

# **SECTION 8**

## **TECHNICAL DATA AND TECH TIPS**

## SERVICING INFORMATION

SERVICEABLE ELECTRICAL COMPONENTS			
SERVICEABLE PARTS	Part No.	Wattage	Resistance
COMPRESSOR	2176659	244	
Run Winding			1 - 5Ω
Start Winding			3 - 11Ω
RELAY	2183410		
OVERLOAD	2183404		
WATER PUMP	2185748	26 - 30	15.95Ω
WATER VALVE.(31 gpm)	2185531	12 nom.	277.5Ω
SOLENOID COIL (HGV)	759112	7 - 9	376Ω
THERMISTOR (Bin)	2185679		10K@ 77°F (25°C)
THERMISTOR (Evap)	2185680		10K@77°F (25°C)
PC BOARD	2185621	23	
TRANSFORMER	2185657	40	360
FAN MOTOR	2183437	12 - 15	277 - 275Ω
DRAIN PUMP (optional)	2185528		6.9Ω

1. Refrigerant charge must be applied to the high side only.
2. This unit operates on 120 VAC except for the cutter grid, electronic control board and optional light, which operate at 8.7 VAC.
3. The transformer, cutter grid and electronic control board remain energized in ON and CLEAN modes.

## THERMISTOR OPERATING PARAMETERS

EVAPORATOR THERMISTOR						
	CUT-IN		CUT-OUT		WATER VALVE OFF (during harvest)	
ICE THICKNESS	Temperature	Resistance	Temperature	Resistance	Temperature	Resistance
NORMAL	52.5°F ± .3°	18.7kΩ ± 1%	6.5°F ± .3°	69.3kΩ ± 1%	40°F ± .3°	25.9kΩ ± 1%
THICK	52.5°F ± .3°	18.7kΩ ± 1%	4.5°F ± .3°	73.5kΩ ± 1%	40°F ± .3°	25.9kΩ ± 1%
THIN	52.5°F ± .3°	18.7kΩ ± 1%	8.5°F ± .3°	65.3kΩ ± 1%	40°F ± .3°	25.9kΩ ± 1%

**NOTE:** The evaporator thermistor is clipped to the outlet tubing of the evaporator, between the two 90° bends before the accumulator. If it is determined that the ice making cycle needs to be lengthened slightly, relocate the thermistor between the second 90° bend and the 180°.

**NOTE:** If evaporator thermistor is not present or open, the electronic control will continue to make ice based on time instead of temperature. (20 minutes for ice making and 3 minutes for harvest.)

ICE BIN THERMISTOR				
	Temperature	Resistance	Temperature	Resistance
BIN SHUT-OFF	40°F ± 1°	25.9kΩ ± 3%	35°F ± 1°	29.8kΩ ± 3%

**TECH TIP:** To check the ohms of the evaporator or ice bin thermistors, stir the thermistor in a glass of ice water for two minutes. This should create a ice bath of approximately 32°F. With the thermistor submersed in the ice water check for 30000 to 33000 Ω. If the ohm readings fall between this range, the thermistor is good.

## CYCLE CHARTS

SECONDS	ON CYCLE						
	POWER ON START UP ONLY			OPERATION			
	120	60	120	ICE MAKING	HARVEST	ICE BIN FULL	*ICE BIN NOT FULL
WATER VALVE				>6.5°F	<52°F	<35°F	>41°F
CONDENSER FAN							
HOT GAS VALVE							
WATER PUMP							
COMPRESSOR							

\* Return to Ice Making

SECONDS	CLEAN CYCLE					
	DIAGNOSTICS					CLEAN CYCLE 47 MINUTES
	5	5	5	5	5	
WATER VALVE						
CONDENSER FAN						
HOT GAS VALVE						
WATER PUMP						
COMPRESSOR						
LED						

Press CLEAN switch for diagnostic mode.

To exit Clean/Diagnostic Cycle press ON or OFF.

If a short or open thermistor is detected the LED will flash for 5 seconds before the Clean Cycle is started.

