



# HOSHIZAKI

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## Service Manual

### Cubelet Icemaker/Dispenser

#### Model

DCM-300BAH(-OS)

DCM-500BAH(-OS), BWH(-OS)

DCM-751BAH(-OS), BWH(-OS)

DCM-752BAH(-OS)



[hoshizakiamerica.com](http://hoshizakiamerica.com)

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**⚠ WARNING**

Only qualified service technicians should install and service the appliance. To obtain the name and phone number of your local Hoshizaki Certified Service Representative, visit [www.hoshizakiamerica.com](http://www.hoshizakiamerica.com). No service should be undertaken until the technician has thoroughly read this Service Manual. Failure to service and maintain the appliance in accordance with this manual will adversely affect safety, performance, component life, and warranty coverage and may result in costly water damage. Proper installation is the responsibility of the installer. Product failure or property damage due to improper installation is not covered under warranty.

Hoshizaki provides this manual primarily to assist qualified service technicians in the service and maintenance of the appliance.

Should the reader have any questions or concerns which have not been satisfactorily addressed, please call, send an e-mail message, or write to the Hoshizaki Technical Support Department for assistance.

Phone: 1-800-233-1940; (770) 487-2331

E-mail: [tech-support@hoshizaki.com](mailto:tech-support@hoshizaki.com)

**HOSHIZAKI AMERICA, INC.**

618 Highway 74 South

Peachtree City, GA 30269

Attn: Hoshizaki Technical Support Department

**NOTE:** To expedite assistance, all correspondence/communication **MUST** include the following information:

- Model Number \_\_\_\_\_
- Serial Number \_\_\_\_\_
- Complete and detailed explanation of the problem.

## **IMPORTANT**

This manual should be read carefully before the appliance is serviced. Read the warnings and guidelines contained in this manual carefully as they provide essential information for the continued safe use, service, and maintenance of the appliance. Retain this manual for any further reference that may be necessary.

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## Important Safety Information

Throughout this manual, notices appear to bring your attention to situations which could result in death, serious injury, damage to the appliance, or damage to property.

**⚠ WARNING** Indicates a hazardous situation which could result in death or serious injury.

**NOTICE** Indicates a situation which could result in damage to the appliance or property.

**IMPORTANT** Indicates important information about the use and care of the appliance.

### **⚠ WARNING**

The appliance should be destined only to the use for which it has been expressly conceived. Any other use should be considered improper and therefore dangerous. The manufacturer cannot be held responsible for injury or damage resulting from improper, incorrect, and unreasonable use. Failure to service and maintain the appliance in accordance with this manual will adversely affect safety, performance, component life, and warranty coverage and may result in costly water damage.

**To reduce the risk of death, electric shock, serious injury, or fire, follow basic precautions including the following:**

- Only qualified service technicians should install and service the appliance.
- The appliance must be installed in accordance with applicable national, state, and local codes and regulations
- Electrical connection must be hard-wired and must meet national, state, and local electrical code requirements. Failure to meet these code requirements could result in death, electric shock, serious injury, fire, or damage to equipment.
- The appliance requires an independent power supply of proper capacity. See the nameplate for electrical specifications. Failure to use an independent power supply of proper capacity can result in a tripped breaker, blown fuse, damage to existing wiring, or component failure. This could lead to heat generation or fire.
- **THE APPLIANCE MUST BE GROUNDED.** Failure to properly ground the appliance could result in death, serious injury, or damage to equipment.
- To reduce the risk of electric shock, do not touch the power switch or control switch with damp hands.
- Before servicing, move the power switch and control switch to the "OFF" position, then turn off the power supply. Lockout/Tagout to prevent the power supply from being turned back on inadvertently.
- Do not make any alterations to the appliance. Alterations could result in electric shock, injury, fire, or damage to the appliance.
- Do not place fingers or any other objects into the ice discharge opening.
- The appliance is not intended for use by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

**⚠ WARNING, continued**

- Children should be properly supervised around the appliance.
- Do not climb, stand, or hang on the appliance or allow children or animals to do so. Serious injury could occur or the appliance could be damaged.
- Do not use combustible spray or place volatile or flammable substances near the appliance. They might catch fire.
- Keep the area around the appliance clean. Dirt, dust, or insects in the appliance could cause harm to individuals or damage to the appliance.

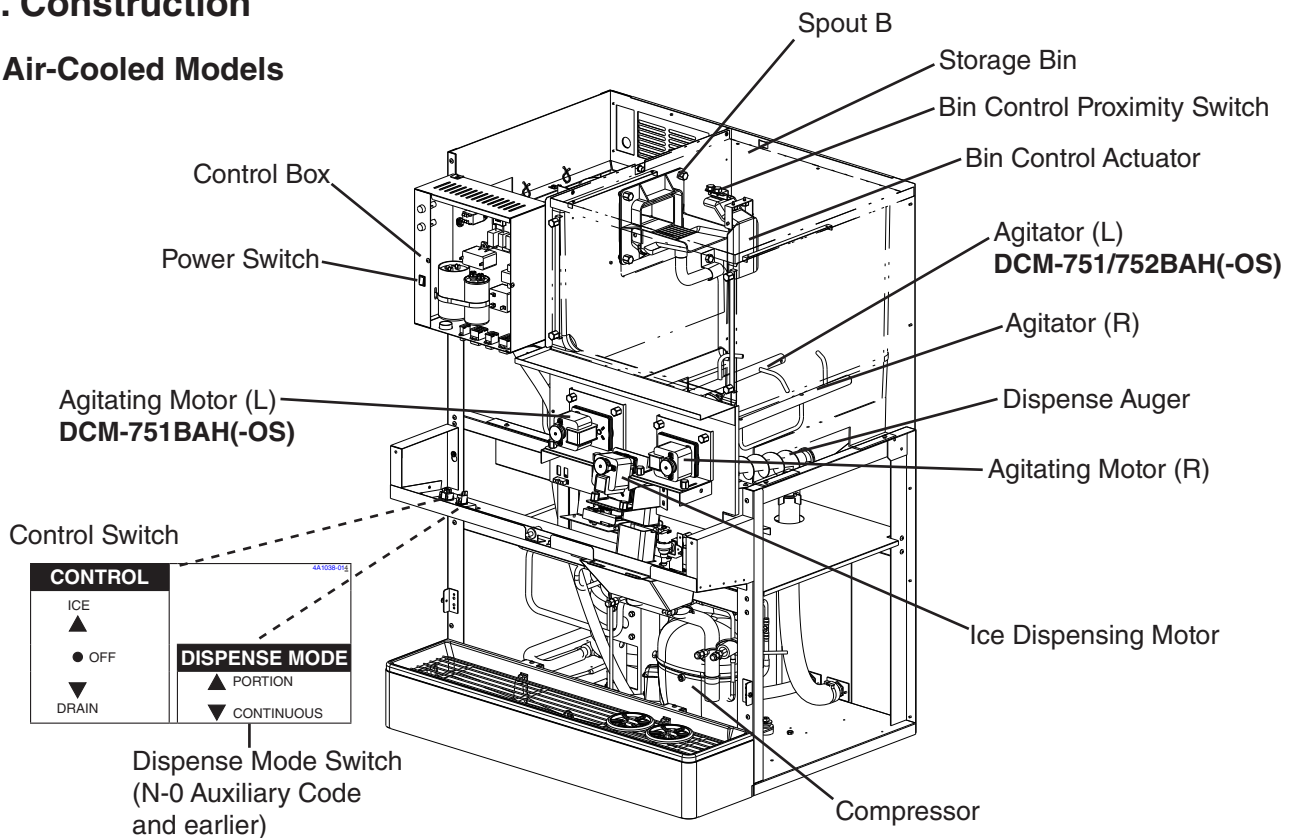
**NOTICE**

- Follow the instructions in this manual carefully to reduce the risk of costly water damage.
- In areas where water damage is a concern, install in a contained area with a floor drain.
- Install the appliance in a location that stays above freezing. Normal operating ambient temperature must be within 45°F to 100°F (7°C to 38°C).
- Do not leave the appliance on during extended periods of non-use, extended absences, or in sub-freezing temperatures. To properly prepare the appliance for these occasions, follow the instructions in "VI. Preparing the Appliance for Periods of Non-Use."
- Keep ventilation openings, in the appliance enclosure or in the built-in structure, clear of obstruction.
- Do not place objects on top of the appliance.
- The storage bin is for ice use only. Do not store anything else in the storage bin.

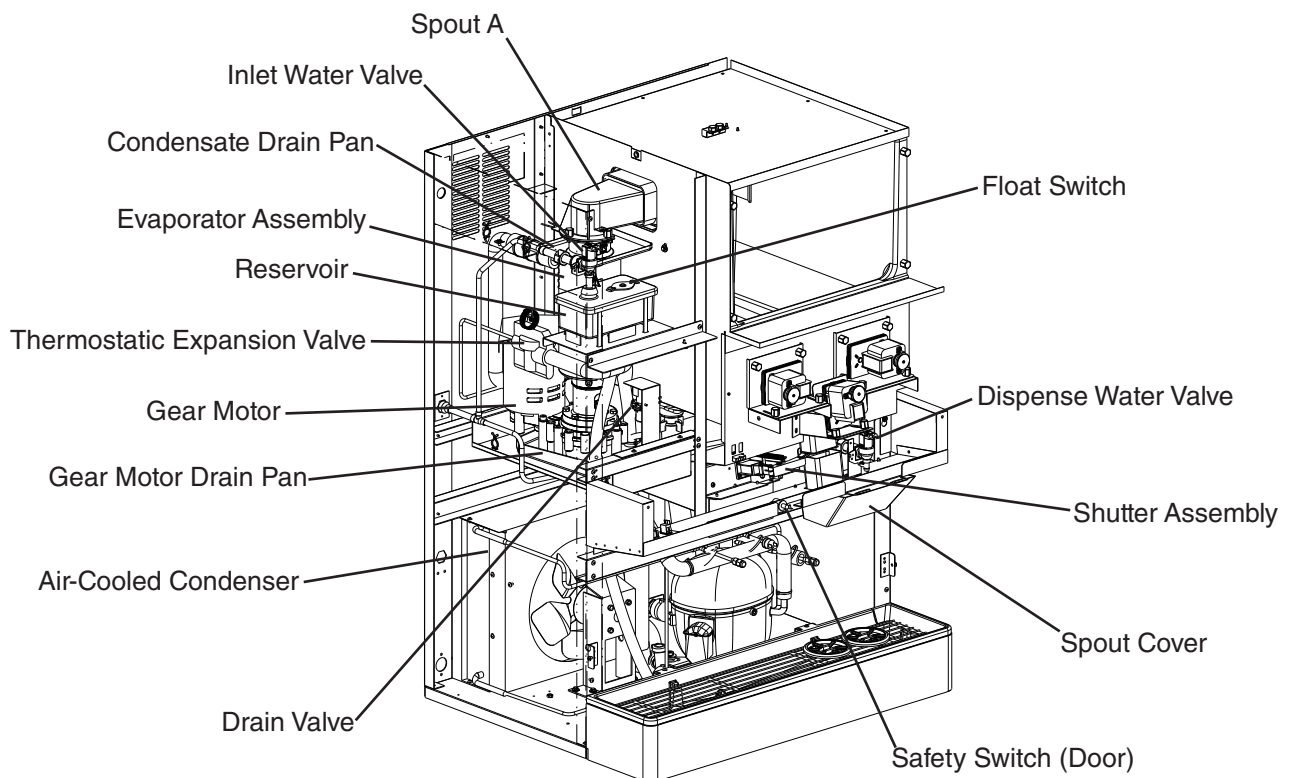
# I. Construction and Water/Refrigeration Circuit Diagrams

## A. Construction

### 1. Air-Cooled Models

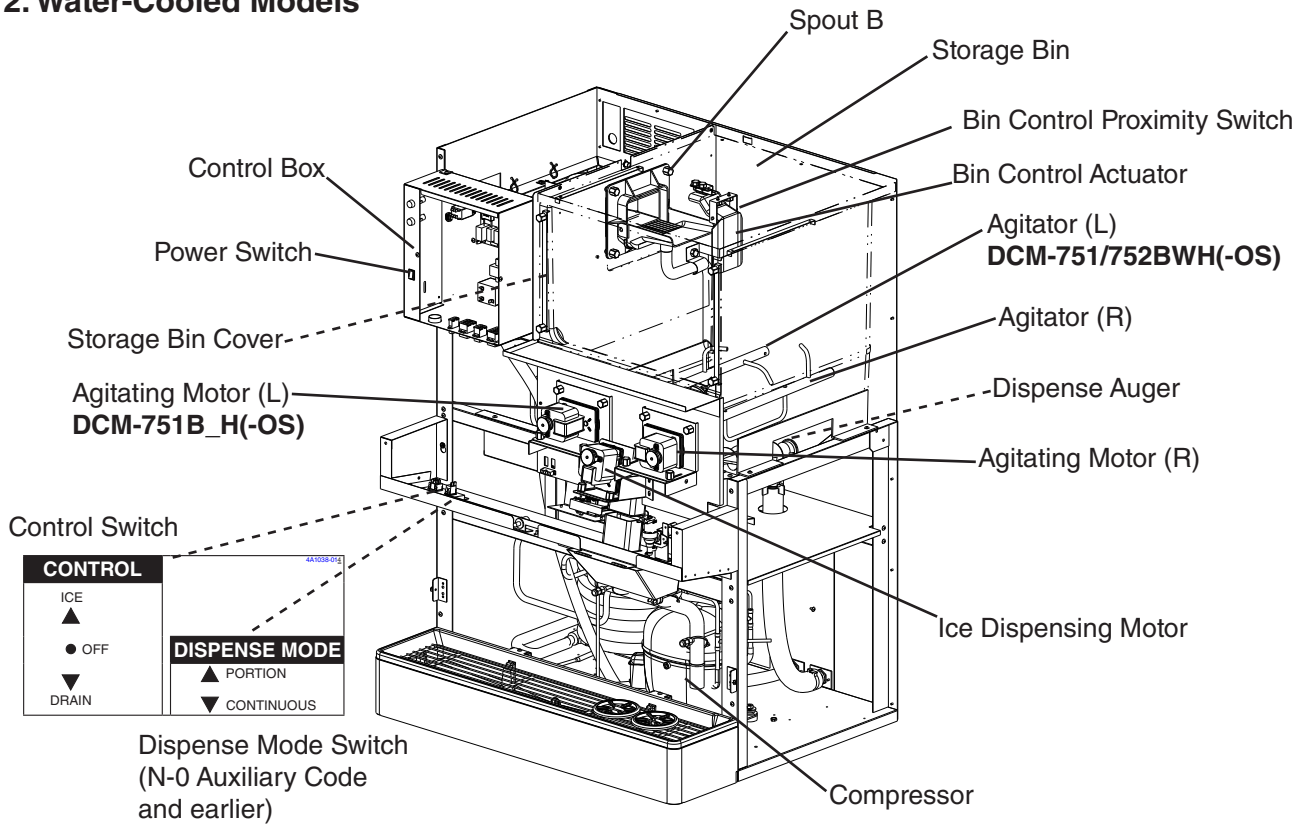


Model Shown: DCM-751BAH

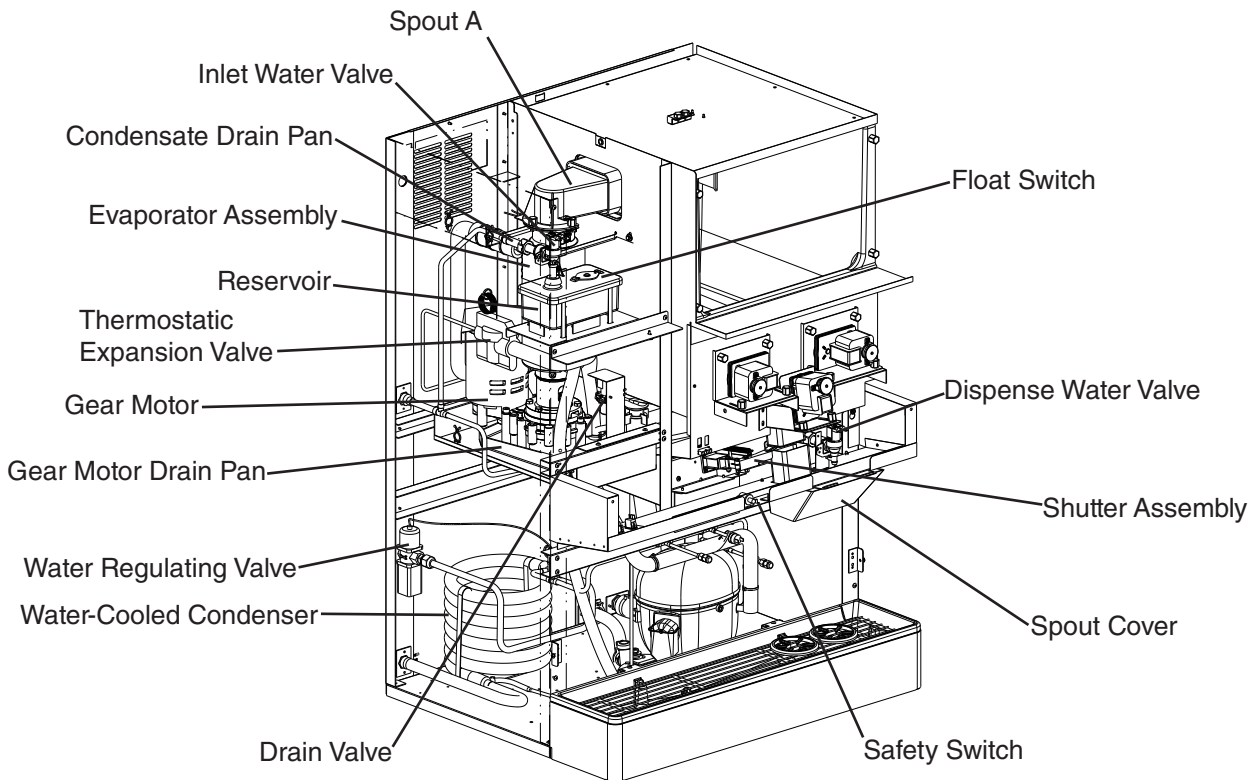


Model Shown: DCM-751BAH

## 2. Water-Cooled Models

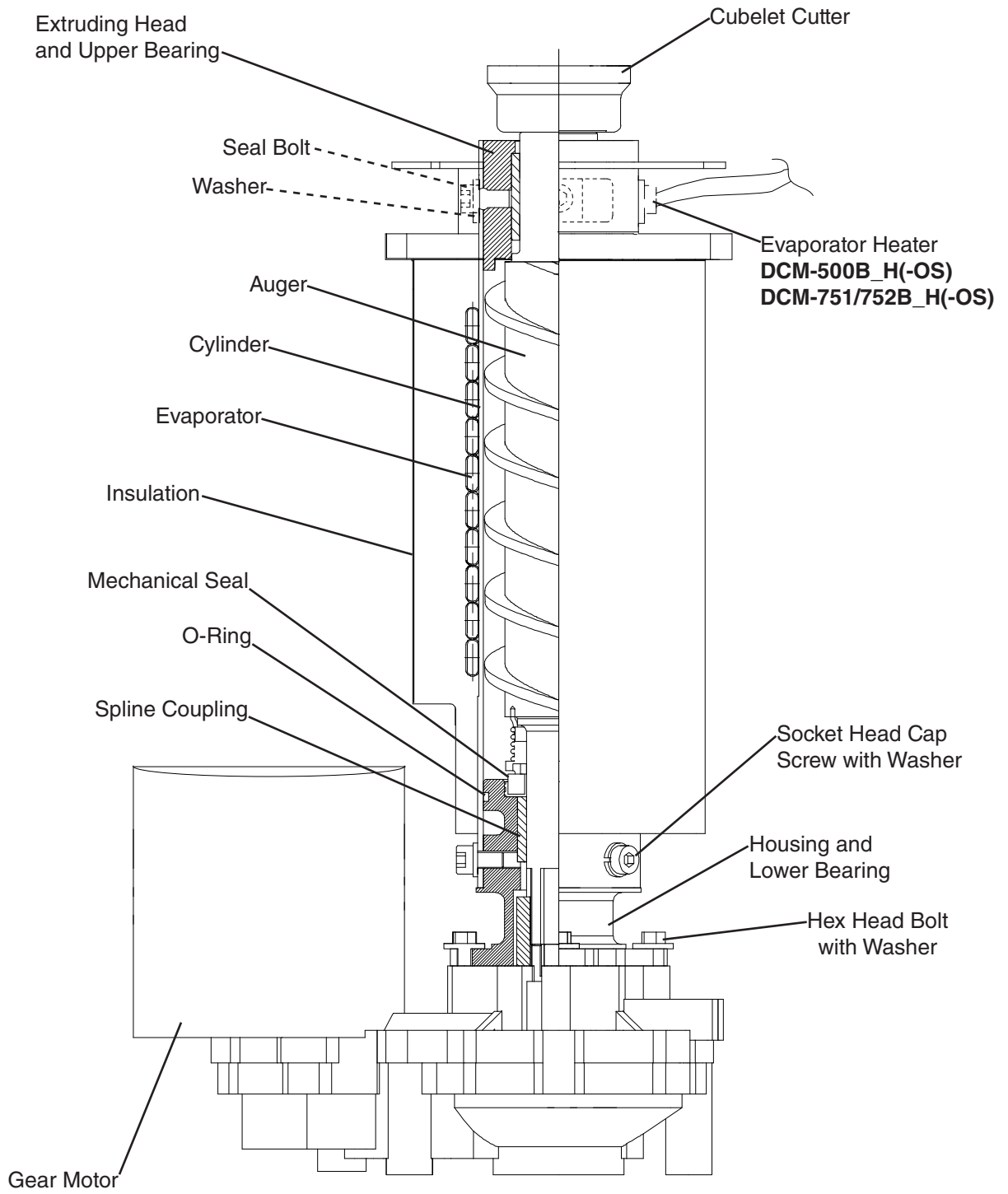


Model Shown: DCM-751BWH



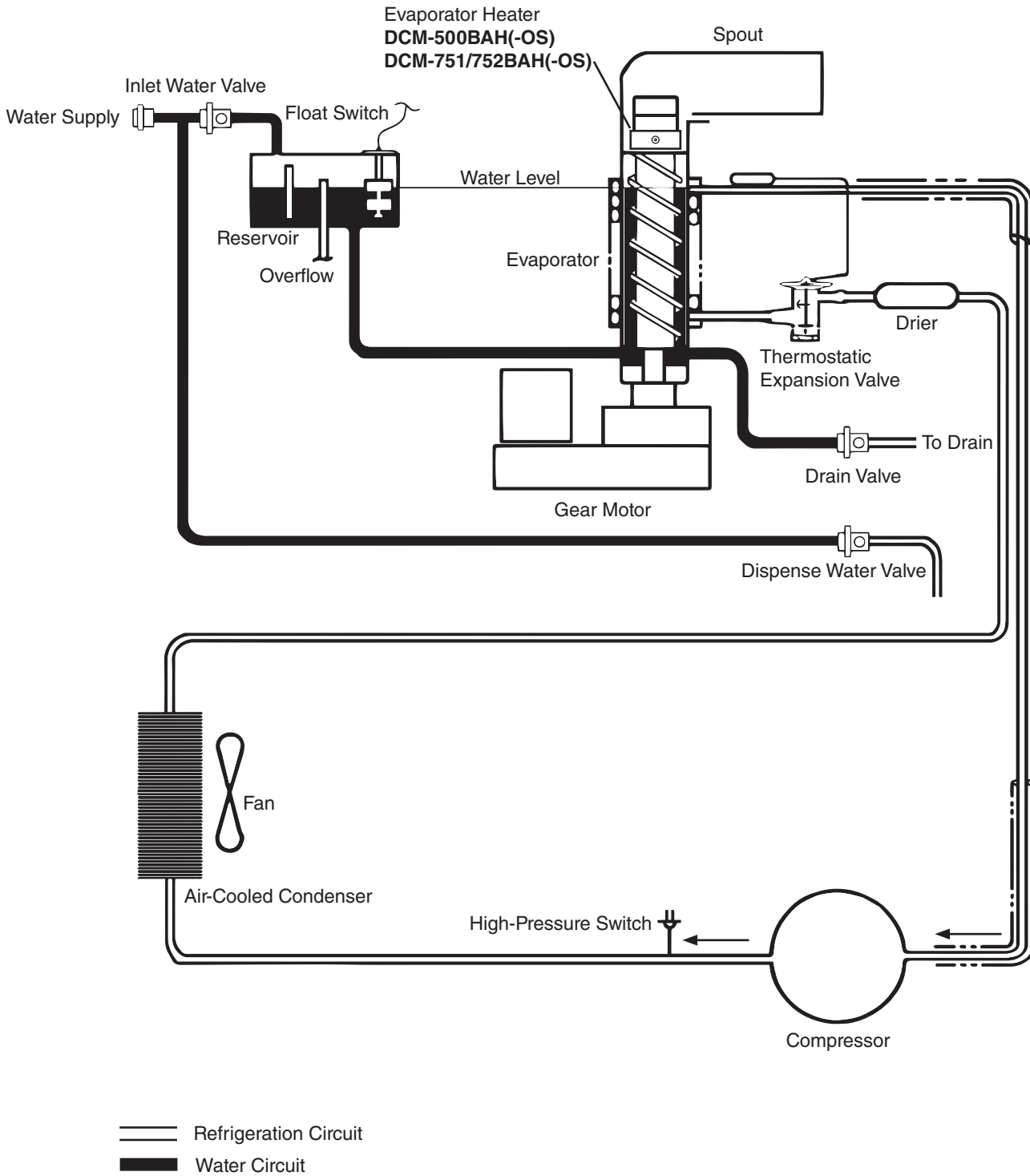
Model Shown: DCM-751BWH

## B. Icemaking Unit

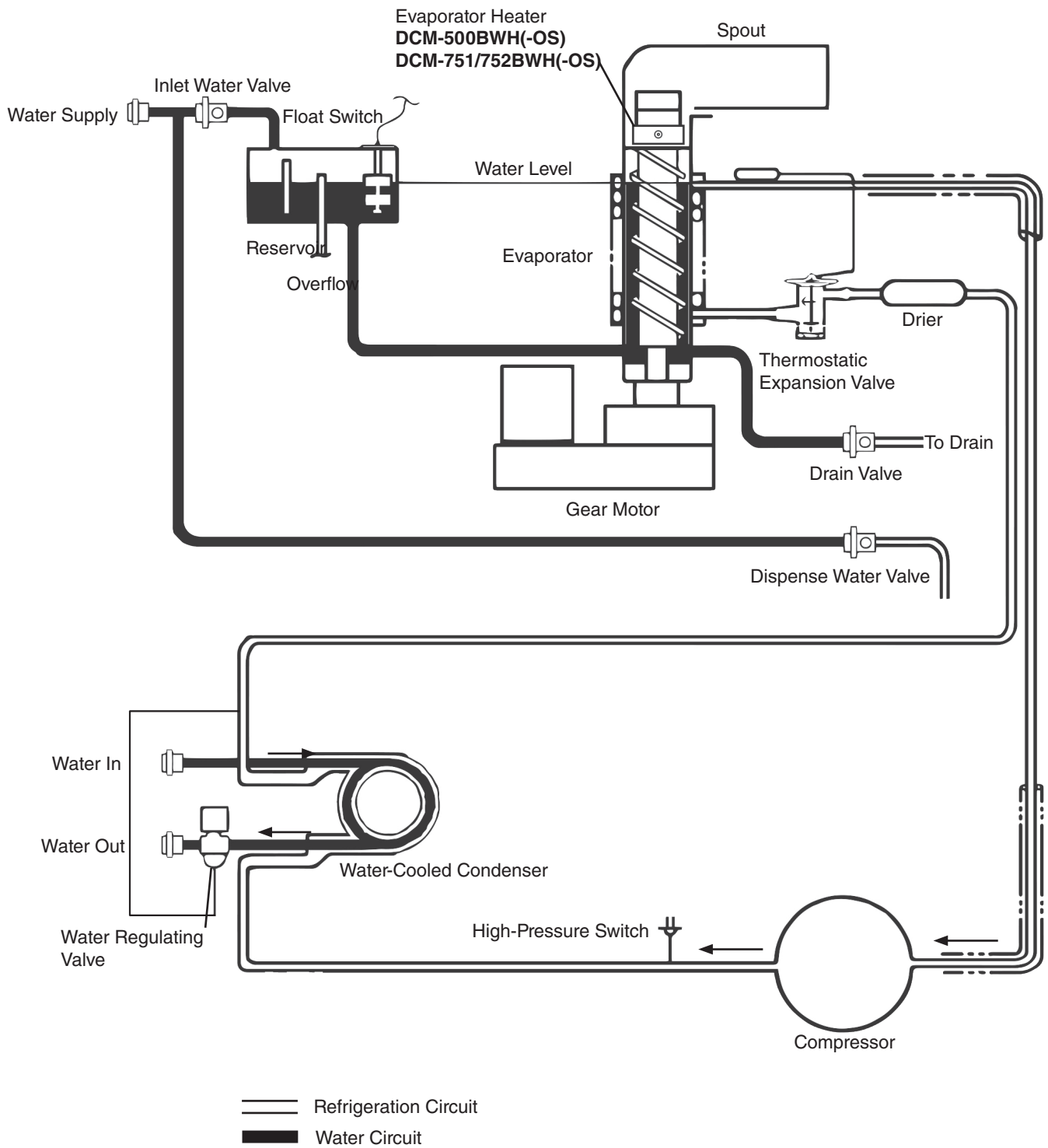


# C. Water/Refrigeration Circuit Diagrams

## 1. Air-Cooled Models

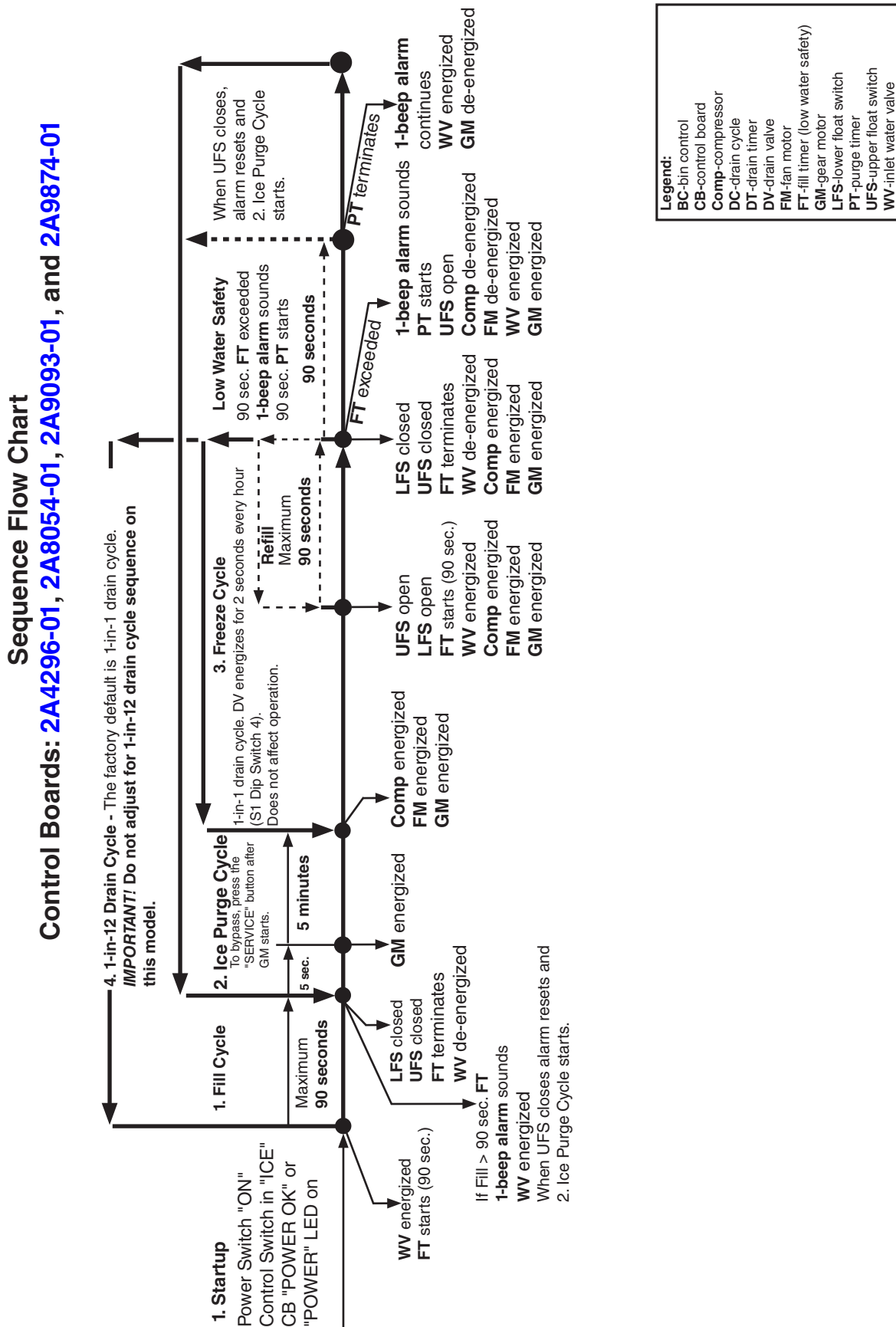


## 2. Water-Cooled Models



## II. Sequence of Operation and Service Diagnosis

### A. Sequence of Operation Flow Chart

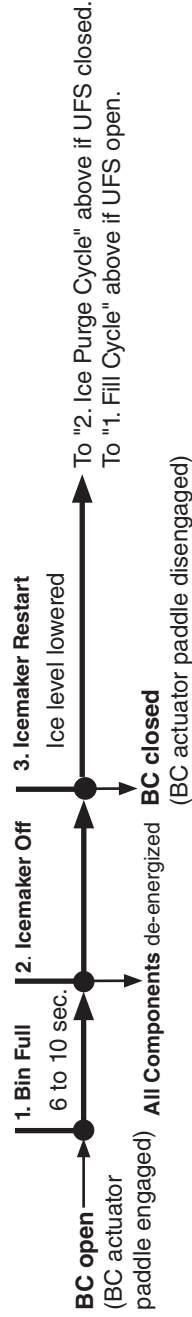


## Shutdown Flow Chart

Control Boards: [2A4296-01](#), [2A8054-01](#), [2A9093-01](#), and [2A9874-01](#)

