

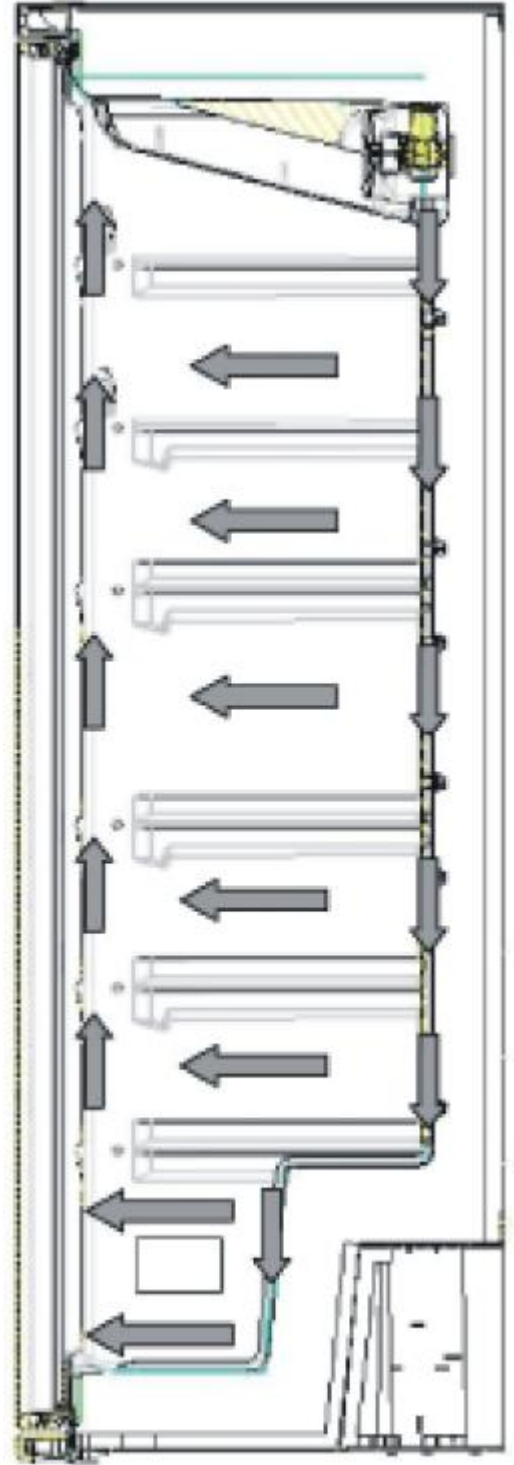
INFORMATION ON THE NO-FROST TECHNOLOGY

No frost fridges differ from other static fridges in their operating principle.

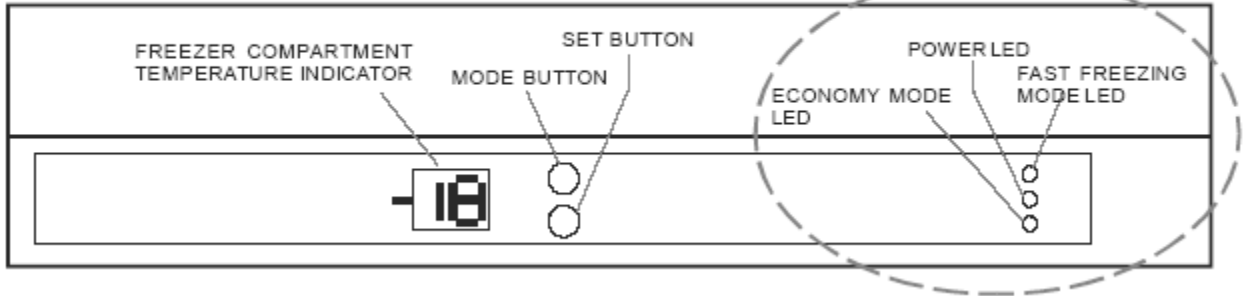
In normal fridges, the humidity entering the fridge in the door openings and humidity of the food cause freezing in the freezer department. To defrost the snow and ice in the freezer department, you should turn off the fridge, take the food that needs to be kept in a constant temperature off the fridge, and remove the ice gathered in the freezer department periodically.

The situation is completely different in no-frost fridges. Dry and cold air is blown to the fridge and freezer departments homogeneously from several points via a blower fan. Cold air dispersed homogeneously even between the shelves cools all your food equally and uniformly, thus prevents humidity and freezing.

Therefore, your no-frost fridge allows you ease of use , besides its huge volume and appearance.



(For some models)

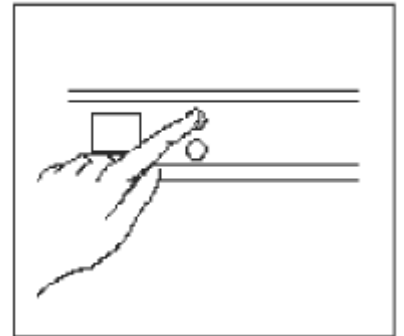


MODE BUTTON

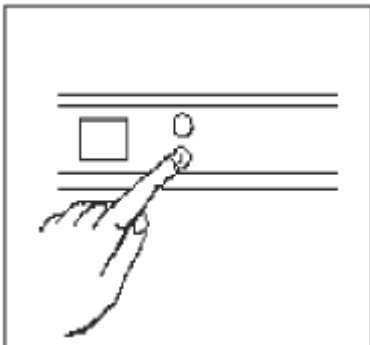
- Mode button allows switching between Freezer Department Indicator, Fast Freezing Mode Lamp, Economy Mode Lamp.
- When you press once, Freezer Department Indicator starts to flash.

