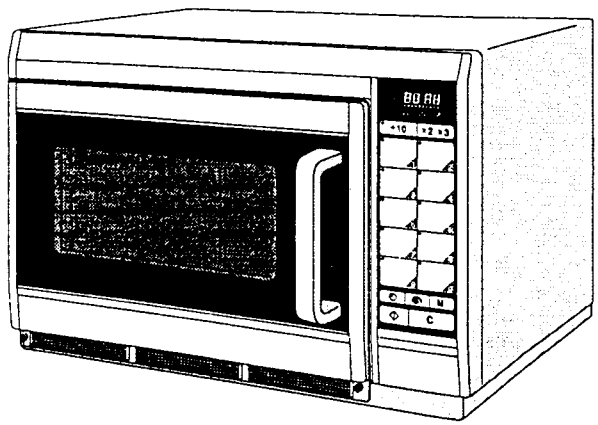
SANYO

FILE NO. A-7764

SERVICE MANUAL

EM-C1850(UK/SD)



Model No.	Product Code No.
EM-C1850 UK	437 462 01
EM-C1850 Germany	437 462 00

Foreword

Read this manual carefully, especially precaution on microwave energy , and follow the procedure strictly. Careless servicing and testing may expose yourself to the microwave energy leakage.

PRECATIONS

PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE TO EXCESSIVE MICROWAVE ENERGY

(a) Do not operate or allow the oven to be operated with the door open.

(b) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary :

(1) Interlock operation, (2) proper door closing , (3) seal and sealing surfaces(arcing, wear and other damage), (4) damage to or loosing of hinges and latches, (5) evidence of dropping or abuse

(c) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, wave guide or transmission line, and cavity for proper alignment, integrity, and connections.

(d) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.

Reference No. SM-640174

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CAUTION
MICROWAVE RADIATION
PERSONNEL SHOULD NOT BE EXPOSED TO THE MICROWAVE ENERGY WHICH MAY RADIATE FROM THE MAGNETRON OR OTHER MICROWAVE GENERATING DEVICE IF IT IS IMPROPERLY USEC OR CONNECTED. ALL INPUT AND OUTPUT MICROWAVE CONNECTIONS, WAVEGUIDE, FLANGES, AND GASKETS MUST BE SECURE. NEVER OPERATE THE DEVICE WITHOUT A MICROWAVE ENERGY ABSORBING LOAD ATTACHED. NEVER LOOK INTO AN OPEN WAVEGUIDE OR ANTENNA WHILE THE DEVICE IS ENERGIZED.

Note:
If the interlock monitor circuit operates and at the same time the fuse blows with the door opened, be sure to replace the control circuit board, because relay 3 and 4 on the control circuit board, the door sensing switch and the electric circuit related on the door sensing switch, which act as secondary interlock switch.

1.ADJUSTMENT PROCEDURES

TO AVOID POSSIBLE EXPOSURE TO MICROWAVE ENERGY LEAKAGE, THE FOLLOWING ADJUSTMENT OF THE INTERLOCK SWITCHES SHOULD BE MADE ONLY BY AUTHORIZED SERVICE PERSONNEL.

PRIMARY INTERLOCK SWITCH, INTERLOCK MONITOR SWICH AND DOOR SENSING SWITCH ADJUSTMENT

(Figure 1)

(1) Loosen 2 screws securing the lever stopper.
(2) Adjust the lever stopper position so that it is pushed and pull backward until there is about zero gap between the latch lever and the switch body on the primary interlock switch and at the same time there is about zero gap between latch lever and the switch body on the door sensing switch when the door latch is securely locked.
(3) Tighten the lever stopper screws securely.
(4) Make sure the interlock monitor switch closes after the primary interlock switch opens when the door is opened very slowly, according to " CHECKOUT PROCEDURE FOR SWITCHES" on page 6.
(5) Make sure the interlock monitor switch opens before the primary interlock switch closes when when the door is closed very slowly, according to "CHECKOUT PROCEDURE FOR SWITCHES" on page 6
(6) Make sure the microwave energy leakage is below the limit of the regulation (5mW/c ㎡) when measured with a detector.
(All service adjustments must be made for minimum microwave energy leakage readings.)

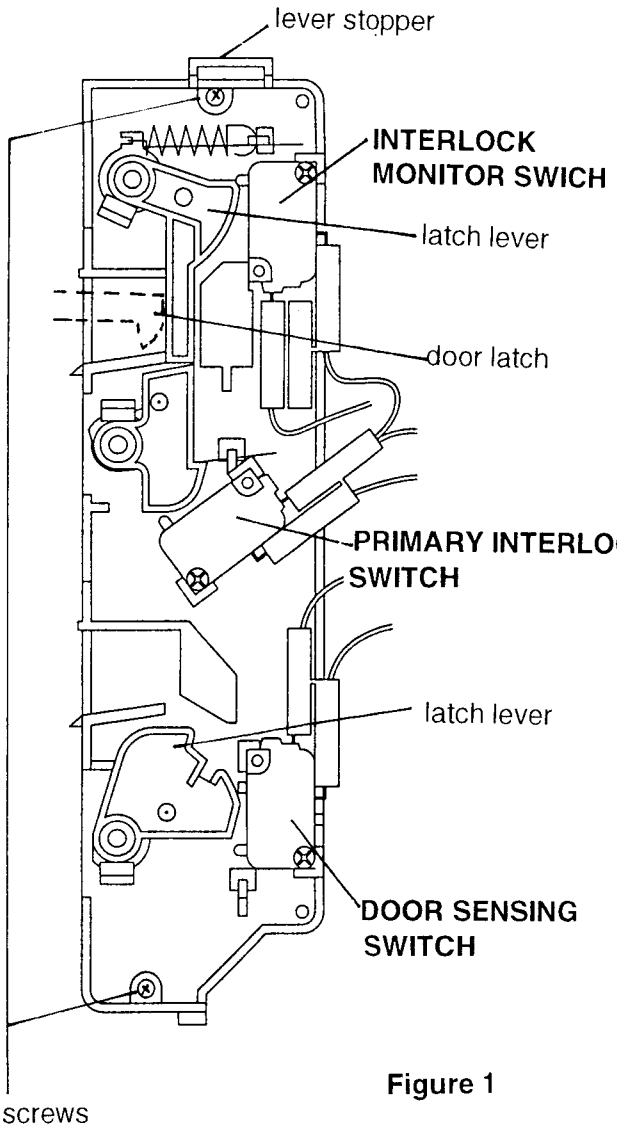


Figure 1

2.SPECIFICATIONS

Microwave output.....1,800W to 180W
Frequency.....2,450MHz
Power supply.....230V, 50Hz
Rated current.....13 Amp.
Safety Device.....
Thermal limitter (Magnetron)150°C Open
80°C Close
Thermistor (Magnetron).....200°C Open
108°C Close
Thermistor(Duct).....120°C Open
Fuse (Cartridge Type)..... 250V 10A
Micro switch, Relay
Primary interlock Switch
Interlock monitor Switch
Door sensing Switch and
Relay RL-3 and 4
Max. input time.....Electronic Digital, up to
Manual 10min.
Memory 30min.
Overall Dimensions.....520(W)x432(D)x335(H) mm
Oven cavity size..... 330(W)x330(D)x175(H) mm
Effective Capacity of Oven Cavity .....19.1 liters
Net weight.....32Kg

3. POWER OUTPUT MEASUREMENT

(1) Prepare 1000+5g tap water.
(2) Adjust water temperature to 10 ±2°C.
(3) Pour water into a container made of borosilicate Glass, 190mm outer diameter cylinder, maximum 3mm thickness.
Note :Use the container kept on the room Temperature.
(4) place the container on the center of oven cavity.
(5) Set the heating time for 26 seconds and rating Full power and then start oven.
(6) Take the container out immediately when heating time is up.
(7) Stir water for making even water temperature in The container.
(8) Measure water temperature.

Water temperature rise shall be 8 to 12°C.

4. PRECATIONS AND REPAIR SERVICE TIPS

PRELIMINARY

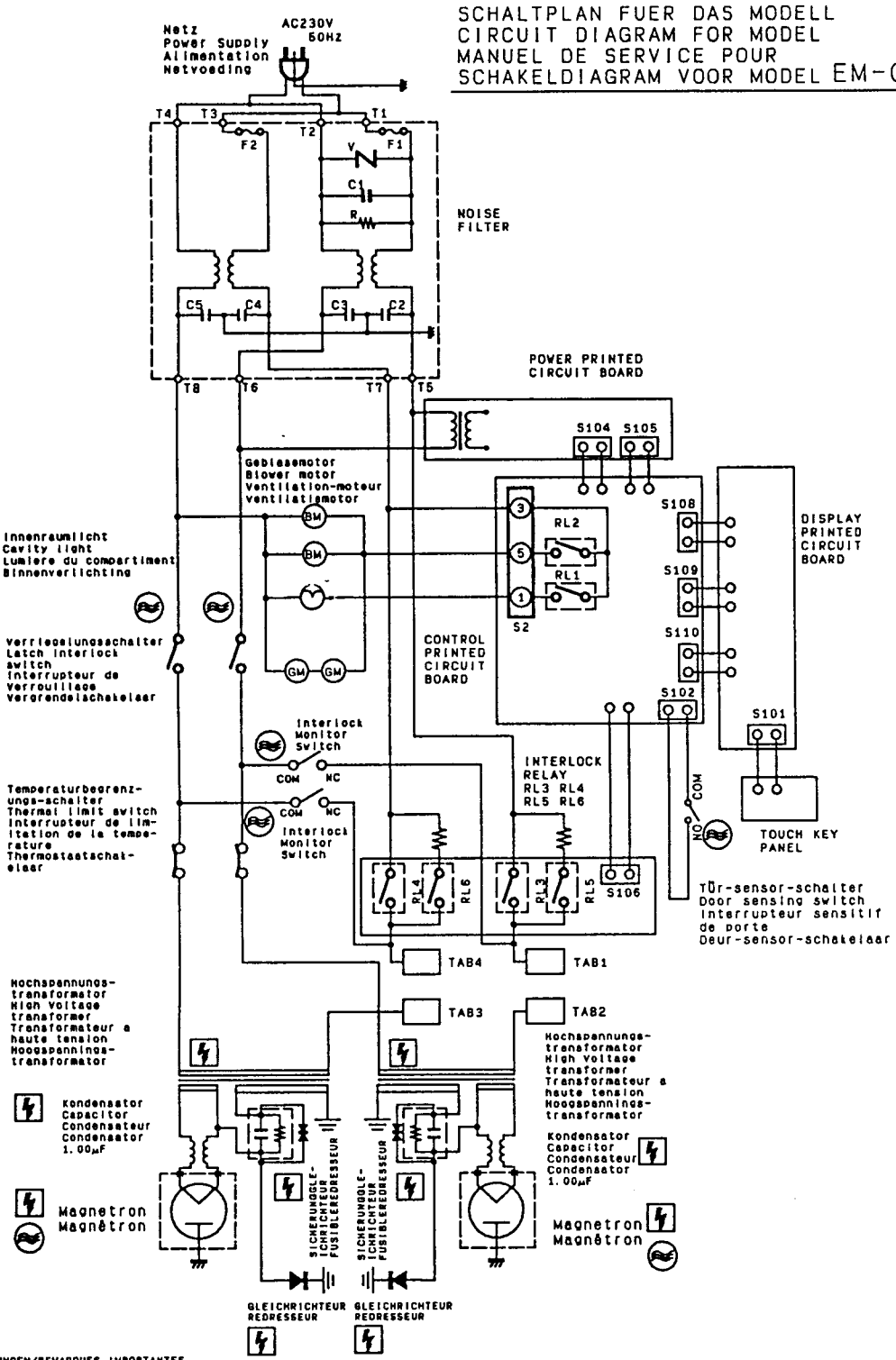
A. SINCE NEALY 4,000 VOLTS EXISTS IN SOME CIRCUITS OF THIS MICROWAVE OVEN, REPAIRS SHOULD BE CARRIED OUT WITH GREAT CARE.

