



# WARNING

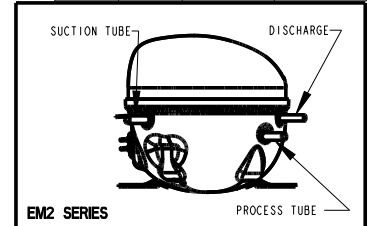
**Electrical Shock Hazard**  
**Disconnect power before servicing.**  
**Replace all parts and panels before operating.**  
**Failure to do so can result in death or electrical shock.**

\* Normal operating conditions are viewed when the air and temperature controls are at mid-sitting, freezer section 0 to -5°F and unit is cycling.

NOTE: Watt and pressure readings will vary and are influenced by the existing condition of the appliance, such as iced-up evaporator, condition

of condenser, defrost cycle, pull-down time and customer use.

PERFORMANCE DATA *( NORMAL OPERATING CONDITIONS )				
AMB	WATTS	SYSTEM PRESSURE ( PSIG )		
		HIGH SIDE	LOW SIDE	
70°	140±20	95 ± 20	-7 TO 3	
90°	150±20	135 ± 20	-4 TO 3	
110°	170±20	185 ± 20	-2 TO 4	



## SERVICE INFORMATION ( W10289806C )

- COMPRESSOR SUCTION AND PROCESS STUBS MAY NOT BE INTERCHANGED UNLESS INDICATED BY \*\*.
- REFRIGERANT CHARGE MUST BE APPLIED TO HIGH SIDE ONLY.
- ICE MAKER AND WATER VALVE NOT ORIGINAL EQUIPMENT ON ALL MODELS.
- NOTE: ICE MAKER CYCLE MUST BE INITIATED ELECTRICALLY. DO NOT TRY TO MANUALLY START CYCLE.
- SERVICE DEFROST BI-METALS -50°F OPEN.
- PART NUMBER CAN BE FOUND ON THE COMPONENT.

## SERVICEABLE ELECTRICAL PARTS MATRIX ( COMPONENTS BY CUBIC FOOT SIZE )

SERVICEABLE PARTS	20/22 CUBIC FOOT			25, 26 AND 27 CUBIC FT			WATTAGE	RESISTANCE
	120V							
COMPRESSOR	EM2Z70	EM2Z80	EM2Y80					
	W10189229	W10183575	W10183577					
RUN WINDINGS	*							1 - 5
START WINDINGS	*							3 - 11
START DEVICE, OVERLOAD	See Note 6							
RUN CAPACITOR ( IF EQUIPPED )	See Note 6							
THERMOSTAT	See Note 6							
MAIN CONTROL (Unit compartment)	See Note 6							
USER INTERFACE	See Note 6							
BAFFLE MODULE ( OPT )	W10151372 / 2216112							
DEFROST TIMER ( OPT )	See Note 6							
ADAPTIVE DEFROST ** ( OPT )	See Note 6							
ADC/FILTER INDICATOR (OPT)	See Note 6							
DEFROST HEATER	See Note 6						550 - 650	27 - 21
DEFROST BI-METAL	See Note 6							
EVAPORATOR FAN	See Note 6						2 - 9	
CONDENSER FAN	See Note 6						3 - 12	

\*\* PRIMARY SOURCE PART NUMBER

## ELECTRONIC CONTROL FEATURES

The dispenser user interface in this appliance controls both the product cooling and the dispensing systems. The product cooling diagnostics are first (see this page) followed by the dispensing diagnostics (see back of this page). The cooling portion of the electronic control in this appliance controls the temperatures in the refrigerator and freezer compartments independently, delays the operation of the evaporator fan, and pulses the defrost heater. The fan delay and pulsed defrost features are controlled in the following manner:

- Evaporator Fan Delay - The electronic control delays the evaporator fan from coming on for 60 seconds after the compressor has turned on, and the evaporator fan stays on for 90 seconds after the compressor has turned off.
- Pulsed Defrost Heat - During the defrost cycle the heater is energized continuously for the first 5 minutes. It is then cycled off for 60 seconds and on for 120 seconds. This on/off cycle is repeated until the bi-metal opens or the maximum defrost time ( 21 minutes ) is reached.

