Service Manual For Built-in Oven
(90x48 Series electric oven)

Model list:
93M90M1
93M90D0

Warnings:

- **This service manual is not available to the general users, but only applies to professional technicians with relevant qualifications. Any incorrect maintenance may result in other dangers!**
- **The power (and gas) supply must be cut off before maintenance!**
- **A new power cord which meets the relevant technical requirements must be used once possible hidden malfunctions are found with the current power cord (refer to this Manual)!**
- **Please read carefully all safety warnings in this Manual before maintenance!**
- **The product is prohibited from using until test is conducted as per relevant regulations after maintenance!**
- **This service manual applies to many models, so the specific operations please prevail in kind!**

V2.0
Nov, 2019

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1. Precaution

1.1 Safety Precaution

1. To prevent injury to the user or other people and property damage, the following instructions must be followed.

2. Incorrect operation due to ignoring instructions will cause harm or damage.

3. Before maintenance, please read carefully the following instructions at first.

1.2 ⚠ Warning

1. The power cord shall be replaced with the original power cord, specifications for an insulation power line which is no less than AWG8*2 +AWG10*1 and resists temperature of greater than 60℃.

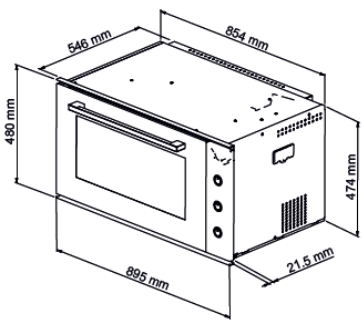
2. All apparatus within a radius of 50mm from this product must resist temperature of greater than 75 ℃, otherwise, deformations are easily to be caused during the application process of this product.

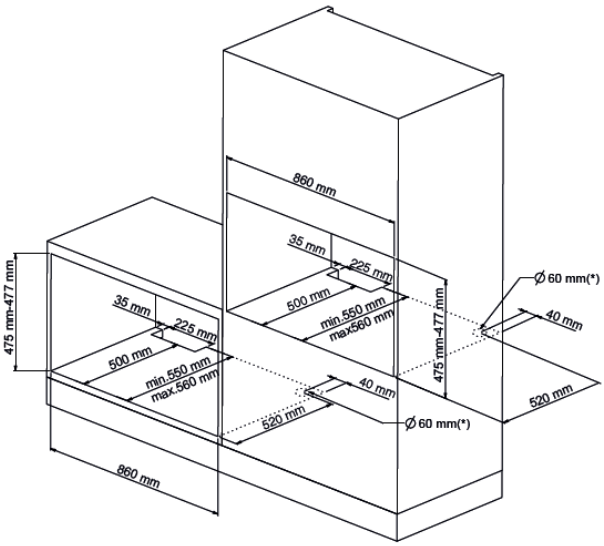
3. When the wrapping materials are removed, keep such materials like metal sheet, packing bag, foam and screws out of reach of children's reach to avoid potential dangers. For example, the children may suffocate as a result of swallowing tiny components or playing with packing bag.

2. Dimension

Model	W (mm)	H (mm)	D (mm)
90x48 All the models	895	480	546

Note: Dimensions for reference only





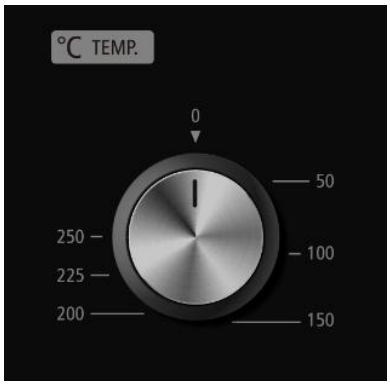
(*) Through the hole diameter 60 mm it is imperative to pass the electric cable of the oven.

3. Function

3.1 Function adjustment

Rotate the knob to the related function position.
(Model: 93M90M1, 93M90D0)

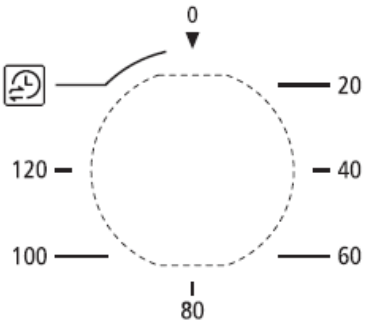
3.2 Temperature adjustment



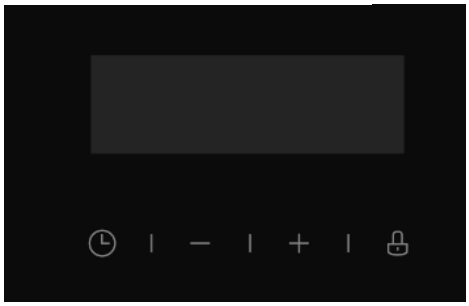
Rotate the knob to the expected temperature position.
(Model: 93M90M1, 93M90D0)

3.3 Timer function

TIMER



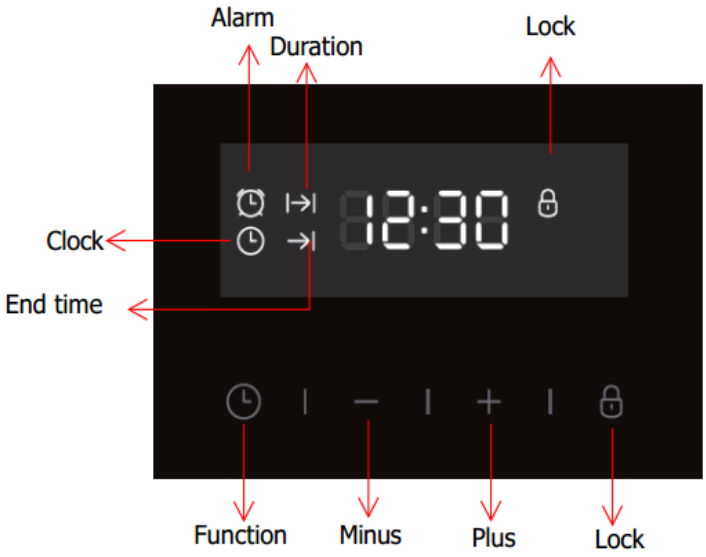
Rotate the knob to the expected timer position.
(Model: 93M90M1)



Set the timer by the buttons.
(Model: 93M90D0)

3.4 Display introduction

(Model: 93M90D0)