B. TO AVOID POSSIBLE EXPOSURE TO MICROWAVE ENERGY LEAKAGE, THE FOLLOWING PRE-CATIONS MUST BE TAKEN BEFORE SERVICING.

(1) Before the power is applied.
(a) Open and close door several times to make sure the door interlock switch and interlock monitor switch operation properly.
(Listen for the clicking sound from switches.)
make sure the interlock monitor switch is closed after the latch interlock switch is open when the door is opened. (See pages 1 and 8)
(b) Make sure the perforated screen and the choke dielectric of the door are correctly mounted.
(2) After the power is applied.
(a) Open and close the door to see if the interlock mechanism operates properly.
(b) Check microwave energy leakage with a leakage detector and confirm the energy leakage is below 5mW/ cm.
(3) Do not operate the unit until it is completely repair-ed if any of the following conditions exists.
(a) Door does not close firmly against the cavity front.
(b) The hinge is broken.
(c) The choke dielectric or the door seal is damaged.
(d) The door is bent or warped, or there is any other visible damage to the oven that may cause micro-wave energy leakage.
Note: Always keep the seal clean.
(e) Make sure that there are no defective parts in the interlock mechanism.
(f) Make sure that there are no defective parts in the microwave generating and transmission assembly. (especially wave guide)
(4) Following items should be checked after the unit is repaired.
(a) The interlock monitor switch is connected correctly and firmly.
(b) The magnetron gasket on the magnetron is properly positioned.
(c) Waveguide and oven cavity are intact.(No leakage of microwave energy).
(d) The door can be properly closed and the safety switches work properly.
(e) The oven must be topped when the door is opened or the time is up.

HINT FOR LAMP-CHANGE
Before removing the cabinet, pull out the main-plug.
If you want to check the new lamp with the open Cabinet, take care of the following safety-cautions:
Do not touch live parts. The lamp holder is not conne-cted to the earth protection lead by a metric screws.

5. CIRCUIT DIAGRAM



ANMERKUNGEN/REMARQUES IMPORTANTES

DAS ZEICHEN LE SIGNE -TEILE, DIE MIT DIESEM ZEICHEN VERSEHEN SIND, FUEHREN HOCHSPANNUNG UEBER 250V.
LES PIECES MARQUEES DE CE SIGNE SONT SOUS HAUTE TENSION(SUPERIEURES A 250 V)

DAS ZEICHEN LE SIGNE -TEILE, DIE MIT DIESEM ZEICHEN VERSEHEN SIND, HABEN SPEZIELLE EIGENSCHAFTEN, DIE FUER DIE LECKSTRAHLUNG BEI MIKROWELLEN WICHTIG SIND. SOLLTE EINES DIESER TEILE AUSGEWECHSELT WERDEN, BITTE NUR VOM HERSTELLER ANGEGEBEN ERSATZTEILE VERWENDEN.

LES PIECES MARQUEES DE CE SIGNE ONT DES SPECIFICATIONS IMPORTANTE POUR L'IMPERMEABILITE AUX MICRO-ONDES.
EN CAS DE CHANGEMENT, DE L'UNE DE CES PIECES N'UTILISER QUE DES PIECES, NE DU FABRICANT.

SWITCH MADE ●	LATCH INTERLOCK SWITCH	INTERLOCK MONITOR SWITCH		SECONDARY INTERLOCK DOOR SENSING SWITCH	SECONDARY INTERLOCK RELAY 3 RELAY 4
	COM	COM	COM	COM	COM
CONDITION	NO	NC	NC	NO	NO
DOOR OPEN		●	●		
DOOR CLOSE	●			●	●

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Figure 2

6. TEST PROCEDURES AND TROUBLESHOOTING

CAUTION

-DISCONNECT THE POWER SUPPLY CORD FROM THE WAL OUTLET WHENEVER REMOVING THE CABINET FROM THE UNIT. PROCEED WITH TESTS ONLY AFTER DISCHARGING THE HIGH VOLTAGE CAPACITOR AND REMOVING THE LEAD WIRES ON THE PRIMARY WINDING OF THE HIGH VOLTAGE TRANSFOREMER.(SEE FIGURE 3)

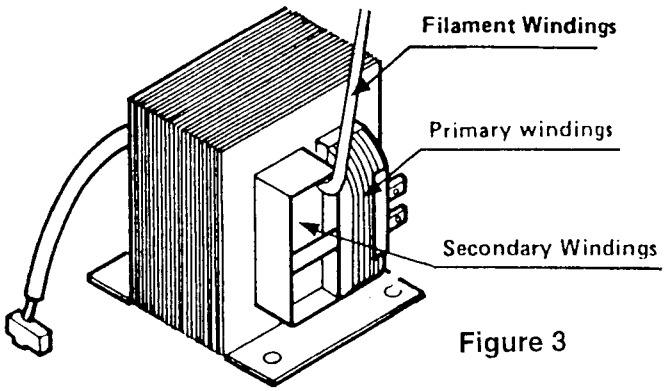
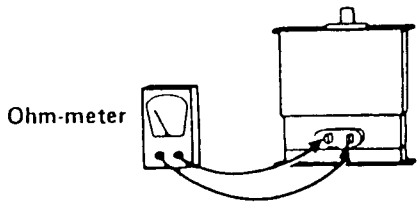
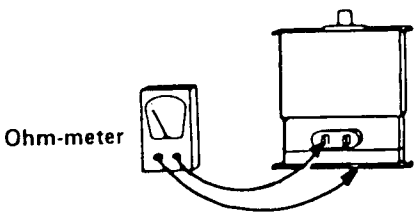
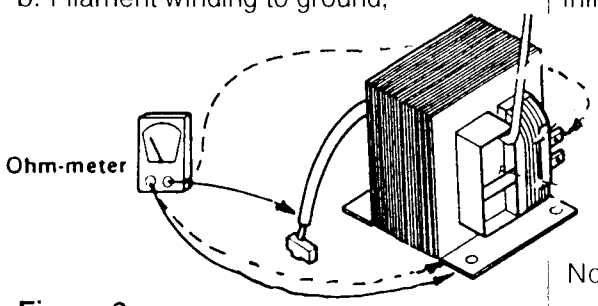
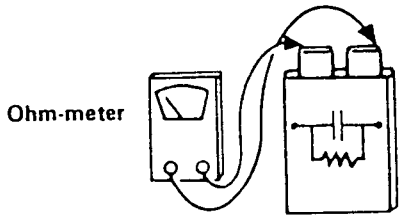
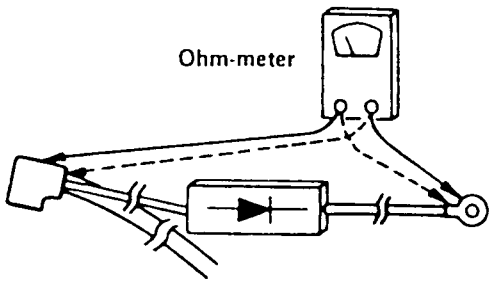
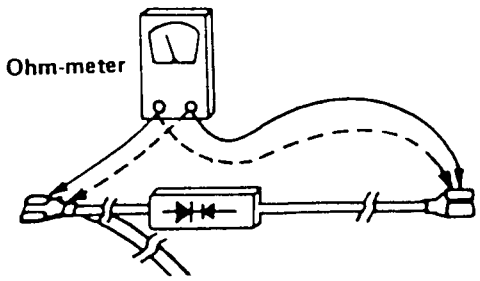


Figure 3

A.TEST PROCEDURES

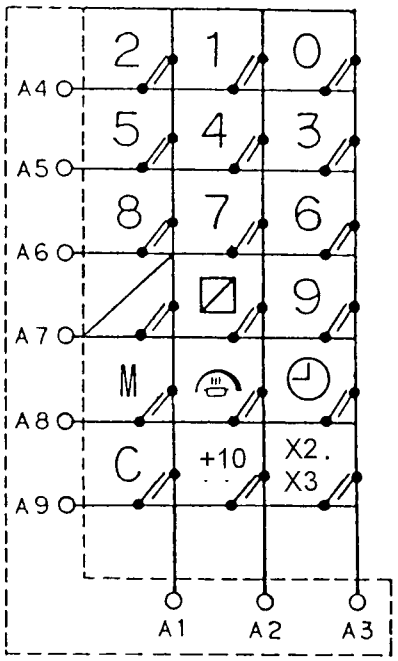
COMPONENT	CHECKOUT PROCEDURE	RESULT
MAGNETRON	1) Check for resistance: Across the filament terminal of the magnetron with an ohm - meter on Rx1 scale.  Figure 4	Normal reading: Less than 1 ohm.
	2) Check for resistance: Between each filament terminal of the magnetron and the chassis ground with an ohm-meter on highest scale  Figure 5	Normal reading: Infinite ohms.
HIGH-VOLTAGE TRANSFORMER	1) Measure the resistance: With an ohm-meter on R x1 scale. a. Primary winding ; b. Filament winding; c. Secondary winding; 2) Measure the resistance: With an ohm-meter on highest scale. a. Primary winding to ground; b. Filament winding to ground;  Figure 6	Normal reading: Approximately 1.0 ohms Less than 1 ohm. Approximately 60 ohms Normal reading: Infinite ohms. Infinite ohms. Note: Remove varnish of measured point.

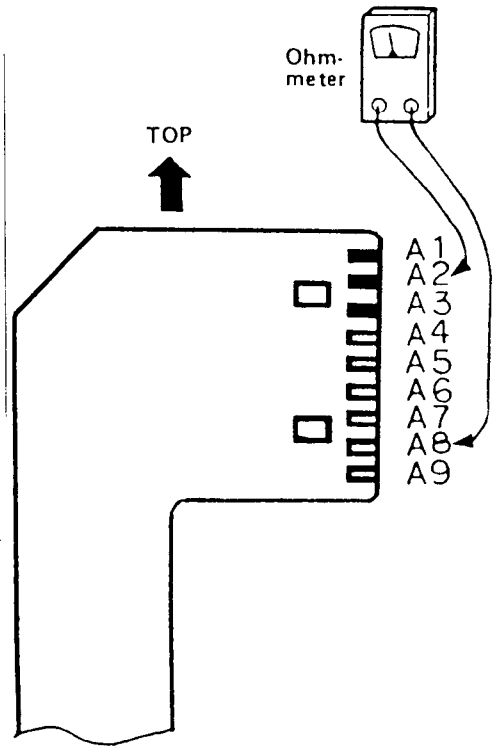
COMPONENT	CHECKOUT PROCEDURE	RESULT
HIGH-VOLTAGE CAPACITOR Including Bleeder Resistor	Measure the resistance: Across two terminals with an ohm-meter on highest scale.  **Figure 7**	Normal reading: Momentarily indicates several ohms, and gradually to 10 meg-ohms. Abnormal reading: Indicates continuity or 10 meg-ohms from the beginning.
HIGH-VOLTAGE DIODE	Measure the resistance: Across two terminals with an ohm-meter on highest scale.  **Figure 8**	Normal reading: Indicate about the middle position in one direct (forward) and infinite ohms in the reverse direction, using meter with a 9-volt battery. NOTE - Some digital meter may show over even in a forward direction because low measuring voltage of meter does not allow the meter to pass through the high voltage diode. Abnormal reading: Indicates continuity or infinite ohms In both directions.
FUSE DIODE	Measure the resistance: Across two terminals with an ohm-meter on highest scale.  **Figure 9**	Normal reading: Indicate infinite ohms in both directions. Abnormal reading: Indicates continuity in both directions or continuity in one direction and infinite ohms in reversed direction.

