

60-SERIES ICEMAKERS --- AUGUST 2012

Before troubleshooting, first check the Control Board and verify your software Revision Level: Rev. 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.63, 1.7, 1.8 and 2.0

CODE:	FAULT CODE INDICATES:	POSSIBLE CAUSE:	SOLUTION:
1>	Rev. 1.1/1.2/1.3/1.4/1.5 Evaporator temp over 120F	1) Bad Evaporator Probe (shorted) or wiring. 2) Hot Gas Valve stuck open - Cuber stuck in extended harvest mode.	1) Repair/replace wiring or replace Probe. 2) Pull down the Water Plate and verify that Hot Gas Valve closes after the Water Plate closes. Repeat, with power to the Hot Gas Valve coil disconnected. If Hot Gas Valve does not close, replace it.
	Rev. 1.6 and higher Fault 10 removed	3) Bad Control Board	
2>	Rev. 1.1 Water Plate failed to close after three consecutive attempts.	1) Cam Arm or Cam Pin is broken. 2) Cam Spring disengaged or broken. 3) Plate-Up Switch stuck open or not actuating.	1) Replace Cam Arm or Cam Pin. 2) Reinstall springs or replace as needed. 3) Adjust switch actuator or replace as needed. Check to insure that the Plate-Up Switch actuates before the Arms-Up Switch actuates.
	Rev. 1.2/1.3/1.4/1.5 After 3 attempts to close, machine goes into a 30-minute shutdown, with the Plate open. It will repeat this routine (w/ the Plate closing 3 times & then a 30-min wait) four times, before going out on Code 20. The Code 20 LED will flash as this routine is in process, and then light solid after the routine tries 4 times and ends in Code 20.	4) Over-freeze causing ice to stick on Water Plate. 5) Silicone coating on Waterplate worn away. 6) During harvest, the Evaporator Probe is out of adjustment (reads too warm) or is defective. 7) Arms-Up Switch stuck closed - Plate stays down. 8) Bin Probe is out of position or faulty, and not shutting off ice maker when the ice bin is full. Ice back-up onto the Water Plate is blocking the Plate from closing.	4) Lower the short water level probe, in 1/16" increments, until cubes have a pea-sized dimple in the center. 5) Replace the Water Plate if the factory coating is severely worn and is causing ice to stick to it. Use a Foodgrade silicone spray to provide a temporary improved surface, until the waterplate can be replaced. 6) Adjust Evaporator Probe colder (turn CW), or replace if adjustment does not help. 7) Free up, adjust or replace stuck/shorted Arms-Up Switch, or repair wiring. 8) Re-position or replace Bin Probe.
	Rev. 1.6 and higher After 3 consecutive failed attempts at raising the water plate, the machine will defrost 5 minutes then try again. LED20 will flash during the 5 minute defrost. Machine will shut down if it fails after this defrost period.		
3>	Rev. 1.1/1.2 Freeze time exceeds <u>60 minutes</u> .	1) Not enough air or liquid flow through condenser. 2) Low-level (harvest) probe shorted or touching side of glass tube. 3) Inoperative water pump. 4) Refrigeration problem.	1) Reset high-pressure safety, if tripped. Clean the condenser, on air-cooled units. Check water/coolant supply, on liquid-cooled units. 2) Check/repair shorted wiring to this probe, or gently move probe away from glass surface. Make sure probe is not pushed up/down out of vertical adjustment when moving it away from glass.