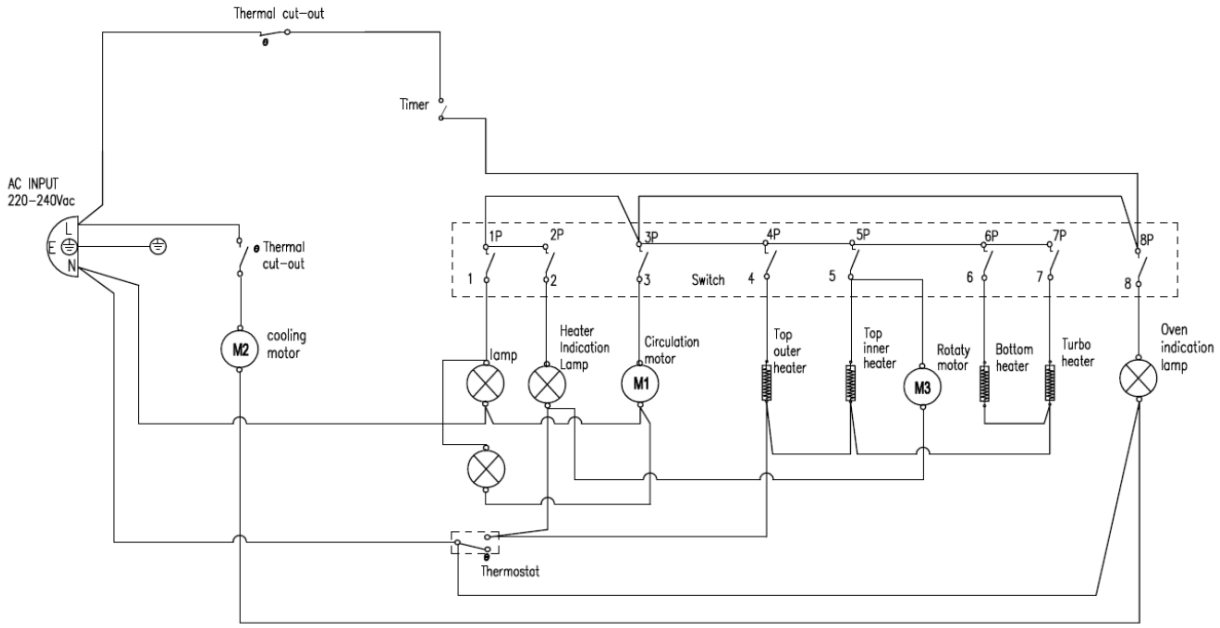


Time display

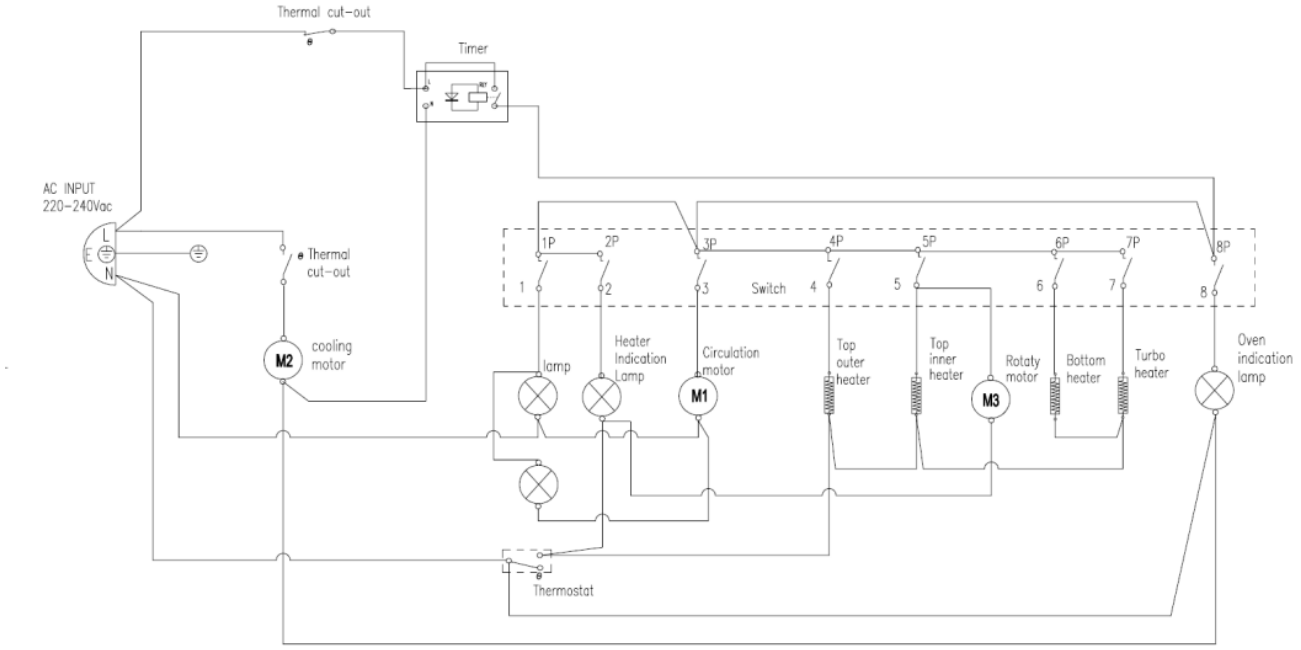
Child Safety Lock function display

4. Circuit diagram

4.1 93M90M1



4.2 93M90D0



5. Installation

5.1 Preparation before installation

1 Assembly shall be refered to the measurements in the following specification after the package is removed. (The packing material shall be handled properly.)

2 Please use the handle boxes on the sides if the oven is required to be lifted or moved. **It is prohibited from using door handle directly to lift the oven.** (See the following figure).

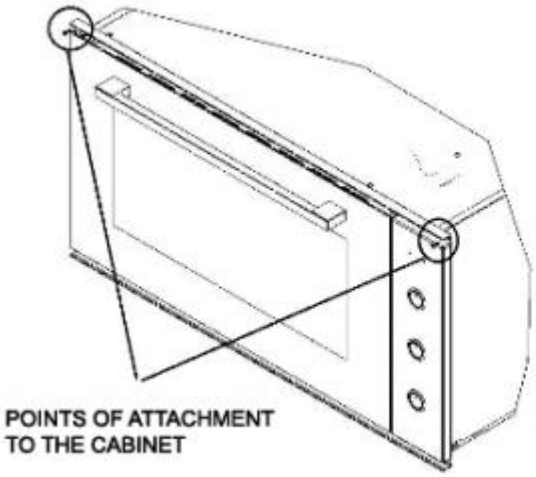
3 All inflammable, combustible and non-heat resistant articles shall be kept away from the surrounding of the oven.

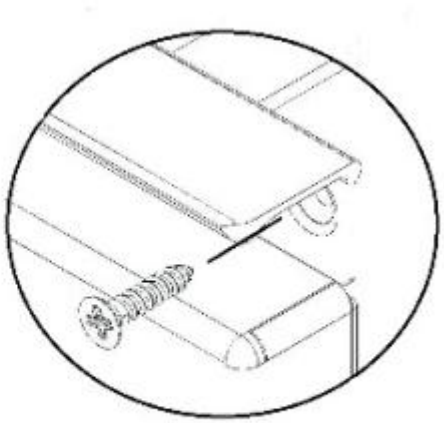
4 The ground shall be maintained flat enough for placing the oven to ensure sufficient stability of the product.

5.2 Install the oven to the cabinet

Step 1: Fit the oven into the cabinet recess.

Step 2: Fix the oven to the cabinet with the 2 screws provided using the holes in the upper aluminum bracket (right and left). (See the following figure).





6. Disassembly

6.1 Tools

Most of the tools that you might need are shown below. Some are optional.

ELECTRICAL PLIERS or STRIPPERS : For cutting and stripping small electrical wire.

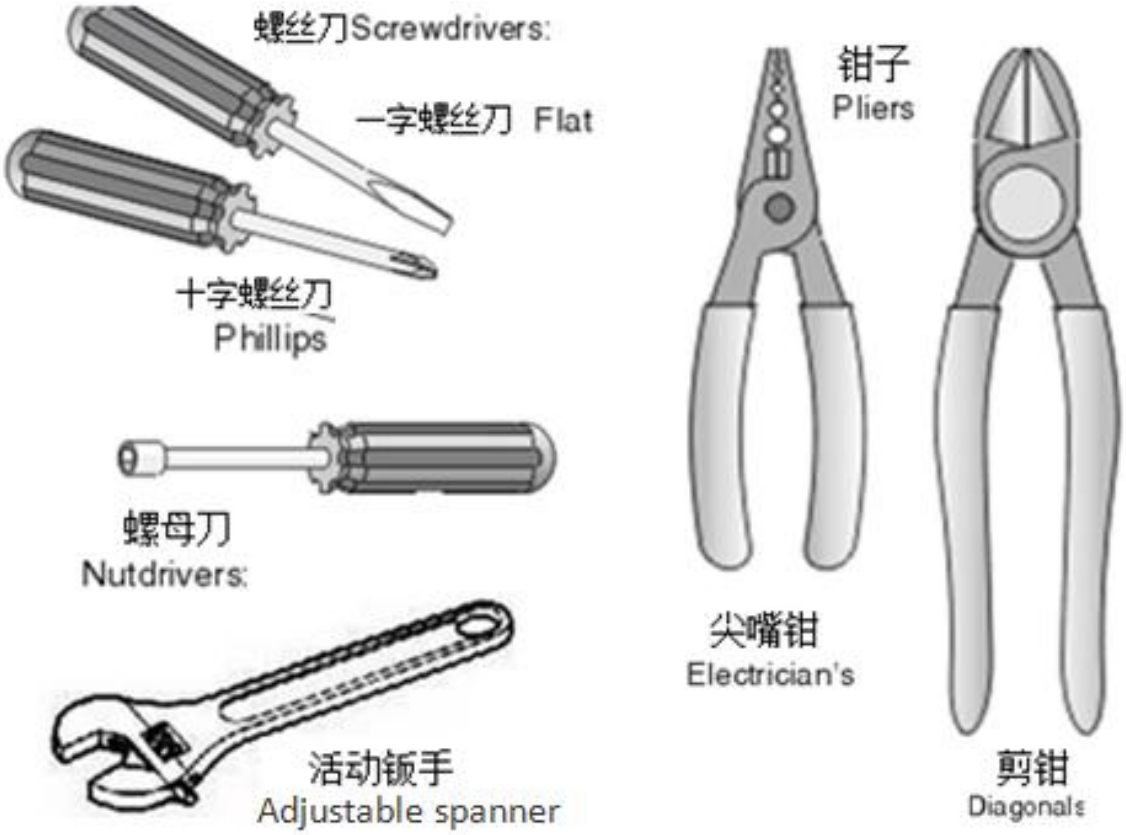
VOM (VOLT-OHM METER): For testing electrical circuits. If you do not have one, please get one. An inexpensive one will suffice, as long as it has both "AC Voltage" and "Resistance" (i.e. Rx1, Rx10) settings on the dial. It will do for our purposes.