Set value is ready to be changed.

- When you press twice, Fast Freezing Mode Lamp starts to flash.
- When you press three times, Economy Mode Lamp starts to flash.



SET BUTTON

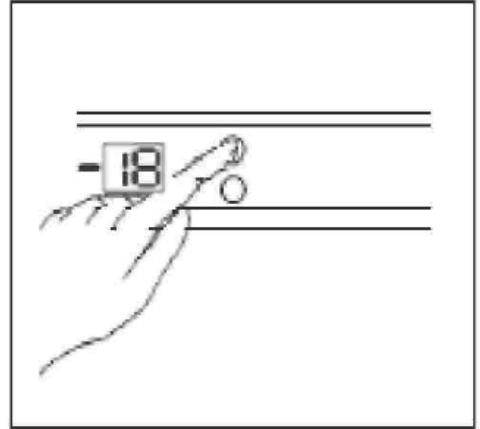


Allows the temperature adjustment of the related department when Freezer Department Indicator is selected with the mode button.

VESTEL WHITE GOODS	FREEZER – 391 (HIDDEN CAP)	CUSTOMER SUPPORT
	THE VARIOUS FUNCTIONS AND POSSIBILITIES	

Freezer Department Temperature Adjustment and Activating FAST FREEZING Mode

- Initial temperature value for Freezer Department Indicator is -18°C.
- Press mode button once.
- The set value for Freezer Department Indicator starts to flash when you press this button.
- The value for Freezer Department Indicator changes for a lower temperature each time you press this button when the indicator is flashing.
(-16°C, -17°C, -18°C, -19°C, -20°C, -21°C, -22°C, -23°C, -24°C)
- When you wait for 5 seconds without pressing any button after reaching the desired set value, the set value is activated and your fridge operates with that set value.
- When you press set button until the value for Freezer Department Indicator reaches -24°C (maximum cold position), if you press the button again, SF letters will flash.
- If you continue to press the button when SF is flashing, the values will start again from -16°C.



Recommended Temperature Values for Freezer

When would it be adjusted?	Inner Temperature
When small amount of food is stored	-16°C, -17°C
In normal usage	-18°C, -19°C, -20°C, -21°C
When lots of food is stored	-22°C, -23°C, -24°C

Fast Freezing Mode

- To freeze plenty of food
- To freeze ready foods
- To freeze foods rapidly
- To store the seasonal foods for a long time

How to use;

- Press the mode button until Fast Freezing mode.
- While Fast Freezing Mode Lamp is flashing if no button is clicked for 5 seconds then a beep sound will be heard and the mode will be enabled.
- While the Fast Freezing mode is active the letters "SF" will be seen at the Indicator of the Freezer.

VESTEL WHITE GOODS	FREEZER – 391 (HIDDEN CAP)	CUSTOMER SUPPORT
	THE VARIOUS FUNCTIONS AND POSSIBILITIES	

While SF mode is selected:

To cancel SF Mode and continue with previous set value:

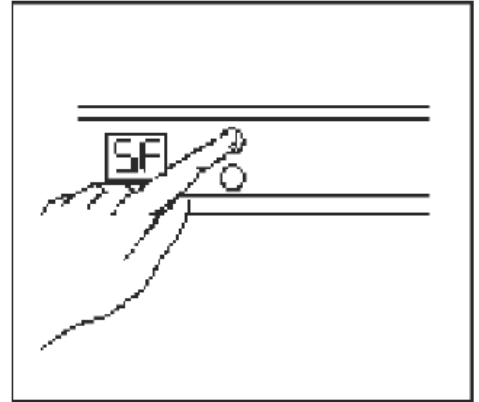
Please press Mode Button 2 times and wait for 5 secs.
 SF mode will be cancelled and appliance will start to work according to previous set value.

To cancel SF Mode and continue with new set value:

Please press Mode Button 1 time and in 5 sec, push set button until you see set value you want and wait for 5 secs. SF mode will be cancelled and appliance will start to work according to new set value.

To cancel SF Mode and activate Economy Mode:

Please press Mode Button 3 times and wait for 5 secs.
 SF mode will be cancelled and appliance will start to work according to Economy Mode.



Note: "Quick Freezing" mode will be cancelled automatically after 24 hours or when the freezer sensor temperature falls below -32°C.

