



DEPT. 731A

TECHNICAL FLASH

Service Branch Manager
Assistant Service Branch Manager
Call Centre Manager
Quality Education Leader

Div 22, 26 & 46

T.F. 22-224
MAY 2007

501 LGE Div 22, 26 & 46 MAJOR APPLIANCES

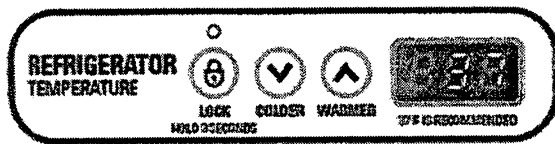
TEST MODELS AND ERROR CODES

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TOP MOUNT ERROR CODE

19cu.ft - 22 cu. ft



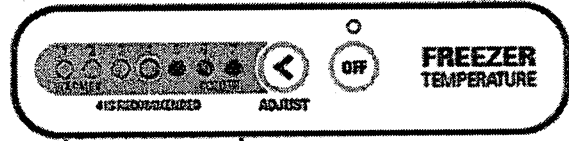
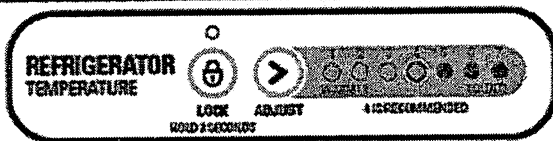
Defect code signs



Defect code signs

-Show ERROR CODE on Refrigerator Temperature Panel and Freezer Temperature panel.

NO	ITEM	ERROR CODE		CONTENTS	REMARKS
		REF. TEMP. PANEL	FRZ. TEMP. PANEL		
1	Freezer sensor malfunctions	E _r	F5	Open or short-circuited wire	*Inspect connecting wires on each sensor
2	Refrigerator sensor malfunctions	E _r	r5	Open or short-circuited wire	
3	Defrost sensor malfunctions	E _r	d5	Open or short-circuited wire	
4	Room Temperature sensor malfunctions	On LED CHECK mode ERROR CODE sign		Open or short-circuited wire	
5	Defrosting malfunctions	E _r	dH	2 hours after defrosting starts, the sensor is not above 50°F(10°C)	Temperature FUSE cuts off, HEATER cuts off, DRAIN is clogged, HEATER starts, RELAY malfunctions



Defect code Panel

ERROR CODE on Freezer Temperature panel

●:ON ●:OFF

NO	ITEM	DEFECT SIGNS							CONTENTS	REMARKS
		F1	F2	F3	F4	F5	F6	F7		
1	Freezer sensor malfunctions	●	●	●	●	●	●	●	Open or short-circuited wire	*Inspect connecting wires on each sensor
2	Refrigerator sensor malfunctions	●	●	●	●	●	●	●	Open or short-circuited wire	
3	Defrost sensor malfunctions	●	●	●	●	●	●	●	Open or short-circuited wire	
4	Room Temperature sensor malfunctions	On LED CHECK mode							Open or short-circuited wire	
5	Defrosting malfunctions	●	●	●	●	●	●	●	2 hours after defrosting starts, the sensor is not above 50°F(10°C)	Temperature FUSE cuts off, HEATER cuts off, DRAIN is clogged, HEATER starts, RELAY malfunctions

-When a defect occurs, the buttons will not operate but the tones will sound. When the defect CODE removes the sign, it returns to normal operation (RESET). The defect CODE is shown on the REFRIGERATOR DISPLAY LED, and the other LED is turned off.

TOPMOUNT TEST MODE

19cu.ft - 22 cu. ft

1. The Test mode allows you to check the PCB and the functions of the product as well as finding out the Defective part in case of an error.
2. The test button is on the main PCB of the refrigerator (Test S/W at the back). The test mode will be cleared in 2 hours regardless of the type of test mode.
3. While in the test mode, the function control button will not operate, though the recognition tone (beep~) sounds.
4. After exiting the test mode, be sure to reset by unplugging and then plugging in the appliance.
5. If an error (such as a sensor failure) is detected while in the test mode, the test mode is cleared and the error code is displayed.
6. While an error code is displayed, the test mode will not be activated even if the test button is pushed.

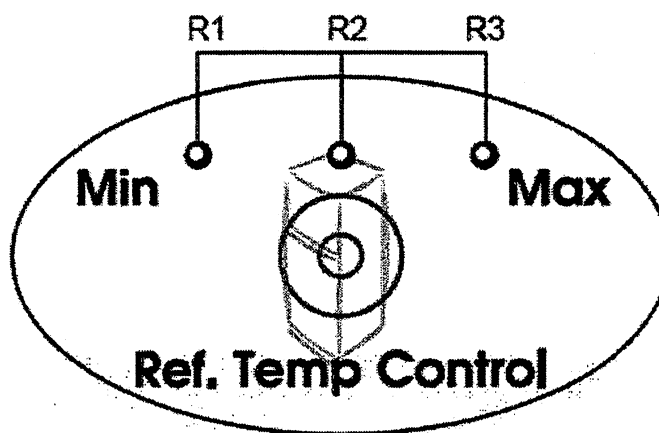
MODE	MANIPULATION	CONTENTS	REMARKS
TEST1	Push the test button once.	1. Continuous operation of the COMP 2. Continuous operation of the freezer fan 3. STEPPING DAMPER OPEN 4. Defrosting Heater OFF 5. Every DISPLAY LED ON	
TEST2	Push the test button once while in TEST MODE 1.	1. COMP OFF 2. Freezer FAN OFF 3. STEPPING DAMPER CLOSE 4. Defrosting heater ON 5. DISPLAY LED shows 222	Reset if the temperature of the Defrosting sensor is 50°F(10°C) or more.
Reset	Push the test button once while in TEST MODE 2.	Reset to the default setting	The compressor will Start after a 7-minute delay.



TOP MOUNT ERROR CODE

9 cu. ft – 15 cu. ft

1. The error diagnostic mode allows the service to locate a fault without having to disassemble the refrigerator.
2. If the refrigerator goes into error mode, the buttons cease to function.
3. After the error mode is cleared, the refrigerator defaults to the normal setting.
4. The error code is displayed by the refrigerator temp indication LED on the display of the refrigerator while the remaining LED's are off.



⊗ : BLINK(1sec on/1sec off) ● : OFF ○ : ON

NO	Error	Error Code Display			Cause	Default state during error mode	
		R1	R2	R3		Compressor / Cooling fan	Defrosting heater
1.	Faulty refrigerator (R) sensor (on the control box of the refrigerator)	⊗	⊗	●	Cut or short-circuited wire of refrigerator sensor	15 min ON/ 15 min OFF	○
2.	Faulty defrosting sensor	●	⊗	⊗	Cut or short-circuited wire of defrosting sensor	○	No defrosting
3.	Defrosting failure	⊗	⊗	⊗	Cut or disconnected wire of defrosting heater or temperature fuse (indicated at least 2 hours later after the error occurs)	○	○

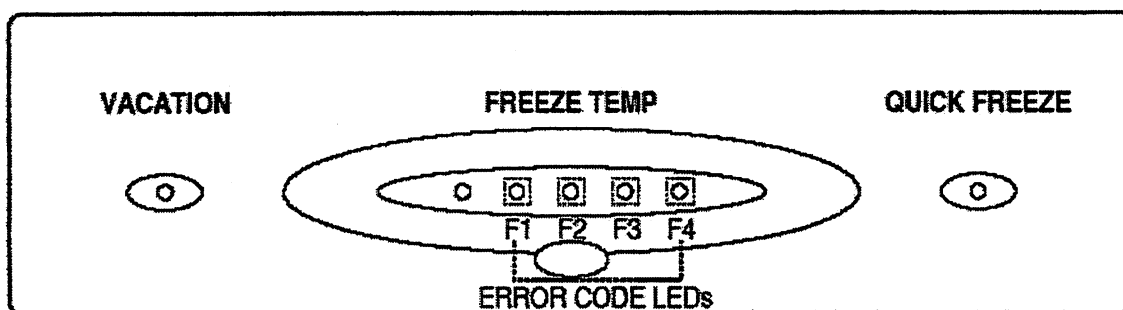
*There is no Test mode for this model

TOP MOUNT ERROR CODE







9 cu. ft – 15 cu. ft

(1) If you push a button and the function will not operate then the refrigerator is in the Error code mode.

(2) The Error code is displayed in the FREEZE TEMP LED's on TOP COVER.



