CONSUMER SERVICES TECHNICAL EDUCATION GROUP PRESENTS

R-101

Whirlpool

FAST FILL DISPENSER SYSTEM

JOB AID
Part No. 8178501A
FORWARD

This Whirlpool Job Aid, “Fast Fill Dispenser System” (Part No. 8178501A), provides the technician with information on the operation and service of the Fast Fill Dispenser System. For specific information on the model being serviced, refer to the “Use and Care Guide,” or “Tech Sheet” provided with the refrigerator.

The Wiring Diagrams used in this Job Aid are typical and should be used for training purposes only. Always use the Wiring Diagram supplied with the product when servicing the unit.

GOALS AND OBJECTIVES

The goal of this Job Aid is to provide information that will enable the service technician to properly diagnose malfunctions and repair the Fast Fill Dispenser System.

The objectives of this Job Aid are to:

• Understand and follow proper safety precautions.
• Successfully troubleshoot and diagnose malfunctions.
• Successfully perform necessary repairs.
• Successfully return the Fast Fill Dispenser System to its proper operational status.

WHIRLPOOL CORPORATION assumes no responsibility for any repairs made on our products by anyone other than Authorized Service Technicians.

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Your safety and the safety of others is very important.

We have provided many important safety messages in this Job Aid and on the appliance. Always read and obey all safety messages.

This is the safety alert symbol.

This symbol alerts you to hazards that can kill or hurt you and others.

All safety messages will follow the safety alert symbol and either the word “DANGER” or “WARNING.” These words mean:

**DANGER**

You can be killed or seriously injured if you don’t immediately follow instructions.

**WARNING**

You can be killed or seriously injured if you don’t follow instructions.

All safety messages will tell you what the potential hazard is, tell you how to reduce the chance of injury, and tell you what can happen if the instructions are not followed.
# MODEL & SERIAL NUMBER DESIGNATIONS

## WHIRLPOOL MODEL NUMBER

<table>
<thead>
<tr>
<th>Model Number</th>
<th>G</th>
<th>S</th>
<th>6</th>
<th>N</th>
<th>B</th>
<th>E</th>
<th>X</th>
<th>R</th>
<th>Q</th>
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**Product Group**

- **G** = WHIRLPOOL GOLD

**Product Identification**

- **S** = SXS CONTOUR DOOR
- **F** = FORMED DOOR

**Capacity/Cubic Foot Size**

- 6 = 26

**Model Series**

- **N** = FAST FILL

**Model Features**

**Model Code**

- **E** = ENERGY STAR®

**Door Swing**

- **X** = SxS

**Year of Introduction**

- **R** = 2005

**Color Code**

- **B** = BLACK
- **Q** = WHITE ON WHITE
- **S** = STAINLESS STEEL
- **Y** = GREY/STAINLESS STEEL

**Engineering Change Digits (00, 01, 02, 03, etc.)**

## WHIRLPOOL SERIAL NUMBER

<table>
<thead>
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<th>S</th>
<th>21</th>
<th>12345</th>
</tr>
</thead>
</table>

**Manufacturing Site**

- **S** = Fort Smith, AR

**Year of Production**

- **S** = 2005

**Week of Production**

- 21ST WEEK

**Product Sequence Number**
# Kitchenaid Model Number

**Model Number**

<table>
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<tr>
<th>K</th>
<th>SR</th>
<th>T</th>
<th>25</th>
<th>F</th>
<th>R</th>
<th>WH</th>
<th>00</th>
</tr>
</thead>
</table>

**Product Group**

- K = Kitchenaid

**Product Identification**

- SR = SxS

**Merchandising Scheme/Series**

- T = Contoured Doors
- F = Formed Doors
- N = Flat Doors

**Capacity/Cubic Foot Size**

**Model Features**

**Year of Introduction**

- R = 2005

**Color Code**

- BL = Black
- WH = White
- SS = Stainless Steel

**Engineering Change Digits (00, 01, 02, 03, etc.)**

---

# Kitchenaid Serial Number

**Serial Number**

<table>
<thead>
<tr>
<th>S</th>
<th>S</th>
<th>21</th>
<th>12345</th>
</tr>
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</table>

**Manufacturing Site**

- S = Fort Smith, AR

**Year of Production**

- S = 2005

**Week of Production**

- 21st Week

**Product Sequence Number**
MODEL & SERIAL NUMBER LABEL LOCATIONS

WHIRLPOOL MODEL

KITCHENAID MODEL
WHIRLPOOL REFRIGERATOR WARRANTY

ONE-YEAR FULL WARRANTY ON REFRIGERATOR
For one year from the date of purchase, when this refrigerator (excluding the water filter) is operated and main- tained according to instructions attached to or furnished with the product, Whirlpool Corporation or Whirlpool Canada LP will pay for FSP® replacement parts and repair labor costs to correct defects in materials or workman- ship. Service must be provided by a Whirlpool designated service company.

On models with a water filter: 30 day limited warranty on water filter. For 30 days from the date of purchase, when this filter is operated and maintained according to instructions attached to or furnished with the product, Whirlpool Corporation or Whirlpool Canada LP will pay for replacement parts to correct defects in materials and workman- ship.

SECOND THROUGH FIFTH YEAR FULL WARRANTY ON SEALED REFRIGERATION SYSTEM PARTS AS LISTED
In the second through fifth years from the date of purchase, when this refrigerator is operated and maintained according to instructions attached to or furnished with the product, Whirlpool Corporation or Whirlpool Canada LP will pay for FSP® replacement parts and repair labor costs to correct defects in materials or workmanship in the sealed refrigeration system. These parts are: compressor, evaporator, condenser, dryer, and connecting tubing. Service must be provided by a Whirlpool designated service company.

Whirlpool Corporation or Whirlpool Canada LP will not pay for:
1. Service calls to correct the installation of your refrigerator, to instruct you how to use your refrigerator, to replace house fuses or correct house wiring or plumbing, to replace light bulbs, or replacement water filters other than as noted above.
2. Repairs when your refrigerator is used in other than normal, single-family household use.
3. Pickup and delivery. Your refrigerator is designed to be repaired in the home.
4. Damage resulting from accident, alteration, misuse, abuse, fire, flood, improper installation, acts of God, or use of products not approved by Whirlpool Corporation or Whirlpool Canada LP.
5. Any food loss due to product failure.
6. Repairs to parts or systems resulting from unauthorized modifications made to the appliance.
7. Replacement parts or repair labor costs for units operated outside the United States or Canada.
8. In Canada, travel or transportation expenses for customers who reside in remote areas.

WHIRLPOOL CORPORATION OR WHIRLPOOL CANADA LP SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES
Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion or limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state or province to province.

Outside the 50 United States and Canada, this warranty does not apply. Contact your authorized Whirlpool dealer to determine if another warranty applies.
KITCHENAID REFRIGERATOR WARRANTY

ONE-YEAR LIMITED WARRANTY

For one year from the date of purchase, when this refrigerator (excluding the water filter) is operated and maintained according to instructions attached to or furnished with the product, KitchenAid or KitchenAid Canada will pay for factory specified parts and repair labor costs to correct defects in materials or workmanship. Service must be provided by a KitchenAid designated service company.