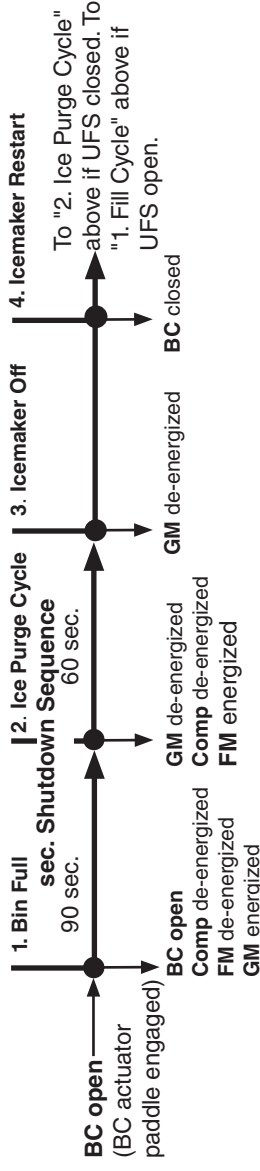
### 2. Bin Control Shutdown & Restart

- A. [2A4296-01](#): 6 to 10 sec. Shutdown  
 DCM-751B\_H(-OS) only  
 E-0 and Earlier  
 Dip Switch 8 "ON"  
 Dip Switch 9 "ON" or "OFF"



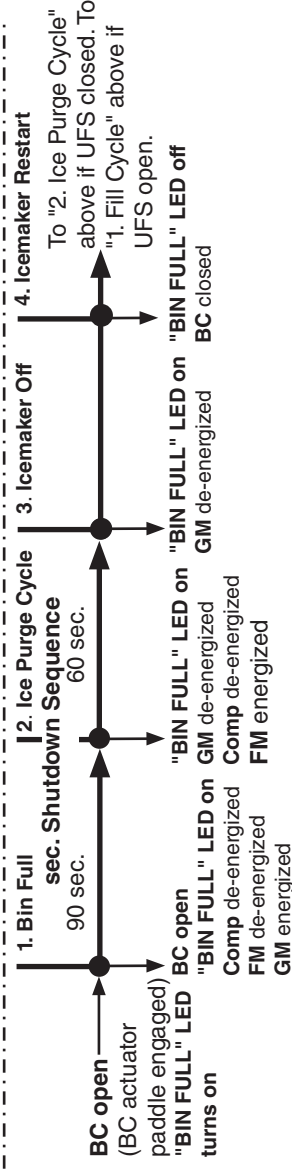
### B. [2A8054-01](#) and [2A9093-01](#)

- 90/60 sec. Shutdown  
 Dip Switch 8 "ON" and  
 Dip Switch 9 "ON"  
 DCM-751B\_H(-OS)  
 F-0 and later  
 DCM-300/500B\_H(-OS) all



### B. [2A9874-01](#):

- 90/60 sec. Shutdown  
 Dip Switch 8 "ON" and  
 Dip Switch 9 "ON"  
 DCM-751B\_H(-OS)  
 F-0 and later  
 DCM-300/500B\_H(-OS) all



## B. Service Diagnosis

### a) Auxiliary Code N-0 and Earlier

#### **WARNING**

- The appliance should be diagnosed and repaired only by qualified service personnel to reduce the risk of death, electric shock, serious injury, or fire.
- Risk of electric shock. Use extreme caution and exercise safe electrical practices.
- Moving parts (e.g., fan blade) can crush and cut. Keep hands clear.
- **CHOKING HAZARD:** Ensure all components, fasteners, and thumbscrews are securely in place after the appliance is serviced. Make sure that none have fallen into the storage bin.
- Make sure all food zones in the appliance are clean after service. For cleaning procedures, see the instruction manual or the maintenance label.

#### 1. Ice Production Check

To check production, prepare a bucket or pan to catch the ice and a set of scales to weigh the ice. Move the control switch to the "OFF" position. Dispense all ice from the ice bin. Move the control switch to the "ICE" position. After the appliance has operated for 10 to 20 minutes, dispense and catch all the ice produced within the 10 minutes.

Note: The ice dispense time control times out after 6-20 sec. Re-engage every 6-20 sec.

Weigh the ice to establish the batch weight (minus the weight of the container).

Multiply the batch weight by 144 to calculate the total production in 24-hr. When confirming production or diagnosing low production, see "VIII.A. Specification & Performance Data Sheets."

## 2a. Diagnostic Procedure

This diagnostic procedure is a sequence check that allows you to diagnose the electrical system and components. Before proceeding, check for correct installation, proper voltage per appliance nameplate, and adequate water supply (10 PSIG to 113 PSIG). "Check that both the 24VAC circuit fuse and the 115VAC GM fuse are good.

Note: • When checking high voltage (115VAC), always choose a neutral (W) wire to establish a good neutral connection. **IMPORTANT! Appliance will not start unless the safety switch is engaged.**

- When checking low voltage (24VAC), always choose a neutral (LBU) wire.
  - When checking CB DC voltage (5VDC), always place the red test lead from the multimeter to CB K4 pin #1 (pin closest to CB K3 connector). See "II.C. Control Board Check."
  - To speed up the diagnostic process, the ice purge cycle may be bypassed by pressing the "SERVICE" button on the control board after the gear motor starts. **WARNING! Risk of electric shock. Care should be taken not to touch live terminals.**
  - If the icemaker is in alarm, see "III.B. LED Lights and Audible Alarm Safeties."
  - FM and EH energize when "GM" LED turns on.
  - CB monitors the following switches with 5VDC during the icemaking process: Control Switch (CS), High-Pressure Switch (HPS), Float Switch (FS), Compressor Control Relay (CCR), and Bin Control (mechanical). When 5VDC is present across any of these switches, the switch is open.
- 1) Turn on the power supply. Remove the front panel. Move the power switch to the "ON" position, replace the front panel in its correct position.
  - 2) Move the control switch to the "OFF" position, pause momentarily, then move to the "DRAIN" position. Allow the water system to drain for 5 minutes.

Note: a) A momentary pause in the "OFF" position is necessary to de-energize the control board when moving the control switch between "ICE" and "DRAIN." Otherwise there is a delay of several minutes before the new selection takes effect.

b) If the control switch is left in the "DRAIN" position for 10 minutes or more, a 2-beep alarm sounds every 5 seconds. Move the control switch out of the "DRAIN" position to clear the alarm.
  - 3) Remove the front panel, then move the power switch to the "OFF" position.
  - 4) Remove the control box cover for access to the CB.
  - 5) Check the CB S1 dip switch settings, see "III.C.1. Default Dip Switch Settings" to assure that they are in the correct positions.
  - 6) Engage the safety switch.

- 7) **Startup—"POWER OK" LED turns on:** Move the power switch to the "ON" position, then move the control switch to the "ICE" position. CB "POWER OK" LED turns on. **IMPORTANT! Appliance will not start unless the safety switch is engaged.** "POWER OK" LED **Diagnosis:** Check that CB "POWER OK" or "POWER" LED is on. If not, check for proper power supply voltage (115VAC) input to CT. If 115VAC is not present, check the breaker, power switch, and safety switch. Next, check that the PPR (DCM-75\_H(-OS) only) is de-energized and contacts between PPR #6 (BR) and #2 (BK) are closed. Check for proper control voltage (24VAC) output from CT. Next, check the 24VAC 1A fuse. If open, replace fuse. Check for 24VAC at CB K8 #1 (W/R) to CB K8 #2 (LBU). If 24VAC is not present, check continuity of control switch. If open, replace. If 24VAC is present between CB K8 #1 (W/R) and CB K8 #2 (LBU), and "POWER OK" LED is off, replace CB.
- BC Diagnosis:** Remove the bin cover and check that the actuator paddle is not engaged (switch closed). Check for continuity across BC proximity switch. This can be checked at CB K8 #3 GY and CB K8 #4 GY. When BC proximity switch is closed 0VDC is read across CB K8 #3 (GY) and CB K8 #4 (GY). 5VDC is present between CB K8 #3 (GY) or CB K8 #4 (GY) to CB K4 pin #1 (pin closest to CB black K3). If 5VDC is not present, replace CB. Note: Be sure safety switch is engaged while checking voltages.
- HPS Diagnosis:** HPS automatically resets when refrigeration circuit high-side pressure is within an acceptable range. 5VDC is supplied from CB K9 #3 (Y) and back onto CB K9 #4 (Y). If 5VDC is not present at CB K9 #3 (Y) to CB K4 pin #1 (pin closest to CB black K3) and CB "POWER OK" LED is on, replace CB. If refrigerant pressures have returned to an acceptable range and HPS does not close, replace HPS. If pressures have not equalized, and refrigeration circuit high-side pressure does not drop, recover, evacuate, and recharge if necessary. On air-cooled model, check that the condenser is not dirty or clogged, check for proper FM operation and fan blade for binding. On water-cooled model, check WRV and water flow in and out of condenser. Check for refrigeration circuit refrigerant restriction (TXV and drier).
- 8) **Fill Cycle – "WTRIN" LED is on.** WV energizes. The 90-sec. low water safety timer begins. LFS closes. Nothing occurs at this time. The reservoir continues to fill until UFS closes, terminating the 90-sec. low water safety timer, starting the 30-min. freeze timer, and de-energizing WV.
- Diagnosis:** Check that "WTRIN" LED turns on and water fills the reservoir. If not, check for water supply line shut-off valve closed, restricted water filters, and restricted WV screen. Next, check for 24VAC at CB K2 #8 (O or W/BR) to neutral (LBU). If 24VAC is not present, replace CB. If 24VAC is present, turn off the power switch, disconnect the WV wires and check WV solenoid continuity. If open, replace WV. Reconnect WV wires, move the power switch to the "ON" position, then check that DV is not leaking by. Check that WV shuts off when UFS closes.
- Note: Low Water Safety–** If UFS remains open 90 sec. after WV energizes, a 1-beep alarm sounds. This alarm resets automatically once UFS closes.

9) **Ice Purge Cycle – "GM" LED is on.** 5-sec. GM delay timer and 30-min. freeze timer start. WV de-energizes and "WTRIN" LED turns off. Once the 5-sec. GM delay timer terminates, GM, CCR, and EH (if applicable) energize. CCR cannot energize unless GM circuit is complete (GM external protector and GM internal protector). Once CCR energizes, CB K9 #5 W/O and CB K9 #6 W/O 5VDC circuit closes and ice purge timer starts (1-min. or 5-min.). See "II.C.2a)c Compressor Control Relay (CCR)." If CCR de-energizes, CB K9 #5 W/O and CB K9 #6 W/O circuit opens and an 8-beep alarm occurs. See "III.B. LED Lights and Audible Alarm Safeties." Note: To bypass ice purge cycle and go straight to freeze cycle, press the "SERVICE" button on CB after GM energizes.

**Diagnosis CB:** Check that UFS closed, WV LED turned off and WV de-energized. If UFS is closed, "WV" LED is off, and "GM" LED is off, replace CB. If "GM" LED is on and GM is off, confirm 115VAC at CB K1 #2 (BR) to neutral (W). If 115VAC is not present, check for loose connection from power switch. If 115VAC is present, check for 115VAC at CB K1 #3 (DCM-300/500/752 pink (P), DCM-751 dark blue (DBU)) to neutral (W). If 115VAC is not present, replace CB.

**Diagnosis GM:** If 115VAC is present at CB K1 #3 (DCM-300/500/752 pink (P), DCM-751 dark blue (DBU)) to neutral (W), check GM fuse, GM internal protector, GM external protector, GM windings and capacitor, and GM coupling between auger and GM.

**Diagnosis CCR:** See "II.C.2a)c. Compressor Control Relay." Once ice purge timer terminates (1-min. or 5-min.) or the "SERVICE" button is pressed, freeze cycle begins.

**Diagnosis EH (DCM-500/751/752):** EH energizes with GM. If EH doesn't energize check EH continuity. Replace as needed.

10) **Freeze Cycle – "COMP" LED is on.** Ice purge timer terminates (1-min. or 5-min.) or the "SERVICE" button is pressed. "COMP" LED turns on. "GM" LED remains on. Comp and FM energize. GM, CCR, and EH (DCM-500/751/752) continue. Ice production begins 4 to 6 minutes after Comp energizes depending on ambient and water conditions.

**Diagnosis Comp:** Check that "COMP" LED is on and that Comp energizes. If "COMP" LED is off, confirm ice purge timer has terminated (1-min. or 5-min.). Check for 0VDC across CB K9 #5 (W/O) and CB K9 #6 (W/O). If 5VDC is present, CCR contacts are open. Check for 115VAC at CCR #7 (R) to CCR #8 (W). If 115VAC is present, check CCR continuity between CCR #3 (W/O) and CCR #5 (W/O). If open, replace CCR. If closed and "COMP" LED remains off, replace CB. If "COMP" LED is on and Comp is off, check for 115VAC at CB X1 brown (BR) wire to neutral (W) and CB X1 red (R) wire to neutral (W). If 115VAC is present on CB X1 brown (BR) wire and not on CB X1 red (R) wire, replace CB. If 115VAC is present on CB X1 red (R) wire, check Comp external protector, motor windings, start relay, and capacitors.

Note: If CCR de-energizes, CB K9 #5 W/O and CB K9 #6 W/O circuit opens, Comp de-energizes and an 8-beep alarm occurs. See "III.B. LED Lights and Audible Alarm Safeties."

**Diagnosis FM:** If FM does not energize, check FM capacitor, motor windings, and bearings.

- 11) **Refill Cycle/Low Water Safety** – As ice is produced, the water level in the reservoir drops. UFS opens. Nothing occurs at this time. When LFS opens, WV energizes, 90-sec. low water safety timer (fill timer) starts. Comp, GM, CCR, and FM continue. When UFS closes, WV de-energizes, 90-sec. low water safety timer (fill timer) terminates and 30-min. freeze timer resets. If UFS remains open 90 sec. after WV energizes (fill timer exceeded), a 90-sec. shutdown cycle starts. Comp and FM de-energize and CB signals a 1-beep alarm every 5 sec. 90-sec. ice purge timer starts. GM and CCR continue to clear ice from the evaporator. 90-sec. ice purge timer terminates, GM and CCR de-energize. WV and 1-beep alarm continue until UFS closes. **Diagnosis** – Check that "WTRIN" LED is on. If not, check LFS. See "II.E. Float Switch Check and Cleaning." If LFS is open and "WTRIN" LED is off, replace CB. If "WTRIN" LED is on, check that the reservoir fills. If not, check the water supply line, restricted water filters, WV solenoid, restricted WV screen. If WV is energized and refill exceeds 90-sec. low water safety timer (fill timer), check DV leaking by or open UFS. See "II.E. Float Switch Check and Cleaning."  
 Note: Each time UFS closes, 30-min. freeze timer starts. The 30-min. freeze timer resets when UFS closes again. If UFS does not close again within 30 min., CB shuts down the icemaker and sounds a 5-beep alarm every 5 sec. See "III.B. LED Lights and Audible Alarm Safeties."

12) **Shutdown**

- a) **2A4296-01: Dip switch 8 "ON" (dip switch 9 is irrelevant to shutdown on this control board):** Comp and GM should de-energize within 10 seconds. See "III.C.6. Bin Control Shutdown Delay, Agitation, and Ice Purge Timer (S1 dip switch 8)."
- b) **2A8054-01 and 2A9093-01: Dip Switch 8 "ON" and dip switch 9 "OFF":** Once dip switch 8 bin control delay timer (6 to 10 sec.) terminates, 90-sec. Comp shutdown timer starts. Once 90-sec. Comp shutdown timer terminates, Comp and FM de-energize and 60-sec. GM shutdown timer starts. Once 60-sec. GM shutdown timer terminates, GM de-energizes. See "III.C.6. Bin Control Shutdown Delay, Agitation, and Ice Purge Timer (S1 dip switch 8)" and "III.C.7. Bin Control Shutdown Delay (S1 dip switch 9)."  
**BC Diagnosis:** See "II.D. Bin Control Check."  
**CB Diagnosis:** See "II.C.2b)a) Bin Control (BC)."

Legend: **BC**–bin control; **CB**–control board; **Comp**–compressor; **CCR**–compressor control relay; **CT**–control transformer; **DV**–drain valve; **EH**–evaporator heater; **FM**–fan motor; **GM**–gear motor; **HPS**–high-pressure switch; **LFS**–lower float switch; **PPR**–power protect relay; **TXV**–thermostatic expansion valve; **UFS**–upper float switch; **WV**–inlet water valve

## **b) Auxiliary Code N-1 and Later**

### **2b. Diagnostic Procedure**

This diagnostic procedure is a sequence check that allows you to diagnose the electrical system and components. Before proceeding, check for correct installation, proper voltage per appliance nameplate, and adequate water supply (10 PSIG to 113 PSIG). "Check that both the 24VAC circuit fuse and the 115VAC GM fuse are good.

Note: • When checking high voltage (115VAC), always choose a neutral (W) wire to establish a good neutral connection. **IMPORTANT! Appliance will not start unless the safety switch is engaged.**

- When checking low voltage (24VAC), always choose a neutral (LBU) wire.
  - When checking CB DC voltage (5VDC), always place the red test lead from the multimeter to CB K7:1 red connector pin #1 (closest to CB K8:2 white connector). See "II.C. Control Board Check."
  - To speed up the diagnostic process, the ice purge cycle may be bypassed by pressing the "SERVICE" button on the control board after the gear motor starts. **WARNING! Risk of electric shock. Care should be taken not to touch live terminals.**
  - If the icemaker is in alarm, see "III.B. LED Lights and Audible Alarm Safeties."
  - FM and EH energize when "GM" LED turns on.
  - CB monitors the following switches with 5VDC during the icemaking process: Control Switch (CS), High-Pressure Switch (HPS), Float Switch (FS), Compressor Control Relay (CCR), and Bin Control (mechanical). When 5VDC is present across any of these switches, the switch is open.
- 1) Turn on the power supply. Remove the front panel. Move the power switch to the "ON" position, replace the front panel in its correct position.
  - 2) Move the control switch to the "OFF" position, pause momentarily, then move to the "DRAIN" position. Allow the water system to drain for 5 minutes.

Note: a) A momentary pause in the "OFF" position is necessary to de-energize the control board when moving the control switch between "ICE" and "DRAIN." Otherwise there is a delay of several minutes before the new selection takes effect.

b) If the control switch is left in the "DRAIN" position for 10 minutes or more, a 2-beep alarm sounds every 5 seconds. Move the control switch out of the "DRAIN" position to clear the alarm.
  - 3) Remove the front panel, then move the power switch to the "OFF" position.
  - 4) Remove the control box cover for access to the CB.
  - 5) Check the CB S2 dip switch settings, see "III.C.1. Default Dip Switch Settings" to assure that they are in the correct positions.
  - 6) Engage the safety switch.

- 7) **Startup—"POWER" LED turns on:** Move the power switch to the "ON" position, then move the control switch to the "ICE" position. CB "POWER" LED turns on.  
**IMPORTANT! Appliance will not start unless the safety switch is engaged.**  
**"POWER" LED Diagnosis:** Check that CB "POWER" LED is on. If not, check for proper power supply voltage (115VAC) input to CT. If 115VAC is not present, check the breaker, power switch, and safety switch. Next, check that the PPR (DCM-75\_H(-OS) only) is de-energized and contacts between PPR #6 (BR) and #2 (BK) are closed. Check for proper control voltage (24VAC) output from CT. Next, check the 24VAC 1A fuse. If open, replace fuse. Check for 24VAC at CB K8 #1 (W/R) to CB K8 #2 (LBU). If 24VAC is not present, check continuity of control switch. If open, replace. If 24VAC is present between CB K8 #1 (W/R) and CB K8 #2 (LBU), and "POWER" LED is off, replace CB.
- BC Diagnosis:** Remove the bin cover and check that the actuator paddle is not engaged (switch closed). Check for continuity across BC proximity switch. This can be checked at CB K8 #3 GY and CB K8 #4 GY. When BC proximity switch is closed 0VDC is read across CB K8 #3 (GY) and CB K8 #4 (GY). 5VDC is present between CB K8 #3 (GY) or CB K8 #4 (GY) to CB K7:1 red connector pin #1 (closest to CB K8:2 white connector). If 5VDC is not present, replace CB. Note: Be sure safety switch is engaged while checking voltages.
- HPS Diagnosis:** HPS automatically resets when refrigeration circuit high-side pressure is within an acceptable range. 5VDC is supplied from CB K9 #3 (Y) and back onto CB K9 #4 (Y). If 5VDC is not present at CB K9 #3 (Y) to CB K7:1 red connector pin #1 (closest to CB K8:2 white connector) and CB "POWER" LED is on, replace CB. If refrigerant pressures have returned to an acceptable range and HPS does not close, replace HPS. If pressures have not equalized, and refrigeration circuit high-side pressure does not drop, recover, evacuate, and recharge if necessary. On air-cooled model, check that the condenser is not dirty or clogged, check for proper FM operation and fan blade for binding. On water-cooled model, check WRV and water flow in and out of condenser. Check for refrigeration circuit refrigerant restriction (TXV and drier).
- 8) **Fill Cycle – "WTRIN" LED is on.** WV energizes. The 90-sec. low water safety timer begins. LFS closes. Nothing occurs at this time. The reservoir continues to fill until UFS closes, terminating the 90-sec. low water safety timer, starting the 30-min. freeze timer, and de-energizing WV.
- Diagnosis:** Check that "WTRIN" LED turns on and water fills the reservoir. If not, check for water supply line shut-off valve closed, restricted water filters, and restricted WV screen. Next, check for 24VAC at CB K2 #8 (O or W/BR) to neutral (LBU). If 24VAC is not present, replace CB. If 24VAC is present, turn off the power switch, disconnect the WV wires and check WV solenoid continuity. If open, replace WV. Reconnect WV wires, move the power switch to the "ON" position, then check that DV is not leaking by. Check that WV shuts off when UFS closes.
- Note: **Low Water Safety**– If UFS remains open 90 sec. after WV energizes, a 1-beep alarm sounds. This alarm resets automatically once UFS closes.

9) **Ice Purge Cycle – "GM" LED is on.** 5-sec. GM delay timer and 30-min. freeze timer start. WV de-energizes and "WTRIN" LED turns off. Once the 5-sec. GM delay timer terminates, GM, CCR, and EH (if applicable) energize. CCR cannot energize unless GM circuit is complete (GM external protector and GM internal protector). Once CCR energizes, CB K9 #5 W/O and CB K9 #6 W/O 5VDC circuit closes and ice purge timer starts (1-min. or 5-min.). See "II.C.2a)c Compressor Control Relay (CCR)." If CCR de-energizes, CB K9 #5 W/O and CB K9 #6 W/O circuit opens and an 8-beep alarm occurs. See "III.B. LED Lights and Audible Alarm Safeties." Note: To bypass ice purge cycle and go straight to freeze cycle, press the "SERVICE" button on CB after GM energizes.

**Diagnosis CB:** Check that UFS closed, WV LED turned off and WV de-energized. If UFS is closed, "WV" LED is off, and "GM" LED is off, replace CB. If "GM" LED is on and GM is off, confirm 115VAC at CB K1 #2 (BR) to neutral (W). If 115VAC is not present, check for loose connection from power switch. If 115VAC is present, check for 115VAC at CB K1 #3 (DCM-300/500/752 pink (P), DCM-751 dark blue (DBU)) to neutral (W). If 115VAC is not present, replace CB.

**Diagnosis GM:** If 115VAC is present at CB K1 #3 (DCM-300/500/752 pink (P), DCM-751 dark blue (DBU)) to neutral (W), check GM fuse, GM internal protector, GM external protector, GM windings and capacitor, and GM coupling between auger and GM.

**Diagnosis CCR:** See "II.C.2a)c. Compressor Control Relay." Once ice purge timer terminates (1-min. or 5-min.) or the "SERVICE" button is pressed, freeze cycle begins.

**Diagnosis EH (DCM-500/751/752):** EH energizes with GM. If EH doesn't energize check EH continuity. Replace as needed.

10) **Freeze Cycle – "COMP" LED is on.** Ice purge timer terminates (1-min. or 5-min.) or the "SERVICE" button is pressed. "COMP" LED turns on. "GM" LED remains on. Comp and FM energize. GM, CCR, and EH (DCM-500/751/752) continue. Ice production begins 4 to 6 minutes after Comp energizes depending on ambient and water conditions.

**Diagnosis Comp:** Check that "COMP" LED is on and that Comp energizes. If "COMP" LED is off, confirm ice purge timer has terminated (1-min. or 5-min.). Check for 0VDC across CB K9 #5 (W/O) and CB K9 #6 (W/O). If 5VDC is present, CCR contacts are open. Check for 115VAC at CCR #7 (R) to CCR #8 (W). If 115VAC is present, check CCR continuity between CCR #3 (W/O) and CCR #5 (W/O). If open, replace CCR. If closed and "COMP" LED remains off, replace CB. If "COMP" LED is on and Comp is off, check for 115VAC at CB X1 brown (BR) wire to neutral (W) and CB X1 red (R) wire to neutral (W). If 115VAC is present on CB X1 brown (BR) wire and not on CB X1 red (R) wire, replace CB. If 115VAC is present on CB X1 red (R) wire, check Comp external protector, motor windings, start relay, and capacitors.

Note: If CCR de-energizes, CB K9 #5 W/O and CB K9 #6 W/O circuit opens, Comp de-energizes and an 8-beep alarm occurs. See "III.B. LED Lights and Audible Alarm Safeties."

**Diagnosis FM:** If FM does not energize, check FM capacitor, motor windings, and bearings.

11) **Refill Cycle/Low Water Safety** – As ice is produced, the water level in the reservoir drops. UFS opens. Nothing occurs at this time. When LFS opens, WV energizes, 90-sec. low water safety timer (fill timer) starts. Comp, GM, CCR, and FM continue. When UFS closes, WV de-energizes, 90-sec. low water safety timer (fill timer) terminates and 30-min. freeze timer resets. If UFS remains open 90 sec. after WV energizes (fill timer exceeded), a 90-sec. shutdown cycle starts. Comp and FM de-energize and CB signals a 1-beep alarm every 5 sec. 90-sec. ice purge timer starts. GM and CCR continue to clear ice from the evaporator. 90-sec. ice purge timer terminates, GM and CCR de-energize. WV and 1-beep alarm continue until UFS closes. **Diagnosis** – Check that "WTRIN" LED is on. If not, check LFS. See "II.E. Float Switch Check and Cleaning." If LFS is open and "WTRIN" LED is off, replace CB. If "WTRIN" LED is on, check that the reservoir fills. If not, check the water supply line, restricted water filters, WV solenoid, restricted WV screen. If WV is energized and refill exceeds 90-sec. low water safety timer (fill timer), check DV leaking by or open UFS. See "II.E. Float Switch Check and Cleaning."  
Note: Each time UFS closes, 30-min. freeze timer starts. The 30-min. freeze timer resets when UFS closes again. If UFS does not close again within 30 min., CB shuts down the icemaker and sounds a 5-beep alarm every 5 sec. See "III.B. LED Lights and Audible Alarm Safeties."