O : OPERATE NORMAL  : ON
  : OFF

NO.	ITEMS	ERROR CODE LEDs F1 F2 F3 F4	DESCRIPTION	OPERATION IN TROUBLE'S OCCURRING		
				COMP	FAN	DEFROST HEATER
1	FREEZER SENSOR abnormal	 ● ● ●	FREEZER SENSOR open or short.	15 minutes On/ 15 minutes Off	○	○
2	DEFROST SENSOR abnormal	● ●  ●	DEFROST SENSOR open or short.	○	○	No defrosting
3	DEFROSTING FUNCTION is abnormal	   	DEFROST HEATER, TEMP. FUSE open or disconnection (Displayed after at least 4 hours from the trouble's occurring.)	○	○	○
4	RT-SENSOR abnormal	NOTE 1)	Room Temperature SENSOR open or short	○	○	○

TOPMOUNT TEST MODE

9 cu. ft – 15 cu. ft

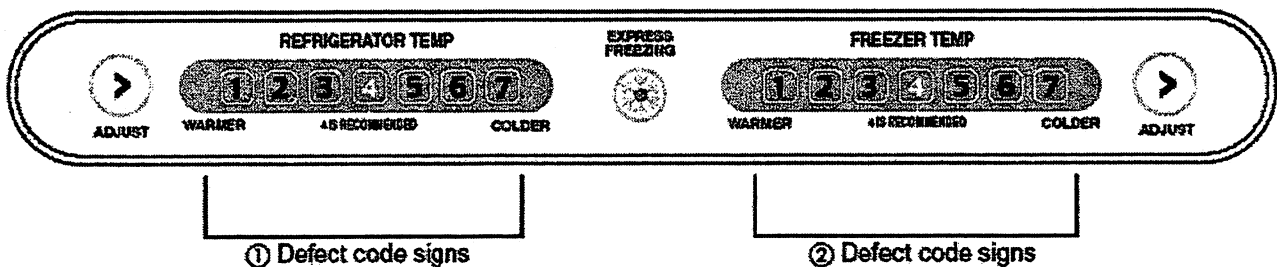
- (1) The test switch is on the MAIN PCB of refrigerator.
- (2) TEST MODE is RESET after MAX. 2hours regardless of TEST MODE.
- (3) After the end of TEST MODE, pull out the power cord and plug it in again(RESET).
- (4) If a ERROR occurs during the TEST MODE, TEST FUNCTION is released and DISPLAY LED's represent ERROR CODE.
- (5) If the TEST switch is pushed during ERROR CODE, TEST FUNCTION is not operated.

MODE	OPERATION	CONTENTS	REMARKS
TEST 1	Press TEST button once.	1. COMP OPERATES SUCCESSIVELY. 2. FAN OPERATES SUCCESSIVELY. 3. DEFROSTING HEATER OFF 4. ALL DISPLAY LEDS ON.	
TEST 2	Press TEST button once in the state of TEST MODE 1.	1. COMP OFF. 2. FAN OFF. 3. DEFROST HEATER ON. 4. ALL THE DISPLAY LEDS OFF EXCEPT QUICK FREEZE AND VACATION LEDS.	If DEFROST HEATER is over 7°C, it returns to the NORMAL STATE.
NORMAL STATE	Press TEST button once in the state of TEST MODE 2.	Return to the initial condition. (RESET)	Comp starts after 7 minutes.

BOTTOM MOUNT ERROR CODE

20 cu. ft – 22 cu. ft

1. When a defect occurs, the buttons will not operate; but the tones. such as ding. will sound.
2. The defect CODE shows on the Refrigerator and Freezer Display.



ERROR CODE on display panel

NO	ITEM	ERROR CODE		CONTENTS	REMARKS
		①	②		
1	Failure of freezer sensor	All off	● ○ ○ ○ ○ ○ ○ ○	Cut or short circuit wire	Inspect Connecting wires on each sensor
2	Failure of Refrigerator sensor	All off	○ ● ○ ○ ○ ○ ○ ○	Cut or short circuit wire	
3	Failure of defrost sensor	All off	○ ○ ● ○ ○ ○ ○ ○	Cut or short circuit wire	
4	Poor of defrost	All off	● ● ● ● ○ ○ ○ ○	2hours later After starting defrost, If sensor doesn't be over 46°F (8°C)	Snapping of defrost heater or Temperature fuse, pull-out of Connector (indicated minimum 2 Hours after failure occurs)

BOTTOM MOUNT TEST MODE

20 cu. ft – 22 cu. ft

1. The test mode is operated by pressing two buttons at Display panel.
2. After exiting the test mode, be sure to reset by unplugging and then plugging in the appliance.
3. If an error, such as a sensor failure, is detected while in the test mode, the test mode is cleared and the error code is displayed.
4. While an error code is displayed, the test mode will not be activated.

MODE	MANIPULATION	CONTENTS	REMARKS
TEST1	Push Express Freezing key and COLDER KEY of Freezer Temp. at the same time over 3 seconds.	<ol style="list-style-type: none"> 1. Continuous operation of the COMPRESSOR 2. Continuous operation of the freezer fan 3. STEPPING DAMPER OPEN 4. Defrosting Heater OFF 5. Every DISPLAY LED ON 	
TEST2	Push Express Freezing key and COLDER KEY of Freezer Temp. at the same time over 3 seconds in TEST MODE 1	<ol style="list-style-type: none"> 1. COMP OFF 2. Freezer FAN OFF 3. STEPPING DAMPER CLOSE 4. Defrosting heater ON 5. DISPLAY LED 1, 3, 5, 7 ON 	Reset if the temperature of the Defrosting sensor is 46°F (8°C) or more.
Reset	Push Express Freezing key and COLDER KEY of Freezer Temp. at the same time over 3 seconds. in TEST MODE 2	Reset to the previously setting before TEST MODE	The compressor will Start after a 7-minute delay.

LED CHECK MODE: When the refrigerator temperature control and the freezer temperature control button at the same time are hold for 1 second or longer, every LED on the display turns on at the same time. when the button are released, the previous mode is restored.

Freezer Fan RPM Variable Check: If the freezer fan is in operation and the WARMER KEY in Refrigerator and Freezer Temp Control are pressed for more than one second at the same time freezer fan RPM changes. (for example if high speed, to normal speed or if normal speed, to high speed for 30 seconds) After 30 seconds, it turns to its original RPM.

Demonstration MODE: Set the Refrigerator settings at the warmest setting then when the refrigerator Temp. control or of freezer Temp. control is held over 5 seconds at the warmest temperature It converts to Demonstration Mode. In this status, each LED is rotated with 1 second interval and, all Loads are off(Compressor / Fan / Damper / Heater)

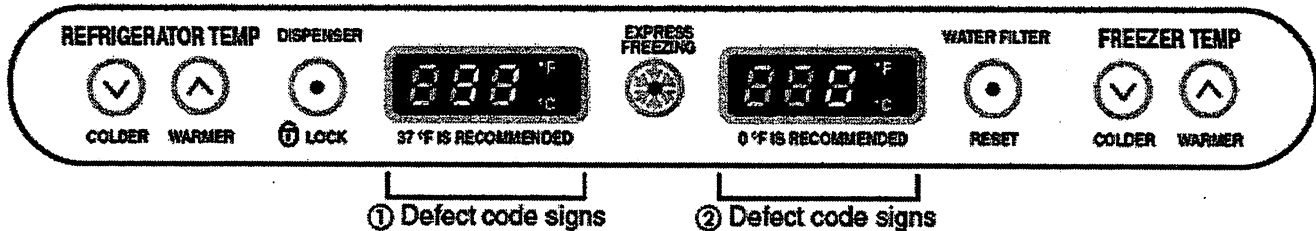


BOTTOM MOUNT ERROR CODE

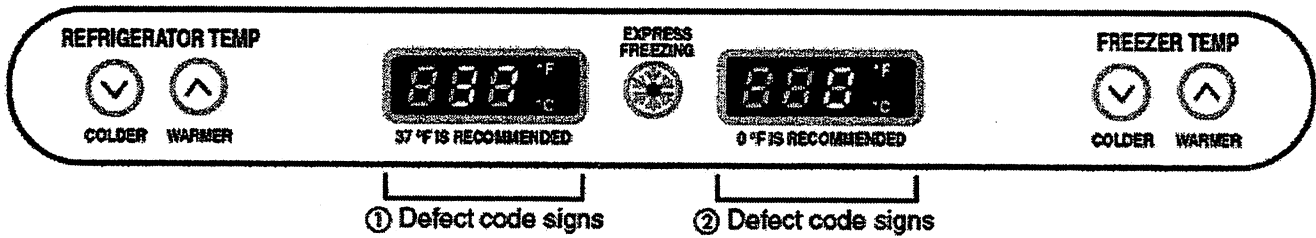
20 cu. ft – 22 cu. ft

1. When a defect occurs, the buttons will not operate; but the tones such as ding will sound.
2. The defect CODE shows on the Refrigerator and Freezer Display.

