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Service Manual

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Order Number MOP00100019C2

Service Manual

Microwave Oven

INVERTER
SYSTEM INSIDE

- NN-L750WB/NN-L760WB

27L

WHITE

EPG Continental Europe

UPG France

Specification

Power Source	230VAC Single Phase 50Hz
Power Requirements	Micro : 1250W Grill: 1350W Convection: 1470W Combination: 2770W
Output (IEC705-88)	Micro : 1000W Grill: 1300W Convection: 1400W
Microwave Frequency	2450Mz
Timer	99 Minutes 99 Seconds
Oven Cavity Size	27L
Outside Dimensions	510mm (W) x 477mm (D) x 304mm(H)
Inside Dimensions	359mm (W) x 352mm (D) x 217mm(H)
Weight	15Kg
Specifications subject to change without notice	

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic®

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

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1 Inverter Warning

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The inverter board looks like a regular PCB, however, this PCB drives the magnetron tube using very high voltages and current.

It has

1. Very high voltage and high current
2. An Aluminium heat sink that becomes very hot
3. The capacitors on the inverter circuit will contain a high voltage charge even when the oven is not operating.

Do not

1. Do not touch the circuitry as it contains very high voltages. When replacing the board please take extreme care to avoid possible electric shock. High voltages may remain in the circuit.
2. Do not touch the aluminium heat sink as it will become very hot. It also contains high voltages.
3. Do not attempt to repair the inverter PCB as this can be very dangerous. Replace the high voltage inverter circuit as a complete unit. Return the old unit fully repacked in the original shipping box and completed paper work.
4. Do not adjust or tamper with the preset volume on the inverter board. It is very dangerous to adjust this preset without proper test equipment.
5. Do not test the oven while the inverter grounding strip or screws are loose. It is very dangerous to operate the inverter circuit board with out a proper ground connection.

Figure 1

Inverter Power Supply Diagram

Figure 2

Inverter Layout

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2 Feature Chart

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	NN-750WB	NN-750WB	NN-760WB	NN-760WB
Function	EPG	UPG	EPG	UPG
Microwave	4	4	4	4
Grill	1	1	1	1
Convection	17	17	17	17
Combination	Yes	Yes	Yes	Yes
Weight Defrost	2	2	2	2
Weight Combination	8	8	5	5
Weight Reheat	1	1	-	-
Weight Cook	2	2	2	2
Weight Crisp	-	-	5	5
Stage Cooking	1 Stage	1 Stage	1 Stage	1 Stage
Delay / Stand	Yes	Yes	Yes	Yes
Clock	24 Hour	24 Hour	24 Hour	24 Hour
Word Prompt	*1	French	*1	French

*1 None, Italian, Spanish, Dutch, French, Greek, Portuguese, Polish, English

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3 Control Panels

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4 Operation And Digital Programmer Circuit Test Procedure

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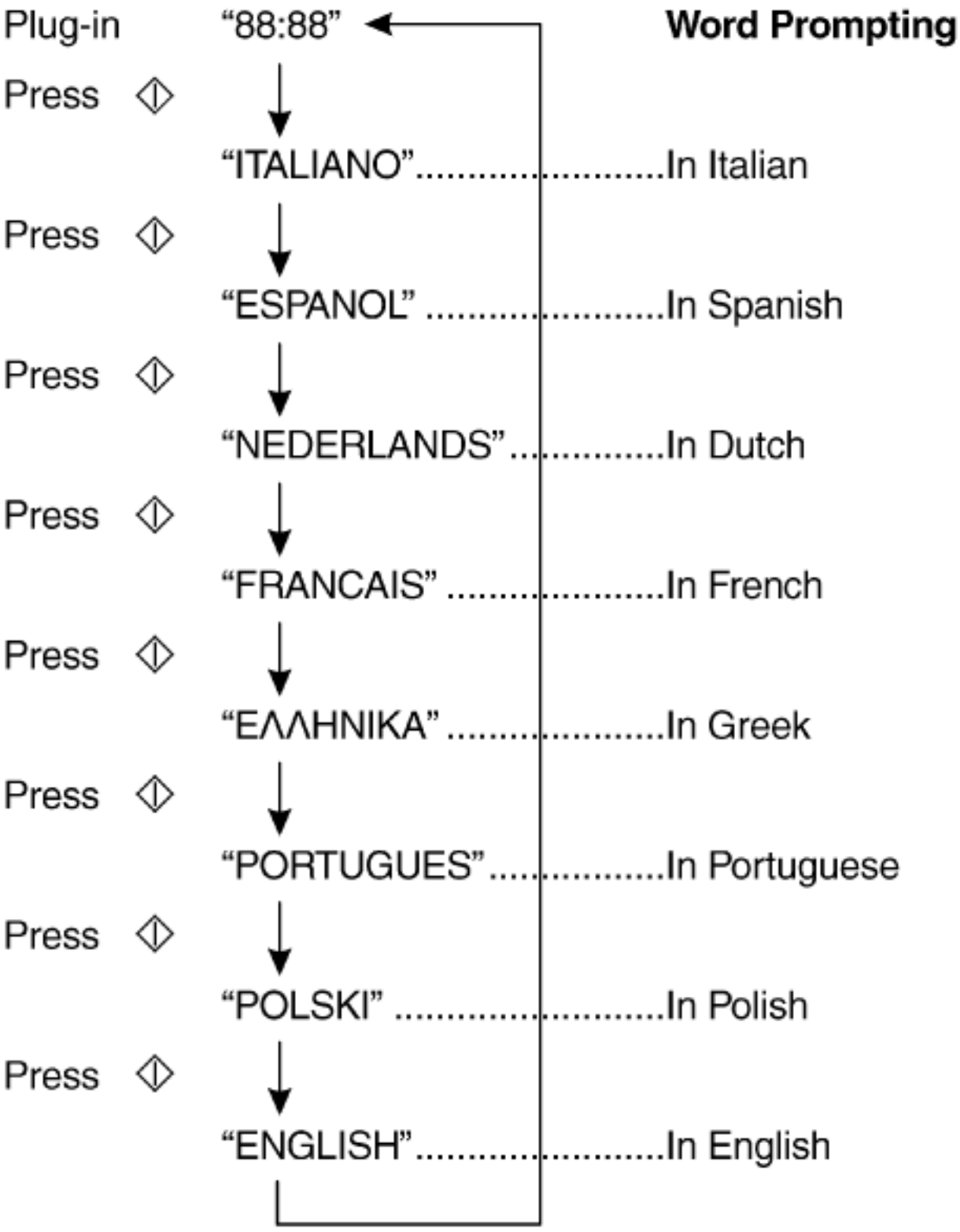
4.1 Word Prompting



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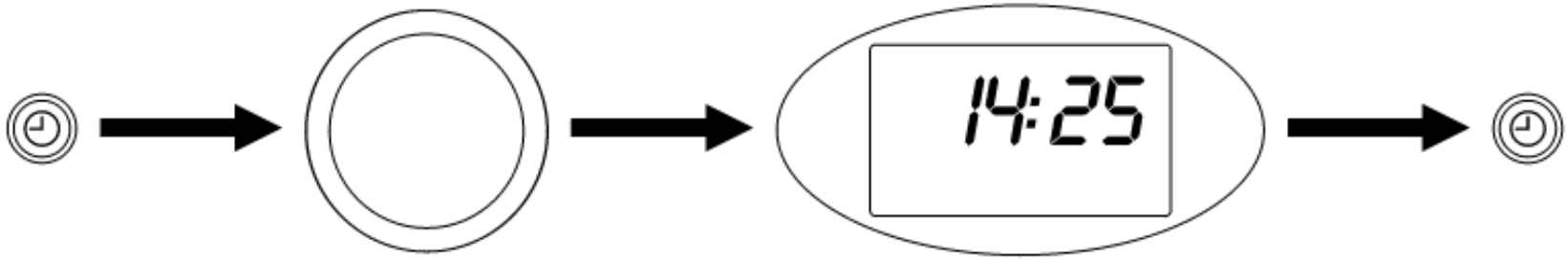
4.2 Setting the Clock

Example: To set 14:25



- **Press Clock/Timer Button twice.**
  - ☛ The colon starts to blink.
- **Enter the time by turning the Time/Weight Dial.**
  - ☛ The time appears in the display and the colon blinks.
- **Press Clock/Timer Button.**
  - ☛ The colon stops blinking and the time of day is entered.

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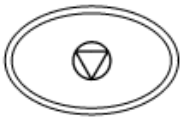
4.3 Child Safety Lock

To set:



- **Press Start Button three times.**
  - ☛ The time of day will disappear.
    Actual time will not be lost.
    A k is indicated in the display

To cancel:

- **Press Stop/Cancel Button three times.**
  - ☛ The time of day will reappear in the display.

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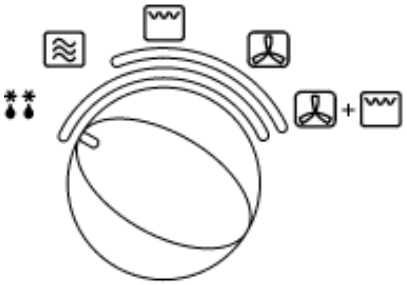
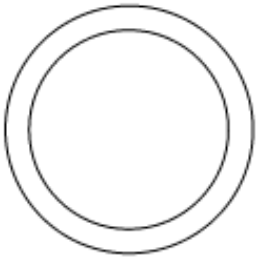
4.4 Microwave Cooking and Defrost

Manual Defrost Power:





Manual Defrost Power:

- **Turn Mode Selector Dial to Microwave Power.**
- **Select Power level by pressing Microwave Power Selector Button.**
- **Set the cooking time using the Time/Weight Dial.**
  (High power: up to 30 minutes
  Other powers: up to 99 minutes.)
  The display will alternate between the start prompt, the power level and the set cooking time. The microwave symbol will also be displayed.
- **CAUTION: The oven will automatically operate on 1000 W Microwave Power if a cooking time is entered without selecting the power level.**
- **Press Start Button.**

4.5 Grill Operation

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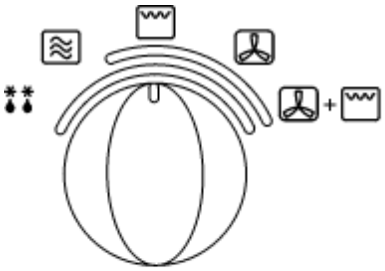
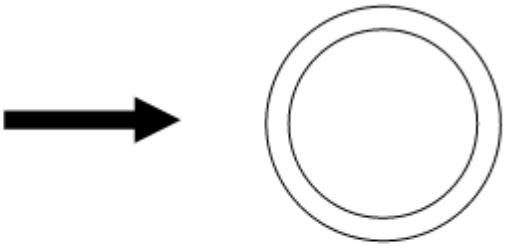
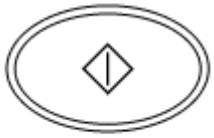


● **Turn Mode Selector Dial to Drill setting.**



● **Set the cooking time using the Time/Weight Dial (up to 99 minutes).**
The display will alternate between the start prompt and the set cooking time. The grill symbol will also be displayed.



● **Press Start Button.**

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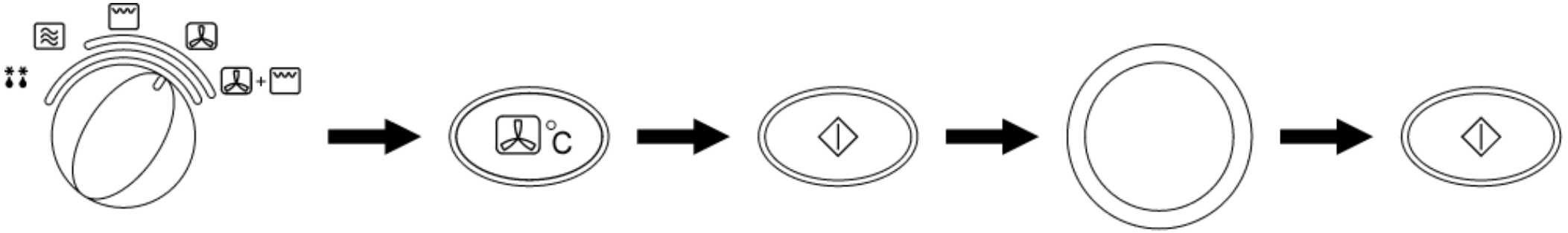
4.6 Convection with Preheating



- Turn Mode Selector Dial to Convection setting.
- Select Convection temperature by pressing Convection Temperature Selector Button.
- Press Start Button to start preheating.
- After preheating, place the food in the oven. Set the cooking time using the Time/Weight dial (up to 9 hours, 90 minutes).
- Press Start Button.

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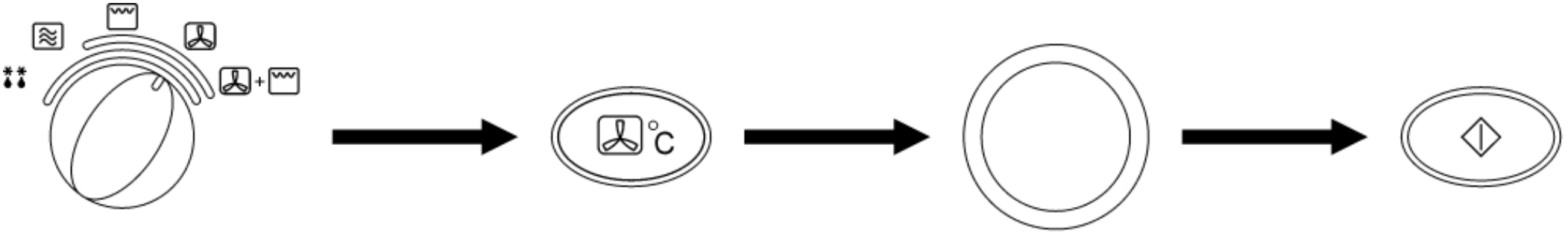
4.7 Convection without Preheating

TOP PREVIOUS NEXT



- Turn Mode Selector Dial to Convection setting.
- Select Convection temperature by pressing Convection Temperature Selector Button.
- Set the cooking time using the Time/Weight dial (up to 9 hours, 90 minutes).
- Press Start Button.

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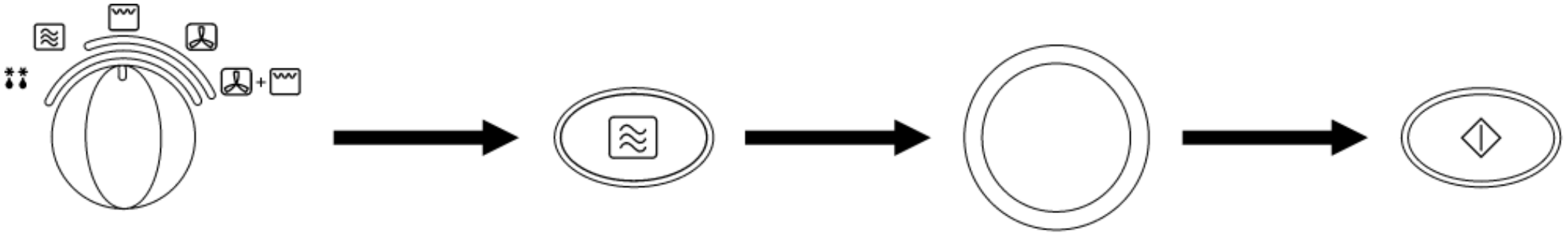
TOP PREVIOUS NEXT

4.8 Combination Cooking (Grill and Microwave)



- Turn Mode Selector Dial to Grill Power.
- Select Microwave Power level by pressing Microwave Power Selector Button.

1 press	600 W	3 presses	250 W
2 presses	440W	4 presses	100 W

- Set the cooking time using the Time/Weight dial (up to 9 hours, 90 minutes).
- Press Start Button.

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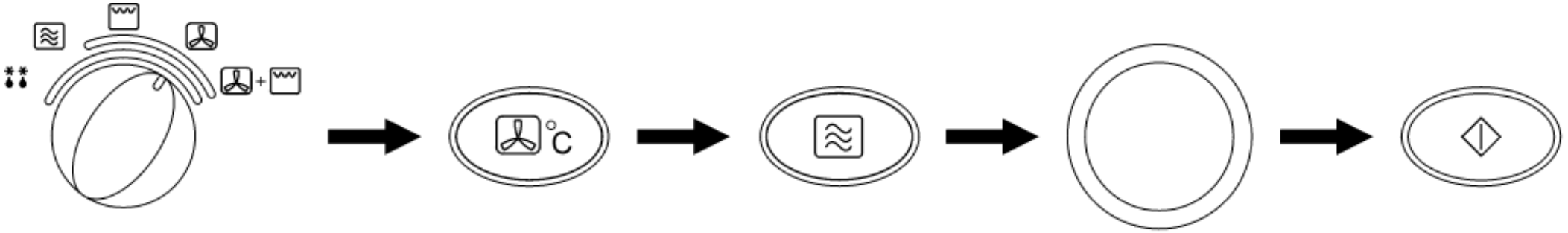
4.9 Combination Cooking (Convection and Microwave)

TOP PREVIOUS NEXT



- Turn Mode Selector Dial to Convection setting.
- Select Convection temperature by pressing Convection Temperature Selector Button 100 - 250°C.
- Select Microwave Power level by pressing Microwave Power Selector Button.
- Set the cooking time using the Time/Weight dial (up to 9 hours, 90 minutes).
- Press Start Button.

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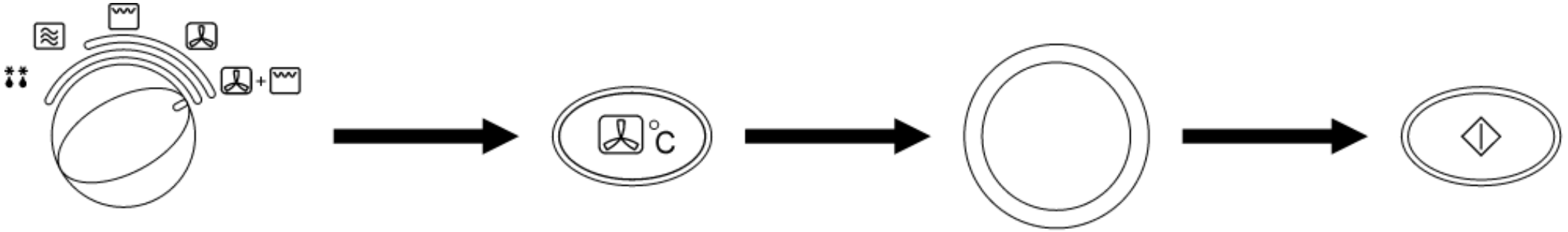
TOP PREVIOUS NEXT

4.10 Combination Cooking (Convection and Grill)



- Turn Mode Selector Dial to Convection and Grill setting.
- Select Convection temperature by pressing Convection Temperature Selector Button 100 - 250°C.
- Set the cooking time using the Time/Weight dial (up to 9 hours, 90 minutes).
- Press Start Button.

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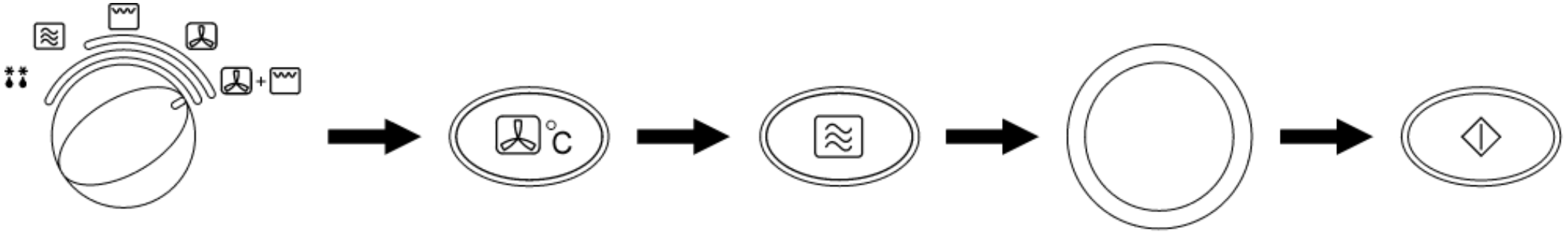
4.11 Combination Cooking (Convection, Grill and Microwave)

TOP PREVIOUS NEXT



- Turn Mode Selector Dial to Convection and Grill setting.
- Select Convection temperature by pressing Convection Temperature Selector Button 100 - 250°C.
- Select Microwave Power level by pressing Microwave Power Selector Button.
- Set the cooking time using the Time/Weight dial (up to 9 hours, 90 minutes).
- Press Start Button.