BUTT CONNECTORS, CRIMPERS, WIRE NUTS and ELECTRICAL TAPE: For splicing small wire. When splicing wire on ovens, you must make sure you use high-temp connections, such as porcelain wire nuts, high-temp terminals and fiberglass insulated wire.

ALLIGATOR JUMPERS (sometimes called a "CHEATER" or "CHEATER WIRE"): Available at your local electronics store.

SCREW-DRIVERS: Both flat and Phillips head; two or three sizes of each. It's best to have at least a stubby, 4-inch and 6-inch sizes.

NUT-DRIVERS, WRENCHS: You will need a 1/4 to 1/2 inch size.



6.2 Remove the oven from the cabinet

WARNING：

1 Use a trolley to move the oven when installing it or removing it from the cabinet for service. Use a trolley will minimize the risk of personal injury as a result of the oven tipping.

2 Hold the oven steady when removing it from the cabinet. Otherwise, the oven will have a tendency to tip forward, increasing the risk of personal injury.

3 Do not use door handle to lift or move the oven, which may result in personal injury.

NOTE:

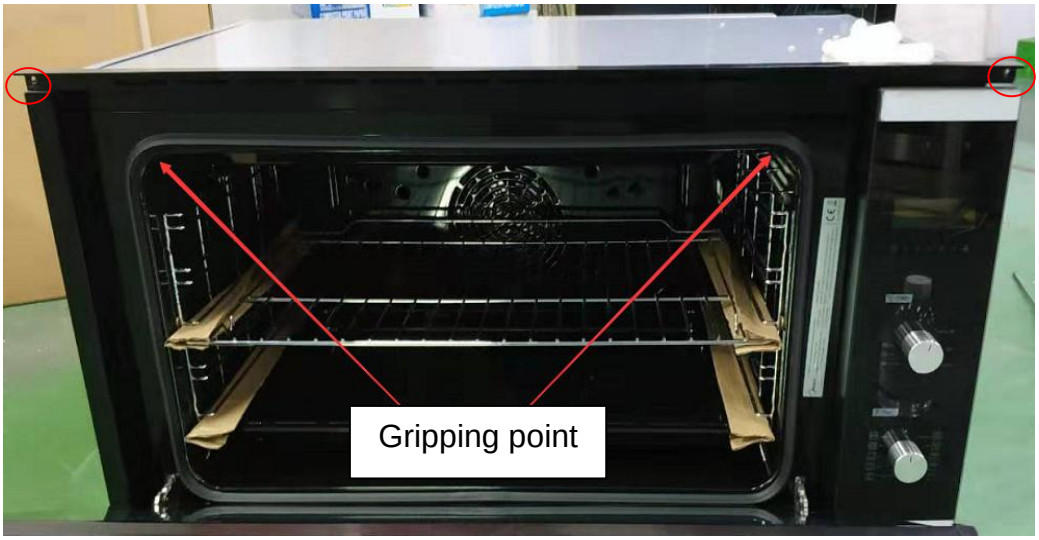
Not all service procedures require that the oven be removed from the cabinet. See the appropriate procedures to determine if removal from the cabinet is necessary.

Step 1: Remove the oven door. Due to the weight of this appliance, removing the oven door will significantly reduce the lifting load. Removing the oven door will also provide the technician a place to grip the oven when removing it from the wall.

Step 2: Remove the bake rack and bake tray from the oven.

Step 3: Remove the fixed screws that located inside the **upper aluminum bracket** (right and left). (See the following figure).

Step 4: Pull the oven out of the cabinet toward you, using the gripping points and the handle boxes on the sides. Hold the oven steady as you pull it out. Service procedures require that the oven be pulled completely out of the cabinet.



6.3 Disassembly of oven door

6.3.1 Remove the door from oven

Step 1: Open the door to the maximum angle.

Step 2: Position the hooks "A" of the hinges outwards (See Fig.7).

Step 3: Slowly close the door to reach the hooks "A", making sure that they lock in the slots "B" of the door (See Fig.8).

Step 4: Using both hands, press lightly inwards on the door, allowing the door hinges "C" to detach from the slots "D" (See Fig.9), and pull the door towards yourself until it has unhooked from the oven.

Step 5: After repairing or cleaning, fit the door back on properly by following the procedure in reverse order. Open the door to the maximum angle, reposition the hooks “A” inwards before closing the door (See Fig.10).

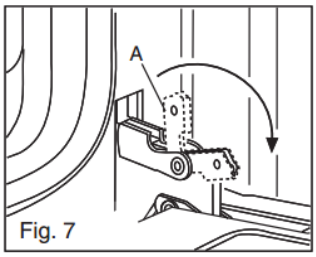


Fig. 7

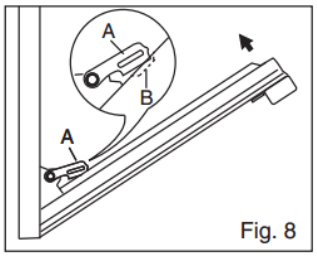


Fig. 8

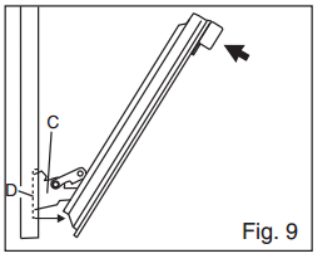


Fig. 9

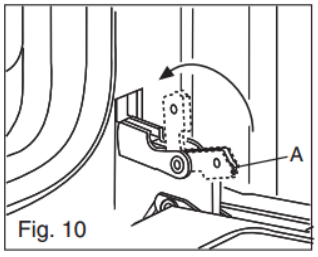


Fig. 10

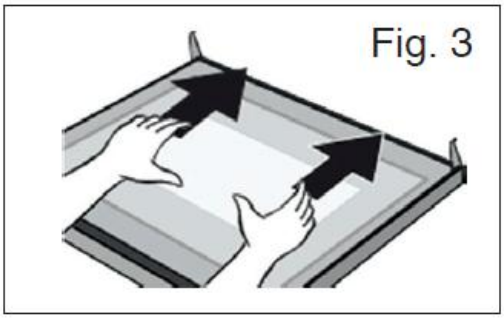
Warning: The door body is prohibited from dragging forcibly and shall be prevented glass smashing during the disassembly process.

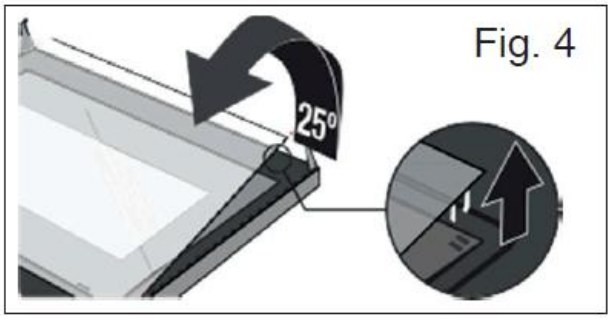
6.3.2 Disassembly parts of door

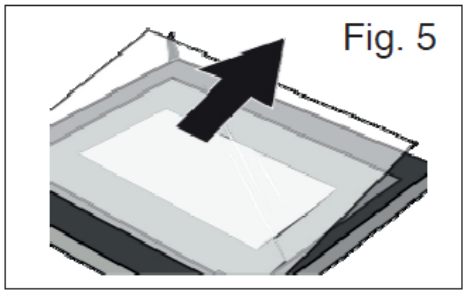
(Type: 3 layers of glass)

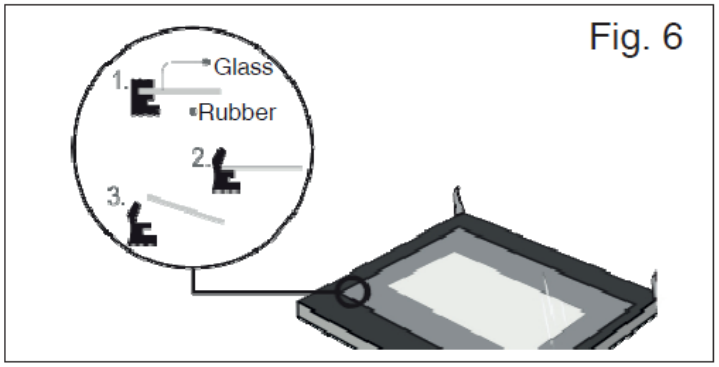
Step 1: Remove the door from oven (please refer to Point 6.3.1), and put it horizontally on the table.

