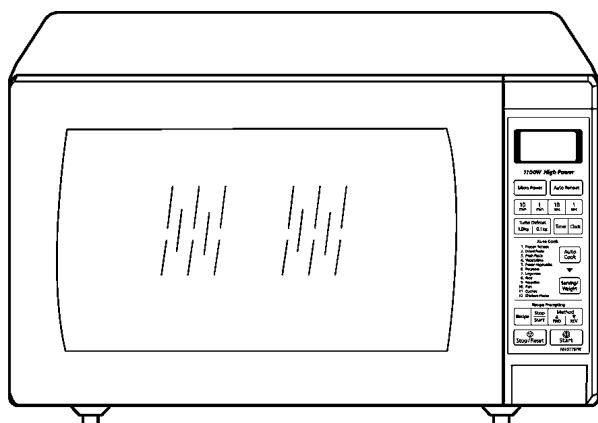


Service Manual

Microwave Oven

NN-ST757W



KTE(UAE)

PTE(Iran)

KPQ(Kuwait, Doha, Qatar, Oman, Bahrain, Pakistan)

STM(Saudi Arabia)

Please file and use this manual together with the service manual for Model NN-S650WF (ORDER NO. SIMMC0007014C3)

Specifications:

Specifications:	Models:	NN-ST757W
Power Source:	230V-240V AC Single Phase, 50Hz ----- for KPQ model 220V AC Single Phase, 50Hz ----- for KTE, PTE models 220V AC Single Phase, 50Hz/60Hz ----- for STM model	
Power Requirement:	1150W	
Output:	1100W	
Microwave Frequency:	2450MHz	
Timer:	30 min. /Stage (HIGH Power) - 5 Stage Maximum 99 min. 99 sec. /Stage (Other Power Levels) - 5 Stage Maximum	
Outside Dimensions:	555mm(W) X 493mm(D) X304mm(H)	
Oven Cavity Dimensions:	418mm(W) X 470mm(D) X 228mm(H)	
Weight:	14.3 kg	
PbF	This product with PbF	
Specifications subject to change without notice.		

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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.

WARNING

1. This product should be serviced only by trained, qualified personnel.
2. Check for radiation leakage before and after every servicing according to the “procedure for measuring radiation leakage.”
3. If the unit cannot be repaired on site, advise the customer not to use until unit is repaired.
4. There are special components used in the microwave oven which are important for safety. These parts are marked with a  on the replacement parts list. It is essential that these critical parts be replaced only with the manufacture’s specified parts to prevent microwave leakage, shock, fire, or other hazards. Do not modify the original design.

This service manual covers products for following markets.

When troubleshooting or replacing parts, please refer to the country identifications shown below for your applicable product specification.

KTE For UAE

PTE For Iran

KPQ For Kuwait, Doha, Qatar

Oman, Bahrain, Pakistan

STM For Saudi Arabia

CAUTION

About lead free solder (PbF)

Distinction of PbF PCB: PCBs (manufactured) using lead free solder will have a PbF stamp on the PCB.

Caution: ● Pb free solder has a higher melting point than standard solder; Typically the melting point is 30 - 40°C higher.

Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to $370 \pm 10^\circ\text{C}$.

- Pb free solder will tend to splash when heated too high (about 600°C).

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

INVERTER WARNING

This Inverter board looks like a regular PCB. However, this PCB drives the magnetron tube with extremely high voltage and high current.

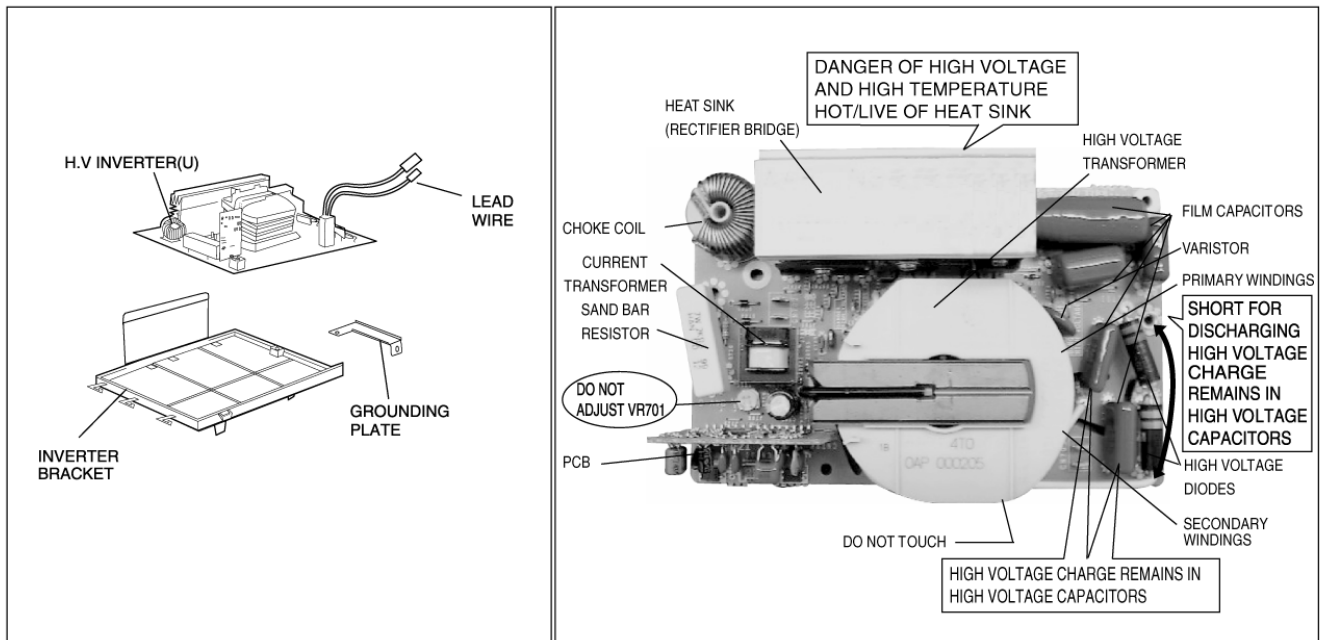
NEW H.V.