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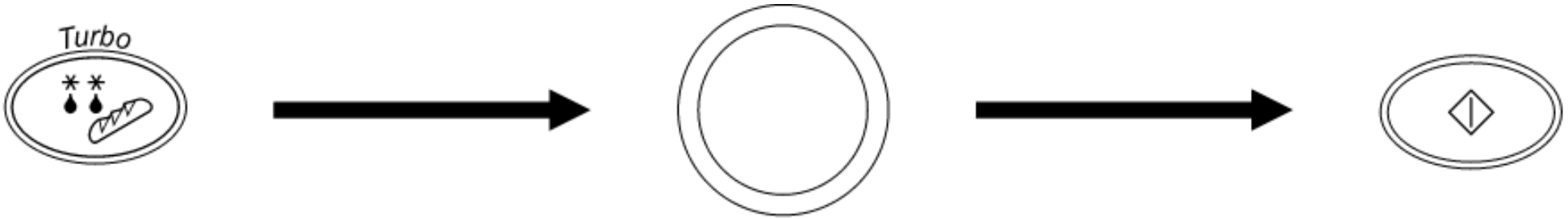
4.12 Auto Defrost



- **Select the desired Auto Defrost Program.**
  1 press for small pieces
  2 presses for big pieces
  3 presses for bread and rolls
- **Set the weight of the frozen food by using the Time/Weight Dial.**
  Turn clockwise, weight counts up in 10g increments.
  Turn anti-clockwise, weight counts down in 10g increments.
- **Press Start Button.**

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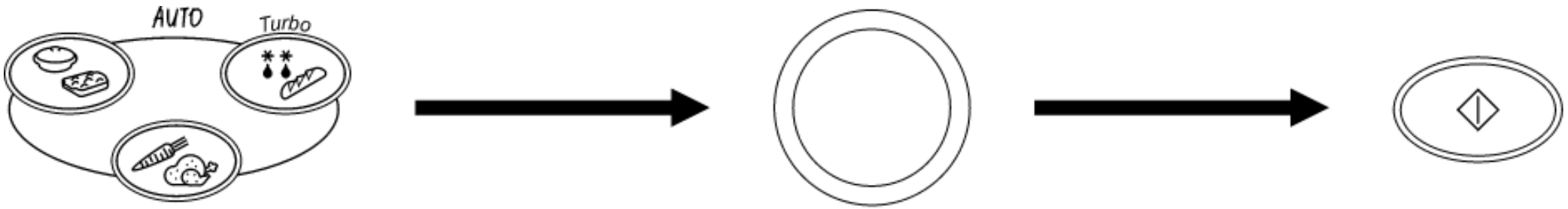
4.13 Auto Weight Programs



● **Select the desired Auto Weight Program.**

● **Set the weight of the frozen food by using the Time/Weight Dial.**
Turn clockwise, weight counts up in 10g increments.
Turn anti-clockwise, weight counts down in 10g increments.
The start prompt will be indicated.

● **Press Start Button.**

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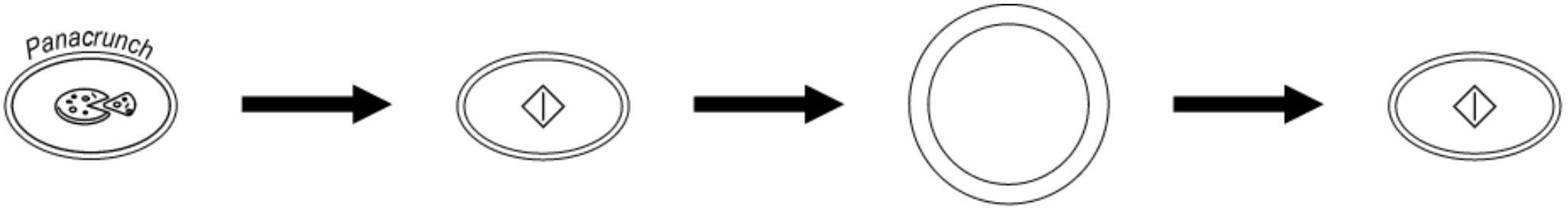
4.14 Auto Weight Program Panacrunch (NN-L760WB)



- Select the Fresh Quiche Program (4 presses) and place the pizza pan in the oven, directly on the glass tray.
- Press the Start Button to pre-heat the pizza pan.
- After pre-heating beeps sound. Place the fresh quiche in the pan, set weight.
- Press Start Button.

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5 Schematic Diagram

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6 Wiring Diagram

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7 Description of Operating instruction

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TOP PREVIOUS NEXT

7.1 Variable power cooking control

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The HIGH VOLTAGE INVERTER POWER SUPPLY controls the output power by a signal from the digital Programmer circuit DPC. The power relay (RY1) turns on to supply power to the inverter circuit. The level of output power is controlled by the drive signallevel form the inverter circuit.

NOTE1: The ON/OFF time ratio does not correspond with the percentage of microwave power since approximately 2 seconds are required for heating the magnetron filament./ NOTE: 2 If microwave cooking is over 8 minutes onHIGH power, the fan motor rotates for 1 minute after cooking to cool the oven and electrical components.

Duty cycles for microwave cooking

	Output	Duty ON/OFF	
		ON time	OFF time
High	1000W	22”	0”
Defrost	440W	16”	6”
Medium	600W	22”	0”
Low	440W	22”	0”
Simmer	440W	15”	7”
Warm	440W	8”	14”

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TOP PREVIOUS NEXT

7.2 Grill Cooking

TOP PREVIOUS NEXT

The digital programmer circuit controls the grill power by operating the power relay RY4 in the sequence shown in the table below

Duty cycles for Grill Cooking

	Duty ON/OFF	
	ON Time	OFF Time
Grill 1	33”	0”

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TOP PREVIOUS NEXT

7.3 Auto weight defrost, Auto weight Cook

When an auto control feature is selected and the start pad pressed:

1. The digital programmer circuit determines the power level and the cooking time and indicates the operating state in the display. The table shows the corresponding cooking times for each category and its respective weight.

2. When the cooking time in the display window has elapsed, the oven turns off automatically via the control signal from the digital programmer circuit.

   Note: After auto cooking if the oven temperature is over the predetermined temperature the fan motor rotates to cool the oven and its components.

Auto Weight Defrost

Category	1st Touch Weight	Cooking Time
Small Pieces	300g	5m 51s
Big pieces	600g	11m 30s
Bread and Rolls	100g	3m 54s

Auto weight Cook NN-L750WB/NN-L760WB

Category	1st Touch Weight	Cooking Time
1.Fresh Fish	300g	4m
2.Fresh Vegetables	500g	12m 35s
3.Chicken	1000g	16m 40s
4.Beef	800g	23m 26s
5.Pork or Veal	1000g	28m 20s
6.Lamb	1200g	28m 16s

Auto weight Reheat NN-L750WB

Category	1st Touch Weight	Cooking Time
1.Fresh meal	500g	3m 35s
2.Frozen Pizza	400g	8m 28s
3.Frozen Quiche	400g	11m 32s
4.Frozen Gratin/Lasagne	400g	12m

Panacrunch Programs NN-L760WB

Category	1st Touch Weight	Cooking Time
1.Frozen Pizza	300g	9m 58s
2.Fresh Pizza	300g	8m 42s
3.Frozen Quiche	300g	11m 30s
4.Fresh Quiche	300g	6m 54s
5.Frozen Oven Fries	300g	14m 1s

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TOP PREVIOUS NEXT

7.4 Convection Cooking

1. The digital programmer circuit operates the power relays RY3,RY5 and RY6 in the sequence as shown in the figure below.

2. When the oven reaches a predetermined temperature the digital programmer circuit stops supplying power to relay RY5, resulting in the convection heater turning off.

3. When the temperature drops below the predetermined temperature, the digital programmer circuit supplies power to power relay RY5 resulting in the convection heater turning on.

   Note: After the convection process, if the oven temperature is higher than the predetermined temperature, the fan motor rotates to cool the electronic components and the oven.

Figure1

Convection Cooking Duty Cycles

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7.5 Combination Cooking

Combination cooking is achieved by operating the microwave and heater modes together during one cooking cycle. There are three combination modes.

1. Combination (convection and microwave)

2. Combination (grill and microwave)

3. Combination (grill, convection and microwave)

The digital programmer circuit operators the power relays as shown in the figures below.

When the oven temperature reaches the predetermined temperature, the digital programmer circuit stops supplying power to relay (RY5) resulting in the convection heater turning off. During this time the digital programmer circuit continues to operaterelay (RY1) so that microwave activity continues at the duty cycle selected. The inverter control signal level is also maintained. The microwave activity continues to cycle until the entire cooking program is completed.

When the oven temperature drops below the selected temperature, the digital programmer circuit operates power relay (RY5) switching on the heater elements.

In the case of grill combination the sequence applies with the digital programmer circuit switching power relay (RY4) to control, the grill elements.

With convection, grill and micro power combination. The grill elements and convection elements are operated alternatively whilst the oven temperature is above the selected level.

Convection And Microwave
Combination Duty Cycles

Convection Heater	Micropower			
100 - 250 C		OUTPUT	ON	OFF
	600W	600W	22	0
	440W	440W	22	0
	250W	440W	15	7
	100W	440W	8	14

Grill And Microwave Combination Duty
Cycles

Grill Heater			Micropower			
	ON	OFF		OUTPUT	ON	OFF
Grill 1	66	0	600W	600W	22	0
Grill 2	48	18	440W	440W	22	0
Grill 3	36	30	250W	440W	16	7
			100W	440W	8	14

Grill Convection And Microwave Combination Duty Cycles

Convection Heater	Grill Heater			Micropower			
100 - 250 C		ON	OFF		OUTPUT	ON	OFF
	Grill 1	48	18	600W	600W	22	0
				440W	440W	22	0
				250W	440W	15	7
				100W	440W	8	14

Figure 1

Convection And Microwave Duty Cycles

Figure 2

Grill and Microwave Duty Cycles

Figure 3

Grill, Convection And Microwave Duty Cycles

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8 Cautions to Be Observed When Troubleshooting

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Unlike many other appliances, the microwave oven is a high voltage, high current is device. Though it is free from danger in ordinary use, extreme care should be taken during repair.

Caution

Servicemen should remove their watches whenever working close to or replacing the magnetron.

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8.1 Check the grounding

Do not operate on a two wire extension cord. The microwave oven is designed to be used when grounded. It is imperative, therefore, to ensure the appliance is properly grounded before beginning repair work.

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8.2 Inverter Warnings

DANGER, HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LINE) OF THE INVERTER POWER SUPPLY (U)

This high voltage inverter power supply handles very high voltage and very high current for the magnetron tube. Though it is free from danger in ordinary use, extreme care should be taken during repair. As you can see, it looks like a TV flybacktransformer, however, the current is extremely large and is therefore, dangerous due to this high current and high voltage.

The aluminium heat sink is also energized with high voltage (HOT), so do not touch when the AC input terminal is connected. The power devices (Collector) is directly connected to the aluminium heat sink.

The aluminium heat sink may be (HOT) due to heat energy, therefore, extreme care should be taken during servicing.

Figure 1

HV Inverter warning

WARNING FOR INVERTER POWER SUPPLY (U) GROUNDING

Check the high voltage inverter power supply circuit grounding. This high voltage inverter power supply circuit board must have a proper chassis ground, the inverter grounding bracket must be connected to the chassis. If the inverter board is notgrounded it will expose very high voltages and cause extreme DANGER! Be sure that the inverter circuit is properly grounded via the inverter earth bracket.

Figure 2

Grounding of the inverter circuit board

WARNING! DISCHARGE THE HIGH VOLATGE CAPACITORS

For about 30 seconds after the oven is turned off, an electric charge remains in the high voltage capacitors in the inverter power supply circuit board.

When replacing or checking parts, remove the power plug from the outlet and short the inverter output terminal of the magnetron filament terminals to the chassis ground with an insulated handle screwdriver to discharge. Please be sure to touch thechassis ground side first and then short to the output terminals.

Figure 3

Discharging the high voltage capacitors

WARNING

There is high voltage present with high current capabilities in the circuits of the primary and secondary windings, choke coil and heat sink of the inverter. It is extremely dangerous to work on or near these circuits with the oven energized. DONOT measure the voltage in the high voltage circuit including the filament voltage of the magnetron.

WARNING

Never touch any circuit wiring with your hand nor with an insulated tool during operation.

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8.3 When parts must be replaced, remove the power plug from the outlet.

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8.4 When the 10A fuse is blown due to the operation of the short switch:

WARNING

when the 10A 250V fuse is blown due to the operation of the short switch, the primary latch switch and short switch must be replaced. It is also important to change the power relay 1 (RY1) when the continuity test shows shorted contacts.

1. This mandatory. Refer to “adjustments and measurements” for the location of these switches.

2. When replacing the fuse, confirm that it has the appropriate rating for these models.

3. When replacing faulty switches, be sure the mounting tabs are not bent, broken or deficient in their ability to hold the switches.

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8.5 Avoid inserting nails, wire etc. through any holes in the unit during operation.

Never insert a wire, nail or any other metal object through the lamp holes on the cavity or any holes or gaps, because such objects may work as an antenna and cause microwave leakage.

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8.6 Confirm after repair

1. After repair or replacement of parts, make sure that the screws of the oven, etc. are neither loose nor missing. Microwaves might leak if screws are not properly tightened.

2. Make sure that all electrical connections are tight before inserting the plug into the wall outlet.

3. Check for microwave energy leakage. (Refer to procedure for measuring microwave energy leakage).

CAUTION MICROWAVE RADIATION

DO NOT BECOME EXPOSED TO RADIATION FROM THE MICROWAVE GENERATOR OR OTHER PARTS CONDUCTING MICROWAVE ENERGY

IMPORTANT NOTICE

The following components have potentials above 250V while is appliance is operated.

- Magnetron
- High voltage transformer (Located on inverter (U))
- High voltage diodes (Located on inverter (U))
- High voltage capacitors (Located on inverter (U))

Pay special attention in these areas.

When the appliance is operated with the door hinges or magnetron fixed incorrectly, the microwave leakage can reach more than 5mW/cm3. After repair or exchange, it is very important to check if the magnetron and the door hingesare correctly fixed.

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8.7 Sharp Edges

Caution

Please use caution when unpacking, installing or moving the unit, as some exposed edges may be sharp to touch and cause injury if not handled with care.

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9 Parts Replacement Procedure

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9.1 Magnetron

1. Discharge the high voltage capacitors on the inverter circuit.
2. Remove the screw holding the air guide
3. Remove the two screws holding the tie bar
4. Remove the oven lamp and lead wire harness cables form the air guide A.
5. Remove the air guide A
6. Disconnect the two high voltage leads from the magnetron
7. Remove the four screws holding the magnetron

NOTE: After replacing the magnetron, tighten the mounting screws making sure that there is no gap between the waveguide and the magnetron to prevent microwave leakage.

Caution

When replacing the magnetron, ensure that the antenna gasket is in place.

Note

The magnetron used for this model is unique for the inverter power supply system. Make sure to use the one as listed in the parts list.

Figure 1

Removal of the magnetron

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9.2 Inverter power supply (U)

1. Discharge the high voltage capacitors
2. Remove two screws holding the tie bar.
3. Unplug the H.V. Lead wires from the magnetron
4. Remove the one screw holding the earth wire to the magnetron
5. Remove the connector CN701 and CN702 from the inverter PCB
6. Remove the two screws holding the inverter base to the chassis (See figure 2)
7. Carefully remove the inverter PCB and support base from the oven.
8. Remove the air guide E by un-clipping the catch hooks
9. Remove the four screws holding the PCB to the inverter support base.

Caution when replacing the inverter power supply (U)

1. Make sure that grounding plate is in place
2. Securely tighten the grounding screw through the side of the chassis (Base).
3. Securely connect the 3 lead wire connectors
4. Make sure that the heat sink has enough space (gap) from the oven. Take care not to touch any lead wire to the aluminium heat sink because it is hot.

Figure 2

Removal of the inverter PCB

Figure 3

Disconnecting the PCB lock connector

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9.3 Digital Programmer Circuit (DPC)

TOP PREVIOUS NEXT

NOTE: Ground any static electric built up on your body before handling the DPC.

1. Disconnect all connectors from the DPC.
2. Remove the two screws holding the escutcheon base and slide the escutcheon base upward slightly. removal is easier with the door open.
3. Release the flat cable.
4. Remove the six screws holding the DPC DU assembly
5. Remove the door lever
6. Remove the seven screws holding the DPC AU assembly

Figure 4

Removal of DPC AU and DPC DU

•@

TOP PREVIOUS NEXT

9.4 Low voltage transformer and/or power relays (RY1)

Note

Be sure to ground your body to discharge any static before handling the DPC.

1. Using a solder wick or a de soldering tool and a 30W soldering iron, carefully remove all solder from the terminal pins of the low voltage transformer and/or power relays.

2. With all of the terminal pins cleaned and separated from the DPC contacts, remove the defective transformer/power relays and install the new components making sure that the terminal pins are inserted completely. Carefully re solderall terminal contacts carefully.

Note

Do not use a soldering iron or de soldering tool of more than 30 watts on DPC contacts

•@

9.5 Fan Motor

1. Remove two screws and remove the tie bar
2. Disconnect the two lead wires from the fan motor terminals
3. Disconnect all lead wires from the noise filter
4. Remove the noise filter
5. Remove the air guide by removing the two screws
6. Remove the two screws holding the orifice assembly
7. Remove the two screws holding the fan motor assembly
8. Detach the orifice assembly and the fan motor assembly from the oven assembly.
9. Remove the fan blade from the fan motor by pulling outward.

Figure 6

Removing the fan motor

•@

9.6 Door disassembly

1. Remove door C from door E by carefully pulling outward starting from the upper right hand corner using a flat blade screwdriver.

2. Remove four screws holding the door E to the door A assembly

3. Remove the door screen B by carefully un-clipping the screen from the door A catch hooks. Care must be taken not to damage these hooks during disassembly.

4. Remove the door key and spring form the door E

After replacement of the defective component parts of the door, reassemble it and follow the instructions below for proper installation and adjustment so as to prevent excessive microwave leakage.

1. When mounting the door to the oven, be sure to adjust the door parallel to the bottom line of the oven face plate by moving the upper hinge in the direction necessary for proper alignment.

2. Adjust so that the door has no play between the inner door surface and the oven front surface. if the door assembly is not mounted properly, microwave power may leak from the clearance between the door and oven.

3. Perform the microwave leakage test.

Figure 7

Disassembly of the door

Figure 8

Adjusting the door hinge

•@

9.7 Turntable Motor

TOP PREVIOUS NEXT

1. Remove the motor cover by breaking off at the 8 spots indicated by the arrows.
2. Disconnect the two lead wires connected to the turntable motor
3. Remove the turntable motor by removing the two screws

Note: After breaking off the motor cover, make sure that cut-off portions are properly trimmed off or bent inside so that no sharp edges are exposed.

Note: To secure the motor cover use a 4 x 6 screw.

Figure 9

Removing the turntable motor cover

Figure 10

Two screws to remove the turntable motor

•@

TOP PREVIOUS NEXT

9.8 Quartz Heater

TOP PREVIOUS NEXT

1. Disconnect the lead wires from the heater terminals
2. Remove one screw holding the heater supports
3. Remove the heater

Figure 11

One screw to remove the grill bracket

Figure 12

Removing the grill element

•@

TOP PREVIOUS NEXT

9.9 Convection Element And Circulation Fan Motor

1. Remove the four screws A holding the rear heater cover.
2. Remove the wire terminals from the thermal cutout, circulation fan motor and the convection elements.
3. After removing the rear heater cover, remove the three screws B holding the inner heater cover.
4. Un clip the metal tags to remove the inner heater cover.
5. Remove the two screws C holding the convection assembly, push upwards to remove.
6. To remove the convection element remove the one screw E on the convection bracket A and 2 screws D on convection bracket B
7. Release the circulation fan nut to remove the circulation fan blade.
8. Remove the three screws F to release the circulation fan motor assembly.

Figure 13

Disassembly of the rear convection assembly

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9.10 Temperature Sensor

1. Remove lead wire plug from connector CN7
2. Remove 1 screw holding temperature sensor
3. Replace temperature sensor and lead wire as a complete unit.

Figure 14

Removing the temperature sensor unit

•@

10 Component Test Procedure

TOP PREVIOUS NEXT

Caution

1. High voltage is present at the high voltage terminal of the inverter unit, including the aluminium heat sink.

2. It is not necessary or advisable to attempt to measure this high voltage.

3. Before touching any oven components, or wiring, always unplug the oven from its power source and discharge the high voltage capacitors.