ECONOMY MODE

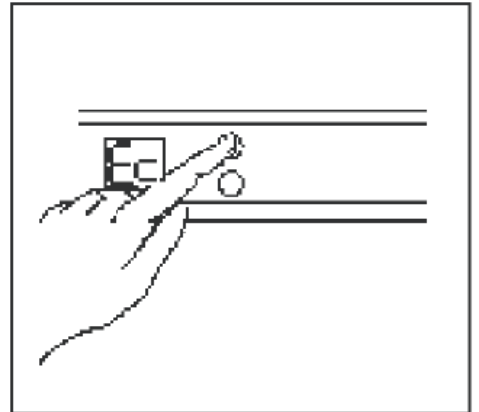
Freezer Compartment will be operated according to the economy conditions specified on the control circuit.

When to use;

- When you want your refrigerator to operate economically.

How to use;

- Press the mode button until Economy Mode Led lights up (3 times).
- While the Economy Mode Led is flashing if no button is clicked then a beep sound will be heard and the mode will be enabled.
- During this mode, the freezer compartment will be operated at the special temperature value set on the control circuit.
- While the Economy mode is active the letters "Ec" will be seen at the Indicators of the Freezer Compartment.



While Economy mode is selected:

To cancel Economy Mode and continue with previous set value:

Please press Mode Button 3 times and wait for 5 secs.
 Economy mode will be cancelled and appliance will start to work according to previous set value.

To cancel SF Mode and continue with new set value:

Please press Mode Button 1 time and in 5 sec, push set button until you see set value you want and wait for 5 secs.
 Economy mode will be cancelled and appliance will start to work according to new set value.

To cancel Economy Mode and activate SF Mode:

Please press Mode Button 3 times and wait for 5 secs.
 Economy mode will be cancelled and appliance will start to work according to SF Mode.

VESTEL WHITE GOODS	FREEZER – 391 (HIDDEN CAP)	CUSTOMER SUPPORT
	SPECIAL PROGRAMS	

During initial operation of the refrigerator;

If the freezer and defrost sensors are warmer than -5°C , then the automatic test starts. The below listed components will be tested respectively with 5 second intervals. For this reason, the refrigerator switches to normal operation mode after 20 secs.

- 5 secs. Defrost resistance
- 5 secs Drain Heater
- 5 secs. Evap. Fan Motor,
- 5 secs. Compressor is operated

After waiting for 5 min. it switches to normal operation mode.

Indicator temperatures

Indicators are LED. Only numbers can be seen. There is no bar. Default set values are -18°C and $+5^{\circ}\text{C}$

Freezer Temperature (-16°C , -17°C , -18°C , -19°C , -20°C , -21°C , -22°C , -23°C , -24°C)

Compressor-Fan Workings:

- Step 1.** If F sensor temp < =Setting temp, go to step 4.
If F sensor temp > Setting temp, go to step 2.
- Step 2.** Set compressor ON then
- Step 3.** If F sensor temp >= Setting temp then return to step 2.
If F sensor temp < Setting temp then go to next step
- Step 4.** Set compressor OFF.

Compressor runs and stops according to set values.

FREEZER SECTION for 391E					
ADJUSTED SET VALUES ON DISPLAY	COMPRESSOR ON VALUES	COMPRESSOR OFF VALUES	ADJUSTED SET VALUES ON DISPLAY	COMPRESSOR ON VALUES	COMPRESSOR OFF VALUES
-16°C	-10°C	-15°C	-21°C	-15°C	-20°C
-17°C	-11°C	-16°C	-22°C	-16°C	-21°C
-18°C	-12°C	-17°C	-23°C	-17°C	-22°C
-19°C	-13°C	-18°C	-24°C	-18°C	-23°C
-20°C	-14°C	-19°C			

Fan Motor:

Fan motor runs in accordance with compressor

But some delays will be used:

Fan Start Delay: Delay after compressor working to fan motor working


Fan Stop Delay: Delay after compressor stopping to fan motor stopping

391E

Fan Start Delay 240 sec

Fan Stop Delay : Attached table

FAN STOP DELAY (FAN STOPPING POINT)			
ADJUSTED SET VALUES ON DISPLAY	DEFROST SENSOR	ADJUSTED SET VALUES ON DISPLAY	DEFROST SENSOR
-16°C	$-16,5^{\circ}\text{C}$	-21°C	$-21,5^{\circ}\text{C}$
-17°C	$-17,5^{\circ}\text{C}$	-22°C	$-22,5^{\circ}\text{C}$
-18°C	$-18,5^{\circ}\text{C}$	-23°C	$-23,5^{\circ}\text{C}$
-19°C	$-19,5^{\circ}\text{C}$	-24°C	$-24,5^{\circ}\text{C}$
-20°C	$-20,5^{\circ}\text{C}$		

	FREEZER – 391 (HIDDEN CAP)	CUSTOMER SUPPORT
	SPECIAL PROGRAMS	

Defrost Program

Defrost is activated under the following conditions.

When the ambient temperature sensor drops below 10°C (cold), it enters defrost mode every 5 hours.

If the ambient temperature sensor is between 10°C and 20°C, it enters defrost mode every 8 hours.

If the ambient temperature sensor is higher than 20°C, it will enter defrost mode at the moment when 32 hours of compressor running is over or when 40 hours of compressor stop comes to an end, whichever occurs first.