DISPENSER MODEL



BEST MODEL



ERROR CODE on display panel

NO	ITEM	ERROR CODE		CONTENTS	REMARKS
		①	②		
1	Failure of freezer sensor	Er	FS	Cut or short circuit wire	Inspect Connecting wires on each sensor
2	Failure of Refrigerator sensor	Er	rS	Cut or short circuit wire	
3	Failure of defrost sensor	Er	dS	Cut or short circuit wire	
4	Failure of defrost mode	Er	dH	When defrost sensor doesn't reach 8°C within 2 hours after starting defrost.	Snapping of defrost heater or Temperature fuse, pull-out of Connector (indicated minimum 2 Hours after failure occurs)
5	Failure of BLDC FAN MOTOR at freezing compartment.	Er	FF	If there is no fan motor signal For more than 65sec. in Operation fan motor	Poor motor, hooking to Wires of fan, contact of structures to fan, snapping or short circuit of Lead wire

BOTTOM MOUNT TEST MODE

20 cu. ft – 22 cu. ft

1. The test mode is operated by pressing two buttons at Display panel.
2. After exiting the test mode, be sure to reset by unplugging and then plugging in the appliance.
3. If an error, such as a sensor failure, is detected while in the test mode, the test mode is cleared and the error code is displayed.
4. While an error code is displayed, the test mode will not be activated.

MODE	MANIPULATION	CONTENTS	REMARKS
TEST1	Push Express Freezing key and COLDER KEY of Freezer Temp. at the same time over 3 seconds.	<ol style="list-style-type: none"> 1. Continuous operation of the COMPRESSOR 2. Continuous operation of the freezer fan 3. STEPPING DAMPER OPEN 4. Defrosting Heater OFF 5. Every DISPLAY LED ON 	
TEST2	Push Express Freezing key and COLDER KEY of Freezer Temp. at the same time over 3 seconds in TEST MODE 1	<ol style="list-style-type: none"> 1. COMP OFF 2. Freezer FAN OFF 3. STEPPING DAMPER CLOSE 4. Defrosting heater ON 5. DISPLAY LED shows 222 	Reset if the temperature of the Defrosting sensor is 46°F(8°C) or more.
Reset	Push Express Freezing key and COLDER KEY of Freezer Temp. at the same time over 3 seconds. in TEST MODE 2	Reset to the previously setting before TEST MODE	The compressor will Start after a 7-minute delay.

LED CHECK MODE: When the refrigerator temperature control and the freezer temperature control button at the same time are hold for 1 second or longer, every LED on the display turns on at the same time. when the button are released, the previous mode is restored.

Freezer Fan RPM Variable Check: If the freezer fan is in operation and the WARMER KEY in Refrigerator and Freezer Temp Control are pressed for more than one second at the same time freezer fan RPM changes. (for example if high speed, to normal speed or if normal speed, to high speed for 30 seconds) After 30 seconds, it turns to its original RPM.

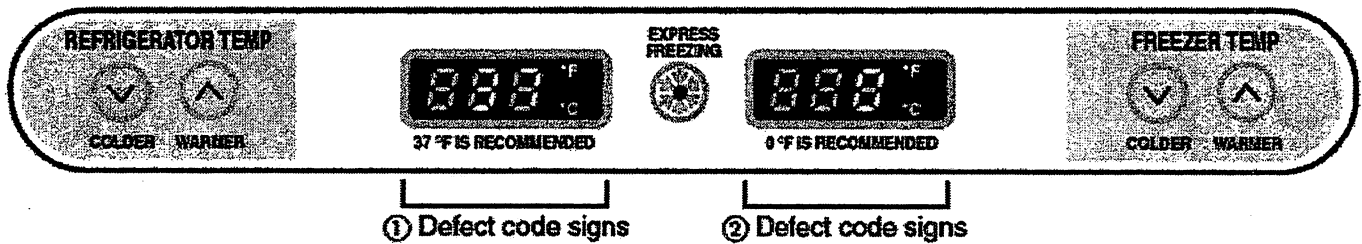
Demonstration MODE: Set the Refrigerator settings at the warmest setting then when the refrigerator Temp. control or of freezer Temp. control is held over 5 seconds at the warmest temperature It converts to Demonstration Mode. In this status, each LED is rotated with 1 second interval and, all Loads are off (Compressor / Fan / Damper / Heater)



THREE DOOR ERROR CODE

21 cu. ft – 25 cu. ft

1. When a defect occurs, the buttons will not operate; but the tones. such as ding. will sound.
2. The defect CODE shows on the Refrigerator and Freezer Display.



ERROR CODE on display panel

NO	ITEM	ERROR CODE		CONTENTS	REMARKS
		①	②		
1	Failure of freezer sensor	Er	FS	Cut or short circuit wire	Inspect Connecting wires on each sensor
2	Failure of Refrigerator sensor	Er	rS	Cut or short circuit wire	
3	Failure of defrost sensor	Er	dS	Cut or short circuit wire	
4	Failure of Room Temperature sensor	When display check mode: Er rt		Cut or short circuit wire	
5	Failure of defrost mode	Er	dH	When defrost sensor doesn't reach 8°C within 2 hours after starting defrost.	Snapping of defrost heater or Temperature fuse, pull-out of connector (indicated minimum 2 hours after failure occurs)
6	Failure of BLDC Fan Motor at Freezing Compartment	Er	FF	If there is no fan motor signal for more than 65sec in operation fan motor	Poor motor, hooking to wires of fan, contact of structures to fan, snapping or short circuit of Lead wires

THREE DOOR TEST MODE

21 cu. ft – 25 cu. ft

1. The test mode is operated by pressing two buttons at Display panel.
2. If an error, such as a sensor failure, is detected while in the test mode, the test mode is cleared and the error code is displayed.
3. While an error code is displayed, the test mode will not be activated.

MODE	MANIPULATION	CONTENTS	REMARKS
TEST1	Push Express Freezing Key and COLDER KEY of Freezer Temp. at the Same time for 3 seconds. OR Push TEST S/W (on the main Board) Once.	1) Continuous operation of the COMPRESSOR and the Freezer fan 2) Stepping DAMPER OPEN 3) Defrosting HEATER OFF 4) DISPLAY LED all ON	
TEST2	Push Express Freezing Key and COLDER KEY of Freezer Temp. at the Same time for 3 seconds. In TEST MODE 1 OR Push TEST S/W Once in TEST MODE 1	1) Continuous operation of the COMPRESSOR and the Freezer fan 2) Stepping DAMPER CLOSE 3) Defrosting HEATER OFF 4) DISPLAY LED shows no. 2	
TEST3	Push Express Freezing Key and COLDER KEY of Freezer Temp. at the Same time for 3 seconds. In TEST MODE 2 OR Push TEST S/W Once in TEST MODE 2	1) COMPRESSOR and the Freezer fan OFF 2) Stepping DAMPER CLOSE 3) Defrosting HEATER ON 4) DISPLAY LED shows no. 3	Reset if the Temperature of the Defrosting sensor is 8°C or more.
Reset	Push Express Freezing Key and COLDER KEY of Freezer Temp. at the Same time for 3 seconds. In TEST MODE 3 OR Push TEST S/W Once in TEST MODE 3	Reset to the previously setting Before TEST MODE	The compressor will Start after a 7-minute Delay.

LED CHECK MODE: When the refrigerator temperature control and the freezer temperature control button at the same time are hold for 1 second or longer, every LED on the display turns on at the same time. when the button are released, the previous mode is restored.

Freezer Fan RPM Variable Check: If the freezer fan is in operation and the WARMER KEY in Refrigerator and Freezer Temp Control are pressed for more than one second at the same time freezer fan RPM changes. (for example if high speed, to normal speed or if normal speed, to high speed for 30 seconds) After 30 seconds, it turns to its original RPM.

Demonstration MODE: Set the Refrigerator settings at the warmest setting then when the refrigerator Temp. control or of freezer Temp. control is held over 5 seconds at the warmest temperature It converts to Demonstration Mode. In this status, each LED is rotated with 1 second interval and, all Loads are off (Compressor / Fan / Damper / Heater)

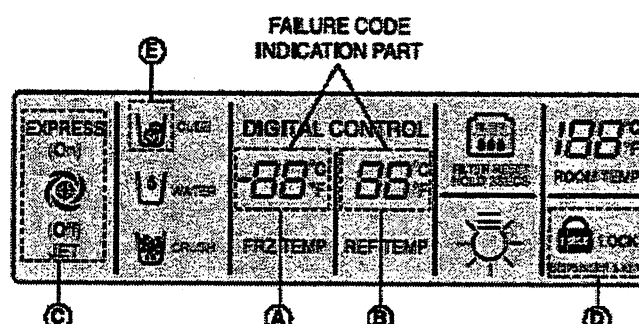
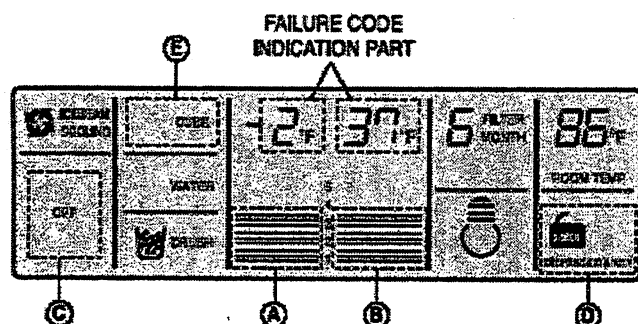


SIDE BY SIDE ERROR CODE

23 cu. ft – 26 cu. ft

1. When the appliance enters the failure mode, pressing buttons has no effect on the operation of the appliance.

2. The failure code will be displayed as indicated in the drawings below.
All other graphics and displays will be turned off.



