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Instruction Sheet

Subject: NEO Control Board Change

NEO UNDERCOUNTER MACHINES ONLY - NOT APPLICABLE TO KOOLAIRE MODELS

NOTE: This control board and software change is applicable to NEO models only and does not affect Koolaire model ice machines that use this control board .

Software Version 2.58

The software version installed during production can be identified by the label on the relays.

NEO control boards are using a jumper (JP1- control board pins) to control when the water pump pauses during freeze cycle to help with slushing issues.



Freeze Cycle

- If the JP1 Terminal is closed (jumper connected): At 2.75 minutes from the start of the freeze cycle, the water pump will de-energize for 30 seconds.
- If the JP1 Terminal is Open (jumper removed): At 3.75 minutes from the start of the freeze cycle, the water pump will de-energize for 30 seconds.
- Upon restart of the water pump, the water inlet valve will energize and open for 7 seconds regardless of position of the Ice Thickness Float Switch (High Float Switch).
- Maximum Freeze cycle time is 45 Minutes

Harvest Cycle

WATER ASSIST

- At 3.5 minutes into harvest: the water inlet valve energizes and fills until the (High) Ice Thickness Float Switch rises. Maximum water fill at this time is 105 seconds.
- At 4.0 minutes into harvest: the water pump energizes and circulates water over the evaporator.
- At 6.5 minutes into harvest: the water pump de-energizes and the dump valve energizes, dumping water down drain.
- Maximum Harvest cycle time is 7 minutes
- If the Damper door is open and closed within 30 seconds during the 7 minute harvest the ice machine will terminate the harvest and start a pre-chill cycle.
- If the Damper door does not activate after the 7 minute harvest the ice machine will start an "ice thaw" cycle.

ICE THAW CYCLE

- Water inlet valve is energizes and fills the water trough until the (High) Ice Thickness Float Switch rises. Maximum water fill at this time is 105 seconds
- At 30 seconds: the water pump energizes and stays running for 2 minutes
- At 2.5 minutes: the water pump de-energizes and the dump valve energizes for 20 seconds
- After 2 complete ice thaw cycles, the ice maker will start an initial start-up.
- If the damper opens and closes within 30 seconds during the ice thaw cycle, the ice machine will continue the ice thaw cycle.
- If the damper opens and remains open for 30 seconds at any point during the 2nd ice thaw cycle, the ice machine will enter an automatic shutdown.

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NEO ICE THAW CYCLE

Time at start of Ice Thaw Cycle (sec)	Dump Valve	Water pump	Harvest	Compressor	Water Inlet
0	OFF	OFF	OFF	OFF	ON, (until ice thickness float opens or max. time 105 seconds)
30	OFF	ON	OFF	OFF	
150	ON	OFF	OFF	OFF	OFF
170	Dump valve turns off. Add 1 count for thaw cycle. If count < 2 then repeat thaw cycle, time 0-170 sec. If count =2 then go to initial startup, state 1				

SAFETY LIMIT NEO:

Safety #1: Long Freeze Cycles

- Maximum Freeze cycle 45 minutes
- 3 consecutive 45 min freeze cycles the ice machine will record a safety limit #1 and SL1 LED light on the control board will start to flash on and off in 1 second intervals.
- After 6 consecutive 45 min freeze cycles the ice machine will shut down and energize the SL 1 light on the control board along with the UI service LED wrench.

SAFETY #2: LONG HARVEST CYCLES

Maximum Harvest cycle time is 7 minutes

- If the Harvest cycle time reaches its maximum of 7 minutes, the harvest limit flag is set and the SL 2 LED on the control board will start flashing on and off in 1 second intervals.
- After 3 consecutive 7 minute long harvest cycles, the ice machine will shut off after completing the Ice Thaw Cycle and energize the SL 2 LED light on the control board along with the UI service LED wrench.

SAFETY #3: WATER LOSS

Safety #3 (Water Loss) is bypassed on the initial star-up cycle.

- If the Harvest Float Switch (low) does not open (Rise) within 4 minutes into the freeze cycle, the program will initiate a safety limit #3 Shut Down and start a 30 Minute Delay for restart.
- The Service LED on the UI will flash on and off in 1 second intervals and the SL1&SL2 LED lights on the control board will flash on and off in 1 second intervals.
- After the 30 Minute Delay for restart the ice machine will start an initial start-up and UI Service LED & SL1&SL2 lights will go out.
- Pressing the On/off button off and then back on will bypass the 30 minute delay for restart.

The control board will remember the last safety limit tripped for 100 consecutive good cycles.