•@

TOP PREVIOUS NEXT

10.1 Primary Latch Switch, Secondary Latch Switch and power relay B interlocks.

TOP PREVIOUS NEXT

1. Unplug the lead connectors to power relay B and verify the continuity of the power relay B 1-2 terminals.

2. Unplug the lead connectors to the primary latch switch and secondary latch switch.

3. Test the continuity of the switches with the door open and closed with an ohm meter on the lowest scale.

   Normal continuity readings should be as followed.

	Door Open	Door Closed
Primary Latch Switch	infinite Ω(Open)	0Ω (Close)
Secondary Latch switch	infinite Ω(Open)	0Ω (Close)
Power relay B	infinite Ω(Open)	infinite Ω (Close)

•@

TOP PREVIOUS NEXT

10.2 Short Switch and Monitor Circuit

1. Unplug the lead wires from the HV inverter primary terminals.

2. Connect the test probes of the ohm meter to these leads

3. Test the continuity of the short switch with the door open and the door closed using the lowest ohm scale.

	Door Open	Door Closed
Monitor switch	0Ω	infinte Ω

•@

10.3 Magnetron

Continuity checks can only indicate an open filament or a shorted magnetron. To diagnose an open filament or shorted magnetron.

1. Isolate the magnetron from the circuit by disconnecting the HV leads

2. A continuity check across the magnetron filament terminals should indicate one ohm or less

3. A continuity check between each filament terminal and the magnetron case should read open.

•@

10.4 Push Button Keyboard

Check the continuity between the switch terminals, by tapping an appropriate pad on the keyboard. The keypad matrix is shown on Key Board Matrix .

•@

10.5 Inverter Power Supply

Caution

DO NOT try to repair this inverter power supply). Replace as a whole H.V. Inverter Unit.

Inverter Power Supply Diagram

Figure 3

•@

10.6 Inverter Power Supply Unit

Warning

Do not attempt to make any measurements in the high voltage circuitry of the inverter or magnetron.

See troubleshooting of the inverter circuit and magnetron on to determine if the inverter power supply is still functioning.

•@

10.7 Temperature Sensor

A temperature sensor is mounted on the oven cavity on the right hand side. The resistance reading across the thermistor should read 300K ohm within a temperature range of 10 to 30 degrees centigrade. This would be the temperature range within akitchen environment. If the resistance measured is outside this range the thermistor is defective and should be replaced.

NOTE: When measuring the resistance of the thermistor disconnect the connector from the digital programmer circuit.

NOTE: If the microwave oven has been operated allow to cool to room temperature before attempting to measure the thermistor resistance.

•@

11 Measurements and Adjustments

TOP PREVIOUS NEXT

Warning

- For continued protection against radiation hazard, replace only with identical parts.
- When the 10 amp fuse is blown due to the operation of the short switch, you must replace the primary latch switch and short switch. Then follow the installation procedures below.
- Interlock switch replacement - In replacing faulty switches, be sure mounting tabs are not bent, broken or otherwise deficient in their ability to hold the switches.
- Refer to the schematic and wiring diagram to ensure proper connection

•@

TOP PREVIOUS NEXT

11.1 Installation of primary latch switch, secondary latch switch and short switch.

1. When mounting the primary latch switch, secondary latch switch and short switch to the door hook assembly. Follow the instructions in figure 1.

   NOTE: No specific adjustment during the insulation of each switch into the door hook is necessary.

2. When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of the arrow in figure 1. Ensuring the door does not have any play in it. Check for play by pulling the door assembly. Makesure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the door hook assembly to the oven assembly.

3. Reconnect the short switch, primary switch and secondary latch switches and check the continuity of the monitor circuit and latch switches by following the component test procedures on page.

•@

11.2 Measurement of microwave output

The output power of the magnetron can be determined by performing the IEC standard test. However, due to the complexity of the IEC test procedures, it is recommended to test the magnetron using the simple method outlined below.

Necessary equipment:

- 1 liter beaker
- Glass thermometer
- Wrist watch or stop watch

NOTE: Check the line voltage under load. Low voltage will lower the magnetron output. Take the temperature readings and heating time as accurate as possible.

1. Fill the beaker with exactly one liter of tap water. Stir the water using the thermometer and record the beakers temperature (Recorded as T1)
2. Place the beaker on the center of the glass cook plate.
3. Stir the water again and read the temperature of the beaker (Recorded as T2)
4. The normal temperature rise at the high power position for each model is shown in the table. (Figure 2)

Figure 1

Adjustment of latch switch assembly

TABLE (1L - 1min test)

RATED OUTPUT	TEMPERATURE RISE
1000W	8°C

12 Troubleshooting guide

Caution

1. Do not try to repair this H.V. Inverter power supply. Replace as a whole unit. When returning the inverter unit pack in the original inverter box.

2. Do not adjust the preset volume on the H.V. Inverter. It is very dangerous to repair or adjust without sufficient test equiptment, this circuit handles very high volatge and current

3. Ensure a good ground connection before beginning any troubleshooting

4. Be careful of the high voltage circuit and take necessary precautions when troubleshooting

5. Discharge the high voltage capacitors on the inverter.

6. When checking the continuity of the switches on the H.V. inverter, disconnect one lead wire from these parts and then check the continuity with the AC plug removed. To do otherwise may result in a false reading or damage to your meter. Whendisconnecting a plastic connector from a terminal, you must hold the plastic connector and not the lead wire, otherwise the lead wire may become open circuit.

7. Do not touch any parts of the circuitry on the digital programmer cicruit, since static electric discharge may damage this control panel.

   Whilst working on this board ensure that that your body is connected to ground to discharge any static charge.

8. 240 VAC is present on the digital programmer circuit. (Terminals of the power relays and the primary circuit of the low voltage transformer). When troubleshooting, be cautious of possible electric shock.

Before troubleshooting, operate the microwave oven following the correct operating procedures in the instruction manual in order to find the exact cause of any trouble, since operator error may be mistaken for the ovens malfunction.

Figure 1

Troubleshooting (No Operation)

Figure 2

Troubleshooting (Fuse is blown)

Figure 3

Troubleshooting (Other problems)

Figure 4

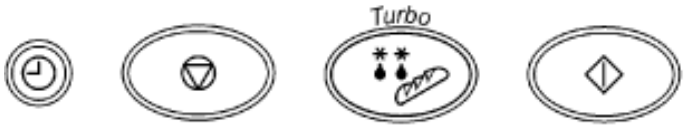
Troubleshooting of Inverter Circuit (U) and Magnetron NEW H.V.

Oven shuts down after approximately 15 or 33 seconds.

If the microwave oven shuts down after a short time in micropower mode, conduct the following test.

The microwave oven must be set in test mode to active the self diagnostic failure code system.

SELF TEST MODE



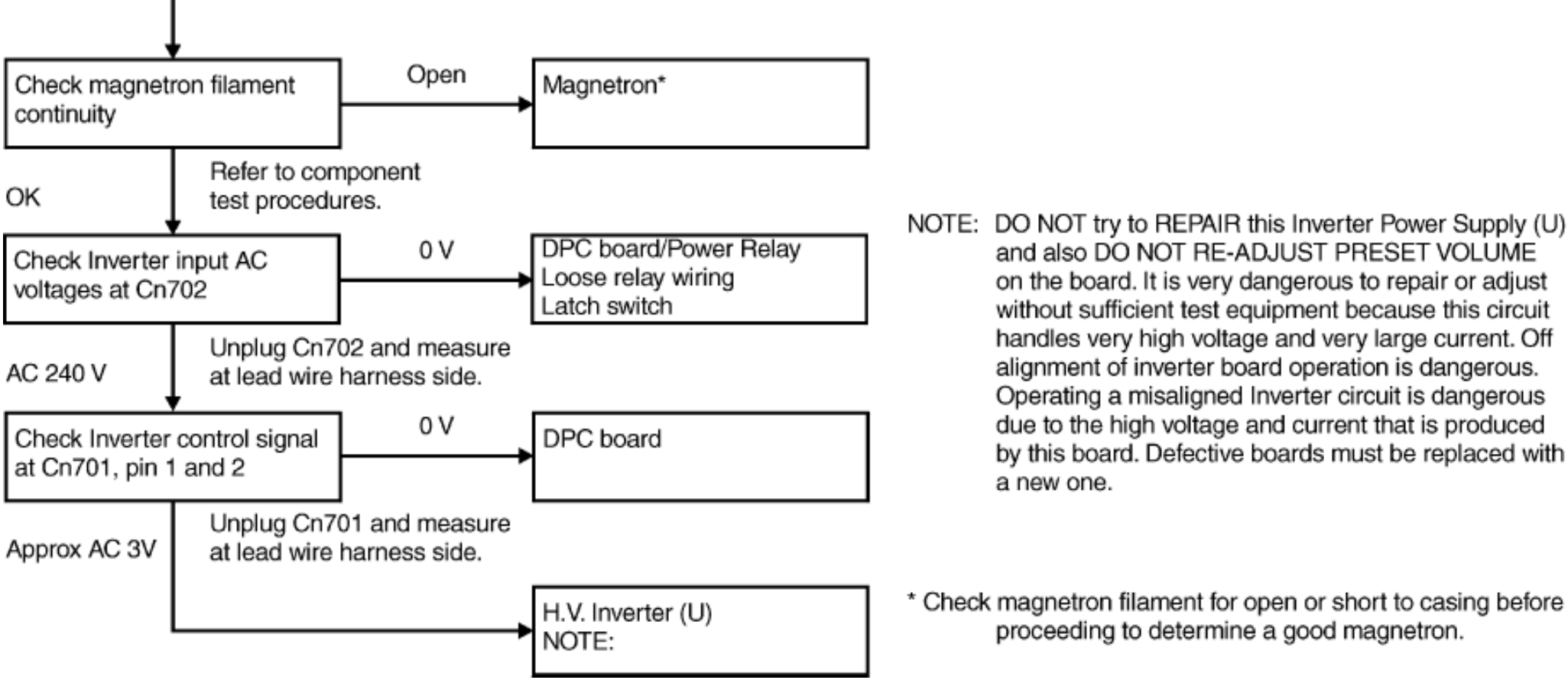
NN-L750WBEPG	NN-L750WBUPG	NN-L760WBEPG	NN-L760WBUPG
4N1EPG	4N1UPG	4N4EPG	4N4UPG

When the oven is set in test mode place water load in oven, set micropower to high and time to 1minute, press start.

H97, H98 appears in display window a short time after start key is pressed and there is no microwave oscillation.

H97, H 98 appears in the display window

DANGER
HIGH
VOLTAGE



Troubleshooting Inverter by Input out voltage

Figure 5

Troubleshooting Inverter by Microwave Oven Input Current

•@

TOP PREVIOUS NEXT

13 Digital Programmer Circuit Troubleshooting Guide

Figure 2

How to test the semiconductors

•@

14 Main Parts List

TOP PREVIOUS NEXT

1. Part numbers are indicated on most mechanical parts. Please use these part numbers for part orders. Do not use the description of the part.

Important safety notice

1. Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only the manufacturers specified parts.

Ref. No.		Part No.	Part Name & Description	Qty	Remarks
1		XTWANE 4 + 8BN	Screw	1	
2		E41194V00BP	Exhaust Guide D	1	
3		E6061002	Strike	1	
4		XTWANE 4+8BN	Screw	1	
5		E10584V00BP	Back Plate Cover A	1	
6		E41074V00BP	Exhaust Guide B	1	
7		AEE0964000BK	Cushion Rubber	1	
8	⚠	E61454V00BP	Thermal Cut-Out	1	
9		XTWANE 4+8BN	Screws	3	
10		E66804V00BP	Heater Cover B	1	
11		E22424V00BP	Adiabatic Material A	1	
12	⚠	E490S4V00BP	Circulation Fan Motor	1	
13		E41804V00BP	Motor Bracket	1	
14		XTBANE 4+8BN	Screws	3	
15		E41594V00BP	Cooling Fan	1	
16		E41614V00BP	Fan Spacer A	1	
17		XTWANE 4+8BN	Screws	3	
18		XTBANE 4 + 8BN	Screws	2	
19		E66794V00BP	Heater Cover A	1	
20	⚠	E630H4V00GP	Heater Unit	1	
21		E22394V00BP	Circulation Fan	1	
22		E41634V00BP	Fan Spacer C	1	

23		XNG4EVSL	Nut	1	
24		E64174V00BP	Heater Bracket A	1	
25		XTWANE 4 + 8BN	Screw	1	
26		E00069000EP	Warning Label	1	
27		E10594V00BP	Back Plate Cover B	1	
28		XTWANE 4+8BN	Screws	2	
29		E22594V00BP	Adiabatic Material D	1	
30	⚠	E030A4V00BP	Lead Wire Harness	1	
31	⚠	E67597550GP	10A Fuse	1	
32	⚠	AEE6230P10GN	16A Fuse	1	
33		E607X4N30BP	Noise Filter	1	
34	⚠	E400A4760JP	Fan Motor	1	
35		E41444N30BP	Upper Orifice	1	
36		E42094N30BP	Lower Orifice	1	
37		E4008-1640	Fan Blade	1	
38		E09020000AF	Cushion Rubber	1	
39		E09020000AA	Cushion Rubber	1	
40		E20994N30BP	Reinforcement Bracket A	1	
41		E40474N30BP	Air Guide A	1	
42	⚠	E610T6700BP	Lamp Assembly	1	
43		E22364V00BP	Right Hand Heater Panel	1	
44		XTW4 +12T	Screw	1	
45		E31374830AP	Hook Spacer B	1	
46		E31384830AP	Hook Spacer C	1	
47	⚠	E61425180AP	Secondary Latch Switch	1	L-3C2-2
48	⚠	E61785180AP	Short Switch	1	L-2C2-2
49	⚠	AEE6142-1450	Primary Latch Switch	1	V-16G-3C26-M
50		E30208000BP	Door Hook	1	
51		AEE9108820GN	Holder	1	
52		XTWANE 4+ 12B	Screws	4	For Magnetron
53	⚠	2M236-M42G	Magnetron	1	
54		E22434V00BP	Adiabatic Material	1	
55		XTWANE 4 + 8BN	Screw	1	
56		AEE0926000AN	Cushion Rubber	1	

57		E66014V00BP	Inverter Earth Bracket	1	
58		E65854V00BP	Inverter Support Bracket	1	
59	⚠	E606Y4V00GP	Inverter	1	
60		E09250000BD	Cushion Rubber	1	
61		E40474V00BP	Air Guide E	1	
62		E09020000AL	Cushion Rubber	1	
63		E10014N30BP	Base Plate	1	
64		E09272000AH	Cushion Rubber	1	
65		E09272000AM	Cushion Rubber	1	
66		E1008-1180	Rubber Foot	4	
67		E09270000AM	Cushion Rubber	1	
68		XTWA 4+12CF	Screws	6	
69		E110D4V00HBP	Outer Panel	1	
70		XTW 3+6B	Screws	2	
71	⚠	E63268960JP	Turntable Motor	1	
72		E01505870EP	Outer Panel Warning Label	1	
73		XTWA 4 + 12CF	Screw	1	
74		XTWA 4 + 12DF	Screw	1	
75		E30074L00GS	Lower Hinge	1	
76		AEE2177-F80	Pulley Shaft Washer	1	
77		E21315870GP	Pulley Shaft	1	
78		XST4 + W5V	Screw	1	
79		E20554L00GS	Cover A	1	
80		E30064N30BP	Upper Hinge	1	
81		XTWA 4+12CF	Screws	2	
82		E200A4V00BP	Oven cavity	1	
83		E64604N30BP	Heater Support Bracket	1	
84		E64604N30BP	Heater Support Bracket	1	
85		E03594N30GP	Lead Wire Grill Link	1	
86		XTWANE4 + 8BN	Screw	1	
87	⚠	E630G4N30GP	Quartz Heater	2	
88		E40244V00BP	Exhaust Guide A	1	
89		XTWANE 4+8BN	Screw	1	
90		E09230000AL	Cushion Rubber	1	

91		XTWANE 4+8BN	Screw	1	
92	⚠	E605A-1960	Temperature Sensor	1	
93	⚠	E900C5870GP	Power cord	1	
94	⚠	E030E4N30BP	H.V Lead Wire	1	
95		E90314V00BP	Holder	1	
96		E90314V00BP	Holder	1	
97		E67579000BP	Heater bracket D	1	
98		E66224L00GS	Outer Panel Spacer	1	
99		E09020000RE	Cushion Rubber	1	

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TOP PREVIOUS NEXT

15 Exploded View

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16 Door Assembly

TOP PREVIOUS NEXT

Ref. No.		Part No.	Part Name & Description	Qty	Remarks
D1		E30014V00HBP	Door A	1	
D2		E30214000AP	Door Key Spring	1	
D3		E30184L00GS	Door Key	1	
D4		E31464V00GP	Door Screen B	1	
D5	⚠	E302K4V00BP	Door E	1	
D6		E30854V00BP	Door Screen C	1	

NOTE: When ordering any Door component also order door C as this part may become damaged during disassembly.

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TOP PREVIOUS NEXT

17 Escutcheon Base

TOP PREVIOUS NEXT

Ref. No.		Part No.	Part Name & Description	Qty	Remarks
E1		E80724L10HBP	DOOR OPENING BUTTON	1	
E2		E80378AOAG	DOOR BUTTON SPRING	1	
E3		E80344V40HUP	ESCUTCHEON BASE	1	NN-L760WBEPG NN-L760WBUPG
E3		E80344V10HUP	ESCUTCHEON BASE	1	NN-L750WBEPG NN-L750WBUPG
E4		E83874L60HUP	START/STOP BUTTON	1	
E5		E82564L10BP	DOOR OPENING LEVER	1	
E6	⚠	E603Y4V00BP	DPC DU	1	
E7		E83094L60UP	PCB SPACER	1	
E8	⚠	E603L4V10EP	PCB ASSEMBLY AU	1	NN-L750WBEPG
E8	⚠	E603L4V10UP	PCB ASSEMBLY AU	1	NN-L750WBUPG
E8	⚠	E603L4V40EP	PCB ASSEMBLY AU	1	NN-L760WBEPG
E8	⚠	E603L4V40UP	PCB ASSEMBLY AU	1	NN-L760WBUPG
E9		E81274L60UP	ESCUTCHEON BACKPLATE	1	
E10		E80244V10HUP	OPERATION BUTTON	1	NN-L750WBEPG NN-L750WBUPG
E10		E80244V40HUP	OPERATION BUTTON	1	NN-L760WBEPG NN-L760WBUPG
E11		E80164L60UP	DISPLAY SPACER	1	
E12		E81894L60UP	DISPLAY WINDOW	1	
E13		E00074V10EP	NAMEPLATE	1	
E14		E83924L60HUP	SELECT KNOB	1	
E15		E80204L60HUP	T.S. KNOB	1	
E16		E66164L60UP	RIBBON CABLE	1	

NOTE: Please order the escutcheon base and name plate togetherNOTE: When replacing the silver escutcheon sheet ensure it is earthed to the escutcheon back plate via the earth stripNOTE: When replacing the stainless escutcheon assembly, be sure that the fascia is earthed to the back plate via the earth spring.