However, in cases where the ambient temperature sensor is higher than 20°C, this period may fall to 24 hours according to the usage conditions (because of the reasons given below).

- * Amount of ice formed,
- * Number of times the door is opened and closed,
- * Duration the door remained opened,
- * Sudden usage change,
- * Sudden Cooler Compartment temperature increase,
- * Sudden Freeze Compartment temperature increase,

Checking of ambient temperature will be done every 10 min
Defrost conditions (durations) can be changed acc to new AT.

Duration of remaining in defrost mode:

Defrost, which is controlled by the defrost sensor, ends up when the defrost sensor temperature reaches 8°C under normal conditions. However, If resistances have some problem and Dsensor temperature doesn't reach to 8°C during 90 min; compressor will start to work

When the defrost starts;

		COMP	FAN	EVAP RES	DRAIN RES	DURATION
I	Normal condition	ON	ON	OFF	OFF	Look at "Compressor - Fan Workings" (page-5)
II	Defrost 1.part	OFF	OFF	ON	ON	Until D Sensor reaches 8°C***
III	Defrost 2.part	OFF	OFF	OFF	ON	During 7:30
IV	Waiting 1.part	ON	OFF	OFF	OFF	During 2:30
I	Normal condition	ON	ON	OFF	OFF	When "waiting 1.part" finishes

Low Voltage Program

If the supply voltage is below < 170 V for 5 seconds or more, the low voltage program is activated and compressor, evap. fan motor, condenser fan motor, quick freezing and fast cooling functions are all stopped. If the appliance is in defrost mode, defrost function also stops.

It waits until the supply voltage reaches >180 V and when it climbs above 180 V, if the appliance is in defrost mode, it resumes from defrosting. If the appliance is not in defrost mode, it waits for 5 min. for compressor safety and resumes from the last set program.

Power Cut off Program


* When the power is cut off, all set parameters and functions (except for the child lock function) remains in the memory.

* When the power is resupplied, compressor starts running after 5 minutes;

* It resumes operating from the last set program.

Other Features

After every compressor stopping, it starts after 5 min

	FREEZER – 391 (HIDDEN CAP)	CUSTOMER SUPPORT
	COMPONENTS USED	

COMPONENTS USED

Defrost Resistance	220V / 185W
Drain Heater	220V / 25W
Thermal fuse	76 °C
Evap. Fan motor	BG2012 (AC input but DC fan) 1W - 2500RPM (Noload) Propeller : 100mm
Motor damper	NO
Main board (Power board)	DANFOSS
Display board	Together with main board
Defrost sensor	EPCOS
Freezer compartment sensor	EPCOS
Cooler Lamp	NO LAMP
Freezer Lamp	NO LAMP

NTC Sensor

There are 3 sensors: Freezer Compartment, Defrost and Ambient.

The ones other than the ambient sensor have the same properties except for their varying cable lengths.

Freezer and Defrost Sensors

[°C]	R_nom	R_min	R_max
-40	169157	159347	178968
-35	121795	115386	128204
-30	88766	84553	92979
-25	65333	62555	68111
-20	48614	46778	50450
-15	36503	35291	37715
-10	27681	26883	28478
-5	21166	20646	21686
0	16330	16003	16657
5	12696	12386	13006
10	9951	9670	10232
15	7855	7604	8105
20	6246	6025	6467
25	5000	4806	5194
30	4029	3859	4198
35	3266	3118	3414
40	2665	2536	2794
45	2186	2073	2298
50	1803	1705	1901
55	1495	1410	1581

VESTEL WHITE GOODS	FREEZER – 391 (HIDDEN CAP)	CUSTOMER SUPPORT
	COMPONENTS USED	

Ambient Temp Sensor

Temperature	RT	Alfa	R	-R
-55	97,578	7,500	487.890	-487.890
-50	67,650	7,200	338.250	-338.250
-45	47,538	7,000	237.690	-237.690
-40	33,831	6,700	169.155	-169.155
-35	24,359	6,500	121.795	-121.795
-30	17,753	6,300	88.765	-88.765
-25	13,067	6,000	65.335	-65.335
-20	9,723	5,800	48.614	-48.614
-15	7,301	5,600	36.503	-36.503
-10	5,536	5,500	27.681	-27.681
-5	4,233	5,300	21.166	-21.166
0	3,266	5,100	16.330	-16.330
5	2,539	5,000	12.696	-12.696
10	1,990	4,800	9.951	-9.951
15	1,571	4,700	7.855	-7.855
20	1,249	4,500	6.246	-6.246
25	1,000	4,400	5.000	-5.000
30	0,806	4,300	4.029	-4.029
35	0,653	4,100	3.266	-3.266
40	0,533	4,000	2.665	-2.665
45	0,437	3,900	2.186	-2.186
50	0,361	3,800	1.803	-1.803
55	0,299	3,700	1.495	-1.495
60	0,249	3,600	1.247	-1.247

VESTEL WHITE GOODS	FREEZER – 391 (HIDDEN CAP)	CUSTOMER SUPPORT
	ERROR MESSAGES	

USER AND SERVICE MODE ERROR MESSAGES

There are error messages that can be seen on the screen.