- IT HAS:**
1. Very high voltage and high current circuits.
It functions the same as the high voltage transformer and high voltage capacitor in ordinary microwave ovens.
 2. Aluminum heat sink that is energized with very high voltage and high heat energy.
 3. Very high voltage which may remain in circuitry even when oven is off. High voltage charge may remain in the capacitors on the board.

DO NOT:

- * 1. Do not touch circuitry because it has very hot (high voltage) circuitry. Even when replacing board, extreme care should be taken to avoid possible electric shock hazards. High voltage charge may remain in circuits.
- * 2. Do not touch aluminum heat sink because it is energized with very high voltage and is also very hot in high heat energy.
- * 3. Do not try to adjust or tamper with preset control on the Inverter board because it is very dangerous to adjust without proper test equipment.
- * 4. Do not test oven while Inverter grounding plate or screws are loose. It is very dangerous to operate H.V. Inverter Circuit (U) with loose mounting screws or if improperly grounded.

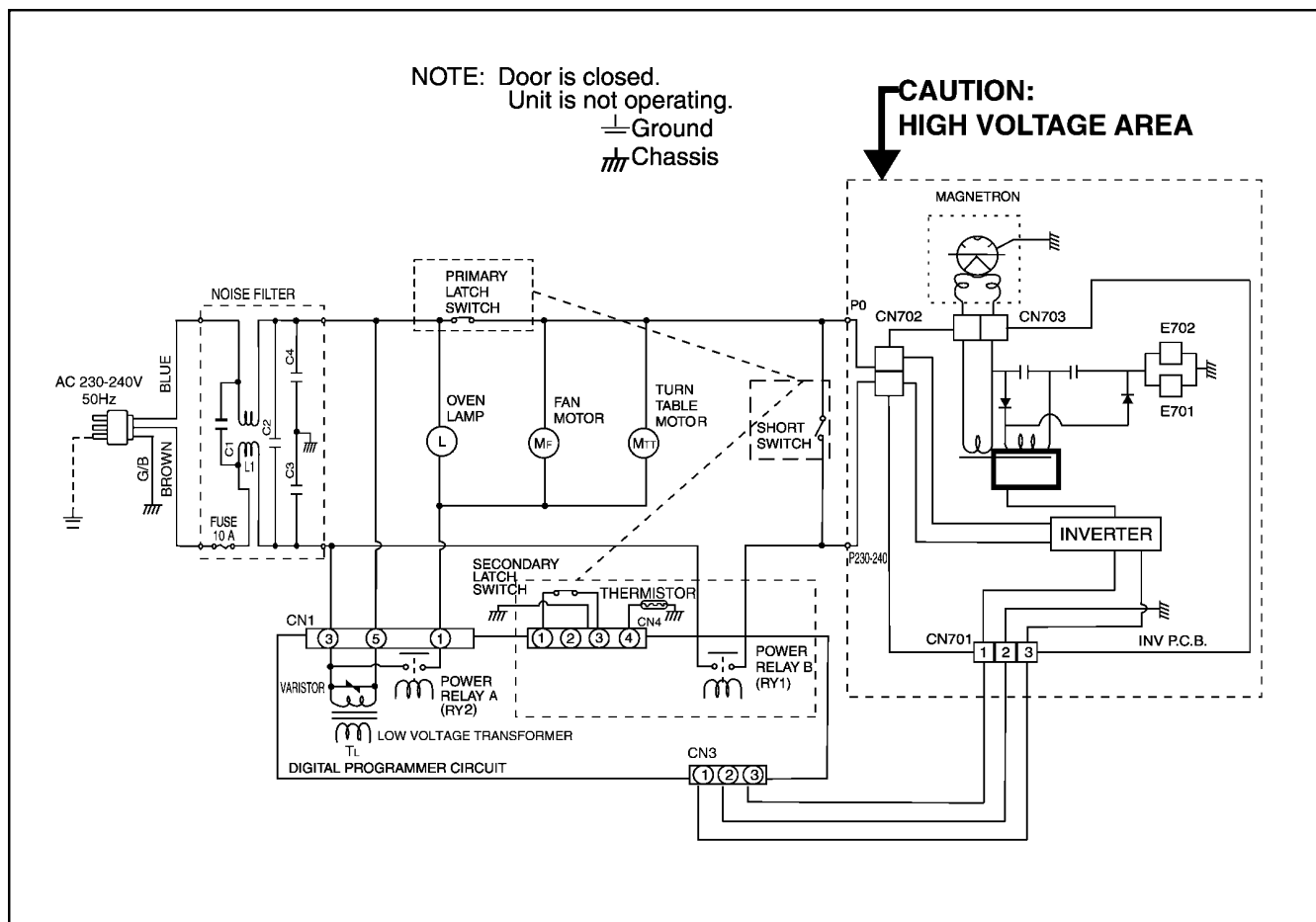
INVERTER POWER SUPPLY



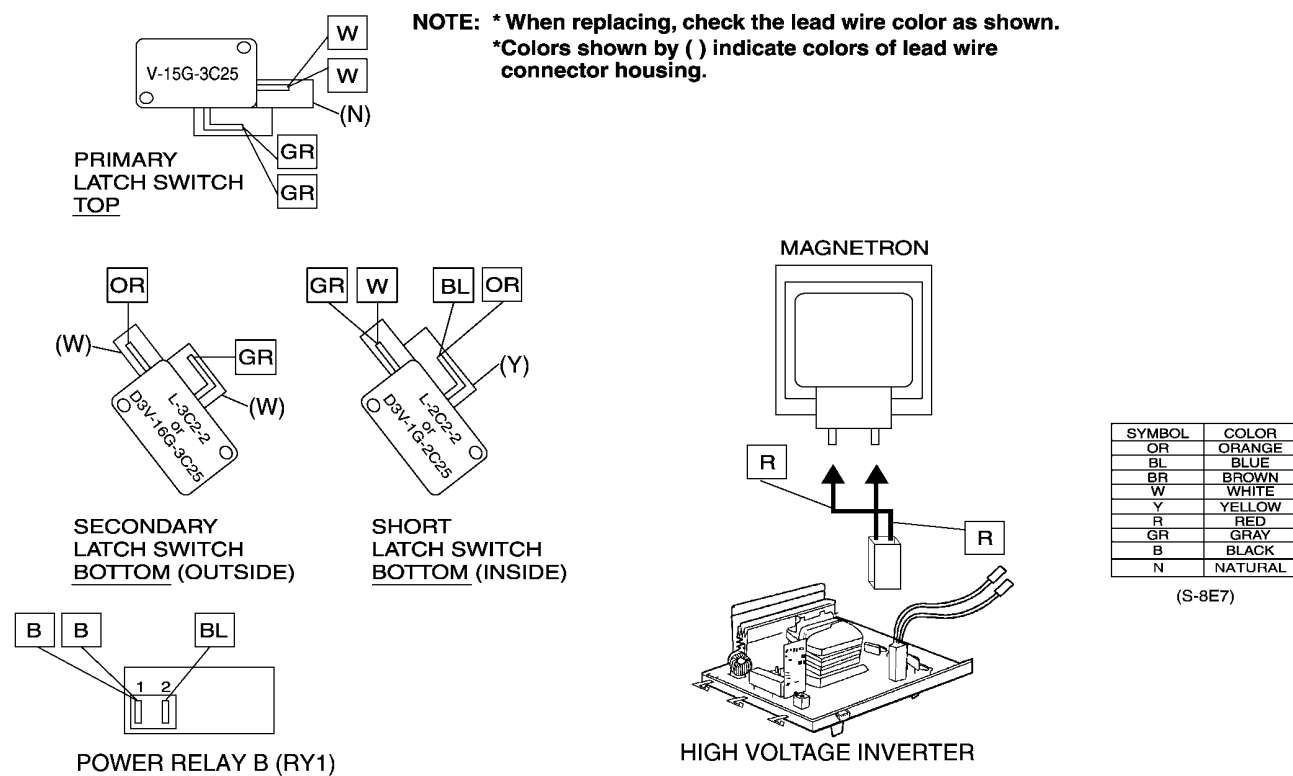
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1 SCHEMATIC DIAGRAM



WIRING DIAGRAM



2 CAUTIONS TO BE OBSERVED WHEN TROUBLESHOOTING

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

Caution