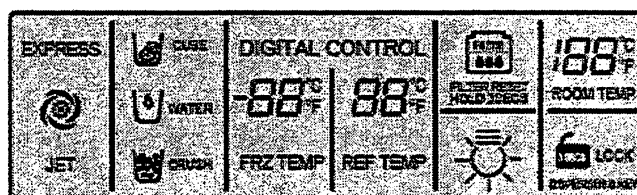
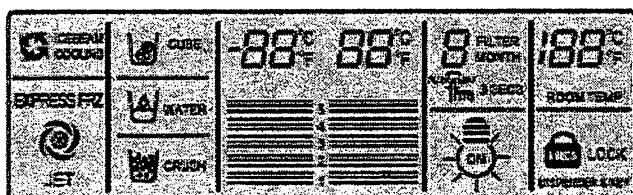
No.	Item	Failure code indication part		Contents of failure	Product operation status in failure				
		Freezer notch temperature display	Refrigerator notch temperature display		Compressor	Freezing BLDC motor	Cooling BLDC motor	Defrost Heater	Stepping motor damper
1	Abnormal freezer sensor	Er	FS	Freezer sensor short circuit	ON for 15 minutes/ OFF for 15 minutes	Standard RPM	○	○	○
2	Abnormal refrigerator sensor 1 (R1) (Upper part in the refrigerator compartment)	Er	rS	Refrigerator sensor1 short circuit	○	Standard RPM	○	○	Full opening for 10 minutes/ Full closing for 15 minutes
3	Abnormal refrigerator sensor 2 (R2) (Middle part in the refrigerator compartment)	Normal display (Note 2)		Refrigerator sensor2 short circuit	○	Standard RPM	○	○	○
4	Abnormal defrost sensor	Er	dS	Abnormal short circuit	○	Standard RPM	○	No defrost	○
5	Failed defrosting	Er	dH	Defrost heater, temperature fuse short circuit, unplugged connector(indicated 4 hour later after trouble)	○	Standard RPM	○	○	○
6	Abnormal freezing BLDC motor	Er	FF	Motor defect, hooked of lead wire to fan, contact of structures with fan, short or open of lead wire(there is no signal of BLDC motor more than 115 seconds in operation of fan motor)	○	OFF	○	○	○
7	Abnormal cooling BLDC motor	Er	CF		○	Standard RPM	OFF	○	○
8	Communication Errors.	Er	CO	Short or open of lead wire connecting between main PCB and display PCB, transmission tr and receiving part	○	Standard RPM	○	○	○
9	Abnormal ambient sensor	Normal display (Note 1)		Ambient sensor short circuit	○	○	○	○	○
10	Abnormal Optichill sensor	Normal display (Note 2)		Optichill sensor short circuit	○	○	○	○	○

SIDE BY SIDE TEST MODE

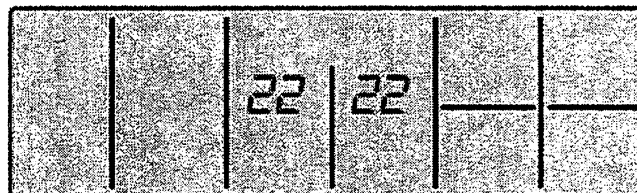
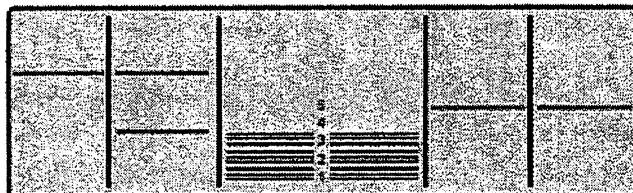
23 cu. ft – 26 cu. ft

Mode	Operation	Contents	Remarks
Test 1	Press test button once (strong cold mode)	<ol style="list-style-type: none"> 1. Continuous operation of compressor 2. Continuous operation of freezing BLDC motor (high-speed RPM) and cooling BLDC motor 3. Defrost heater turns off 4. Stepping motor damper is completely opened (baffle open) 5. Optichill stepping motor damper is completely closed. 6. All display LEDs or LCD graphics turn on. 	Freezer fan is off when door is open.
Test 2	Press test button once at the test mode 1 status (forced defrost mode)	<ol style="list-style-type: none"> 1. Compressor OFF 2. Freezing BLDC motor and cooling BLDC motor turn off 3. Defrost heater turns on 4. Stepping motor damper is completely closed (baffle close) 5. Optichill stepping motor damper is completely closed. 6. All display LEDs or LCD graphics turn off. Except for (A), (B) LCD graphic. Except for (A): 22 (B): 22 LEDs. 	Return to the normal mode when the defrost sensor is above +5°C
Normal Status	Press test button once at the test mode 2 status	Return to the initial status.	Compressor will operate after delay for 7 minutes

TEST MODE1 STATUS DISPLAY








TEST MODE2 STATUS DISPLAY





ICE MAKER TEST MODE

1. It is operated by pressing the water supply control KEY for 3 seconds.
2. If the water supply control KEY is pressed for 3 seconds in the Ice making mode (no matter what condition the Ice-Making tray is in) the Ice-Removing operation starts immediately. Water is not yet frozen, so water is poured instead of ice. If the control doesn't operate normally in the TEST mode, check and repair as needed.
3. After water is supplied, the normal CYCLE is followed: Ice making → Dump → Fill → Park Position.

Diagnosis TABLE

STAGE	ITEMS	INDICATOR	REMARKS
1	HEATER		Five seconds after heater starts, heater will go off if temperature recorded by sensor is 10°C or lever is in up position.
2	MOTOR		Five seconds after heater starts, you can confirm that motor is moving.
3	HALL IC (detection of position) I		You can confirm Hall IC detection of position.
4	VALVE (Detection of ICE-FULL)		Two seconds after detection of initial position, you can confirm that valve is on.
5	HALL IC (Detection of ICE-FULL) II		You can check whether hall is sensing Full ice condition. (If there is a ICE-FULL error, the fifth LED is not on.)
6	reset	Mark previous status on TEST mode	5 seconds after the last step is completed, the icemaker resets itself to its initial state.

ERROR CODES:

NO	DIVISION	INDICATOR	CONTENTS	REMARKS
1	Normal	Mark time to supply	None	Display switch operates properly
2	Icemaking Sensor malfunction		Cut or short-circuited wire	Make sure that the wire on each sensor is connected.
3	Icemaker Kit malfunction		When ejector blades don't reach park position over 18 minutes since Dump Mode starts.	Defects of HALL IC/MOTOR/ HEATER/RELAY/ STALLED EJECTOR.

ERROR indicators in table can be checked only in TEST mode.



7. TROUBLESHOOTING

7-1. BEFORE PERFORMING SERVICE

- Be careful of electric shock when disconnecting parts while troubleshooting.
- The voltage of each terminal is 120 V AC and DC when the unit is plugged in.

7-2. QC TEST MODE.

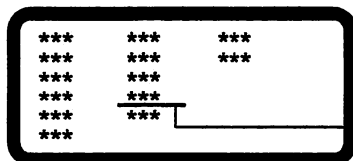
The washer must be empty and the controls must be in the off state.

1. Press the SPIN SPEED and SOIL LEVEL buttons simultaneously.
2. Press the Power (⏻) button, while the above condition. Then buzzer will sound twice.
3. Press the Start/Pause (⏻) button repeatedly to cycle through the test modes.

Number of times the Start/Pause button is pressed	Check Point	Display Status
None	Turns on all lamps and locks the door.	QC TEST MODE
1 time	Tumble clockwise.	rpm (42~50)
2 times	Low speed Spin.	rpm (55~65)
3 times	High speed Spin.	rpm (125~135)
4 times	Inlet valve for prewash turns on.	Water level frequency (25~65)
5 times	Inlet valve for main wash turns on.	Water level frequency (25~65)
6 times	Inlet valve for hot water turns on.	Water level frequency (25~65)
7 times	Inlet valve for steam turns on.	Water level frequency (25~65)
8 times	Inlet valve for bleach turns on.	Water level frequency (25~65)
9 times	Tumble counterclockwise.	rpm (42~50)
10 times	Heater turns on for 3 sec.	Water temperature
11 times	Circulation pump turns on.	Water level frequency (25~65)
12 times	Drain pump turns on.	Water level frequency (25~65)
13 times	Water level Sensor for Steam	Water level frequency of TSG(0~255)
14 times	Steam Heater turns on for 1.2 sec.	TSG temperature
15 times	Off	-

7-3. HOW TO CHECK THE WATER LEVEL FREQUENCY

- * Press the WASH/RINSE and SOIL LEVEL button simultaneously.







• The digits indicate the water level frequency.