18 Packing And Accessories

TOP PREVIOUS NEXT

Ref. No.		Part No.	Part Name & Description	Qty	Remarks
P1		E06435870GS	Rubber foot	3	RED
P2		E060V8020BP	Wire rack low	1	
P3		E06435870GS	Rubber foot	3	BLACK
P4		E060V6520UP	Wire rack high	1	
P5		E06014N30BP	Glass tray	1	
P6		E00034V10UP	Operating instructions and cook book	1	NN-L760WBUPG NN-L750WBUPG
P6		E000B4V20EP	Cook book	1	NN-L760WBEPG NN-L750WBEPG
P7		E00034V10EP	Operating instructions	1	NN-L760WBEPG NN-L750WBEPG
P8		E0212-1520	Foam sheet	1	
P9		E06015020GP	32L Enamel Tray	1	
P10		E060W9040ET	Crispy pan	1	NN-L760WBEPG NN-L760WBUPG
P11		E01695750BP	Service center list	1	
P12		E290D4N00BP	Roller ring	1	
P13		E010859040BP	Crispy pan handle	1	NN-L760WBEPG NN-L760WBUPG
P14		E01134N30BP	Tray styrol	1	NN-L750WBEPG NN-L750WBUPG
P14		E01134N80EP	Tray styrol	1	NN-L760WBEPG NN-L760WBUPG
P15		E01084V00GP	Tray packing	1	NN-L750WBEPG NN-L750WBUPG
P15		E01084V40UP	Tray packing	1	NN-L760WBEPG NN-L760WBUPG
P16		E01024V10HEP	Carton box	1	NN-L750WB EPG
P16		E01024V10HUP	Carton box	1	NN-L750WB UPG
P16		E01024V40HEP	Carton box	1	NN-L760WB EPG
P16		E01024V40HUP	Carton box	1	NN-L760WB UPG
P17		E01054V00BP	Lower filler	1	
P18		E01066750BP	Vinyl Cover	1	
P19		E01076700BP	Door sheet	1	

P20		E01044V00BP	Upper filler	1	

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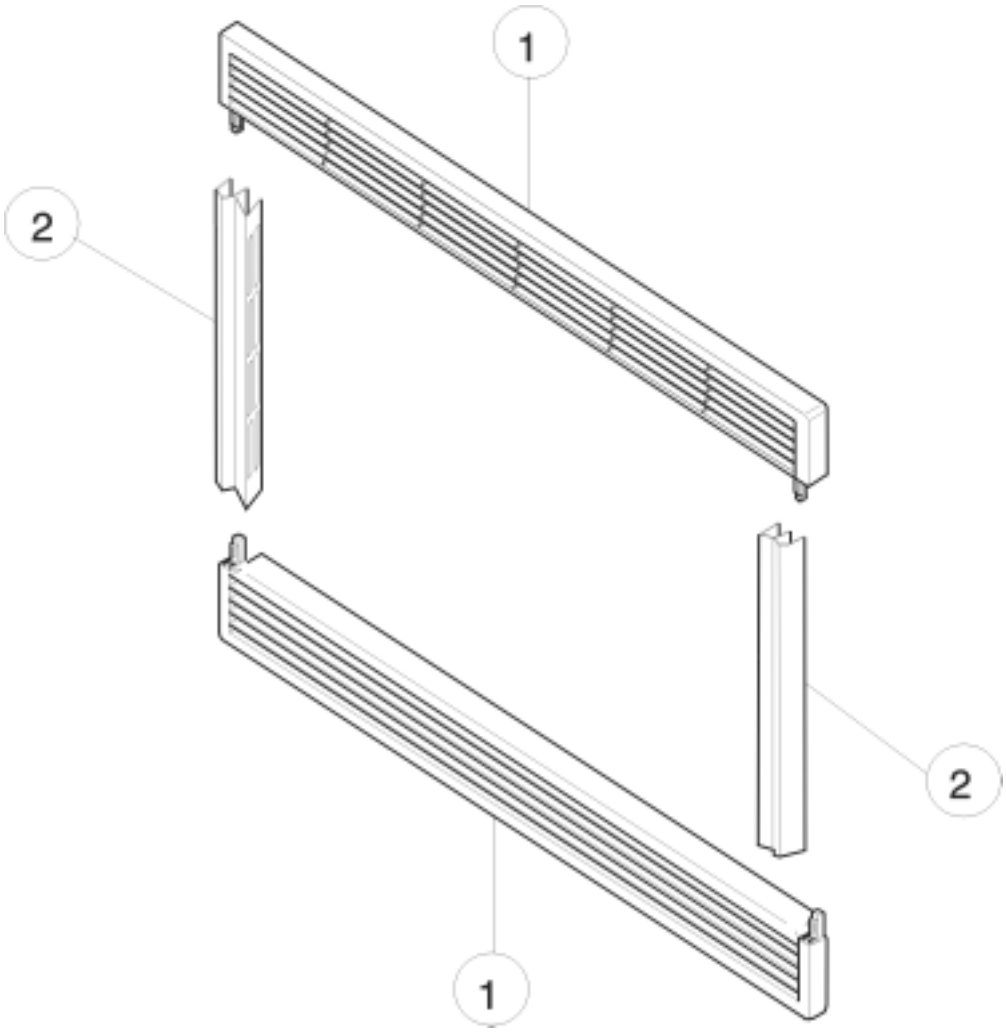
TOP PREVIOUS NEXT

19 Trim Kit Accessories



•@

20 Noise filter component parts

TOP PREVIOUS NEXT

Ref. No.	Part No.	Part Name & Description	Qty	Remarks
R1	ERG1SJ753P	Resistor	1	75KΩ W
C1 & C2	QETJ5225KRP2CE	Capacitor	2	2.2 µ F
C3 & C4	ECKMNA472ME	Capacitor	2	4700pF 250V AC
L1	SC-08-E203A	Inductor	1	2.4mH
F1	E62316010BP	Fuse Holder	2	

•@

TOP PREVIOUS NEXT

21 Digital programmer Circuit

DPC Schematic 2

•@

22 Key Board Matrix

•@

23 Digital programmer circuit parts list

TOP PREVIOUS NEXT

•@

TOP PREVIOUS NEXT

23.1 J603L4V10EP/10UP/40EP/40UP DPC AU

Ref. No.		Part No.	Part Name & Description	Qty	Remarks
R180		ERDS2TJ361T	Carbon Resistor	1	360R
D40 D41		AESS133T-77	Diode	2	
D180-D182		AESQTLGE260T	Green LED	3	
CX320		EFOMC8004T4	Ceramic Resonator	1	
SW40-SW47		EVQ11L05R	Push Switch	8	
C90 C40 C41 C42		AECU1C101J50	100pF Chip Capacitor	4	
C20 C80 C81 C110 C441		AECU1F103Z50	10nFChip Capacitor	5	
C22 C220 C221 C222 C224		AECU1F104Z25	100nFChip Capacitor	5	
R98 R110		AERJ3GSYJ220	22R Chip Resistor	2	
R331		AERJ3GSYJ471	470R Chip Resistor	1	
R20 R82 R83 R111 R112 R113 R442		AERJ3GSYJ102	1K Chip Resistor	7	
R91		AERJ3GSYJ152	1.5K Chip Resistor	1	
R440		AERJ3EKF2401	2.4K Chip Resistor 1%	1	
R92		AERJ3GSYJ332	3.3K Chip Resistor	1	
R224		AERJ3GSYJ472	4.7K Chip Resistor	1	
R93		AERJ3GSYJ622	6.2K Chip Resistor	1	
R80 R81 R90 R340 R341 R94		AERJ3GSYJ103	10K Chip Resistor	6	
R95 R342		AERJ3GSYJ163	16K Chip Resistor	2	
R97		AERJ3GSYJ683	68K Chip Resistor	1	
R441		AERJ3EKF8202	82K Chip Resistor 1%	1	
R40 R41 R42 R229 R650		AERJ3GSYJ104	100K Chip Resistor	5	
R320		AERJ3GSYJ105	1M Chip Resistor	1	
Q224		2SC2412KT146	NPN Transistor	1	
IC1	⚠	AEIC8227H209	LSI M3822 (32K)	1	
		A611A4J01XN	Display Holder Unit	1	
DISP110		AEDDHL4V00BP	LCD	1	
CN6		AEEM19FESVKN	Connector	1	
IC220		AN6747B	Custom IC	1	
RSW90		AEVQSRBV18	Rotary Switch	1	
RE80		AEVQEC16B24G	Rotary Encoder	1	

JPR1		ANE6445880AP	10mm Jumper Wire	1	J603L4V1EP
JPR2		ANE6445880AP	10mm Jumper Wire	1	J603L4V1UP
JPR3		ANE6445880AP	10mm Jumper Wire	1	J603L4V4EP

•@

TOP PREVIOUS NEXT

23.2 J603Y4V00BP DPC DU

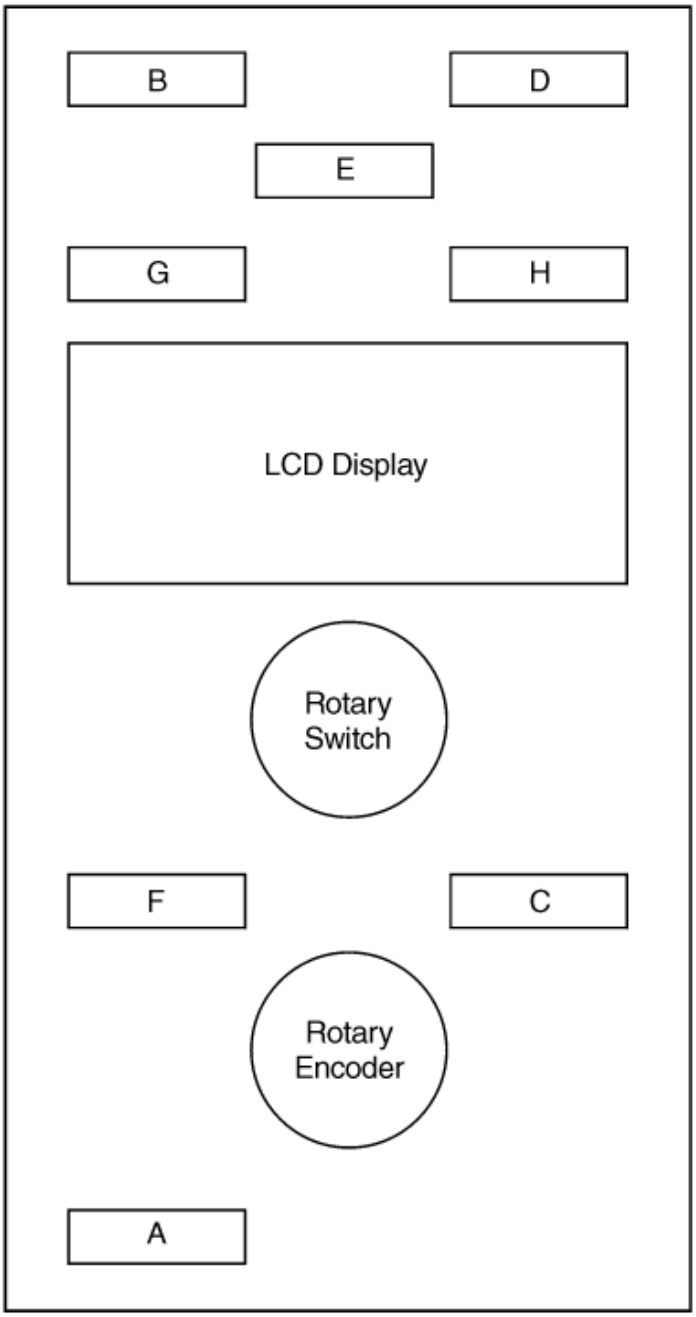
TOP PREVIOUS

Ref. No.	Part No.	Description	Qty	Remarks
ZD10	AESZMTZ5R6B	Zener Diode	1	
D221-D224	AESS133T-77	Silicon Diode	4	
D25	AESS133T-77	Silicon Diode	1	
D220	AESS1N4003E	Silicon Diode	1	
D12	AESSAK03	Shottky Diode	1	
C330	ECBT1H681KB5	Capacitor	1	680PF
C440	ECBT1E103ZF5	Capacitor	1	10nF
R25,R26	ERDS1FJ563T	Resistor	2	56K 1/2 Watt
R220,R232	ERDS2TJ103T	Resistor	2	10K
R11 R226-R228	ERDS2TJ104T	Resistor	4	100K
R231	ERDS2TJ102T	Resistor	1	1.0K
R221-R223	ERDS2TJ222T	Resistor	3	2.2K
R24	ERDS2TJ223T	Resistor	1	22K
R330	ERDS2TJ333T	Carbon Resistor	1	33K
R311	ERDS2TJ391T	Resistor	1	390
R10	ERDS2TJ821T	Resistor	1	820
R310	ERSD2TJ182T	Resistor	1	1.8K
Q10	2SD1859TV2	Transistor	1	
Q226	AESAKTA200Y	PNP Transistor	1	
Q220-Q222	AESCKTC3199GR	NPN Transistor	3	
C10	EEUFC1C471B	Elect Capa	1	470uF 16 V
C12	ECEA1CKA100B	Electrolytic Capacitor	1	10uF 16V
R27	ERX12SJ1R0E	Watt Resistor	1	1R 1/2 Watt
CN3	AEEMXF00703B	3 Pin Connector (Inverter)	1	
CN7	AEEMMF00703R	3 Pin Connector (OvenThermistor)	1	
CN4	AEEMXF00D04W	4 Pin Connector (0+00)	1	
C25(COVER)	A6219-1850	Capacitor Cover (small)	1	
RY2 RY3 RY6 RY7	AEBGG5N1A12	12 V Relay	3	
RY1 RY4 RY5	AEGG5G1A12	12 V Relay	3	
CN5	AEEM19FEBVKN	19 Pin Connector	1	

CN1		AEEMXD55511W	11 Pin Connector	1	
IC25		AEICP25011HL	Photocoupler IC	1	
D26		AESTS1WBA60B	Diode Bridge (600V)	1	
C25		ECA2WHG100E	Electrolytic Capacitor	1	10uF 450V
BZ310		EFBAH20C001	2KHz Buzzer	1	
D2,D3		ERZV10D112C1	Varistor	2	1100V
D1		ERZV10D511CS	Varistor	1	510V
IC10		ETXMJ197X1BG	Switching Power Supply	1	

•@

TOP PREVIOUS



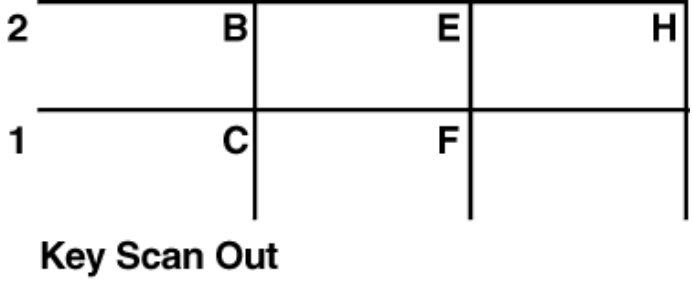
	S-4V1EP	S-4V1UP
A	CLK/TIM	CLK/TIM
B	AUTO	AUTO
C	START	START
D	AUTO	AUTO
E	AUTO	AUTO
F	RESET	RESET
G	CONV	CONV
H	MICRO	MICRO