COMPONENT	CHECKOUT PROCEDURE	RESULT
POWER P.C.B	Check each voltage at connector S104 and S105 after removing each connector (female) from power circuit board. Pin No.3 (Ground) and 4,5,1,2 at S105. Pin No.1 and 2 at S104. CAUTION: Proceed with the test only after removing the wire leads from the primary winding of high voltage transformer for your safety. Test procedures: a) Make sure that the power supply cord is not plugged in. b) Remove the connector S104 and S105 from the power circuit board. c) Plug the power supply cord. d) And then, measure each voltage.	Normal reading: Connection Pin No., Voltage(V) S105 #3 to #4 DC 12 #3 to #5 DC 16 #3 to #1 DC 30 #3 to #2 DC 35 S104 #1 to #2 AC 2.4
CONTROL P.C.B	Measure the voltage: Between test points TP-1, TP-2 ,TP-3 and ground (See figure 18 on page 23) Note - Proceed with the check of the control P.C.B to see if any one of the measured values is different from the specified values.	Test point TP, Voltage(V) TP-1 DC –5V TP-2 DC -12V TP-3 DC -16V

COMPONENT	CHECKOUT PROCEDURE	RESULT
TOUCH KEY BOARD	Measure the resistance between terminals of FPC connector after removing it from S101.(Figure 10) **NOTE** - When reconnecting the FPC connector, make sure the holes on the connector are properly inserted in hook of the plastic fastener in S101. **MATRIX CIRCUIT FOR TOUCH KEY BOARD FPC CONNECTOR**	When checking " " key , connect Ohm-meter as illustration below.

Resistance value	When touched	When not touched
	Less than 1K Ohms	More than 1 MEG Ohm

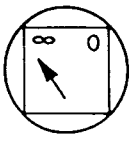
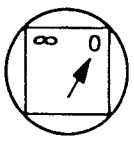
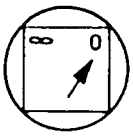
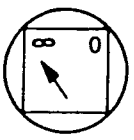




TERMINALS OF FPC CONNECTOR
Figure 10.

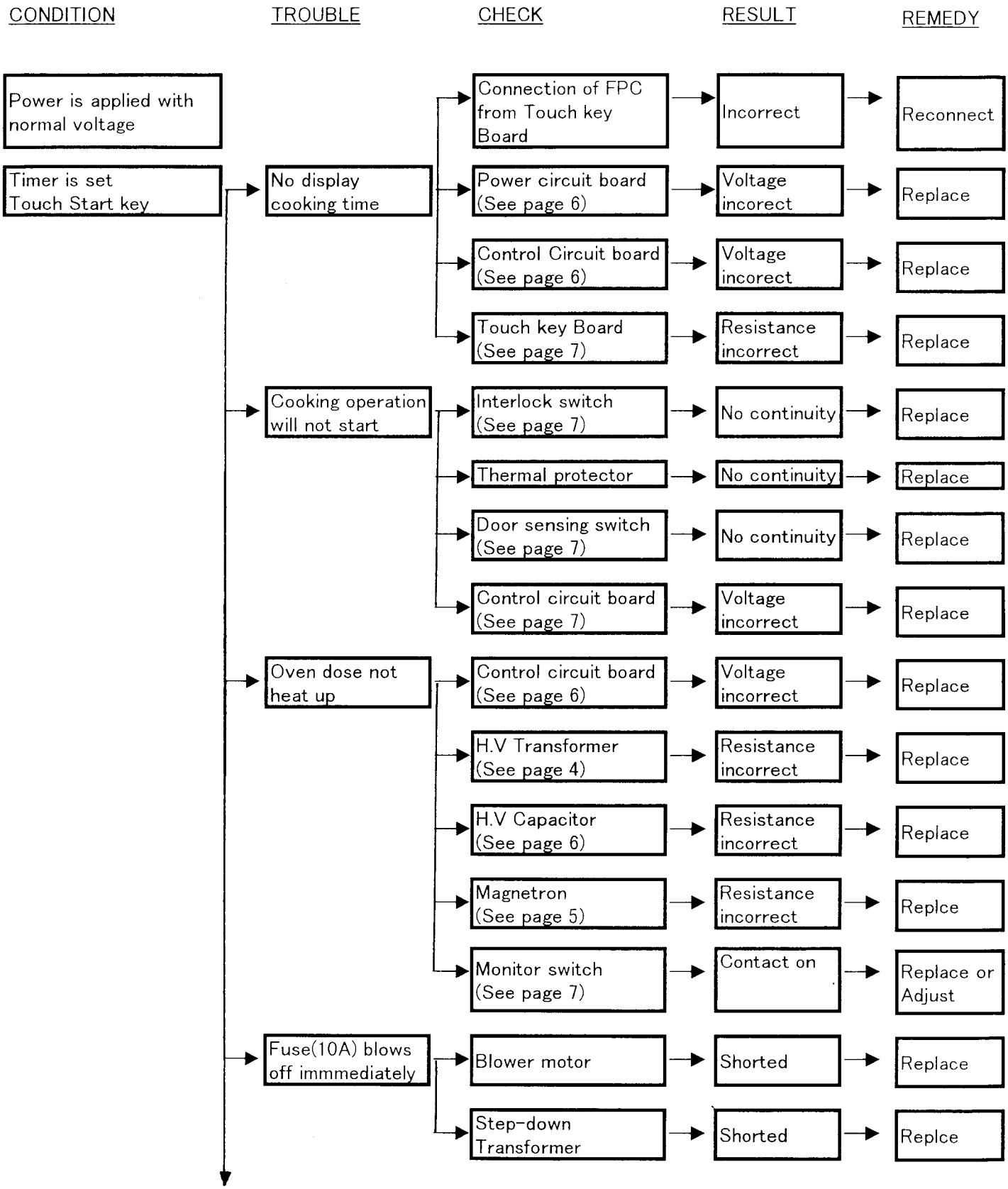
CHECKOUT PROCEDURE FOR SWITCHES

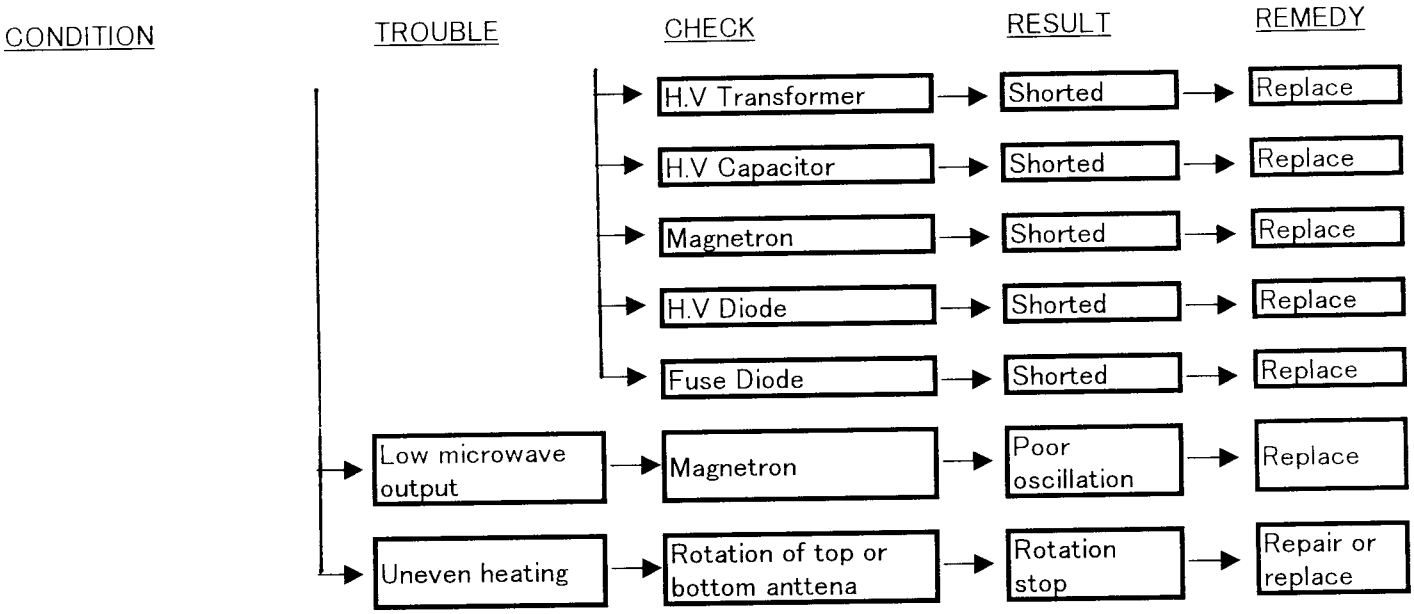
Disconnect the lead wires from the switches and check for the continuity of the switches, connecting an ohm-meter to its terminals.

SWITCHES (SEE Figure 1 on page 1)	CHECKOUT PROCEDURES	DOOR OPEN	DOOR CLOSE
PRIMARY INTERLOCK DOOR SENSING	Terminals "COM" and "NO"		
INTERLOCK MONITOR	Terminals "COM" and "NC"		

CAUTION: After checking the switches, make sure that the interlock monitor switch is properly connected according to the CIRCUIT DIAGRAM on page 3.

B.TROUBLESHOOTING





C. ERROR INDICATION

This model has some self diagnosis fanctions.
Display shows "E" depend on the trouble.

DISPLAY	Trouble parts	Situation
E-21	Thermistor for duct of cavity top is operated by over heating of 120 ℃.	Buzzer will continuously beep tone. Blower motor will stop immediately. Then oven will stop heating.
E-31	Thermistor for lower magnetron and duct Is shorted.	Blower motor will stop immediately. Then oven will stop heating.
E-32	Thermistor for lower magnetron and duct Is disconnected or removed from connector socket.	Oven will stop heating. Blower motor will be operated.

7. DISASSEMBLY INSTRUCTIONS

- OVEN MUST BE DISCONNECTED FROM ELECTRICAL OUTLET WHEN MAKING REPLACEMENTS, REPAIRS, ADJUSTMENT AND CONTINUITY CHECKS BEFORE PROCEEDING WITH ANY REPAIR WORK AFTER DISCONNECTING, WAIT AT LEAST 1 MINUTE, UNTIL THE CAPACITOR IN THE HIGHVOLTAGE AREA HAS FULLY DISCHRGED.

A. REMOVING DOOR INTERLOCK SWITCH

(See Figure 1 on page 1)

(1) Disconnect all lead wires from the door interlock Switch.
(2) Remove 2 screws securing the lever stopper.
(3) Remove 1 screw securing the switches. Then pull out the switches.
(4) Make necessary adjustment, and make microwave energy leakage check according to "1. ADJUSTMENT PROCEDURE FOR SWITCHES" on page 1, after It is replaced with new one, and check proper operation of it according to "CHECKOUT PROCEDURE FOR SWITCHES" on page 8.