12) **Shutdown – Dip Switch 8 "ON" and dip switch 9 "OFF":**

Once dip switch 8 bin control delay timer (6 to 10 sec.) terminates, 90-sec. Comp shutdown timer starts. Once 90-sec. Comp shutdown timer terminates, Comp and FM de-energize and 60-sec. GM shutdown timer starts. Once 60-sec. GM shutdown timer terminates, GM de-energizes. See "III.C.6. Bin Control Shutdown Delay, Agitation, and Ice Purge Timer (S2 dip switch 8)" and "III.C.7. Bin Control Shutdown Delay (S2 dip switch 9)."

**BC Diagnosis:** See "II.D. Bin Control Check."

**CB Diagnosis:** See "II.C.2b)a) Bin Control (BC)."

Legend: **BC**–bin control; **CB**–control board; **Comp**–compressor; **CCR**–compressor control relay; **CT**–control transformer; **DV**–drain valve; **EH**–evaporator heater; **FM**–fan motor; **GM**–gear motor; **HPS**–high-pressure switch; **LFS**–lower float switch; **PPR**–power protect relay; **TXV**–thermostatic expansion valve; **UFS**–upper float switch; **WV**–inlet water valve

## C. Control Board Check

### 1) Auxiliary Code N-0 and Earlier

Before replacing a CB that does not show a visible defect and that you suspect is bad, always conduct the following check procedure. This procedure will help you verify your diagnosis. Before proceeding, check for proper voltage per appliance nameplate. Check that the 24VAC 1A fuse is good and 115VAC 2A (DCM-300/500) or 3A (DCM-751/752) GM external protector is closed.

**NOTICE! Control Board Change:**

- Control board **2A4296-01** and **2A8054-01** are no longer available. Control board **2A9093-01** replaces **2A4296-01** and **2A8054-01**.
- Check the S1 dip switch settings to assure that they are in the factory default position. For factory default settings, see "III.C.1. Default Dip Switch Settings." S1 dip switch 7 determines bin control application. **WARNING! Do not adjust S1 dip switch 4, 7, 8, or 9 dip switches out of their factory default positions. These dip switches must be left in the factory default position or the appliance will not operate correctly.**
- When checking for 115VAC high-voltage (primary), always choose a 115VAC neutral (W) to establish a good neutral connection.
- When checking for 24VAC low-voltage (secondary), always choose a 24VAC neutral (LBU) to establish a good neutral connection. If the appliance is in alarm, see "III.B. LED Lights and Audible Alarm Safeties."
- When checking for 5VDC, use CB K4 pin #1 (pin closest to CB black K3) to complete DC circuit.

1) **Startup-"POWER OK" LED on:** Move control switch to "ICE" position, then move power switch to "ON" position. "POWER OK" LED turns on. "POWER OK" LED remains on unless power supply is interrupted. **NOTICE! Appliance will not start unless the safety switch is engaged. Diagnosis:** Check that "POWER OK" LED is on. If not, check for proper 115VAC supply voltage to CT (main breaker or fuse, power switch, safety switch, and power protect relay on DCM-751/752). Next, check for proper 24VAC output from CT. Next, check that 24VAC 1A fuse is good. Check for 24VAC from CB K8 pin #1 (W/R) to CB K8 pin #2 (LBU). If 24VAC is present and "POWER OK" LED is off, replace CB.

2) **5VDC Output Checks:** There are seven 5VDC circuits on the appliance.

- a) 3 circuits at CB K9 connector: Control switch "DRAIN" position, high-pressure switch (HPS), and compressor control relay (CCR).
- b) 2 circuits at CB K8 connector: Bin control (BC) and float switch (FS upper and lower).
- c) 2 circuits at CB K7 connector: Ice dispense (push button and OS sensor), and water dispense (push button and OS sensor).

2a) **5VDC CB K9 Connector:** See Fig. 1.

a) **Control Switch "ICE" and "DRAIN" Positions**

CB K9 connector pins #1 (W/BK) and #2 (W/BK):

- "ICE" Position: When the control switch is in the "ICE" position, CB K9 pin #1 and pin #2 are open. 5VDC is present between CB K9 pin #1 (W/BK) and pin #2 (W/BK). If not, check control switch position and continuity. If open, replace control switch. Next, confirm 5VDC between CB K9 pin #1 (W/BK) and CB K4 pin #1 (pin closest to CB black K3). If 5VDC is not present, replace CB.
- "DRAIN" Position: When control switch is in the "DRAIN" position, CB K9 pin #1 (W/BK) and pin #2 (W/BK) are closed. 0VDC is present between CB K9 pin #1 (W/BK) and CB K9 pin #2 (W/BK). If 5VDC is present, check control switch position and continuity. If open, replace control switch. Next, confirm 5VDC is present between both CB K9 pin #1 (W/BK) and pin #2 to CB K4 pin #1 (pin closest to CB black K3). If 5VDC is not present at both locations and control switch continuity is closed, replace CB.

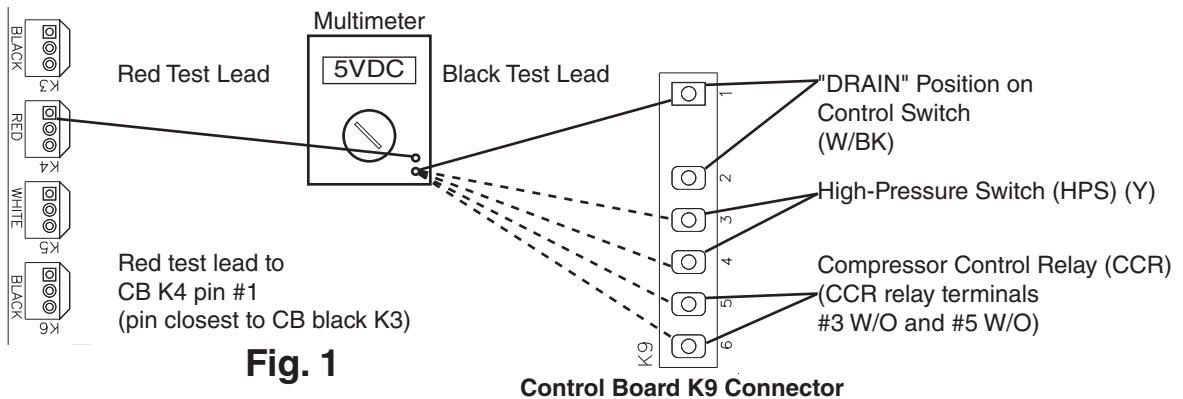
b) **High-Pressure Switch (HPS)**

When HPS is closed, 0VDC is present between CB K9 pin #3 (Y) and CB K9 pin #4 (Y). 5VDC is present between CB K9 pin #3 and pin #4 to CB K4 pin #1 (pin closest to CB black K3). Confirm 5VDC from CB K9 pin #3 (Y) to CB K4 pin #1 (pin closest to CB black K3). If 5VDC is not present, replace CB. If 5VDC is present at CB K9 pin #3 (Y) and not on CB K9 pin #4 (Y), HPS is most likely open. CB sounds a 3-beep alarm. Check HPS continuity. See "II.B.2.7) HPS Diagnosis." If HPS is open and CB is not in alarm, replace CB. If 5VDC is present at CB K9 pin #4 (Y) and icemaker doesn't start and/or CB sounds a 3-beep alarm, replace CB.

**c) Compressor Control Relay (CCR)**

CB K9 pin #5 (W/O) and pin #6 (W/O): When CCR is de-energized (GM off), CCR terminal #3 and terminal #5 are open and 5VDC is present between CB K9 pin #5 (W/O) and CB K9 pin #6 (W/O). If 5VDC is not present, check CCR continuity between terminal #3 and terminal #5. If closed and CCR is de-energized, replace CCR. If open, check for 5VDC at CB K9 pin #5 (W/O) to CB K4 pin #1 (pin closest to CB black K3). If 5VDC is not present, replace CB. When CCR is energized, CCR terminals #3 and #5 close and 0VDC is present between CB K9 pin #5 (W/O) and pin #6 (W/O). 5VDC is present between CB K9 pin #5 (W/O) to CB K4 pin #1 (pin closest to CB black K3) and CB K9 pin #6 (W/O) to CB K4 pin #1 (pin closest to CB black K3). If GM is energized and CCR terminals #3 & #5 are open, an 8-beep alarm occurs. See "III.B. LED Lights and Audible Alarm Safeties." If CCR terminals #3 and #5 are closed, Comp delay timer starts. If Comp does not energize after Comp delay timer terminates, replace CB.

5VDC CB K9 Connector	
Component	Pin # (Wire Color)
"DRAIN" Position Through Control Switch	#1 (W/BK) and #2 (W/BK)
High-Pressure Switch (HPS)	#3 (Y) and #4 (Y)
Compressor Control Relay (CCR) (CCR relay terminals #3 W/O and #5 W/O)	#5 (W/O) and #6 (W/O)



**Fig. 1**

**Control Board K9 Connector**

2b) **5VDC CB K8 Connector:** See Fig. 2.

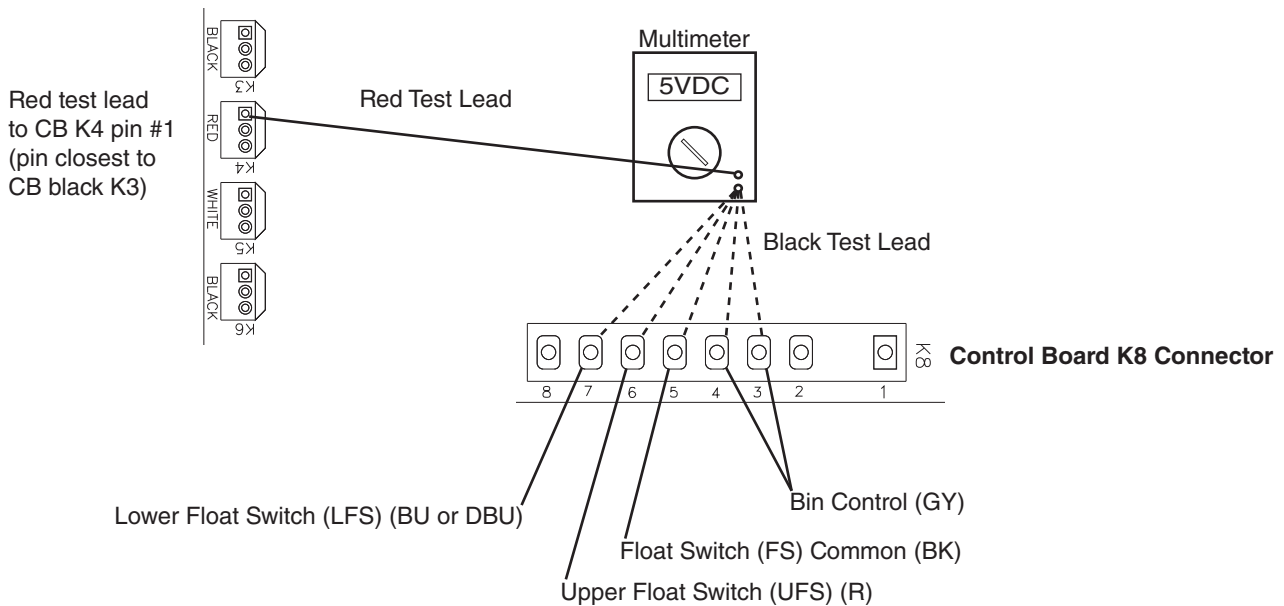
a) **Bin Control (BC)**

CB K8 pin #3 (GY) and #4 (GY): When BC is closed (icemaking), 5VDC is present between CB K8 pin #3 (GY) and pin #4 (GY) to CB K4 pin #1 (pin closest to CB black K3). If 5VDC is not present on either pin, replace CB. If 5VDC is present on pin #3 (GY) and not on pin #4 (GY), BC is open. See "II.D. Bin Control Check."

b) **Float Switch (FS): Upper (UFS) and Lower (LFS):**

CB K8 pin #5 common (BK), #6 UFS (R), and #7 LFS (BU) or (DBU): 5VDC is present between CB K8 pin #5 common (BK) and CB K4 pin #1 (pin closest to CB black K3) at all times. If 5VDC is not present, replace CB. For further float switch diagnostics, see "II.E. Float Switch Check and Cleaning."

5VDC CB K8 Connector	
Component	Pin # (Wire Color)
Bin Control (BC)	#3 (GY) and #4 (GY)
Float Switch (FS) Common	#5 (BK) Common
Upper Float Switch (UFS)	#6 (R)
Lower Float Switch (LFS)	#7 (BU) or (DBU)



**Fig. 2**

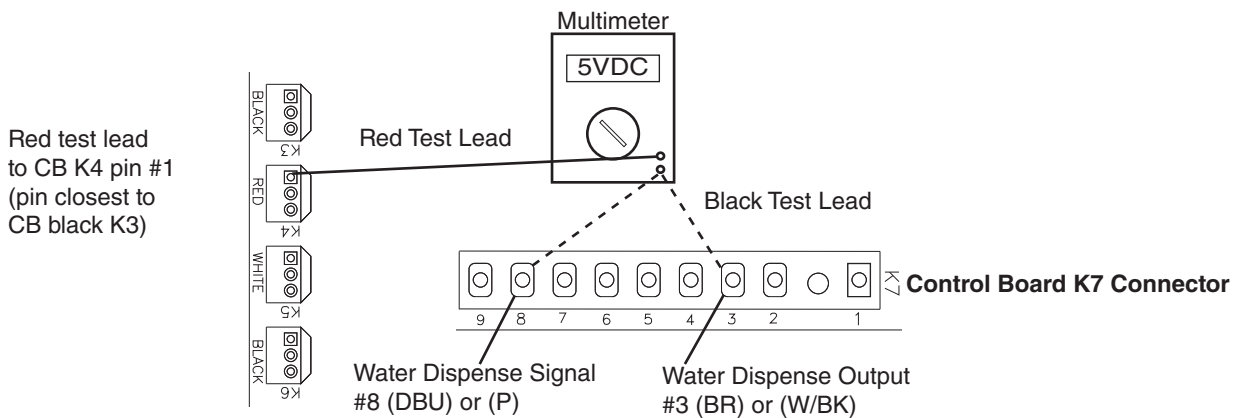
2c) **5VDC CB K7 Connector:** See Figs. 3, 4, 5, and 6.

a) **Water Dispense Switch/Water Dispense Sensor**

**1. Push Button Model**

CB K7 pin #3 (BR) or (W/BK) and pin #8 (DBU) or (P): Before engaging the water dispense switch, check for the correct VDC from the locations given in the "Disengaged" column in the table below. If the VDC is different than in the table, replace CB. If the VDC is correct, engage the water dispense switch. "WTRDP" LED turns on. If not, confirm that the water dispense signal VDC matches the "Engaged" column in the table below. If not, check the water dispense switch continuity when engaged (closed). If the water dispense switch is open when engaged, replace the water dispense switch. If the VDC matches the "Engaged" column below and the "WTRDP" LED does not turn on, replace CB.

5VDC CB K7 Connector					
Component	Pin # (Wire Color)	To	CB VDC Ground	Disengaged	Engaged
5VDC Power Supply	#3 (BR) or (W/BK)	To	CB K4 pin #1 (pin closest to CB black K3)	5VDC	5VDC
Water Dispense Signal	#8 (DBU) or (P)			0VDC	5VDC



**Fig. 3**

## 2. Opti-Serve Model

CB K7 connector pins #7 (R), #8 (P) or (W), and #9 (BK) or (P): Before engaging the water dispense Opti-Serve sensor, check for the correct VDC from the locations given in the "Disengaged" column in the table below. If the VDC is different than in the table, replace CB. If the VDC is correct, engage the Opti-Serve sensor. "WTRDP" LED turns on. If not, confirm that the water dispense signal VDC matches the "Engaged" column in the table below. If not, replace the Opti-Serve sensor. If the VDC matches the "Engaged" column below and the "WTRDP" LED does not turn on, replace CB.

5VDC CB K7 Connector					
Component	Pin # (Wire Color)	To	CB VDC Ground	Disengaged	Engaged
Sensor Ground	#7 (R)	To	CB K4 pin #1 (pin closest to CB black K3)	0VDC	0VDC
Water Dispense Signal	#8 (P) or (W)			0VDC	5VDC
5VDC Power Supply	#9 (BK) or (P)			5VDC	5VDC

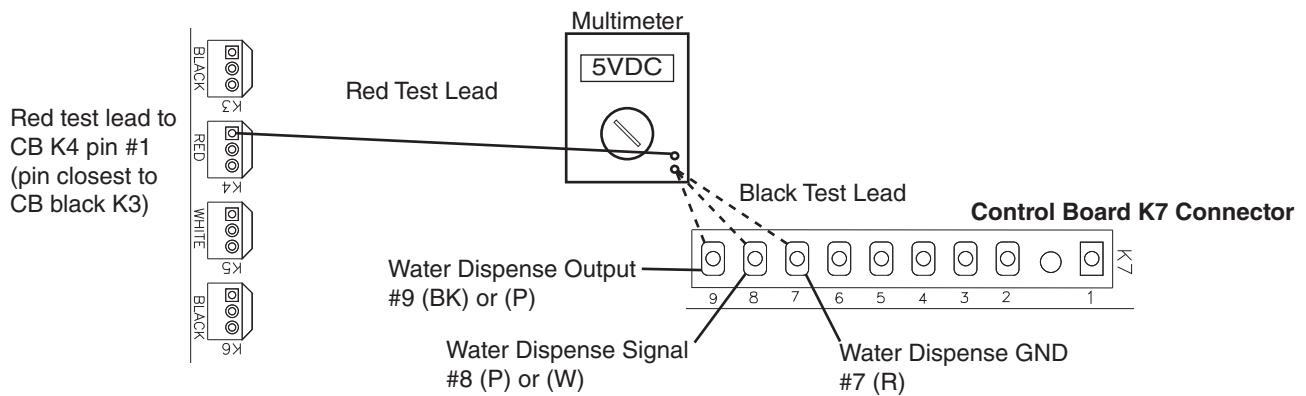


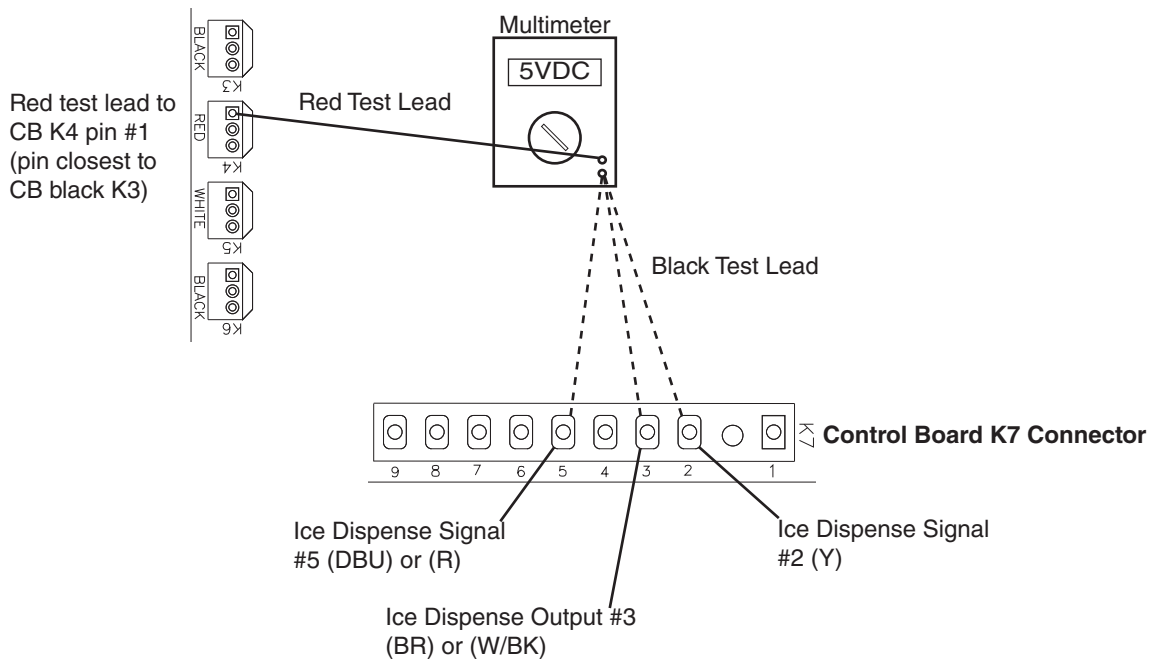
Fig. 4

**b) Ice Dispense**

**1. Push Button Model**

CB K7 connector pins #2 (Y) and #3 (W/BK) or (BR): Before engaging the ice dispense switch, check for the correct VDC from the locations given in the "Disengaged" column in the table below. If the VDC is different than in the table, replace CB. If the VDC is correct, engage the ice dispense switch. "ICE" LED turns on. If not, confirm position of dispense mode switch and that the portion and continuous VDC matches the "Engaged" column in the table below. If not, check the ice dispense switch continuity when engaged (closed) and the dispense mode switch continuity. If the ice dispense switch is open when engaged, replace. If dispense mode switch is open, replace. If the VDC matches the "Engaged" column below and the "ICE" LED does not turn on, replace CB.

5VDC CB K7 Connector					
Component	Pin # (Wire Color)	To	CB VDC Ground	Disengaged	Engaged
Portion Position Signal	#5 (DBU) or (R)	To	CB K4 pin #1 (pin closest to CB black K3)	0VDC	5VDC
5VDC Power Supply	#3 (W/BK) or (BR)			5VDC	5VDC
Continuous Position Signal	#2 (Y)			0VDC	5VDC



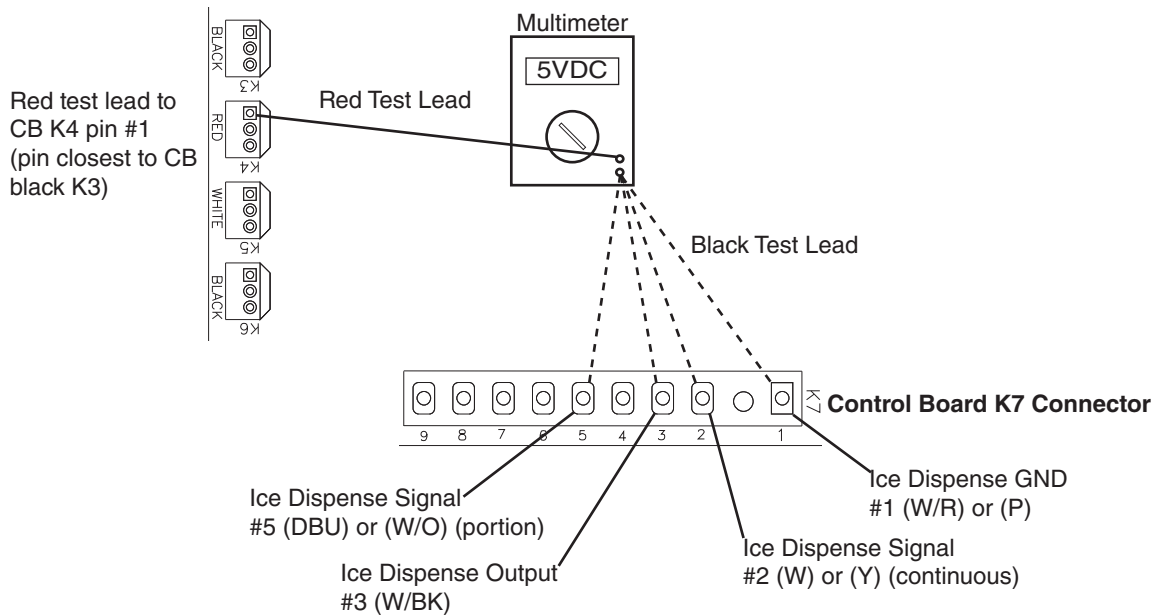
**Fig. 5**

## 2. Opti-Serve Model

CB K7 connector pins #1 (W/R) or (P), #2 (W) or (Y), #3 (W/BK), and #5 (DBU) or (W/O): Before engaging the ice dispense Opti-Serve sensor, check for the correct VDC from the locations given in the "Disengaged" column in the table below. If the VDC is different than in the table, replace CB. If the VDC reading is correct, engage the Opti-Serve sensor. "ICE" LED turns on. If not, confirm position of dispense mode switch and that the portion and continuous VDC matches the "Engaged" column in the table below. If not, check the dispense mode switch continuity. If open, replace. If dispense mode switch is closed (portion or continuous), replace the Opti-Serve sensor. If the VDC matches the "Engaged" column below and the "ICE" LED does not turn on, replace CB.

Note: "AM" LED turns on .6 sec. for every 12 sec. of cumulative dispense time.

5VDC CB K7 Connector					
Component	Pin # (Wire Color)	To	CB VDC Ground	Disengaged	Engaged
5VDC Power Supply	#3 (W/BK)	To	CB K4 pin #1 (pin closest to CB black K3)	5VDC	5VDC
Sensor Ground	#1 (W/R) or (P)			0VDC	0VDC
Continuous Position Signal	#2 (W) or (Y)			0VDC	5VDC
Portion Position Signal	#5 (DBU) or (W/O)			0VDC	5VDC



**Fig. 6**

- 3) **Fill Cycle—"WTRIN" LED is on:** "WTRIN" LED turns on only when the reservoir water level is low enough to open LFS. **Diagnosis:** Confirm LFS is open. If "WTRIN" LED is off and LFS is open and the control switch is in the "ICE" position (open), replace CB. If "WTRIN" LED is on and water is not filling the reservoir, check for 24VAC at CB K2 connector between pin #8 (O or W/BR) and a neutral (LBU). If the "WTRIN" LED is on and 24VAC is not present between CB K2 connector pin # 8 (O or W/BR) and neutral (LBU), confirm 24VAC at CB K2 connector between pin #7 (R or W/R) and a neutral (LBU). If 24VAC is present between CB K2 connector pin #7 (R or W/R) and a neutral (LBU) and not between CB K2 connector pin #8 (O or W/BR) and a neutral (LBU), replace CB.

24VAC CB K2 Connector					
Connector	Pin # (Wire Color)	To	Neutral (LBU)	LFS Open	LFS Closed
K2 (CB input power)	Pin #7 (R or W/R)	To	K8 pin #2 (LBU)	24VAC	24VAC
K2 (WV power)	Pin #8 (O or W/BR)			0VAC	24VAC

- 4) **Ice Purge Cycle—"GM" LED is on:** "GM" LED turns on once UFS closes (reservoir full). If UFS is closed and "GM" LED is off, replace CB. If "GM" LED is on but GM does not start, check for 115VAC from CB K1 connector pin #3 (DBU or P) to a neutral (W). If 115VAC is not present, confirm 115VAC from CB K1 connector pin #2 (BR) to a neutral (W). If 115VAC is present on CB K1 connector pin #2 (BR) but not on CB K1 connector pin #3 (DBU or P), replace CB. Once GM energizes, CCR energizes and ice purge timer (5-min.) starts.
- 5) **Freeze Cycle—"GM" and "COMP" LED are on:** Ice purge timer (1-min. or 5-min.) terminates or press the "SERVICE" button on CB after the "GM" LED turns on to bypass ice purge cycle. **WARNING! Risk of electric shock. Care should be taken not to touch live terminals.** After ice purge timer (1-min. or 5-min.) terminates, "COMP" LED turns on. If not, confirm CCR contacts are closed. See step "II.C.2a)c). Compressor Control Relay (CCR)." If CCR contacts are closed, replace CB. If "COMP" LED turns on and Comp does not start, check for 115VAC from the CB X1 brown (BR) wire and red (R) wire to a neutral (W). If 115VAC is present on CB X1 brown (BR) wire and not on CB X1 red (R) wire, replace CB. If 115VAC is present on CB X1 red (R) wire and Comp is not energized, check Comp external overload, start capacitor, start relay, motor windings, locked rotor.

Legend: **AM**—agitating motor; **BC**—bin control; **CB**—control board; **Comp**—compressor; **CCR**—compressor control relay; **CT**—control transformer; **DCT**—drain cycle timer (1-hr.); **DV**—drain valve; **EH**—evaporator heater; **FM**—fan motor; **FS**—float switch; **FT**—fill timer (90-sec. low water safety); **GM**—gear motor; **IPT**—ice purge timer; **LFS**—lower float switch; **UFS**—upper float switch; **WV**—inlet water valve

## 2) Auxiliary Code N-1 and Later

Before replacing a CB that does not show a visible defect and that you suspect is bad, always conduct the following check procedure. This procedure will help you verify your diagnosis. Before proceeding, check for proper voltage per appliance nameplate. Check that the 24VAC 1A fuse is good and 115VAC 2A (DCM-300/500) or 3A (DCM-751/752) GM external protector is closed.

### **NOTICE! Control Board Change:**

- **Control board 2A9874-01.**
  - Check the S2 dip switch settings to assure that they are in the factory default position. For factory default settings, see "III.C.1. Default Dip Switch Settings." S2 dip switch 7 determines bin control application. **WARNING! Do not adjust S2 dip switch 4, 7, 8, or 9 dip switches out of their factory default positions. These dip switches must be left in the factory default position or the appliance will not operate correctly.**
  - When checking for 115VAC high-voltage (primary), always choose a 115VAC neutral (W) to establish a good neutral connection.
  - When checking for 24VAC low-voltage (secondary), always choose a 24VAC neutral (LBU) to establish a good neutral connection. If the appliance is in alarm, see "III.B. LED Lights and Audible Alarm Safeties."
  - When checking for 5VDC, use CB K7:1 red connector pin #1 (closest to CB K8:2 white connector) to complete DC circuit.
- 1) **Startup-"POWER" LED on:** Move control switch to "ICE" position, then move power switch to "ON" position. "POWER" LED turns on. "POWER" LED remains on unless power supply is interrupted. **NOTICE! Appliance will not start unless the safety switch is engaged. Diagnosis:** Check that "POWER" LED is on. If not, check for proper 115VAC supply voltage to CT (main breaker or fuse, power switch, safety switch, and power protect relay on DCM-751/752). Next, check for proper 24VAC output from CT. Next, check that 24VAC 1A fuse is good. Check for 24VAC from CB K8 pin #1 (W/R) to CB K8 pin #2 (LBU). If 24VAC is present and "POWER" LED is off, replace CB.
- 2) **5VDC Output Checks:** There are seven 5VDC circuits on the appliance.
- a) 3 circuits at CB K9 connector: Control switch "DRAIN" position, high-pressure switch (HPS), and compressor control relay (CCR).
  - b) 2 circuits at CB K8 connector: Bin control (BC) and float switch (FS upper and lower).
  - c) 2 circuits at CB K7 connector: Ice dispense (push button and OS sensor), and water dispense (push button and OS sensor).