## PERFORMANCE AND PRODUCTION TABLES

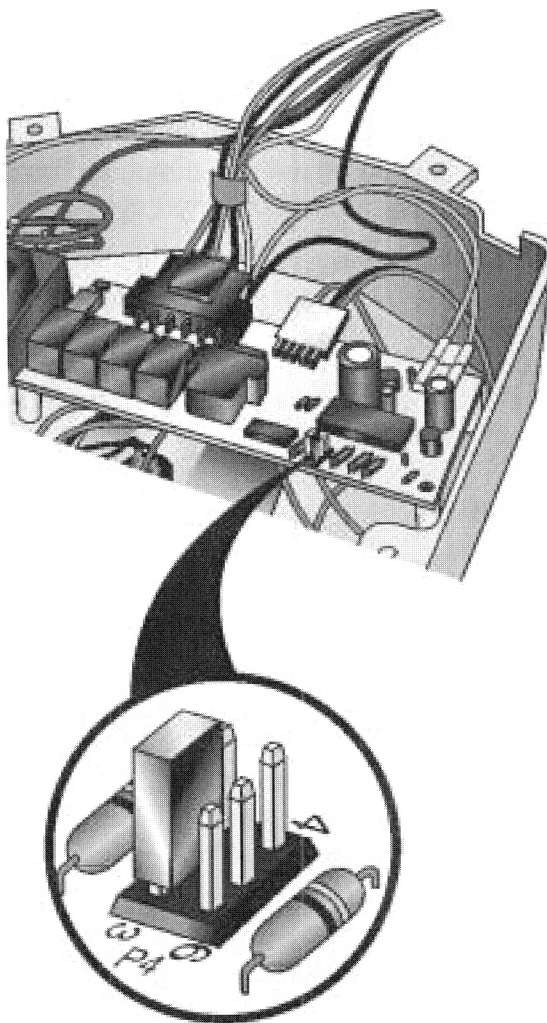
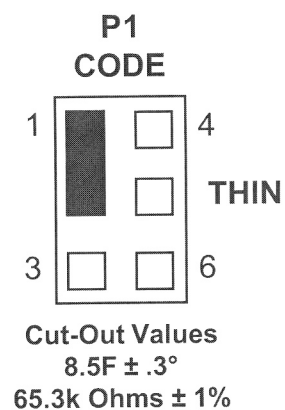
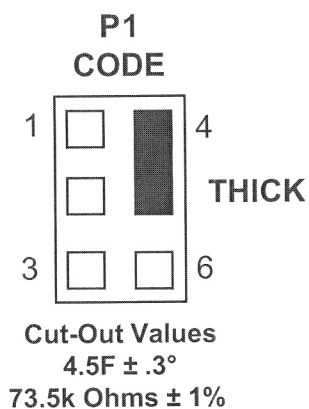
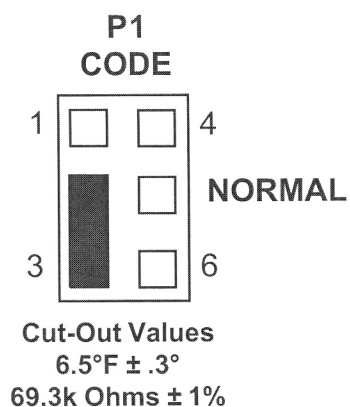
PERFORMANCE DATA			
Temperature	Suction Pressure at End of Freeze Cycle	Head Pressure at End of Freeze Cycle	Cycle Time
Ambient 70°F (21°C) Water 60°F (16°C)	1 - 4 psi	65 - 80 psi	18 - 22 Min.
Ambient 90°F (32°C) Water 60°F (16°C)	2 - 5 psi	85 - 100 psi	21 - 27 Min.
Ambient 100°F (38°C) Water 60°F (16°C)	2 - 6 psi	85 - 105 psi	28 - 35 Min.
Ambient 70°F (21°C) Water 80°F (27°C)	1 - 4 psi	65 - 80 psi	20 - 25 Min.
Ambient 90°F (32°C) Water 80°F (27°C)	2 - 5 psi	85 - 100 psi	23 - 30 Min.
Ambient 100°F (38°C) Water 80°F (27°C)	2 - 6 psi	85 - 105 psi	30 - 38 Min.

		TYPICAL ICE PRODUCTION, LBS., 24 HOURS			
Ambient Temperature	100°F (38°C)	37	36	35	34
	90°F (32°C)	44	42	40	38
	80°F (27°C)	42	40	38	36
	70°F (21°C)	44	43	41	40
		50°F (10°C)	60°F (16°C)	70°F (21°C)	80°F (27°C)
Water Temperature					



## CIRCUIT BOARD JUMPERS (To Adjust Ice Thickness)

**NOTE:** This information can also be found on the control board.

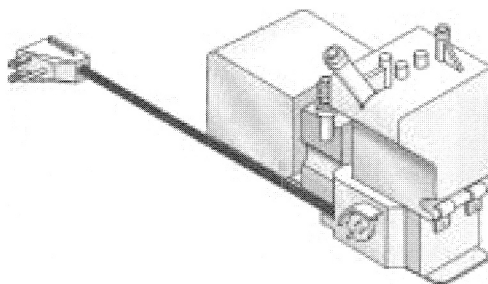


## Optional Drain Pump

The optional drain pump consists of a motor, a pump that is magnetically coupled to the motor, a water reservoir with sensing devices, an electronic control board that controls the water level in the reservoir using the sensing probes.

### How It Works

1. Water enters the pump reservoir from the ice machine bin.
2. The reservoir has three probes for sensing water level:
  - High Water Cut-In
  - High Water Shut Off
  - Common



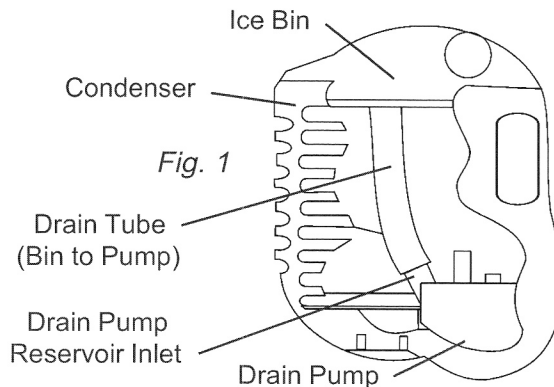
As the water level rises to contact the high water cut-in probe in the reservoir, a signal is sent to the electronic control board. The control board performs a low voltage comparison by water contact between the high water cut-in and common probes. If water is contacting both probes the pump motor turns on and the pump runs.