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

2.1. Check the grounding

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

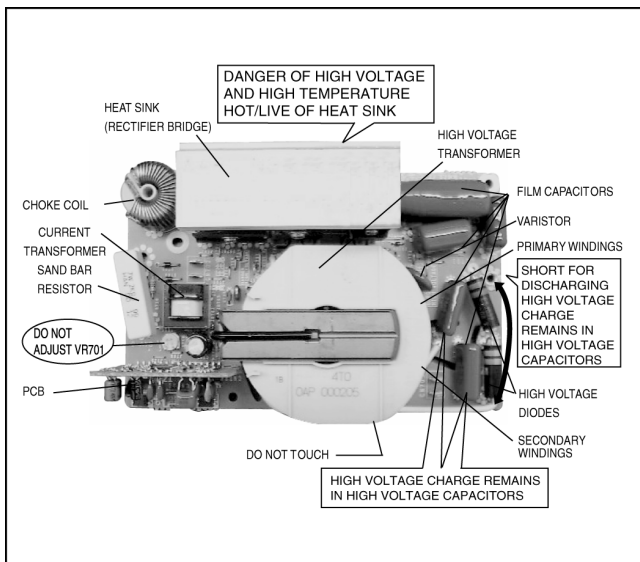
2.2. Inverter warnings

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

The high voltage inverter power supply handles very high voltage and current for the magnetron tube. Though it is free from danger in ordinary use, extreme care should be taken during repair.

The aluminum heat sink is also energized with high voltage (HOT), do not touch when the AC input terminals are energized. The power device Collector is directly connected to the aluminum heat sink.

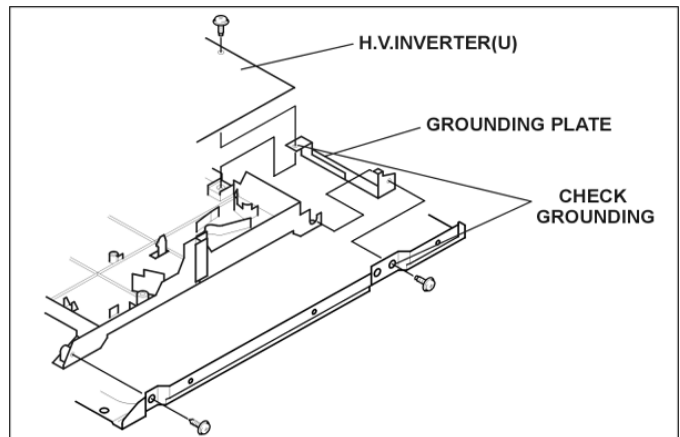
The aluminum heat sink may be HOT due to heat energy, therefore, extreme care should be taken during servicing.



H.V. Inverter warning

WARNING FOR INVERTER POWER SUPPLY (U) GROUNDING

Check the high voltage inverter power supply circuit grounding. The 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 not grounded it will expose the user to very high voltages and cause extreme DANGER! Be sure that the inverter circuit is properly grounded via the inverter earth bracket.

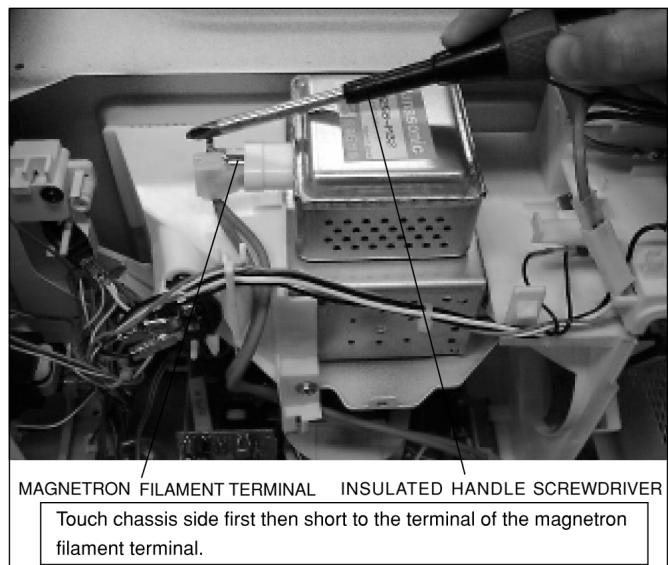


Grounding of the inverter circuit board

WARNING! DISCHARGE THE HIGH VOLTAGE 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 the chassis ground side first and then short to the output terminals.