2a) **5VDC CB K9 Connector:** See Fig. 7.

a) **Control Switch "ICE" and "DRAIN" Positions**

CB K9 connector pins #1 (W/BK) and #2 (W/BK):

- "ICE" Position: When the control switch is in the "ICE" position, CB K9 pin #1 and pin #2 are open. 5VDC is present between CB K9 pin #1 (W/BK) and pin #2 (W/BK). If not, check control switch position and continuity. If open, replace control switch. Next, confirm 5VDC between CB K9 pin #1 (W/BK) and CB K7:1 red connector pin #1 (closest to CB K8:2 white connector). If 5VDC is not present, replace CB.
- "DRAIN" Position: When control switch is in the "DRAIN" position, CB K9 pin #1 (W/BK) and pin #2 (W/BK) are closed. 0VDC is present between CB K9 pin #1 (W/BK) and CB K9 pin #2 (W/BK). If 5VDC is present, check control switch position and continuity. If open, replace control switch. Next, confirm 5VDC is present between both CB K9 pin #1 (W/BK) and pin #2 to CB K7:1 red connector pin #1 (closest to CB K8:2 white connector). If 5VDC is not present at both locations and control switch continuity is closed, replace CB.

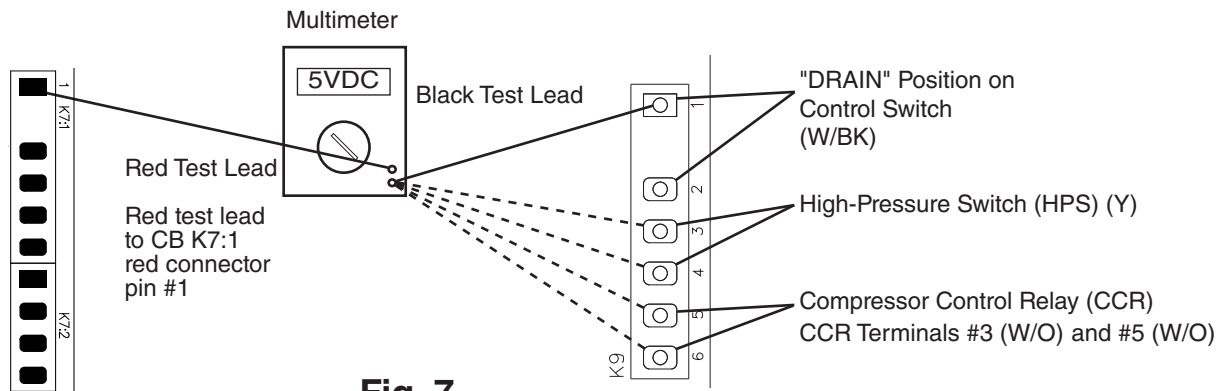
b) **High-Pressure Switch (HPS)**

When HPS is closed, 0VDC is present between CB K9 pin #3 (Y) and CB K9 pin #4 (Y). 5VDC is present between CB K9 pin #3 and pin #4 to CB K7:1 red connector pin #1 (closest to CB K8:2 white connector). Confirm 5VDC from CB K9 pin #3 (Y) to CB K7:1 red connector pin #1 (closest to CB K8:2 white connector). If 5VDC is not present, replace CB. If 5VDC is present at CB K9 pin #3 (Y) and not on CB K9 pin #4 (Y), HPS is most likely open. CB sounds a 3-beep alarm. Check HPS continuity. See "II.B.2.7) HPS Diagnosis." If HPS is open and CB is not in alarm, replace CB. If 5VDC is present at CB K9 pin #4 (Y) and icemaker doesn't start and/or CB sounds a 3-beep alarm, replace CB.

**c) Compressor Control Relay (CCR)**

CB K9 pin #5 (W/O) and pin #6 (W/O): When CCR is de-energized (GM off), CCR terminal #3 and terminal #5 are open and 5VDC is present between CB K9 pin #5 (W/O) and CB K9 pin #6 (W/O). If 5VDC is not present, check CCR continuity between terminal #3 and terminal #5. If closed and CCR is de-energized, replace CCR. If open, check for 5VDC at CB K9 pin #5 (W/O) to CB K7:1 red connector pin #1 (closest to CB K8:2 white connector). If 5VDC is not present, replace CB. When CCR is energized, CCR terminals #3 and #5 close and 0VDC is present between CB K9 pin #5 (W/O) and pin #6 (W/O). 5VDC is present between CB K9 pin #5 (W/O) to CB K7:1 red connector pin #1 (closest to CB K8:2 white connector) and CB K9 pin #6 (W/O) to CB K7:1 red connector pin #1 (closest to CB K8:2 white connector). If GM is energized and CCR terminals #3 & #5 are open, an 8-beep alarm occurs. See "III.B. LED Lights and Audible Alarm Safeties." If CCR terminals #3 and #5 are closed, Comp delay timer starts. If Comp does not energize after Comp delay timer terminates, replace CB.

5VDC CB K9 Connector	
Component	Pin # (Wire Color)
"DRAIN" Position Through Control Switch	#1 (W/BK) and #2 (W/BK)
High-Pressure Switch (HPS)	#3 (Y) and #4 (Y)
Compressor Control Relay (CCR) (CCR relay terminals #3 W/O and #5 W/O)	#5 (W/O) and #6 (W/O)



**Fig. 7** Control Board K9 Connector

2b) **5VDC CB K8 Connector:** See Fig. 8.

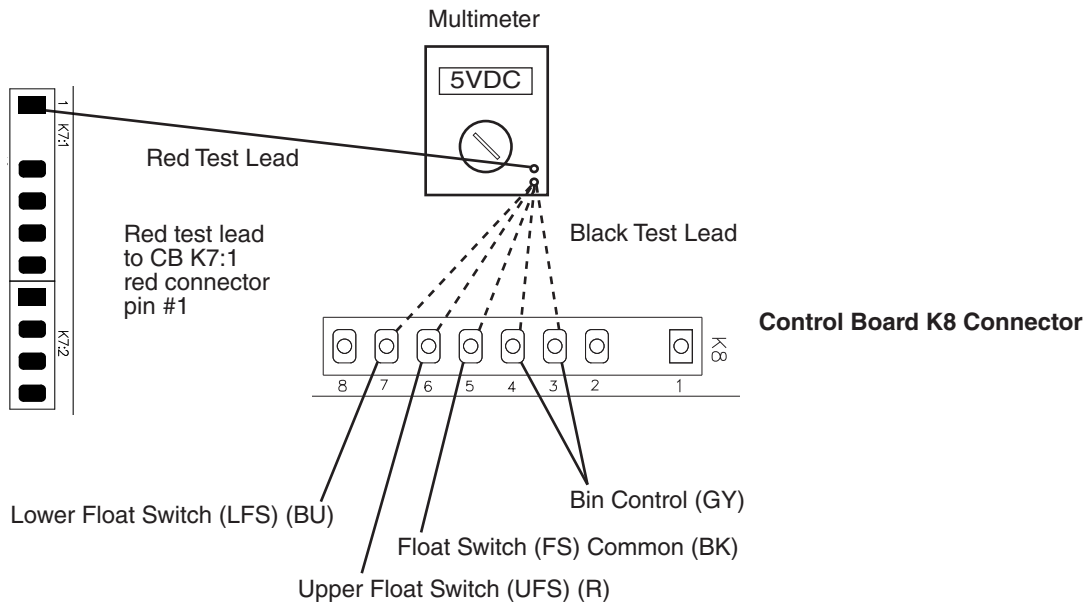
a) **Bin Control (BC)**

CB K8 pin #3 (GY) and #4 (GY): When BC is closed (icemaking), 5VDC is present between CB K8 pin #3 (GY) and pin #4 (GY) to CB K7:1 red connector pin #1 (closest to CB K8:2 white connector). If 5VDC is not present on either pin, replace CB. If 5VDC is present on pin #3 (GY) and not on pin #4 (GY), BC is open. See "II.D. Bin Control Check."

b) **Float Switch (FS): Upper (UFS) and Lower (LFS):**

CB K8 pin #5 common (BK), #6 UFS (R), and #7 LFS (BU) or (DBU): 5VDC is present between CB K8 pin #5 common (BK) and CB K7:1 red connector pin #1 (closest to CB K8:2 white connector) at all times. If 5VDC is not present, replace CB. For further float switch diagnostics, see "II.E. Float Switch Check and Cleaning."

5VDC CB K8 Connector	
Component	Pin # (Wire Color)
Bin Control (BC)	#3 (GY) and #4 (GY)
Float Switch (FS) Common	#5 (BK) Common
Upper Float Switch (UFS)	#6 (R)
Lower Float Switch (LFS)	#7 (BU) or (DBU)



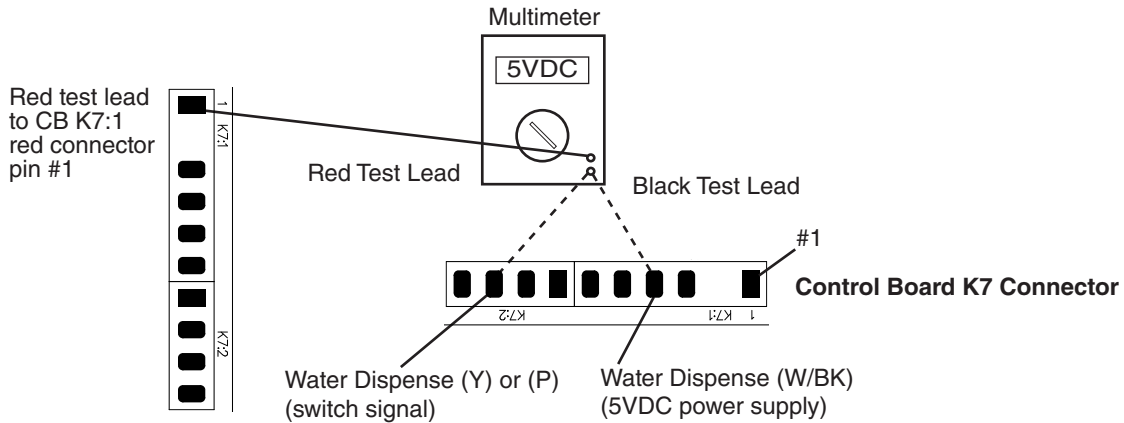
**Fig. 8**

2c) **5VDC CB K7 Connector:** See Figs. 9 and 10.

a) **Water Dispense Switch/Water Dispense Sensor**  
**1. Push Button Model**

CB K7 pin #3 (BR) or (W/BK) and pin #8 (DBU) or (P): Before engaging the water dispense switch, check for the correct VDC from the locations given in the "Disengaged" column in the table below. If the VDC is different than in the table, replace CB. If the VDC is correct, engage the water dispense switch. "WTRDP" LED turns on. If not, confirm that the water dispense signal VDC matches the "Engaged" column in the table below. If not, check the water dispense switch continuity when engaged (closed). If the water dispense switch is open when engaged, replace the water dispense switch. If the VDC matches the "Engaged" column below and the "WTRDP" LED does not turn on, replace CB.

5VDC CB K7 Connector					
Component	Pin # (Wire Color)	To	CB VDC Ground	Disengaged	Engaged
5VDC Power Supply	#3 (BR) or (W/BK)	To	CB K7:1 red connector pin #1 (closest to CB K8:2 white connector)	5VDC	5VDC
Water Dispense Signal	#8 (DBU) or (P)			0VDC	5VDC



**Fig. 9**

## 2. Opti-Serve Model

CB K7 connector pins #7 (R), #8 (P) or (W), and #9 (BK) or (P): Before engaging the water dispense Opti-Serve sensor, check for the correct VDC from the locations given in the "Disengaged" column in the table below. If the VDC is different than in the table, replace CB. If the VDC is correct, engage the Opti-Serve sensor. "WTRDP" LED turns on. If not, confirm that the water dispense signal VDC matches the "Engaged" column in the table below. If not, replace the Opti-Serve sensor. If the VDC matches the "Engaged" column below and the "WTRDP" LED does not turn on, replace CB.

5VDC CB K7 Connector					
Component	Pin # (Wire Color)	To	CB VDC Ground	Disengaged	Engaged
Sensor Ground	#7 (R)	To	CB K7:1 red connector pin #1 (closest to CB K8:2 white connector)	0VDC	0VDC
Water Dispense Signal	#8 (P) or (W)			0VDC	5VDC
5VDC Power Supply	#9 (BK) or (P)			5VDC	5VDC

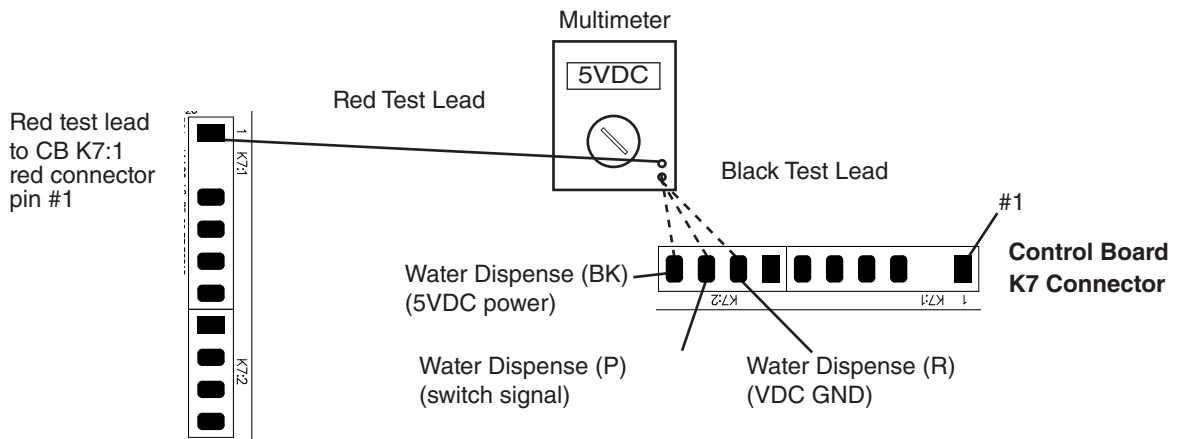


Fig. 10

- 3) **Fill Cycle—"WTRIN" LED is on:** "WTRIN" LED turns on only when the reservoir water level is low enough to open LFS. **Diagnosis:** Confirm LFS is open. If "WTRIN" LED is off and LFS is open and the control switch is in the "ICE" position (open), replace CB. If "WTRIN" LED is on and water is not filling the reservoir, check for 24VAC at CB K2 connector between pin #8 (O or W/BR) and a neutral (LBU). If the "WTRIN" LED is on and 24VAC is not present between CB K2 connector pin # 8 (O or W/BR) and neutral (LBU), confirm 24VAC at CB K2 connector between pin #7 (R or W/R) and a neutral (LBU). If 24VAC is present between CB K2 connector pin #7 (R or W/R) and a neutral (LBU) and not between CB K2 connector pin #8 (O or W/BR) and a neutral (LBU), replace CB.

24VAC CB K2 Connector					
Connector	Pin # (Wire Color)	To	Neutral (LBU)	LFS Open	LFS Closed
K2 (CB input power)	Pin #7 (R or W/R)	To	K8 pin #2 (LBU)	24VAC	24VAC
K2 (WV power)	Pin #8 (O or W/BR)			0VAC	24VAC

- 4) **Ice Purge Cycle—"GM" LED is on:** "GM" LED turns on once UFS closes (reservoir full). If UFS is closed and "GM" LED is off, replace CB. If "GM" LED is on but GM does not start, check for 115VAC from CB K1 connector pin #3 (DBU or P) to a neutral (W). If 115VAC is not present, confirm 115VAC from CB K1 connector pin #2 (BR) to a neutral (W). If 115VAC is present on CB K1 connector pin #2 (BR) but not on CB K1 connector pin #3 (DBU or P), replace CB. Once GM energizes, CCR energizes and ice purge timer (5-min.) starts.
- 5) **Freeze Cycle—"GM" and "COMP" LED are on:** Ice purge timer (1-min. or 5-min.) terminates or press the "SERVICE" button on CB after the "GM" LED turns on to bypass ice purge cycle. **WARNING! Risk of electric shock. Care should be taken not to touch live terminals.** After ice purge timer (1-min. or 5-min.) terminates, "COMP" LED turns on. If not, confirm CCR contacts are closed. See step "II.C.2a)c). Compressor Control Relay (CCR)." If CCR contacts are closed, replace CB. If "COMP" LED turns on and Comp does not start, check for 115VAC from the CB X1 brown (BR) wire and red (R) wire to a neutral (W). If 115VAC is present on CB X1 brown (BR) wire and not on CB X1 red (R) wire, replace CB. If 115VAC is present on CB X1 red (R) wire and Comp is not energized, check Comp external overload, start capacitor, start relay, motor windings, locked rotor.

Legend: **AM**—agitating motor; **BC**—bin control; **CB**—control board; **Comp**—compressor; **CCR**—compressor control relay; **CT**—control transformer; **DCT**—drain cycle timer (1-hr.); **DV**—drain valve; **EH**—evaporator heater; **FM**—fan motor; **FS**—float switch; **FT**—fill timer (90-sec. low water safety); **GM**—gear motor; **IPT**—ice purge timer; **LFS**—lower float switch; **UFS**—upper float switch; **WV**—inlet water valve

## D. Bin Control Check

When the actuator paddle is not engaged, BC circuit (CB K8 #3 (GY) and CB K8 #4 (GY)) is closed and the appliance produces ice. When ice fills the chute and engages the actuator paddle, BC opens.

**NOTICE! Do not place S1 (S2) dip switch 7 or S1 (S2) dip switch 8 out of the factory default position. These dip switches must be left in the factory default position or the appliance will not operate correctly. For details, see "III.C.1. Default Dip Switch Settings."**

- **2A4296-01**: Dip switch 8 on; CB shuts down the appliance within 6 to 10 seconds.
- **2A8054-01, 2A9093-01, and 2A9874-01**: Dip switch 8 and 9 on; CB starts the bin control 90-60 shutdown delay sequence after dip switch 8 bin control delay timer (6 to 10 sec.) terminates. See "II.A.2.B. **2A8054-01** and **2A9093-01** 90/60 sec. Shutdown."

- 1) Move the control switch to the "OFF" position.
- 2) Remove the front and top panels.
- 3) Remove the storage bin cover. If necessary, dispense ice or remove ice manually so that the BC actuator paddle is not engaged.  
**IMPORTANT! Appliance will not start unless the safety switch is engaged.**  
**WARNING! Keep hands, hair, and loose clothing clear of the agitator rotating inside of the storage bin.**
- 4) Move the power switch to the "OFF" position.
- 5) Turn off the power supply.
- 6) Disconnect BC connector from the back of the control box.
- 7) Check for continuity across BC proximity switch. If BC actuator is not engaged and BC proximity switch is open, replace BC proximity switch.
- 8) Press and hold BC actuator paddle. While BC actuator is engaged, check for continuity across BC proximity switch. If BC actuator is engaged and BC proximity switch is closed, replace BC proximity switch.
- 9) Disengage BC actuator paddle.
- 10) Reconnect BC connector. Remove the control box cover.
- 11) Turn on the power supply. Move the power switch to the "ON" position.
- 12) Move the control switch to the "ICE" position.
- 13) Engage the safety switch to start the automatic icemaking process.
- 14) Make sure the "GM" LED is on. There is a delay of at least 5 seconds before the "GM" LED turns on after power-up. After the "GM" LED turns on, press the "SERVICE" button on CB to bypass the ice purge timer (1-min. or 5-min.). **WARNING! Risk of electric shock. Care should be taken not to touch live terminals.** "COMP" LED turns on.

- 15) When Comp starts, press and hold BC actuator paddle.
- 16) a. **2A4296-01: Dip Switch 8 "ON"**: Comp and GM should de-energize within 10 seconds.  
b. **2A8054-01, 2A9093-01, and 2A9874-01: Dip switch 8 and 9 "ON"**: Once dip switch 8 bin control delay timer (6 to 10 sec.) terminates, 90-sec. Comp shutdown timer starts. Once 90-sec. Comp shutdown timer terminates, Comp and FM de-energize and 60-sec. GM shutdown timer starts. Once 60-sec. GM shutdown timer terminates, GM de-energizes. Diagnosis: If BC proximity switch is found open and the appliance continues to run, replace CB.
- 17) Move the power switch to the "OFF" position and turn off the power supply.
- 18) Move the power switch to the "ON" position.
- 19) Replace the storage bin cover, control box cover, top panel, and front panel in their correct positions.
- 20) Turn on the power supply to start the automatic icemaking process.

Legend: **BC**—bin control; **CB**—control board; **Comp**—compressor; **GM**—gear motor

## E. Float Switch Check and Cleaning

### 1. Float Switch Check

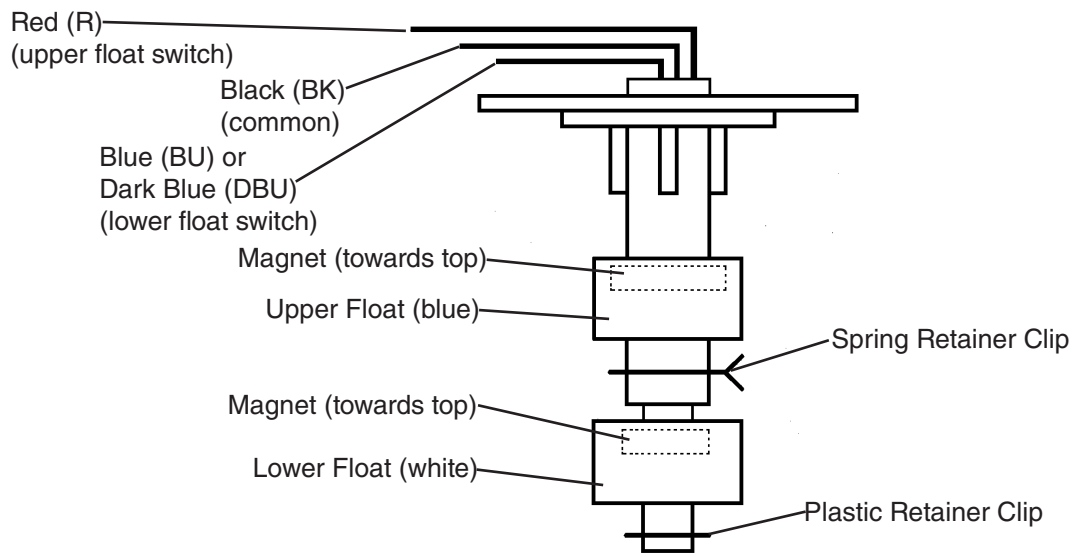
- 1) Remove the front panel and move the control switch to the "DRAIN" position.
- 2) Press and hold the safety switch to start draining the appliance.  
**IMPORTANT! Appliance will not start unless the safety switch is engaged.**
- 3) Allow the water to drain from the reservoir, then release the safety switch. Move the control switch to the "ICE" position.
- 4) Remove the FS moxex plug from the control box and check continuity across FS wires. Black (BK) to red (R) for the upper float and black (BK) to blue (BU) or dark blue (DBU) for the lower float. See Fig. 11. With the water reservoir empty, the float switches are open.  
If open, continue to step 5. If closed, follow the steps in "II.E.2. Float Switch Cleaning."  
After cleaning the float switches, check them again. Replace if necessary.
- 5) Connect the FS moxex plug on the control box.
- 6) Press and hold the safety switch to start filling the reservoir.
- 7) Once the reservoir is full and GM starts, release the safety switch.
- 8) Remove the FS moxex plug from the control box and check continuity across FS wires. Black (BK) to red (R) for the upper float and black (BK) to blue (BU) or dark blue (DBU) for the lower float. They should be closed. If open, follow the steps in "II.E.2. Float Switch Cleaning." After cleaning the float switches, check them again. Replace if necessary. Replace the front panel in its correct position.

### 2. Float Switch Cleaning

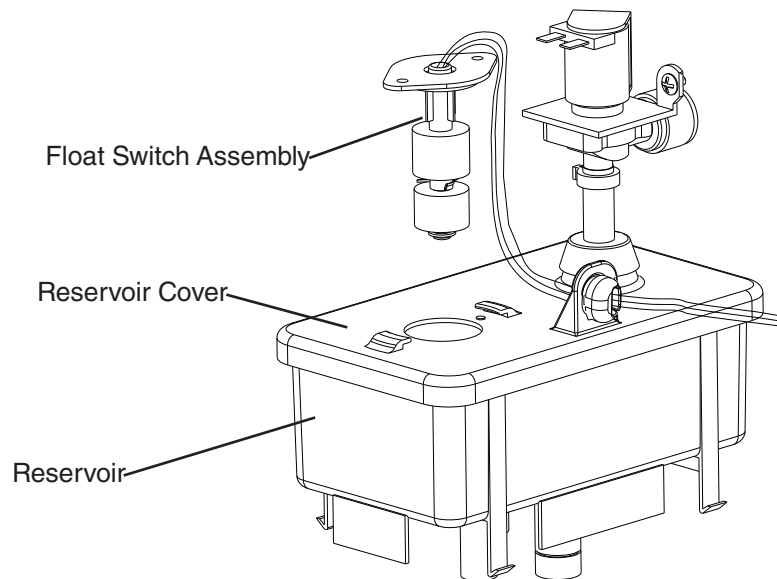
Depending on water conditions, scale may build up on FS. Scale on the switch can cause the floats to stick. In this case, FS should be cleaned and checked.

- 1) Remove the front panel and move the control switch to the "DRAIN" position.
- 2) Press and hold the safety switch to start draining the appliance.
- 3) Allow the water to drain from the reservoir, then release the safety switch.
- 4) Turn off the power supply.
- 5) Remove FS assembly from the reservoir cover. See Fig. 12.
- 6) Wipe down FS assembly with a mixture of 1 part Hoshizaki Scale Away and 25 parts warm water. Rinse the FS assembly thoroughly with clean water.
- 7) While not necessary, the floats can be removed from the shaft during cleaning. If you remove them, note that the blue float is on top. The floats must be installed with the magnets inside them towards the top of the switch. See Fig. 7. Installing the floats upside down will affect the timing of FS operation.
- 8) Rinse FS assembly thoroughly with clean water and replace in its original position.
- 9) Replace the front panel in its correct position.
- 10) Move the control switch to the "ICE" position.
- 11) Turn on the power supply to start the automatic icemaking process.

Legend: **Comp**—compressor; **FS**—float switch; **GM**—gear motor



**Fig. 11**



**Fig. 12**

## F. Diagnostic Tables

Before consulting the diagnostic tables, check for correct installation, proper voltage per appliance nameplate, and adequate water pressure (10 to 113 PSIG). Check control board using the steps in "II.C. Control Board Check."

### 1. No Ice Production

No Ice Production - Possible Cause	
Startup	
1. Power Supply	a) Off, blown fuse, or tripped breaker.
	b) Loose connection.
	c) Not within specifications.
2. Power Switch	a) "OFF" position.
	b) Defective.
3. Safety Switch	a) Safety switch not engaged.
	b) Defective.
4. Power Protect Relay (DCM-751/752B_H(-OS))	a) Energized. Voltage not within specifications.
	b) Defective.
5. Control Transformer	a) Coil winding open or shorted.
6. 1A 24VAC Fuse (Control Box)	a) Blown.
7. Control Board See "II.C. Control Board Check"	a) In alarm. See "III.B. LED Lights and Audible Alarm Safeties."
	b) Defective.
8. Control Switch	a) In "DRAIN" position.
	b) Defective.
9. Bin Control	a) Tripped with bin filled with ice.
	b) Proximity switch defective.
	c) Actuator paddle does not move freely.
10. High-Pressure Switch	a) Control board in 3 or 4-beep alarm. See "III.B. LED Lights and Audible Alarm Safeties."
Fill Cycle	
1. Control Board	a) No power to inlet water valve (24VAC).
	b) No power to float switch or not reading float switch condition.
2. Inlet Water Valve	a) Screen or orifice clogged.
	b) Coil winding open.
3. Water Supply	a) Water supply off or improper water pressure.
	b) External water filters clogged.
4. Float Switch	a) Float does not move freely.
	b) Defective.
5. Drain Valve	a) Sticking open.

<b>No Ice Production - Possible Cause</b>	
<b>Ice Purge Cycle</b>	
1. Control Board	a) No power to gear motor. b) No power to compressor control relay circuit (5VDC) or not reading circuit.
2. Gear Motor	a) 2A (DCM-300/500B_H(-OS)) or 3A (DCM-751/752B_H(-OS)) fuse blown. b) Internal protector open. c) Motor winding. d) Mechanical failure.
3. Coupling	a) Defective.
4. Compressor Control Relay	a) Defective.
<b>Freeze Cycle</b>	
1. Control Board	a) Defective.
2. Start Relay	a) Defective.
3. Start Capacitor or Run Capacitor	a) Defective.
4. Compressor	a) External protector. b) Motor winding. c) Mechanical failure.
5. High-Pressure Switch Activates	a) Dirty condenser. b) Ambient temperature too warm. c) Fan motor not operating. d) Refrigerant overcharged. e) Defective. f) Refrigerant lines or components restricted.
6. Fan Motor	a) Capacitor defective. b) Motor winding. c) Bearing worn out or locked rotor.
7. Evaporator	a) Dirty. b) Damaged or defective.
8. Thermostatic Expansion Valve (TXV)	a) Bulb loose. b) Operating erratically.
9. Refrigerant Charge	a) Low.
10. Drain Valve	a) Dirty, leaking by. b) Defective coil. c) Defective control board.
11. Water System	a) Water leaks.

<b>No Ice Production - Possible Cause</b>	
<b>Refill</b>	
1. Water Supply	a) Off.
2. Control Board	a) No power to float switch (5VDC) or not reading float switch condition.
	b) No power to inlet water valve (24VAC).
3. Float Switch	a) Float does not move freely.
	b) Defective.
4. Inlet Water Valve	a) Clogged or defective.
<b>Shutdown</b>	
1. Bin Control	a) Actuator paddle sticking open.
	b) Proximity switch defective.
2. Control Board See "II.C. Control Board Check"	a) S1 (S2) dip switch settings not set correctly.
	b) Defective.