Step 2: Place the inner glass upward (See Fig.3). Remove the inner glass carefully by raising it approximately 25 degrees (See Fig.4) until the retaining spring pieces unhook. Push the inner glass in the direction of the arrow (See Fig.5) and pull it completely out. At this point you can also remove the middle glass (follow the procedure of Fig.6).



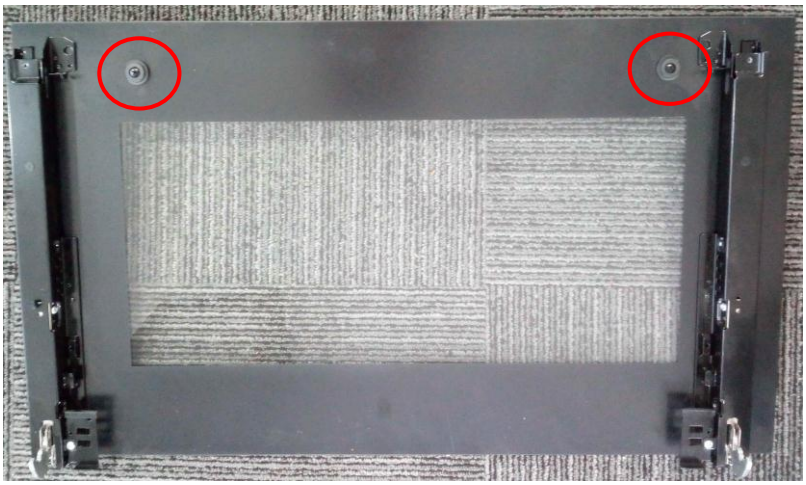




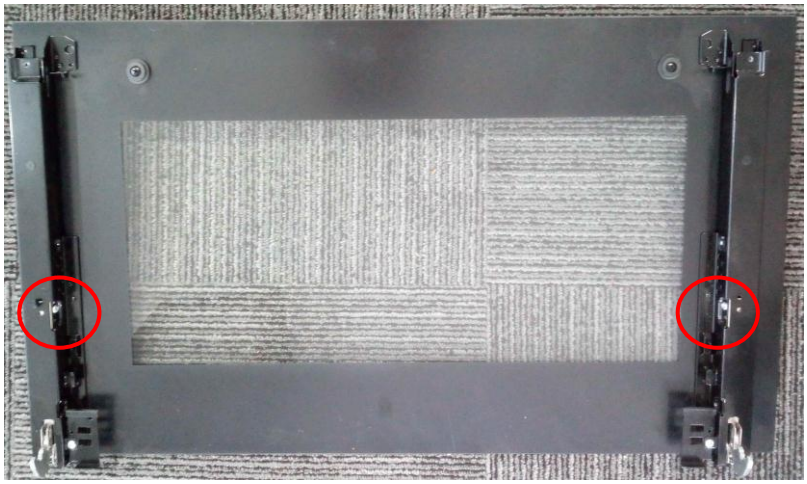


Step 3: Use a screwdriver to remove the screws fixed the door frame up cover, and pull it out (See the following left figure). Please pay attention to the buckles between the up cover and the brackets (See the following right figure).

Step 4: Use a screwdriver to remove the screws fixed the door handle, and disassemble the door handle.



Step 5: Use a screwdriver to remove the screws fixed the hinges, and disassemble the hinges.

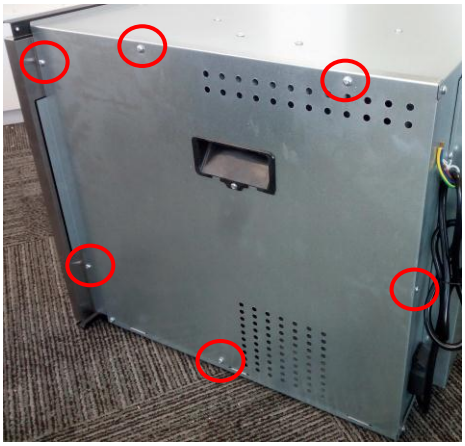


6.4 Disassembly of covers (Right/Left/Back → Upper)

WARNING: Turn off the electrical power supply to the appliance prior to servicing it. Failure to disconnect the power supply during service may result in an electrical shock or fire hazard.

Step: Use a screwdriver to remove the screws on covers, and take the covers out in proper sequence (1. Right/Left/Back cover → 2. Upper cover).

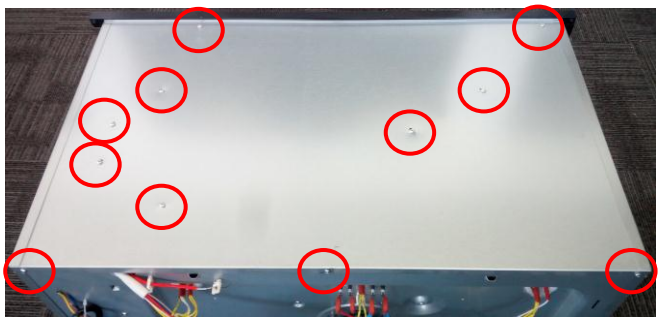
[Right cover as follow]



[Left cover as follow]

[Back cover as follow]

[Top cover as follow]



6.5 Disassembly of control panel

6.5.1 Remove the control panel from oven

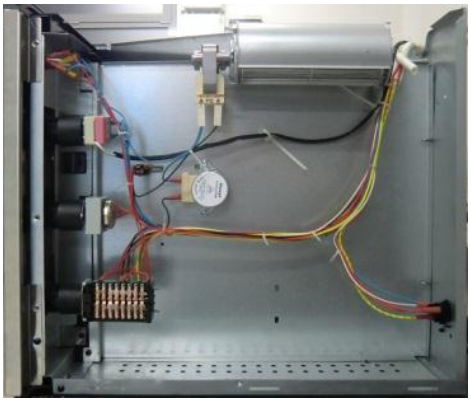
WARNING:

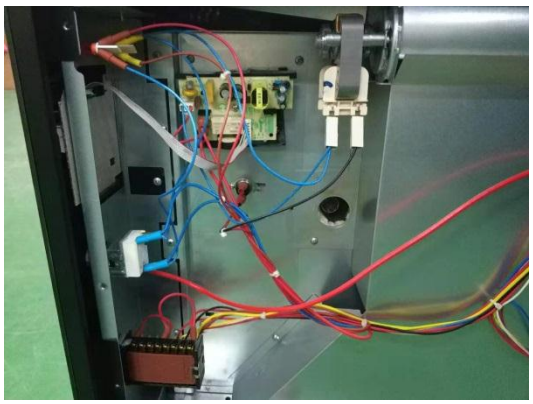
1 Turn off the electrical power supply to the appliance prior to servicing it. Failure to disconnect the power supply during service may result in an electrical shock or fire hazard.

2 Access the control panel requires that oven's covers were removed. When the covers were removed, the oven's printed circuit assemblies are exposed. The printed circuit assemblies contain electronic components that are sensitive to electro-static discharge (ESD). So you must wear a properly grounded antistatic wrist strap when touching or servicing the control panel.