	Rev. 1.3/1.4/1.5/1.6 and higher Freeze time exceeds 45 minutes three times consecutively.	5) Bad Contactor (Compressor would be off !) 6) Inlet Water Valve stuck open. Water Tank will be overflowing. 7) Controller not shutting off Water Valve. 8) Hot Gas Valve (HGV) stuck <u>partially</u> open, or with a liquid-cooled compressor, HGV stuck <u>fully</u> open, but Evaporator never gets hot enough (>120F) to give an Error Code 10.	3) Unplug the pump and confirm that the impeller is not jammed with foreign material. Put machine in Wash Mode & check voltage at pump-cable connector. On the Controller Board's AC output buss, check wires P5-2 and P5-6, during Wash Mode, for line voltage. If rated line voltage is present, and the pump's impeller is not obstructed, replace faulty Water Pump. 4) Check for low refrigerant charge. 5) Replace Contactor. 6) Replace Water Valve. 7) Replace Controller. 8) Replace Hot Gas Valve
	Rev. 1.63 and higher Reworked: Now flashes after 3 consecutive cycles over 35 minutes, but will not shut down the machine. Stops flashing once a cycle is under 35 min.		
4>	Rev. 1.1/1.2/1.3/1.4/1.5 Freeze time less than 5 min. for 3 consecutive times. (Water level in the glass Probe Tube is prematurely falling below the low-level probe, during the first 5 minutes of the freeze cycle, or, the Low-level probe circuit is open)	1) Slushing, in Pump, water lines or Water Tank, due to Expansion Valve mis-adjustment or <u>not</u> being wrapped in insulating foam, or failure. 2) Low-level Probe circuit is open, or the Water-Level Probe Assy is bad. 3) Water is being lost somewhere (leaking), causing premature harvest to occur. 4) During harvest, Evaporator Probe out of adjustment (too warm). 5) High-level Probe possibly short circuiting during fill, causing short fill and hollow cubes.	1) Insure Expansion Valve (TXV) is covered with insulating foam. Adjust TXV as needed. As a starting point, <u>gently</u> turn the TXV in CW direction until it stops, then turn it CCW 5-1/2 turns. Adjust in 1/4-turn increments as needed. 2) Repair wiring to Low-Level Probe or replace Probe Assy. 3) Inspect hoses, water tank, water pump, water plate and water level probe assembly to locate leak. Repair or replace part as needed. 4) Adjust colder (CW) 5) Locate & repair short circuit.
	Rev. 1.6 and higher After 3 consecutive occurrences of Fault 40, the machine will attempt to remove any blockages by defrosting and cycling water. -LED40 will be flashing (5Hz) during this defrost and water cycle -Defrost will last for 5 minutes -Water will cycle for 10 minutes -If the machine has 3 more consecutive short freeze cycles, LED40 will be solid and the machine will shut down.		
5>	Rev. 1.1/1.2/1.3/1.4/1.5 Harvest cycle exceeds 20 mins.	1) Evaporator Temperature Probe out of adjustment (reads too warm), or is defective (open). 2) Actuator Motor won't raise Water Plate. 3) Actuator Motor won't lower Water Plate. 4) Controller Board is defective. 5) Arms-Down Switch stuck open (Lowering) - Cam rotates CCW & wraps spring around cam shaft, causing Cam or Spring damage. 6) Arms-Down Switch stuck closed (Plate is supposed to lower, but is staying up) 7) Hot Gas Valve won't open 8) During harvest, Evaporator Probe out of adjustment (reads too cool) or defective. (Ice production may be low!) 9) Bad Contactor (Compressor could be off !)	1) On the Controller, adjust Evaporator Probe pot CW, to a colder setting, so that the Water Plate returns to the closed position about 5 sec. after ice releases. If Evaporator Probe is non-responsive, and Actuator Motor is confirmed operational, then replace the Evaporator Probe. 2) Replace Actuator Motor - (Motor should drive up when Water Plate is down & Evaporator Probe is > 38 F. (35-45F.)) 3) Replace Actuator Motor 4) Replace Controller Board - (When Water Plate is down & Evap Probe is > 38F, there should be line voltage to the Actuator Motor, between Pins 2 & 8*, on the green output connector of the Controller. If voltage not present, replace the Controller. 5) Free up, adjust or replace Arms-Down Switch or repair open wiring. 6) Free up, adjust or replace Arms-Down Switch or repair shorted wiring. 7) Check power from the Controller to the Valve Coil, to determine if problem is electrical or the Valve is just stuck closed. Replace Coil, Controller, wiring or Valve, as required. 8) Adjust Evaporator Probe warmer, or replace if not responding. 9) Replace Contactor.