## 2. Ice/Water Dispensing

<b>Ice Dispense-Push Button</b>	
1. Power Supply	a) Off, blown fuse, or tripped breaker.
2. Control Board	a) Ice dispense switch circuit open or no power (5VDC) from control board.
	b) No power (115VAC) to ice dispense solenoid, ice dispense motor, or agitating motor.
3. Ice Dispense Switch	a) Defective.
4. Dispense Mode Switch	a) Defective.
5. Ice Dispense Motor	a) Motor windings.
	b) Mechanical failure.
6. Ice Dispense Solenoid	a) Defective or loose connection.
7. Shutter Assembly	a) Defective.
8. Agitating Motor	a) Motor windings.
	b) Mechanical failure.
<b>Ice Dispense-Opti-Serve</b>	
1. Power Supply	a) Off, blown fuse, or tripped breaker.
2. Control Board	a) No power to dispense mode switch.
	b) Dispense mode switch circuit open.
	c) No power to ice dispense solenoid, ice dispense motor, or agitating motor.
3. Infrared Sensor	a) Defective.
4. Dispense Mode Switch	a) Defective (open).
5. Ice Dispense Motor	a) Motor windings.
	b) Mechanical failure.
6. Ice Dispense Solenoid	a) Defective or loose connection.
7. Shutter Assembly	a) Defective.
8. Agitating Motor	a) Motor windings.
	b) Mechanical failure.

<b>Water Dispense-Push Button</b>	
1. Power Supply	a) Off, blown fuse, or tripped breaker.
2. Control Board	a) No power from control board to water dispense switch (5VDC) or not reading signal.
	b) No power to water dispense valve (24VAC).
3. Water Dispense Switch	a) Defective.
4. Water Dispense Valve	a) Water supply turned off.
	b) Defective.
<b>Water Dispense-Opti-Serve</b>	
1. Power Supply	a) Off, blown fuse, or tripped breaker.
2. Infrared Sensor	a) Defective.
3. Control Board	a) No power to infrared sensor.
	b) No power to water dispense valve (24VAC).
4. Water Dispense Valve	a) Water supply turned off.
	b) Defective.

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### III. Controls and Adjustments

- A Hoshizaki exclusive control board is employed in the DCM series appliances.
- All models are pretested and factory adjusted.
- For a control board check procedure, see "II.C. Control Board Check."

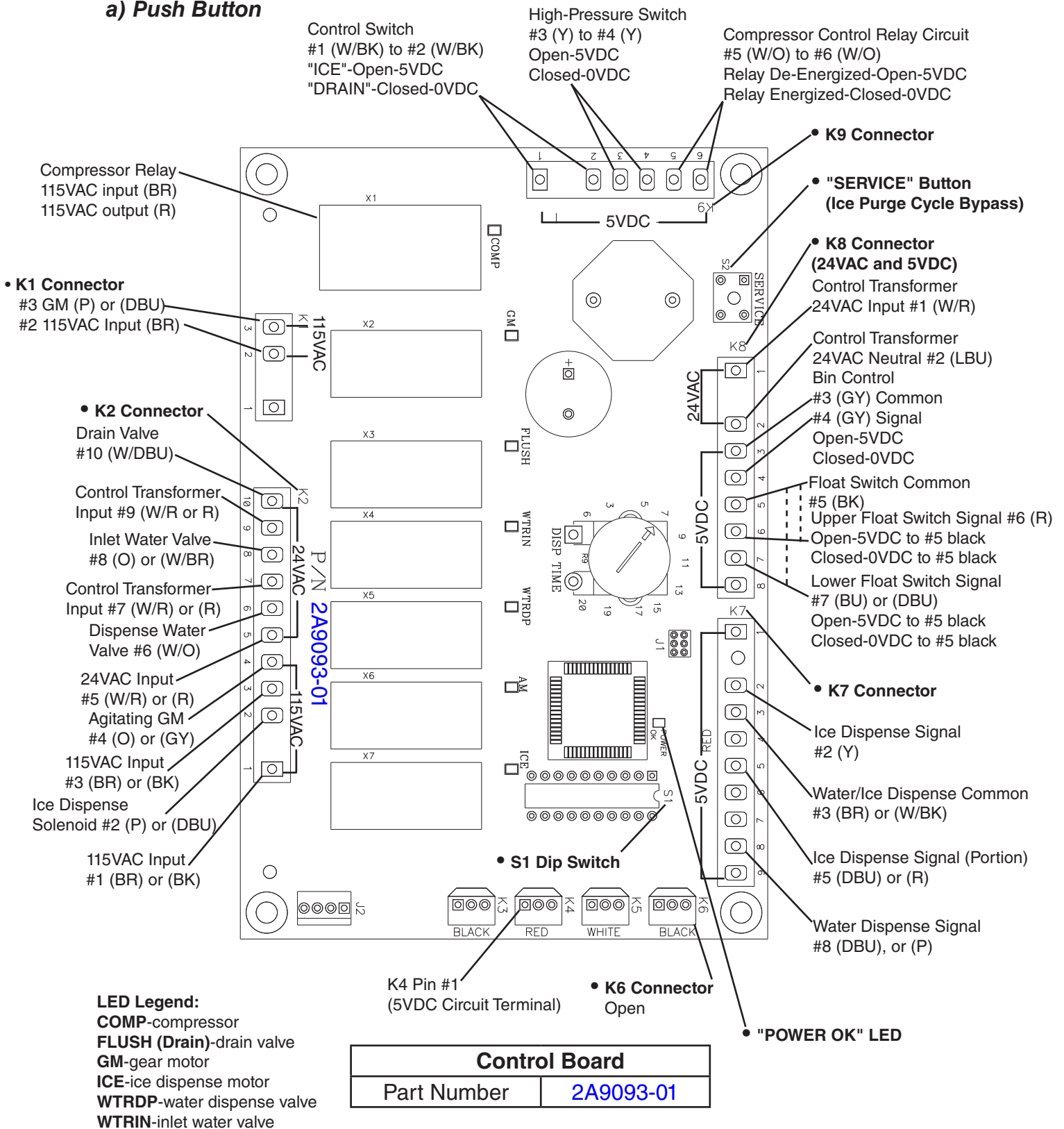
<b><i>NOTICE</i></b>
<ul style="list-style-type: none"><li>• The control board is fragile; handle very carefully.</li><li>• The control board contains integrated circuits, which are susceptible to failure due to static discharge. It is especially important to touch the metal part of the appliance when handling or replacing the control board.</li><li>• Do not touch the electronic devices on the control board or the back of the control board.</li><li>• Do not change wiring and connections. Do not misconnect terminals.</li><li>• Do not short out power supply to test for voltage.</li><li>• Always replace the whole control board assembly if it goes bad.</li></ul>

# A. Control Board Layout

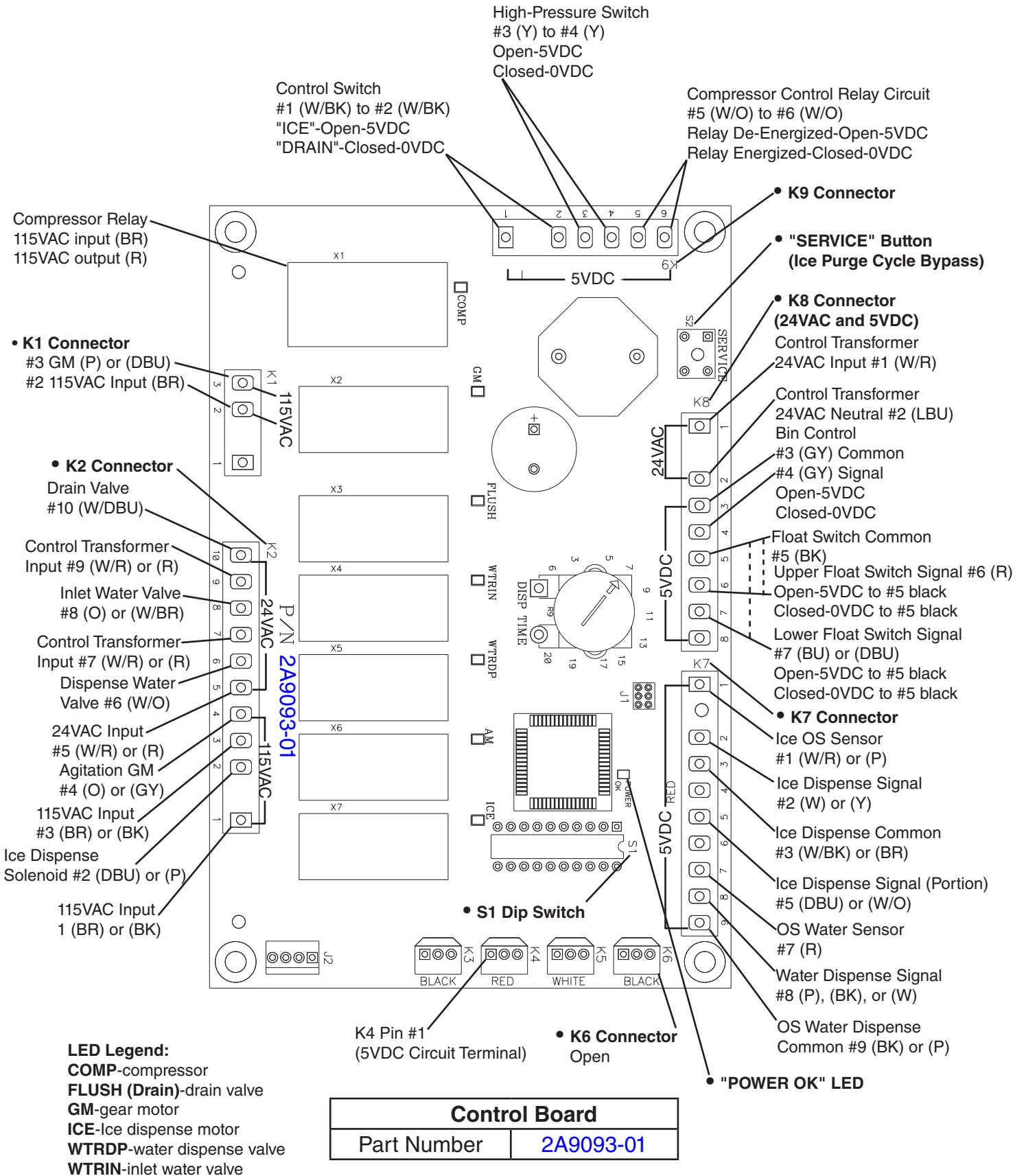
## 1. Control Board Layout - Auxiliary Code N-0 and Earlier

Note: Control Board layout is the same for **2A4296-01**, **2A8054-01**, and **2A9093-01**.

### a) Push Button

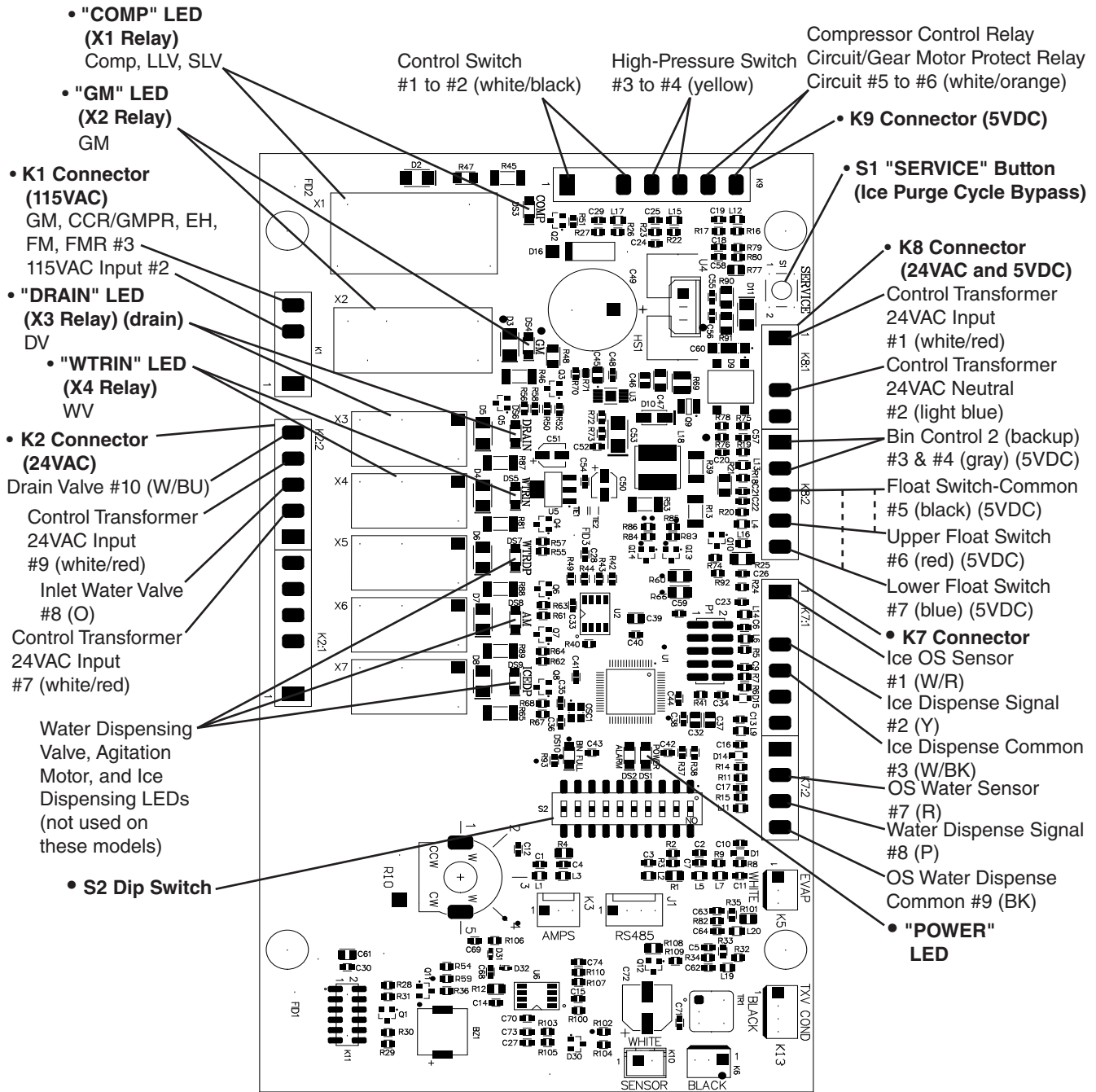


**b) Opti-Serve (-OS)**



## 2. Control Board Layout - Auxiliary Code N-1 and Later

### Push Button and Opti-Serve (-OS)



Control Board	
Part Number	2A9874-01

## B. LED Lights and Audible Alarm Safeties

### 1. Auxiliary Code N-0 and Earlier

The "POWER OK" LED indicates proper control voltage and will remain on unless a control voltage problem occurs. For further details, see "II.B. Service Diagnosis."

Icemaking Sequence					
Sequence Step	LED	Energized Components	Min.	Max.	
Fill Cycle	WTRIN	WV	-	-	
Ice Purge Cycle	GM	GM, EH, FM	5 min.	5 min.	
Freeze Cycle (with refill)	GM, WTRIN* (refill), COMP	GM, Comp, FM, WV* (refill)	-	*On until UFS closes. Alarm sounds after 90 sec.	
1-1 hr or 1-12 hr Drain Cycle	FLUSH (Drain) <b>Do not adjust for 1-in-12 on this model.</b>	1-in-1: DV- Icemaker status does not change 1-in-12: DV	2 sec.	10 min.	
Dispensing Sequence					
Sequence Step	LED	Energized Components	Time LEDs are on	**Dispense Mode Switch	
				Continuous	Portion
Ice Dispense Activation	ICE, AM*	IDS**, IDM**, AM*	*AM energizes .6 sec. every 12 sec. of cumulative dispense time	60 sec. per activation	Adjustable between 0.2 sec. and 20 sec.
Dispense Water Valve Activation	WTRDP	DispWV			

The built-in alarm safeties shut down the appliance.

No. of Beeps (every 5 sec.)	Type of Alarm	Reset Options
1	Low Water Safety UFS open > 90 seconds after WV energized.	Automatic reset once water supply is restored and UFS closes.
2	Control Switch In "DRAIN" position longer than 15 minutes.	Automatic reset once the control switch is moved to the "ICE" position.
3	High-Pressure Switch First and second activation in 1 hour.	Automatic reset once pressure drops below the high pressure threshold and the high-pressure switch closes.
4	High-Pressure Switch Third activation in 1 hour.	Call for service. To avoid possible catastrophic failure, it is recommended to leave the appliance off until this alarm is resolved. Manual reset. Turn power off and on again.
5	Freeze Timer WV off > 30 minutes since last WV activation.	Manual reset. Turn power off and on again.
6	Low Voltage (92Vac ±5% or less)	"POWER OK" LED turns off if voltage protection operates.
7	High Voltage (147Vac ±5% or more)	The control voltage safeties automatically reset when voltage is corrected.
8	Gear Motor CCR contacts fail to close.	Manual reset. Turn power off and on again.
9	Open Circuit CB K8 #3 and #4. Infrared Sensor (S1 dip switch 7) (Not used on this model)	Manual reset. Turn power off and on again.

Legend: **AM**—agitating motors, **CB**—control board; **CCR**—compressor contact relay; **Comp**—compressor; **DispWV**—dispense water valve; **DV**—drain valve; **EH**—evaporator heater; **FM**—fan motor; **GM**—gear motor; **IDM**—ice dispense motor; **IDS**—ice dispense shutter solenoid; **UFS**—upper float switch; **WV**—inlet water valve

## 2. Auxiliary Code N-1 and Later

The "POWER" LED indicates proper control voltage and will remain on unless a control voltage problem occurs. For further details, see "II.A. Sequence of Operation Flow Chart."

Sequence Step	LED	Energized Components	Min.	Max.
Fill Cycle	WTRIN	WV	-	-
Ice Purge Cycle	GM	GM, EH, FM/FMR	5 min.	5 min.
Freeze Cycle (with refill)	GM, WTRIN* (refill), COMP	GM, EH, Comp, FM/FMR, LLV, SLV, WV* (refill)	-	*On until UFS closes. Alarm sounds after 90 sec.
Drain Cycle 1-in-1 hr. or 1-in-12 hr.	DRAIN	1-in-1 hr: DV 1-in-12 hr: DV (Icemaker status does not change)	2 sec. (1-in-1 hr.)	10 min. (1-in-12 hr.)

In case of alarm, the built-in alarm safeties shut down the unit, the orange "ALARM" LED turns on, and audible alarms sound as listed below.

No. of Beeps (every 5 sec.)	Type of Alarm	Notes and Reset Options
1	<b>Low-Water Safety</b> UFS open > 90 sec. after WV energized.	Automatic reset once water supply is restored and UFS closes.
2	<b>Control Switch</b> In "DRAIN" position longer than 15 min.	Automatic reset once the control switch is moved to the "ICE" position.
3	<b>High-Pressure Switch</b> First and second activation in 1 hr.	Automatic reset once pressure drops below the high pressure threshold and the high-pressure switch closes.
4	<b>High-Pressure Switch</b> Third activation in 1 hr.	Turn power off. Call for service. To avoid possible catastrophic failure, it is recommended to leave the icemaker off until this alarm is resolved.
5	<b>Freeze Timer</b> WV off > 30 min. since last WV activation.	Call for service. Manual reset. Turn power off and on again. Check for FS stuck (up), WV leaking by, TXV defective, LLV not opening, low charge, HM not bypassing, or inefficient Comp.
6	<b>Low Voltage</b> 92VAC $\pm$ 5% or less.	Green "POWER" LED turns off if voltage protection operates.
7	<b>High Voltage</b> 147VAC $\pm$ 5% or more.	Control voltage safeties automatically reset when voltage is corrected.
8	<b>Gear Motor Fuse or Protector Open</b> CCR contacts fail to close.	Turn power off. Check for GM fuse or protector open. Replace fuse or let protector cool and reset. If persistent trips occur, call for service.

Legend: **CCR**—compressor control relay; **Comp**—compressor; **DV**—drain valve;  
**EH**—evaporator heater; **FM**—fan motor; **FMR**—fan motor-remote; **FS**—float switch;  
**GM**—gear motor; **HM**—headmaster (C.P.R.); **LLV**—liquid line valve; **SLV**—suction line valve; **TXV**—thermostatic expansion valve; **UFS**—upper float switch;  
**WV**—inlet water valve

## C. Controls and Adjustments

### NOTICE

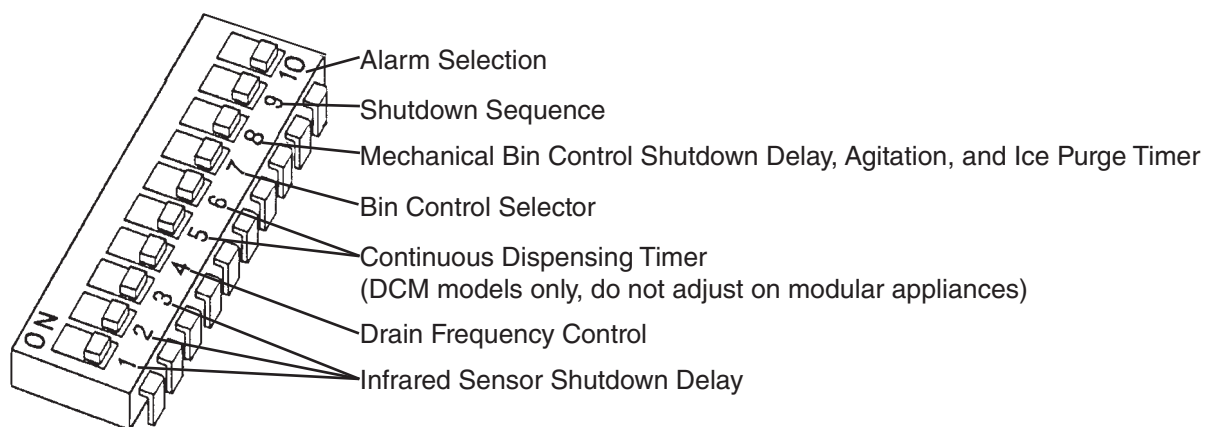
Dip switches are factory set. Failure to maintain factory settings may adversely affect performance and warranty coverage. For more information, contact Hoshizaki Technical Support at 1-800-233-1940.

### a) Auxiliary Code N-0 and Earlier

#### 1. Default Dip Switch Settings

The S1 dip switch settings are factory-set to the following positions:

AUX Code	Dip Switch No.	1	2	3	4	5	6	7	8	9	10
N-0 and Earlier	DCM-300BAH DCM-500B_H DCM-751B_H DCM-752BAH	OFF	OFF	OFF	OFF	ON	ON	OFF	ON	OFF	OFF
ALL	DCM-300BAH-OS DCM-500B_H-OS DCM-751B_H-OS DCM-752BAH-OS	OFF	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF



#### 2. Infrared Sensor Shutdown Delay (S1 dip switch 1, 2, 3)

### NOTICE

Do not adjust. Setting not used on this model. When dip switch 7 is off, dip switch 1, 2, and 3 are ignored.

Factory set. The appliance does not use an infrared sensor bin control. The appliance uses a mechanical bin control for ice level control.

### 3. Drain Frequency Control (S1 dip switch 4)

The appliance is factory set for optimum performance with the 1-in-1 drain cycle (S1 dip switch 4 in the "OFF" position). This setting allows for removal of sediment from the evaporator without interrupting the icemaking process. **NOTICE! Do not adjust S1 dip switch 4 out of the factory default position. This dip switch must be left in the factory default position or the appliance will not operate correctly.**

S1 Dip Switch Setting No. 4	Drain Timer Interval	Drain Valve Open
OFF (1-in-1)	1 Hour	2 Seconds
ON (1-in-12)	11 Hours 45 Minutes	10 Minutes

### 4. Continuous Dispensing Timer (S1 dip switch 5 & 6)

The dispense mode switch must be in the "CONTINUOUS" position for this setting to apply. The factory setting allows ice to be dispensed continuously for 20 sec. on push button models and for a maximum of 60-sec. on Opti-Serve models.

**NOTICE! On Opti-Serve models, do not adjust S1 dip switch 5 & 6 out of the factory default position.**

S1 Dip Switch Setting		Dispense Time
No. 5	No. 6	
OFF	OFF	No Limit
ON	OFF	20 Seconds
OFF	ON	60 Seconds
ON	ON	No Limit

Note: The ice dispense solenoid has an internal overload protector. When set to "No Limit" the internal protector may open if ice dispense solenoid is energized longer than 3 to 4 min. at one time.

### 5. Bin Control Selector (S1 dip switch 7)

The appliance is factory set with mechanical bin control operation. No adjustment is required. In the factory default position (S1 dip switch 7 in the off position), the gear motor delay after the upper float switch closes is 5 seconds. **WARNING! Do not adjust S1 dip switch 7 out of the factory default position. This dip switch must be left in the factory default position or the appliance will not operate correctly.**

S1 Dip Switch Setting No. 7	Bin Control Application	Gear Motor Delay
OFF	Bin Control (Mechanical)	5 seconds
ON	Bin Control (Infrared Sensor) with optional Mechanical Bin Control Backup	30 seconds

### 6. Bin Control Shutdown Delay, Agitation, and Ice Purge Timer (S1 dip switch 8)

Only available when S1 dip switch 7 is in the "OFF" position. Factory set for normal operation. No adjustment is required. The shutdown delay is the time between the bin control proximity switch opening and the control board shutting down the appliance or starting the S1 dip switch 9 bin control shutdown timer (2A8054-01 and 2A9093-01 only). E-0 (H) and Later: A 2-second periodic agitation was added to occur every 90 minutes. **WARNING! Do not adjust S1 dip switch 8 out of the factory default position. This dip switch must be left in the factory default position or the appliance will not operate correctly.**

S1 Dip Switch Setting	Bin Control Shutdown Delay 2A4296-01 CB Only (See Dip switch 9 for 2A8054-01 and 2A9093-01 CB)		Storage Bin Periodic Agitation		Ice Purge Timer
No. 8	2A4296-01 E-0 (G) and Earlier 2A8054-01 and 2A9093-01	2A4296-01 E-0 (H) and Later	2A4296-01 E-0 (G) and Earlier	2A4296-01 E-0 (H) and Later 2A8054-01 and 2A9093-01	2A4296-01 2A8054-01 2A9093-01
OFF	0.25 sec.	90-60 Second Sequence (150-sec. total)	No Agitation	2 Seconds	60 Seconds (1 min.)
ON	6 to 10 sec.		No Agitation		300 Seconds (5 min.)

### 7. Bin Control Shutdown Delay (S1 dip switch 9)

2A8054-01 and 2A9093-01 Only. Only available when S1 dip switch 7 is in the "OFF" position. Factory set for optimum performance. Do not adjust. Dip switch 9 shutdown timing starts when Dip Switch 8 Bin Control Shutdown Delay timer terminates. The shutdown delay is the time between the bin control proximity switch opening and the control board shutting down the appliance. **WARNING! Do not adjust S1 dip switch 9 out of the factory default position. This dip switch must be left in the factory default position or the appliance will not operate correctly.**

S1 Dip Switch Setting	Bin Control Shutdown Delay
No. 9	
OFF	90-60 Second Sequence (150 sec. total)
ON	6 to 10 Seconds

### 8. Factory Use (S1 Dip Switch 10)

Factory set for proper operation. Do not adjust. This must be left in the factory default position.

**b) Auxiliary Code N-1 and Later**

**1. Default Dip Switch Settings**

The S2 dip switch settings are factory-set to the following positions:

AUX Code	Dip Switch No.	1	2	3	4	5	6	7	8	9	10
N-1 and Later	DCM-300BAH	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
	DCM-500B_H										
	DCM-751B_H										
	DCM-752BAH										
ALL	DCM-300BAH-OS	OFF	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF
	DCM-500B_H-OS										
	DCM-751B_H-OS										
	DCM-752BAH-OS										

**2. Infrared Sensor Shutdown Delay (S2 dip switch 1, 2, 3)**

<b>NOTICE</b>
Do not adjust. Setting not used on this model. When dip switch 7 is off, dip switch 1, 2, and 3 are ignored.

Factory set. The appliance does not use an infrared sensor bin control. The appliance uses a mechanical bin control for ice level control.

**3. Drain Frequency Control (S2 dip switch 4)**

The appliance is factory set for optimum performance with the 1-in-1 drain cycle (S2 dip switch 4 in the "OFF" position). This setting allows for removal of sediment from the evaporator without interrupting the icemaking process. **NOTICE! Do not adjust S2 dip switch 4 out of the factory default position. This dip switch must be left in the factory default position or the appliance will not operate correctly.**

S2 Dip Switch Setting	Drain Timer Interval	Drain Valve Open
No. 4		
OFF (1-in-1)	1 Hour	2 Seconds
ON (1-in-12)	11 Hours 45 Minutes	10 Minutes

**4. Continuous Dispensing Timer (S2 dip switch 5 & 6)**

The factory setting allows ice to be dispensed continuously for 20 sec. on push button models and for a maximum of 60-sec. on Opti-Serve models.

**NOTICE! On Opti-Serve models, do not adjust S2 dip switch 5 & 6 out of the factory default position.**

S2 Dip Switch Setting		Dispense Time
No. 5	No. 6	
OFF	OFF	No Limit
ON	OFF	20 Seconds
OFF	ON	60 Seconds
ON	ON	No Limit

Note: The ice dispense solenoid has an internal overload protector. When set to "No Limit" the internal protector may open if ice dispense solenoid is energized longer than 3 to 4 min. at one time.

### 5. Bin Control Selector (S2 dip switch 7)

The appliance is factory set with mechanical bin control operation. No adjustment is required. In the factory default position (S2 dip switch 7 in the off position), the gear motor delay after the upper float switch closes is 5 seconds. **WARNING! Do not adjust S2 dip switch 7 out of the factory default position. This dip switch must be left in the factory default position or the appliance will not operate correctly.**

S2 Dip Switch Setting	Bin Control Application	Gear Motor Delay
No. 7		
OFF	Bin Control (Mechanical)	5 seconds
ON	Bin Control (Infrared Sensor) with optional Mechanical Bin Control Backup	30 seconds

### 6. Bin Control Shutdown Delay, Agitation, and Ice Purge Timer (S2 dip switch 8)

Only available when S2 dip switch 7 is in the "OFF" position. Factory set for normal operation. No adjustment is required. The shutdown delay is the time between the bin control proximity switch opening and the control board shutting down the appliance or starting the S2 dip switch 9 bin control shutdown timer. **WARNING! Do not adjust S2 dip switch 8 out of the factory default position. This dip switch must be left in the factory default position or the appliance will not operate correctly.**

S2 Dip Switch Setting	Storage Bin Periodic Agitation	Ice Purge Timer
No. 8		
OFF	2 Seconds	60 Seconds (1 min.)
ON	No Agitation	300 Seconds (5 min.)