Once the water level drops and breaks the contact between the high water cut-in and common probes, the electronic control board will turn the pump motor off after a built-in 12 second delay. This delay prevents the motor from short cycling and over heating.

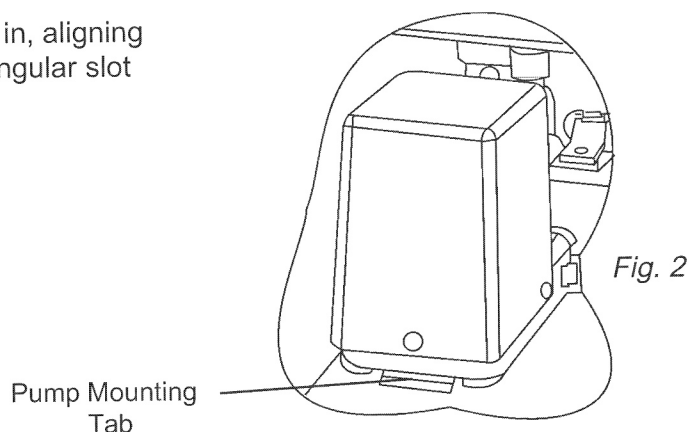
3. If the the drain outlet becomes clogged to the point where water will not be allowed to be pumped out or a large volume of water enters the reservoir quickly, the high water shut off probe will come in contact with the water. If this occurs, the signal sent to the electronic control board will trigger a complete shut down of the ice machine. The pump motor will continue to function in this mode until the reservoir is empty or the motor cycles off from over heating. (The motor is equipped with a resettable thermal fuse.)

### Drain Pump Installation

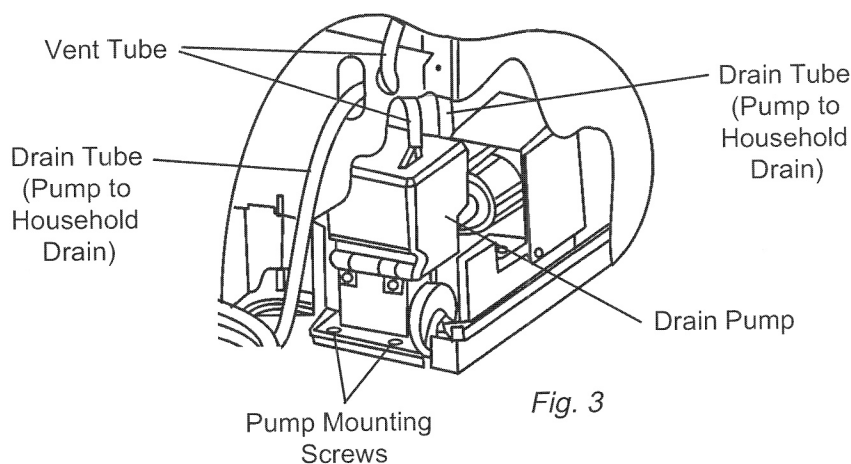
1. Pull the ice machine from its installed position.
2. Disconnect the power supply cord from the wall outlet.
3. Remove the seven screws securing the rear component compartment cover to the cabinet.
4. Slide the drain pump into the back of the cabinet.
5. If the unit already has a drain tube connected to the ice bin outlet, remove it and the clamp attached to the bin. (Clamp will be used later.)
6. Install the new drain tube (Part No. 2185672) provided in the drain pump kit. Use the clamp removed earlier to secure the new drain tube to the bin. (Fig. 1).



7. Install the drain pump. Carefully slide in, aligning the tab on the pump base to the rectangular slot in the unit base. (Fig. 2)



8. Attach the drain tube from the bin to the pump inlet. Install the vent tube and drain tube to the household drain before securing the pump to the unit base. The vent tube and drain tube should be threaded through the component compartment cover. (Fig. 3)



9. Coil the power cord from the Ice Maker into a figure 8. Wrap electrical tape around the center of the figure 8. Place the wrapped cord between the compressor and the drain pump. Install the plug on the power cord to the electrical outlet of the drain pump.
9. Line up the two (2) holes at the rear of the pump with the two holes in the unit base and install two (2) #8 x 1/2" hex-head screws. (Fig. 3)
10. Secure the vent tube to the back of the ice maker using three (3) clamps and three (3) #8 x 1/2" hex-head screws supplied in the drain pump kit. (Fig. 4)
11. Check all connections for leaks.
12. Reinstall the component compartment cover.
13. Connect the power cord from the drain pump to the house hold electrical supply in accordance with National Electrical Code and local codes and ordinances.

