

SYSTEM DIAGNOSTIC MODE				
Activate:		Press and hold FZ + Λ and FZ - V buttons for 10 secs. Navigate through tests with FF + Λ/ FF - V buttons. Automatically deactivates after 10 minutes of no activity.		
Deactivate:				
Display code	Test Description	Activation/Deactivation	Display	Passing Result
---	First Screen	---	Turn on all LEDs on external dispenser UI	---
	Second Screen		Turn off all LEDs on external dispenser UI	
2	Frz Defrost	Press CUBE to change status of load	Heater on when display reads On , off when oF	Defrost heater shows temp increase before 5 min have passed or reaches 45°C cutout
8	Main Water Valve		Main valve is activated when On , stops when oF	Valve is able to turn on and off
11	Cube/Crush Solenoid		Solenoid activated when On , deactivated when oF	Solenoid is able to turn on and off
12	Condenser Fan		Fan on when display reads On , off when oF	Fan motor is activated successfully
53	Water Valve Dispenser + Main Valve		Water dispenses when On , stops when oF	Water is dispensed successfully at dispenser
56	FF IM Water Valve + Main Valve		Remove ice tray to collect water into a container to measure water fill. If collecting water into ice tray, perform test 50 first to empty tray. Water flows in the tray when On ; test is correspondent to ice tray water fill setting. Automatically goes to oF state once configured time has elapsed.	Water is dispensed at ice tray for configured time setting
72	FF IM Defrost Heater		Heater on when display reads On , off when oF	Defrost heater shows temp increase before 5 min have passed or reaches 45°C cutout
82	FRZ IM Water Valve + Main Valve		Remove ice tray to collect water into a container to measure water fill. If collecting water into ice tray, perform test 50 first to empty tray. Water flows in the tray when On ; test is correspondent to ice tray water fill setting. Automatically goes to oF state once configured time has elapsed	Water is dispensed at ice tray for configured time setting
10	Auger Motor		Auger activated when On , deactivated when oF	Auger motor is successfully activated
13	FF Light		Fresh Food lights come on when On ; lights turn off when oF	All FF lights turn on
15	FRZ Evaporator Fan Motor		Fan runs at 3 speeds: Max speed On , Medium speed Mi , Stopped oF Locked rotor will show Lc No PWM signal will show Ns when fan is stopped (oF) No 12V signal or ground will show Np when fan is On or Mi	Fan will cycle through all 3 speeds and Lc or Ns or Np is not displayed
20	FRZ Light		Freezer lights come on when On ; lights turn off when oF	FRZ light turns on
38	VCC Compressor	Compressor is running at max speed when On , stopped when oF	Compressor successfully turns on	
47	Ice Chute Heater	Chute heater is activated when On , deactivated when oF	Heater turns on successfully and difference in temperature is felt around dispenser ice chute	
62	FF IM Evaporator Fan Motor	Evap fan motor is activated when On , deactivated when oF	FF IM evap fan turns on successfully	
63	Flipper Mullion DC Heater	Flipper mullion heater is activated when On , deactivated when oF	Heater turns on successfully and difference in temperature is felt along flipper mullion	
66	Dispenser Light	Dispenser light comes on when On ; light turns off when oF	Dispenser pocket light turns on successfully	
67	FF Fill Tube Heater	FF fill tube heater is activated when On , deactivated when oF	Fill tube heater is successfully turned on and off. Temperature increase is noted in fill tube area	
94	FRZ Fill Tube Heater	FRZ fill tube heater is activated when On , deactivated when oF		
22	FF Damper Motor	FRZ Evap Fan will turn on at max speed. Damper is open when OP , closed when CL . Check for airflow when damper is fully open (OP) and no air flow when fully closed (CL). Screen will blink 1 during damper movement. Any FRZ evap fan motor errors will display alternatively of damper status during test	Damper opens and closes successfully and no air flow is felt when damper is in closed (CL) position	
36	Ice Chute/ Flapper Motor	When flapper is closed, shows CL , when open OP	Flapper door opens and closes successfully, Er does not show on display	
50	FF IM Twist Tray Harvest Test	Remove ice bucket in order to see rotation of tray. Display will show "Go" when tray is in home position (horizontal). during rotation, screen will blink 1 . In case of failure at end of twisting operation, screen will show Er	Tray twists successfully and Er is not displayed at the end of the cycle	
78	FF IM Bail Arm/ Ice Level Bucket	Remove ice bucket in order to see status of im bail arm. Allow bail arm to drop freely, Em (empty) will show when tray returns home. Hold bail arm up by hand, Fu (full) will show when tray returns home. In case of failure at end of twisting operation, will show Er . Screen will blink 1 during rotation.	Bail arm successfully completes test and Er is not displayed at the end of each cycle	
88	FRZ IM Twist Tray Harvest Test	Remove ice bucket in order to see rotation of tray. Display will show Go when tray is in home position (horizontal). During rotation, screen will blink 1 . In case of failure at end of twisting operation, screen will show Er	Tray twists successfully and Er is not displayed at the end of the cycle	
86	FRZ IM Bail Arm/ Ice Level Bucket	Remove ice bucket in order to see status of im bail arm. Allow bail arm to drop freely, Em (empty) will show when tray returns home. Hold bail arm up by hand, Fu (full) will show when tray returns home. In case of failure at end of twisting operation, will show Er . Screen will blink 1 during rotation.	Bail arm successfully completes test and Er is not displayed at the end of each cycle	
23	FF Door Switch	Open/Close FF doors	Display shows CL when door is closed, OP when door is open	Display reads correctly when door is opened/closed
24	FRZ Door Switch	Open/Close FRZ door		
27	FRZ IM Switch	Toggle switch on/off	Switch is closed when display reads On , open when oF	
28	Dispenser Paddle	Press paddle	Display shows oF when paddle is pressed. On when paddle is released or not pressed	Display shows oF when paddle is not pressed and On when paddle is pressed
29	FF Temp Sensor	Activates automatically	Display will show compartment temperature in either C or F depending on mode. Display will read OP if open circuit, SH if short circuit	Temperature is displayed and does not show OP or SH
30	FRZ Temp Sensor		Display will show UI temperature in either C or F depending on mode. Display will read OP if open circuit, SH if short circuit	
34	UI Ambient Temp Sensor		Display will show FRZ evaporator temperature in either C or F depending on mode. Display will read OP if open circuit, SH if short circuit	
39	FRZ Evaporator Temp Sensor		Display will show FF IM tray temperature in either C or F depending on mode. Display will read OP if open circuit, SH if short circuit	
45	FF IM Tray Temp Sensor		Display will show FF IM evaporator temperature in either C or F depending on mode. Display will read OP if open circuit, SH if short circuit	
68	FF IM Evaporator Temp Sensor		Display will show relative humidity sensed by H&T sensor on UI. Display will read OP if open circuit, SH if short circuit	
64	UI Humidity Sensor		Display will show FRZ IM tray temperature in either C or F depending on mode. Display will read OP if open circuit, SH if short circuit	
87	FRZ IM Tray Temp Sensor			