These error messages are shown in the table below.


SENSOR	TEMPERATURE	USER MODE REACTION
(1) Freezer	>+50°C or <-50°C (Sensor is short or open)	Sr will blinks in FREEZER segment LED
(2) Defrost	Short (< 800Ω) or <-50°C	Sr will blinks in FREEZER segment LED and ECONOMY led blinks
(3) AT sensor	Short or < -30°C	Sr will blinks in FREEZER segment LED and S.FREEZE led blinks

COMPONENT ERRORS

DEFECT TYPE	USER MODE REACTION
Compressor Defect	Sr will blinks in FREEZER segment LED and ECONOMY and S.FREEZE leds blinks together
Defrost Heater Defect	

LOW VOLTAGE ERROR

ERROR	DETAILS	USER MODE
Low voltage	Supply voltage <170	Freezer number segment shows LP

	FREEZER – 391 (HIDDEN CAP)	CUSTOMER SUPPORT
	ERROR MESSAGES	

COOLING ERRORS

ERROR	DETAILS	USER MODE
If freezer sensor is > -5°C	Freezer compartment is not cold enough.	LF is shown on LED segments

If temperature is warmer than alarm set value during 30 min; LED will show LF and buzzer will make beep-beep. LF and buzzer will continue until user pushes SET or MODE button directly; buzzer will stop. (After stopping of buzzer, SET and MODE button will work acc to their normal functions)

But LF;

- a) will continue if temperature is still warmer than -5 C
- b) will stop if temperature decreases and comes to normal temperature.

In this condition;

LED will show setting temperature again.

(Because user saw the LF and he/she was warned but he/she cancelled alarm.

So; he/she can check the qualities of foods)

NOTE : To prevent the wrong alarms, this alarm status is disabled on following conditions:

- 1) During the first 6 hours after the product was firstly connected.
- 2) During the defrost period
- 3) During the first two hours after a defrost cycle
- 4) During the first 2 hours that one of the doors was open.