## SERVICE DIAGNOSTICS MODE

To **ENTER SERVICE DIAGNOSTICS Mode**: Press SW1 and SW2 simultaneously for 3 seconds. Release both buttons when you hear the CHIME indicator.

Unit must not be in Lockout prior to entering SERVICE DIAGNOSTIC MODE.

The display will show O1 to indicate the control is in step 1 of the diagnostics routine.

To **EXIT SERVICE DIAGNOSTICS Mode**, do one of the following 3 options:

1) Press SW1 and SW2 simultaneously for 3 seconds.

2) Disconnect the product from power.

3) Allow 20 minutes to pass.

Following the exit of the diagnostic mode, the controls will then resume normal operation.

Cooling diagnostics are steps 1 through 7. Dispensing diagnostics are steps 8 through 30.

Each step must be manually advanced. Press SW5 to move to the next step in the sequence. Press SW4 to back up in the sequence to the previous step. Diagnostics will begin at Step 1. Each step is displayed in the two digits of the dispenser user interface display. The step results are displayed in the two digits on dispenser user interface display 2 seconds after the step number is displayed. An amber LED will be shown to designate that the step number is being displayed and a red LED will be shown to designate that the status of the step is being displayed.

All button and pad inputs shall be ignored and all inputs shall be off, except as described in the actions for each step.

Note: The ice door motor cycles 1 minute after an ice dispensing.

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**Service Tip: If the control does not respond, remove power from the entire appliance for 10 seconds. Re-apply power, wait 10 seconds, and perform the service diagnostics routine.**

Step No.	Component Tested	Suggested Diagnostics Routine: COOLING system steps 1-7. DISPENSING system steps 8-30.	Component Status Indicator
1	FC thermistor	This is an internal board test. The board will check the resistance value of the thermistor and display the results on the RC Temp Display.	O1=Pass O2=Open O3=Short
2	RC thermistor	This is an internal board test. The board will check the resistance value of the thermistor and display the results on the RC Temp Display.	
3	Evaporator fan motor and Air baffle motor	Verify air flow from the evaporator fan. Check to see if the baffle opens and closes.	O1=Fan ON, Air Baffle is open O2=Fan ON, Air Baffle is closed (not available on motors without feedback)
4	Compressor/Condenser Fan Motor	Line voltage switched to components from board. Verify 120VAC between line and neutral at motor.	O1=ON O2=OFF
5	N/A	N/A (This step bypassed automatically)	N/A
6	Defrost heater/Bi-metal	Line voltage switched to components from board, verify 120VAC between line and neutral at heater. Under some conditions, the Bi-metal can take a few minutes to close the circuit. Note: If Bi-metal is open, it will need to be by-passed for heater to operate. See Note below.	Blank O1 = Bimetal Closed O2 = Bimetal Open
7	Defrost Mode	The Defrost Mode can be set by using SW3. In ADC Mode the product will automatically defrost after a minimum of 8 hours of compressor runtime and up to maximum of 96 hours of compressor runtime, depending upon product usage. In Basic Mode the product will automatically defrost after 8 hours of compressor runtime. The Defrost Mode must be set to ADC ON before exiting the Service Diagnostic Mode. Press SW5 to indicate the completion of this step and to continue with dispenser service routine.	O1 = ADC ON O2 = Basic Mode ON (8 hour timer)

**ATTENTION: IF BI-METAL IS BY-PASSED FOR TESTING ( IF APPLICABLE ), DO NOT OVERHEAT EVAPORATOR AREA.**

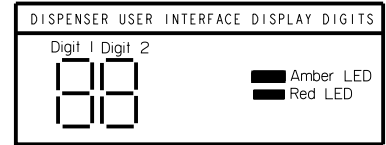
# SERVICE SHEET

**W10324389B**

## ⚠ WARNING



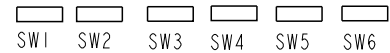
**Electrical Shock Hazard**  
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NOTE: The step number is shown first, followed by the status of the step 2 seconds after the step number is displayed. When the step number is being shown, the amber (Order Filter) LED will be on. When the status of the step is being shown, the red (Replace Filter) LED will be on.