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. DO NOT measure the voltage in the high voltage circuit including the filament voltage of the magnetron.

WARNING

Never touch any circuit wiring with your hand or with an insulated tool during operation.

2.3. Part replacement.

When any part or component is to be replaced, always ensure that the power cord is removed from the wall outlet.

2.4. 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 interlock monitor switch, replace all of the components (primary latch switch, door switch, short switch and power relay B (RY1)).

1. This is 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.

2.5. 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.

2.6. 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

USE CAUTION NOT TO BECOME EXPOSED TO RADIATION FROM THE MICROWAVE MAGNETRON OR OTHER PARTS CONDUCTING MICROWAVE ENERGY

IMPORTANT NOTICE

The following components have potentials above 2000V while the 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 to these areas.

When the appliance is operated with the door hinges or magnetron installed incorrectly, the microwave leakage can exceed more than 5mW/cm². After repair or exchange, it is very important to check if the magnetron and the door hinges are correctly installed.

2.7. Sharp edges

Caution

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

3 MEASUREMENTS AND ADJUSTMENTS

3.1. Adjustment of primary latch switch, secondary latch switch and short switch.

1. Mount the Primary latch switch, the secondary latch switch and the short switch to the door hook assembly as shown in ILL.

NOTE:

No specific individual adjustments during installation of the Primary latch switch, Secondary latch switch or Short switch to the door hook are required.

2. When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of the arrows in the illustration, so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure 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 and check the continuity of the monitor circuit and all latch switches again by following the component test procedures.

3.2. Measurement of microwave output

The output power of the magnetron can be determined by performing IEC standard test procedures. However, due to the complexity of 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 stopwatch

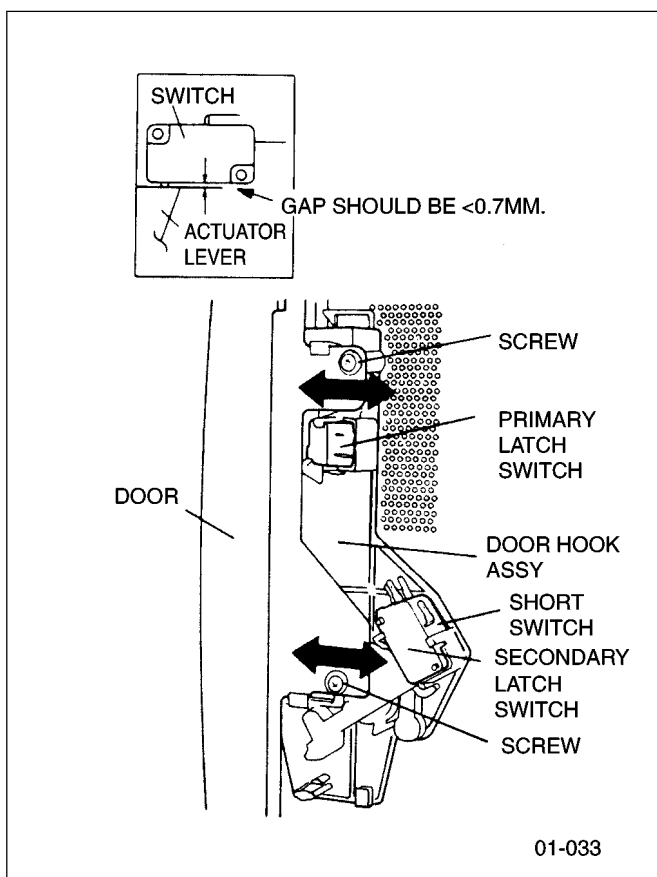
NOTE:

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

1. Fill the beaker with exactly one liter of tap water. Stir the water using the thermometer and record the water's temperature. (recorded as T1).
2. Place the beaker on the center of glass tray.
Set the oven for High power and heat it for exactly one minute.
3. Stir the water again and read the temperature of the water. (recorded as T2).
4. The normal temperature rise at High power level for each model, is as shown in table.

TABLE (1L-1min.test)