On models with a water filter: 30 day limited warranty on water filter. For 30 days from the date of purchase, when this filter is operated and maintained according to instructions attached to or furnished with the product, KitchenAid or KitchenAid Canada will pay for replacement parts to correct defects in materials and workmanship.

SECOND THROUGH FIFTH YEAR FULL WARRANTY ON CAVITY LINER AND SEALED REFRIGERATION SYSTEM PARTS AS LISTED

In the second through fifth years from the date of purchase, when this refrigerator is operated and maintained according to instructions attached to or furnished with the product, KitchenAid or KitchenAid Canada will pay for replacement or repair of the refrigerator/freezer cavity liner (including labor costs) if the part cracks due to defective materials or workmanship. Service must be provided by a KitchenAid designated service company.

Also, in the second through fifth years from the date of purchase, KitchenAid or KitchenAid Canada will pay for factory specified replacement parts and repair labor costs to correct defects in materials or workmanship in the sealed refrigeration system. These parts are: compressor, evaporator, condenser, dryer, and connecting tubing. Service must be performed by a KitchenAid designated service company.

SIXTH THROUGH TENTH YEAR LIMITED WARRANTY ON SEALED REFRIGERATION SYSTEM PARTS AS LISTED

In the sixth through tenth years from date of purchase, when this refrigerator is operated and maintained according to instructions attached to or furnished with the product, KitchenAid or KitchenAid Canada will pay for factory specified replacement parts to correct defects in materials or workmanship in the sealed refrigeration system. These parts are: compressor, evaporator, condenser, dryer, and connecting tubing.

KitchenAid or KitchenAid Canada will not pay for:

1. Service calls to correct the installation of your refrigerator, to instruct you how to use your refrigerator, to replace house fuses or correct house wiring or plumbing, to replace light bulbs, or replacement water filters other than as noted above.
2. Repairs when your refrigerator is used in other than normal, single-family household use.
3. Pickup and delivery. Your refrigerator is designed to be repaired in the home.
4. Damage resulting from accident, alteration, misuse, abuse, fire, flood, improper installation, acts of God, or use of products not approved by KitchenAid or KitchenAid Canada.
5. Any food loss due to product failure.
6. Repairs to parts or systems resulting from unauthorized modifications made to the appliance.
7. Replacement parts or repair labor costs for units operated outside the United States or Canada.
8. In Canada, travel or transportation expenses for customers who reside in remote areas.
9. Any labor costs during the limited warranty periods.

Disclaimer Of Implied Warranties; Limitation Of Remedies

Implied warranties, including to the extent applicable warranties of merchantability, or fitness for a particular purpose, are excluded to the extent legally permissible. Any implied warranties that may be imposed by law are limited to one year, or the shortest period allowed by law. Some states and provinces do not allow limitations or exclusions on how long an implied warranty of merchantability or fitness lasts, so the above limitations or exclusions may not apply to you.

If this product fails to work as warranted, customer’s sole and exclusive remedy shall be repair or replacement according to the terms of this limited warranty.

KitchenAid and KitchenAid Canada do not assume any responsibility for incidental or consequential damages.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state or province to province.

Outside the 50 United States and Canada, this warranty does not apply. Contact your authorized KitchenAid dealer to determine if another warranty applies.
PRODUCT OPERATION
FAST FILL DISPENSER SYSTEM OVERVIEW

FUNCTIONS AND FEATURES

The primary functions of the Fast Fill Dispenser System are:

- Ice dispensing (cubed and crushed)
- Water dispensing (normal fill with feedback and measured fill)
- Water filter indicator
- Dispenser lighting (auto night light)
- Lockout
- Dispenser housing heater operation and power for the ice door. Power (14 volts DC) for a heated ice door is available and may be used as a service fix.
- Monitoring water valve flowmeter to measure water flow to ice maker and dispenser
- Showroom floor mode
- Service Mode Diagnostics

Components

There are three control boards in the Fast Fill Dispenser System. The user interface (touchpad), and the core control are located in the dispenser area of the freezer door. The smart valve control is part of the valve and is located in the unit compartment.

Dispenser Area

The core control is attached to the dispenser housing and controls the dispenser motor, ice door motor, dispenser housing and ice door heaters. The core control also monitors the condition of the freezer door switch and provides the 14 volt DC power supply for the user interface and smart valve. Water and ice can not be dispensed while the freezer door is open.

The user interface provides customer input to the system based on input from the keypad. The user interface drives all the LED indicators and the audio beeper. The user interface powers the white LED lighting and sets the proper amount of lighting during the auto night mode using the photo sensor on the user interface keypad.

The ice and water pad switches are connected electrically to the user interface.

Unit Compartment

The smart valve is mounted to the cabinet. In addition to the dispenser and ice maker water solenoids, it contains a small electronic board and a water flow sensor. The smart valve is used to measure the amount of water for the dispenser and the ice maker.
Ice Dispenser Motor
All Fast Fill Dispenser System models will have IDI, (In-Door Ice). A bridge rectifier on the core control will rectify 120 volts AC to 120 volts DC for the ice dispenser motor. Changing polarity will reverse the motor to change from crush to cube modes. Clockwise (CW) rotation is crush and counterclockwise (CCW) is cube mode.

Ice Door Motor
The ice door is opened and closed by a DC motor driven by a 12 volt DC square wave. When ice dispensing begins, the motor is driven in the CCW direction for approximately one second to open the door. When ice dispensing ends, there is a delay of 10 seconds to allow all ice to clear before the motor is driven CW to close the door. No switches are used to determine the position of the door motor. To ensure the ice door is not left open, a request is made to fully open and then close the door one hour after ice has been dispensed. If a cube had temporarily jammed open the door, this will ensure it does not stay open indefinitely. A request to fully open and then close the door is also made immediately when power is applied or restored to the refrigerator.

Ice Door And Housing Heaters
The housing heater is a 120 volt AC, 2.25 watt heater. Service doors for refrigerators with stainless steel door skins will have additional zone heaters to reduce moisture and will be 4.25 watts. A 14 volt DC, 1 watt, heated service ice door will be available. It is powered from P3 on the core board.

Smart Valve
The smart valve is responsible for water dispensing and filling the ice maker. It also monitors total water volume used and accumulated time for the water filter indication. It drives the ice maker valve solenoid and the water dispenser valve solenoid.

120 volts AC will always be present at P1-4 and P1-5 on the smart valve. P1-1 is the AC input from the ice maker to start an ice maker fill request. 120 volts AC for any length of time, signals the valve to fill the ice maker. The valve fills the ice maker by volume, not by time. 14 volts DC will always be present at P2-1 and P2-3.
OPERATION

Water Dispensing

NORMAL FILL
Normal fill is when the customer presses the fill pad or holds the fill button. While water is being dispensed, the flowmeter will measure the water dispensed and display the amount on the user interface.

The following sequence occurs:
1. The user interface supplies 5 volts DC to one side of the water pad switch.
2. The water pad switch is pushed closed.
3. The user interface receives back the 5 volts DC.
4. The user interface signals the core control on P1-2.
5. The core control outputs a data signal to the smart valve.
6. The smart valve then energizes the water valve solenoid with 120 volts AC, and using the flowmeter, sends a signal for the amount of water dispensed, to the user interface display.