	Rev. 1.6 and higher Fault 50 Removed Ice Mode -Added a MAX defrost time (5 minutes) -ICE maker will attempt to begin a new cycle after 5 minutes of defrost or when the Evaporator Temp. Probe reaches the set temperature.		*Check pins <u>2</u> & <u>10</u> , for <u>upper</u> Actuator Motor, on a dual-Evaporator machine

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6>	Rev. 1.1/1.2 Water fill exceeds 5 minutes.	1) Water supply off or major leak in the water tank, or water lines. 2) External water filter plugged.	1) Turn on water supply or check for leaks. 2) Replace, bypass or eliminate external water filter. 3) Place in Wash Mode and pull down on water plate, to lower it. On return up, water valve will energize to fill, until the short probe is reached. If water solenoid valve has power & water, but does not open, replace the valve.
	Rev. 1.3 and higher Water fill exceeds 3 minutes, then the Valve closes & waits 10 minutes, as Code 60 LED flashes. Valve then opens & tries again. This routine repeats 3X and results in a solid Code 60, if the fill is not completed on the third try.	3) Water solenoid valve inoperative. 4) Upper (short) Probe, in the Water-Level Probe Assy, may have a loose wire connection (open). 5) Common (longest) Probe, in the Water-Level Probe Assy, may have a loose connection (open). 6) Controller is bad.	4) Verify wire connection is securely crimped on top of probe & back to Controller. 5) Verify wire connection is securely crimped on top of probe & back to Controller. 6) Replace Controller.
7>	Rev. 1.1/1.2 Evaporator Temperature < 31F, during water fill only. (System opens Hot Gas Valve to compensate, until an Evaporator temp of about 38 F is reached. This temp range is adjustable from about 35-46 F)	Rev. 1.1/1.2 1) This is not necessarily a fault condition, but could indicate that the incoming water temp is very cold, which can slow down ice production, as the Hot Gas Valve continually reopens to warm the Evaporator to >38F.	1) No action required. (Increase incoming water temp to > 45F for best results) 2) Tighten switches 3) Wiring should be to the Common & Normally Closed (NC) positions, with black wire to the bottom-front NC terminal and red wire to bottom-rear NC terminal. White wires should go to the Common terminals on top. 4) Straighten bracket. 5) Cam flats should be almost opposite each other. See Water Plate Up/Down adjustment, page 35 of Service Manual.
	Rev. 1.3 and higher Both Arm-Up/Arm Down (Cam) Switches Closed (un-actuated) at the same time (not allowed)	Rev. 1.3 and higher 2) Switches are loose. 3) Switches are mis-wired. 4) Switch Bracket bent & switches not in position. 5) Switch Cams loose and/or in the wrong position 6) Arms-Up Switch stuck closed - Plate stays down. 7) Arms-Down Switch stuck closed - Plate stays up.	6) Replace stuck/shorted Arms-Up Switch or check solutions 2-5 above. 7) Replace stuck/shorted Arms-Down Switch or check solutions 2-5 above.
8>	Rev. 1.3 and higher Machine is in Full-Rinse Mode. (Left Jumper is pulled, on Controller)	1) This is an optional mode, that is not as energy efficient.	1) Replace jumper to restore normal energy-efficient minimum-rinse mode.
9>	Rev. 1.3 and higher Ice Bin Full (a cold Bin Probe will shut down the icemaker right after the next harvest is complete)	1) This is a normal- condition, indicating that the Bin is full. (Bin Probe is cold !) 2) If Code 90 is indicated, but Bin is <u>not</u> full, check for faulty Bin Probe, bad wiring to Bin Probe or faulty Control Board	1) No action required. 2) Repair wiring, replace Bin Probe or replace Controller.