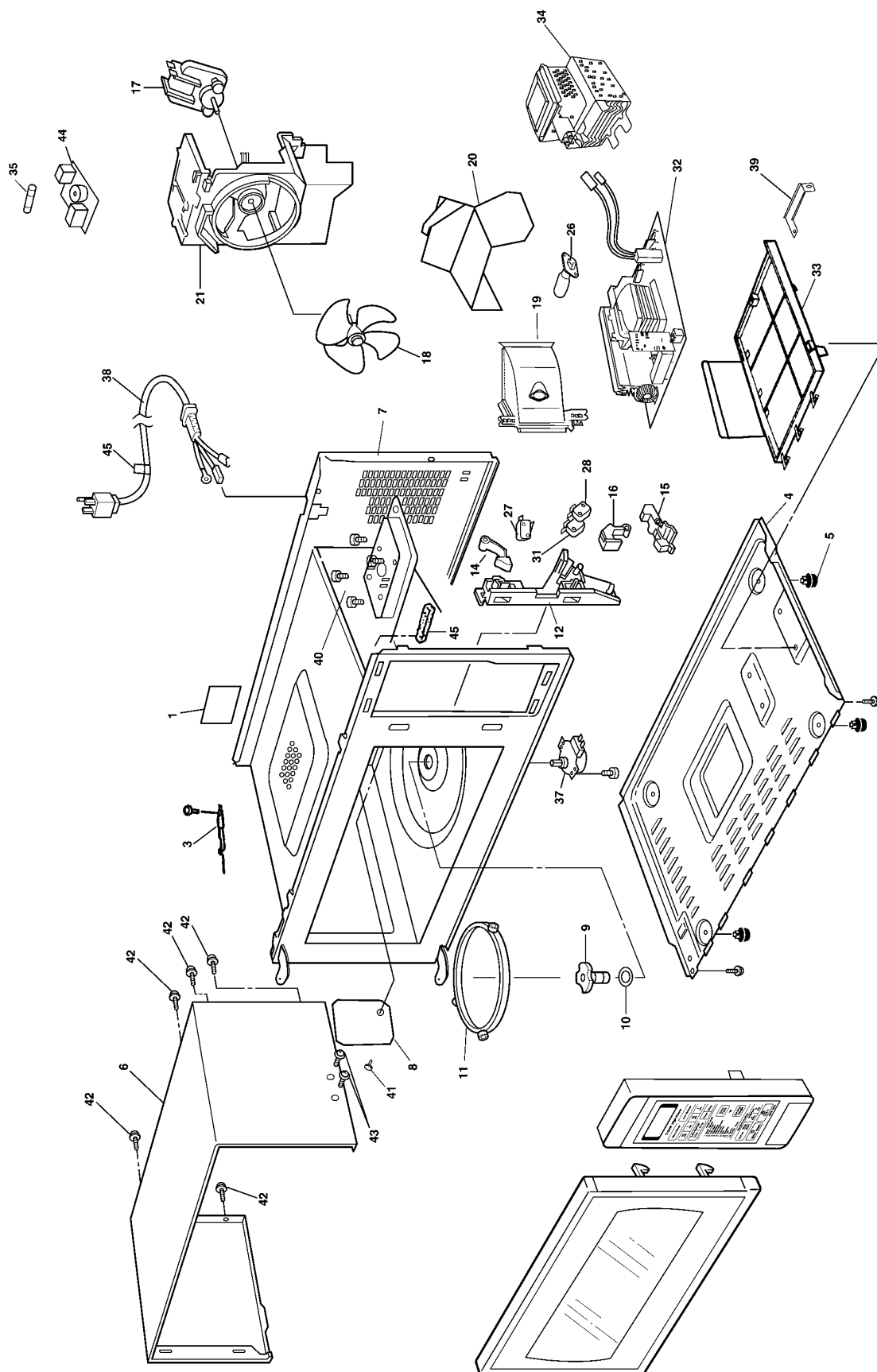
RATED OUTPUT	TEMPERATURE RISE
1100W	Min. 9.4°C



4 EXPLODED VIEW AND PARTS LIST

4.1. EXPLODED VIEW

EXPLODED VIEW



4.2. PARTS LIST

NOTE:

1. When ordering replacement part(s), please use part number(s) shown in this part list.

Do not use description of the part.

2. Important safety notice:

Components identified by mark have special characteristics important for safety.

When replacing any of these components, use only manufacture's specified parts.

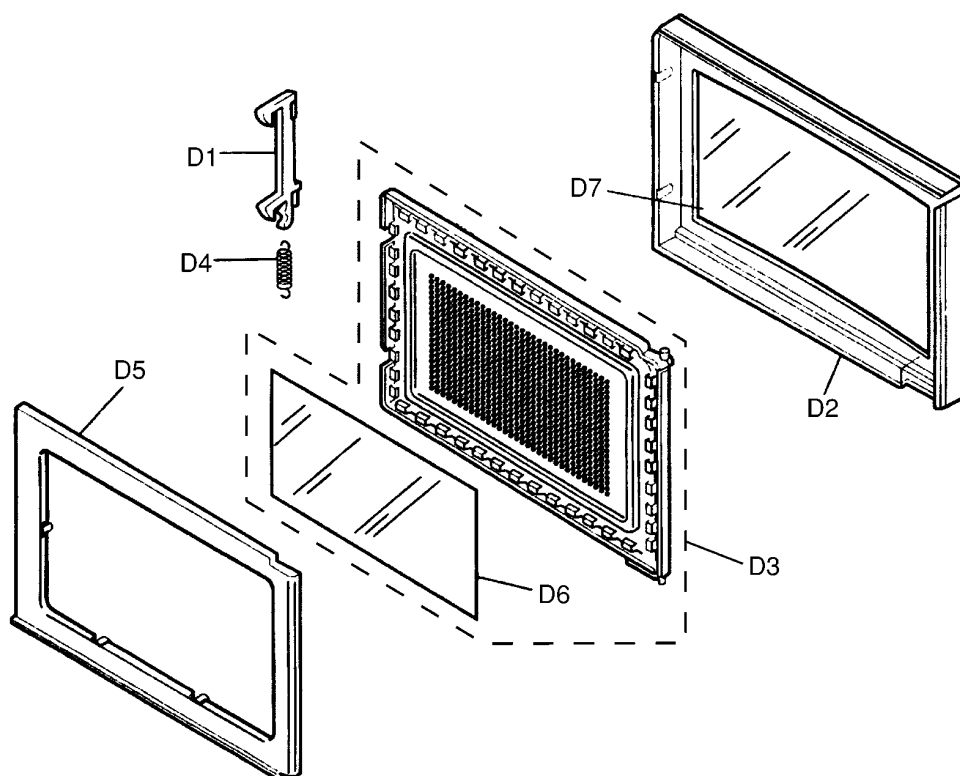
NOTE:

“A” parts are supplied by MOBU (Japan)

“F” parts are supplied by PHAMOS (China)