SERVICE DATA SHEET

A20430302

ICE & WATER - AUTOMATIC DEFROST BOTTOM FREEZER - R600a

➔ IMPORTANT: PLEASE RETURN THIS SHEET TO ITS ORIGINAL LOCATION.

This concludes the hardware tests. The following tests correspond to firmware versions. Before each firmware version is displayed "--" will appear on screen followed by each 8-digit string representing firmware version. After the string has been displayed, "--" will appear again before automatically proceeded to the next 8-digit string. Press "+" to advance to the next string at any time

--	Software Version	Runs automatically scrolling through all digits. Press "+" button to skip to next test	Displays digit sequence related to software loaded onto main power board; 8 digit sequence	Software version is able to be recorded from display
--	Main Board Firmware Version	Runs automatically scrolling through all digits. Press "+" button to skip to next test	Displays digit sequence related to firmware loaded onto main power board; 8 digit sequence	Firmware version is able to be recorded from display
--	Dispenser UI Firmware Version	Runs automatically scrolling through all digits. Press "+" button to skip to next test	Displays digit sequence related to firmware loaded onto Cobalt UI (on exterior of unit); 8 digit sequence	Firmware version is able to be recorded from display
--	Lifetime	Press + button to advance to next digit	Displays number of days the appliance has been powered up, even not consecutively. Range is from 0-9999	Lifetime displays successfully on display

After Lifetime is displayed, last display is a 1-second counting up timer (0, 1, 2, 3...) this communicates that Service Mode has come to an end. To return to normal operation, press and hold "+" and "-" for 10 seconds or plug/unplug the appliance