	S-4V4EP	S-4V4UP
A	CLK/TIM	CLK/TIM
B	AUTO	AUTO
C	START	START

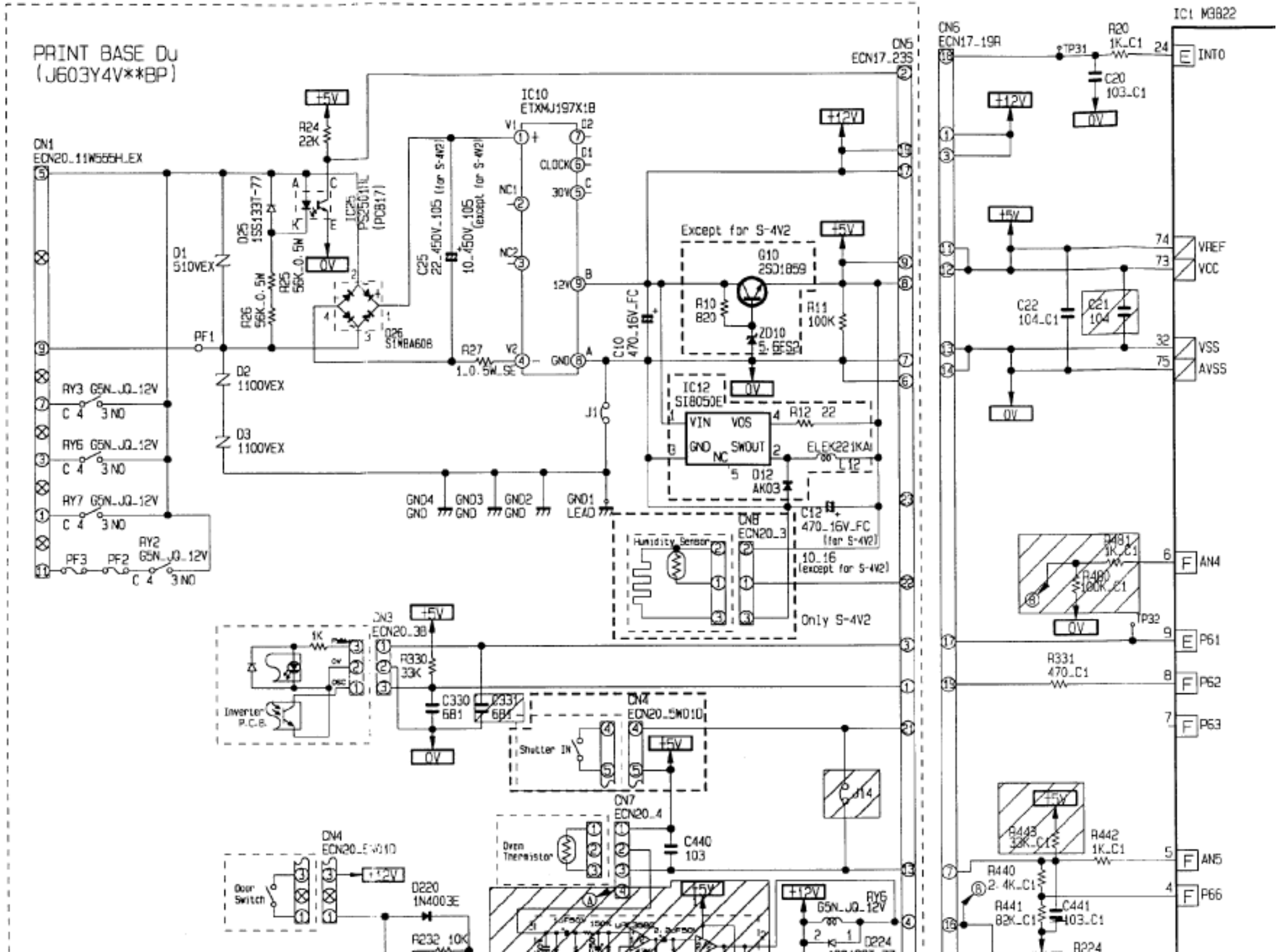
Key Data In

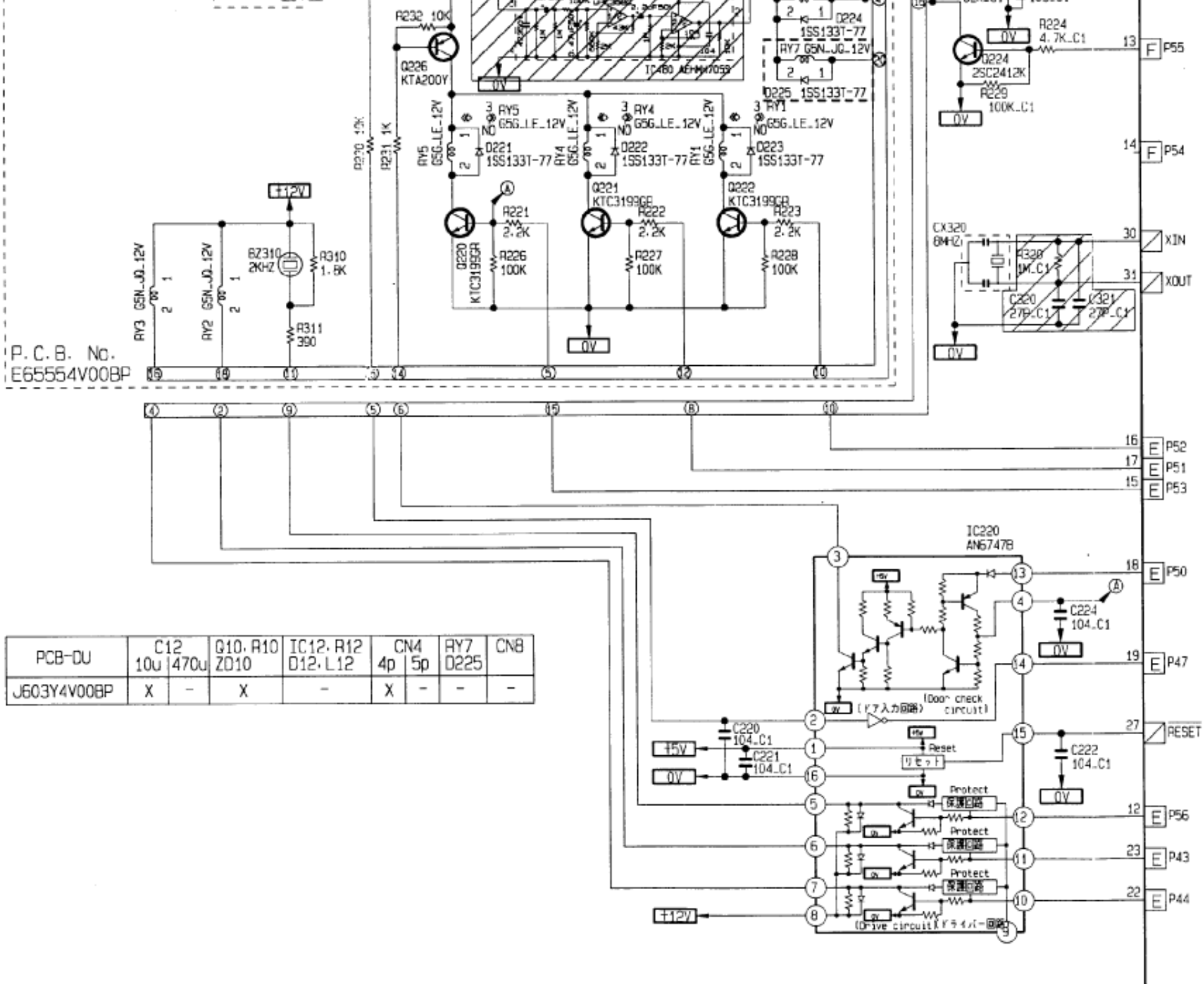
3	**A**	**D**	**G**
2	**B**	**E**	**H**

B	AUTO	AUTO
C	START	START
D	AUTO	AUTO
E	AUTO	AUTO
F	RESET	RESET
G	CONV	CONV
H	MICRO	MICRO

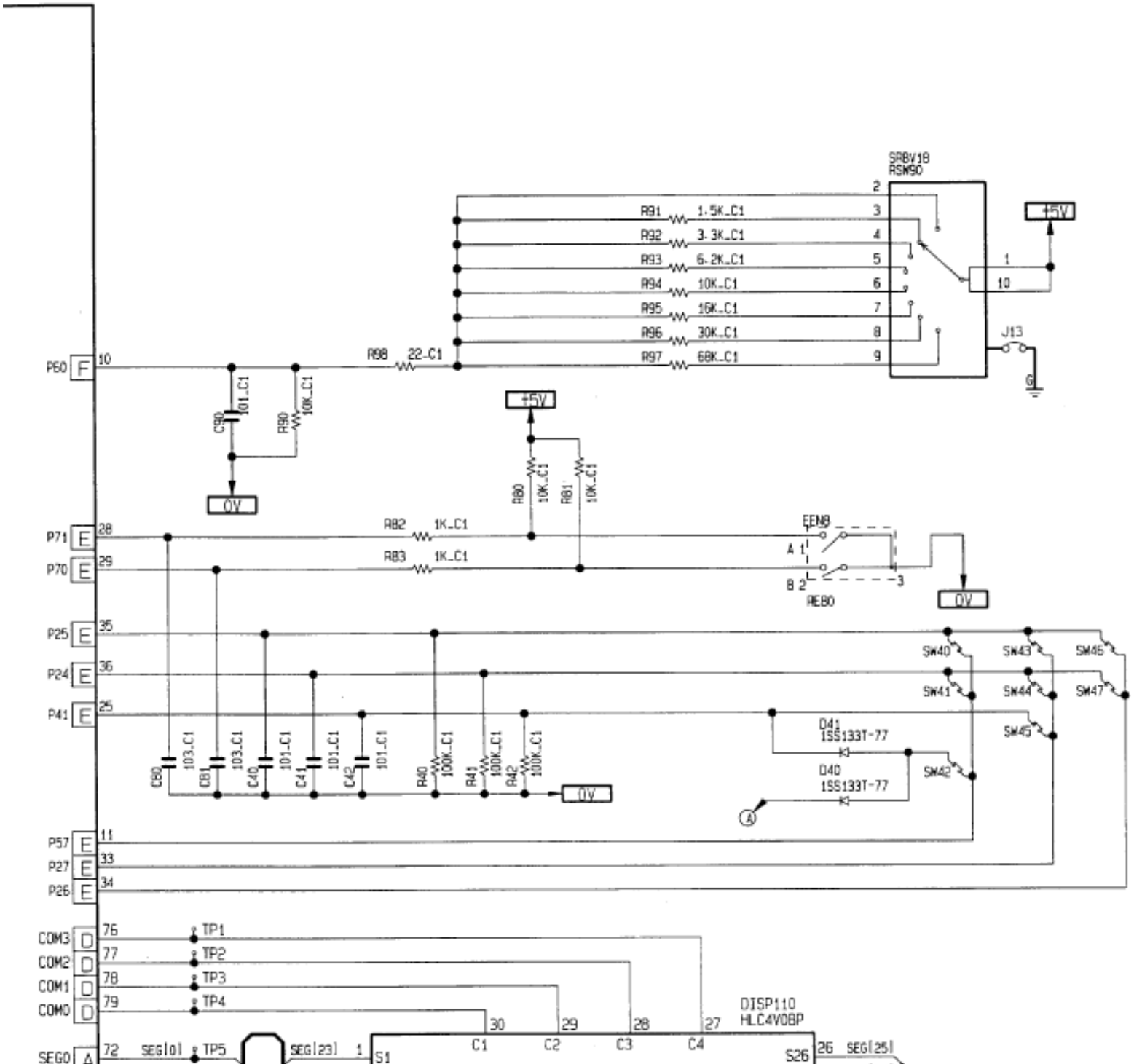


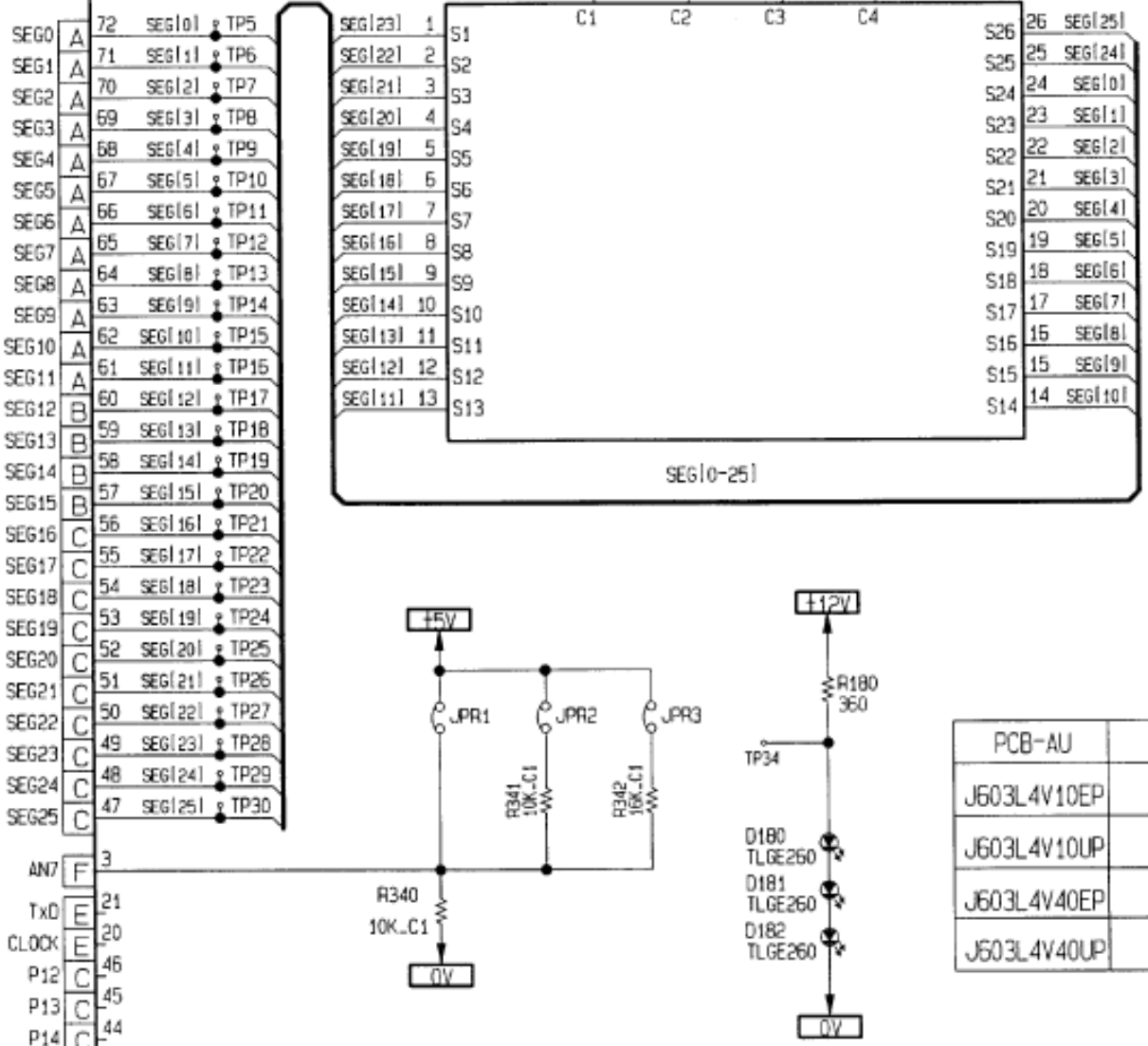
Key Scan Out


PRINT BASE Du
(J603Y4V**BP)
CN1
ECN20_11W555HLEX
CN5
ECN17_23S
IC10
ETXMJ197X1B
IC1 M3822
CN6
ECN17_19R
+5V
+12V
0V
R24
22K
D1
510VEX
D2
1100VEX
D3
1100VEX
D25
1SS133T-77
IC25
PS2501-1L
(PC817)
R25
56K_0.5W
R26
56K_0.5W
D26
S1WBA60B
PF1
PF2
PF3
RY3 G5N_JQ_12V
RY6 G5N_JQ_12V
RY7 G5N_JQ_12V
RY2
G5N_JQ_12V
C25
22_450V_105 (for S-4V2)
10_450V_105 (except for S-4V2)
R27
1_0.5W_SE
C10
470_16V_FC
J1
Except for S-4V2
Q10
2SD1859
R10
820
R11
100K
ZD10
5.6ES2
IC12
SI8050E
VIN
VOS
GND
NC
SWOUT
R12
22
ELEK221KAI
D12
AK03
L12
GND4
GND3
GND2
GND1
LEAD
C12
470_16V_FC
(for S-4V2)
CN8
ECN20_3
Humidity Sensor
10_16
(except for S-4V2)
Only S-4V2
CN3
ECN20_3B
R330
33K
C330
681
C331
681
Inverter P.C.B.
CN4
ECN20_5W01D
Shutter IN
CN7
ECN20_4
C440
103
Oven Thermistor
CN4
ECN20_5W01D
Door Switch
D220
1N4003E
R232
10K
D224
C14
R20
1K_C1
C20
103_C1
TP31
C22
104_C1
C21
104
R481
1K_C1
R480
100K_C1
TP32
R331
470_C1
R443
33K_C1
R442
1K_C1
R440
2.4K_C1
R441
82K_C1
C441
103_C1
R224
INT0
VREF
VCC
VSS
AVSS
AN4
P61
P62
P63
AN5
P66

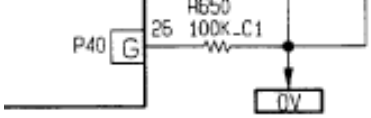


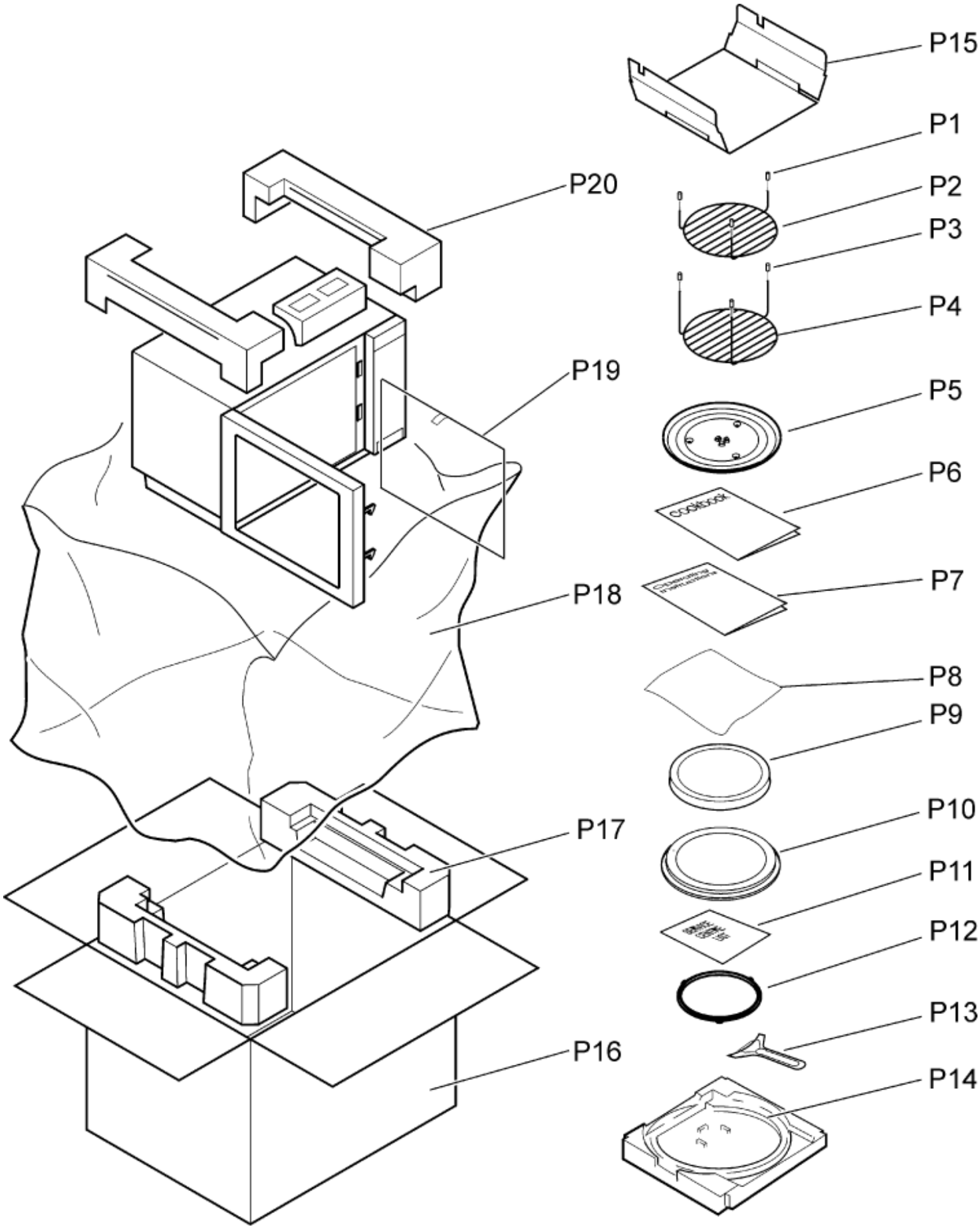
PCB-DU	C12 10u	C12 470u	Q10・R10 ZD10	IC12・R12 D12・L12	CN4 4p	CN4 5p	RY7 D225	CN8
J603Y4V00BP	X	–	X	–	X	–	–	–

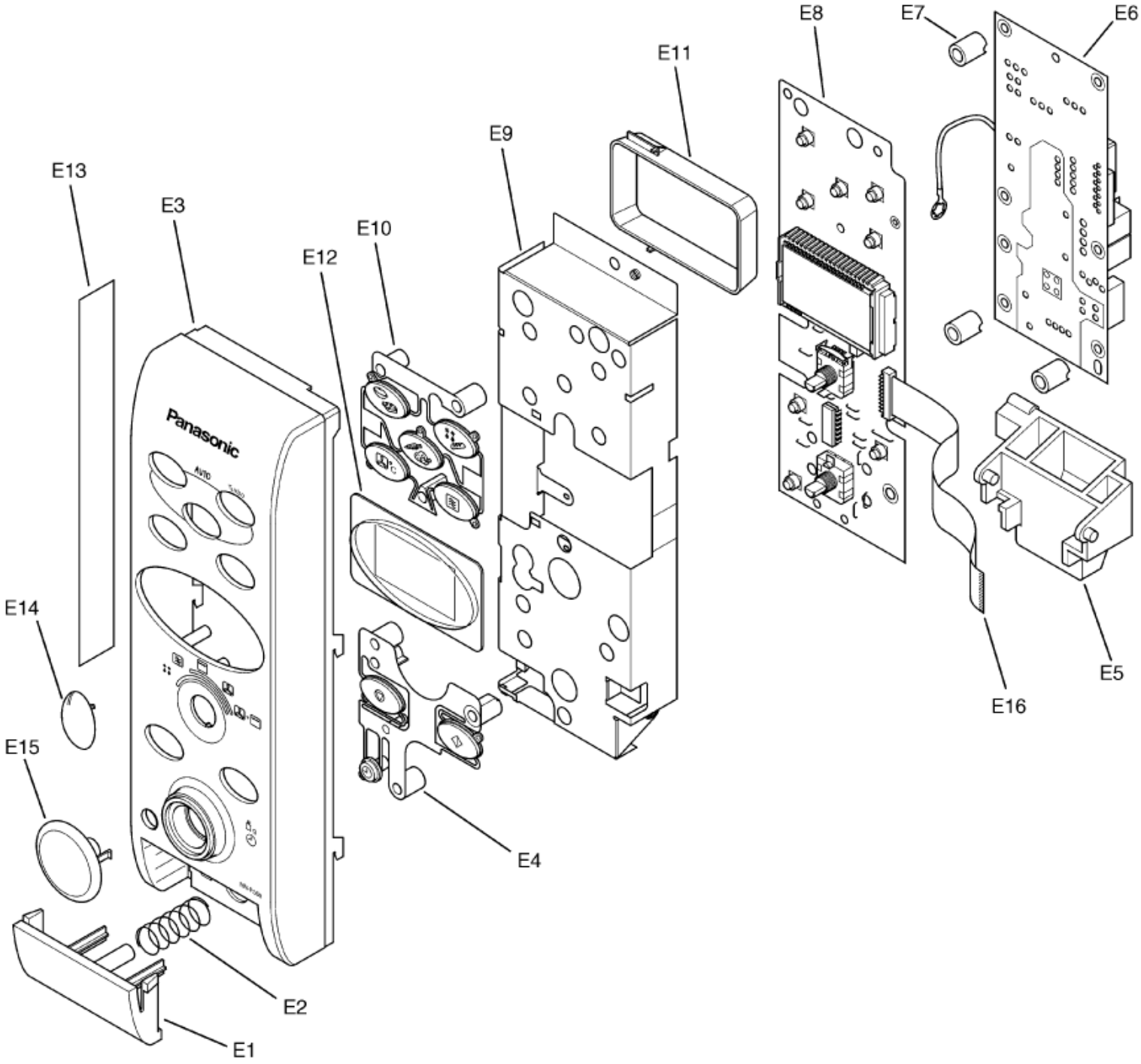

SRBV18
RSW90
R91 1.5K_C1
R92 3.3K_C1
R93 6.2K_C1
R94 10K_C1
R95 15K_C1
R96 30K_C1
R97 68K_C1
+5V
J13
G
P60 F 10
R98 22_C1
C90 101_C1
R90 10K_C1
0V
R80 10K_C1
R81 10K_C1
P71 E 28
P70 E 29
R82 1K_C1
R83 1K_C1
FENB
REB0
P25 E 35
P24 E 36
P41 E 26
SW40
SW43
SW46
SW41
SW44
SW47
SW45
SW42
D41 1SS133T-77
D40 1SS133T-77
C80 103_C1
C81 103_C1
C40 101_C1
C41 101_C1
C42 101_C1
R40 100K_C1
R41 100K_C1
R42 100K_C1
P57 E 11
P27 E 33
P26 E 34
COM3 D 76
COM2 D 77
COM1 D 78
COM0 D 79
TP1
TP2
TP3
TP4
DISP110
HLC4V08P
SEG0 A 72
SEG[0]
TP5
SEG[23]
S1
S26
SEG[25]
C1
C2
C3
C4