### 7. Bin Control Shutdown Delay (S2 dip switch 9)

Only available when S2 dip switch 7 is in the "OFF" position. Factory set for optimum performance. Do not adjust. Dip switch 9 shutdown timing starts when Dip Switch 8 Bin Control Shutdown Delay timer terminates. The shutdown delay is the time between the bin control proximity switch opening and the control board shutting down the appliance. **WARNING! Do not adjust S2 dip switch 9 out of the factory default position. This dip switch must be left in the factory default position or the appliance will not operate correctly.**

S2 Dip Switch Setting	Bin Control Shutdown Delay
No. 9	
OFF	90-60 Second Sequence (150 sec. total)
ON	6 to 10 Seconds

### 8. Factory Use (S2 Dip Switch 10)

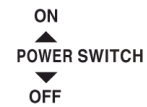
Factory set for proper operation. Do not adjust. This must be left in the factory default position.

## D. Switches

The power switch, control switch, and dispense mode switch are used to control the operation of the appliance.

### 1. Power Switch

**WARNING! The power switch does not turn off all power supply to the unit. 115VAC power supply is present on control board K1 connector pin #2 (BR) and control board X1 relay (BR) when the power switch is in the "OFF" position. See Fig. 13.**



**Fig. 13**

### 2. Control Switch

The control switch has 3 positions, "ICE," "OFF," and "DRAIN." See Fig. 14.

#### a) ICE

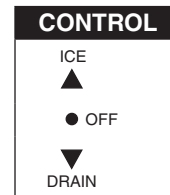
When the control switch is in the "ICE" position, 24VAC is directed to control board K8 connector pin #1. 24VAC is present between control board K8 connector pins #1 (power) and pin #2 (neutral).

#### b) OFF

When the control switch is in the "OFF" position, 24VAC is broken to control board K8 connector pin #1.

#### c) DRAIN

When the control switch is in the "DRAIN" position, 24VAC is directed to control board K8 connector pin #1. 24VAC is present between control board K8 connector pins #1 (power) and pin #2 (neutral). Also, a 5VDC circuit is closed on control board K9 connector pins #1 and #2. This energizes an internal relay on the control board which allows 24VAC to the drain valve from control board connector K2 pin #10.



**Fig. 14**

### 3. Dispense Mode Switch - Auxiliary Code N-0 and Earlier ONLY

The dispense mode switch has 2 positions, "CONTINUOUS" and "PORTION." See Fig. 15.

#### a) CONTINUOUS

When the dispense mode switch is in the "CONTINUOUS" position, ice dispenses as follows:

Push Button: Ice dispenses continuously with button engaged.

OS: Ice dispenses for a maximum of 60 seconds per activation.

#### b) PORTION

When the dispense mode switch is in the "PORTION" position, ice dispenses for the amount of time determined by the ice dispense time setting.



Fig. 15

The ice dispense time control is located on the control board. The dial indicates dispense time in seconds and is adjustable between 0.6 and 20 seconds. When shipped, the ice dispense time control is set to the minimum dispense time of 0.6 sec. (approximately 0.72 oz.). See Fig. 16.

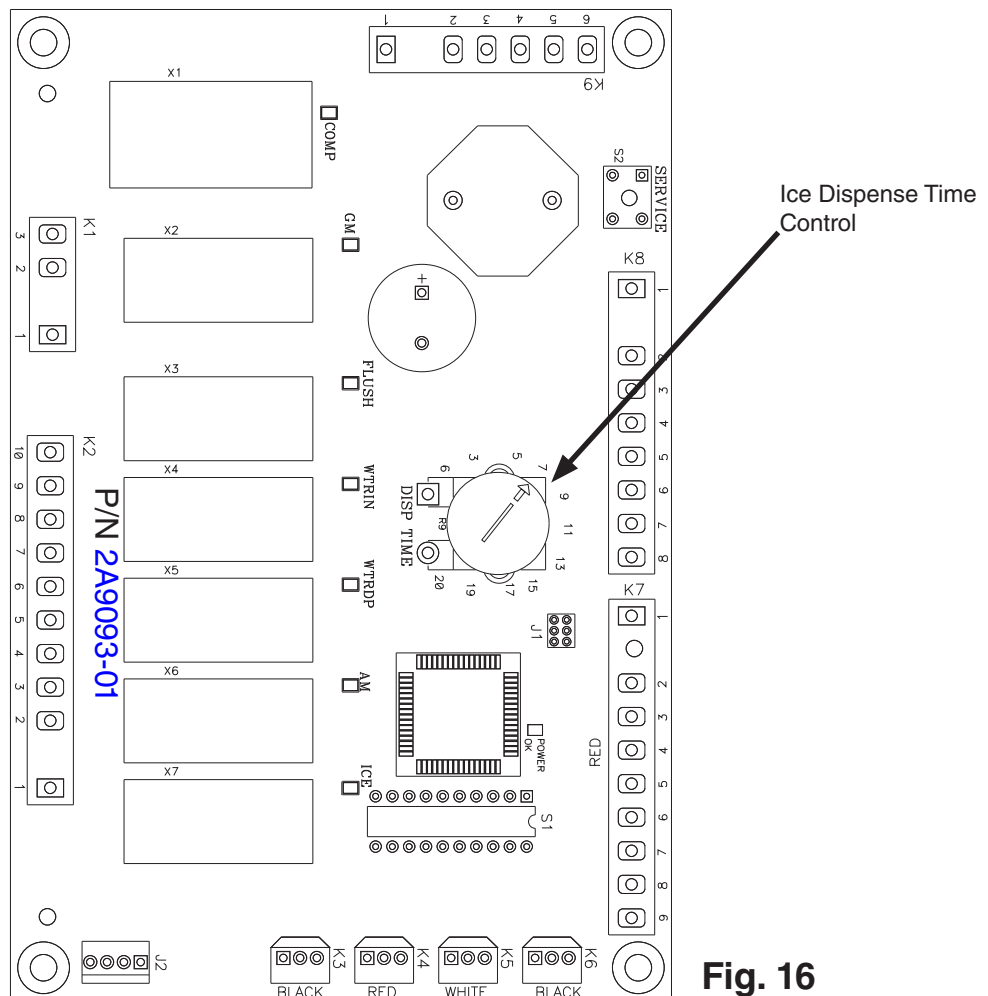


Fig. 16

## IV. Refrigeration Circuit and Component Service Information

### **⚠ WARNING**

- This appliance should be diagnosed and repaired only by qualified service personnel to reduce the risk of death, electric shock, serious injury, or fire.
- Move the power switch to the "OFF" position, then unplug the appliance from the electrical outlet before servicing.
- **CHOKING HAZARD:** Ensure all components, fasteners, and thumbscrews are securely in place after the icemaker is serviced. Make sure that none have fallen into the ice storage bin.
- Make sure all food zones in the icemaker and dispenser unit/ice storage bin are clean after service.
- When replacing evaporator assembly and water circuit components, make sure there are no water leaks after the repair is complete.

### A. Refrigeration Circuit Service Information

#### **⚠ WARNING**

- Repairs requiring the refrigeration circuit to be opened must be performed by properly trained and EPA-certified service personnel.
- Use an electronic leak detector or soap bubbles to check for leaks. Add a trace of refrigerant to the system (if using an electronic leak detector), and then raise the pressure using nitrogen gas (140 PSIG). Do not use R-404A as a mixture with pressurized air for leak testing.

#### **NOTICE**

- Always recover the refrigerant and store it in an approved container. Do not discharge the refrigerant into the atmosphere.
- Do not leave the system open for longer than 15 minutes when replacing or servicing parts. The Polyol Ester (POE) oils used in R-404A units can absorb moisture quickly. Therefore it is important to prevent moisture from entering the system when replacing or servicing parts.
- Always install a new drier every time the sealed refrigeration system is opened. Do not replace the drier until after all other repair or replacement has been made. Install the new drier with the arrow on the drier in the direction of the refrigerant flow.
- When brazing, protect the drier by using a wet cloth to prevent the drier from overheating. Do not allow the drier to exceed 250°F (121°C).

#### 1. Refrigerant Recovery

This icemaker is provided with refrigerant access valves. Using proper refrigerant practices, recover the refrigerant from the access valves and store it in an approved container. Do not discharge the refrigerant into the atmosphere.

## 2. Brazing

### **⚠ WARNING**

- R-404A itself is not flammable at atmospheric pressure and temperatures up to 176°F (80°C).
- R-404A itself is not explosive or poisonous. However, when exposed to high temperatures (open flames), R-404A can be decomposed to form hydrofluoric acid and carbonyl fluoride both of which are hazardous.
- Do not use silver alloy or copper alloy containing arsenic.
- Use an electronic leak detector or soap bubbles to check for leaks. Add a trace of refrigerant to the system (if using an electronic leak detector), and then raise the pressure using nitrogen gas (140 PSIG). Do not use R-404A as a mixture with pressurized air for leak testing.

- 1) Braze all fittings while purging with nitrogen gas flowing at a pressure of 3 to 4 PSIG.

### **NOTICE**

- Always install a new drier every time the sealed refrigeration system is opened.
- Do not replace the drier until after all other repair or replacement has been made. Install the new drier with the arrow on the drier in the direction of the refrigerant flow.
- When brazing, protect the drier by using a wet cloth to prevent the drier from overheating. Do not allow the drier to exceed 250°F (121°C).

- 2) Use an electronic leak detector or soap bubbles to check for leaks. Add a trace of refrigerant to the system (if using an electronic leak detector), and then raise the pressure using nitrogen gas (140 PSIG). Do not use R-404A as a mixture with pressurized air for leak testing.

## 3. Evacuation and Recharge (R-404A)

- 1) Attach a vacuum pump to the system. Be sure to connect charging hoses to both high and low-side access valves.

### **IMPORTANT**

The vacuum level and vacuum pump may be the same as those for current refrigerants. However, the rubber hose and gauge manifold to be used for evacuation and refrigerant charge should be exclusively for POE oils.

- 2) Turn on the vacuum pump. Open the gauge manifold valves. Never allow the oil in the vacuum pump to flow backwards.
- 3) Allow the vacuum pump to pull down to a 29.9" Hg vacuum. Evacuating period depends on pump capacity.
- 4) Close the low-side valve and high-side valve on the gauge manifold.

- 5) Disconnect the gauge manifold hose from the vacuum pump and attach it to a refrigerant service cylinder. Remember to loosen the connection and purge the air from the hose. See the rating label inside the icemaker for the required refrigerant charge. Hoshizaki recommends only virgin refrigerant or reclaimed refrigerant which meets AHRI Standard 700 (latest edition) be used.
- 6) A liquid charge is required for charging an R-404A system (to prevent fractionation). Place the service cylinder on the scales: if the service cylinder is not equipped with a dip tube, invert the service cylinder, then place it on the scales. Open the high-side valve on the gauge manifold.
- 7) Allow the system to charge with liquid until the proper charge weight is met.
- 8) If necessary, add any remaining charge to the system through the low-side.  
**NOTICE! To prevent compressor damage, use a throttling valve or liquid dispensing device to add the remaining liquid charge through the low-side access valve with the icemaker running.**
- 9) Close the high and low-side gauge manifold valves, then disconnect the gauge manifold hoses.
- 10) Cap the access valves to prevent a possible leak.

## B. Component Service Information

### **NOTICE**

- When replacing a component listed below, see the notes to help ensure proper operation.
- When replacing evaporator assembly and water circuit components, make sure there are no water leaks after the repair is complete.
- Seal bolts must be replaced once removed because seal material is one-time use only. If new seal bolts do not have preapplied threadlocker, apply Loctite 243 or equivalent threadlocker to seal bolt threads. Tighten to the torque values listed below.

Torque for DCM models: 11.1 ft-lb/15 N·m

<b>Component</b>	<b>Notes</b>
Compressor	Install a new drier, start capacitor, and start relay.
Fan Motor	Install a new capacitor.
Thermostatic Expansion Valve	<ul style="list-style-type: none"> <li>• Attach the thermostatic expansion valve bulb to the suction line in the same location as the previous bulb.</li> <li>• The bulb should be between the 10 and 2 o'clock positions on the tube.</li> <li>• Secure the bulb with the clamp and holder, then insulate it.</li> </ul>
Upper and Lower Bearings	<ul style="list-style-type: none"> <li>• Inspect the upper bearing for wear. See "IV.C.1. Upper Bearing Wear Check." Replace if necessary.</li> <li>• When replacing the upper bearing it is advised to also change the lower bearing at the same time.</li> </ul>
Evaporator	<ul style="list-style-type: none"> <li>• Install a new drier.</li> <li>• Inspect the mechanical seal and O-ring prior to installing the new evaporator. If worn, cracked, or scratched, the mechanical seal should also be replaced.</li> </ul>
Gear Motor	Install a new gear motor capacitor.

# Evaporator Assembly

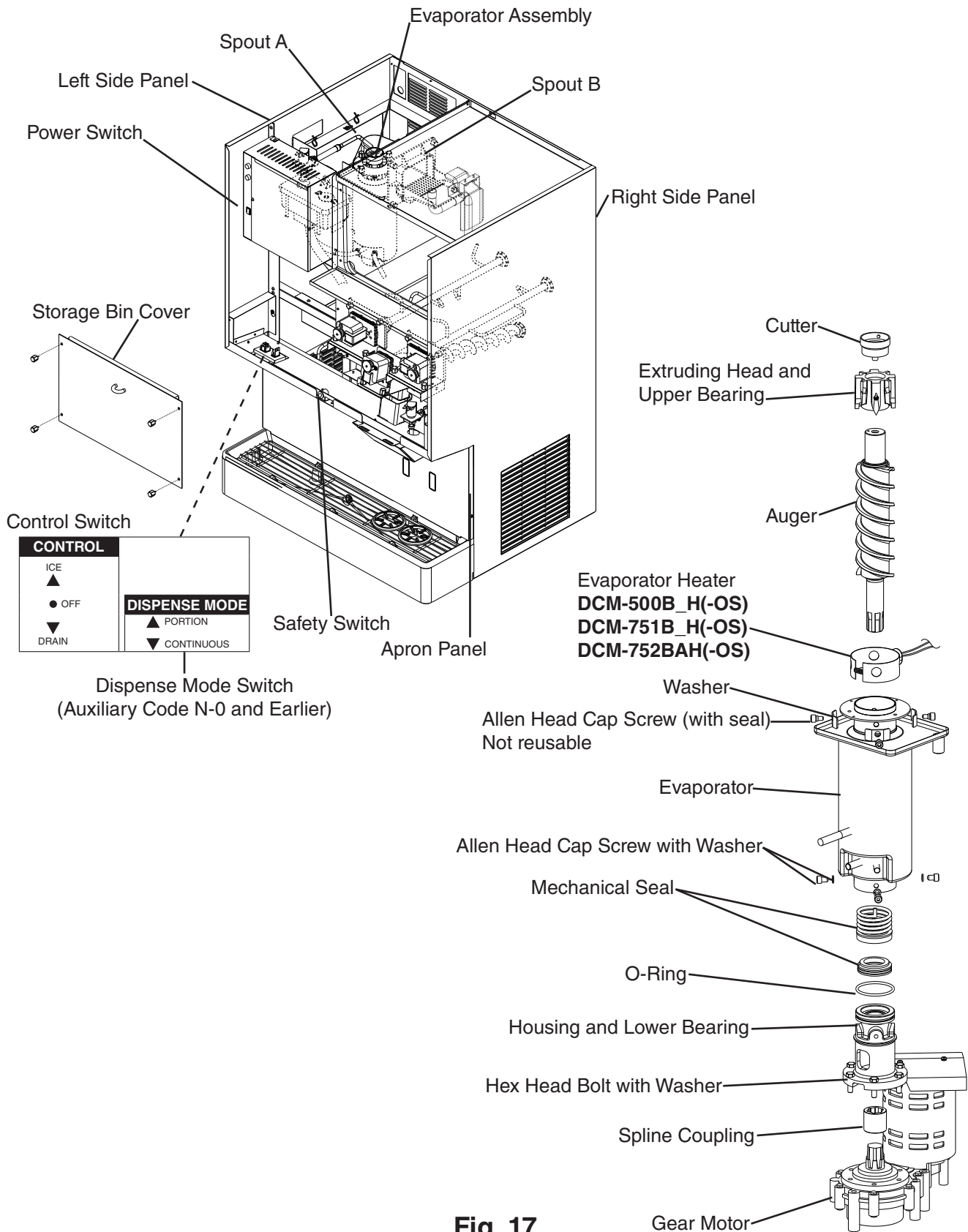


Fig. 17

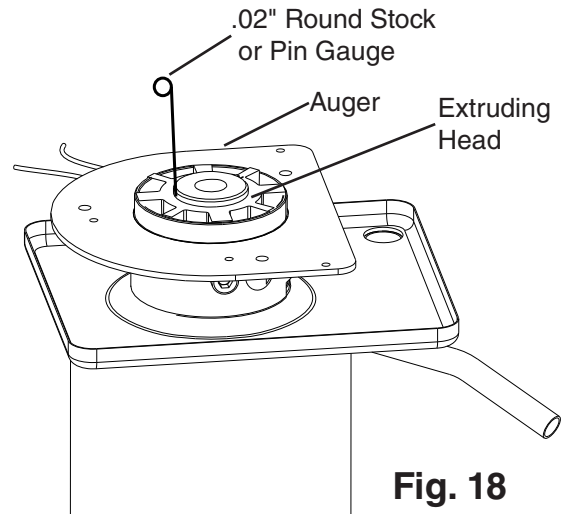
## C. Icemaking Unit

### 1. Upper Bearing Wear Check

To ensure that the bearing inside the extruding head does not exceed the wear tolerance of .02", follow the instructions below. See Fig. 18.

- 1) Move the control switch to the "OFF" position, then turn off the power supply. Remove the front and top panels, then move the power switch to the "OFF" position.
- 2) Remove the storage bin cover. Remove spout B, then remove spout A and the cutter. See Fig. 17.

- 3) Grasp the top of the auger and move the auger towards you, then try to insert a .02" round stock or pin gauge in between the back side of the auger shaft and the bearing surface. Check several locations around the auger shaft. If the gauge goes between the shaft and the bearing at any point or if the bearing is scratched or cracked, both the top bearing in the extruding head and the lower bearing in the housing should be replaced. Instructions for removing the extruding head and housing are located later in this procedure.



**Fig. 18**

Note: Replacing the bearing requires a bearing press adaptor. If one is not available, replace the whole extruding head and housing.

- 4) Replace the cutter, spout A, spout B, and the storage bin cover in their correct positions.
- 5) Move the power switch to the "ON" position, then replace the panels in their correct positions.
- 6) Turn on the power supply, then move the control switch to the "ICE" position to start the automatic icemaking process.

### 2. Removal and Replacement of Extruding Head

- 1) Move the control switch to the "DRAIN" position and drain all of the water from the evaporator.
- 2) After the water has stopped draining, move the control switch to the "OFF" position, then turn off the power supply. Remove the front and top panels, then move the power switch to the "OFF" position.
- 3) Remove the storage bin cover. Remove spout B, then remove spout A and the cutter. See Fig. 17. Remove the apron panel, then remove the left side panel.
- 4) Remove the evaporator heater (if applicable), then remove the allen head cap screws (with seals) securing the extruding head and discard. **NOTICE! The allen head cap screws (with seals) are not reusable. New allen head cap screws (with seals) must be used.**

- 5) Lift off the extruding head.
- 6) Place the new extruding head in place and tighten down with new allen head cap screws. Replace the evaporator heater (if applicable).
- 7) Replace the cutter in its correct position.
- 8) Replace spout A, spout B, and the storage bin cover in their correct positions.
- 9) Move the power switch to the "ON" position, then replace the panels in their correct positions.
- 10) Turn on the power supply, then move the control switch to the "ICE" position to start the automatic icemaking process.

### 3. Removal and Replacement of Auger

- 1) Move the control switch to the "DRAIN" position and drain all of the water from the evaporator.
- 2) After the water has stopped draining, move the control switch to the "OFF" position, then turn off the power supply. Remove the front and top panels, then move the power switch to the "OFF" position.
- 3) Remove the storage bin cover. Remove spout B, then remove spout A. See Fig. 17. Remove the apron panel, then remove the left side panel.
- 4) Remove the evaporator heater (if applicable), then remove the allen head cap screws (with seals) securing the extruding head and discard. Using the cutter, lift out the auger assembly.
- 5) Remove the cutter, extruding head, and upper part of the mechanical seal from the auger and place them on the new auger. **NOTICE! To help prevent water leaks, be careful not to damage the surfaces of the O-ring or mechanical seal.**
- 6) Install the new auger assembly with the upper part of the mechanical seal attached. Secure the auger assembly using new allen head cap screws. Replace the evaporator heater (if applicable).
- 7) Replace spout A, spout B, and the storage bin cover in their correct positions.
- 8) Move the power switch to the "ON" position, then replace the panels in their correct positions.
- 9) Turn on the power supply, then move the control switch to the "ICE" position to start the automatic icemaking process.

#### 4. Removal and Replacement of Evaporator

##### **NOTICE**

- Always install a new drier every time the sealed refrigeration system is opened.
- Do not replace the drier until after all other repair or replacement has been made. Install the new drier with the arrow on the drier in the direction of the refrigerant flow.
- When brazing, protect the drier by using a wet cloth to prevent the drier from overheating. Do not allow the drier to exceed 250°F (121°C).

- 1) Move the control switch to the "DRAIN" position and drain all of the water from the evaporator.
- 2) After the water has stopped draining, move the control switch to the "OFF" position, then turn off the power supply. Remove the front and top panels, then move the power switch to the "OFF" position.
- 3) Remove the apron panel, then remove the left side panel.
- 4) Recover the refrigerant and store it in an approved container.
- 5) Remove the storage bin cover. Remove spout B, then remove spout A. See Fig. 17.
- 6) Remove the evaporator heater (if applicable), then remove the allen head cap screws securing the extruding head and discard the allen head cap screws. Using the cutter, lift out the auger assembly.
- 7) Remove the evaporator bracket and disconnect the water hoses.
- 8) Disconnect the inlet and outlet tubing.
- 9) Remove the allen head cap screws securing the evaporator to the lower housing.
- 10) Lift off the evaporator.
- 11) Inspect the mechanical seal and o-ring prior to installing the new evaporator. The mechanical seal consists of two parts. One moves along with the auger, and the other is fixed on the lower housing. **NOTICE! If the contact surfaces of these two parts are worn, cracked, or scratched, the mechanical seal may cause water leaks and should be replaced.** Instructions for removing the mechanical seal and lower housing are located later in this procedure.
- 12) Make sure the lower mechanical seal is in place, then place the new evaporator in position. Secure the evaporator to the lower housing using the allen head cap screws.
- 13) Remove the drier, then place the new drier in position.
- 14) Braze all fittings while purging with nitrogen gas flowing at a pressure of 3 to 4 PSIG.
- 15) Use an electronic leak detector or soap bubbles to check for leaks. Add a trace of refrigerant to the system (if using an electronic leak detector), and then raise the pressure using nitrogen gas (140 PSIG). Do not use R-404A as a mixture with pressurized air for leak testing.
- 16) Evacuate the system, and charge it with refrigerant. See the nameplate for the required refrigerant charge.

- 17) Install the new auger assembly with the upper part of the mechanical seal attached. Secure the auger assembly using new allen head cap screws. Replace the evaporator heater (if applicable).
- 18) Replace the evaporator bracket and reconnect the water hoses.
- 19) Replace spout A, spout B, and the storage bin cover in their correct positions.
- 20) Move the power switch to the "ON" position, then replace the panels in their correct positions.
- 21) Turn on the power supply, then move the control switch to the "ICE" position to start the automatic icemaking process.

## 5. Removal and Replacement of Mechanical Seal and Lower Housing

### 5a. Mechanical Seal

- 1) Move the control switch to the "DRAIN" position and drain all of the water from the evaporator.
- 2) After the water has stopped draining, move the control switch to the "OFF" position, then turn off the power supply. Remove the front and top panels, then move the power switch to the "OFF" position.
- 3) Remove storage bin cover. Remove spout B, then remove spout A. See Fig. 17.
- 4) Remove the apron panel, then remove the left side panel.
- 5) Remove the evaporator heater (if applicable), then remove the allen head cap screws securing the extruding head and discard the allen head cap screws. Using the cutter, lift out the auger assembly, then remove the evaporator bracket.
- 6) The mechanical seal consists of two parts. One moves along with the auger, and the other is fixed on the lower housing. **NOTICE! If the contact surfaces of these two parts are worn, cracked, or scratched, the mechanical seal may cause water leaks and should be replaced.**
- 7) Remove the allen head cap screws securing the evaporator to the lower housing.
- 8) Raise the evaporator up to access the lower housing.
- 9) Remove the mechanical seal from the housing. If only replacing the mechanical seal, proceed to step 13. **NOTICE! To help prevent water leaks, be careful not to damage the surfaces of the O-ring or mechanical seal.**

### 5b. Lower Housing

- 10) Remove the o-ring and the bolts securing the lower housing to the gear motor and remove the lower housing from the gear motor. If inspection of the upper bearing inside the extruding head (see "IV.C.1. Upper Bearing Wear Check") indicates that it is out of tolerance, replace both it and the bearing inside the lower housing.  
Note: Replacing the bearing requires a bearing press adaptor. If one is not available, replace the whole extruding head and lower housing.
- 11) Install the o-ring and mount the lower housing on the gear motor.
- 12) Install the lower part of the mechanical seal on the lower housing.
- 13) Lower the evaporator down and secure it to the lower housing.

- 14) Install the auger assembly with the upper part of the mechanical seal attached. Secure the auger assembly using new allen head cap screws. Replace the evaporator heater (if applicable).
- 15) Replace the evaporator bracket in its correct position.
- 16) Replace spout A, spout B, and the front cover of the storage bin in their correct positions.
- 17) Move the power switch to the "ON" position, then replace the panels in their correct positions.
- 18) Turn on the power supply, then move the control switch to the "ICE" position to start the automatic icemaking process.

## **6. Removal and Replacement of Gear Motor**

- 1) Move the control switch to the "DRAIN" position and drain all of the water from the evaporator.
- 2) After the water has stopped draining, move the control switch to the "OFF" position, then turn off the power supply. Remove the front and top panels, then move the power switch to the "OFF" position.
- 3) Remove the storage bin cover. Remove spout B, then remove spout A. See Fig. 17.
- 4) Remove the apron panel, then remove the left side panel.
- 5) Remove the evaporator bracket.
- 6) Remove the bolts securing the lower housing to the gear motor. Lift the evaporator up slightly.
- 7) Remove the 3 gear motor bolts.
- 8) Disconnect the wiring from the gear motor, then remove the gear motor.
- 9) Remove the spline coupling from the old gear motor and attach to the new gear motor.
- 10) Place the new gear motor in the drain pan.
- 11) Secure the gear motor.
- 12) Connect the gear motor wires.
- 13) Lower the evaporator down and secure it to the gear motor.
- 14) Replace the evaporator bracket in its correct position.
- 15) Replace spout A, spout B, and the front cover of the storage bin in their correct positions.
- 16) Move the power switch to the "ON" position, then replace the panels in their correct positions.
- 17) Turn on the power supply, then move the control switch to the "ICE" position to start the automatic icemaking process.

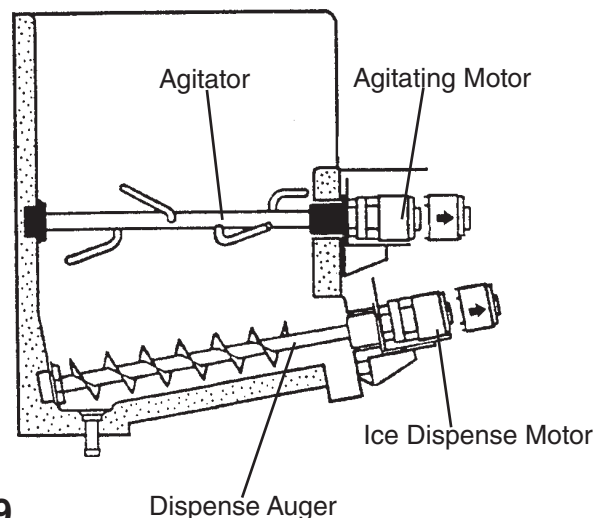
## D. Dispense Components

### 1. Dispense Auger and Agitator

- 1) Move the control switch to the "OFF" position, then turn off the power supply. Remove the front and top panels, then move the power switch to the "OFF" position.
- 2) Remove the storage bin cover.
- 3) Remove the thumbscrews from the vertical plane, then loosen the thumbscrews from the horizontal plane of the motor bracket. Slide the motor back.  
Note: Hold the dispense auger/agitator to prevent it from dropping when sliding back the motor. See Fig. 19.
- 4) Replace the dispense auger/agitator with the new one.
- 5) Assemble the removed parts in the reverse order of which they were removed.
- 6) Move the power switch to the "ON" position, then replace the panels in their correct positions.
- 7) Turn on the power supply, then move the control switch to the "ICE" position to start the automatic icemaking process.

### 2. Dispense and Agitating Motors

- 1) Move the control switch to the "OFF" position, then turn off the power supply. Remove the front and top panels, then move the power switch to the "OFF" position.
- 2) Remove the storage bin cover.
- 3) Remove the thumbscrews from the vertical plane, then loosen the thumbscrews from the horizontal plane of the motor bracket. Slide the motor back.  
Note: Hold the dispense auger/agitator to prevent it from dropping when sliding back the motor. See Fig. 16.
- 4) Remove the thumbscrews from the horizontal plane of the motor bracket.
- 5) Remove the motor from the bracket.
- 6) Install the new motor.
- 7) Assemble the removed parts in the reverse order of which they were removed.
- 8) Move the power switch to the "ON" position, then replace the panels in their correct positions.
- 9) Turn on the power supply, then move the control switch to the "ICE" position to start the automatic icemaking process.



**Fig. 19**

## V. Maintenance

The maintenance schedule below is a guideline. More frequent maintenance may be required depending on water quality, the appliance's environment, and local sanitation regulations.

### WARNING

- Only qualified service technicians should service the appliance.
- Move the control switch and power switch to the "OFF" positions, then turn off the power supply before servicing. Lockout/Tagout to prevent the power supply from being turned back on inadvertently.