So, for example a display indicating 058: a Water level frequency of $20 + (58 \times 0.1)$
 $= 25.8 \text{ kHz}$

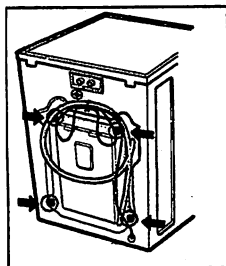
7-4. ERROR DISPLAY

- If you press the START/PAUSE button when an error is displayed, any error except 『PE』 will disappear and the machine will go into the pause status.
- In case of 『PE』, 『tE』, 『OE』 if the error is not resolved within 20 sec., or the in case of other errors, if the error is not resolved within 4 min., power will be turned off automatically and the error code will blink. But in the case of 『FE』, power will not be turned off.

	ERROR	SYMPTOM	CAUSE
1	WATER INLET ERROR		<ul style="list-style-type: none"> • Correct water level (246) is not reached within 8 minutes after water is supplied or it does not reach the preset water level within 25 minutes.
2	IMBALANCE ERROR		<ul style="list-style-type: none"> • The load is too small. • The appliance is tilted. • Laundry is gathered to one side. • Non distributable things are put into the drum.
3	DRAIN ERROR		<ul style="list-style-type: none"> • Not fully drained within 10 minutes.
4	OVER FLOW ERROR	FE	<ul style="list-style-type: none"> • Water is overflowing (water level frequency is over 213). ※ If FE is displayed, the drain pump will operate to drain the water automatically.
5	PRESSURE SENSOR ERROR	PE	<ul style="list-style-type: none"> • The SENSOR SWITCH ASSEMBLY is out of order.
6	DOOR OPEN ERROR		<ul style="list-style-type: none"> • Door not all the way closed. • Loose electrical connections at Door switch and PWB Assembly. • The DOOR SWITCH ASSEMBLY is out of order.
7	HEATING ERROR	tE	<ul style="list-style-type: none"> • The THERMISTOR is out order.

	ERROR	SYMPTOM	CAUSE
8	LOCKED MOTOR ERROR	LE	<ul style="list-style-type: none"> • The connector (3-pin, male, white) in the MOTOR HARNESS is not connected to the connector (3-pin, female, white) of STATOR ASSEMBLY. • The electric contact between the connectors (3-pin, male, white) in the MOTOR HARNESS and 4-pin, female, white connector in the MAIN PWB ASSEMBLY is bad or unstable. • The MOTOR HARNESS between the STATOR ASSEMBLY and MAIN PWB ASSEMBLY is cut (open circuited). • The hall sensor is out of order/defective.
10	EEPROM ERROR	EE	<ul style="list-style-type: none"> • EEPROM is out of order. ※ Displayed only when the START/PAUSE button is first pressed in the QC Test Mode.
11	POWER FAILURE	PF	<ul style="list-style-type: none"> • The washer experienced a power failure.

VIBRATION & NOISE IN SPIN



Have all the transit bolts and base packing been removed?

NO

Remove the transit bolts and Base packing.

YES

Is the washer installed on a solidly constructed floor?

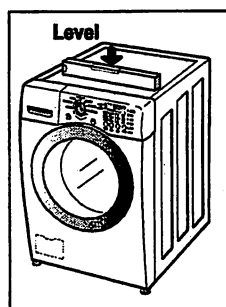
NO

Move the washer or reinforce the floor.

YES

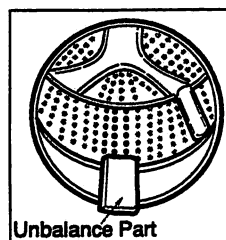


Check if the washer is perfectly level as follows:



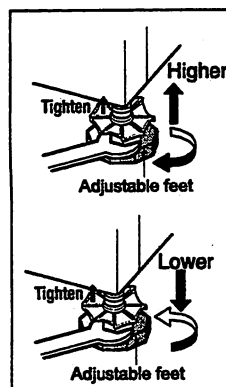
Check the leveling of the washer with a Level and check that the washer is stable.

Put an unbalance part (rubber) inside of drum and start QC test mode and run in high spin (Refer to section 7-2).
When the machine is spinning in high speed, verify that it is stable.



If you do not have the unbalance part, put 4.5 to 6.5 lbs (2 to 3 kg) of clothing. Once loaded, press power, Rinse+Spin and the start/pause button in sequence.
When the machine is spinning in high speed, verify that it is stable.









YES



If it is not stable, adjust feet accordingly. After the washer is level, tighten the lock nuts up against of the base of the washer. All lock nuts must be tightened.






FRONT LOAD WASHER ERROR CODE

Rear Control

	ERROR	SYMPTOM	CAUSE
1	WATER INLET ERROR		<ul style="list-style-type: none"> • Correct water level (2 level) is not reached within 8 minutes after water is supplied or it does not reach the preset water level within 25 minutes.
2	IMBALANCE ERROR		<ul style="list-style-type: none"> • The load is too small. • The appliance is tilted. • Laundry is gathered to one side. • Non distributable things are put into the drum.
3	DRAIN ERROR		<ul style="list-style-type: none"> • Not fully drained within 10 minutes.
4	OVER FLOW ERROR		<ul style="list-style-type: none"> • Water is overflowing (over 8 level). • If  is displayed, the drain pump will operate to the drain water automatically.
5	PRESSURE SENSOR ERROR		<ul style="list-style-type: none"> • The SENSOR SWITCH ASSEMBLY is out of order.
6	DOOR OPEN ERROR		<ul style="list-style-type: none"> • Door not all the way closed. • Loose electrical connections at Door switch and PWB Assembly. • The DOOR SWITCH ASSEMBLY is out of order.
7	HEATING ERROR		<ul style="list-style-type: none"> • The THERMISTOR is out order.

FRONT LOAD WASHER ERROR CODE

Rear Control


	ERROR	SYMPTOM	CAUSE
8	OVER CURRENT ERROR		<ul style="list-style-type: none"> • MAIN PWB ASSEMBLY is out of order. • Winding in the STATOR ASSEMBLY is short-circuited.
9	LOCKED MOTOR ERROR		<ul style="list-style-type: none"> • The connector (3-pin, male, white) in the MOTOR HARNESS is not connected to the connector (3-pin, female, white) of STATOR ASSEMBLY. • The electric contact between the connectors (3-pin, male, white) in the MOTOR HARNESS and 4-pin, female, white connector in the MAIN PWB ASSEMBLY is bad or unstable. • The MOTOR HARNESS between the STATOR ASSEMBLY and MAIN PWB ASSEMBLY is cut (open circuited). • The hall sensor is out of order/defective.
10	BALL SENSOR ERROR		<ul style="list-style-type: none"> • Loose Ball Sensor Connector. • Ball Sensor is out of order. <ul style="list-style-type: none"> ; Displayed only when the START / PAUSE button is first pressed in the QC Test Mode.
11	EEPROM ERROR		<ul style="list-style-type: none"> • EEPROM is out of order. <ul style="list-style-type: none"> ; Displayed only when the START / PAUSE button is first pressed in the QC Test Mode.
12	POWER FAILURE		<ul style="list-style-type: none"> • The washer experienced a power failure.

FRONT LOAD WASHER TEST MODE

Rear Control









The washer must be EMPTY and the controls must be OFF.

- 1) Press the SPIN SPEED and SOIL LEVEL buttons simultaneously.
- 2) Press the Power button, while holding the above condition. The buzzer will sound twice.
- 3) In order to advance to the next step of test mode, press the START / PAUSE button once.

Number of times the Start/Pause button is pressed	Check Point	Display Status
None	Turns on all lamps and locks the door.	 ¹⁾
1 time	Tumble clockwise.	rpm (40~50)
2 times	Low speed Spin.	rpm
3 times	High speed Spin.	rpm
4 times	Inlet valve for prewash turns on.	Water level frequency (25~65)
5 times	Inlet valve for main wash turns on.	Water level frequency (25~65)
6 times	Inlet valve for hot water turns on.	Water level frequency (25~65)
7 times	Inlet valve for softener turns on.	Water level frequency (25~65)
8 times	Inlet valve for bleach turns on.	Water level frequency (25~65)
9 times	Tumble counterclockwise.	rpm (40~50)
10 times	Heater turns on for 3 sec.	Water temperature
11 times	Circulation pump turns on.	Water level frequency (25~65)
12 times	Drain pump turns on.	Water level frequency (25~65)
13 times	Power off and unlock the door.	Turn off all lamps.