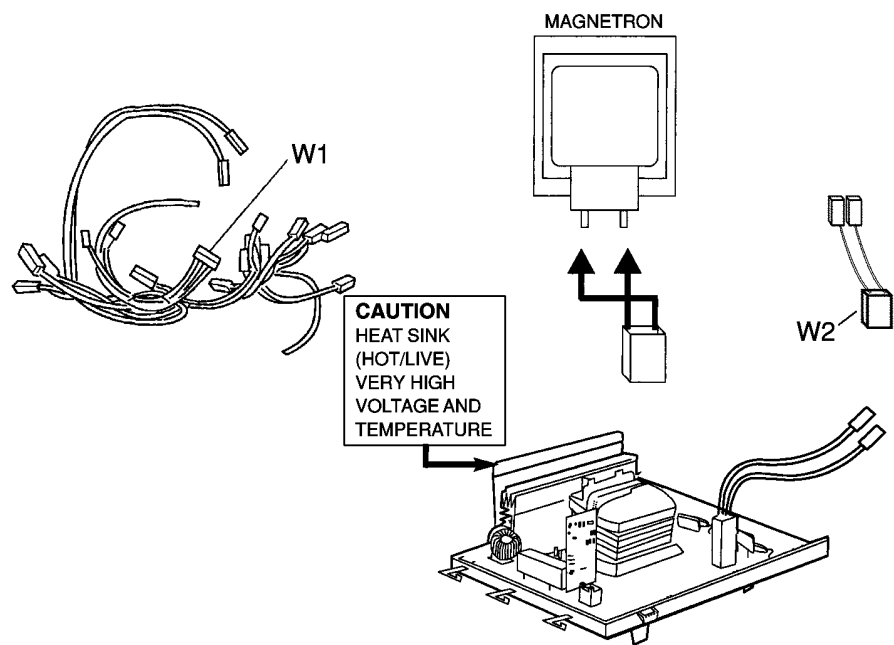
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
1		F00066V00HP	CAUTION LABEL	1	
3		F03534W00QP	LEAD WIRE HARNESS	1	
4		F10014W00APG	BASE	1	
5		F10084T00AP	RUBBER FOOT	4	
6		F110D4W00HQP	CABINET BODY (U)	1	
7	△	F200A8E40AP	OVEN (U)	1	
8		F20555K00AP	COVER	1	
9		F21315Y00AP	PULLY SHAFT	1	
10		F2177-F80	WASHER	1	
11		F290D9330AP	ROLLER RING (U)	1	
12	△	F3020-1200	DOOR HOOK	1	
14		F3136-1200	HOOK LEVER A	1	
15		F31374650AP	HOOK LEVER B	1	
16		F31384650AP	HOOK LEVER C	1	
17		F400A6V00QP	FAN MOTOR	1	AC240V, SINGLE PHASE, 50Hz
18		F40084T00AP	FAN BLADE	1	
19		F40254W00AP	AIR GUIDE A	1	
20		F40264W00AP	AIR GUIDE B	1	
21		F41444W00AP	ORIFICE	1	
26		F612E4Y00XP	INCANDESCENT LAMP (U)	1	24V, 50Hz, 20W
27	△	J61415G10XN	MICRO SWITCH	1	(PRIMARY LATCH SWITCH) (V-15G-3C25)
28	△	J61414T00AP	MICRO SWITCH	1	(SECONDARY LATCH SWITCH) (D3V-16G-3C25)
31	△	F61785U30XN	MICRO SWITCH	1	(SHORT SWITCH) (D3V-1G-2C25)
32	△	F606Y4V00XN	H.V. INVERTER (U)	1	
33		F65854W00AP	INVERTER BRACKET A	1	
34	△	2M261-M32JP	MAGNETRON	1	
35	△	F62306V60BP	FUSE	1	10A/240V
37		F63265U30XN	TURNTABLE MOTOR	1	
38	△	F900C8F70YK	AC CORD W/PLUG	1	KTE, KPQ
38	△	F900C8F60PT	AC CORD W/PLUG	1	PTE
38	△	F900C5E90SN	AC CORD W/PLUG	1	STM
39		F66624W00AP	GROUNDING PLATE	1	
40		XTWFA4+12T	SCREW	4	FOR MAGNETRON
41		F90804W00AP	CANOE CLIP	1	FOR COVER
42		XTWFA4+12D	SCREW	5	FOR CABINET BODY
43		XTTFA4+6BN	SCREW	2	FOR CABINET BODY SIDE
44		F692Y8A00QP	NOISE FILTER	1	
45		F02395E20KN	CORD CAUTION LABEL	1	

4.3. DOOR ASSEMBLY



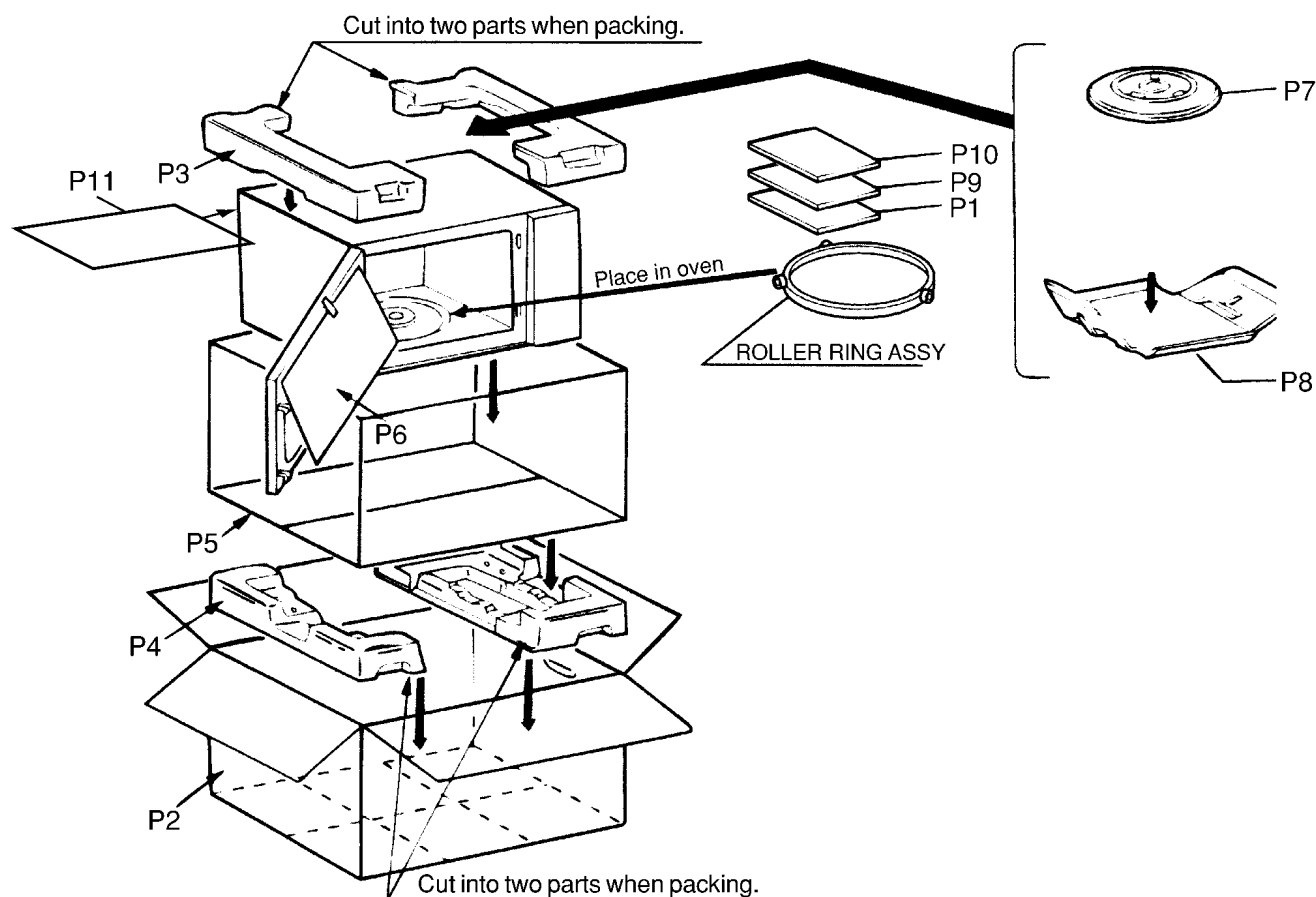
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
D1		F30186P40AG	DOOR KEY A	1	
D2	⚠	F30016V20HQP	DOOR A	1	
D3	⚠	F302K4W00AP	DOOR E (U)	1	
D4		F30215G10XN	DOOR KEY SPRING	1	
D5	⚠	F30854W00AP	DOOR C	1	
D6	⚠	F31456V00XP	DOOR SCREEN A	1	
D7		F31468E30BAP	DOOR SCREEN B	1	