Maintenance Schedule		
Frequency	Area	Task
Every 2 Weeks	Air Filter	Inspect. Wash with warm water and neutral cleaner if dirty.
Monthly	External Water Filters	Check for proper pressure and change if necessary.
	Appliance Exterior	Wipe down with a clean, soft cloth. Use a damp cloth containing a neutral cleaner to wipe off oil or dirt build up. Clean any chlorine staining (rust colored spots) using a non-abrasive cleanser.
Every 6 Months	Icemaker and Storage Bin	Clean and sanitize per the cleaning and sanitizing instructions provided in the instruction manual or maintenance label on the appliance.
	Evaporator Condensate Drain Pan and Gear Motor Drain Pan	Wipe down with a clean cloth and warm water. Dilute 0.82 fl. oz. (25 ml) of a 7.5% sodium hypochlorite solution (chlorine bleach) with 1.6 gal. (6.0 l) of warm water. Slowly pour one cup of sanitizing solution into the evaporator condensate drain pan. Be careful not to overflow the pan. This solution will flow down to the gear motor drain pan and out the drain line to sanitize these areas. Repeat with a cup of clean water to rinse.
	Icemaker, Storage Bin, and Drip Tray Drains	Check to make sure they are clear.
Yearly	Inlet Water Valve and Drain Valve	Close the water supply line shut-off valve and drain the water system. Clean the inlet water valve screen and clean and inspect the drain valve.
	Water Hoses	Inspect the water hoses and clean/replace if necessary.
	Condenser	Inspect. Clean if necessary by using a brush or vacuum cleaner.
	Appliance	Inspect for oil spots, loose components, fasteners, and wires.
	Upper Bearing (extruding head)	Check for wear using .02" round stock or pin gauge. Replace both upper bearing and lower bearing if wear exceeds factory recommendations. See "IV.C.1. Upper Bearing Wear Check".
After 3 Years, then Yearly	Upper Bearing (extruding head); Lower Bearing and O-Ring (lower housing); Mechanical Seal; Evaporator Cylinder; Auger	Inspect. Replace both upper bearing and lower bearing if wear exceeds factory recommendations. Replace the mechanical seal if the seal's contact surfaces are worn, cracked, or scratched.

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## VI. Preparing the Appliance for Periods of Non-Use

<b>NOTICE</b>
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When storing the appliance for an extended time or in sub-freezing temperatures, follow the instructions below to prevent damage.
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When the appliance is not used for two or three days under normal conditions, it is sufficient to only move the control switch to the "OFF" position. When storing the appliance for extended time or in sub-freezing temperatures, follow the instructions below.

### **1. Remove the ice from the storage bin, drain the water system, and remove the water from the icemaker/water dispenser water supply line:**

- 1) Close the icemaker water supply line shut-off valve and open the icemaker water supply line drain valve.
- 2) Move the control switch to the "OFF" position, pause momentarily, then move to the "DRAIN" position. Allow the water system to drain for 5 minutes.  
Note: a) A momentary pause in the "OFF" position is necessary to de-energize the control board when moving the control switch between "ICE" and "DRAIN." Otherwise there is a delay of several minutes before the new selection takes effect.  
b) If the control switch is left in the "DRAIN" position for 10 minutes or more, a 2-beep alarm sounds every 5 seconds. Move the control switch out of the "DRAIN" position to clear the alarm.
- 3) Dispense all of the ice from the storage bin.
- 4) Attach a compressed air or carbon dioxide supply to the icemaker water supply line drain valve.
- 5) While engaging the water dispense switch, blow out the water dispense valve using the compressed air or carbon dioxide supply. After blowing out the water dispense valve, leave the compressed air or carbon dioxide supply flowing. Move the control switch to the "OFF" position, pause momentarily, then move to the "ICE" position to open the inlet water valve and briefly blow out the inlet water valve. After blowing out the inlet water valve, move the control switch to the "OFF" position.
- 6) Close the icemaker water supply line drain valve.
- 7) Turn off the power supply, then remove the front panel and move the power switch to the "OFF" position.
- 8) Remove the storage bin cover. Clean the storage bin liner and the storage bin cover using a neutral cleaner. Rinse thoroughly after cleaning. Replace the storage bin cover and the front panel in their correct positions.  
Note: If your unit has a water-cooled condenser, leave the front panel off and go to the next section.

**2. On water-cooled model only, remove the water from the water-cooled condenser:**

- 1) Make sure the control switch and the power switch are in the "OFF" position and that the power supply is off. Remove the top, apron, and left side panels.
- 2) Close the condenser water supply line shut-off valve. If connected to a closed loop system, also close the condenser return line shut-off valve.
- 3) Open the condenser water supply line drain valve. If connected to a closed loop system, also open the condenser return line drain valve.
- 4) Attach a compressed air or carbon dioxide supply to the condenser water supply line drain valve.
- 5) Open the water regulating valve by using a screwdriver to pry up on the spring retainer underneath the spring. While holding the valve open, blow out the condenser using the compressed air or carbon dioxide supply until water stops coming out.
- 6) Close the drain valve(s).
- 7) Replace the panels in their correct positions.

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## **VII. Disposal**

The appliance contains refrigerant and must be disposed of in accordance with applicable national, state, and local codes and regulations. Refrigerant must be recovered by properly certified service personnel.

## VIII. Technical Information

We reserve the right to make changes in specifications and design without prior notice.

### A. Specification & Performance Data Sheets

Note: The data not in bold should be used for reference only.

#### 1. DCM-300BAH(-OS)

##### Specification Sheet

AC SUPPLY VOLTAGE	115-120/60/1		
COMPRESSOR	115 V	6.0 RLA	29 LRA
GEAR MOTOR	120 V	1.45 FLA	80 W
FAN MOTOR	115 V	0.8 FLA	16 W
AGITATING MOTOR	115 V	0.9 FLA	55 W
DISPENSING MOTOR	115 V	0.9 FLA	55 W
OTHER	120 V	0.2 A	
MAXIMUM FUSE SIZE	20 A		
MAX. HACR BREAKER (USA ONLY)	20 A		
MAX. CIRC. BREAKER (CANADA ONLY)	20 A		
MINIMUM CIRCUIT AMPACITY	20 A		
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F	
ELECTRIC W (kWH/100 lbs.)	661 (6.84)	653 (4.88)	
POTABLE WATER	29 (12.5)	40 (12.5)	
gal./24HR (gal./100 lbs.)			
BIN CONTROL SYSTEM	Mechanical Bin Control (Proximity Switch)		
REFRIGERANT CHARGE	R-404A, 15.9 oz. (450 g)		

##### Performance Data Sheet

APPROXIMATE ICE PRODUCTION PER 24 HR.	Ambient Temp. (°F)	Water Temp. (°F)					
		50		70		90	
	70	<b>321</b>	146	307	139	291	132
	80	277	125	263	119	249	113
	90	237	107	<b>232</b>	105	214	97
lbs./day kg/day	100	203	92	193	87	<b>181</b>	82
APPROXIMATE ELECTRIC CONSUMPTION watts	70	<b>653</b>	--	654	--	655	--
	80	656	--	658	--	659	--
	90	660	--	<b>661</b>	--	666	--
	100	671	--	675	--	<b>680</b>	--
APPROXIMATE WATER CONSUMPTION PER 24 HR. gal./day l/day	70	<b>40</b>	152	38	145	36	138
	80	35	131	33	124	31	118
	90	30	112	<b>29</b>	110	27	101
	100	25	96	24	91	<b>23</b>	86
EVAPORATOR OUTLET TEMP. °F °C	70	<b>19</b>	-7	19	-7	19	-7
	80	19	-7	23	-5	23	-5
	90	23	-5	<b>23</b>	-5	25	-4
	100	25	-4	25	-4	<b>25</b>	-4
HEAD PRESSURE PSIG kg/cm <sup>2</sup> G	70	<b>200</b>	14.1	200	14.1	200	14.1
	80	237	16.6	237	16.6	237	16.6
	90	273	19.2	<b>273</b>	19.2	273	19.2
	100	315	22.1	315	22.1	<b>315</b>	22.1
SUCTION PRESSURE PSIG kg/cm <sup>2</sup> G	70	<b>37</b>	2.6	37	2.6	37	2.6
	80	39	2.7	39	2.7	39	2.7
	90	41	2.9	<b>41</b>	2.9	41	2.9
	100	45	3.2	45	3.2	<b>45</b>	3.2
TOTAL HEAT OF REJECTION						3,500 BTU/h (AT 90°F /WT 70°F)	

## 2. DCM-500BAH(-OS)

### Specification Sheet

AC SUPPLY VOLTAGE	115/60/1		
COMPRESSOR	120 V	7.9 RLA	51 LRA
GEAR MOTOR	120 V	1.6 FLA	1/6 HP
FAN MOTOR	120 V	0.6 FLA	30 W
AGITATING MOTOR	120 V	0.9 FLA	55 W
DISPENSING MOTOR	120 V	0.9 FLA	55 W
OTHER	120 V	0.2 A	
MAXIMUM FUSE SIZE	20 A		
MAX. HACR BREAKER (USA ONLY)	20 A		
MAX. CIRC. BREAKER (CANADA ONLY)	20 A		
MINIMUM CIRCUIT AMPACITY	20 A		
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F	
ELECTRIC W (kWH/100 lbs.)	1055 (6.6)	985 (4.4)	
POTABLE WATER	46 (11.9)	64 (11.9)	
gal./24HR (gal./100 lbs.)			
BIN CONTROL SYSTEM	Mechanical Bin Control ( Proximity Sw. )		
REFRIGERANT CHARGE	R404A	1 lb 4.1 oz. (570g)	

### Performance Data Sheet

APPROXIMATE ICE PRODUCTION PER 24 HR.	Ambient Temp. (°F)	Water Temp. (°F)					
		50		70		90	
lbs./day (kg/day)	70	<b>535</b>	(243)	510	(231)	485	(220)
	80	461	(209)	438	(199)	416	(189)
	90	396	(179)	<b>385</b>	(175)	358	(162)
	100	340	(154)	323	(147)	<b>304</b>	(138)
APPROXIMATE ELECTRIC CONSUMPTION	70	<b>985</b>	--	995	--	1005	--
watts	80	1015	--	1025	--	1035	--
	90	1045	--	<b>1055</b>	--	1056	--
	100	1058	--	1059	--	<b>1060</b>	--
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70	<b>64</b>	(243)	61	(231)	58	(220)
gal. / day (l/day)	80	55	(209)	53	(199)	50	(189)
	90	48	(179)	<b>46</b>	(175)	43	(162)
	100	41	(154)	39	(147)	<b>37</b>	(138)
EVAPORATOR OUTLET TEMP. °F (°C)	70	<b>23</b>	(-5)	23	(-5)	23	(-5)
	80	23	(-5)	26	(-4)	26	(-4)
	90	26	(-4)	<b>26</b>	(-4)	28	(-3)
	100	28	(-3)	28	(-3)	<b>28</b>	(-3)
HEAD PRESSURE	70	<b>230</b>	(16.2)	230	(16.2)	230	(16.2)
PSIG (kg/cm <sup>2</sup> G)	80	264	(18.5)	264	(18.5)	264	(18.5)
	90	297	(20.9)	<b>297</b>	(20.9)	297	(20.9)
	100	335	(23.5)	335	(23.5)	<b>335</b>	(23.5)
SUCTION PRESSURE	70	<b>33</b>	(2.3)	33	(2.3)	33	(2.3)
PSIG (kg/cm <sup>2</sup> G)	80	35	(2.5)	35	(2.5)	35	(2.5)
	90	37	(2.6)	<b>37</b>	(2.6)	37	(2.6)
	100	43	(3.0)	43	(3.0)	<b>43</b>	(3.0)
TOTAL HEAT OF REJECTION	6300 BTU/h (AT 90°F /WT 70°F)						
HEAT OF REJECTION FROM CONDENSER	5438 BTU/h (AT 90°F /WT 70°F)						
HEAT OF REJECTION FROM COMPRESSOR	1104 BTU/h (AT 90°F /WT 70°F)						

### 3. DCM-500BWH(-OS)

#### Specification Sheet

AC SUPPLY VOLTAGE	115/60/1		
COMPRESSOR	115 V	7.8 RLA	54.5 LRA
GEAR MOTOR	115 V	2.4 FLA	1/4 HP
AGITATING MOTOR	115 V	0.9 FLA	55 W
DISPENSING MOTOR	115 V	0.9 FLA	55 W
OTHER	120 V	0.6 A	
MAXIMUM FUSE SIZE	20 A		
MAX. HACR BREAKER (USA ONLY)	20 A		
MAX. CIRC. BREAKER (CANADA ONLY)	20 A		
MINIMUM CIRCUIT AMPACITY	20 A		
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F	
ELECTRIC W (kWH/100 lbs.)	966 (4.48)	940 (3.70)	
POTABLE WATER	61 (12.0)	71 (12.0)	
gal./24HR (gal./100 lbs.)	485 (112)	299 (49)	
BIN CONTROL SYSTEM	Mechanical Bin Control ( Proximity Sw. )		
REFRIGERANT CHARGE	R404A	11.5 oz. (325 g)	

#### Performance Data Sheet

APPROXIMATE ICE PRODUCTION PER 24 HR.	Ambient Temp. (°F)	Water Temp. (°F)					
		50		70		90	
	70	<b>590</b>	268	571	259	560	254
	80	549	249	538	244	528	239
	90	517	235	<b>512</b>	232	497	226
lbs./day ( kg/day)	100	488	221	478	217	<b>442</b>	201
APPROXIMATE ELECTRIC CONSUMPTION	70	<b>940</b>	--	944	--	948	--
	80	951	--	955	--	959	--
	90	963	--	<b>966</b>	--	965	--
watts	100	964	--	962	--	<b>961</b>	--
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70	<b>370</b>	1.40	422	1.60	677	2.56
	80	409	1.55	490	1.85	848	3.21
	90	422	1.60	<b>546</b>	2.07	867	3.28
gal. / day (l/day)	100	578	2.19	621	2.35	<b>1161</b>	4.40
EVAPORATOR OUTLET TEMP. °F (°C)	70	<b>12</b>	-11	12	-11	12	-11
	80	12	-11	13	-11	13	-11
	90	13	-11	<b>13</b>	-11	15	-10
	100	15	-10	15	-10	<b>15</b>	-10
HEAD PRESSURE	70	<b>255</b>	17.9	255	17.9	255	17.9
	80	255	17.9	255	17.9	255	17.9
	90	255	17.9	<b>255</b>	17.9	255	17.9
PSIG (kg/cm <sup>2</sup> G)	100	261	18.3	261	18.3	<b>261</b>	18.3
SUCTION PRESSURE	70	<b>36</b>	2.5	36	2.5	36	2.5
PSIG (kg/cm <sup>2</sup> G)	80	37	2.6	37	2.6	37	2.6
	90	38	2.7	<b>38</b>	2.7	38	2.7
	100	40	2.8	40	2.8	<b>40</b>	2.8
WATER FLOW FOR CONDENSER	20 gal/h (AT 90°F /WT 70°F)						
PRESSURE DROP OF COOLING WATER LINE	Less than 7 PSIG						
HEAT OF REJECTION FROM CONDENSER	6000 BTU/h (AT 90°F /WT 70°F)						
HEAT OF REJECTION FROM COMPRESSOR	900 BTU/h (AT 90°F /WT 70°F)						

## 4. DCM-751BAH(-OS)

### Specification Sheet

AC SUPPLY VOLTAGE	115/60/1		
COMPRESSOR	115 V	77 LRA	11.0 RLA
GEAR MOTOR	115 V	3.0 FLA	1/4 HP
FAN MOTOR	115 V	1.0 FLA	50 W
AGITATING MOTOR	120 V	1.8 FLA (TOTAL)	110 W (TOTAL)
DISPENSING MOTOR	115 V	0.9 FLA	55 W
OTHER	115 V	0.6 A	
MAXIMUM FUSE SIZE	20 A		
MAX. HACR BREAKER (USA ONLY)	20 A		
MAX. CIRC. BREAKER (CANADA ONLY)	20 A		
MINIMUM CIRCUIT AMPACITY	20 A		
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F	
ELECTRIC W (kWH/100 lbs.)	1388 (5.94)	1292 (4.08)	
POTABLE WATER	70 (12.0)	96 (12.0)	
gal./24HR (gal./100 lbs.)			
BIN CONTROL SYSTEM	Mechanical Bin Control (Proximity Sw.)		
REFRIGERANT CHARGE	R-404A, 1 lb. 10 oz. (737 g)		

### Performance Data Sheet

APPROXIMATE ICE PRODUCTION PER 24 HR.	Ambient Temp. (°F)	Water Temp. (°F)					
		50		70		90	
lb./day kg/day	70	<b>801</b>	363	757	343	725	329
	80	695	315	666	302	639	290
	90	612	278	<b>583</b>	265	562	255
	100	539	245	517	234	<b>490</b>	222
APPROXIMATE ELECTRIC CONSUMPTION	70	<b>1292</b>	--	1306	--	1319	--
watts	80	1333	--	1347	--	1361	--
	90	1374	--	<b>1388</b>	--	1401	--
	100	1414	--	1426	--	<b>1439</b>	--
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70	<b>96</b>	364	91	344	87	330
gal./day l/day	80	83	316	80	303	77	290
	90	73	278	<b>70</b>	265	68	256
	100	65	245	62	235	<b>59</b>	223
EVAPORATOR OUTLET TEMP. °F °C	70	<b>14</b>	-10	14	-10	14	-10
	80	14	-10	18	-8	18	-8
	90	18	-8	<b>18</b>	-8	20	-7
	100	20	-7	20	-7	<b>20</b>	-7
HEAD PRESSURE	70	<b>217</b>	15.3	217	15.3	217	15.3
PSIG kg/cm <sup>2</sup> G	80	253	17.8	253	17.8	253	17.8
	90	289	20.3	<b>289</b>	20.3	289	20.3
	100	327	23.0	327	23.0	<b>327</b>	23.0
SUCTION PRESSURE	70	<b>32</b>	2.2	32	2.2	32	2.2
PSIG kg/cm <sup>2</sup> G	80	34	2.4	34	2.4	34	2.4
	90	36	2.5	<b>36</b>	2.5	36	2.5
	100	38	2.7	38	2.7	<b>38</b>	2.7
TOTAL HEAT OF REJECTION	9,300 BTU/h (AT 90°F /WT 70°F)						

## 5. DCM-751BWH(-OS)

### Specification Sheet

AC SUPPLY VOLTAGE	115/60/1		
COMPRESSOR	115 V	77 LRA	11.0 RLA
BEAR MOTOR	115 V	3.0 FLA	1/4 HP
FAN MOTOR	115 V	1.0 FLA	50 W
AGITATING MOTOR	120 V	1.8 FLA (TOTAL)	110 W (TOTAL)
DISPENSING MOTOR	115 V	0.9 FLA	55 W
OTHER	115 V	0.6 A	
MAXIMUM FUSE SIZE	20 A		
MAX. HACR BREAKER (USA ONLY)	20 A		
MAX. CIRC. BREAKER (CANADA ONLY)	20 A		
MINIMUM CIRCUIT AMPACITY	20 A		
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F	
ELECTRIC W (kWH/100 lbs.)	1388 (5.94)	1292 (4.08)	
POTABLE WATER	70 (12.0)	96 (12.0)	
	gal./24HR (gal./100 lbs.)		
MIN CONTROL SYSTEM	Mechanical Bin Control (Proximity Sw.)		
REFRIGERANT CHARGE	R-404A, 1 lb. 10 oz. (737 g)		

### Performance Data Sheet

APPROXIMATE ICE PRODUCTION PER 24 HR.	Ambient Temp. (°F)	Water Temp. (°F)					
		50		70		90	
lb./day kg/day	70	<b>801</b>	363	757	343	725	329
	80	695	315	666	302	639	290
	90	612	278	<b>583</b>	265	562	255
	100	539	245	517	234	<b>490</b>	222
APPROXIMATE ELECTRIC CONSUMPTION watts	70	<b>1292</b>	--	1306	--	1319	--
	80	1333	--	1347	--	1361	--
	90	1374	--	<b>1388</b>	--	1401	--
	100	1414	--	1426	--	<b>1439</b>	--
APPROXIMATE WATER CONSUMPTION PER 24 HR. gal./day l/day	70	<b>96</b>	364	91	344	87	330
	80	83	316	80	303	77	290
	90	73	278	<b>70</b>	265	68	256
	100	65	245	62	235	<b>59</b>	223
EVAPORATOR OUTLET TEMP. °F °C	70	<b>14</b>	-10	14	-10	14	-10
	80	14	-10	18	-8	18	-8
	90	18	-8	<b>18</b>	-8	20	-7
	100	20	-7	20	-7	<b>20</b>	-7
HEAD PRESSURE PSIG kg/cm <sup>2</sup> G	70	<b>217</b>	15.3	217	15.3	217	15.3
	80	253	17.8	253	17.8	253	17.8
	90	289	20.3	<b>289</b>	20.3	289	20.3
	100	327	23.0	327	23.0	<b>327</b>	23.0
SUCTION PRESSURE PSIG kg/cm <sup>2</sup> G	70	<b>32</b>	2.2	32	2.2	32	2.2
	80	34	2.4	34	2.4	34	2.4
	90	36	2.5	<b>36</b>	2.5	36	2.5
	100	38	2.7	38	2.7	<b>38</b>	2.7
TOTAL HEAT OF REJECTION	9,300 BTU/h (AT 90°F /WT 70°F)						

## 6. DCM-752BAH(-OS)

### Specification Sheet

AC SUPPLY VOLTAGE	115/60/1	
AMPERAGE	13 A	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	1208 (5.10)	1159 (3.93)
POTABLE WATER	69 (12.0)	85 (12.0)
gal./24HR (gal./100 lbs.)		
BIN CONTROL SYSTEM	Mechanical Bin Control	
REFRIGERANT CHARGE	R404A, 1 lb. 10 oz. (737g)	

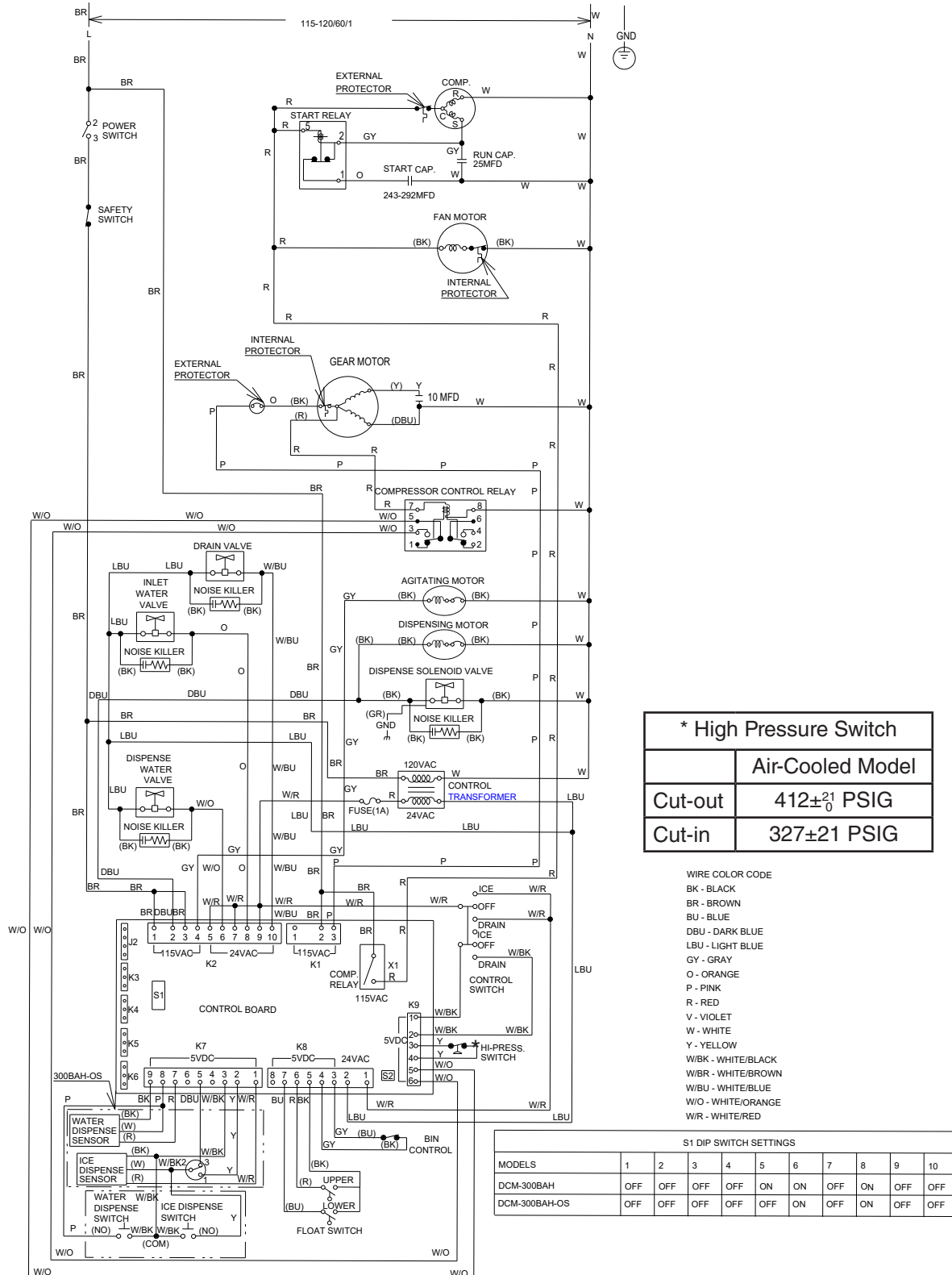
### Performance Data Sheet

APPROXIMATE ICE PRODUCTION PER 24 HR.	Ambient Temp. °F (°C)	Water Temp. °F (°C)		
		50 (10)	70 (21)	90 (32)
	70 (21)	<b>708 (321)</b>	697 (316)	673 (305)
	80 (26)	650 (295)	627 (284)	605 (274)
	90 (32)	584 (265)	<b>576 (261)</b>	544 (247)
lbs./day ( kg/day)	100 (38)	525 (238)	507 (230)	<b>474 (215)</b>
APPROXIMATE ELECTRIC CONSUMPTION	70 (21)	1159	1166	1173
	80 (26)	1180	1187	1194
	90 (32)	1201	1208	1216
	100 (38)	1224	1231	1239
APPROXIMATE WATER CONSUMPTION PER 24 HR. (TOTAL) gal. / day (l/day)	70 (21)	<b>85 (322)</b>	84 (317)	81 (306)
	80 (26)	78 (295)	75 (285)	73 (275)
	90 (32)	70 (265)	<b>69 (262)</b>	65 (247)
	100 (38)	63 (239)	61 (230)	<b>57 (215)</b>
EVAPORATOR OUTLET TEMP.  °F (°C)	70 (21)	<b>13 (-11)</b>	13 (-10)	14 (-10)
	80 (26)	14 (-10)	14 (-10)	15 (-10)
	90 (32)	15 (-9)	<b>15 (-9)</b>	16 (-9)
	100 (38)	16 (-9)	17 (-9)	<b>17 (-8)</b>
HEAD PRESSURE	70 (21)	<b>217 (15.3)</b>	227 (15.9)	236 (16.6)
	80 (26)	246 (17.3)	255 (17.9)	265 (18.6)
	90 (32)	274 (19.3)	<b>284 (20.0)</b>	292 (20.5)
	100 (38)	300 (21.1)	308 (21.6)	<b>316 (22.2)</b>
SUCTION PRESSURE PSIG (kg/cm <sup>2</sup> G)	70 (21)	<b>34 (2.4)</b>	35 (2.4)	35 (2.5)
	80 (26)	36 (2.5)	36 (2.6)	37 (2.6)
	90 (32)	37 (2.6)	<b>38 (2.7)</b>	38 (2.7)
	100 (38)	39 (2.7)	40 (2.8)	<b>40 (2.8)</b>
HEAT OF REJECTION FROM CONDENSER		6,900 BTU/h (AT 90°F / WT 70°F)		
HEAT OF REJECTION FROM COMPRESSOR		1,200 BTU/h (AT 90°F / WT 70°F)		

# B. Wiring Diagrams

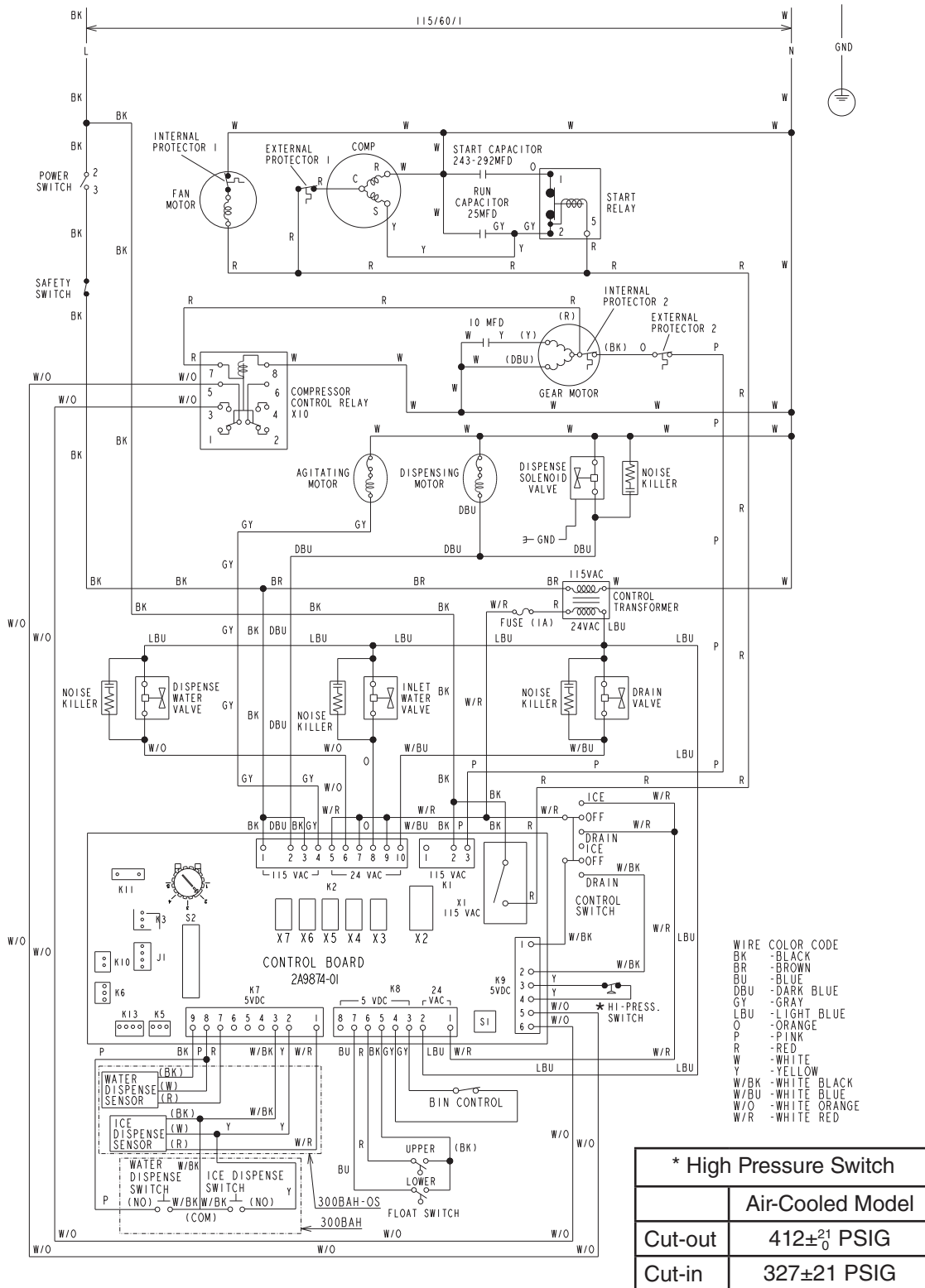
## 1. DCM-300BAH(-OS)