PERFORMANCE DATA NO LOAD & NO DOOR OPENINGS AT 37°/0° CONTROL SETTING				
	CD DISPENSER		SD DISPENSER	
Type A with Run / Start Capacitor	55°F (13°C) Ambient	90°F (32°C) Ambient	55°F (13°C) Ambient	90°F (32°C) Ambient
Operating Time	65 to 70%	100%	55 to 60%	100%
Freezer Temp	-8°F to 6°F (-22°C to -14°C)			
Refrigerator Temp	33°F to 43°F (0° to 6°C)			
Low Side Pressure	-6.3 to -5.1 psig (56 to 64 kPa)	-5.3 to -4.8 psig (63 to 66 kPa)	-6.3 to -5.1 psig (56 to 64 kPa)	-5.3 to -4.8 psig (63 to 66 kPa)
High Side Pressure	25 to 28 psig (270 to 290 kPa)	57 to 61 psig (490 to 520 kPa)	25 to 28 psig (270 to 290 kPa)	57 to 61 psig (490 to 520 kPa)
Wattage	35 to 40	50 to 60	50 to 55	60 to 70
Amps (running)	0.4 to 0.5	0.6 to 0.7	0.6 to 0.7	0.8 to 0.9
Base Voltage	115 vac (103 to 127 vac)			

DEFROST SPECIFICATIONS					
Cabinet Size: 23" CD/28" SD		Thermal Cutout	Heater	Defrost Thermistor Termination	
		Cutout	Watts	Ohms	Cutout
	FRZ	2 fuses, each fuse rated to open @ 72 +0/-4 C	360 W	36.7 +/- 5% Ω @ 25° C	50°F (10°C)
	FFIM	2 fuses, each fuse rated to open @ 72 +0/-4 C	60 W	220 +/-7.5% Ω @ 25° C	64.4°F (18°C)
Electronic Timer - (ADC) Defrost 35 minutes every 8-96 hours of compressor run time					

CONDENSER FAN MOTOR			
Watts	RPM	Amps	
3.1	1050 ± 50	130 CFM	39mA (@115VAC/20°C)
Max Input Power (W)	Speed (R/Min)	Air Flow in Free Air (@ 0 in H ₂ O)	

ERROR CODES		
Error Message Display		Interpretation
FZ Temp Disp. Area	FF Temp Disp. Area	
Er	CE	Communication Error UI to Main Board
dl	SP	Chute Flapper Error - Flapper not Closed
Er	t1	FRZ Temp Sensor Opened/Shorted
	t2	FRZ Defrost Sensor Open/Shorted
	t3	FF Temp Sensor Opened/Shorted
	t6	FF IM Tray Temp Sensor
	t7	FF IM Defrost Sensor Opened/Shorted
	t8	FRZ IM Temp Sensor

SPECIAL MODES					
Mode	Display			Activate	Deactivate
	FZ	FF	Other		
Manual Defrost	d	F		FZ + (Λ) and FF + (Λ) for 10 secs	---
Sabbath	Sb			FZ - (v) and FF + (Λ) for 10 secs	FZ - (v) and FF + (Λ) for 10 secs
Demo/Showroom	Demo Light On			FZ + (Λ) and FF - (v) for 10 secs	FZ + (Λ) and FF - (v) for 10 secs
System Diagnostics	Refer to Systems Diagnostics Table			FZ + (Λ) and FZ - (v) for 10 secs	FZ + (Λ) and FZ - (v) for 10 secs
°F/°C Display	---			FF + (Λ) and FF - (v) for 10 secs	FF + (Λ) and FF - (v) for 10 secs
Sleep/Awake Mode	Display off or always on			CRUSH and LIGHT keys for 5 secs	CRUSH and LIGHT keys for 5 secs
FF and FZ IM Fill Time Menu	Settings will appear on UI			CUBE and CRUSH keys for 10 secs	After 10 secs of no activity