**SERVICE INFORMATION ( W10324388 B )**

## SWITCH DIAGRAM



Step #	Component Tested	Suggested Diagnostics Routine: COOLING system steps 1-7. DISPENSING system steps 8-30.	Component Status Indicator																								
8	All UI indicators	Verify that all LED indicators and UI display digits turn on automatically.	All indicators ON																								
9	UI Button and Pad Test	Displays the User Interface Buttons and Ice and Water Pads status as described in the Component Status Indicator column.  NOTE: Do not use SW4 and SW5 as these are used only to navigate through the Service Diagnostics.	<table border="0"> <tr> <td>Digit 1</td> <td>Digit 2</td> <td></td> </tr> <tr> <td>1</td> <td>0</td> <td>= SW1 Pressed</td> </tr> <tr> <td>2</td> <td>0</td> <td>= SW2 Pressed</td> </tr> <tr> <td>3</td> <td>0</td> <td>= SW3 Pressed</td> </tr> <tr> <td>6</td> <td>0</td> <td>= SW6 Pressed</td> </tr> <tr> <td>0</td> <td>1</td> <td>= Ice Pad Pressed</td> </tr> <tr> <td>0</td> <td>2</td> <td>= Water Pad Pressed</td> </tr> <tr> <td>0</td> <td>3</td> <td>= Ice and Water Pads Pressed</td> </tr> </table> NOTE: SW4 and SW5 ARE USED FOR NAVIGATION AND ARE NOT DISPLAYED.	Digit 1	Digit 2		1	0	= SW1 Pressed	2	0	= SW2 Pressed	3	0	= SW3 Pressed	6	0	= SW6 Pressed	0	1	= Ice Pad Pressed	0	2	= Water Pad Pressed	0	3	= Ice and Water Pads Pressed
Digit 1	Digit 2																										
1	0	= SW1 Pressed																									
2	0	= SW2 Pressed																									
3	0	= SW3 Pressed																									
6	0	= SW6 Pressed																									
0	1	= Ice Pad Pressed																									
0	2	= Water Pad Pressed																									
0	3	= Ice and Water Pads Pressed																									
10	N/A	N/A (This step is bypassed automatically)	N/A																								
11	Dispenser Lighting	Pressing SW3 will change the dispenser lighting setting from OFF(0%) to ON(100%) To DIM(50%)	Blank																								
12	N/A	N/A (This step is bypassed automatically)	N/A																								
13	Dispenser Housing Heater Status	Displays the Dispenser Housing Heater status on the UI display. Press SW3 to change status.	O1 = ON O2 = OFF																								
14	N/A	N/A (This step is bypassed automatically)	N/A																								
15	N/A	N/A (This step bypassed automatically)	N/A																								
16	RC Door Switch Input	Displays the RC Door status in realtime on the UI display. Verify that the open and close status display correctly	O1 = RC Door Open O2 = RC Door Closed																								
17	FC Door Switch Input	Displays the FC Door status in realtime on the UI display. Verify that the open and close status display correctly.	O1 = FC Door Open O2 = FC Door Closed																								
18	Ice Door Motor	Displays the Ice Door stepper motor state on 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 have a delay in closing after an ice dispense is initiated.	O1=Closed, O2=Opening, O3=Open, O4=Closing																								
19	Fill tube heater status	If this feature is available on the product, this step will allow the fill tube heater to be toggled on and off through the use of SW3.	O1=ON, O2=OFF																								
20	Water Filter Usage Rating	Displays in two sequential flashes the total water usage rating in gallons for the water filter on the UI display. Wait until dash is displayed which means end of the number.	00/0- to 99/9-																								
21	Water Filter Time Rating	Displays in two sequential flashes the total time rating in days for the water filter on the UI display. Wait until dash is displayed which means end of the number.	00/0- to 99/9-																								
22	Water Filter Usage	Displays in two sequential flashes the current water filter status in gallons used since last reset on the UI display. Wait until dash is displayed which means end of the number.	00/0- to 99/9-																								
23	Water Filter Time	Displays in two sequential flashes the current water filter status in days since last reset on the UI display. Wait until dash is displayed which means end of the number.	00/0- to 99/9-																								
24	Water Filter Reset	Display in two sequential flashes the current times the Water Filter was reset on the UI display. Wait until dash is displayed which means end of the number.	00/0- to 99/9-																								
25	Water Dispensing and icemaker fill test.	Simulate an icemaker fill. Then the ice maker will show icemaker fill status. Press the Water Pad to initiate the water dispense.	<table border="0"> <tr> <td>Digit 1</td> <td>Digit 2</td> </tr> <tr> <td>O= Icemaker valve OFF</td> <td>O= Water valve OFF</td> </tr> <tr> <td>I = Icemaker valve ON</td> <td>I= Water valve ON</td> </tr> </table>	Digit 1	Digit 2	O= Icemaker valve OFF	O= Water valve OFF	I = Icemaker valve ON	I= Water valve ON																		
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O= Icemaker valve OFF	O= Water valve OFF																										
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26	Main Control Software Version	Displays in three sequential flashes the Main Control software version on the UI display. Note: This is repeated displayed during all time in this step.	00/00/00 to 99/99/99																								
27	Dispenser UI Control Software Version	Displays in three sequential flashes the Dispenser UI Control software version on the UI display. Note: This is repeated displayed during all time in this step.	00/00/00 to 99/99/99																								
28	N/A	N/A (This step bypassed automatically)	N/A																								
29	N/A	N/A (This step is bypassed automatically)	N/A																								
30	N/A	N/A (This step is bypassed automatically)	N/A																								