FRONT LOAD WASHER ERROR CODE

Front Control

	ERROR	SYMPTOM	CAUSE
1	WATER INLET ERROR		<ul style="list-style-type: none"> • Correct water level (246) is not reached within 8 minutes after water is supplied or it does not reach the preset water level within 25 minutes.
2	IMBALANCE ERROR		<ul style="list-style-type: none"> • The load is too small. • The appliance is tilted. • Laundry is gathered to one side. • Non distributable things are put into the drum.
3	DRAIN ERROR		<ul style="list-style-type: none"> • Not fully drained within 10 minutes.
4	OVER FLOW ERROR		<ul style="list-style-type: none"> • Water is overflowing (water level frequency is over 213). ※ If  is displayed, the drain pump will operate to drain the water automatically.
5	PRESSURE SENSOR ERROR		<ul style="list-style-type: none"> • The SENSOR SWITCH ASSEMBLY is out of order.
6	DOOR OPEN ERROR		<ul style="list-style-type: none"> • Door not all the way closed. • Loose electrical connections at Door switch and PWB Assembly. • The DOOR SWITCH ASSEMBLY is out of order.
7	HEATING ERROR		<ul style="list-style-type: none"> • The THERMISTOR is out order.

FRONT LOAD WASHER ERROR CODE

Front Control


	ERROR	SYMPTOM	CAUSE
8	OVER CURRENT ERROR		<ul style="list-style-type: none"> • MAIN PWB ASSEMBLY is out of order. • Winding in the STATOR ASSEMBLY is short-circuited.
9	LOCKED MOTOR ERROR		<ul style="list-style-type: none"> • The connector (3-pin, male, white) in the MOTOR HARNESS is not connected to the connector (3-pin, female, white) of STATOR ASSEMBLY. • The electric contact between the connectors (3-pin, male, white) in the MOTOR HARNESS and 4-pin, female, white connector in the MAIN PWB ASSEMBLY is bad or unstable. • The MOTOR HARNESS between the STATOR ASSEMBLY and MAIN PWB ASSEMBLY is cut (open circuited). • The hall sensor is out of order/defective.
10	BALL SENSOR ERROR		<ul style="list-style-type: none"> • Loose Ball Sensor Connector. • Ball Sensor is out of order. ※ Displayed only when the START/PAUSE button is first pressed in the QC Test Mode.
11	EEPROM ERROR		<ul style="list-style-type: none"> • EEPROM is out of order. ※ Displayed only when the START/PAUSE button is first pressed in the QC Test Mode.
12	POWER FAILURE		<ul style="list-style-type: none"> • The washer experienced a power failure.

FRONT LOAD WASHER TEST MODE

Front Control

The washer must be empty and the controls must be off.

1. Press the SPIN SPEED and SOIL LEVEL buttons simultaneously.
2. Press the Power button, while holding the above condition. Then buzzer will sound twice.
3. Press the Start/Pause button repeatedly to cycle through the test modes.

Number of times the Start/Pause button is pressed	Check Point	Display Status
None	Turns on all lamps and locks the door.	 ¹⁾
1 time	Tumble clockwise.	rpm (40~50)
2 times	Low speed Spin.	rpm
3 times	High speed Spin.	rpm
4 times	Inlet valve for prewash turns on.	Water level frequency (25~65)
5 times	Inlet valve for main wash turns on.	Water level frequency (25~65)
6 times	Inlet valve for hot water turns on.	Water level frequency (25~65)
7 times	Inlet valve for bleach turns on.	Water level frequency (25~65)
8 times	Tumble counterclockwise.	rpm (40~50)
9 times	Heater turns on for 3 sec.	Water temperature
10 times	Circulation pump turns on.	Water level frequency (25~65)
11 times	Drain pump turns on.	Water level frequency (25~65)
12 times	Power off and unlock the door.	Turn off all lamps.









If there is a specific spin speed that has excessive vibration and noise you can adjust it.

- 1) Put an unbalance part (rubber) inside of the drum.
- 2) Start the QC test mode (Refer to section 7-2).
- 3) Press Delay Wash button, then 'E5E' is displayed.
- 4) Press the Spin Speed button repeatedly to select Extra High.
- 5) Press the Quick Cycle button, the spin speed is displayed.
- 6) Press the Start/Pause button.
- 7) Press the Beeper button repeatedly to set spin speed (600, 900, 1020, 1120 rpm) and check if there is vibration and noise.
- 8) If there is no vibration and noise, increase the spin speed by pressing Beeper button.
- 9) If there is vibration and noise, rotate the Cycle selector knob clockwise to reduce the Spin Speed (reduce by 50 and 100 rpm). 600 rpm can not be reduced
- 10) If vibration and noise are reduced, press the Quick Cycle button to store (2 beep sounds).

* If you want to return to factory default spin speed setting, repeat above steps except step 9).




FRONT LOAD WASHER ERROR CODE

24" Front Control

	ERROR	SYMPTOM	CAUSE
1	WATER INLET ERROR		§ Water has not reached to the pre-set level within 4 min. since inlet valve operated, or water has not reached to the normal level within 25 min.
2	IMBALANCE ERROR		§ The appliance is tilted. § Laundry is gathered to one side. § Non distributable things are put into the drum.
3	DRAIN ERROR		§ Water has not drained enough within 5 min.
4	OVERFLOW ERROR		§ Water is automatically being pumped out because too much water is in the tub.
5	SENSOR PRESSURE S/W ERROR		§ The sensor pressure switch is out of order.
6	DOOR OPEN ERROR		§ The Start/Pause button is pressed with the door open. § The door switch is out of order.
7	HEATING ERROR		§ The thermistor is out of order.
8	SENSOR ERROR		§ The connector (5-pin, male, white) in the wire harness is not connected to the connector (5-pin, female) of hall sensor in the MOTOR. f_ Reconnect or repair the contact in the connector.

FRONT LOAD WASHER ERROR CODE

24" Front Control

	ERROR	SYMPTOM	CAUSE
8	SENSOR ERROR		<ul style="list-style-type: none"> • The electric contact between the connectors (5-pin, male in the wire harness and 5-pin female in the hall sensor) is bad or unstable. f_ Reconnect or repair the contact in the connector. • The connector (6-pin, male, natural) in the wire harness is not connected to the connector (6-pin, female, natural) of PWB assembly (Main) or the electric contact of connectors is bad/unstable. f_ Reconnect or repair the contact in the connector. • The electric contact between the connectors; a6-pin, male in the wire harness and 6-pin female in the controller (Main); is bad or unstable. f_ Reconnect or repair the contact in the connector. • The wire harness between hall sensor in the MOTOR and PWB assembly (Main) is cut (open circuited). f_ Repair/replace the damaged WIRE HARNESS. • The hall sensor is out of order/defective. f_ Replace the motor. • The controller (Main) is out of order/defective. f_ Replace the PWB assembly (Main).
9	CURRENT ERROR		<ul style="list-style-type: none"> • PWB assembly (Main) is out of order. f_ Replace the PWB assembly (Main). • Winding in the MOTOR is short-circuited. f_ Replace the MOTOR.
10	LOCK ERROR		<ul style="list-style-type: none"> • The connector (3-pin, male, white) in the wire harness is not connected to the connector (3-pin, female, white) of MOTOR. f_ Reconnect or repair the connector. • The electric contact between the connectors; a3-pin, male, white in the wire harness and 6-pin, female, white in the PWB assembly (Main); is bad or unstable. f_ Reconnect or repair the contact in the connector. • The wire harness between the MOTOR and PWB assembly (Main) is cut (open circuited). f_ Repair the damaged (open-circuited) WIRE HARNESS. • The hall sensor is out of order/defective. f_ Replace the PWB assembly (Main).

FRONT LOAD WASHER TEST MODE

24" Front Control

Pressing Spin, and Temp button simultaneously.


1. Power supply ON with pressing upper two button, then the buzzer will sound twice.
2. Press the START/PAUSE button as follows.

Pressing number of START/PAUSE button	Checking Point	Display Status
None	All lamps turn on	16:28
1 time	Clockwise spin (right)	Motor rpm (About 45)
2 times	Low speed spin	Motor rpm (About 63~67)
3 times	High speed spin	Motor rpm (About 79~85) : WD(M)-8070(4)F(H)(B)
		Motor rpm (About 100~106) : WD(M)-1070(5)F(H)(B)/WD(M)-1074(6)F(H)B
		Motor rpm (About 107~103) : WD(M)-1170(5)F(H)B/WD(M)-1174(6)F(H)B/WM-1171(6)FHB
		Motor rpm (About 114~120) : WD(M)-1270(5)F(H)B/WD(M)-1274(6)F(H)B/WD-1271FB
		Motor rpm (About 122~127) : WD(M)-1370(5)F(H)B/WD(M)-1374(6)F(H)B/WM-1371(6)FHB
4 times	Inlet valve for pre-wash operation	Water level frequency (25~65)
5 times	Inlet valve for main-wash operation	Water level frequency (25~65)
	Hot inlet valve in case of hot water fill	
6 times	Inlet valve for main-wash operation	Water level frequency (25~65)
7 times	Counterclockwise spin (left)	Motor rpm (About 45)
8 times	A heater is in operation for 3 sec.	Water temperature
9 times	Draining pump operation	Water level frequency
10 times	Auto off operation	

DRYER TEST MODE









ACTIVATING THE DIAGNOSTIC TEST MODE

1. Unit must be in Standby (unit plugged in, display off)
2. Press "POWER" while pressing "MORE TIME", and "LESS TIME" simultaneously.