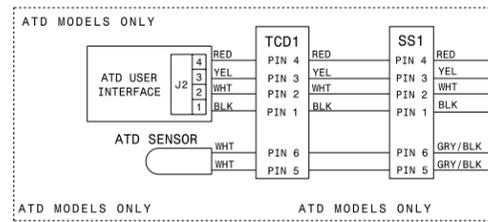
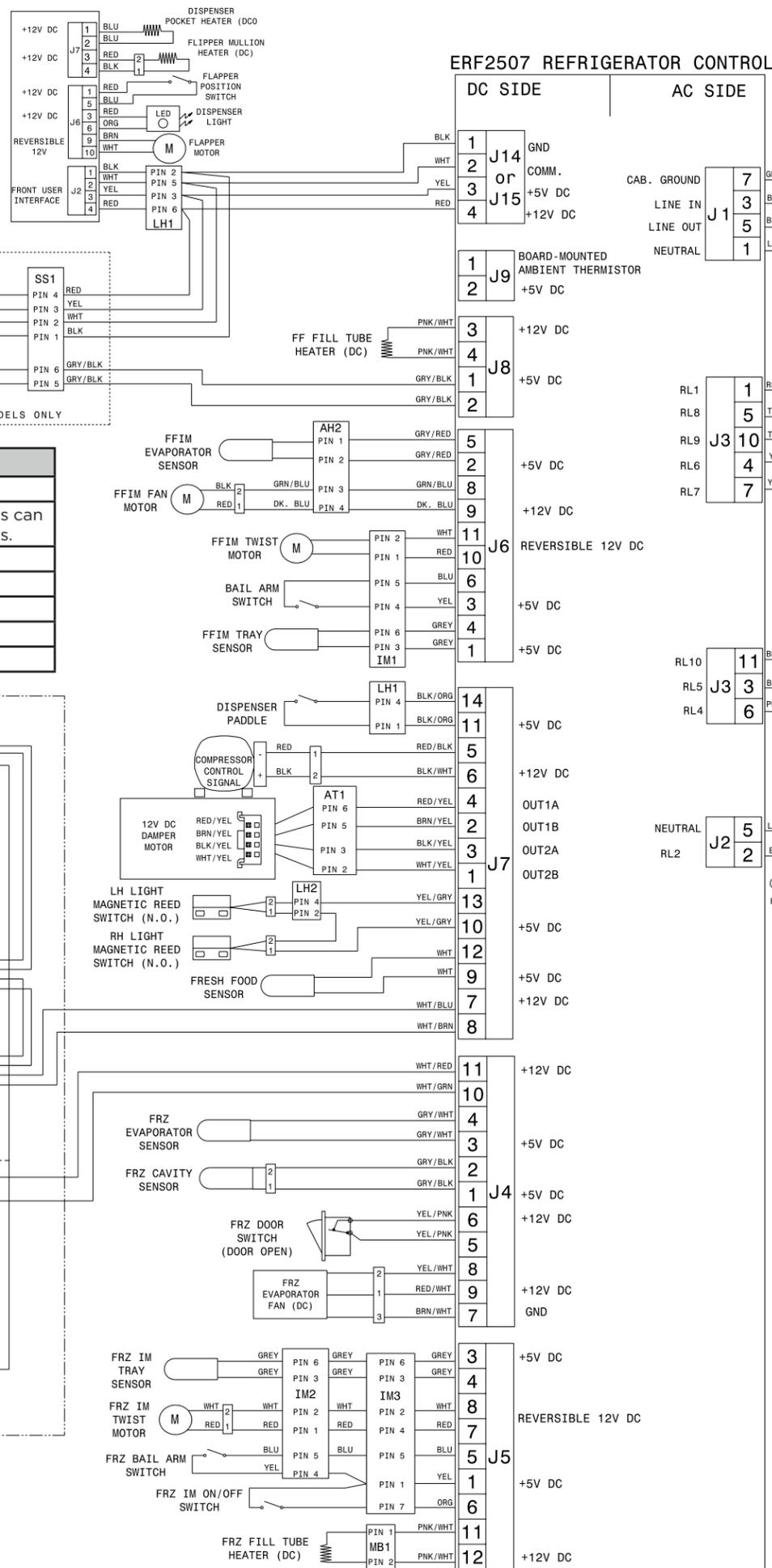
* See page 2 for IM Fill Settings

IMPORTANT SAFETY NOTE

The information provided herein is designed to assist qualified repair personnel only. Untrained persons should not attempt to make repairs due to the possibility of electrical shock. Disconnect power cord before servicing this appliance.

IMPORTANT

If any green grounding wires are removed during servicing, they must be returned to their original position and properly secured.