MEASURED FILL
Measured fill is where the user interface commands the smart valve to dispense a specific amount of water. The water is measured by the flowmeter in the smart valve. The unit of measure may be changed as desired at any time that you are not dispensing water. Options are ounces, liters and cups. The user interface water switch may be used to start, pause or resume measured fill.

The following sequence occurs:
1. The units of measure are selected.
2. The volume of water requested is entered.
3. The water keypad is pressed or the water dispenser activation pad is held closed.
4. The user interface receives the signal.
5. The user interface signals the smart valve.
6. The smart valve then energizes the water valve solenoid with 120 volts AC, and using the flowmeter, sends a signal for the amount of water as it is dispensed, to the user interface display. When the proper volume has been reached, the smart valve control de-energizes the water valve solenoid.

Ice maker Fill
Using the flowmeter, the valve will fill the appropriate volume of water when requested by the ice maker, 4.4 ounces (130 ml) of water for 8 cube ice makers, and 2.9 ounces (86 ml) of water for 5 cube ice makers. It is important to note that because the ice maker is not time-filled, it may take more or less time than the 7.5 seconds to fill. After receiving the 120 volt AC signal from the ice maker, the smart valve will fill the ice maker.

The flowmeter is used for both the ice maker and the water dispenser with the water dispenser having priority over the ice maker fill. If the water dispenser is operated during an ice maker fill, the ice maker fill will be paused until the dispenser operation has been completed. The smart valve will hold the partial ice maker fill volume in memory, and completes the fill when the flowmeter is available.
**Ice Dispensing**

IDI ice dispensing is the same as in Side-By-Side IDI electronic dispensers, with the addition of an ice door that is powered open and closed by an electric motor. When the dispenser pad is depressed, the user interface commands the core control to dispense ice, based on the cube/crushed keypad selection.

The core control directs 120 volts AC through the PTC in the IDI motor, and back to the core control. The core control rectifies the 120 volts AC, and 120 volts DC is sent back out on the BR/WH and RD/WH wires. The polarity determines the direction that the motor will run. RD/WH wires will be positive for crushed ice, and will run clockwise. The BR/WH wires will be positive for cubed ice, and will run counterclockwise.

The following sequence occurs:

1. The ice pad switch is pushed closed.
2. The user interface receives the signal.
3. The user interface signals the core control on P1-2 which direction to run the auger.
4. The core control outputs the square wave to the ice door motor for approximately 1 second, and at the same time, the IDI motor is energized on P2-1 and P2-2 with 120 volts DC.
5. When dispensing has stopped, the ice door will remain open for 10 seconds, and then power is applied for approximately 1 second to close the door.

**Operation Defaults**

**Low water pressure:** If the water pressure falls below 5 psi, or if the flowmeter fails, the fast fill dispenser system will assume the pressure to be at 60 psi, and will default to a timed fill. The accuracy of the fill will depend on the amount of pressure that is above or below 60 psi. For example, if the actual water pressure is 5 psi, the water volume dispensed will be low.

During low water pressure default, the ice maker will fill for 7.5 seconds.

**Dispenser fill timeout:** If water is dispensed continuously for 5 minutes by the customer, or if a water pad switch fails closed, power will be interrupted to the valve. Normal operation will resume when the closed switch is released.
COMPONENT ACCESS

This section instructs you on how to service the Fast Fill Dispenser System in the Side-By-Side Refrigerator. The components and their locations are shown below.

COMPONENT LOCATIONS

Dispenser Cover Assembly
- User Interface & Board
- Dispenser Light Assembly
- Ice Pad Switch
- Water Pad Switch

Dispenser
- Ice Door Motor
- Water Tube
- Water Nozzle
- IDI Motor
- Core Board
- Dispenser Supply Harness

Unit Compartment
- Smart Valve
**REMOVING THE WATER AND ICE DISPENSER COMPONENTS**

**WARNING**

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

**NOTE:** The water and ice dispenser components are listed as follows:

- Ice Door Motor
- Core Board
- Pad Switches
- User Interface Board
- User Interface (touchpad)
- Dispenser Light Assembly
- IDI Motor
- Water Dispenser Nozzle

1. Unplug refrigerator or disconnect power.
2. Pull the dispenser drip tray out as far as it will go, then press down to release the catch, pull the tray out all the way and remove it from the dispenser.
3. Remove the two screws from the dispenser cover assembly.
4. Pull out at the bottom, lift up on the dispenser cover assembly, and remove the assembly from the refrigerator door.
5. Disconnect the dispenser cover 3-wire connector from the user interface board, and the ground wire connector from the ground wire harness.
6. **To remove the ice door motor:**
   a) Remove the two screws from the ice door assembly, and remove the assembly from its housing.
   b) Disconnect the motor wire connector from the core board at P5.
   c) Push down on the blue quick disconnect locking ring, and pull the water tube from the fitting (see the top right photo).
   d) Release the two clips, and pull the nozzle & ice guide out just far enough to remove the motor wires and connector, then remove the ice door assembly from the dispenser.
   e) Remove the two screws from the motor and remove the motor from the ice door assembly housing.

Continued on the next page.
7. **To remove the core board:**
   a) Remove the wire connectors from P1, P2, P3, P5, P6, and P7.
   b) Unclip the tabs at the top of the board, and remove the shield and board from the dispenser housing. **NOTE:** If the tabs become damaged, secure the board with two screws at the indicated top corner locations.

8. **To remove an ice or water pad switch:**
   a) With the back of the dispenser cover assembly facing up, press the release tab in on the wire connector, and pull the connector off the user interface board pins.
   b) Press in on the release button, and slide the pad switch clips off the dispenser cover assembly.
   c) Remove the pad switch assembly.
9. **To remove the user interface board:**
   a) With the back of the dispenser cover assembly facing up, disconnect the ice and water pad switch connectors.
   b) Disconnect the user interface ribbon cables from the user interface board. To do this, lift the locking tabs, and pull the cables out of the connectors.
   c) Remove the four screws from the user interface board, and remove the board and its cover from the dispenser cover assembly.

10. **To remove the user interface:**
   a) Remove the user interface board (see step 9).

11. **To remove the dispenser light (LED) assembly:**
   a) With the back of the dispenser cover assembly facing up, disconnect the wire connector from the user interface board.
   b) Push out on either of the two tabs, and pull the light assembly off the dispenser cover assembly.
12. **To remove the IDI motor:**
   
a) Open the freezer door.

b) Press in on the release button and remove the ice bin from the door shelf.

c) Remove the two screws from the hex drive shaft coupling holder and remove the coupling assembly.

d) Lift the spring and hex drive shaft up and out of the door.

e) Remove the boot from the top of the IDI motor.

f) Disconnect the motor connector from the IDI motor.

g) Unclip the wires from the retainers under the IDI motor housing.

h) Remove the three screws from the IDI motor housing and remove the motor and housing from the dispenser.

i) Remove the four screws from the IDI motor and remove the motor from the housing.
13. **To remove the water dispenser nozzle:**
   a) Push down on the blue quick-disconnect locking ring, and pull the water tube from the fitting.
   b) Pull out on the locking clip and remove it from around the quick-disconnect.
   c) Remove the cover from the water nozzle housing.
   d) Unclip the water nozzle and remove it from the housing.
1. Unplug refrigerator or disconnect power.
2. Open the refrigerator and freezer doors and remove the bottom grille.