### a) Auxiliary Code N-0 and Earlier



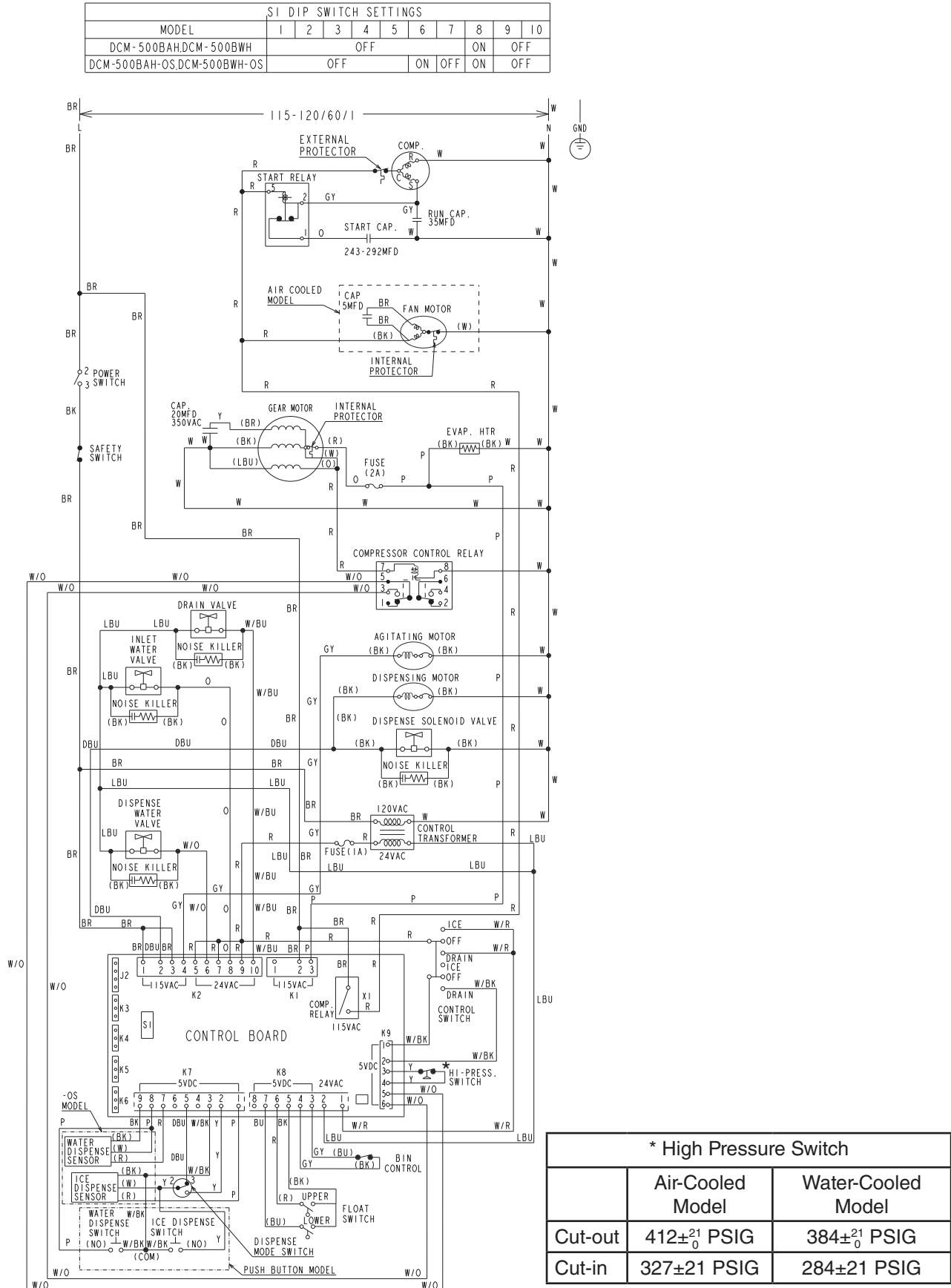
**b) Auxiliary Code N-1 and Later**

S2 DIP SWITCH SETTING	1	2	3	4	5	6	7	8	9	10
DCM-300BAH	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
DCM-300BAH-OS	OFF	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF



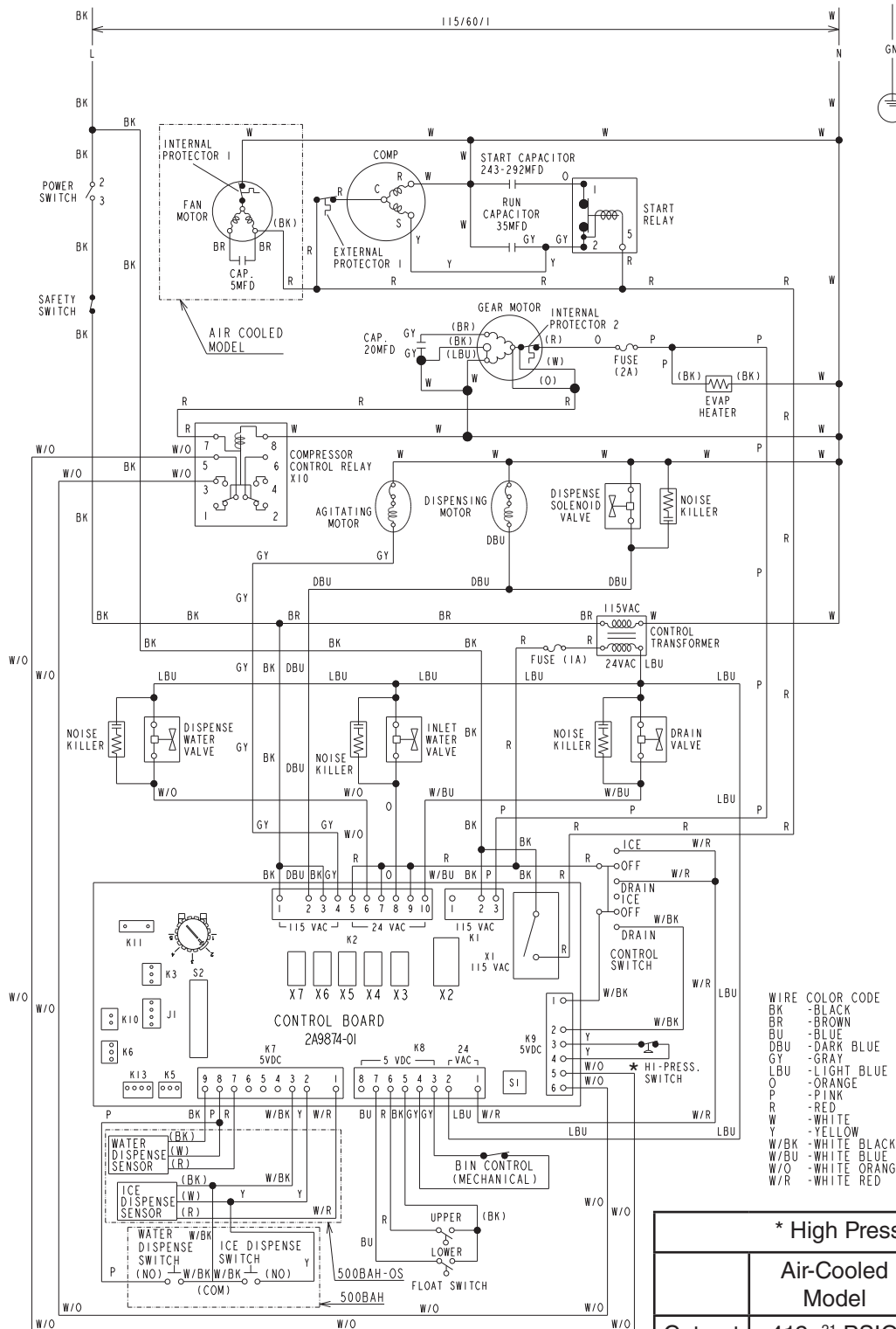
## 2. DCM-500B\_H(-OS)

### a) Auxiliary Code N-0 and Earlier



## b) Auxiliary Code N-1 and Later

S2 DIP SWITCH SETTING	1	2	3	4	5	6	7	8	9	10
DCM-500BAH, DCM-500BWH	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
DCM-500BAH-OS, DCM-500BWH-OS	OFF	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF



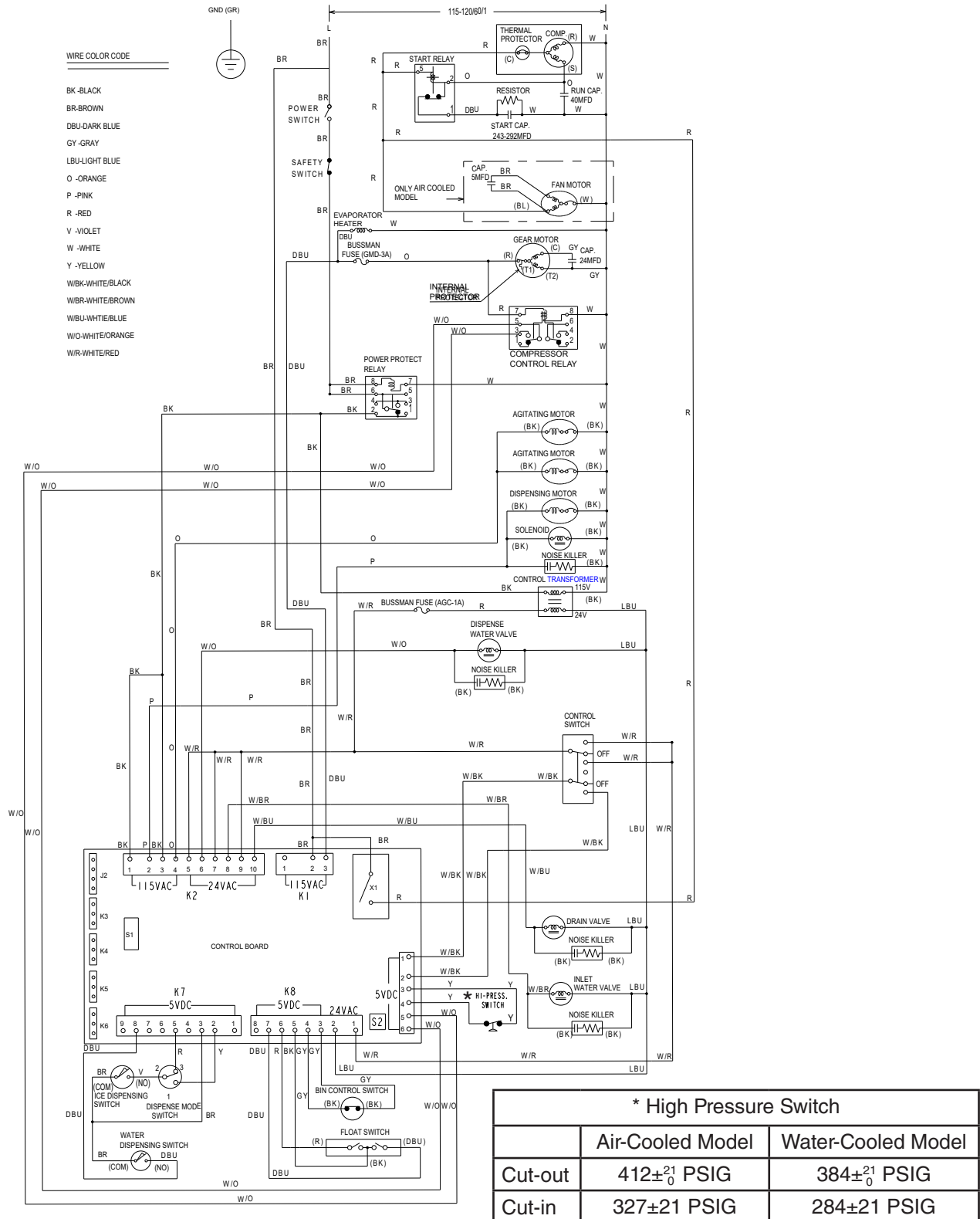
- WIRE COLOR CODE
- BK - BLACK
  - BR - BROWN
  - BU - BLUE
  - DBU - DARK BLUE
  - GY - GRAY
  - LBU - LIGHT BLUE
  - O - ORANGE
  - P - PINK
  - R - RED
  - W - WHITE
  - Y - YELLOW
  - W/BK - WHITE BLACK
  - W/BU - WHITE BLUE
  - W/O - WHITE ORANGE
  - W/R - WHITE RED

	* High Pressure Switch	
	Air-Cooled Model	Water-Cooled Model
Cut-out	412±21 PSIG	384±21 PSIG
Cut-in	327±21 PSIG	284±21 PSIG

### 3. DCM-751B\_H

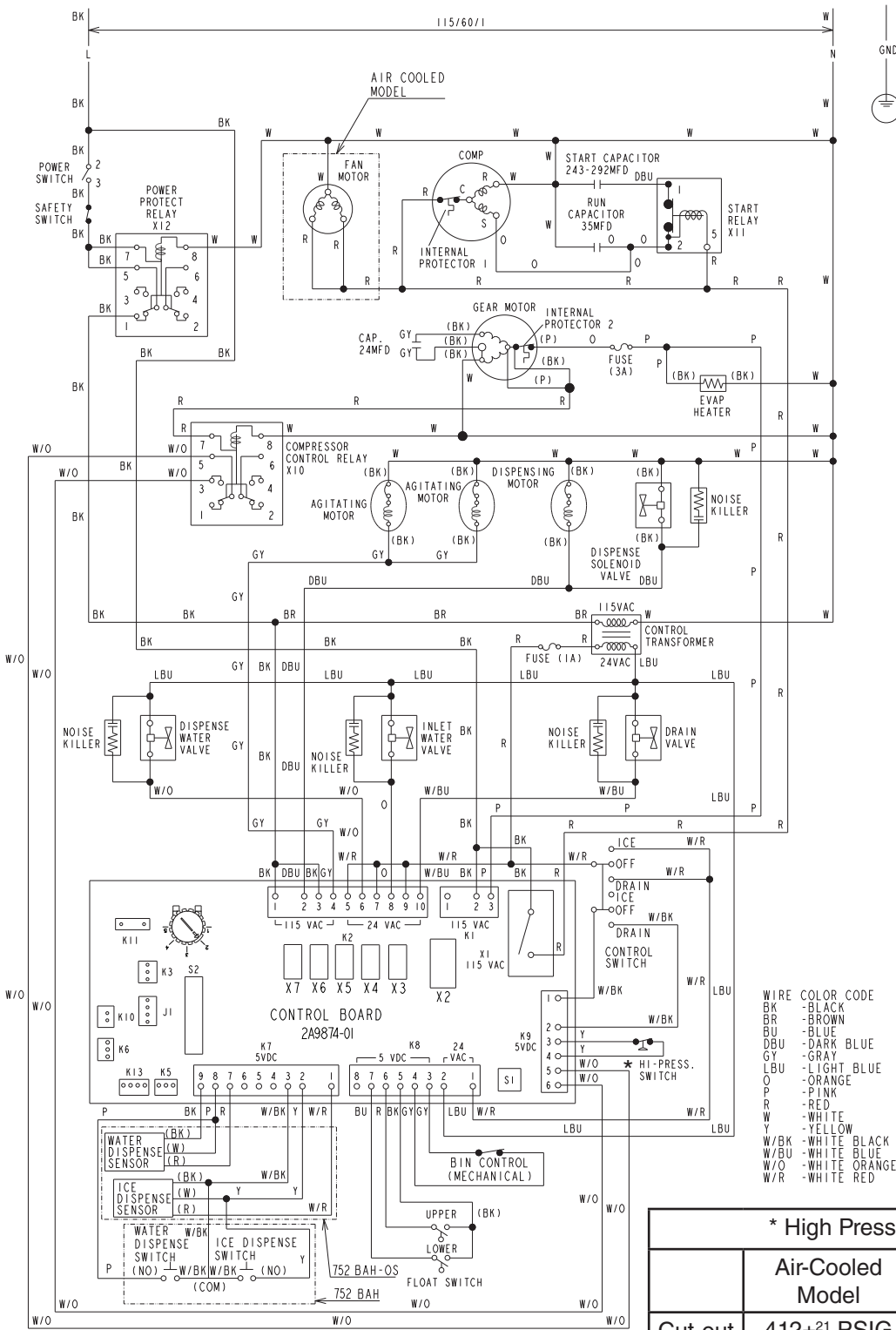
#### a) Auxiliary Code N-0 and Earlier

S1 DIP SWITCH SETTINGS										
MODELS	1	2	3	4	5	6	7	8	9	10
DCM-751B_H	OFF	OFF	OFF	OFF	ON	ON	OFF	ON	OFF	OFF



## b) Auxiliary Code N-1 and Later

S2 DIP SWITCH SETTING	1	2	3	4	5	6	7	8	9	10
DCM-752BAH, DCM-751BWH	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
DCM-752BAH-OS, DCM-751BWH-OS	OFF	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF

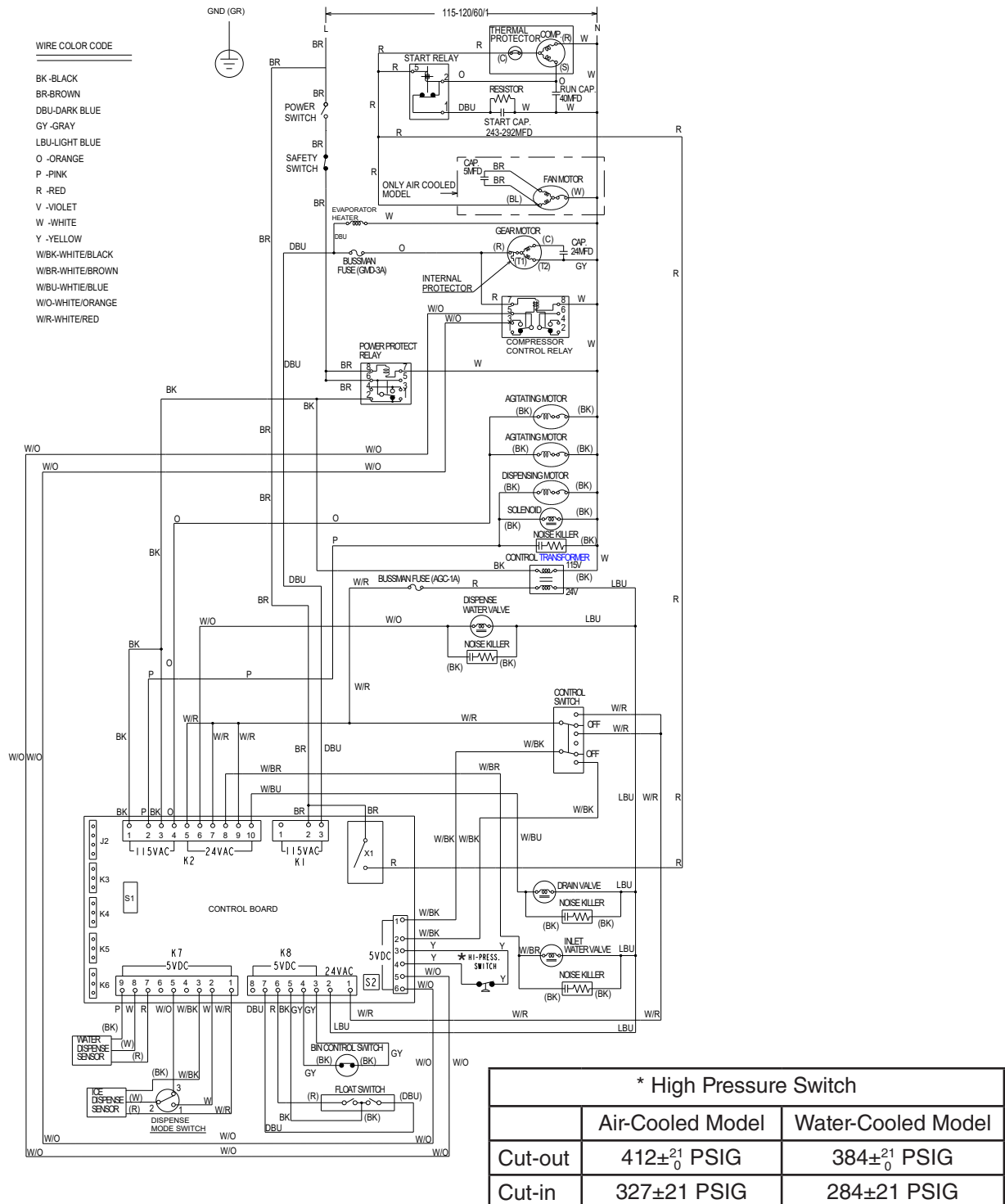


* High Pressure Switch		
	Air-Cooled Model	Water-Cooled Model
Cut-out	412± <sup>21</sup> <sub>0</sub> PSIG	384± <sup>21</sup> <sub>0</sub> PSIG
Cut-in	327±21 PSIG	284±21 PSIG

## 4. DCM-751B\_H-OS

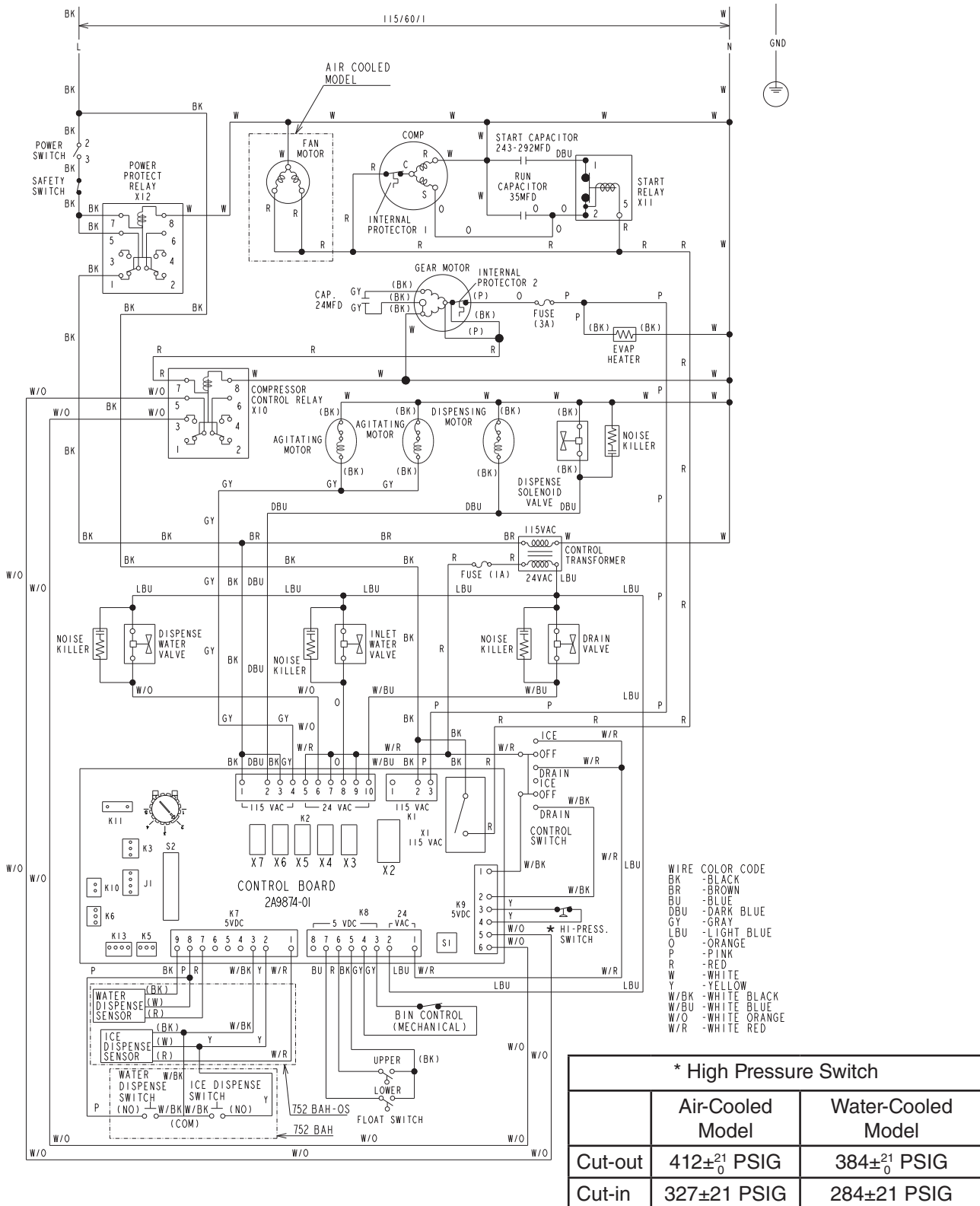
### a) Auxiliary Code N-0 and Earlier

S1 DIP SWITCH SETTINGS										
MODELS	1	2	3	4	5	6	7	8	9	10
DCM-751B_H-OS	OFF	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF



## b) Auxiliary Code N-1 and Later

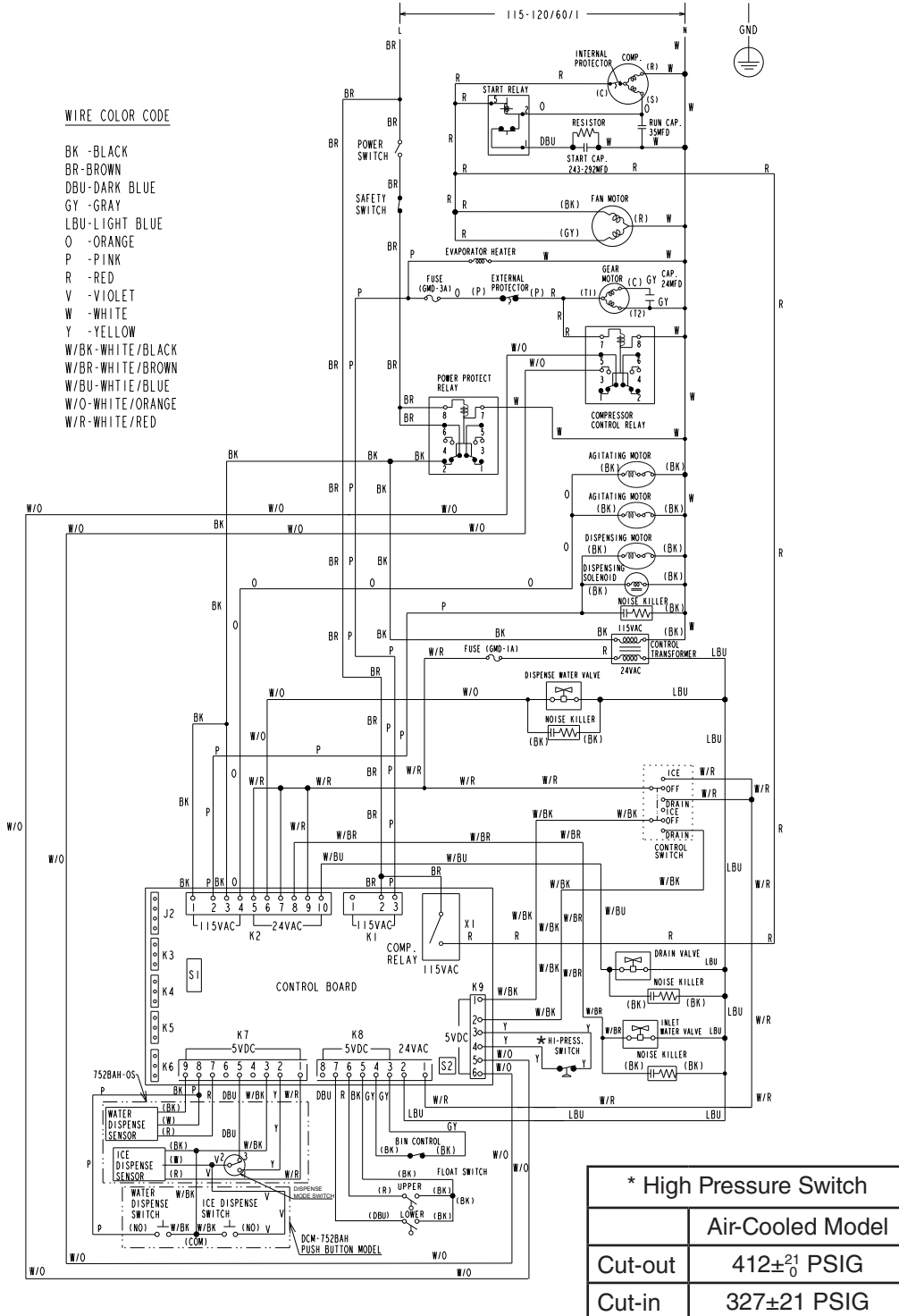
S2 DIP SWITCH SETTING	1	2	3	4	5	6	7	8	9	10
DCM-752BAH, DCM-751BWH	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
DCM-752BAH-OS, DCM-751BWH-OS	OFF	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF



## 5. DCM-752BAH(-OS)

### a) Auxiliary Code N-0 and Earlier

SI DIP SWITCH SETTING	1	2	3	4	5	6	7	8	9	10
DCM-752BAH	OFF	OFF	OFF	OFF	ON	ON	OFF	ON	OFF	OFF
DCM-752BAH-OS	OFF	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF



## b) Auxiliary Code N-1 and Later

S2 DIP SWITCH SETTING	1	2	3	4	5	6	7	8	9	10
DCM-752BAH, DCM-751BWH	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
DCM-752BAH-OS, DCM-751BWH-OS	OFF	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF