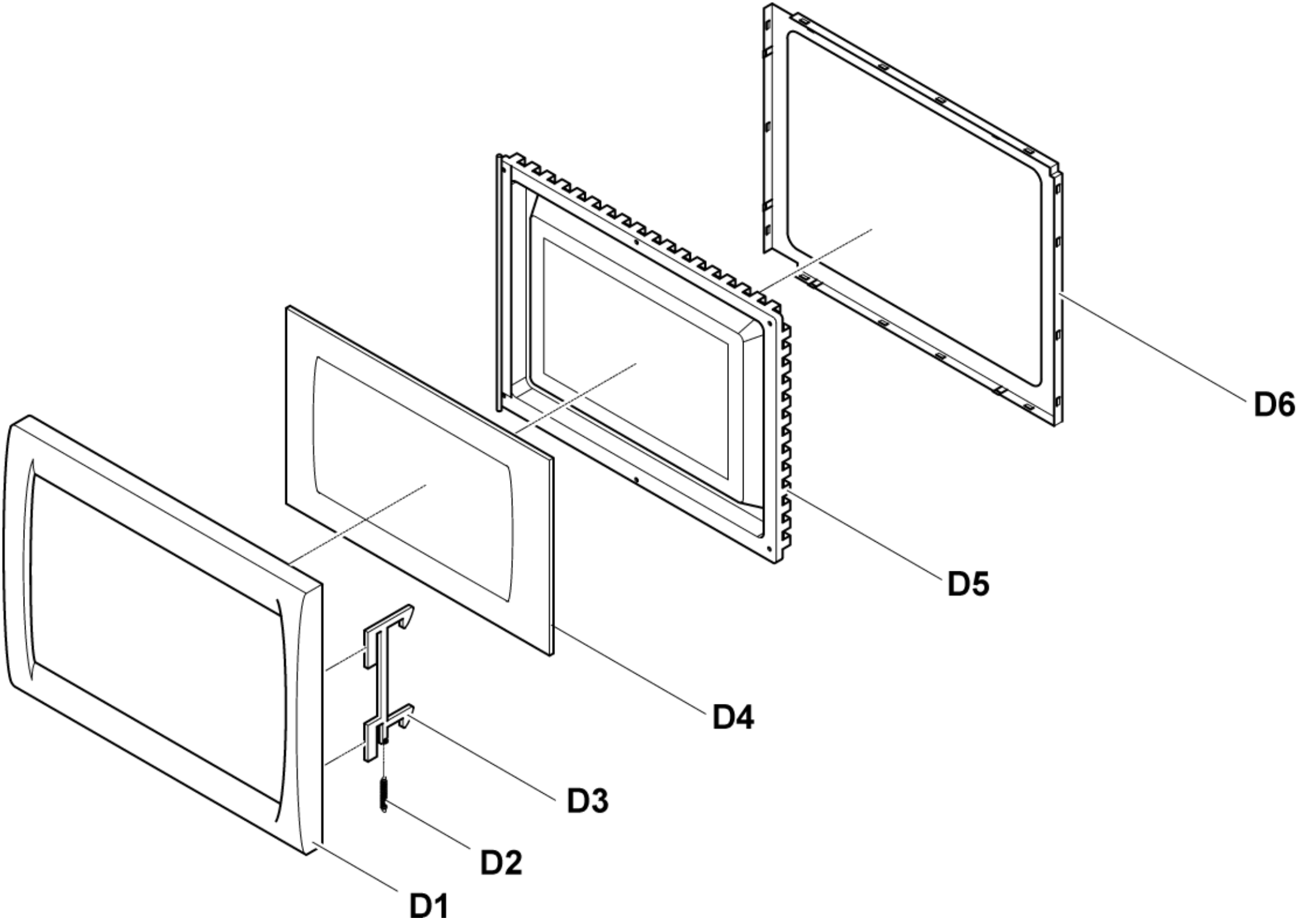


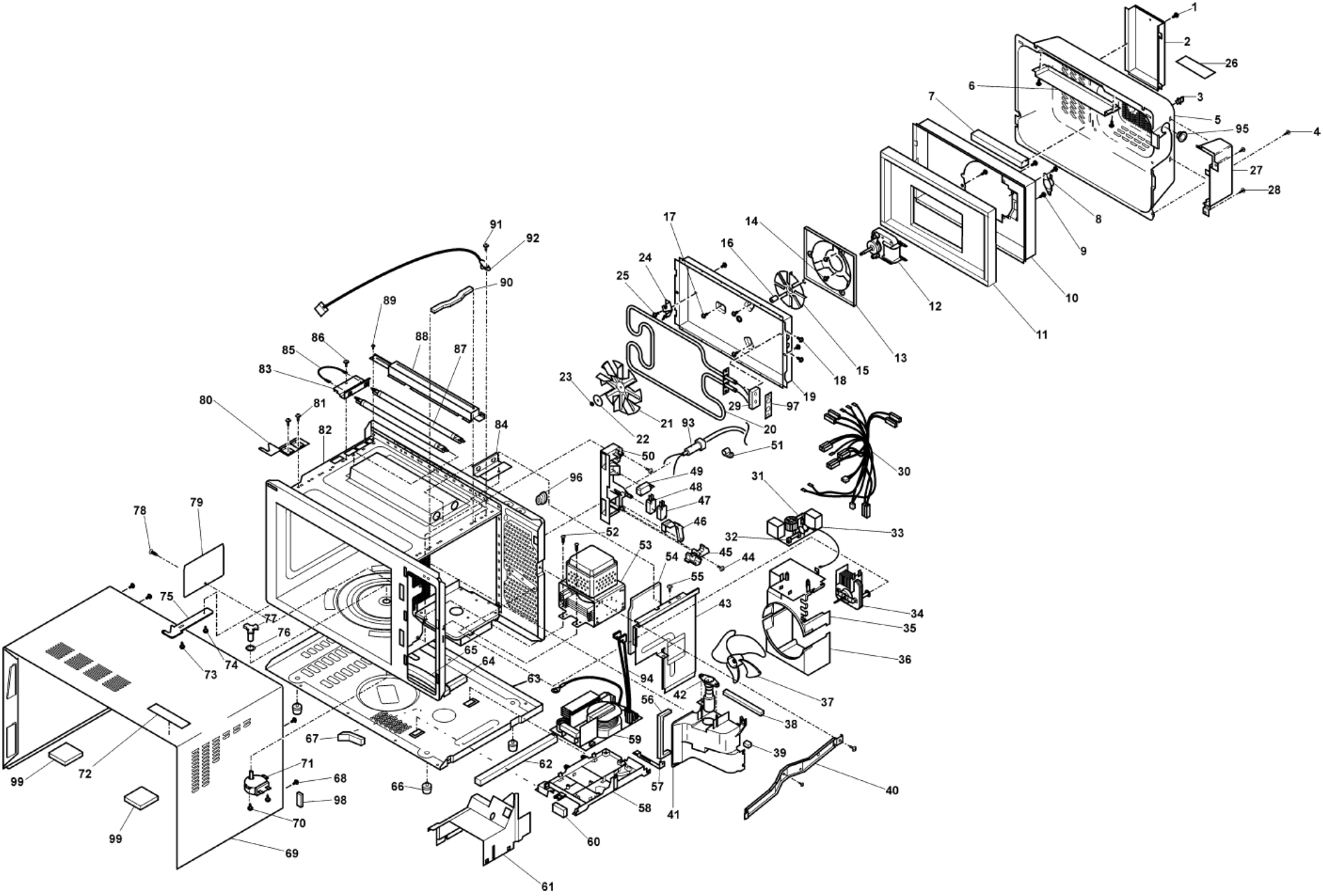
PCB-AU	JPR1	JPR2	JPR3	(AD)	IC1_maskNo
J603L4V10EP	JUMPER	OPEN	OPEN	0 ohm	208
J603L4V10UP	OPEN	JUMPER	OPEN	10K	208
J603L4V40EP	OPEN	OPEN	JUMPER	16K	208
J603L4V40UP	OPEN	OPEN	OPEN	OPEN	208


R650
26 100K_C1
P40
G
0V


P15
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
P12
P13
P14
P20
P19
P18
P17
P16
cookbook


E8
E7
E6
E11
E9
E13
E3
E10
E12
Panasonic
E14
E5
E16
E15
E4
E2
E1


D6
D5
D4
D3
D2
D1


1
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26
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95
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Trouble Related to Digital Programmer Circuit

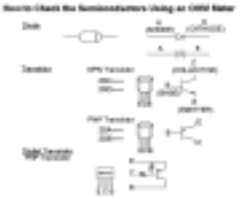
SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
No display when oven is first plugged in. Oven is dead.	1	Fuse pattern of DPC	Normal	STEP 2
			Open (NOTE)	Shorted Circuit of ZNR, L.V.T., Oven Lamp etc. Replace DPC
	2	IC10 Pin 9 (12V line)	Abnormal 0V	IC10
			Normal 12V	→ Step 3
	3	IC-1 Pin 73 voltage (Emitter of Q10)	Abnormal	ZD10, Q10, Ribbon Cable
			Normal = 5V	→ Step 4
	4	IC-1 pin 27 voltage (15 pin of IC220)	Abnormal	IC-220
			Normal	→ IC-1, CX1

NOTE
Procedure of fuse pattern repairing is as follows:
1. When the fuse pattern (PF2) opens.
(1) Remove the jumper wire (PF3).
(2) Insert the removed jumper wire (PF3) to "(PF2)" position and solder it. If both "PF2" and "PF3" fuse patterns are open, please replace DPC.
NOTE: * At the time of these repairs, make visual inspection of the varistor for burning damage and examine the transformer with tester for the presence of layer short-circuit (check primary coil resistance).
If any abnormal condition is detected, replace the defective parts.

SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
No key input	1	Push button switch	Abnormal	Push button switch
			Normal	IC-1
No beep sound	1	IC-1 pin 12, voltage	Abnormal	IC-1
			Normal	IC220, BZ310
Power relay A(RY-2) does not turn on even though the program has been set and the start pad is tapped.	1	IC-1 pin 23voltage while operation	Abnormal	IC-1
			Normal = 5V	→ Step 2
	2	Short circuit between pin 6 and pin 16 of IC-2	Still not turn on	RY-2
			RY-2 turns on	IC-220
No microwave oscillation at any power setting.	1	IC-1 pin 18 and 16 voltages while operation at high power	Abnormal	IC-1
			Normal 18---5V, 16---5V	→ Step 2
	2	Q222 transistor	Abnormal	Q222
			Normal	IC220, Q226, RY1
No Grill Operation at any power setting.	1	IC-1 pin 17 and 15 voltages while operation at high power	Abnormal	IC-1
			Normal	→ Step 2

		operation at high power	Normal 18---5V, 17---5V	→ Step 2
	2	Q222 transistor	Abnormal	Q222
			Normal	IC220, Q226, RY4
No convection operation at any power setting.	1	IC-1 pin 18 and 15 voltages while operation at high power	Abnormal	IC-1
			Normal 18---5V, 15---5V	→ Step 2
	2	Q220 transistor	Abnormal	Q220
			Normal	IC220, Q226, RY5
Dark or unclear display	1	Replace display and check operation	Normal	DISPLAY
			Abnormal	IC-1
Missing or lighting of unnecessary segment	1	Replace IC-1 and check operation	Normal	IC-1
			Abnormal	DISPLAY
Oven shuts down on Micropower after a short time (set in test mode) (set high power 1 Min) H97/H98 appears in window and oven stops operation. Program High power for 1 minute and conduct following test quickly, unless H97/H98 appears and oven stops. NEW H.V.	1	Unplug CN702(2 pin) connector and measure voltage between terminals	0V	1. Latch switch 2. DPC/Power relay
			AC line voltage of 240V	→ Step 2
	2	Unplug CN701(3 pin) connector and measure pin 1 voltage	0V	1. DPC
			Approx. AV 3V	1. Magnetron 2. Inverter

How to Check the Semiconductors Using an OHM Meter



	FORWARD	REVERSE
Diode	500Ω	∞

	FORWARD	REVERSE
B-E	700Ω	∞
B-C	700Ω	∞
C-E	∞	∞

	FORWARD	REVERSE
B-E	700Ω	∞
C-E	700Ω	∞
C-E	∞	∞

	FORWARD	REVERSE
B-E	1kΩ – 10kΩ	1kΩ – 10kΩ
C-E	1kΩ – 10kΩ	∞
C-E	1kΩ – 10kΩ	∞

	SYMPTOMS	CAUSE	CORRECTIONS
1.	Oven is dead. Fuse is OK. No display and no operation at all.	1. Open or loose lead wire harness. 2. Open low voltage transformer. 3. Defective DPC AU or DPC DU.	
2.	Oven does not accept key input (Program).	1. Key input is not in sequence. 2. Shorted push button on DPC AU. 3. Defective DPC AU.	Refer to operation procedure. Refer to DPC troubleshooting.
3.	Oven beep and turntable motor turn on when oven is plugged in with door closed.	1. Misadjustment or loose wiring of secondary latch switch. 2. Defective secondary latch switch.	Adjust door and latch switches.
4.	Timer starts countdown but no microwave oscillation. (No heat while oven lamp and fan motor turn on).	1. Off-alignment of latch switches. 2. Open or loose connection of high voltage circuit especially magnetron filament circuit. NOTE: Large contact resistance will bring lower magnetron filament voltage and cause magnetron to have lower output and/or be intermittent. 3. Defective high voltage component. H.V. Inverter [illegible H.V.] Magnetron 4. Open or loose wiring of power relay (RY1). 5. Defective primary latch switch. 6. Defective power relay RY1 or DPC AU or DU.	Adjust door and latch switches. Check high voltage component according to component test procedure and replace if it is defective. Refer to DPC troubleshooting.
5	No operation of grill or convection elements.	1. Open thermal cut-out SW1. 2. Defective convection or grill element. 3. Defective power relay (RY5) (RY4). 4. Defective DPC.	

	SYMPTOMS	CAUSE	CORRECTIONS
1.	No display and no operation at all. 10A Fuse is blown.	1. Shorted lead wire harness 2. Defective primary latch switch (NOTE 1) 3. Defective short switch (NOTE 1) 4. Defective inverter power supply (U) MFWH1X Refer to component test procedure	Check adjustment of primary, secondary latch switch and short switch including door.
		NOTE 1: All of these switches must be replaced at the same time. (Refer to adjustment instructions.) Check continuity of power relay B's contacts (between 1 and 2) and if it has continu-ity, replace power relay B also.	
2	10A fuse is blown	1. Shorted lead wire harness 2. Short convection element 3. Shorted grill element	

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	SYMPTOMS	CAUSE	CORRECTIONS
1	Microwave output is low. Oven takes longer time to cook food.	1. Decrease in power source voltage. 2. Open or loose wiring of magnetron filament circuit. (Intermittent oscillation) 3. Aging change of magnetron.	Consult electrician. Refer to output test procedures by water temperature raising test.
2	Turntable on when door is opened.	1. Shorted primary latch switch.	
3	Loud buzzing noise can be heard.	1. Loose fan and fan motor	
4	Turntable motor does not rotate.	1. Open or loose wiring of turntable motor 2. Defective turntable motor	
5	Oven stops operation during cooking.	1. Open or loose wiring of primary and secondary latch switch 2. Operation of thermal cut-out	Adjust door and latch switches.
6	Oven returns to plug in mode 1 minute after start pad is pressed.	1. Open thermistor circuit 2. Defective thermistor	

Alternative way to troubleshooting oven with AC Ampare meter used NEW H.V.

Oven shuts down after approximately 15 or 33 seconds.

If the microwave oven shuts down after a short time in micropower mode, conduct the following test.

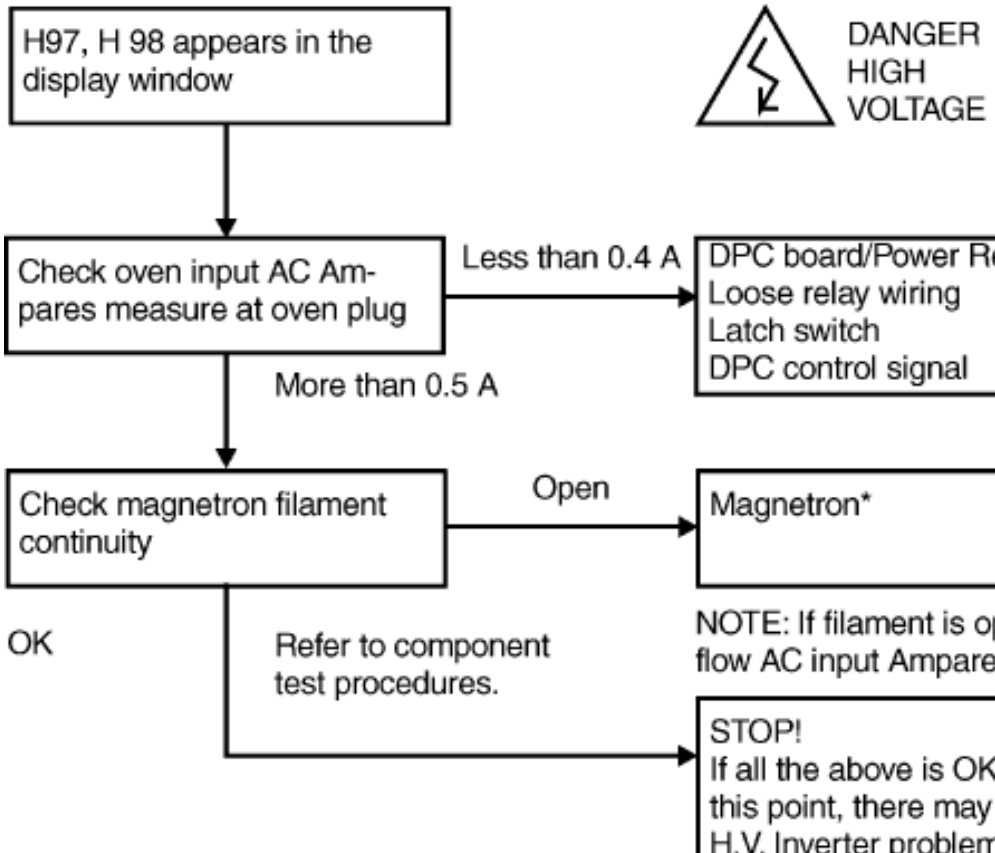
The microwave oven must be set in test mode to active the self diagnostic failure code system.

SELF TEST MODE

NN-L750WBEPG	NN-L750WBUPG	NN-L760WBEPG	NN-L760WBUPG
4N1EPG	4N1UPG	4N4EPG	4N4UPG

When the oven is set in test mode place water load in oven, set micropower to high and time to 1minute, press start.

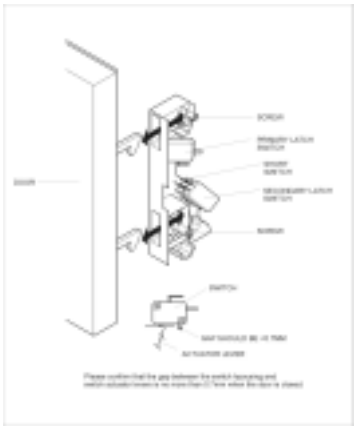
H97, H98 appears in display window a short time after start key is pressed and there is no microwave oscillation with AC Ampare meter used for troubleshooting.

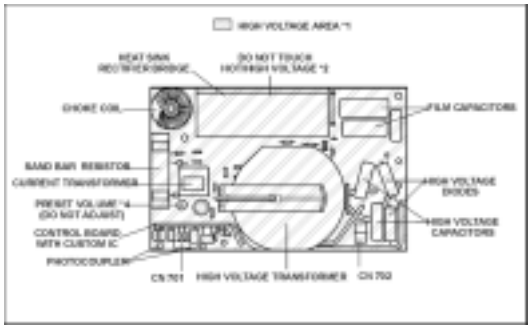


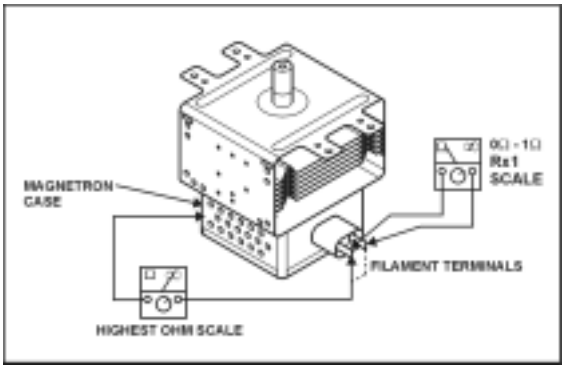
NOTE: DO NOT try to REPAIR this Inverter Power Supply (U) and also DO NOT RE-ADJUST PRESET VOLUME on the board. It is very dangerous to repair or adjust without sufficient test equipment because this circuit handles very high voltage and very large current. Off alignment of inverter board operation is dangerous. Operating a misaligned Inverter circuit is dangerous due to the high voltage and current that is produced by this board. Defective boards must be replaced with a new one.