3. To remove the freezer door dispenser supply harness:
   a) Using a screwdriver, pry out on the harness connector locking tab, and disconnect the harness connector from the main harness.
   b) Remove the dispenser cover assembly (see page 3-2 for the procedure).
   c) Disconnect harness connectors P1 and P7 from the core board.
   d) Disconnect the ground wire screw.
   e) Grasp the ends of the harness wires firmly and pull the harness up and out of the channel opening in the freezer door.

4. To remove the dispenser water tube:
   a) Turn off the water supply to the refrigerator.
   b) Place a towel or a small container to catch any water when you disconnect the water supply tubing under the freezer door hinge.
c) Push down on the blue quick-disconnect locking ring, and pull the dispenser water tube from the fitting. Allow any water to drain into the container or onto the towel.

d) Push down on the blue quick-disconnect locking ring, and pull the water tube from the fitting.

e) Pull the water tube out of the freezer door channel and remove the tube.
REMOVING THE SMART VALVE

1. Unplug refrigerator or disconnect power.
2. Turn off the water supply to the refrigerator.
3. Pull the refrigerator away from the wall so that you can access the rear of the unit.
4. Remove the screws from the unit access cover and remove the cover.
5. Remove the two screws from the smart valve bracket, and remove the assembly from the side of the refrigerator.
6. Place a towel or a small container to catch any water when you disconnect the water supply tubing.
7. Push down on the quick-disconnect locking rings, and pull the water inlet, ice maker, and dispenser outlet water tubes from the fittings.
8. Disconnect the smart valve wire connectors from the smart valve and remove the smart valve assembly.

Electrical Shock Hazard
Disconnect power before servicing. Replace all parts and panels before operating. Failure to do so can result in death or electrical shock.
REMOVING THE FREEZER DOOR

WARNING

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

NOTE: The freezer door is shown being removed in the following procedure. Except for the wiring and water tubing disconnects, the refrigerator door is removed in the same manner.

1. Unplug refrigerator or disconnect power.
2. Turn off the water supply to the refrigerator.
3. Open the refrigerator and freezer doors and remove the bottom grille.
4. Close the refrigerator door.
5. Remove the contents from the freezer door shelves.
6. Close the freezer door.
7. Using a screwdriver, pry out on the harness connector locking tab, and disconnect the harness connector from the unit.
8. Place a towel or a small container under the freezer door hinge to catch any water in the tubing when it is disconnected.
9. Push down on the blue quick-disconnect locking ring, and pull the door water tube out of the fitting. Allow any water to drain into the container or onto the towel.
10. Remove the screw from the top hinge cover and remove the cover.

Continued on the next page.
NOTE: Support the freezer door so that it does not fall in the next step.

11. With the freezer door closed, remove the three screws from the top hinge, and remove the hinge. IMPORTANT: DO NOT remove the tap plate retainer screw inside the center hinge cutout.

12. Partially open the freezer door and lift it off the bottom hinge pin. Guide the wires and tubing through the hinge opening, and remove the door.
COMPONENT TESTING

Before testing any of the components, perform the following checks:

- The most common cause for control failure is corrosion on connectors. Therefore, disconnecting and reconnecting wires will be necessary throughout test procedures.
- All tests/checks should be made with a VOM or DVM having a sensitivity of 20,000 ohms-per-volt DC, or greater.
- Check all connections before replacing components, looking for broken or loose wires, failed terminals, or wires not pressed into connectors far enough.
- Resistance checks must be made with power cord unplugged from outlet, and with wiring harness or connectors disconnected.

**ICE DOOR MOTOR**

Refer to page 3-2 for the procedure for accessing the ice door motor.
1. Unplug refrigerator or disconnect power.
2. Disconnect the motor connector at P5 on the core board.
3. Set the ohmmeter to the R x 1 scale.
4. Touch the ohmmeter test leads to the following motor connector pins:
   Pin 1 to pin 2, 3, 5, or 6 = 45 to 55 Ω

**WATER & ICE PAD SWITCHES**

Refer to page 3-2 for the procedure for accessing the water & ice pad switches.
1. Unplug refrigerator or disconnect power.
2. Disconnect the water and ice pad switch connector from the user interface board.
3. Set the ohmmeter to the R x 1 scale.
4. Touch the ohmmeter test leads to the pad switch connector pins and press the pad. The meter should indicate less than 175 Ω.

**WARNING**

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.
Refer to page 3-2 for the procedure for accessing the IDI motor.

1. Unplug refrigerator or disconnect power.
2. Disconnect the IDI motor connector.
3. Set the ohmmeter to the R x 1 scale.
4. Touch the ohmmeter test leads to the following motor connector pins:
   - Pins 1 and 2 = 10 to 15 Ω
   - Pins 4 and 5 = 220 to 270 Ω

Refer to page 3-10 for the procedure for accessing the smart valve.

1. Unplug refrigerator or disconnect power.
2. Unsnap and remove the cover from the smart valve housing.
3. Set the ohmmeter to the R x 10 scale.
4. Touch the ohmmeter test leads to either coil connector. The meter should indicate between 240 and 280 Ω.

**WARNING**

Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.
DIAGNOSTICS & TROUBLESHOOTING

DIAGNOSTICS

Use the following procedure to enter the diagnostics mode:

1. Make sure that the unit is not in the “lock-out” mode (the lockout LED will be off).
2. Press and hold the CUBED and LIGHT buttons for about 3 seconds until the unit beeps, then release both buttons.
3. Diagnostics will begin with step 0. **NOTE:** Each step displays the step number in digits 4 and 5 (see below) of the user interface display, and the step result, using the first three digits (1 - 3).
4. Each step must be manually advanced by pressing the LOCKOUT button to move to the next step in the sequence, or back up to the previous step by pressing the FILTER RESET button.
5. All buttons and pads are inoperative, except for those described in the actions for each step.
6. The diagnostics charts shown on the following pages describe each component that is tested.
7. If communication is lost with the dispenser core control board, steps 10 - 14 will display “- - -” on digits 1 - 3.
8. If communication is lost with the smart valve control, steps 15 - 20 will display “- - -” on digits 1 - 3.
9. The diagnostics mode ends automatically after the steps are complete, or 20 minutes have elapsed (whichever comes first). The diagnostics mode may be manually exited by pressing the LIGHT button during any step, or in the case that electrical power is cycled. Following the exit of the diagnostics mode, the controls will resume normal operation.
<table>
<thead>
<tr>
<th>Step</th>
<th>Component Tested</th>
<th>Suggested Diagnostics Routine</th>
<th>Component Status Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>All UI indicators</td>
<td>Verify that all LED indicators, UI display digits, and dispenser lighting turn on automatically</td>
<td>N/A</td>
</tr>
<tr>
<td>1</td>
<td>Dispenser UI Control SW Version</td>
<td>Displays the Dispenser UI Control software version on Digits 1 to 3 of the UI display</td>
<td>N/A</td>
</tr>
<tr>
<td>2</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>3</td>
<td>Water Filter Usage Rating</td>
<td>Displays the total water usage rating in gallons for the water filter on Digits 1 to 3 of the UI display</td>
<td>200</td>
</tr>
<tr>
<td>4</td>
<td>Water Filter Time Rating</td>
<td>Displays the total time rating in days for the water filter on Digits 1 to 3 of the UI display</td>
<td>#02</td>
</tr>
</tbody>
</table>
| 5    | UI Pad and Button Test                              | Notes: Do not use LOCKOUT, FILTER RESET and LIGHT as these buttons are only used to control the Service Diagnostic Mode as previously described. Displays the status of both Water and Ice pads on Digi 1. Depress the pads in all combinations to verify the appropriate status indications as shown in the Component Status Indicator column. Displays the UI Button matrix on Digits 2 and 3. Depress each UI button to verify the appropriate status indications as shown in the Component Status Indicator column. | Digit 1: Ice Pad: "1"  
Water Pad: "2"  
Ice & Water Pad: "3"  
Digit 2 and 3: "14"  
CRUSHED CONTAINER: "22"  
UNITS: "23"  
CUBED: "24"  
MEASURED FILL: "23"  
WATER: "24" |
| 6    | Night Light Sensor                                  | Displays the Night Light Sensor reading on Digits 1 to 3 of UI display. Cover the sensor to verify a decrease in the result.                                                                                                                        | N/A                        |
| 7    | Dispenser Lighting                                   | Verify that the dispenser lighting cycles between Maximum and Minimum output levels.                                                                                                                                           | N/A                        |
| 8    | Dispenser Housing Heater Status                      | Digit 3 must read "1". Press CUBED to change.                                                                                                                                                                                                                                                                         | Digit 3: Housing Heater Off: "0"  
Housing Heater On: "1" |
| 9    | N/A                                                  | N/A                                                                                                                                                                                                                                                                                                                                                                                   | N/A                        |
| 10   | Dispenser Core Control SW Version                    | Displays the Dispenser Core Control software version on Digits 1 to 3 of the UI display.                                                                                                                                           | N/A                        |
| 11   | N/A                                                  | N/A                                                                                                                                                                                                                                                                                                                                                                                   | N/A                        |
| 12   | FC Door Switch Input                                 | Displays the FC Door status in realtime on Digits 3 of the UI display. Verify that the open and close status display correctly                                                                                                                        | FC Door Closed: "0"  
FC Door Open: "1" |
| 13   | N/A                                                  | N/A                                                                                                                                                                                                                                                                                                                                                                                   | N/A                        |
| 14   | Ice Door Motor                                       | Displays the Ice Door stepper motor status on Digits 3 of the UI display. Initiate ice dispense and verify that the mechanical operation of the ice door corresponds to the component status indicator. *Note*: Ice Door will close in 5 sec. Following release of Ice Pad, Ice will dispense upon Ice Pad depressing | Ice Door Closed: "0"  
Ice Door Opening: "2"  
Ice Door Open: "3"  
Ice Door Closing: "3" |
| 15   | Smart Valve SW Version                              | Displays the Smart Valve software version on Digits 1 to 3 of the UI display.                                                                                                                                                                                                                                              | N/A                        |
| 16   | N/A                                                  | N/A                                                                                                                                                                                                                                                                                                                                                                                   | N/A                        |
| 17   | N/A                                                  | N/A                                                                                                                                                                                                                                                                                                                                                                                   | N/A                        |
| 18   | Water Filter Usage Rating                            | Displays the current water filter status in gallons used since last reset on Digits 1 to 3                                                                                                                                         | 0 to 999                   |
| 19   | Water Filter Time                                   | Displays the current water filter status in days since last reset on Digits 1 to 3                                                                                                                                         | 0 to 999                   |
| 20   | Water Dispenser and Icemaker Fill Test               | Displays the ice maker status on Digits 1, initiate icemaker fill and verify that display changes from "0" to "3". If a water dispense is in progress while the icemaker fill is initiated, the display will change to "1". Once the water dispense is complete, the icemaker fill will begin and the display will change to "3" as long as it is not interrupted by a water dispense. Displays water voltage status on Digits 2 and flow sensor status on Digits 3. Initiate water dispense and verify Digits 2 changes to "1" and Digits 3 remain "0" during water dispense  | Digit 1: Icemaker Off: "0"  
Icemaker Fill Pending: "1"  
Icemaker Filling: "3"  
Digit 2: Water Dispenser Valve Off: "0"  
Water Dispenser Valve On: "1"  
Digit 3: Flow Sensor: "0"  
Flow Sensor Failed: "1" |
<table>
<thead>
<tr>
<th>Step #</th>
<th>Component Tested</th>
<th>Suggested Diagnostics Routine</th>
<th>Component Status Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>All UI indicators</td>
<td>Verify that all LCD icons, UI LCD display digits, UI button lighting, and dispenser lighting turn on automatically</td>
<td>N/A</td>
</tr>
<tr>
<td>1</td>
<td>Dispenser UI Control SW Version</td>
<td>Displays the Dispenser UI Control software version on Digits 1 to 3 of the UI display</td>
<td>N/A</td>
</tr>
<tr>
<td>2</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Water Filter Usage Rating</td>
<td>Displays the total water usage rating in gallons for the water filter on Digits 1 to 3 of the UI display</td>
<td>200</td>
</tr>
<tr>
<td>4</td>
<td>Water Filter Time Rating</td>
<td>Displays the total time rating in days for the water filter on Digits 1 to 3 of UI display</td>
<td>882</td>
</tr>
<tr>
<td>5</td>
<td>UI Pad and Button Test</td>
<td>Note: Do not use Lockout, Filter and Light as these buttons are only used to control the Service Diagnostic Mode as previously described. Displays the status of both Water and Ice pads on Digit 1. Depress the pads in all combinations to verify the appropriate status indications as shown in the Component Status Indicator column. Displays the UI Button matrix on Digits 2 and 3. Depress Ice button to verify the appropriate status indication as shown in the Component Status indicator column.</td>
<td>Digit 1: Ice Pad: &quot;1&quot; Water Pad: &quot;2&quot; Ice B Water Pad: &quot;3&quot; Digits 2 and 3: Ice &quot;2-4&quot;</td>
</tr>
<tr>
<td>6</td>
<td>Light Sensor</td>
<td>Displays the Light Sensor reading on Digits 1 to 3 of UI display. Verify the sensor to verify a decrease in the result.</td>
<td>N/A</td>
</tr>
<tr>
<td>7</td>
<td>Dispenser Lighting</td>
<td>Verify that the dispenser lighting cycles between Maximum and Minimum output levels.</td>
<td>N/A</td>
</tr>
<tr>
<td>8</td>
<td>Dispenser Housing Heater Status</td>
<td>Digit 3 must read &quot;1&quot;. Press Ice to change.</td>
<td>Digit 3: Housing Heater Off: &quot;0&quot; Housing Heater On: &quot;1&quot;</td>
</tr>
<tr>
<td>9</td>
<td>LCD Contrast Setting</td>
<td>Displays the LCD contrast on Digits 2 and 3 of the UI display. The contrast setting can be changed by depressing Ice button.</td>
<td>0 to 15</td>
</tr>
<tr>
<td>10</td>
<td>Dispenser Care Control SW Version</td>
<td>Displays the Dispenser Care Control software version on Digits 1 to 3 of the UI display.</td>
<td>N/A</td>
</tr>
<tr>
<td>11</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>FC Door Switch Input</td>
<td>Displays the FC Door status in realtime on Digit 3 of the UI display. Verify that the open and close status display correctly</td>
<td>FC Door Closed: &quot;0&quot; FC Door Open: &quot;1&quot;</td>
</tr>
<tr>
<td>13</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Ice Door Motor</td>
<td>Displays the Ice Door stepper motor state on Digit 3 of the UI display. Initiate ice dispenser and verify that the mechanical operation of the ice door corresponds to the component status indicator. Note: Ice Door will close 10 sec. following release of Ice Pad. Ice will dispense upon Ice Pad depressing.</td>
<td>Ice Door Closed: &quot;0&quot; Ice Door Opening: &quot;1&quot; Ice Door Open: &quot;2&quot; Ice Door Closing: &quot;3&quot;</td>
</tr>
<tr>
<td>15</td>
<td>Smart Valve SW Version</td>
<td>Displays the Smart Valve software version on Digits 1 to 3 of the UI display.</td>
<td>N/A</td>
</tr>
<tr>
<td>16</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Water Filter Usage</td>
<td>Displays the current water filter status in gallons used since last reset on Digits 1 to 3</td>
<td>0 to 999</td>
</tr>
<tr>
<td>19</td>
<td>Water Filter Time</td>
<td>Displays the current water filter status in days since last reset on Digits 1 to 3</td>
<td>0 to 999</td>
</tr>
<tr>
<td>20</td>
<td>Water Dispensing and Ice Maker Fill Test</td>
<td>Displays ice maker status on Digit 1. Initiate ice maker fill and verify that display changes from &quot;0&quot; to &quot;3&quot;. If a water dispense is in progress while the ice maker fill is initiated, the display will change to &quot;1&quot;. Once the water dispense is complete, the ice maker fill will begin and the display will change to &quot;3&quot; as long as it is not interrupted by a water dispense. Displays water valve status on Digits 2 and Flowsensor status on Digit 3. Initiate water dispense and verify Digit 2 changes to &quot;1&quot; and Digit 3 remains &quot;0&quot; during water dispense.</td>
<td>Digit 1: Ice Maker Off: &quot;0&quot; Ice Maker Fill Pending: &quot;1&quot; Ice Maker Filling: &quot;3&quot; Digit 2: Water Dispenser Valve Off: &quot;0&quot; Water Dispenser Valve On: &quot;1&quot; Digit 3: Flow Sensor OK: &quot;0&quot; Flow Sensor Failed: &quot;1&quot;</td>
</tr>
</tbody>
</table>