B. REMOVING INTERLOCK MONITOR SWITCH AND DOOR SENSING SWITCH

(See Figure on page 1)

(1) Disconnect all lead wires from the interlock monitor switch and door sensing switch.
(2) Remove 1 screw securing the these switches. Then pull out the switches.
(3) Make necessary adjustments or replacement of switch by the reversing step (2) and check microwave energy leakage according to "1. ADJUSTMENT PROCEDURE FOR SWITCHES" on page 1, after It is replaced with new one, and check proper operation of it according to "CHECKOUT PROCEDURE FOR SWITCHES" on page 8.

WHEN REPLACING ANY DOOR MICROSWITCH, REPLACE WITH THE SAME TYPE SWITCH SPECIFIED ON THE PARTS LIST.

C. REMOVING FUSE

Remove the 10A fuse with screwdriver.

NOTES

- When replacing the 10A fuse, be sure to use an exact repair part.
- If the 10A fuse blows immediately, check the primary interlock switch, the relay 3 and 4 (on the control circuit board) and the interlock monitor switch according to "CHECKOUT PROCEDURE FOR SWITCHES" on page 8. And make sure to check the microwave energy leakage according to "1. ADJUSTMENT PROCEDURE FOR SWITCHES" on page 1, when the primary interlock switch, the relay 3 and 4 or the interlock monitor switch is adjusted or replaced.
- If the primary interlock switch, the relay 3 and 4 or the interlock monitor switch operate properly, determine which of the followings is defective : control circuit board, blower motor, gear motor, high voltage transformer, high voltage capacitor, high voltage diode or magnetron.
- If the high voltage diode is defective, replace not only the high voltage diode but also the fuse diode.

D. REMOVING CONTROL COMPLETE

(1) Remove Cabinet
(2) Remove 3 screws securing the upper control Complete. (See figure 11)
(3) Remove 4 screws securing the control complete. one of 4 screws act as earthing the key board.
(4) Remove connectors S108, 109 and S110 from PCB Complete .
(5) Slightly lift up the Control complete and remove the Control complete from the unit.

E. REMOVING SWITCH BASE COMPLETE

(1) Remove 1 screw securing the blower motor assembly for lower magnetron. Remove the blower motor assembly. (See figures 12 and 13)
(2) Remove 2 screws securing the switch base complete to the cavity body.
(3) Lift up the switch base complete and remove it from the cavity boy.

F. REMOVING LOWER MAGNETRON

(1) Remove the blower motor for lower magnetron. (Figure 12)
(2) Remove 1 screw securing the intake duct for lower magnetron and remove the intake duct.
(3) Remove 1 screw securing the blower motor and remove the blower motor by pulling.
(4) Remove 2 nuts securing the waveguide for lower magnetron.
(5) Remove lower magnetron.
(6) Remove 1 screw securing the exhaust duct for lower magnetron.

G. REMOVING UPPER MAGNETRON

(1) Remove 9 screws securing the rear plate.
(2) Remove 3 screws securing the exhaust duct for Upper magnetron.(Figure 14)
(3) Remove 1 screw securing the intake duct for upper magnetron and remove the intake duct.
(4) Remove 4 nuts securing the waveguide and remove the upper magnetron.

NOTES

- when removing the magnetron, make sure that its dome does not hit any adjacent parts, or it may be damaged.
- When replacing the magnetron, be sure to install the magnetron gasket in the correct position and be sure that the gasket is in good condition.
- After replacing the magnetron, check for microwave make sure the microwave energy leakage is below the limit of the regulation (5mW/c ㎡) .

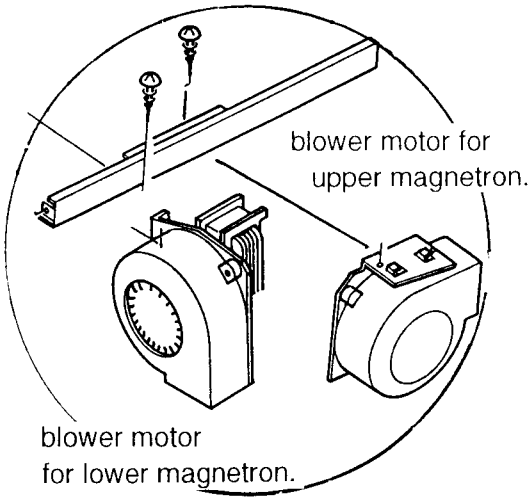


Figure 13

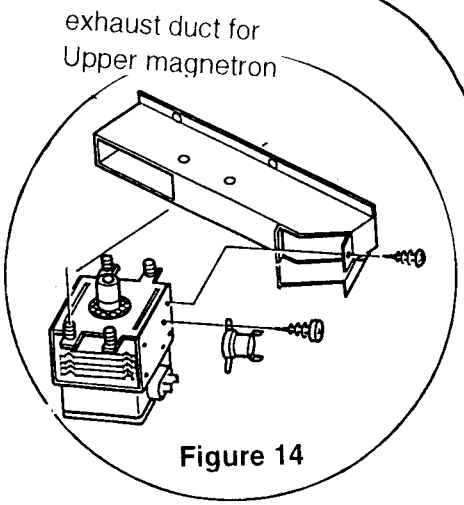


Figure 14

Figure 11

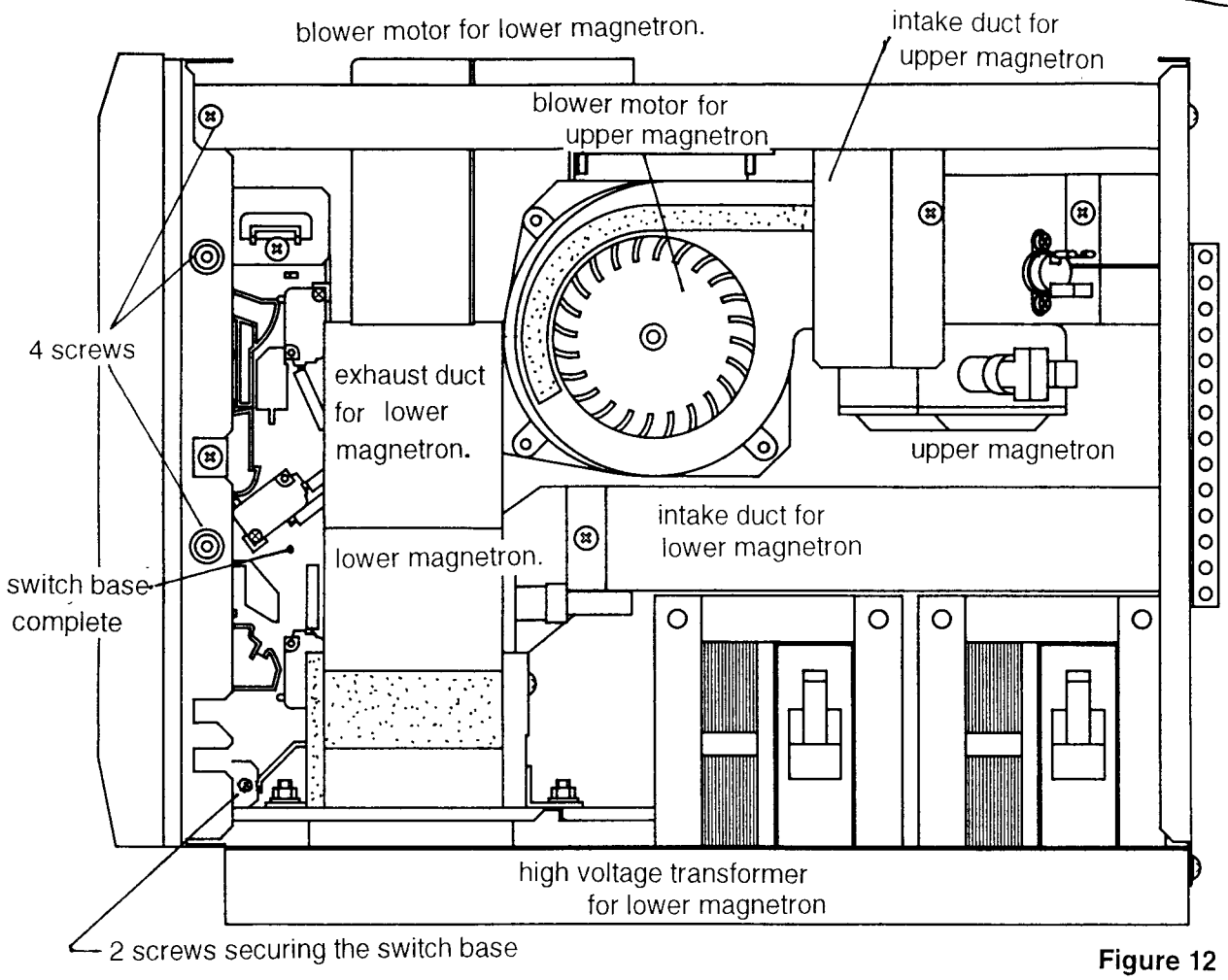


Figure 12

H. REMOVING HIGH VOLTAGE CAPACITOR

(1) Remove 9 screw securing the rear plate.
(2) Remove 2 screws securing the capacitor band. (Figure15)

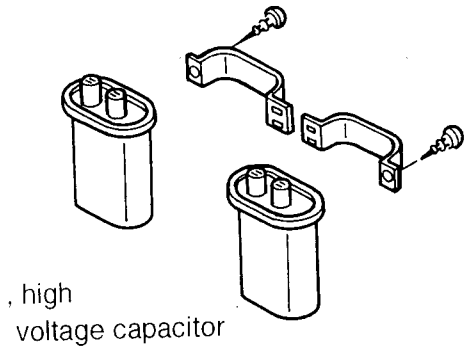


Figure 15

I.REMOVING HIGH VOLTAGE TRANSFORMER FOR UPPER MAGNETRON

(1) Remove the rear plate.
(2) Remove 1 screw securing the exhaust duct for lower magnetron and remove it.
(3) Remove **2** screws securing the bottom plate. (Figure16)

J.REMOVING HIGH VOLTAGE TRANSFORMER FOR LOWER MAGNETRON

(1) Remove the rear plate, the blower motor for lower and upper magnetron.
(2) Remove **2** screws securing the bottom plate.

Caution: After replacing the high voltage transformer for lower magnetron, make sure that the insulation sheet to the high voltage trans former.

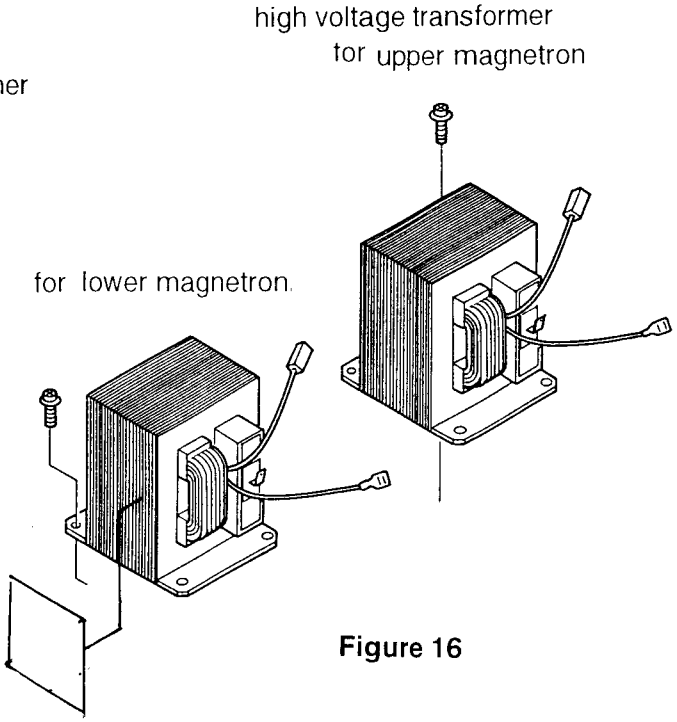


Figure 16

K.CHANGING POWER SUPPLY CORD

(See exploded view on page)
(1) Remove the rear plate.
(2) Remove 1 screw securing the wire lead for earth with special washer to the bottom plate.
(3) Pull out the 2 lead wires.
(4) Remove 1 screw securing the bottom bracket which is mounted the cord bushing.
(5) Install the new power supply cord with reverse procedure of above (1) to (4).

WARNING:
For the changing the power supply cord, never Use other parts than following.

Key. No.	Order No.	Parts Name
57	6172081472	Power Cord Ass'y (Germany)
58	6171969184	Power Cord Ass'y (U.K)
59	6171401332	Cord Bush(Ger.)
74	6170783132	Cord Bush (UK)
60	6171401349	Bottom Bracket (Ger.)
75	6171253832	Bottom Bracket (UK)

L.REMOVING CERAMIC TRAY

(1) Take of the cabinet.
(2) Put(insert) a screwdriver in the 9 mm diameter hole locating at lower hinge of left side of the oven cavity. And push the tray up with the screwdriver.
(3) Open the door and take out the tray very carefully.

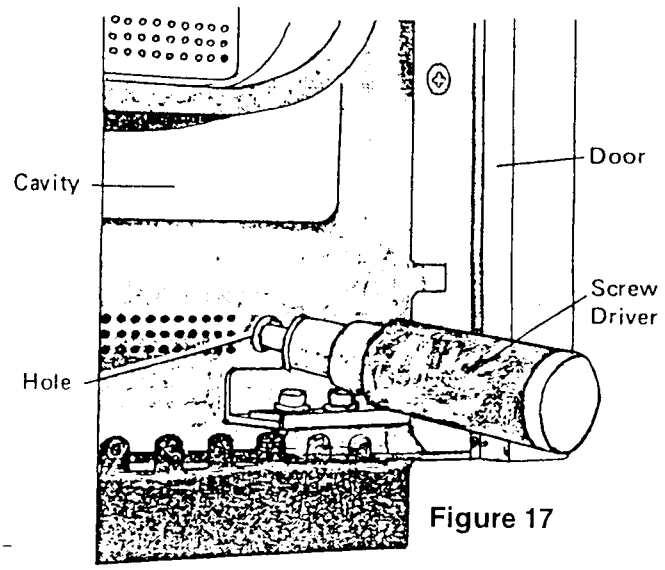
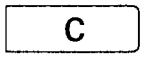
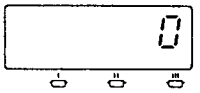
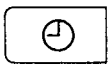
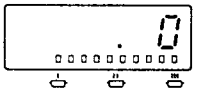
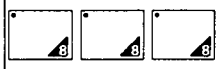
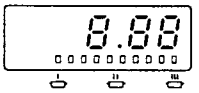
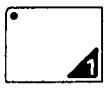
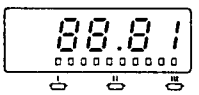
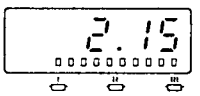
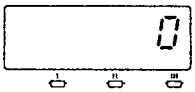
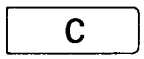
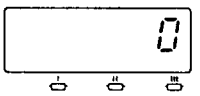


Figure 17

M. CHECKING ACCUMULATIVE COOKING TIME, NUMBER OF DOOR OPERATIONS AND CONTROL OF THE BUZZER SOUND

Display shows accumulative cooking time or the number of door operations by key operation. Also, you can change any remaining cooking time, buzzer sound or buzzer volume.

	Operation	Display window
1	 • Touch " C " key.	 • "0" appears in the display.
2	 • Touch " ⏲ " key.	 • The colon and Power level "10" bar appear in the display.
3	 • Touch number "8" three times.	 • The "8.88" appears in the display.
*	• Stages 1 to 3 are the same for all options. Input the 4th digit as follows to check or change the modes.	
4	 • Input one of the following options (1-0) using the PROGRAMME SELECTION key.	 • e.g. Input "1" (accumulative cooking time).
5	 • Touch " ◈ " key.	 • All 4 digits will be flashing.
6	 • Touch " ◈ " key again.	 • The number "215" shows total cooking hours OR.
		 • In case where options other than 1 or 2 were selected in stage 4, "0" appears in the display confirming that the new setting has been accepted.
7	 • Touch " C " key.	 • In case of option 1 or 2, the CLEAR key must be touched to clear the display. (Not necessary for options 3 to 0)

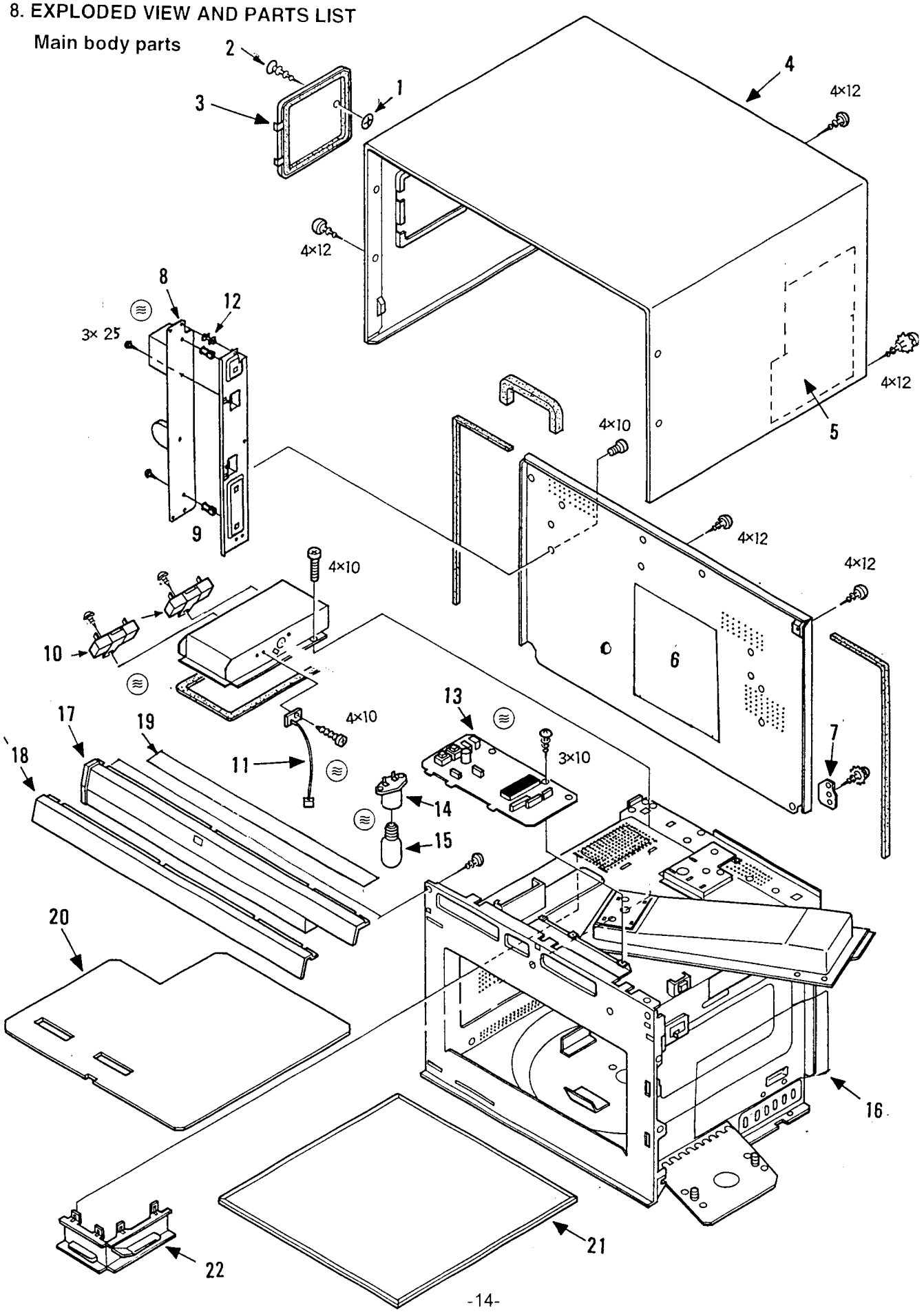
The following modes can be selected by inputting one of the numbers below at the operation stage "4".

INPUT OPTIONS

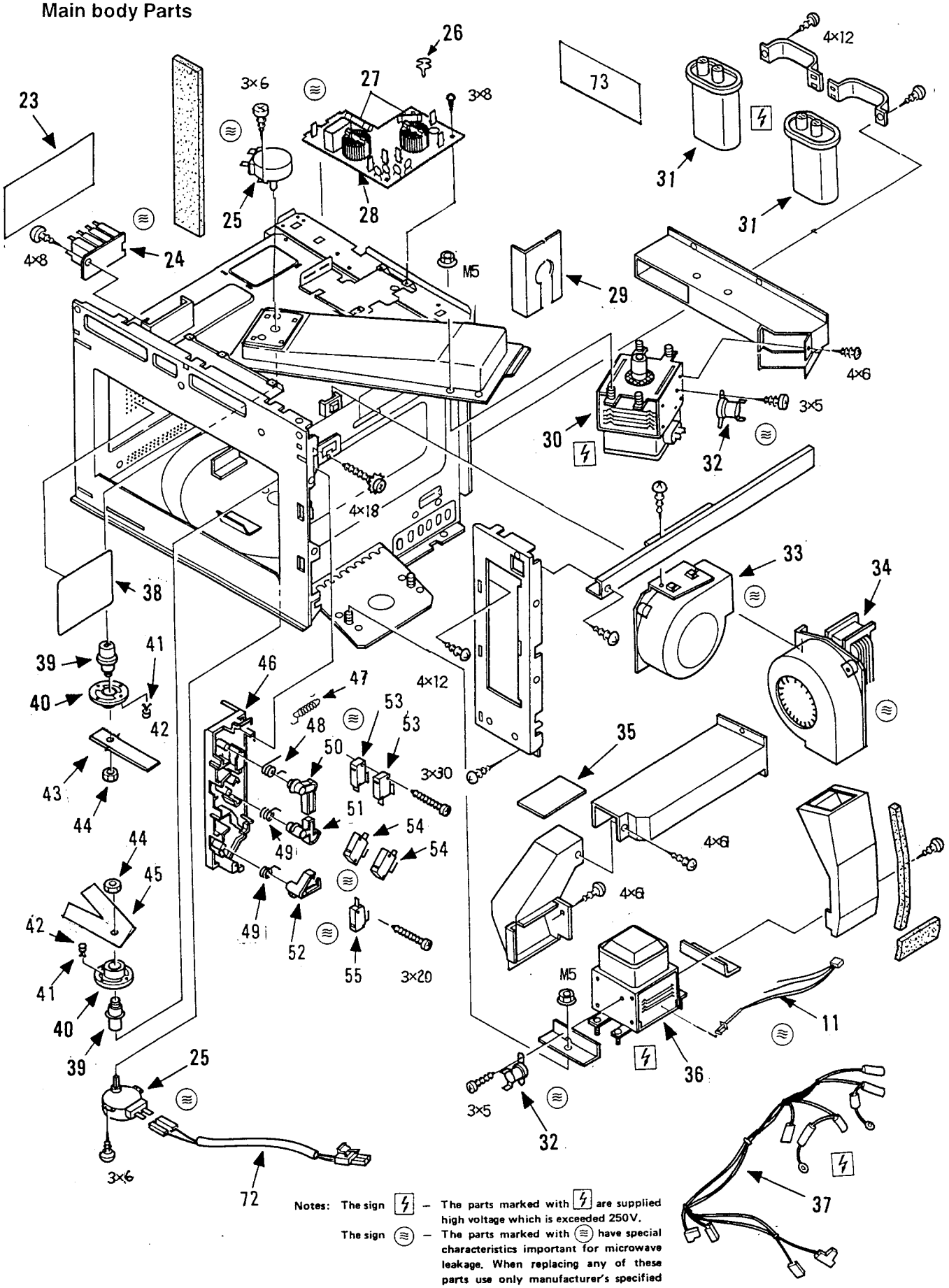
1 . . . Accumulative cooking time.
2 . . . The number of door operations. (100 times)
3 . . . Indication of remaining cooking time (when cooking is interrupted by door opening).
4 . . . To cancel remaining cooking time (when cooking is interrupted by door opening).
5 . . . Tone of the buzzer on cooking completion. (Pip, Pip, Pip)
6 . . . Tone of the buzzer on cooking completion. (Peep)
7 . . . The volume of the buzzer. (quiet)
8 . . . The volume of the buzzer. (medium)
9 . . . The volume of the buzzer. (loud)
0 . . . The volume of the buzzer. (none)