Pressing the "START/PAUSE" button	CHECKING ACTION	DISPLAY	CHECKING POINT	REMARK
None	Electric control & Temperature sensor		Won't power up Defective LED	See test 1 Display : See page
		EE 1	Thermistor open	See test 2
		EE 2	Thermistor close	
Once	Motor	70 ~ 237 Measured Moisture Value.	Motor runs	See test 3
			Displays Moisture Sensor Operation: If moisture sensor is contacted with damp cloth. The display number is below 180, in normal condition.	See test 4
Twice	<ul style="list-style-type: none"> ■ ELECTRIC TYPE Motor + Heater 1 (1250W) ■ GAS TYPE Motor + Valve 	Current Temp.	<ul style="list-style-type: none"> ■ ELECTRIC TYPE : Heater runs ■ GAS TYPE : GAS Valve runs (Display the Temperature of Inside drum.) 	Gas valve See test 7
3 times	<ul style="list-style-type: none"> ■ ELECTRIC TYPE Motor + Heater 1 + Heater 2 (5400W) ■ GAS TYPE Motor Type 	Current Temp. (5 ~ 70)	In normal state if displayed temp. is increasing. Temperature in 4min : 113°F (45°C) • Above : 1" on , 1" off beep sound • Under : 0.5" on, 0.5" off beep sound	See test 5 ※ Off automatically after 5 minutes
During check, If the door is open.	Motor & Heater Off + Lamp On + Buzzer beeps five times	dE	Door switch	See test 6
			Lamp	
During check, If the door is closed.	Motor & Heater Off + Lamp Off	70 ~ 237	Return once "1time" (See test 4) state.	
4 times	Control Off		Auto Off	




WASH/DRY COMBO ERROR CODE

24' front Control

	ERROR	SYMPTOM	CAUSE
1	WATER INLET ERROR		<ul style="list-style-type: none"> Not reached to the water level (2 level) within 4 minutes after water supplied or not reached to the preset water level within 25 minutes.
2	DRAIN ERROR		<ul style="list-style-type: none"> Not fully drained within 5 minutes.
3	OVERFLOW ERROR		<ul style="list-style-type: none"> Water is over flowing (over 8 level). If  is displayed, drain pump operates to drain water automatically.
4	SENSOR PRESSURE S/W ERROR		<ul style="list-style-type: none"> The sensor pressure switch is out of order.
5	DOOR OPEN ERROR		<ul style="list-style-type: none"> In case of operating the reservation function or the other function with door opened. Close the door, then the error display is resolved. The door switch is out of order.
6	IMBALANCE ERROR		<ul style="list-style-type: none"> The appliance is tilted. Laundry is gathered to one side.
7	HEATING ERROR		<ul style="list-style-type: none"> The THERMISTOR is out of order.

WASH/DRY COMBO ERROR CODE

24' front Control

	ERROR	SYMPTOM	CAUSE
8	CURRENT ERROR		<ul style="list-style-type: none"> • MAIN PWB ASSEMBLY is out of order ✚ Replace the MAIN PWB ASSEMBLY • Winding in the STATOR ASSEMBLY is short-circuited. ✚ Replace the STATOR ASSEMBLY • EE is displayed during a high spin ✚ Replace the LEAD WIRE ASSEMBLY (MOTOR)
9	MOTOR ERROR		<ul style="list-style-type: none"> • The connector in the LEAD WIRE ASSEMBLY is not connected to the connector of STATOR ASSEMBLY ✚ Reconnect or repair the connector • The hall sensor is out of order/defective. ✚ Replace the STATOR ASSEMBLY
10	DRY HEATOR ERROR		<ul style="list-style-type: none"> • The Dry Heater is out of order ✚ Replace the Dry Heater • The Connector of the Dry Heater is not connected properly to the connector in the Main PWB ASSEMBLY ✚ Reconnect or repair the connector • The Dry fan motor is out of order ✚ Replace the fan Motor.

WASH/DRY COMBO TEST MODE









24" front Control

- 1) Press SPIN, and TEMP. button simultaneously.
- 2) Power supply ON with pressing the upper two buttons
- 3) Press the **START/PAUSE** button as follows.

Pressing number of [START/PAUSE] button	Checking Point	Display Status
None	All lamps turn on	18:85
1 time	Clockwise spin (right)	Drum rpm (About 40~52)
2 times	Low speed Spin	Drum rpm (About 70~90)
3 times	High speed Spin	Drum rpm (About 110~130)
4 times	Inlet valve for pre-wash operation	Water level frequency (25~65)
5 times	Inlet valve for main-wash operation	Water level frequency (25~65)
6 times	Inlet valve for dry operation	Water level frequency (25~65)
7 times	Counterclockwise spin (left)	Drum rpm (About 40~52)
8 times	Heater is in operation for 3 sec.	Water temperature
9 times	Draining pump operation	Water level frequency
10 times	Dry operation for 6 minutes	Auto off operation after 6 minutes







WASH/DRY COMBO ERROR CODE

Front and Rear Control

	ERROR	SYMPTOM	CAUSE
1	WATER INLET ERROR		<ul style="list-style-type: none"> • Correct water level (2 level) is not reached within 8 minutes after water is supplied or it does not reach the preset water level within 25 minutes.
2	IMBALANCE ERROR		<ul style="list-style-type: none"> • The load is too small. • The appliance is tilted. • Laundry is gathered to one side. • Non distributable things are put into the drum.
3	DRAIN ERROR		<ul style="list-style-type: none"> • Not fully drained within 10 minutes.
4	OVER FLOW ERROR		<ul style="list-style-type: none"> • Water is overflowing (over 8 level). ※ If  is displayed, the drain pump will operate to the drain water automatically.
5	PRESSURE SENSOR ERROR		<ul style="list-style-type: none"> • The SENSOR SWITCH ASSEMBLY is out of order.
6	DOOR OPEN ERROR		<ul style="list-style-type: none"> • Door not all the way closed. • Loose electrical connections at Door switch and PWB Assembly. • The DOOR SWITCH ASSEMBLY is out of order.
7	HEATING ERROR		<ul style="list-style-type: none"> • The THERMISTOR is out order.

WASH/DRY COMBO ERROR CODE

Front and Rear Control

	ERROR	SYMPTOM	CAUSE
8	OVER CURRENT ERROR		<ul style="list-style-type: none"> • MAIN PWB ASSEMBLY is out of order. • Winding in the STATOR ASSEMBLY is short-circuited.
9	LOCKED MOTOR ERROR		<ul style="list-style-type: none"> • The connector (3-pin, male, white) in the MOTOR HARNESS is not connected to the connector (3-pin, female, white) of STATOR ASSEMBLY. • The electric contact between the connectors (3-pin, male, white) in the MOTOR HARNESS and 4-pin, female, white connector in the MAIN PWB ASSEMBLY is bad or unstable. • The MOTOR HARNESS between the STATOR ASSEMBLY and MAIN PWB ASSEMBLY is cut (open circuited). • The hall sensor is out of order/defective.
10	BALL SENSOR ERROR		<ul style="list-style-type: none"> • Loose Ball Sensor Connector. • Ball Sensor is out of order. ※ Displayed only when the START / PAUSE button is first pressed in the QC Test Mode.
11	EEPROM ERROR		<ul style="list-style-type: none"> • EEPROM is out of order. ※ Displayed only when the START / PAUSE button is first pressed in the QC Test Mode.
12	POWER FAILURE		<ul style="list-style-type: none"> • The washer experienced a power failure.
13	DRY HEATER ERROR		<ul style="list-style-type: none"> • The Dry Heater is out of order. <ul style="list-style-type: none"> - Replace the Dry Heater. • The connector of the Dry Heater is not connected properly to the connector in the main PWB ASSEMBLY. <ul style="list-style-type: none"> - Reconnect or repair the connector. • The Dry fan motor is out of order. <ul style="list-style-type: none"> - Replace the fan motor.

WASH/DRY COMBO TEST MODE

Front and Rear Control

- 1) Press the SPIN SPEED and SOIL LEVEL buttons simultaneously.
- 2) Press the Power button, while the above condition. Then buzzer sound twice.
- 3) In order to advance to the next step of test mode, press the START / PAUSE button once.

Number of times the Start/Pause button is pressed	Check Point	Display Status
None	Turns on all lamps and locks the door.	1F:83
1 time	Tumble clockwise.	rpm (40~50)
2 times	Low speed Spin.	rpm
3 times	High speed Spin.	rpm
4 times	Inlet valve for prewash turns on.	Water level frequency (25~65)
5 times	Inlet valve for main wash turns on.	Water level frequency (25~65)
6 times	Inlet valve for hot water turns on.	Water level frequency (25~65)
7 times	Inlet valve for bleach turns on.	Water level frequency (25~65)
8 times	Inlet valve for dry turns on.	Water level frequency (25~65)
9 times	Tumble counterclockwise.	rpm (40~50)
10 times	Heater turns on for 3 sec.	Water temperature
11 times	Circulation pump turns on.	Water level frequency (25~65)
12 times	Drain pump turns on.	Water level frequency (25~65)
13 times	Dry fan & motor turns on.	Water level frequency (25~65)
14 times	Power off and unlock the door.	Turn off all lamps.