5-3
MODULAR ICE MAKER & ICE LEVEL DETECTOR MODELS

MODULAR ICE MAKER & ICE LEVEL DETECTOR SERVICE SHEET

ICEMAKER SPECIFICATIONS (120 VOLT MODEL):

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>25&quot; &amp; 27&quot; MODELS</th>
<th>22 MODELS</th>
</tr>
</thead>
<tbody>
<tr>
<td>WATER FILL</td>
<td>130CC, 7.5 SEC</td>
<td>86CC, 7.5 SEC</td>
</tr>
<tr>
<td>MOLD HEATER</td>
<td>Non-Finned: 185 WATTS, 72 OHMS</td>
<td>All: 185 WATTS, 72 OHMS</td>
</tr>
<tr>
<td></td>
<td>Finned: 250 WATTS, 51 OHMS</td>
<td></td>
</tr>
<tr>
<td>THERMOSTAT</td>
<td>BIMETAL</td>
<td>PURGE 1/4&quot;</td>
</tr>
<tr>
<td></td>
<td>OPEN 32º F. 4.5&quot;</td>
<td></td>
</tr>
<tr>
<td>MOTOR</td>
<td>3.2-1.5 WATTS, 4,400-8,800 OHMS</td>
<td></td>
</tr>
<tr>
<td>MODULE</td>
<td>STAMPED CIRCUIT, PLUG IN CONNECTORS</td>
<td></td>
</tr>
<tr>
<td>CYCLE</td>
<td>ONE REVOLUTION (EJECTS ICE &amp; WATER FILL)</td>
<td></td>
</tr>
</tbody>
</table>

ICEMAKER MODULE

MODULE OHMMETER CHECKS (NO POWER TO ICEMAKER & EJECTOR BLADES IN PARK)

<table>
<thead>
<tr>
<th>TEST POINTS</th>
<th>COMPONENT</th>
<th>MODULE POSITION</th>
<th>OHMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>L - H</td>
<td>MOLD HEATER</td>
<td>ATTACHED TO SUPPORT</td>
<td>72 / 51</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(see mold heater above)</td>
</tr>
<tr>
<td>L - M</td>
<td>MOTOR</td>
<td>DISCONNECT FROM SUPPORT</td>
<td>8000</td>
</tr>
</tbody>
</table>

MODULE VOLTAGE CHECKS WITH METER OR TEST LIGHT (POWER TO ICEMAKER)

<table>
<thead>
<tr>
<th>TEST POINTS</th>
<th>COMPONENT</th>
<th>LINE VOLTAGE</th>
<th>0 VOLTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>L - N</td>
<td>MODULE</td>
<td>POWER OK</td>
<td>NO POWER</td>
</tr>
<tr>
<td>T - H</td>
<td>BIMETAL</td>
<td>OPEN</td>
<td>CLOSED</td>
</tr>
<tr>
<td>L - H</td>
<td>HEATER</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>L - M</td>
<td>MOTOR</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>N - V</td>
<td>WATER VALVE</td>
<td>ON</td>
<td>OFF</td>
</tr>
</tbody>
</table>

WATER LEVEL ADJUSTMENT

TURNING THE ADJUSTMENT SCREW (SEE PICTURE ABOVE) CLOCKWISE DECREASES THE WATER FILL.
- MAXIMUM ADJUSTMENT IS ONE FULL TURN IN EITHER DIRECTION. ADDITIONAL ROTATION COULD DAMAGE THE MODULE.