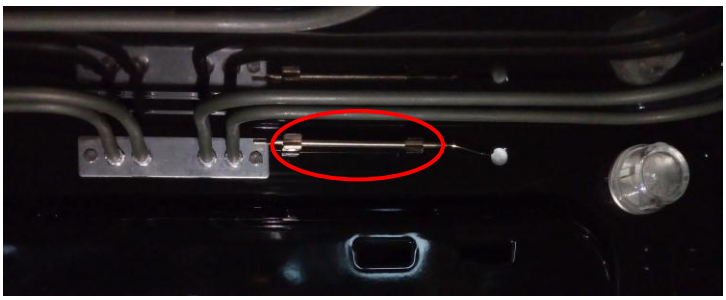
Step 1: Disassemble the covers (Right/Left/Back → Upper) (please refer to Point 6.4).

Step 2: Disconnect the wires from the back of the control panel printed circuit board assembly. For the sake of reassembly convenience, please mark the connection positions before moving the wires. [Left figure: 93M90M1] [Right figure: 93M90D0]

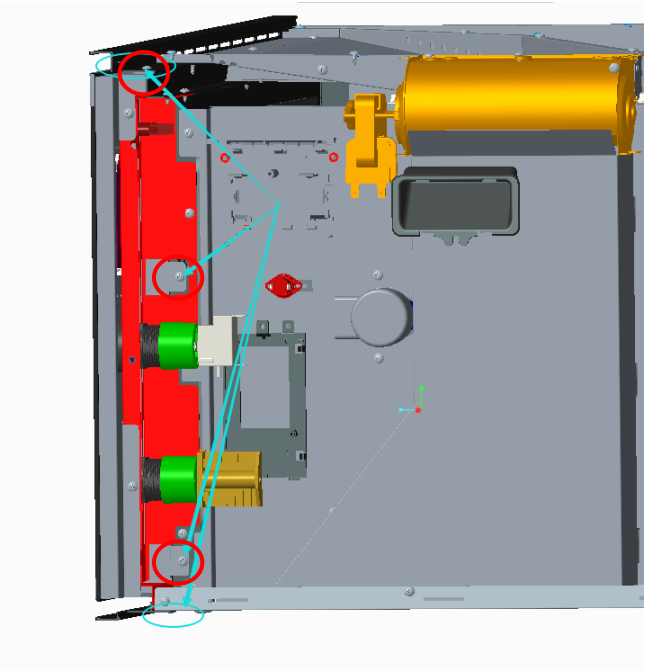




If some models that there is an energy controller inside the product, it's necessary to remove it from the probe bracket, and pull it out of the cavity hole. (Model: Mechanical type.)



Step 3: Use a screwdriver to remove the screws fixed control panel holder (or control panel decoration) and upper aluminum bracket or the cavity, and take out the control panel assembly.

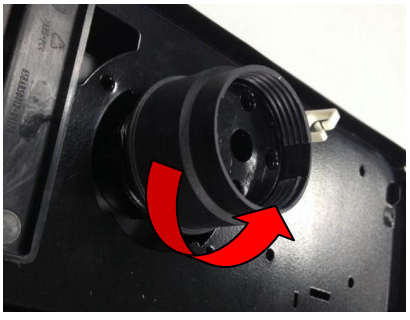


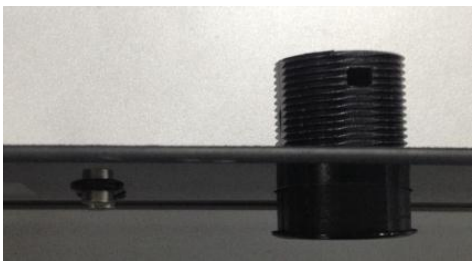
6.5.2 Disassembly parts of control panel

Step 1: Remove the control panel from oven (please refer to Point 6.4.1), and put it horizontally on the table.

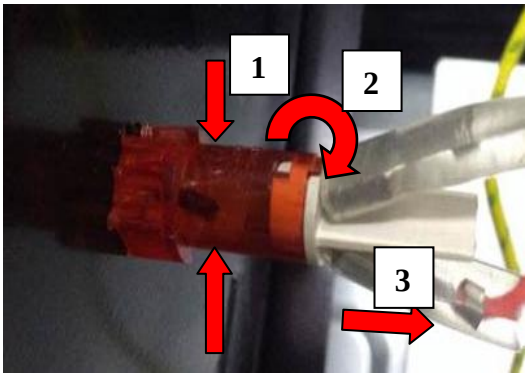
Step 2: Pull the **knobs** out of the control panel assembly by hands.
(Model: Mechanical knob.)

Step 3: Use a screwdriver to remove the screws on control panel holder (on the back of knob decoration ring), remove the **knob assembly** by screwing it off the control panel holder. Pull the knob out of the knob assembly by hands, and then you can disassemble the function knob and telescopic button. (Model: Telescopic knob.)

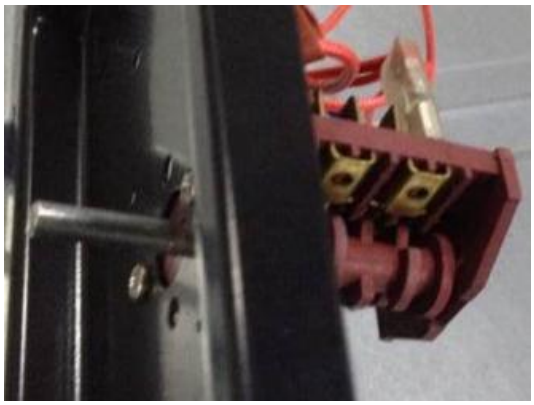




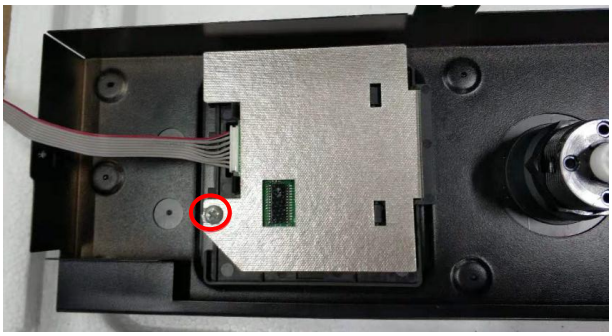
Step 4: Press the clips on both sides of the **indicator,** meanwhile rotate the indicator to the aligned position with the hole on the control panel holder, and pull the indicator out of the it (Model: Mechanical type.)

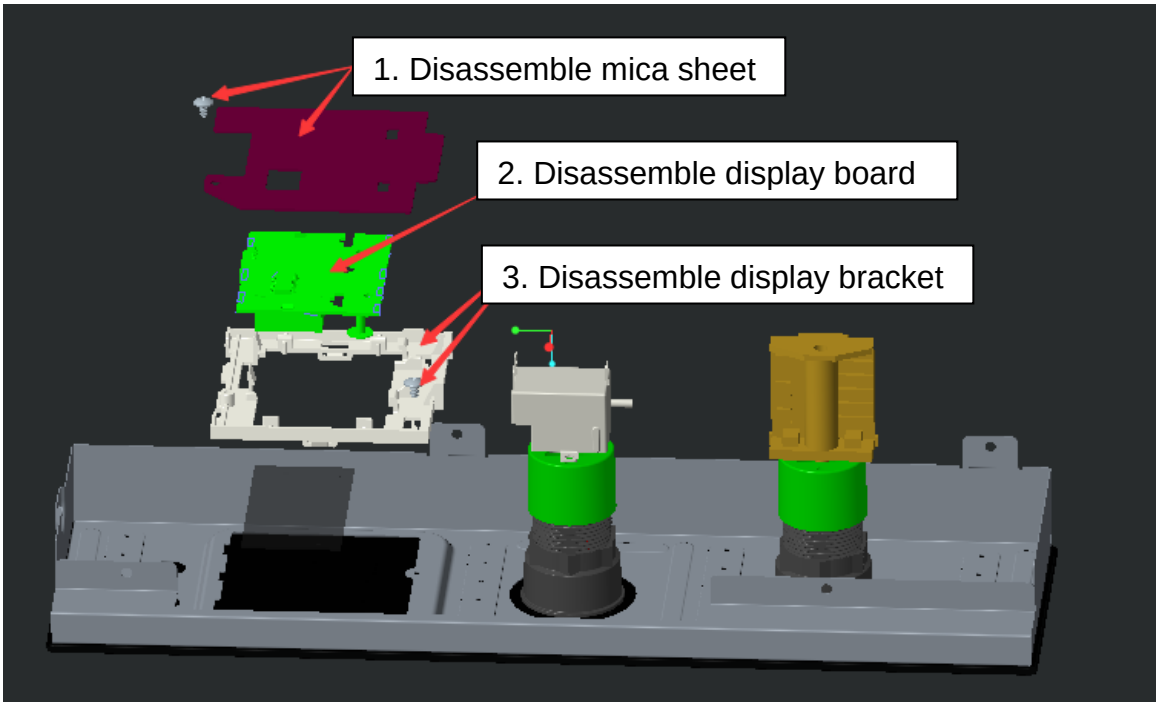


Step 5: Use a screwdriver to remove the screws which fixed the **electric components** on the control panel. (Model: 93M90M1.)