DISHWASHER TEST MODE




BUTTON	The number of pushing button	Top Display	Front Display	Load and Checking points		Door open/ closed
Rinse + Time Delay + POWER S/W	1 TIME	3H/U2	n : 3H/U:02	All LEDs are lighting		Both
Soak	1 TIME	11	1 : 11	All LEDs are lighting		Both
Power Scrub	1 TIME	22	2 : 22	All LEDs are lighting		Both
Normal	1 TIME	33	3 : 33	All LEDs are lighting		Both
Delicate	1 TIME	44	4 : 44	All LEDs are lighting		Both
Quick Wash	1 TIME	55	5 : 55	All LEDs are lighting		Both
Rinse Only	1 TIME	66	6 : 66	All LEDs are lighting		Both
Supply	1 TIME	77	7 : 77	Strong/Medium/Soft		Both
Rinse	1 TIME	88	8 : 88	Sanitary-Extra Rinse		Both
Half Load	1 TIME	99	9 : 99	Upper-Lower		Both
Time Delay	1 TIME	31	^① Soil Level	Soil Sensor	Delay Start	Both
	2 TIME	32	n : 02	Wash Pump	Child Lock + Rinse Aid	Closed
	3 TIME	33	n : 03	Drain Pump	Wash	Closed
	4 TIME	34	^② Frequency	Inlet Valve	Rinse	Both
	5 TIME	35	n : 05	Dispenser	Dry	Closed
	6 TIME	36	n : 06	Heater (for 10 sec)	Wash-Rinse-Dry	Closed
	7 TIME	37	n : 07	Fan	Strong-Soft	Closed
	8 TIME	38	n : 08		Sanitary-Extra	
	9 TIME	39	Temp. (°C)	Thermistor	Upper-Lower	Both
	10 TIME	3A	n : 0A	Lower Nozzle (VARIO)	Soak-Normal	Closed
	11 TIME	3b	n : 0b	Upper Nozzle (VARIO)	Delicate-Rinse Only	Closed
	12 TIME	3c	n : 0c	Wash-Drain-Water Supply	Rinse Aid	Closed
	13 TIME			Auto-Off		Closed

① Normal Water Level : 315




② Pure Water : more than 229

※ Supply water before operating the Test Mode.

DISHWASHER ERROR CODE

ERROR MESSAGE	POSSIBLE CAUSE FOR ERROR OCCURRENCE	REMEDY
<p>INLET ERROR</p> <p></p> <p>displayed</p> <p>Condition Not reached to the normal water level in spite of 10 min. water supply</p>	<ul style="list-style-type: none"> • The Water Supply Tap is closed. • The Water Supply is shut off. • The Inlet Hose is kinked. • The Water Pressure is very low. (below 10 psi) • Inlet Valve is OK? • The filter of Inlet Valve is clogged by impure water. • The Hall sensor is OK? • The Impeller of Air Guide is bound. 	<ul style="list-style-type: none"> • Take action on Water Supply device. • Measure the electric resistance of Inlet Valve. (950-1300 Ω) • Clean the filter of Inlet Valve. • Check the frequency of Inlet Water by the Test Mode. • Replace the Air Braker.
<p>DRAIN ERROR</p> <p></p> <p>displayed</p> <p>Condition Not fully drained out in spite of 5 min. drain operation</p>	<ul style="list-style-type: none"> • The Drain Hose kinked or blocked. • Wiring connection is OK? • The drain outlet of sump is blocked. • The Drain Pump/Motor or circuit is troubled. 	<ul style="list-style-type: none"> • Remove the cause of kink or block. • Check the wiring connection. • Measure the electric resistance of Drain Motor. (20-40 Ω) • Replace the Drain Motor or repair the Circuit.
<p>LEAKAGE ERROR</p> <p></p> <p>displayed</p> <p>Condition The excessive RPM of Washing Motor happened during Wash cycle due to water leakage.</p>	<ul style="list-style-type: none"> • Water leakage in Hose connections. • Water is leaked by damages. • The Motor Water Seal leakage of Sump assembly. • The height of Drain Hose connection (sink-Drain Hose) is not over 20". • Impeller of the Washing Pump is worn away. 	<ul style="list-style-type: none"> • Replace the connections of Hose. • Check the point of damages and repair or replace the related parts. • Read the Installation Instructions (page 9) and fix it to the recommended Height. • Replace the Impeller of the Washing Pump.

DISHWASHER ERROR CODE

ERROR MESSAGE	POSSIBLE CAUSE FOR ERROR OCCURRENCE	REMEDY
EXCESS ERROR  displayed Condition Excessive water is supplied than normal water level.(Automatically drain Pump operated.)	<ul style="list-style-type: none"> • The Inlet Valve is troubled. • The Controller is troubled. 	<ul style="list-style-type: none"> • Replace the Inlet Valve. • Repair or replace the Controller.
THERMAL ERROR  displayed Condition The resistance of thermistor not normally out put.	<ul style="list-style-type: none"> • The Inlet Water Temperature is very high. (over 194°F) • Wiring connection is OK? • The Thermistor is OK? 	Check the temperature. (Test Mode) 1) If the temperature is displayed, ① adjust the Inlet Water Temperature to 120°F. 2) If the temperature is not displayed, ① check the wiring connection. ② check the electric resistance of Thermistor. (11~14kΩ at 77°F) ③ Replace the PCB.
MOTOR ERROR  displayed Condition The Motor is working abnormally.	<ul style="list-style-type: none"> • Wiring connection is OK? • The Impeller of Washing Pump is locked. • The rotor of Washing Motor is locked. • The Blade is locked. 	<ul style="list-style-type: none"> • Check the wiring connection. • Replace the cause of restriction. • Replace the Washing Motor. • Replace the PCB.

FAILURE CODES RANGE



WARNING

- ¥Disconnect power supply cord from the outlet before servicing
- ¥Replace all panels and parts before operating.
- ¥Reconnect all grounding devices
- Failure to do so can result in death or electrical shock

"F" (Failure) DISPLAY CODES

Before doing any action, perform the following step1~3.

Step1. Unplug range or disconnect power.

Step2. Check if connector is fully seated or not.

Note: All units in the first few days of use should be checked for mis-wiring or loose connections.

DISPLAY SHOWS	CAUSE	CORRECTIVE ACTION
F1	Key held down too long or shorted key	A. Perform step 1 through 2 above B. Replace keypad or keypad assembly (if F code recur, go to C after unplugging or disconnecting) C. Replace Control (PCB) assembly
F2	Door Locking system don't operate	A. Perform step 1 through 2 above B. Check wire and connections from control to latch C. If motor operate, check integrity of latch mechanism - check the micro-switch (refer to component test section) - check integrity of door locking mechanism D. If motor didn't operate, check continuity of the latch motor and electrical connections - if the wiring is bad, replace the harness - if the wiring is good, replace the door motor assembly - if F code recur, replace control
F3	Main oven Sensor opened	A. Perform step 1 through 2 above B. Open the back panel and check continuity of the sensor and Control (PCB) C. Disconnect sensor from harness
F4	Main oven Sensor shorted	D. - Measure value between connector pins : Approximately 1090 (at room temperature: 77F/25°C) - Measure value between sensor chassis and any connector pins : value should read OPEN => if there is any problem, Replace oven sensor E. If you couldn't find any problem, Replace Control (PCB)
F5	Warming drawer Sensor shorted	A. Perform step 1 through 2 above B. Open the back panel and check continuity of the sensor and Control (PCB) C. Disconnect sensor from harness
F6	Warming drawer Sensor open	D. - Measure value between connector pins : Approximately 50k (at room temperature 77F/25°C) - Measure value between sensor chassis and any connector pins : value should read OPEN => if there is any problem, Replace warming drawer sensor E. If you couldn't find any problem, Replace Control (PCB)

DISPLAY SHOWS	CAUSE	CORRECTIVE ACTION
F7	Main oven heating error	A. Perform step 1 through 2 above B. Open the back panel and check continuity of the sensor, heater (bake, broil) and Control (PCB) C. Check the bake and broil heater (refer to component test) D. Disconnect sensor from harness - Measure value between connector pins of oven sensor - Measure value between sensor chassis and any connector pins : value should read OPEN => if there is any problem, Replace oven sensor E. If you couldn't find any problem, Replace Control (PCB)
F9	Oven is too hot; Bad oven sensor; Bad control (PCB)	A. Perform step 1 through 2 above B. Open the back panel and Disconnect sensor from harness - Measure value between connector pins : approximately 1090 (at room temperature : 77F/25°C) => if there is any problem, Replace oven sensor C. Check the bake and broil relay (refer to the strip circuit section) STRIP CIRCUITS D. If there is any problem, Replace Control (PCB)