ICEMAKER DIAGNOSTICS PROCEDURE:

1. PERFORM THE OPTICS DIAGNOSTIC PROCEDURE

<table>
<thead>
<tr>
<th>STEP #</th>
<th>OPTICS DIAGNOSTIC PROCEDURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>OPEN THE FREEZER DOOR</td>
</tr>
<tr>
<td>1. A.1.</td>
<td>2 PULSES FOLLOWED BY A 1 SECOND DELAY. (REPEATED)</td>
</tr>
<tr>
<td>1. A.2.</td>
<td>NO LAMP</td>
</tr>
<tr>
<td>B.</td>
<td>PRESS IN THE EMITTER FLAPPER DOOR TO UNBLOCK THE BEAM</td>
</tr>
<tr>
<td>1. B.1.</td>
<td>1 PULSE FOLLOWED BY A 1 SECOND DELAY. (REPEATED)</td>
</tr>
<tr>
<td>1. B.2.</td>
<td>LED IS ON SOLID</td>
</tr>
</tbody>
</table>

2. DISCONNECT THE POWER SUPPLY
3. SLIDE THE ICEMAKER OUT, REMOVE COVER
4. JUMP "T" & "H" TO BYPASS THE BIMETAL AND START A HARVEST
5. CONNECT THE POWER SUPPLY
6. CLOSE THE FREEZER DOOR TO ALIGN THE OPTICS AND A HARVEST CYCLE WILL BEGIN IN 5 SECONDS
7. OPEN THE FREEZER DOOR AND OBSERVE THE ICEMAKER
8. REMOVE THE JUMPER BEFORE THE FINGERS REACH 100º. REINSTALL THE ICEMAKER OR BE PREPARED TO CATCH THE WATER FILL
9. IMMEDIATELY DISCONNECT POWER AFTER THE WATER FILL
10. WITH THE FREEZER DOOR CLOSED, RECONNECT THE POWER SUPPLY
11. WAIT 5 SECONDS AND OPEN THE FREEZER DOOR AND WATCH THE STATUS LED

STATUS LED OUTPUT CODE:

4 PULSES, REPEATED ONCE INDICATES THE RELAY IS DEFECTIVE REPLACE BOTH THE EMITTER AND RECEIVER BOARDS.
3 PULSES, REPEATED ONCE, INDICATES OPTICS AND RELAY ARE GOOD, BUT Y/M IS NOT BEING SENSED WILL NOT OPERATE:
- CHECK BAIL ARM SWITCH (MUST BE ON)
- CHECK Y/M CIRCUIT AND CONNECTIONS BACK TO THE RECEIVER BOARD AND NEUTRAL
- CHECK Y/M COMPONENTS
2 PULSES, REPEATED ONCE, INDICATES OPTICS ARE DEFECTIVE: REPEAT STEP ONE AND REPLACE BOTH BOARD IF NECESSARY.
STABLE LIGHT FOR 5 SECONDS INDICATES THE RELAY AND OPTICS ARE GOOD, AND THE RECEIVER SENSES THE ICEMAKER.
NO LIGHT, UNPLUG THE REFRIGERATOR FOR 5 SECONDS AND REPEAT TEST.
TROUBLESHOOTING
Flowcharts

The flowcharts on the following pages are intended to be used with the Diagnostics Charts. If a problem occurs during the diagnostics tests, refer to the flowcharts to help locate and correct it. The flowcharts cover the following problems:

1. Ice Cannot Be Dispensed (Water Dispenser Is Operating Normally) - Page 5-6.
2. Both Ice And Water Cannot Be Dispensed - Page 5-7.
3. Ice Maker Does Not Produce Ice (Water Dispenser Is Operating Normally) - Page 5-8.
12. User Interface Display Indicators Do Not Operate Correctly - Page 5-12.
1. ICE CANNOT BE DISPENSED (WATER DISPENSER IS OPERATING NORMALLY)

A. Ice Dispenser Door Does Not Open
   - Before starting the diagnostics, make sure that there is nothing blocking the ice door.
   - Make sure that connector P5 is properly seated with the core board connector, and all wires are tight.

B. In-Door Ice Motor Does Not Operate
   - Confirm that connector P2 is properly seated with the core board connector, and all wires are tight.
   - Confirm that the IDI motor connector and terminals are tight.
2. BOTH ICE AND WATER CANNOT BE DISPENSED

START

Go to diagnostics on page 5-1, then to step #12 on page 5-2 or 5-3 and close the freezer door.

Display reads "0."

Check for correct water supply to refrigerator. Is supply correct?

YES

NO

Repair water supply.

Display reads "1."

Perform resistance check on freezer door switch. Is reading correct?

YES

NO

Repair or replace freezer door switch.

Check the grill filter. Does water dispense with filter removed?

YES

NO

Replace filter.

Check smart valve for 14 vdc across RD/YL & BK/YL wires. Is reading correct?

YES

NO

Replace smart valve.

Check core control board across RD/YL & BK/YL wires. Is reading correct?

YES

NO

Replace core control board.

Check for correct water supply to refrigerator. Is supply correct?

YES

NO

Check the grill filter. Does water dispense with filter removed?

YES

NO

Replace filter.

Check smart valve for 14 vdc across RD/YL & BK/YL wires. Is reading correct?

YES

NO

Replace smart valve.

Check core control board across RD/YL & BK/YL wires. Is reading correct?

YES

NO

Replace core control board.

Check the grill filter. Does water dispense with filter removed?

YES

NO

Replace filter.

Check smart valve for 14 vdc across RD/YL & BK/YL wires. Is reading correct?

YES

NO

Replace smart valve.

Check core control board across RD/YL & BK/YL wires. Is reading correct?

YES

NO

Replace core control board.

Check the grill filter. Does water dispense with filter removed?

YES

NO

Replace filter.

Check smart valve for 14 vdc across RD/YL & BK/YL wires. Is reading correct?

YES

NO

Replace smart valve.
3. ICE MAKER DOES NOT PRODUCE ICE (WATER DISPENSER IS OPERATING NORMALLY)

- Verify freezer temperature is 5°F or colder. Ice production will be slow from 10°F to 15°F, and will stop at around 18°F.
- Ice maker should be in the “park” (2:00) position.

4. ICE MAKER DOES NOT PRODUCE ENOUGH ICE

- Verify freezer temperature is 5°F or colder, and that the airflow is not blocked.
- Make sure that the ice maker is receiving the proper amount of water (8 cubes = 4.4 oz. (130 cc) of water).
- Look for high ice usage by customer.
- At 0°F, 80 to 106 cubes of ice in a 24-hour period is normal.
5. WATER CANNOT BE DISPENSED (ICE MAKER IS OPERATING NORMALLY)

- Prior to following the diagnostics routine, make sure that no plumbing leaks exist by checking the connections listed in section “Measured Fill Is Not Accurate.”

![Flowchart Diagram]

- Water cannot be dispensed by water pad only.
  - Press the water pad and test for water dispense.
- Water cannot be dispensed by water button only.
  - Go to diagnostics on page 5-1, then step #5 on page 5-2 or 5-3.
  - Is water pad recognized?
  - Yes: Go to diagnostics on page 5-1, then step #5 on page 5-2 or 5-3.
  - No: Perform resistance check on water pad (see pg 4-1).
  - Is reading correct?
  - Yes: Replace water pad.
  - No: Replace water pad connection on dispenser user interface board and test.
- Digits 2 & 3 display “34” when water button is pressed.
  - Replace user interface board.
- Digits 2 & 3 do not display “34” when water button is pressed.
  - Check ribbon cable connections P4 and P5 on user interface board and press water button.
  - Tighten connections.
- Digits 1, 2, & 3 display decimal number for software version.
  - Go to diagnostics step #15.
- Digits 1, 2, & 3 display “-”.
  - Check the P1 and P2 connectors and make sure that all the wires are secure.
  - Repeat diagnostics step #15.
- Digits 1, 2, & 3 display “-”.
  - Repeat diagnostics step #10.
- Digits 1, 2, & 3 display “-”.
  - Repeat diagnostics step #10.
- Digits 1, 2, & 3 display “-”.
  - Repeat flow chart procedure from START.
- Is the unit operating?
  - Yes: Unit is operating normally.
  - No: Repeat flow chart procedure from START.
- Is the unit operating?
  - Yes: Repeat diagnostics step #10.
  - No: Repeat flow chart procedure from START.
- Replace user interface board.
- Replace smart valve.
- Repeat diagnostics step #10.
- Replace smart valve.
- Replace core control board.
6. MEASURED FILL IS NOT ACCURATE