Step 6: Use a screwdriver to remove the screws which fixed the **electric components** on the control panel. (Model: 93M90D0.)





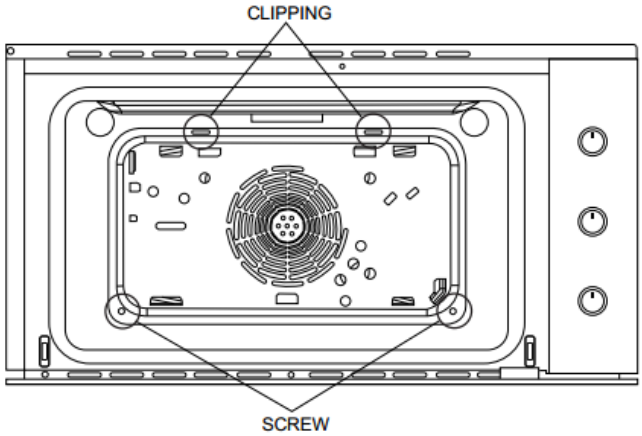
6.6 Disassembly of convection motor, turbo heating element

WARNING: Turn off the electrical power supply to the appliance prior to servicing it. Failure to disconnect the power supply during service may result in an electrical shock or fire hazard.

Step 1: Remove the door from oven (please refer to Point 6.3.1), and put it horizontally on the table.

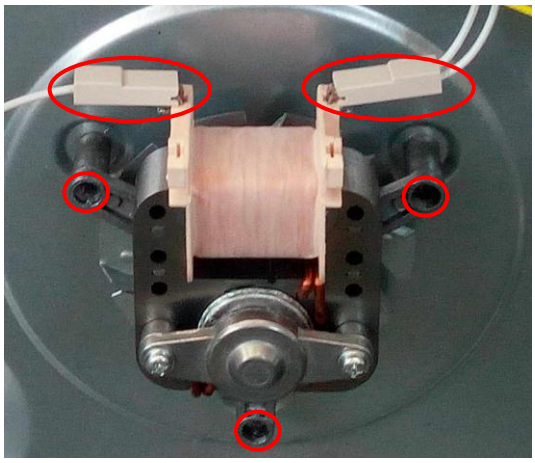
Step 2: Disassemble the cover (Back) (please refer to Point 6.4).

Step 3: Use a screwdriver to remove the screws on the cavity inside to disassemble the **convection motor cover**, and then pull it out from the clipping hole.

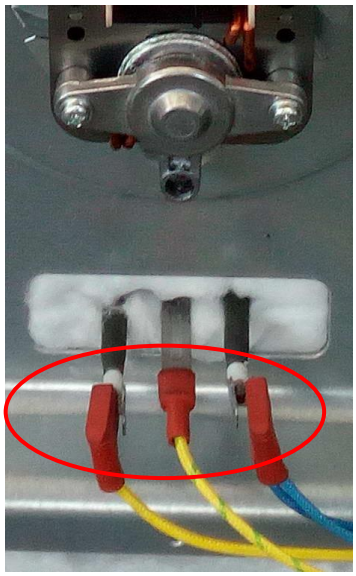


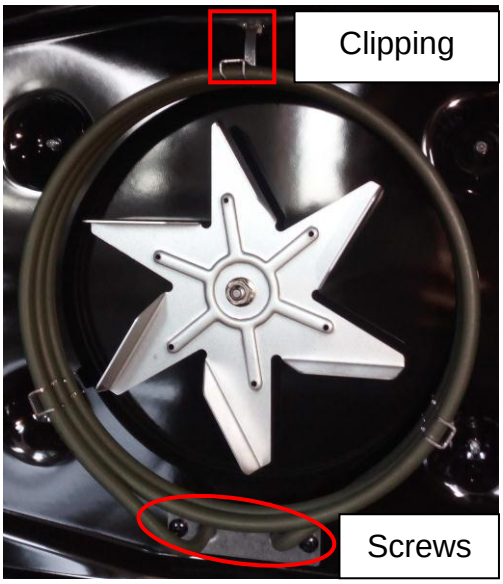
Step 4: Use a spanner or a nut-driver to rotate the nut on the convection motor clockwise so that the nut be taking out, and then take the **fan blade** and washer out of the convection motor.

Step 5: Disconnect the wires on the **convection motor.** For the sake of reassembly convenience, please mark the connection positions before moving the wires. Remove the screws fixed the convection motor.



Step 6: Disconnect the wires from the **turbo heating element**. For the sake of reassembly convenience, please mark the connection positions before moving the wires. Remove the screws on the turbo heating element, and then take it out of from the clipping hole.



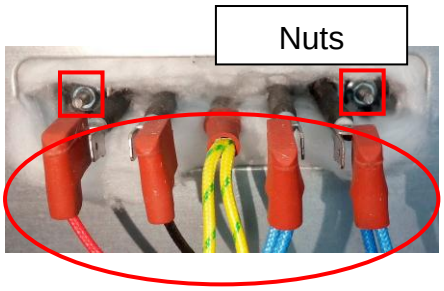


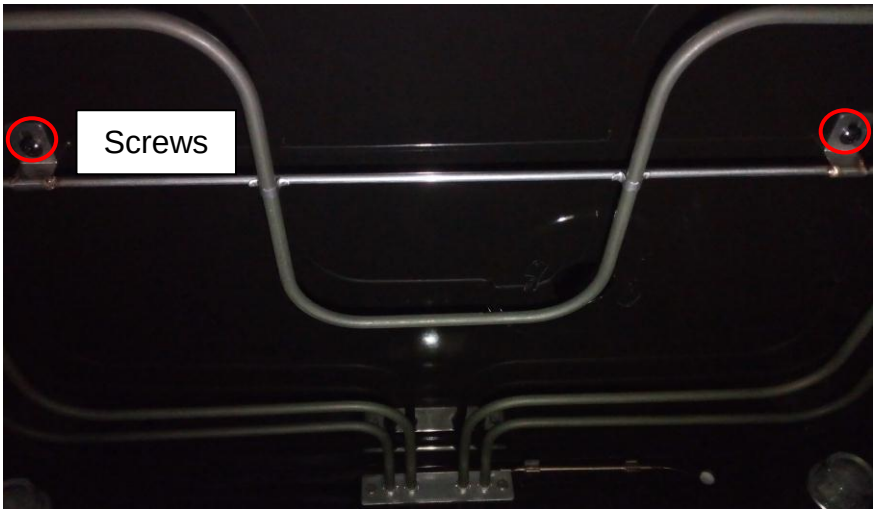
6.7 Disassembly of top, bottom heating element

Step 1: Remove the door from oven (please refer to Point 6.3.1), and put it horizontally on the table.

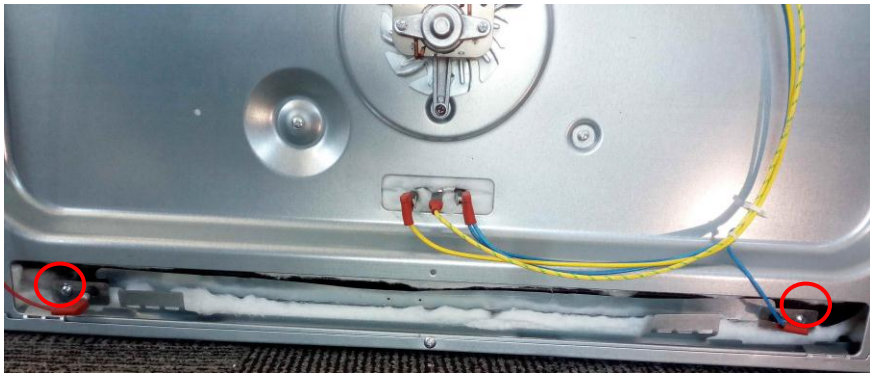
Step 2: Disassemble the cover (Back) (please refer to Point 6.4).