8. EXPLODED VIEW AND PARTS LIST

Main body parts



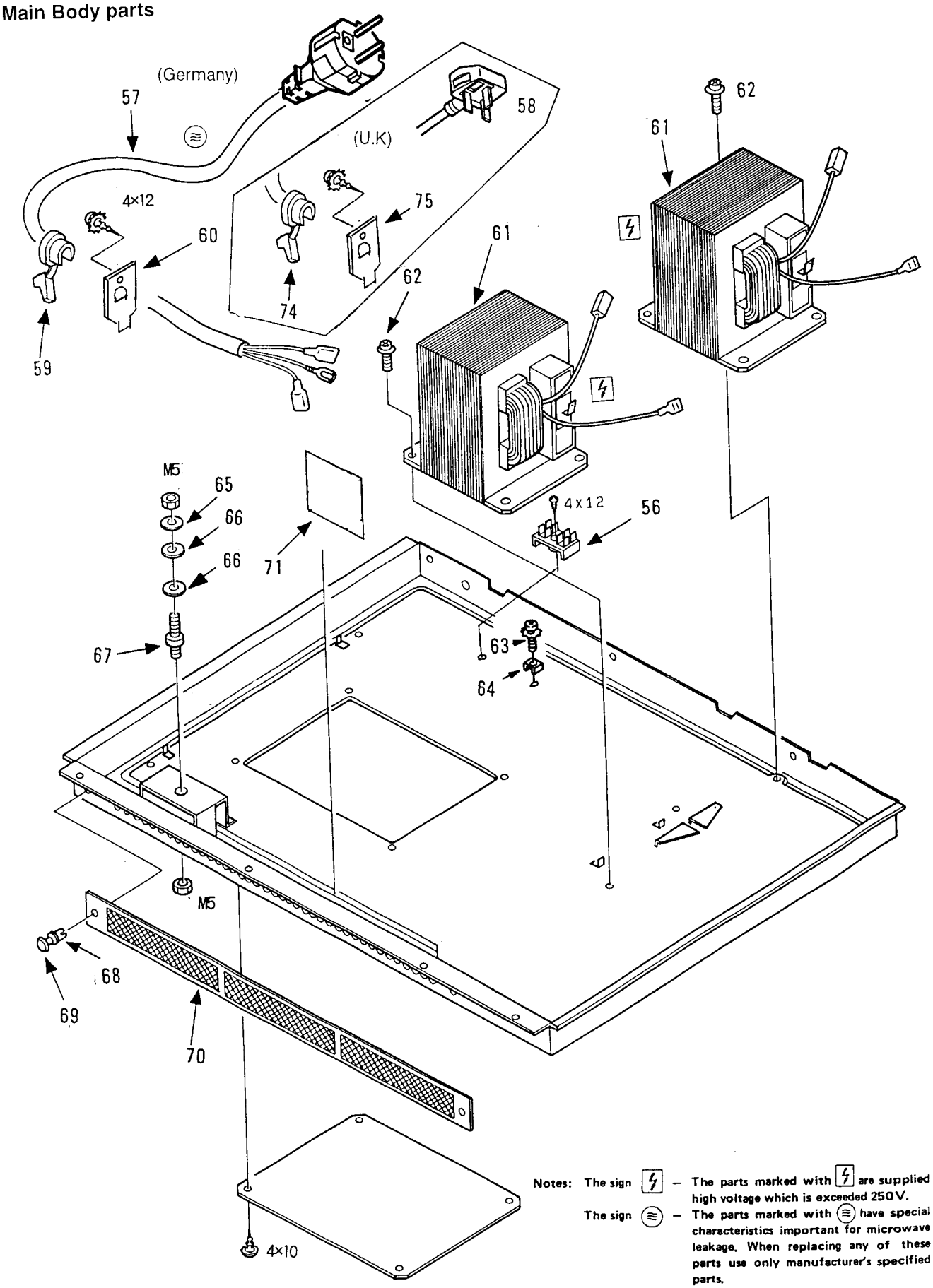
Main body Parts



Notes: The sign ϟ – The parts marked with ϟ are supplied high voltage which is exceeded 250V.

The sign ≋ – The parts marked with ≋ have special characteristics important for microwave leakage. When replacing any of these parts use only manufacturer's specified parts.

Main Body parts



Notes: The sign ϟ – The parts marked with ϟ are supplied high voltage which is exceeded 250V.

The sign ≋ – The parts marked with ≋ have special characteristics important for microwave leakage. When replacing any of these parts use only manufacturer's specified parts.

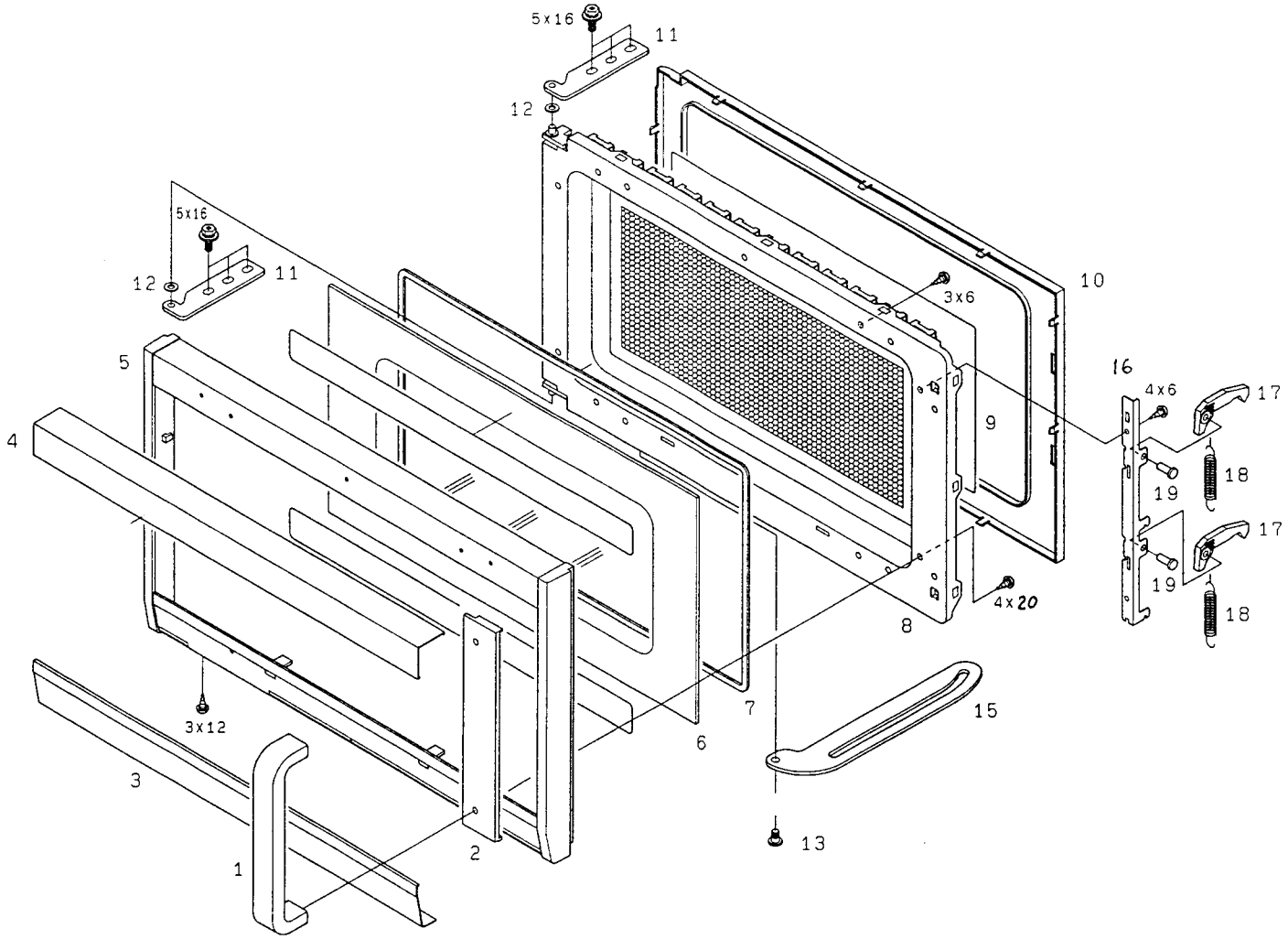
Main Body parts

KEY NO.	SERVICE PART NO.	DESCRIPTION	Q TY.
1	412-018-3803	NUT HEX+CON-SW 2X10	1
2	411-075-5300	SCR TPG OVL 3X8	1
3	617-055-9584	CABINET COVER ASS'Y	1
4	617-167-8772	CABINET SUS430 T0.6	1
5	617-189-1249	INSU. SHEET T2.0	1
6	617-188-1998	INSU. SHEET T2.0	1
7	617-179-6087	CABINET BRACKET	1
8	617-195-7228	P.C.B COMP. POWER	1
9	617-121-6134	SPACER	2
10	402-061-1505	CERAMIC RES 25 J 20W MTST ERF-20HMJ250	2
11	617-130-3599	THERMISTOR ASS'Y	1
12	617-121-5465	SPACER	1
13	617-206-8596	P.C.B COMP. CONTROL	1
14	617-077-6356	LAMP SOCKET PA0 2A250V T150	1
15	617-149-3009	LAMP 240/250V 25W E-14	1
16	617-210-0609	INSU. SHEET T0.4	1
17	617-169-8640	CONTROL BASE ABS	1
18	617-169-8589	ORNAMENT PLATE SUS-430 T0.3	1
19	617-073-7616	CAVITY.PACKING	1
20	617-120-3370	CAVITY COVER T0.8	1
21	617-120-4230	SHELF ASS'Y	1
22	617-120-4148	STIRRER GUIDE P.P	1
23	617-123-9942	INSU. SHEET T0.4	1
24	617-137-3844	P.C.B COMP. RELAY	1
25	617-209-9422	GEAR MOTOR M2CJ29AA49-H UL	2
26	617-207-6836	CLIP MPS-04-0	2
27	423-018-7609	FUSE 250V 10A 250V-TLC 10A	2
28	617-206-7506	P.C.B COMP. NOISE FILTER	1
29	617-183-8091	INSU. SHEET T0.35	1
30	415-002-6705	MAGNETRON 2M254J(M)	1
31	617-206-8220	CAPACITOR 1.0MFD 1.0	2
32	617-140-1257	THERMOSTAT 150°C	2
33	617-206-7902	BLOWER COMP.	1
34	617-206-7896	BLOWER COMP.	1
35	617-189-1355	INSU. SHEET T0.35	1
36	415-002-6408	MAGNETRON 2M254(M)	1
37	617-206-8244	HARNESS WITH HV DIODE	1
38	617-120-3387	LIGHT OPENING COVER T0.1	2
39	617-120-3325	ANTENNA SHAFT AL	2
40	617-120-3318	ANTENNA BEARING	2
41	617-121-5519	GROMMET PTFE	4
42	617-121-9265	CLIP	4
43	617-120-3332	ANTENNA UPPER AL	1
44	617-120-3349	SPECIAL NUT AL	2
45	617-149-3054	ANTENNA LOWER	1
46	617-178-1151	LEVER STOPPER 6-6 G-15	1
47	617-187-2217	SPRING SUS304-WPB D0.7	1
48	617-178-1212	SPRING SUS304-WPB D0.65	1
49	617-178-1205	SPRING SUS304-WPB D0.65	2
50	617-178-1168	LATCH LEVER	1