Consistent measured fill inaccuracies are often due to the smart valve mechanics, low incoming water pressure, or water plumbing leaks. Make sure that no leaks occur in the following locations:

- Door Spigot
- Door Elbow Joint
- Water Tank
- Smart Valve Water Dispenser Outlet
- Smart Valve Ice Maker Fill Outlet
- Smart Valve Inlet
- Customer Connection
- Filter Inlet & Outlet

If no leaks are found, replace the smart valve.

7. WATER DISPENSER FILL IS TOO SLOW

- Verify proper refrigerator water supply.
- Water filter is blocked, or incorrect filter is being used (dispense water with water filter removed to test).
- Check for kinked water tubing.
8. DISPENSER LIGHTING DOES NOT OPERATE
• Use this diagnostics procedure in the event that the dispenser night light never turns on.

9. DISPENSER LIGHTING DOES NOT OPERATE CORRECTLY IN THE “AUTO” MODE
• Use this diagnostics procedure in the event that the dispenser lighting does not operate correctly when set for AUTO (i.e. lighting should get brighter with more ambient light, and dimmer with less ambient light).

10. DISPENSER LIGHTING DOES NOT TURN OFF
• Make sure that the user interface board ribbon connectors are properly seated on the board.
11. USER INTERFACE KEYPAD BUTTONS DO NOT OPERATE CORRECTLY

- Use this diagnostics procedure when pressing a button gets no response or no audible beep.
  - If an audible beep does occur, but a button gets no response, then there is most likely a wiring problem, or a control board failure.
  - If the failure exists with regards to a water dispense, or measured fill, then refer to the section “Water Cannot Be Dispensed.”
- Make sure that the ribbon connection at the user interface board connectors P4 and P5 are seated correctly.

```
START
Go to diagnostics on page 5-1, then to step #5 on page 5-2 or 5-3.
```

```
Test passes. Replace user interface board.
```

```
Test fails. Are the ribbon connectors loose?
```

```
YES Seat the connectors until unit operates properly.
```

```
NO Replace user interface touchpad.
```

12. USER INTERFACE DISPLAY INDICATORS DO NOT OPERATE CORRECTLY

- Includes fragmented digits on display, or LED indicators that do not operate.
- If the user interface display is completely blank, make sure that power is applied to the refrigerator. Disconnect user interface connector P1, and measure the voltage across the RD/YL and BK/YL wires from the core control board. If 14 vdc is not present, replace the core control board.
- Make sure that the ribbon cables at P4 and P5 on the user interface board are properly connected.

```
START
Go to diagnostics on page 5-1, then to step #5 on page 5-2 or 5-3.
```

```
Test passes. All indicators turn on.
```

```
Check for the original problem. Does it still exist?
```

```
YES Replace user interface board.
```

```
NO Unit operates properly.
```

```
Test fails. Some or all indicators do not turn on.
```

```
Check ribbon cables at P4 & P5 for proper connection. Are the ribbon connectors secure?
```

```
YES Replace user interface touchpad.
```

```
NO Reset connectors & retest.
```

13. MOISTURE PRESENT IN DISPENSER AREA

- The following diagnostics procedure examines a moisture-related issue that may be caused by the dispenser housing heater not operating correctly.
- Make sure that the ice door closes fully each time it is used.

START

Go to diagnostics on page 5-1, then to step #8 on page 5-2 or 5-3.

Digit 3 displays "1" (heater is on).

Digit 3 displays "0" (heater is off).

Press Ice Mode/Cubed button until digit 3 displays "1".

Remove connector at core control board P3, and measure resistance across heater leads. Is resistance present?

120 vac is present on core control board P3 connector.

Yes

No

Replace core control board.

Some condensation will be normal during high humidity conditions, especially on the ice door.

Replace freezer door assembly.

Unit operates.
WIRING DIAGRAMS
WHIRLPOOL MODELS

WIRING DIAGRAM 1

See A On “Wiring Diagram 2”

See B On “Wiring Diagram 2”

Color Code:

Wire Color Code:

Blue (BL) = Blue
Black (BK) = Black
Red (RD) = Red
White (WH) = White
Yellow (YL) = Yellow
Orange (OR) = Orange
Gray (GR) = Gray
Pink (PK) = Pink
Violet (VI) = Violet
Tan (TN) = Tan

Wire Color Code:

Blue (BL) = Blue
Black (BK) = Black
Red (RD) = Red
White (WH) = White
Yellow (YL) = Yellow
Orange (OR) = Orange
Gray (GR) = Gray
Pink (PK) = Pink
Violet (VI) = Violet
Tan (TN) = Tan

FREEZER DOOR

DISPENSER HOUSING
HEATER

FC DOOR HEATER
(COP)

DISPENSER USER INTERFACE
CONTROL

DISPENSER INTERFACE

See A On “Wiring Diagram 2”

See B On “Wiring Diagram 2”

6-1
SCHEMATIC DIAGRAM 1

Color Code:

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<th>BK : BLACK</th>
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</tr>
<tr>
<td>TL/BR : YELLOW/RED TRACER</td>
<td>DB/TL : BLACK/YELLOW TRACER</td>
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<tr>
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</tr>
<tr>
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6-7
PRODUCT SPECIFICATIONS
AND
WARRANTY INFORMATION SOURCES

IN THE UNITED STATES:

FOR PRODUCT SPECIFICATIONS AND WARRANTY INFORMATION CALL:

FOR WHIRLPOOL PRODUCTS: 1-800-253-1301
FOR KITCHENAID PRODUCTS: 1-800-422-1230
FOR ROPER PRODUCTS: 1-800-447-6737

FOR TECHNICAL ASSISTANCE WHILE AT THE CUSTOMER’S HOME CALL:

THE TECHNICAL ASSISTANCE LINE: 1-800-253-2870

HAVE YOUR STORE NUMBER READY TO IDENTIFY YOU AS AN AUTHORIZED SERVICER

FOR LITERATURE ORDERS:

PHONE: 1-800-851-4605

FOR TECHNICAL INFORMATION AND SERVICE POINTERS:

www.servicematters.com

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IN CANADA:

FOR PRODUCT SPECIFICATIONS AND WARRANTY INFORMATION CALL:

1-800-461-5681

FOR TECHNICAL ASSISTANCE WHILE AT THE CUSTOMER’S HOME CALL:

THE TECHNICAL ASSISTANCE LINE: 1-800-488-4791

HAVE YOUR STORE NUMBER READY TO IDENTIFY YOU AS AN AUTHORIZED SERVICER