Also see JOB-AID 4322658A for detailed troubleshooting of the In-Door Ice Systems (IDI).

LIT-SERVICE SHEET NO.

**W10324389B**

LIT-SERVICE SHEET NO.

**W10324389B**

- NOTES:
1. IM SOLENOID GROUNDED THROUGH MOUNTING.
  2. EVAP COVER GROUNDED HEAT SHIELD.
  3. POLARITY ON THE DISPENSER IS ACCOMPLISHED USING A RELAY ON THE MAIN BOARD. THE WH/RD AND THE GY/OR WIRES SWITCH POLARITY DEPENDING ON THE CRUSH/CUBE POSITION. SEE TABLE BELOW:

CRUSH	GY/OR	WH/RD
CUBE	+	-

## WIRING DIAGRAM



**WARNING**

**Electrical Shock Hazard**  
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WIRE COLOR CODE  
 WH/GN = WHITE/GREEN TRACER  
 OR/BK = ORANGE/BLACK TRACER  
 YL/RD = YELLOW/RED TRACER  
 BU/BK = BLUE/BLACK TRACER  
 WH/BU = WHITE/BLUE TRACER  
 WH/RD = WHITE/RED TRACER  
 GN/YL = GREEN/YELLOW TRACER  
 BK/WH = BLACK/WHITE TRACER  
 YL/BK = YELLOW/BLACK TRACER  
 PK/BK = PINK/BLACK TRACER  
 BK/WH = BROWN/WHITE TRACER  
 OR/BU = ORANGE/BLUE TRACER  
 RD/WH = RED/WHITE TRACER  
 LB/BK = LIGHT BLUE/BLACK TRACER  
 TN/WH = TAN/WHITE TRACER  
 TN/BK = TAN/BLACK TRACER  
 RD/YL = RED/YELLOW TRACER

WIRE COLOR CODE  
 V/WH = VIOLET/WHITE TRACER  
 BL/YL = BLUE/YELLOW TRACER  
 YL/BU = YELLOW/BLUE TRACER

WIRE COLOR CODE  
 BU = BLUE  
 BK = BLACK  
 RD = RED  
 WH = WHITE  
 YL = YELLOW  
 OR = ORANGE  
 BR = BROWN  
 GY = GRAY  
 P = PINK  
 V = VIOLET  
 TN = TAN