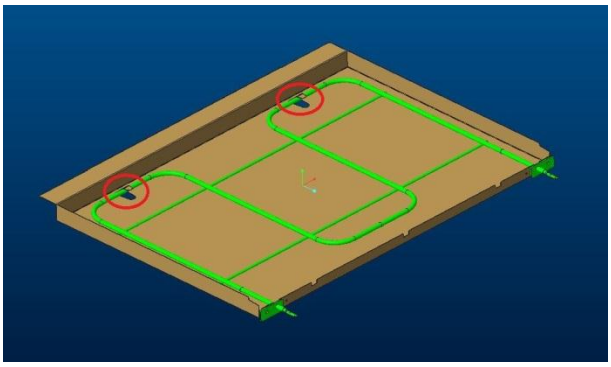
Step 3: Disconnect the wires on the **top heating element**. For the sake of reassembly convenience, please mark the connection positions before moving the wires. Use a nut-driver to remove the nuts fixed top heating element (on the back of the cavity).Remove the screws on the top heating element, and then pull it out from the inside of the cavity.



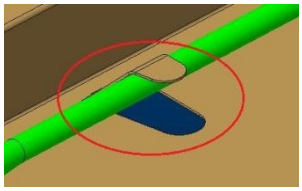


Step 4: Disconnect the wires on the **bottom heating element**. For the sake of reassembly convenience, please mark the connection positions before moving the wires. Remove the screws from the bottom heater cover，and then pull the bottom heater assembly out from the bottom.





Then, push up the buckle of heater cover to take out the bottom heater.



6.8 Disassembly of cooling fan motor

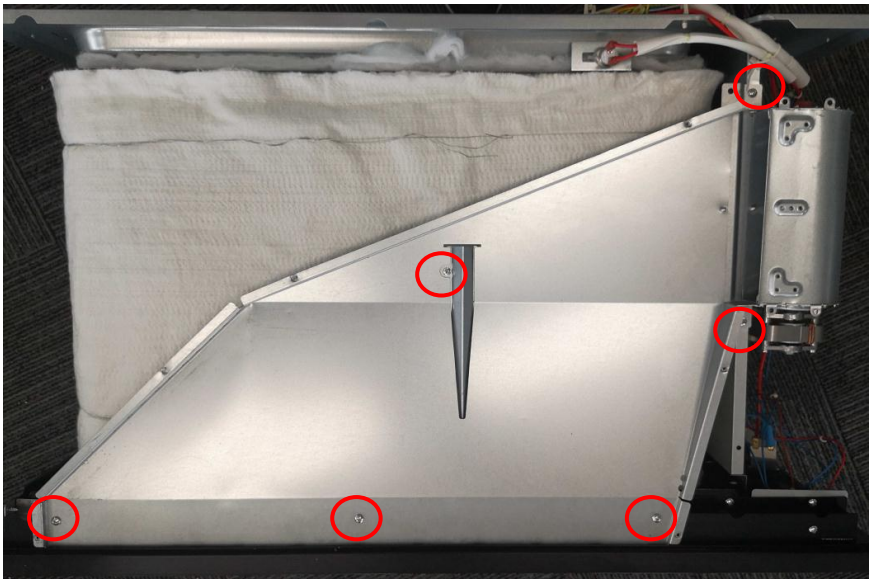
WARNING:

1 Turn off the electrical power supply to the appliance prior to servicing it. Failure to disconnect the power supply during service may result in an electrical shock or fire hazard.

2 Access the cooling fan motor requires that oven's covers were removed. When the covers were removed, the oven's printed circuit assemblies are exposed. The printed circuit assemblies contain electronic components that are sensitive to electro-static discharge (ESD). So you must wear a properly grounded antistatic wrist strap when touching or servicing the cooling fan motor.

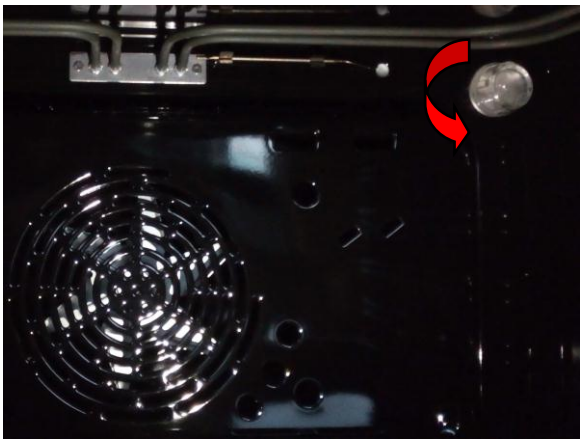
Step 1: Disassemble the covers (Right/Left/Back → Upper) (please refer to Point 6.4).

Step 2: Disconnect wires on the **cooling motor**. For the sake of reassembly convenience, please mark the connection positions before moving the wires. Remove the screws connected cooling fan motor (or cooling fan cover) and insulation cover (or upper aluminum bracket, or exhaust duct), and then disassemble the motor.



6.9 Disassembly of lamp

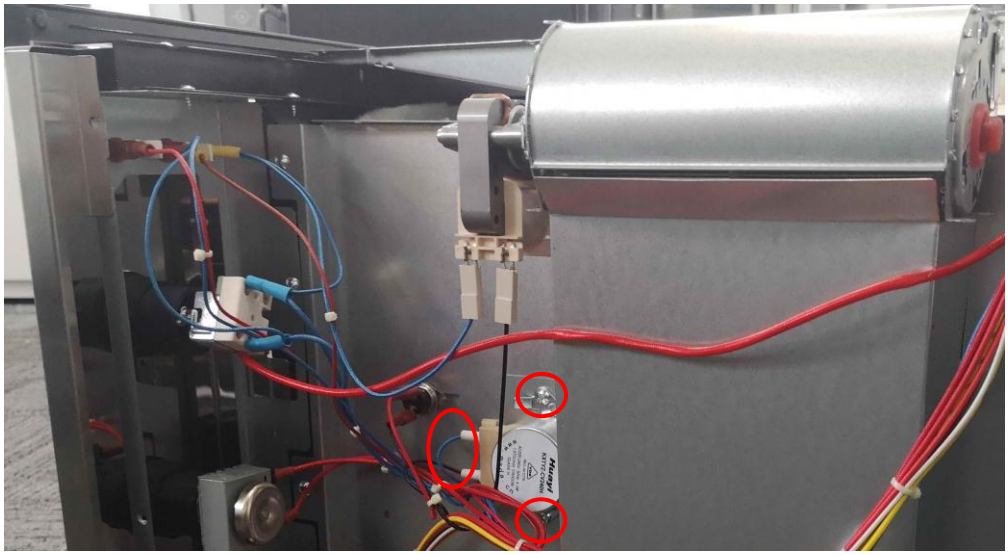
Step: Open the door to the maximum angle. Remove the bulb by screwing the lamp cover off the cavity only if the bulb is required to be replaced.



6.10 Disassembly of rotary motor

Step 1: Disassemble the cover (Right) (please refer to Point 6.4).

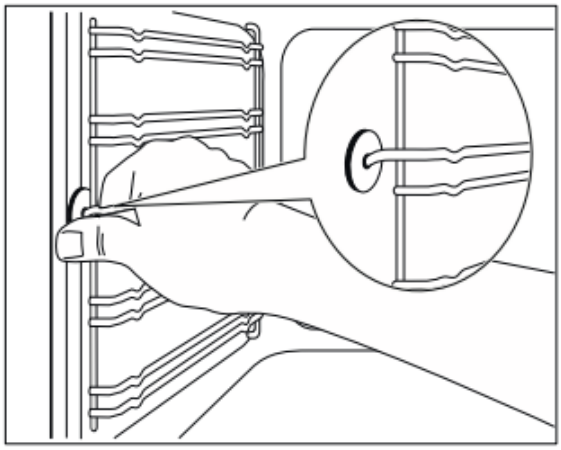
Step 2: Disconnect wires on the **rotary motor**. For the sake of reassembly convenience, please mark the connection positions before moving the wires. Remove the screws connected the motor and insulation cover, and then disassemble the motor.