(00)

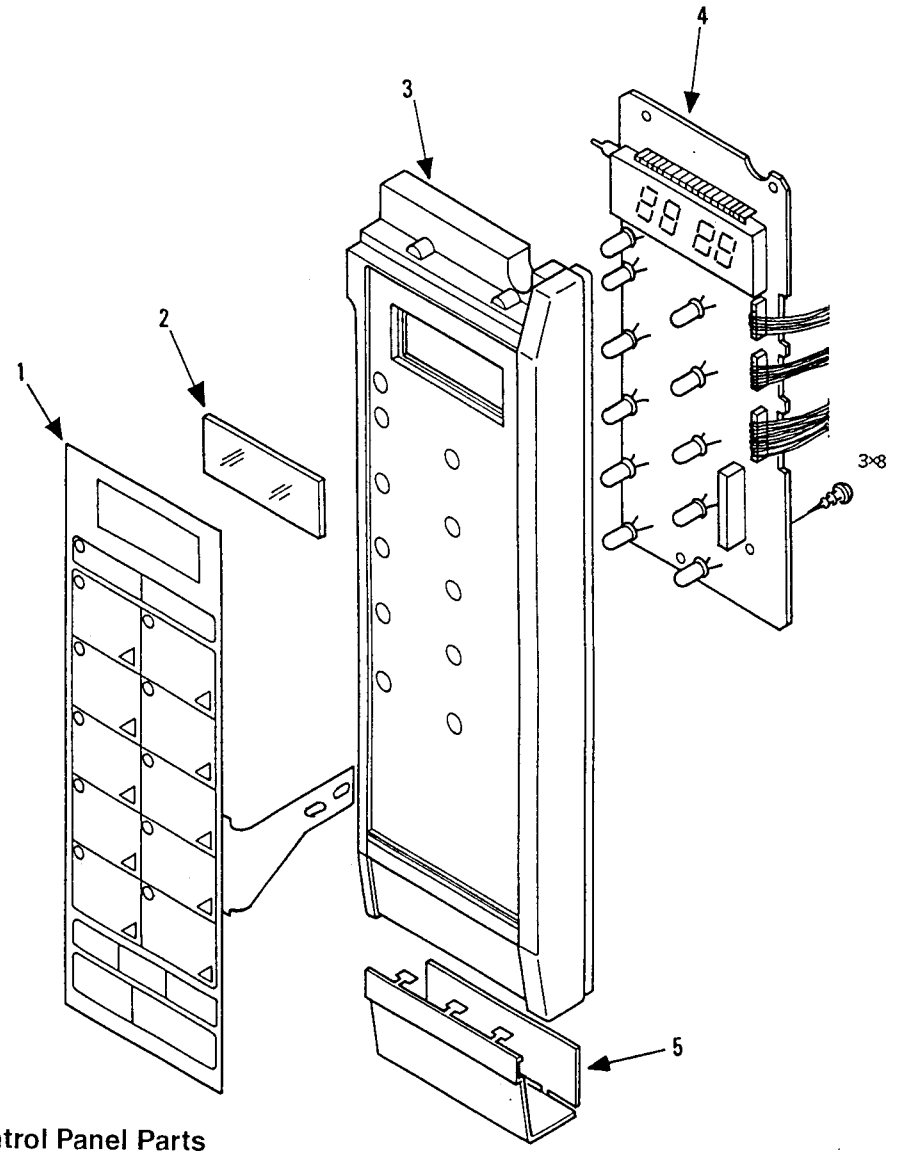
KEY NO.	SERVICE PART NO.	DESCRIPTION		Q TY.
51	617-178-1175	LATCH LEVER		1
52	617-178-1182	LATCH LEVER		1
53	617-004-5230	MICRO SWITH MONITOR	V-5220D-502	2
54	617-160-0438	MICRO SWITCH DOOR(PRI)	V-5930D-013	2
55	617-004-3724	MICRO SWITCH DOOR SENSING	V-5330DK	1
56	617-192-2110	TERMINAL PLATE		1
57	617-208-1472	POWER SUPPLY CORD ASS'Y	KABELMETAL H07RN-F	1
58	617-196-9184	POWER SUPPLY CORD AA'Y		1
59	617-140-1332	CORD BUSH		1
60	617-140-1349	BOTTOM BRACKET		1
61	617-206-8213	HV TRANSFORMER	N5T-C1850(DB)	2
62	617-080-4196	SPECIAL SCREW		6
63	617-080-4219	SPECIAL SCREW		1
64	617-195-1295	SPECIAL WASHER	T1.0	1
65	617-080-5186	SPECIAL WASHER	SPG T1.0XD5XD13	1
66	617-080-5179	SPECIAL WASHER	TEF. T0.5XD7.3XD13	2
67	617-080-3830	SPECIAL SCREW	SUS-430 D6	1
68	617-122-6379	GROMMET		2
69	617-122-8908	CLIP		2
70	617-120-3394	FILTER ASS'Y		1
71	617-078-2029	INSULATION SHEET		1
72	617-182-9853	HARNESS		1
73	617-202-7845	INSULATION SHEET		1
74	617-078-3132	CORD BUSH		1
75	617-125-3832	BOTTOM BRACKET		1

Door Parts



KEY NO.	SERVICE PART NO.	DESCRIPTION		Q TY.
1	617-201-9697	DOOR HANDLE	AL	1
2	617-201-9680	DOOR BASE	PP	1
3	617-120-3127	ORNAMENT PLATE	SUS-430 T0.3	1
4	617-120-3110	ORNAMENT PLATE	SUS-430 T0.3	1
5	617-120-3073	DOOR COVER	ABS HS-400	1
6	617-130-4862	DOOR PANEL	T3.2	1
7	617-121-5489	PACKING	NO.686	2
8	617-178-0734	DOOR ASS'Y	NO.4376SK	1
9	617-178-1441	DOOR PANEL		1
10	617-178-0840	CHOKE DIELECTRIC	FR-PET	1
11	617-120-3028	HINGE	SPHC T3	2
12	411-089-2500	WASHER F 5X10X0.8		2
13	617-080-3847	SPECIAL SCREW	SUS-304 D6	1
15	617-068-3623	DOOR ARM	SUS-430 T2	1
16	617-178-0833	LATCH SUPPORT	SECC-J T1.0	1
17	617-068-1087	DOOR LATCH	GF25%	2
18	617-140-5392	SPRING	SWP-B D1.1	2
19	617-068-3579	ARM PIN	S30C ZK	2