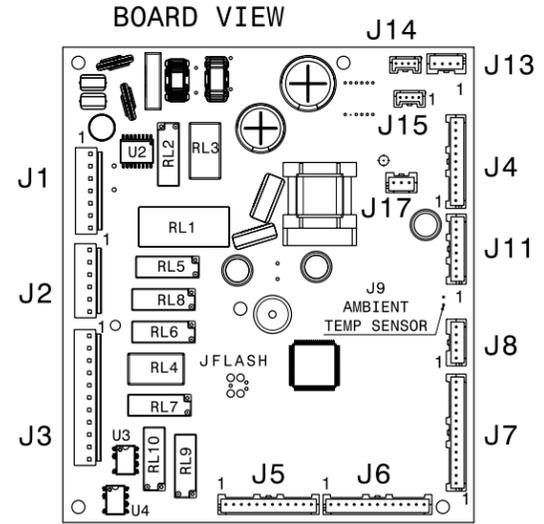
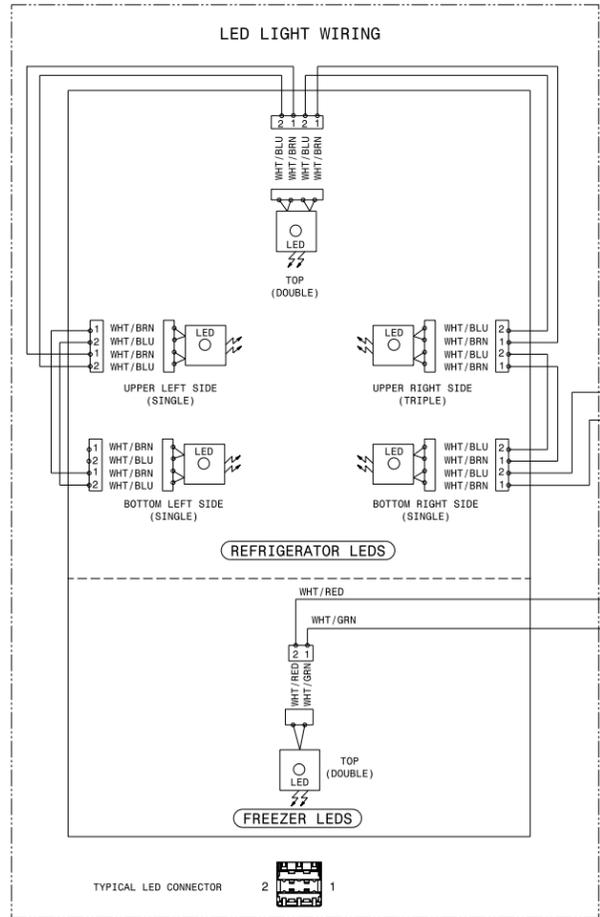
FF AND FRZ IM FILL TIME ADJUSTMENT MODE

NOTE: First consider water filter condition before adjusting fill time.

Activate: Press and hold **CUBE** and **CRUSH** buttons for 10 secs. Adjustments can be made with the +/- buttons. The setting will time out after another 10 secs.

Deactivate: Resets to Normal Operation after 10 secs

Setting	Pressure Condition
1	Normal-High (more than 60 psi)
2	Low (between 30 and 60 psi)
3	Very Low (between 20 and 30 psi)



INLINE CONNECTOR ABBREVIATION KEY

ABBR.	EXPLANATION	ABBR.	EXPLANATION
AT1	9 PIN CONNECTION AT AIR TOWER	WV1	6 PIN CONNECTION IN THE MACHINE COMPARTMENT TO THE RIGHT OF THE CONDENSER
AH1	5 PIN CONNECTION IN FRESH FOOD ICEMAKER COMPARTMENT	MC1	10 PIN CONNECTION IN THE MACHINE COMPARTMENT TO THE LEFT OF THE COMPRESSOR
AH2	4 PIN CONNECTION IN FRESH FOOD ICEMAKER COMPARTMENT	SS1	10 PIN CONNECTION IN THE LEFT DELI SIDE SUPPORT
IM1	6 PIN CONNECTION IN FRESH FOOD ICEMAKER COMPARTMENT	TCD1	6 PIN CONNECTION IN SIDE SUPPORT
IM2	6 PIN CONNECTION INSIDE FREEZER ICEMAKER HOUSING	MB1	4 PIN CONNECTION IN THE MAIN CONTROL BOARD HOUSING
IM3	9 PIN CONNECTION IN TOP OF FREEZER ICEMAKER HOUSING	MB2	3 PIN CONNECTION IN THE MAIN CONTROL BOARD HOUSING
LH1	6 PIN CONNECTION AT THE LEFT DOOR UPPER HINGE	DF1	3 PIN CONNECTION BEHIND THE FRZ EVAPORATOR COIL COVER
LH2	4 PIN CONNECTION AT THE LEFT DOOR UPPER HINGE		