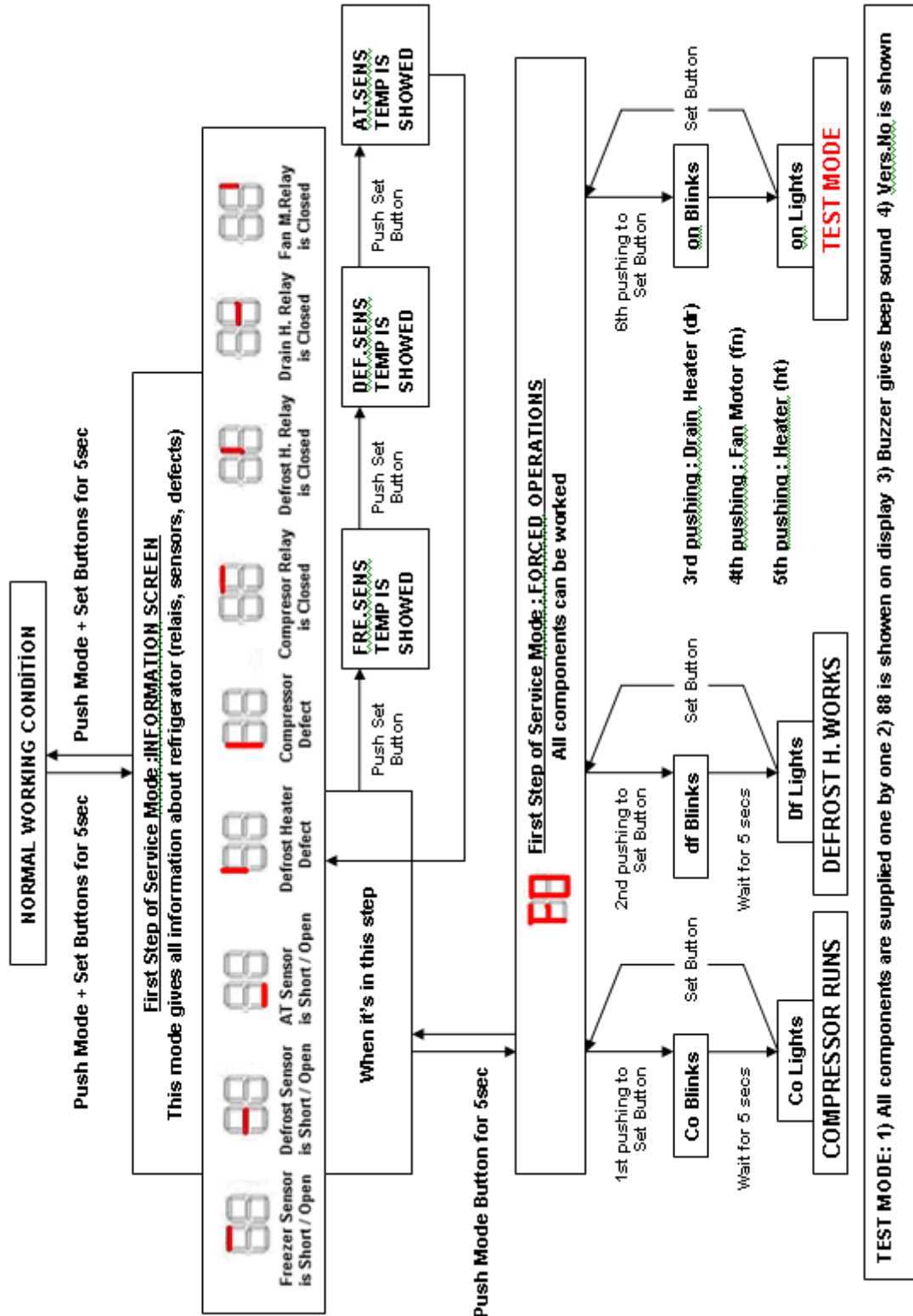
PRIORITY OF ERROR ON DISPLAY

	REACTION
Compressor, Defrost H. or Drain H. Defect	SR
Sensor Defect (Short-Open)	SR
Cooling Errors	LF

VESTEL WHITE GOODS	FREEZER – 391 (HIDDEN CAP)	CUSTOMER SUPPORT
	SERVICE MODE	

Information Screen

	Freezer Sensor is Short or Open	Entering Service Mode : Push Mode and Set Buttons together during 5 sec. When user enter to Service Mode, Informations will be seen acc to scheme on the left side.
	Defrost Sensor is Short or Open	While this screen is being seen; 1.push to Set Button: Freezer Sensor Temperature
	AT sensor is Short is Open	2.push to Set Button: Defrost Sensor Temperature 3.Push to Set Button: Ambient Sensor Temperature 4.Push to Set Button: Again Information Screen
	Defrost Heater Defect	While this screen is being seen; Pushing Mode Button during 5 sec, FO will be seen. FO means Forced Operation. After this point;
	Compressor Defect	1.push to Set Button: CO will blink, if you wait for 5 sec. Blinking will stop, CO will light Compressor will be supplied until user pushes set button one more time.
	Compressor Relay : Closed	If user pushed set button, compressor supplying will be stopped. FO will be seen again.
	Defrost Heater Relay: Closed	2.push to Set Button: Defrost Heater Forced Working. Other pushing are same. 3.push to Set Button: Drain Heater Forced Working. Other pushing are same.
	Drain Heater Relay: Closed	4.push to Set Button: Fan Motor Forced Working. Other Pushing are same. 5.push to Set Button: Defrost+Drain Heater Forced Working. Other Pushing are same.
	Fan Motor Relay : Closed	When FO is being sseen, if user pushed Mode Button for 5 sec. Forced Operation Mode will be finished. Information screen will be seen. When information screen is being seen, if user pushes Mode and Set Button for 5 sec, Service Mode will be finished. Last Mode ot Set Value will be seen.



Changing The Door Direction to Right Hand

1- Remove the top hinge cover on the right.
(Fig-1)



Figure-1

2- Unscrew the screw fixing the top hinge and remove it. (Fig-2)



Figure-2

3- Unscrew the bottom hinge fixing screws and remove it. (Fig-6)



Figure-3

4- Unscrew the stationary foot of bottom hinge and screw to **Hole-1**. Unscrew the hinge pin and screw to **Hole-2**.(Fig-4)

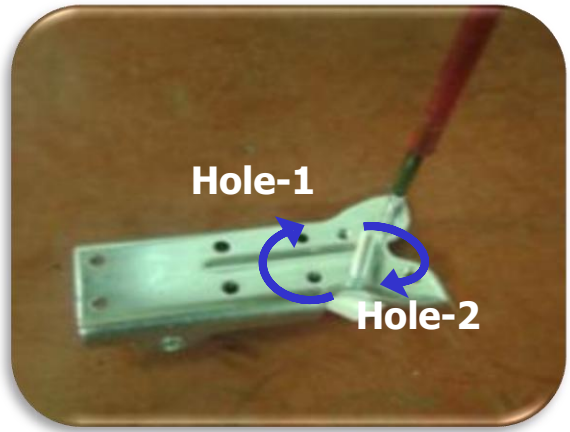


Figure-4

5-Unscrew the stationary foot and front wheel (Fig-5.1) and screw to the right side. (Fig-5.2)



Figure-5.1

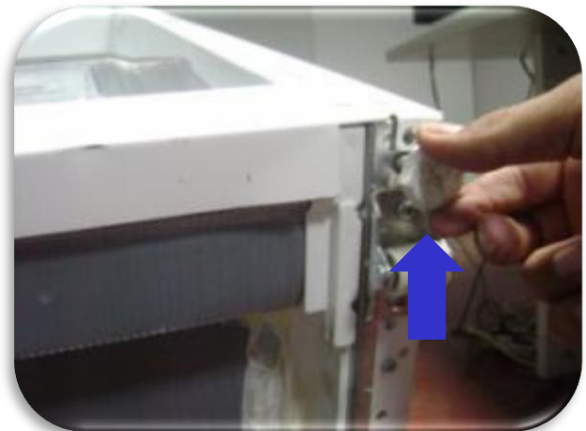


Figure-5.2

6- Remove the bushing and then insert it to the left side. (Fig-6.1 / Fig-6.2)