Control Panel Parts



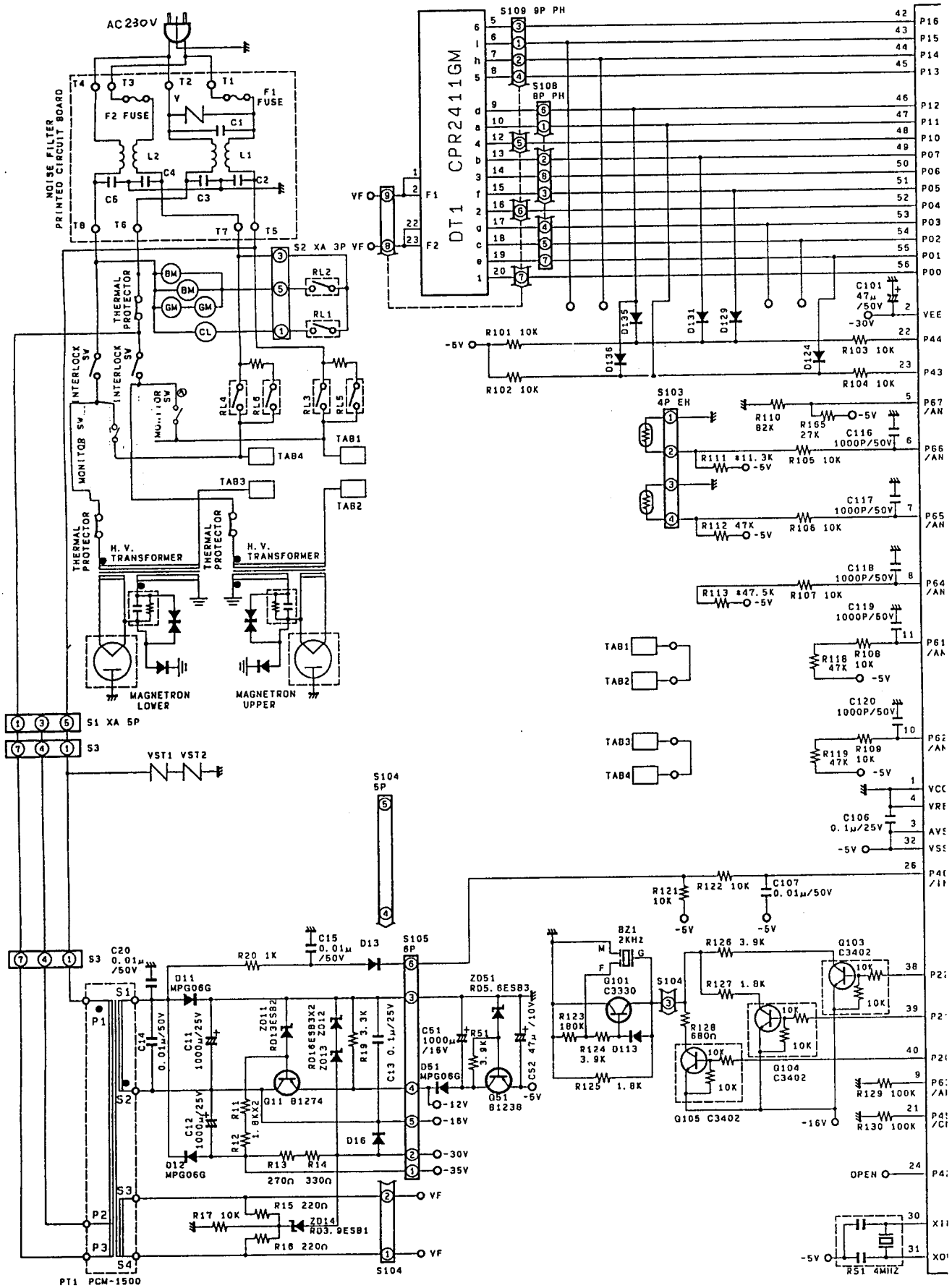
Control Panel Parts

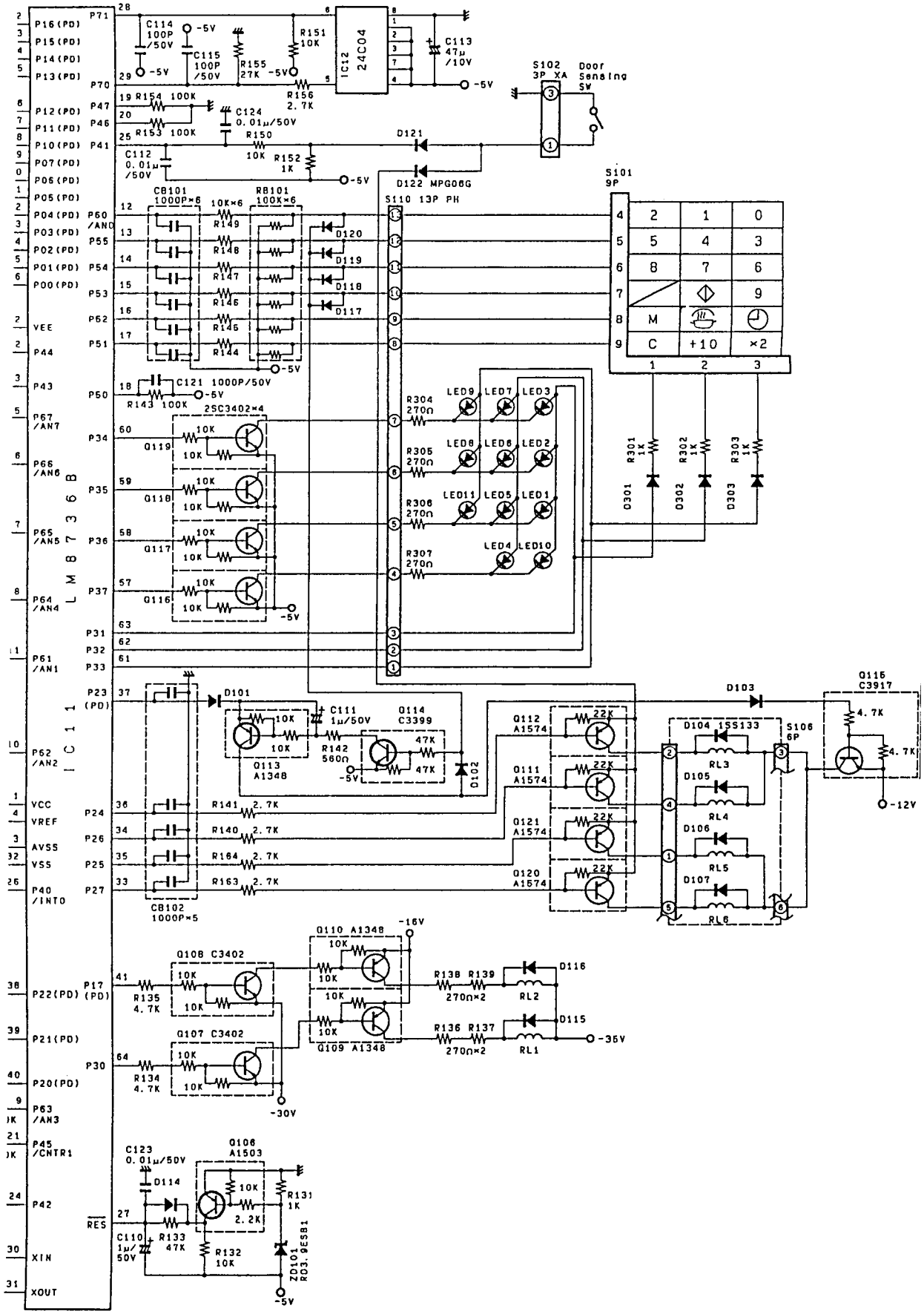
KEY NO.	SERVICE PART NO.	DESCRIPTION		Q TY.
1	617-206-7827	KEY BOARD		1
2	617-206-0873	CONTROL PLATE	T2.0	1
3	617-169-8626	CONTROL BASE	ABS	1
4	617-210-8490	P.C.B COMP. DISPLAY		1
5	617-169-8596	ORNAMENT PLATE	SUS-430 T0.3	1

Printed Matter (Items not illustrated)

KEY NO.	SERVICE PART NO.	DESCRIPTION		Q TY.
1	617-206-8237	CORRUGATE BOX COMP.		1
2	617-206-8138	CORRUGATE BASE COMP.		1
3	617-169-8404	BODY CUSHION BED		1
4	617-169-8398	BODY CUSHION BED LOWER		1
5	617-130-3797	MENU LABEL TIMER		1
6	617-206-8039	INST. MANUAL	ENGLISH	1

OVERALL CIRCUIT DIAGRAM




IC11 LM8736B
P16(PD)
P15(PD)
P14(PD)
P13(PD)
P12(PD)
P11(PD)
P10(PD)
P07(PD)
P06(PD)
P05(PD)
P04(PD)
P03(PD)
P02(PD)
P01(PD)
P00(PD)
VEE
P44
P43
P67 /AN7
P66 /AN6
P65 /AN5
P64 /AN4
P61 /AN1
P62 /AN2
VCC
VREF
AVSS
VSS
P40 /INT0
P22(PD)
P21(PD)
P20(PD)
P63 /AN3
P45 /CNTR1
P42
RES
XIN
XOUT
IC12 24C04
C114 100P /50V
C115 100P /50V
R151 10K
R155 27K
R156 2.7K
C113 47μ /10V
S102 3P XA Door Sensing SW
R154 100K
R153 100K
C124 0.01μ/50V
R150 10K
R152 1K
C112 0.01μ /50V
D121
D122 MPG06G
S101 9P
S110 13P PH
CB101 1000P×6
RB101 100K×6
R149
R148
R147
R146
R145
R144
D120
D119
D118
D117
C121 1000P/50V
R143 100K
2SC3402×4
Q119
Q118
Q117
Q116
R304 270Ω
R305 270Ω
R306 270Ω
R307 270Ω
LED9 LED7 LED3
LED8 LED6 LED2
LED11 LED5 LED1
LED4 LED10
R301 1K
R302 1K
R303 1K
D301
D302
D303
D101
C111 1μ/50V
Q113 A1348
Q114 C3399
R142 560Ω
D102
CB102 1000P×5
R141 2.7K
R140 2.7K
R164 2.7K
R163 2.7K
Q112 A1574
Q111 A1574
Q121 A1574
Q120 A1574
22K
D103
Q115 C3917
4.7K
D104 1SS133
S106 6P
RL3
D105
RL4
D106
RL5
D107
RL6
-12V
Q110 A1348
Q108 C3402
Q107 C3402
Q109 A1348
R135 4.7K
R134 4.7K
R138 R139 270Ω×2
R136 R137 270Ω×2
D116
D115
RL2
RL1
-16V
-36V
-30V
C123 0.01μ/50V
D114
Q106 A1503
R131 1K
2.2K
R133 47K
R132 10K
C110 1μ/ 50V
ZD101 RD3.9ES81
-5V

CONTROL CIRCUIT BOARD

(P/N 617 206 8596)

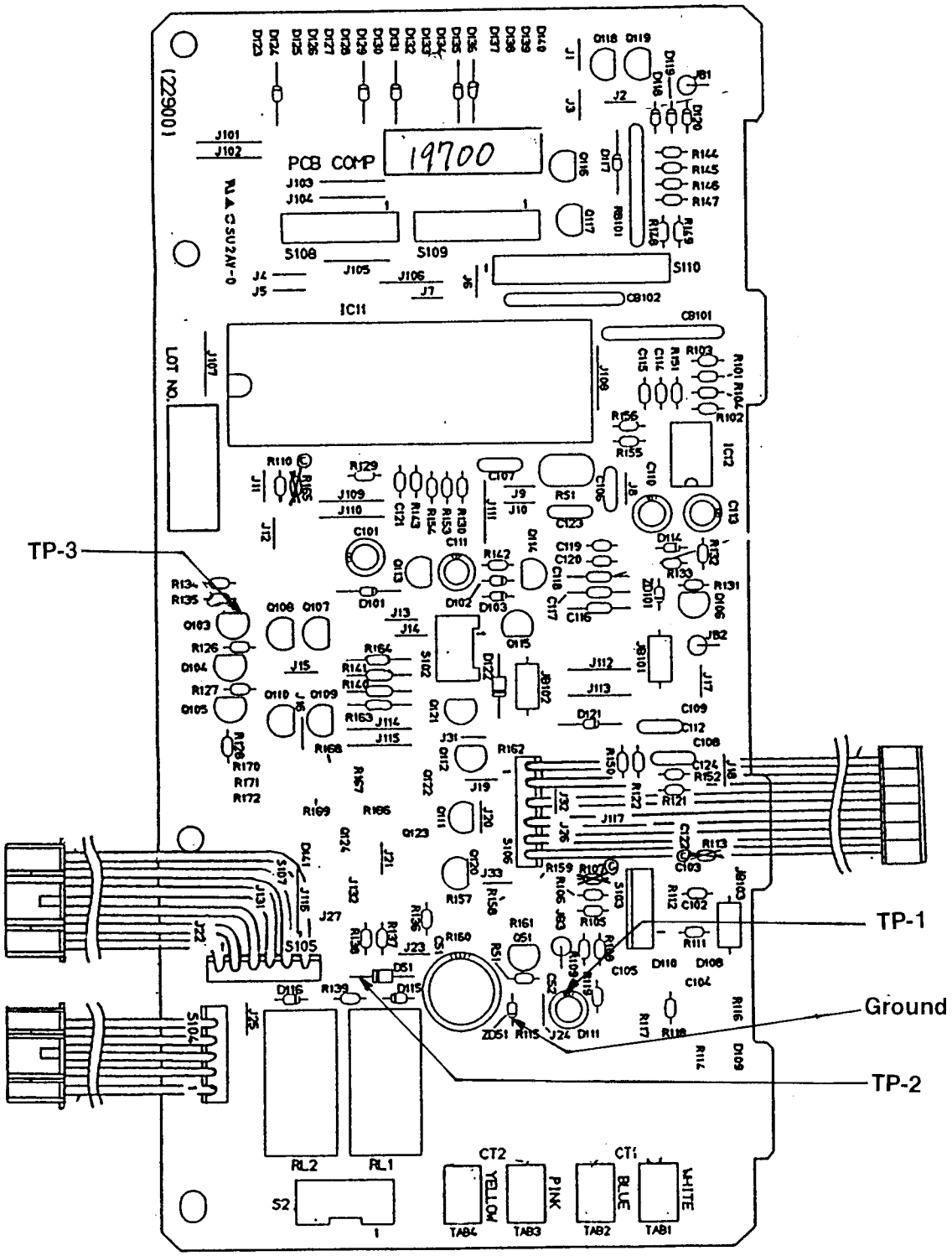


Figure 18

SANYO

SANYO Electric Co., Ltd.
Osaka, Japan