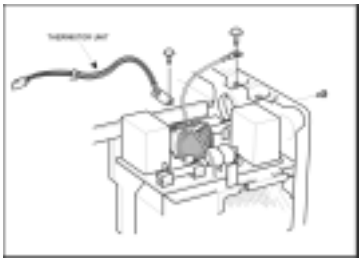
* Check magnetron filament for open or short to casing before proceeding to determine a good magnetron.

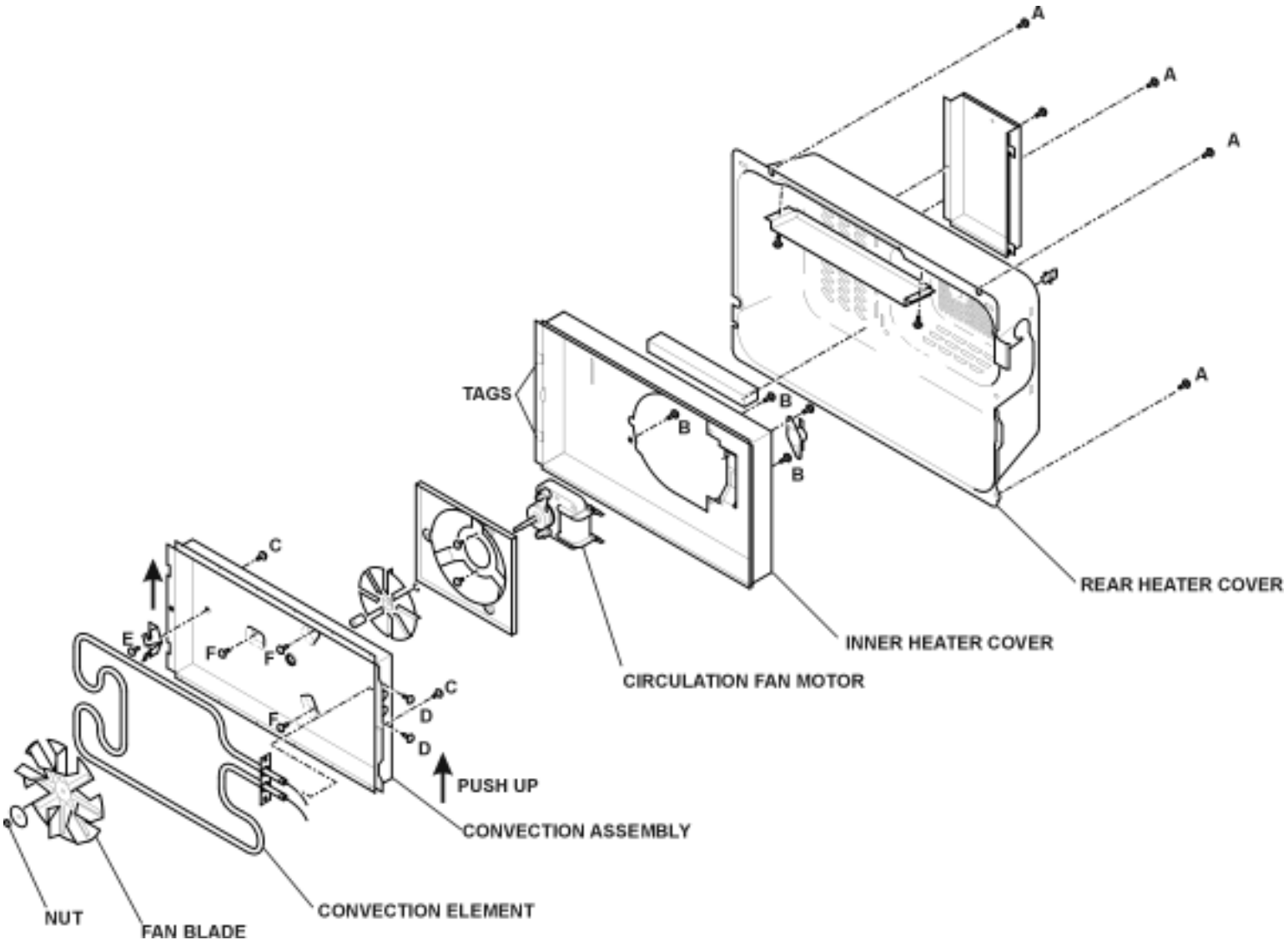
this point, there may be a
H.V. Inverter problem.
(SEE NOTE)

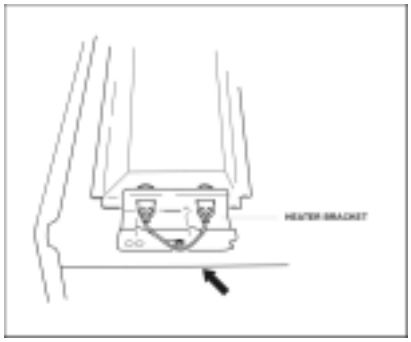

DOOR
SCREW
STRIKER
SWITCH
ACTUATOR LEVER

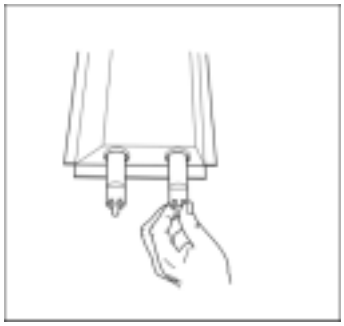

HIGH VOLTAGE AREA *1
HEAT SINK
RECTIFIER BRIDGE
DO NOT TOUCH
HOT/HIGH VOLTAGE *2
CHOKE COIL
FILM CAPACITORS
BAND BAR RESISTOR
CURRENT TRANSFORMER
PRESET VOLUME *4
(DO NOT ADJUST)
CONTROL BOARD
WITH CUSTOM IC
PHOTOCOUPLER
HIGH VOLTAGE
DIODES
HIGH VOLTAGE
CAPACITORS
CN 701
HIGH VOLTAGE TRANSFORMER
CN 702

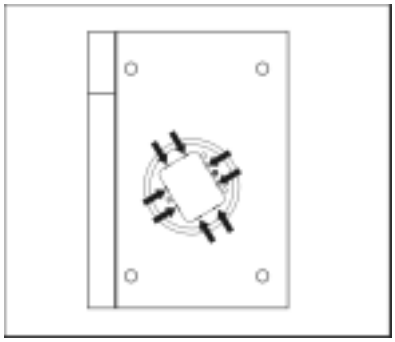

MAGNETRON
CASE
0Ω - 1Ω
Rx1
SCALE
FILAMENT TERMINALS
HIGHEST OHM SCALE

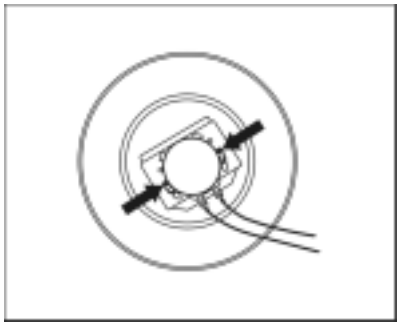

THERMISTOR UNIT

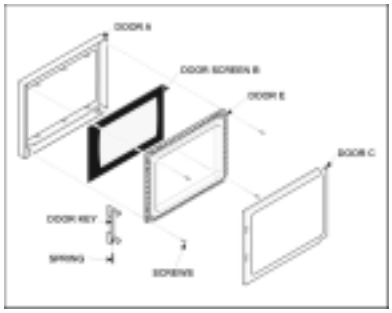

A
A
A
A
TAGS
B
B
B
REAR HEATER COVER
INNER HEATER COVER
CIRCULATION FAN MOTOR
C
E
F
F
F
C
D
D
PUSH UP
CONVECTION ASSEMBLY
NUT
FAN BLADE
CONVECTION ELEMENT

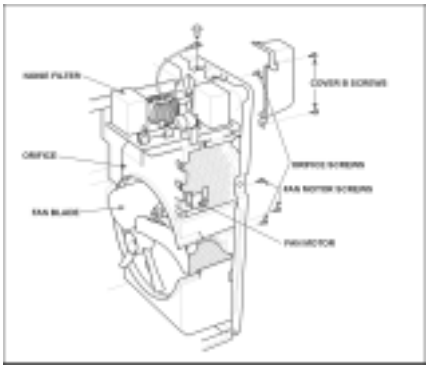

HEATER BRACKET

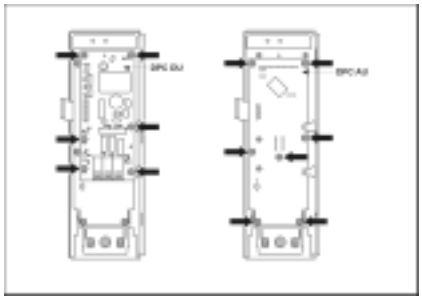


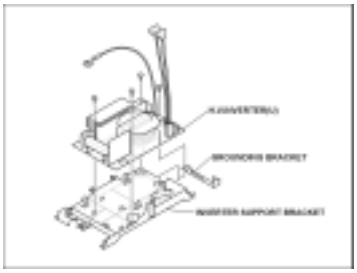


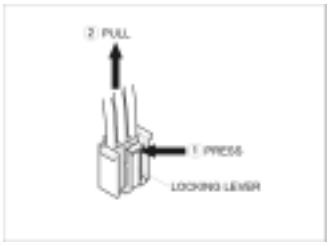


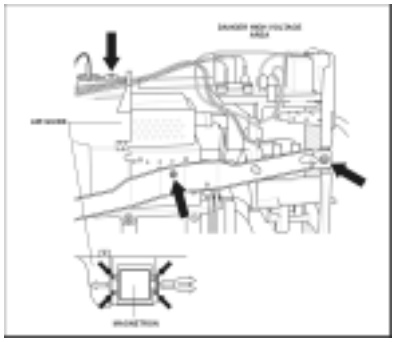

DOOR A
DOOR SCREEN B
DOOR E
DOOR C
DOOR KEY
SPRING
SCREWS

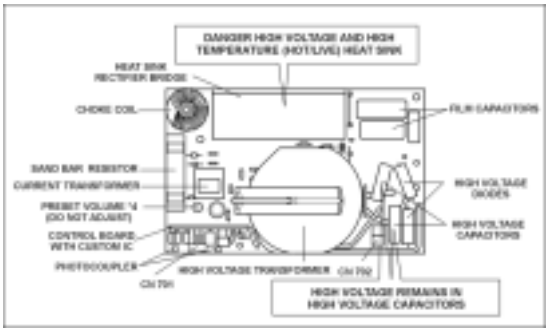

COVER B SCREWS
ORIFICE
ORIFICE SCREWS
FAN MOTOR SCREWS
FAN BLADE
FAN MOTOR

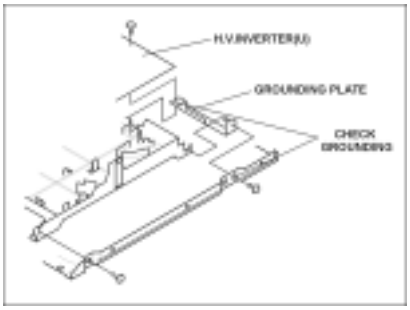

DPC-DU
DPC-AU

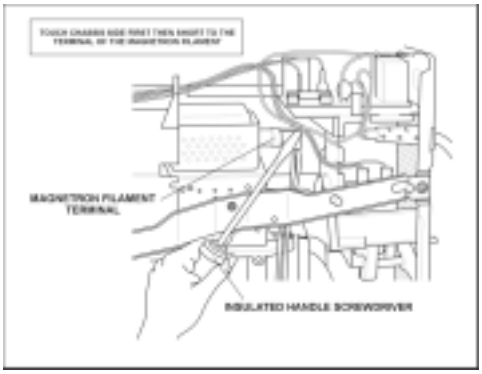

A (INVERTER)
BRACKET
INVERTER SUPPORT BRACKET

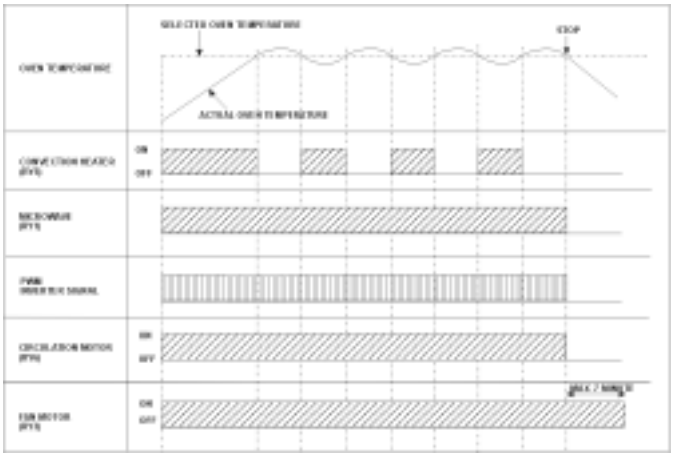

2 PULL
1 PRESS
LOCKING LEVER

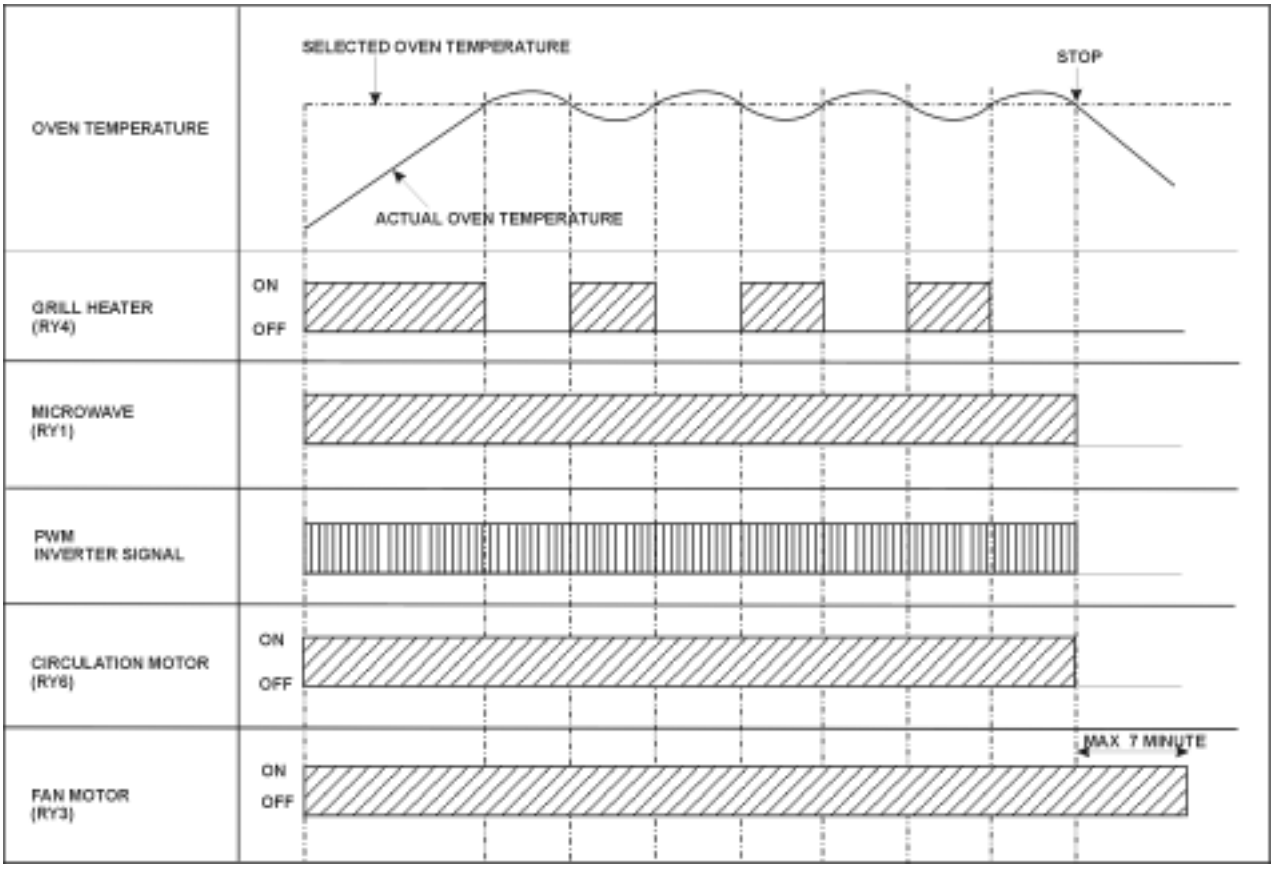


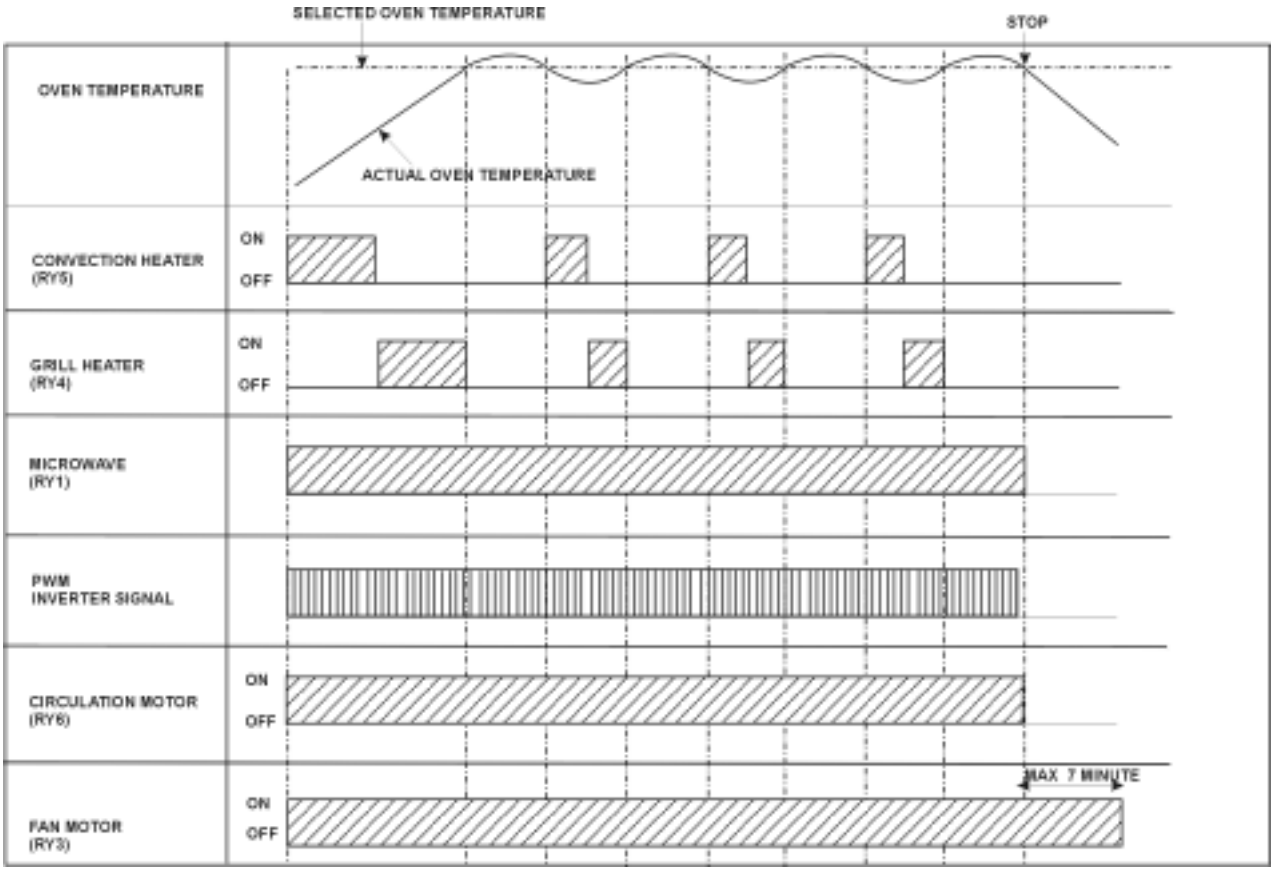

DANGER HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LIVE) HEAT SINK
HEAT SINK RECTIFIER BRIDGE
CHOKE COIL
FILM CAPACITORS
SAND BAR RESISTOR
CURRENT TRANSFORMER
PRESET VOLUME 'V (DO NOT ADJUST)
CONTROL BOARD WITH CUSTOM IC
PHOTOCOUPLER
CN 701
HIGH VOLTAGE TRANSFORMER
CN 702
HIGH VOLTAGE DIODES
HIGH VOLTAGE CAPACITORS
HIGH VOLTAGE REMAINS IN HIGH VOLTAGE CAPACITORS