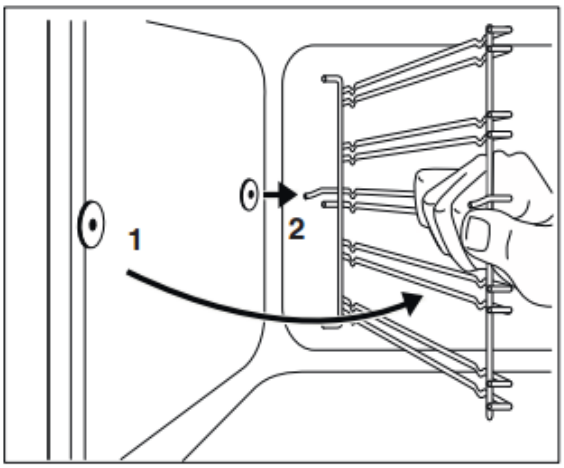


6.11 Disassembly of rail bracket, slider

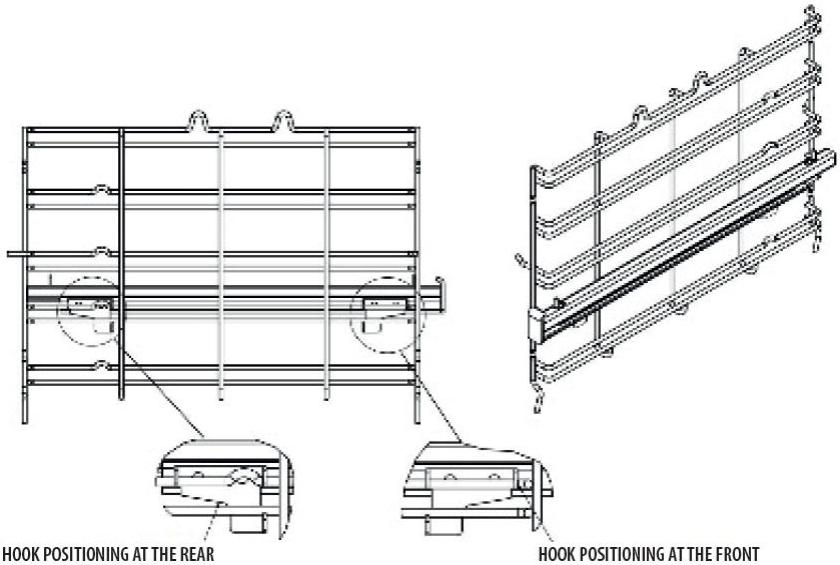
Step 1: Remove the door from oven (please refer to Point 6.3.1), and put it horizontally on the table.

Step 2: Hold the front of **rail bracket** and pull it out (See the left figure). After the front hook is pulled out of the hole, take out the rail bracket from the clipping hole (See the right figure).





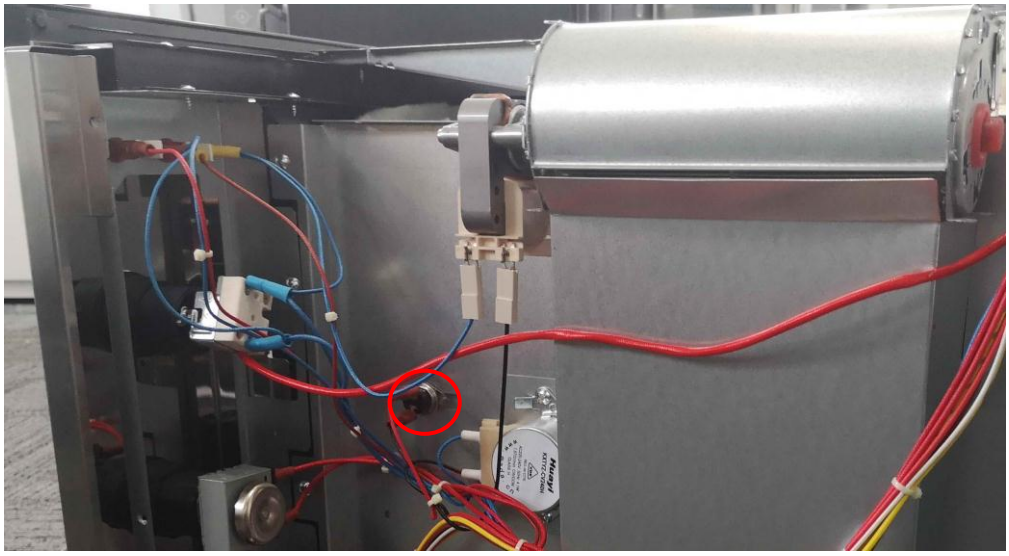
Step 3: Pull out the lower part of the **slider** by hand, and then remove the slider. You can change the position of the slider and move it onto every level of rail bracket. (See the following figure).



6.12 Disassembly of thermostat

Step 1: Disassemble the covers (Right/Left/Back → Upper) (please refer to Point 6.4).

Step 2: Disconnect wires on the **thermostat**. For the sake of reassembly convenience, please mark the connection positions before moving the wires. Remove the screws connected the thermostat and insulation cover (on right side of cavity) or thermostat bracket (above the cavity), and then disassemble the thermostat.



7. Troubleshooting

OPERATIONAL DIFFICULTIES AND POSSIBLE CAUSES				
Symptom	**Cause / Source**	**Troubleshooting Checks**	**Solution**	**User Actions / Solutions**
Oven will not heat.	Oven is set for delay timed cooking	Oven will turn on automatically at preset time. Press CANCEL to return to normal operation.	Oven will turn on automatically at preset time. Press CANCEL to return to normal operation.	Oven will turn on automatically at preset time. Press CANCEL to return to normal operation.
	Not open heating element	Check elements at harness connection point.	Replace elements or replace harness if needed.	Call for service.
	Door not shut tightly. Or oven is in BROIL mode.	Check for obstructions, and close door tightly. Check cooking mode.	Check for obstructions, and close door tightly. Check cooking mode.	Check for obstructions, and close door tightly. Check cooking mode.
No time is displayed or the time is incorrect.	Time of day is not set.	Set clock.	Set clock.	Set clock by reference of user manual
Oven does not self-clean	Door not shut tightly.	Check for obstructions, and close door tightly	Check for obstructions, and close door tightly	Check for obstructions, and close door tightly
	Error code displayed.	Check the error codes list to find the cause, and clear error code.	Check the error codes list to find the cause, and clear error code.	Check the error codes list to find the cause, and clear error code.
	Oven set for delay timed cleaning.	Oven will start to self-clean at preset time. Press CANCEL to return to normal operation.	Oven will start to self-clean at preset time. Press CANCEL to return to normal operation.	Oven will start to self-clean at preset time. Press CANCEL to return to normal operation.
Oven lamp will not work.	Oven is in the SELF-CLEAN cycle.	Wait for completion of self-clean cycle.	Wait for completion of self-clean cycle.	Wait for completion of self-clean cycle.
	Light bulb was burned out.	Replace light bulb.	Replace light bulb.	Replace light bulb.
Door will not open.	Oven is in SELF-CLEAN, or self-clean cycle has ended and oven is cooling.	Check display. If display indicates PYA, wait for completion of self-clean cycle. When self-clean cycle has ended, please wait 10 minutes to cool down.	Check display. If display indicates PYA, wait for completion of self-clean cycle. When self-clean cycle has ended, please wait 10 minutes to cool down.	Check display. If display indicates PYA, wait for completion of self-clean cycle. When self-clean cycle has ended, please wait 10 minutes to cool down.
Door Outer Glass Broken.	Damaged after shipping.	Check packaging condition	Replace door glass.	Call for service.
Door Inner Glass Broken.	Damaged after shipping.	Question for incident details.	Replace door glass	Call for service.
	Cold item placed on hot glass	Question for incident details.	Replace door glass	Call for service.
	Item dropped on window pack	Question for incident details.	Replace door glass	Call for service.
Food is burnt or oven bakes uneven.	Food placed in oven during Pre-heat	Check the food is not in oven before Pre-heat	Educate customer not to put food into oven during pre-heat	Verify the food is not in oven before Pre-heat
	Use of BROIL mode	Check cooking mode.	Educate customer to verify cooking mode.	Verify cooking mode
	Food may be too close to the heating element.	Check position of bake rack or bake tray	Educate the customer on right position of bake rack or bake tray by reference of user manual	Put the bake rack or bake tray on right position
	Temperature setting too high for recipe or quantity of food	Check temperature setting. Verify temperature setting against recipe.	Educate customer on right setting temperature	Check temperature setting. Verify temperature setting against recipe