Figure-6.1



Figure-6.2

7- Remove the bottom bushing and bottom stopper and then insert them to the left side. (Fig-7)

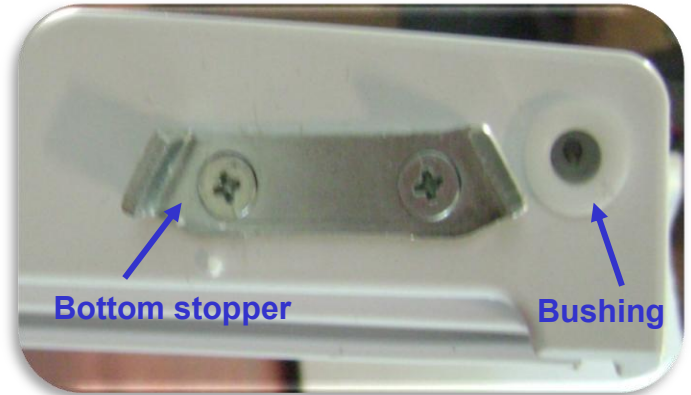


Figure-7



Figure-8

8. Remove the hinge panel cover (Fig-8) and remove it on the right side turn by 180°.

9- Assemble the door. (Fig-9.1 / Fig-9.2)



Figure-9.1



Figure-9.2

10- Unscrew the pin of the top hinge, turn the top hinge by 180° then screw it to the left side hinge holes and screw the pin of the top hinge (Fig-10.1 / Fig-10.2)

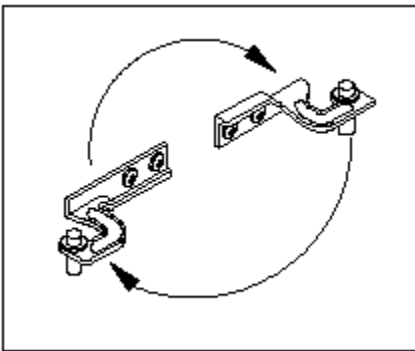


Figure-10.1



Figure-10.2

11- Insert the top hinge cover (which is put in the user manual bag) to the left side. (Fig-11)



Figure-11

VESTEL WHITE GOODS	FREEZER – 391 (HIDDEN CAP)	CUSTOMER SUPPORT
	HEAD PANEL GROUP	

Replacement of Head Panel Group and Main PCB

1- Remove the head panel caps. (Fig-1)

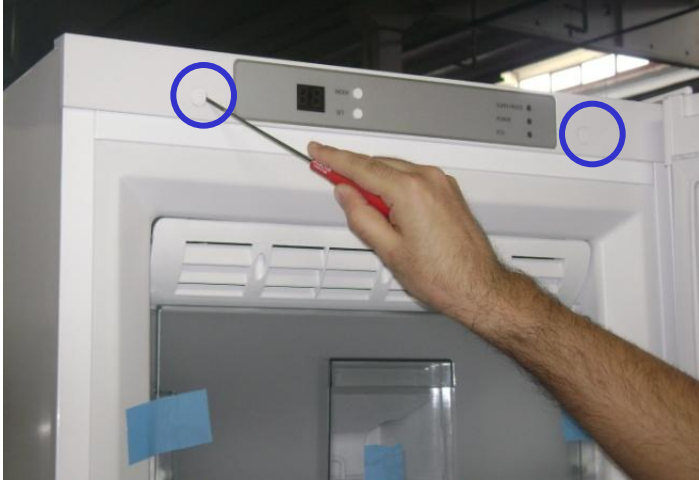


Figure-1

2- Unscrew the screws fixing the head panel. (Fig-2)



Figure-2

3- Remove the head panel. (Fig-3.1 and Fig-3.2) *Make sure that the door is open 90°*



Figure-3.1



Figure-3.2

4- Unscrew the screws fixing the main board box (Fig-4.1) and remove it. (Fig-4.2)



Figure-4.1



Figure-4.2

5- Disconnect all socket connections. (Fig-5)

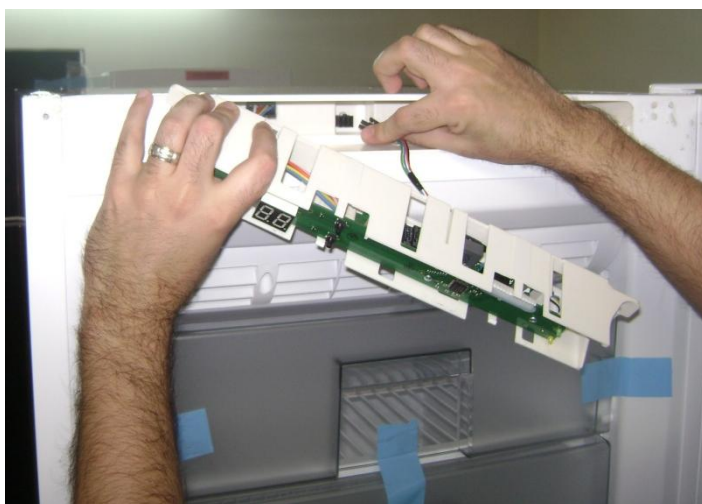


Figure-5

6- Unscrew the screws fixing the main PCB and remove it. (Fig-6)