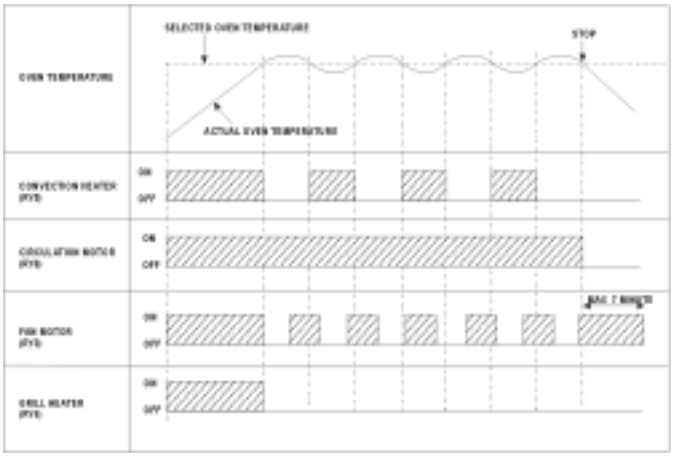

H.V.INVERTER(U)
GROUNDING PLATE
CHECK
GROUNDING


MAGNETRON FILAMENT TERMINAL
INSULATED HANDLE SCREWDRIVER

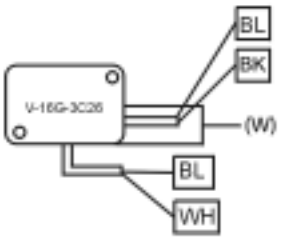

OVEN TEMPERATURE
SELECTED OVEN TEMPERATURE
STOP
ACTUAL OVEN TEMPERATURE
CONVECTION HEATER (PWM)
ON
OFF
MICROWAVE (PWM)
PWM INSERTION SIGNAL
CIRCULATION MOTOR (PWM)
ON
OFF
FAN MOTOR (PWM)
ON
OFF
TIME


OVEN TEMPERATURE
SELECTED OVEN TEMPERATURE
STOP
ACTUAL OVEN TEMPERATURE
GRILL HEATER
(RY4)
ON
OFF
MICROWAVE
(RY1)
PWM
INVERTER SIGNAL
CIRCULATION MOTOR
(RY6)
ON
OFF
MAX. 7 MINUTE
FAN MOTOR
(RY3)
ON
OFF

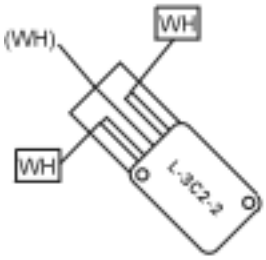

SELECTED OVEN TEMPERATURE
STOP
OVEN TEMPERATURE
ACTUAL OVEN TEMPERATURE
CONVECTION HEATER
(RY5)
ON
OFF
GRILL HEATER
(RY4)
ON
OFF
MICROWAVE
(RY1)
PWM
INVERTER SIGNAL
CIRCULATION MOTOR
(RY6)
ON
OFF
MAX. 7 MINUTE
FAN MOTOR
(RY3)
ON
OFF


OVEN TEMPERATURE
SELECTED OVEN TEMPERATURE
STOP
ACTUAL OVEN TEMPERATURE
CONVECTION HEATER (RY3)
ON
OFF
CIRCULATION MOTOR (RY5)
ON
OFF
FAN MOTOR (RY4)
ON
OFF
LAST 1 MINUTE
GRILL HEATER (RY2)
ON
OFF

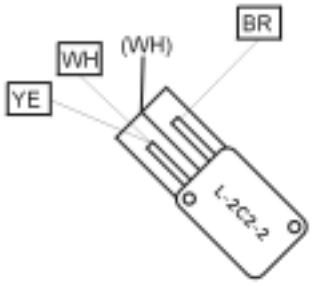
NOTE: *When replacing, check the lead color as shown.
*Colors shown by () indicate colors of lead wire connector housing.



Primary Latch Switch
TOP



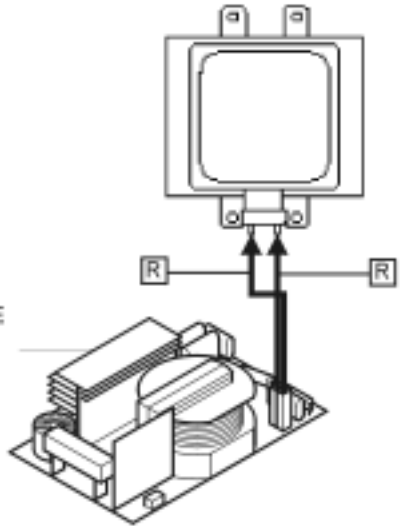
Secondary Latch Switch
BOTTOM Outside



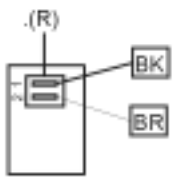
Short Switch
Bottom Inside

MAGNETRON

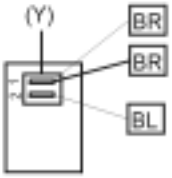
CAUTION:
HEAT SINK
(HOT/LIVE)
VERY HIGH VOLTAGE
AND TEMPERATURE



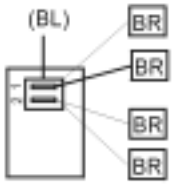
HIGH VOLTAGE INVERTER



Power Relay
(Ry5)

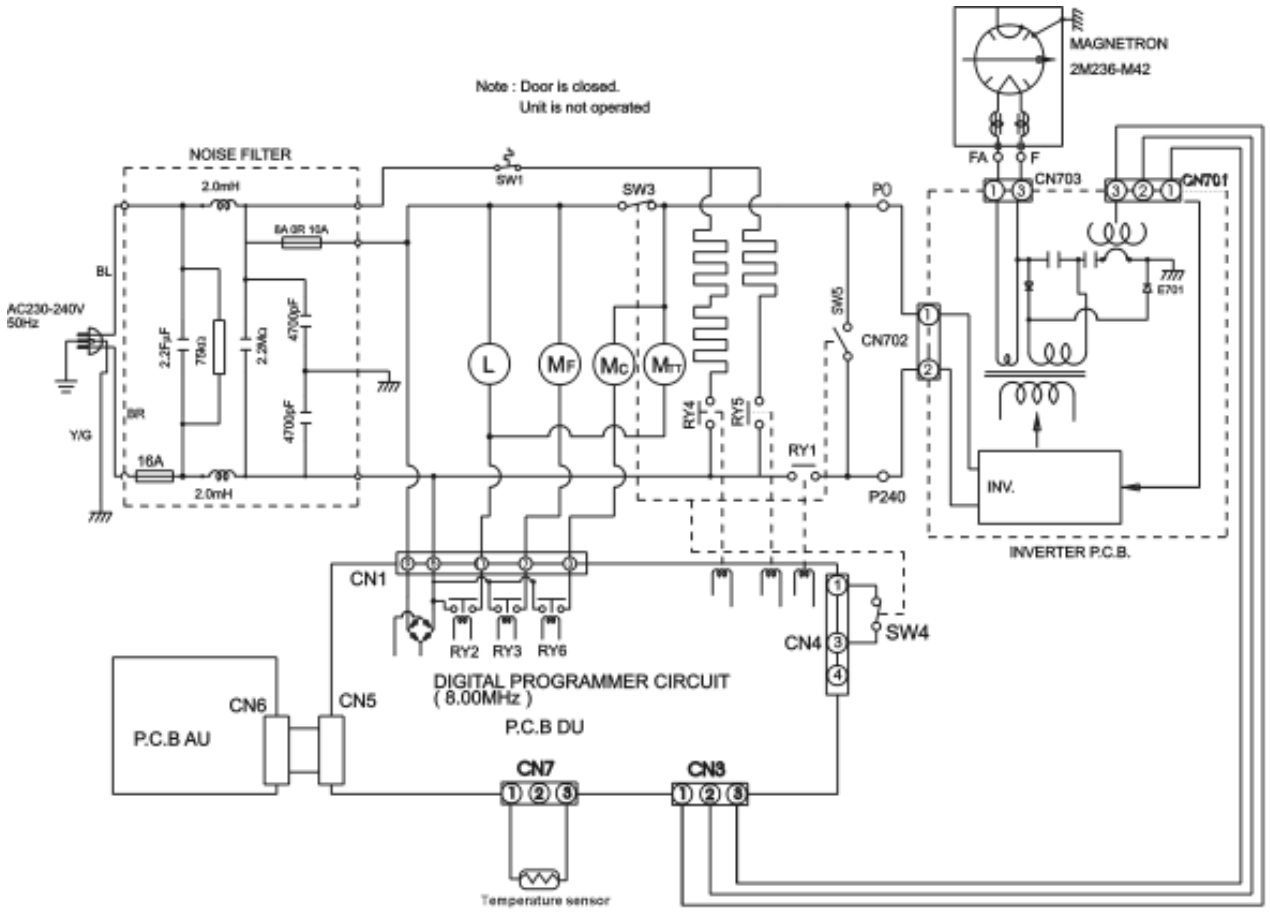


Power Relay
(Ry4)



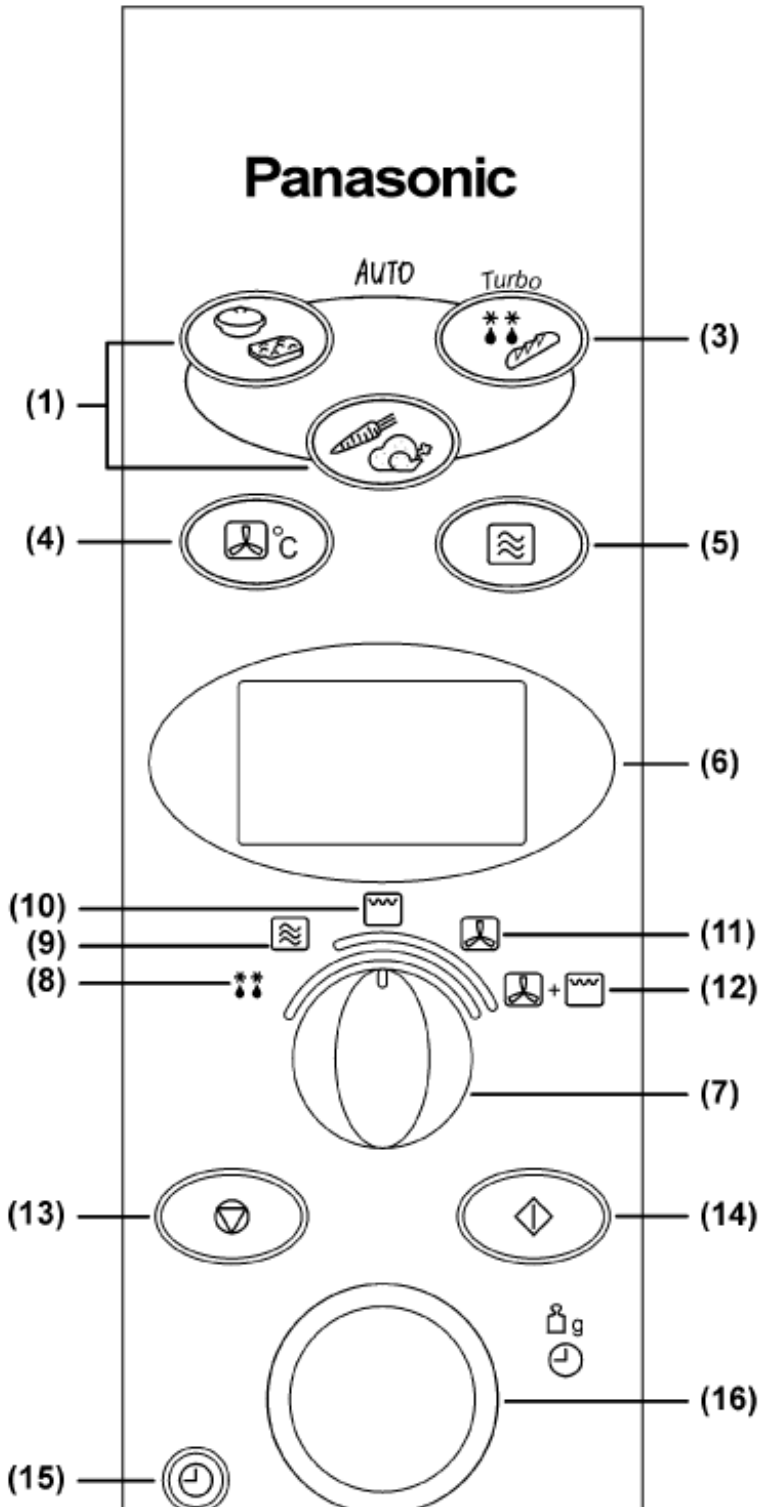
Power Relay
(Ry1)

SYMBOL	COLOUR
BL	BLUE
BK	BLACK
BR	BROWN
WH	WHITE
Y	YELLOW
R	RED

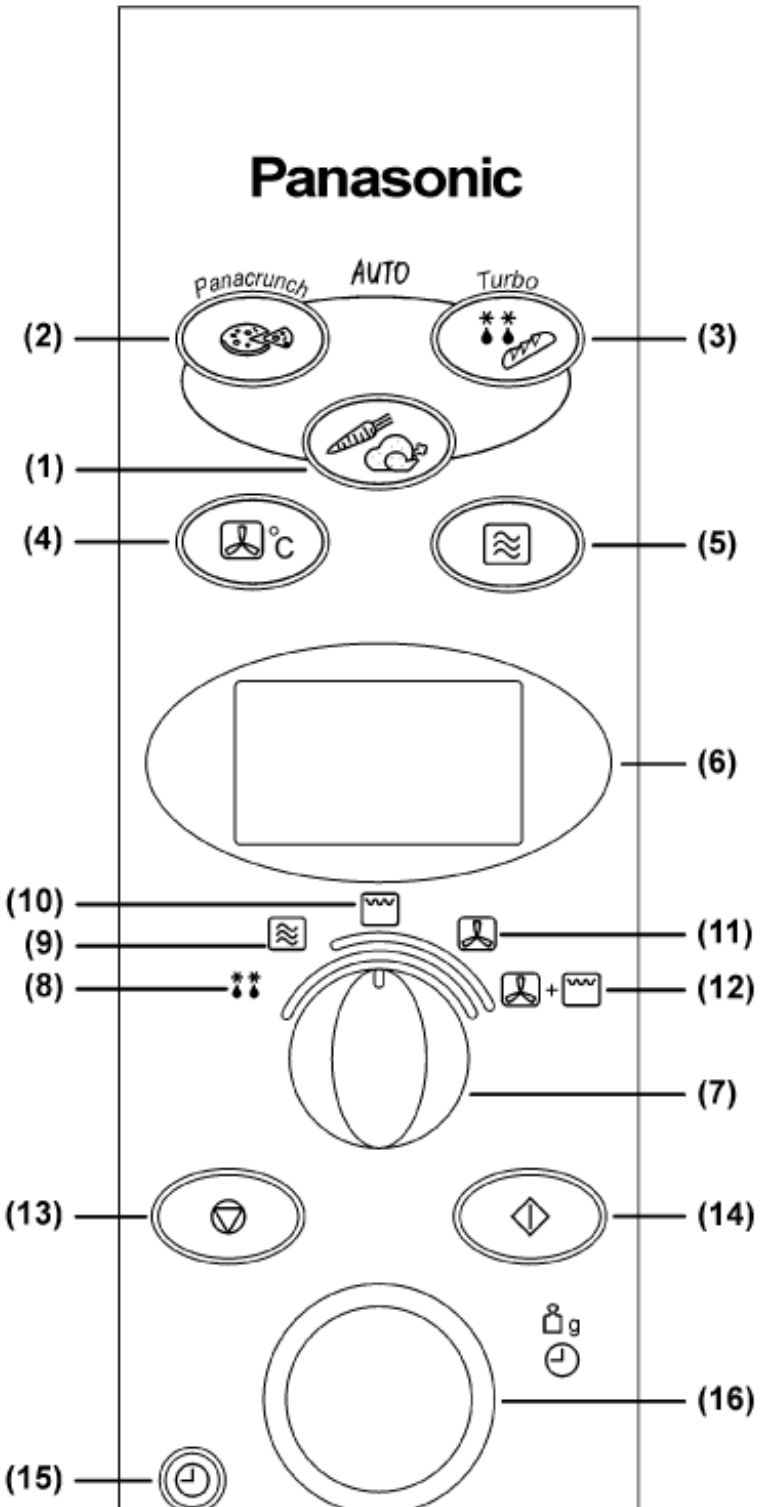


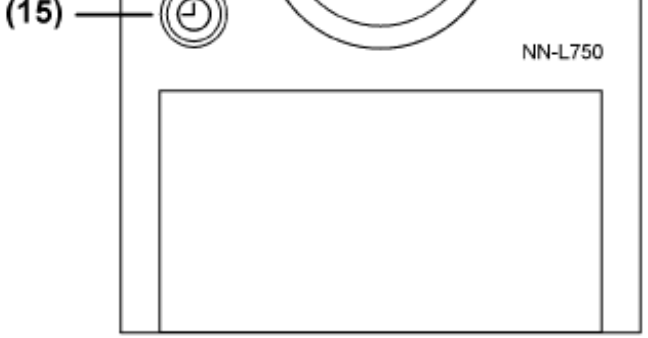
SW1	THERMAL CUT OUT (OVEN)
Sw3	PRIMARY INTER-LOCK SWITCH
Sw4	SECONDARY INTER-LOCK SWITCH
Sw5	MONITOR DEVICE
	GROUNDING
	CHASSIS GROUND
	FUSE
Mf	FAN MOTOR
	DIODE
	VARISTOR
RY1 RY6	POWER RELAY
L	OVEN LAMP
Mtt	TURN TABLE MOTOR
	HEATER

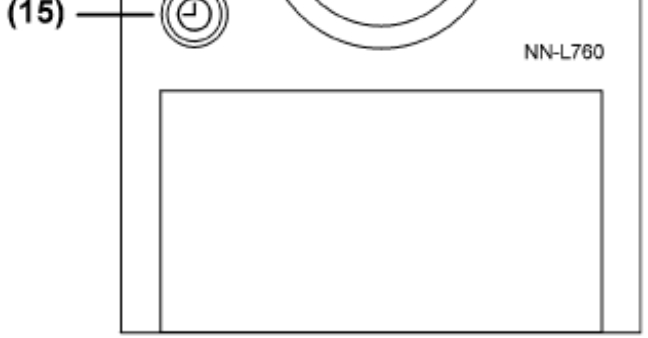
NN-L750



NN-L760







(1) Auto Weight Programs

(2) Panacrunch Auto Weight Programs (NN-L760)

(3) Auto Weight Defrost and Frozen Bread

(4) Convection Temperature Selector Button

(5) Microwave Power Selector Button

(6) Display Window

(7) Mode Selector Dial

(8) Defrost Power Setting

(9) Microwave Power Setting

(10) Grill Setting

(11) Convection Setting

(12) Convection and Grill Setting

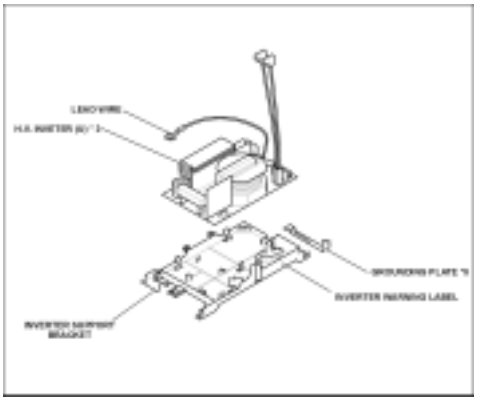
(13) Stop Cancel Button:
Before Cooking: one press clears your instructions.
During Cooking: one press temporarily stops the cooking program. Another press cancels all your instructions and the time of the day will appear in the display

(14) Start Button:
Press to start operating the oven. If during cooking the door is opened or the Stop/Cancel Button is pressed once , the Start Button has to be pressed again to continue cooking.

(15) Clock/Timer Button

(16) Time/Weight Dial

Beep Sound:
A beep sounds when a button is pressed. If this beep does not sound, the setting is incorrect. When the oven changes from one function to another, two beeps sound. After completion of cooking, five beeps sound.


LEAD WIRE
H.V. INVERTER (U) *1
GROUNDING PLATE *1
INVERTER WARNING LABEL
INVERTER MOUNT BRACKET