4.4. WIRING MATERIALS



Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
W1	F030A5T50QP	LEAD WIRE HARNESS	1	
W2	F030E6V00QP	H.V.LEAD WIRE	1	

4.6. PACKING AND ACCESSORIES



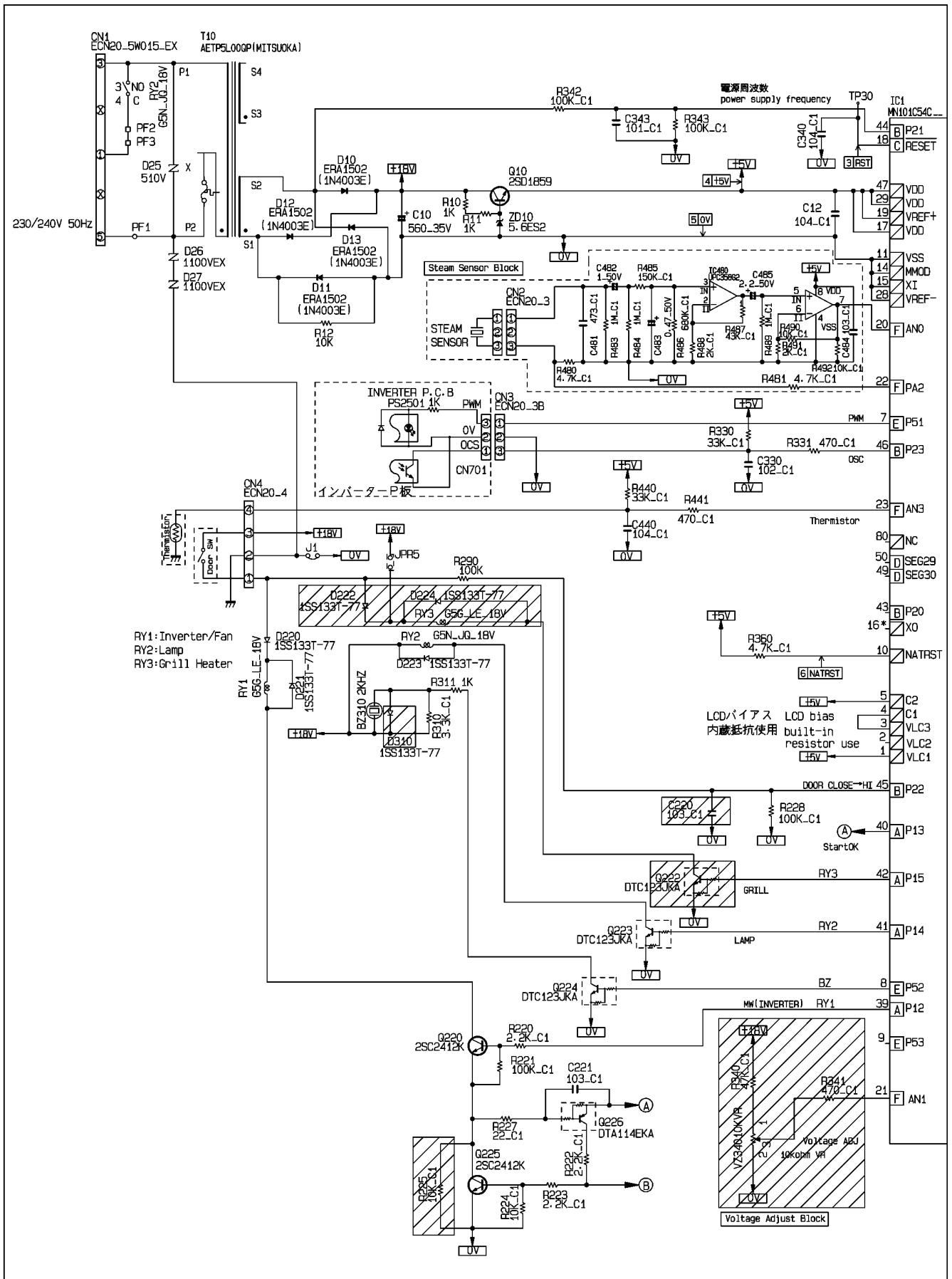
Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
P1	F00038E70KP	INSTRUCTION MANUAL	1	
P2	F01028E70HKT	PACKING CASE, PAPER	1	ST757W KTE/PTE
P2	F01028E70HKP	PACKING CASE, PAPER	1	ST757W KPQ/STM
P3	F01045J00AP	UPPER FILLER	1	
P4	F01055J00AP	LOWER FILLER	1	
P5	F01064W00AP	P.E. BAG	1	
P6	F01074W00AP	DOOR SHEET	1	
P7	F06014W00AP	COOKING TRAY	1	
P8	F01084W00AP	TRAY PACKING	1	
P9	F000B7J70KP	COOKING GUIDE	1	
P10	F04458E70HKP	OVERLAY	1	
P11	F01924U00AP	SHEET	1	