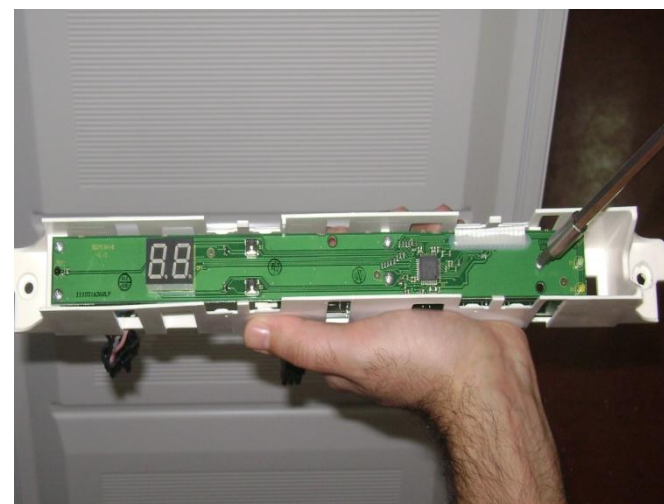


Figure-6

After changing the main PCB insert the new one into the main PCB box and make the connections then mount them to the head panel. Mount the head panel to the panel housing.

VESTEL WHITE GOODS	FREEZER – 391 (HIDDEN CAP)	CUSTOMER SUPPORT
	FIN EVAP GROUP	

Warning: Make sure the unit is unplugged.

- Unscrew the condenser screws. (4 pcs)



- Push the condenser up side and remove.



- Remove the sealing material at the housing.

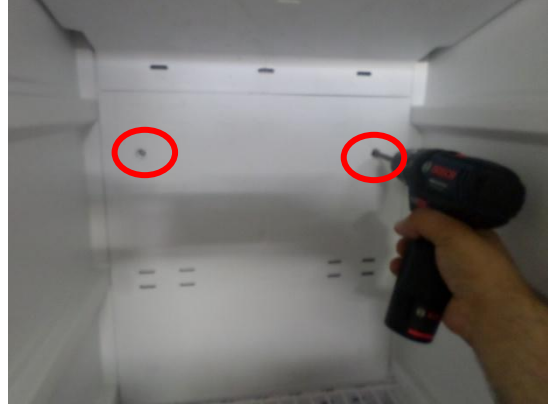


- Fix the heat exchanger pipe.



VESTEL WHITE GOODS	FREEZER – 391 (HIDDEN CAP)	CUSTOMER SUPPORT
	FIN EVAP GROUP	

- Remove 4 caps and unscrew the 4 screws shown at the picture.



- Unscrew the 3 screws shown at the picture. Remove the cover supports left and right.



-Take out the fin evap connector.

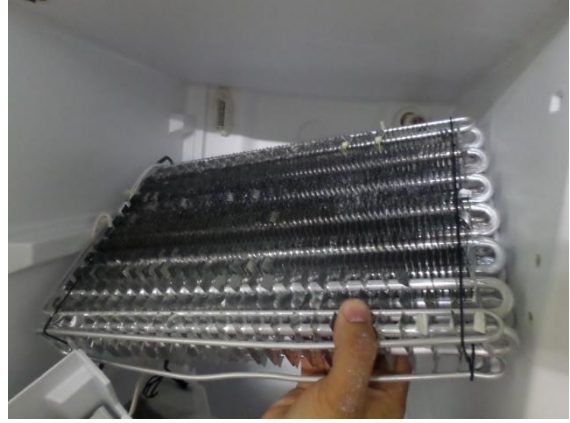


-Remove the fin evap strafoam.

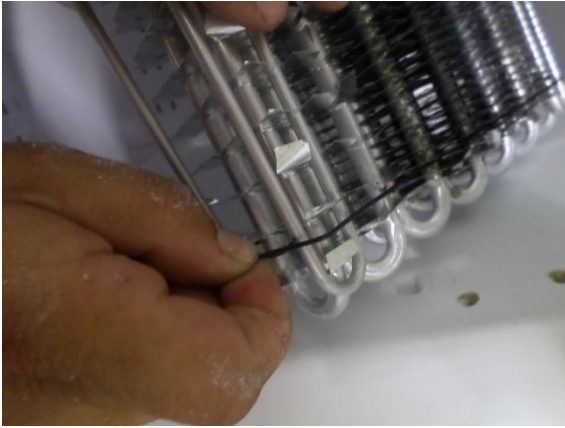


VESTEL WHITE GOODS	FREEZER – 391 (HIDDEN CAP)	CUSTOMER SUPPORT
	FIN EVAP GROUP	

-Remove the fin evap box.



- Remove the black metal clippers.



- Detach the evaporator from the defrost heater.



-Take out the fin evap heater connector.

