in this machine is designed to be above freezing therefore it is absolutely normal for the stored ice to be wet. This allows fresh ice to be made to achieve the highest quality taste and appearance.

\*If the ice is not used or stirred on a regular basis it is absolutely normal for the ice to clump together or form a hardened layer over top of the cubes. Using the scoop provide, this can be prevented by stirring the ice every couple of days when the ice is not being consumed.

Need help?

Call Marvel Technical Support @ 1-800-428-6644

Marvel product technical information available on line @ Servicepower.com

41050011 REV. A  
Service Data Sheet

\* LOCKOUT DELAY: SEE MODE OF OPERATION