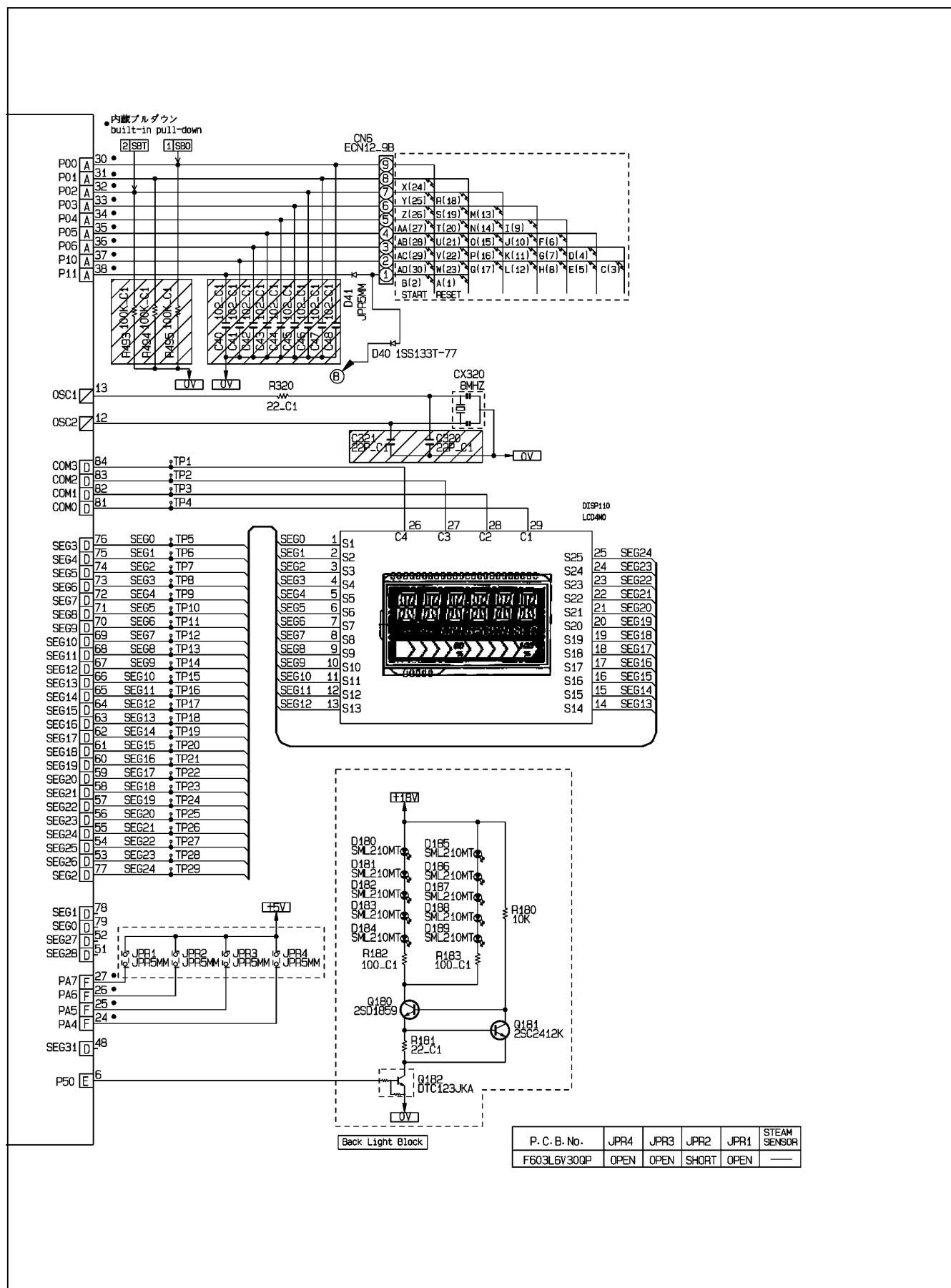
4.7. H.V. INVERTER BOARD MAIN PARTS LIST (F606Y4V00XN)

Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
Q701		TRANSISTOR SI	1	
Q702	A691E4V10GP	TRANSISTOR SI	1	
DB701	AESTRS2006M	DIODE SI	1	20A, 600V
D701, D702	A62024V00GP	DIODE SI	2	0.3A
C704, C705	ECWH30822JUA	CAPACITOR	2	8200PF 3000VDC
T701	F609A4V00XN	H.V. TRANSFORMER	1	
	F607D4V00XN	D.P. CIRCUIT (KU)	1	
L701	F50204V00XN	CHOKE COIL	1	
CT701	F66904V00XN	CURRENT TRANSFORMER	1	

5 DIGITAL PROGRAMMER CIRCUIT

5.1. DIGITAL PROGRAMMER CIRCUIT





5.2. PARTS LIST

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
BZ310		L0DDEA000014	BUZZER	1	2.0KHz
C10		AECETK1V561B	AL CHEM CAPACITOR	1	560 μ F/35V
CX320		EFOEC8004A4	CERAMIC RESONATOR	1	8.0MHz
DISP110		L5AAAFD00019	LCD	1	
DISP1 HOLDER		F66175E40XN	LCD HOLDER	1	
		F67525E40XN	DIFFUSION SHEET	1	
D10-D13		B0EAKT000025	DIODE	4	
D40, D220, D221, D223		MA2C19600E	DIODE	4	
D25		AERZ511KD10A	VARISTOR	1	
D26, D27		AERZ102KD10A	VARISTOR	2	
IC1		MN101C54CFT	L.S.I.	1	
Q10, Q180		B1BAAJ000003	TRANSISTOR	2	
RY1		AEBGJQC25F18	POWER RELAY	1	
RY2		K6B1AZA00011	POWER RELAY	1	EXCEPT STM
RY2		K6B1AZA00013	POWER RELAY	1	STM
T10		G4C3AAH00008	LOW VOLTAGE TRANSFORMER	1	
ZD10		B0BA5R600016	ZENER DIODE	1	