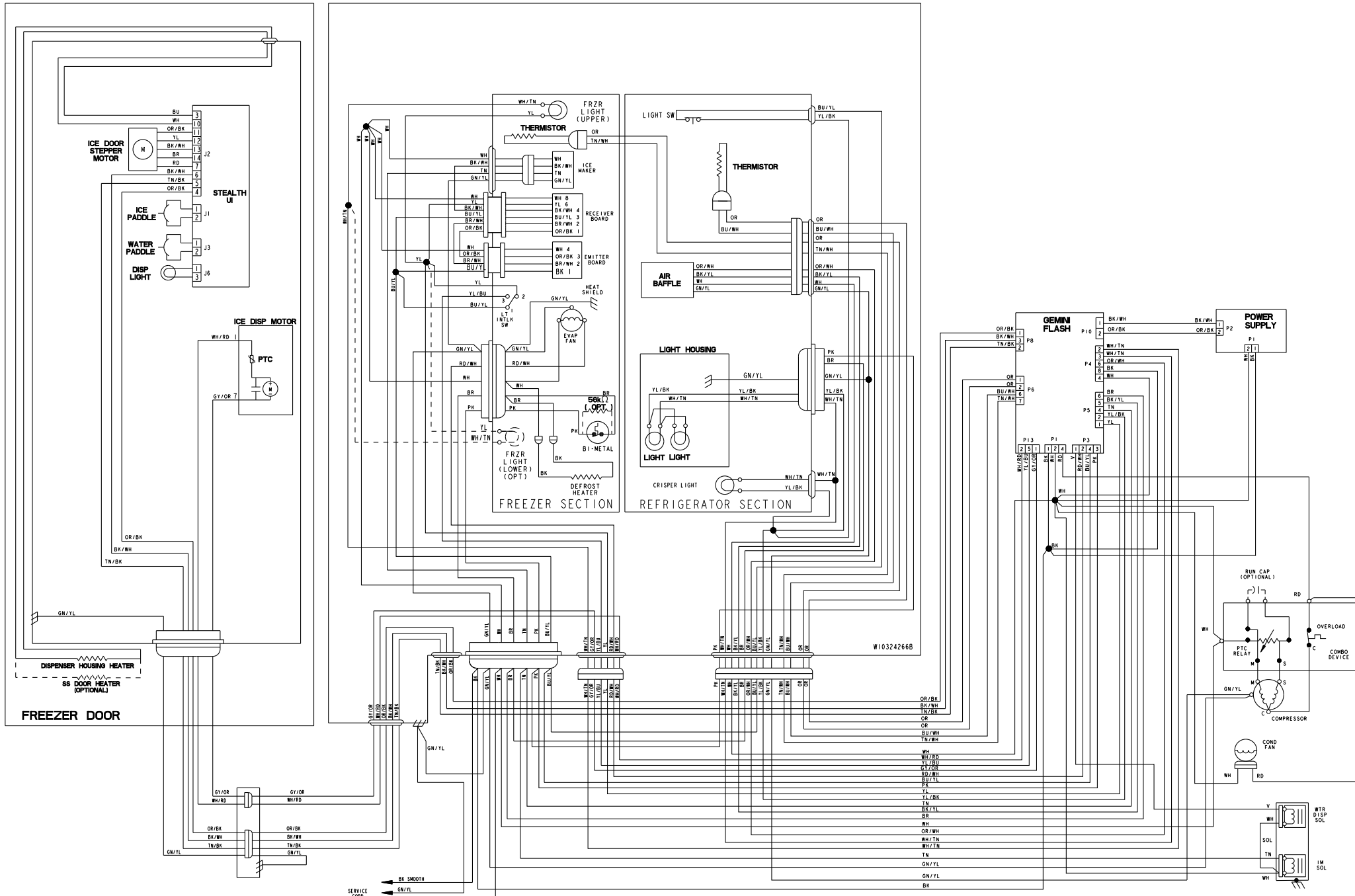
MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING UNITED STATES PATENTS

3,980,631	4,659,157	4,765,696	4,908,544	5,011,101
4,084,725	4,865,708	4,761,896	4,911,508	5,033,182
4,090,641	4,694,553	4,768,353	4,914,928	5,033,273
4,102,660	4,706,169	4,776,178	4,920,758	5,042,398
4,327,557	4,707,401	4,787,216	4,924,680	5,044,704
4,330,310	4,709,556	4,799,362	4,934,541	5,050,777
4,640,432	4,715,512	4,800,935	4,936,641	5,070,709
4,649,712	4,728,759	4,801,181	4,944,566	5,077,985
4,649,717	4,745,656	4,833,894	4,956,890	5,099,461
4,649,718	4,745,775	4,862,577	4,996,848	

OTHER PATENTS PENDING

SYMBOL CODE

- (C) : CONNECTOR - SCREW ON
- (C) : CONNECTOR - CLOSED END
- : DISCONNECT TERMINAL
- : PERMANENT CONNECTION
- ⊕ : PLUG CONNECTOR
- ⊥ : GROUND ( CHASSIS )



WIRING SHEET NO. W10324265B

