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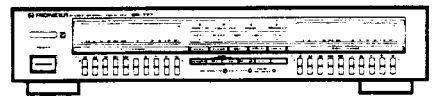
The future of sound and vision.

Service Manual



ORDER NO.
ARP1608

GRAPHIC EQUALIZER

GR-777

MODEL GR-777 HAS FOUR VERSIONS:

Type	Power requirement	Export destination
KUC	AC120V only	U.S.A. and Canada
SD	AC110V,120V-127V,220V,240V (switchable)	Kingdam of SaudiArabia and general market
SD/G	AC110V,120V-127V,220V,240V (switchable)	U.S.Military
HEZ	AC220V,240V (switchable)	West Germany

- **This service manual is applicable to the KUC, SD, SD/G and HEZ types**
- **For the SD, SD/G and HEZ types refer to page 22.**

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YO IIINE Printed in Japan

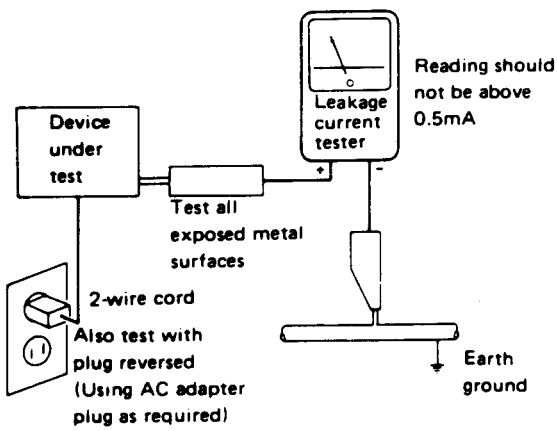
1. SAFETY INFORMATION

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

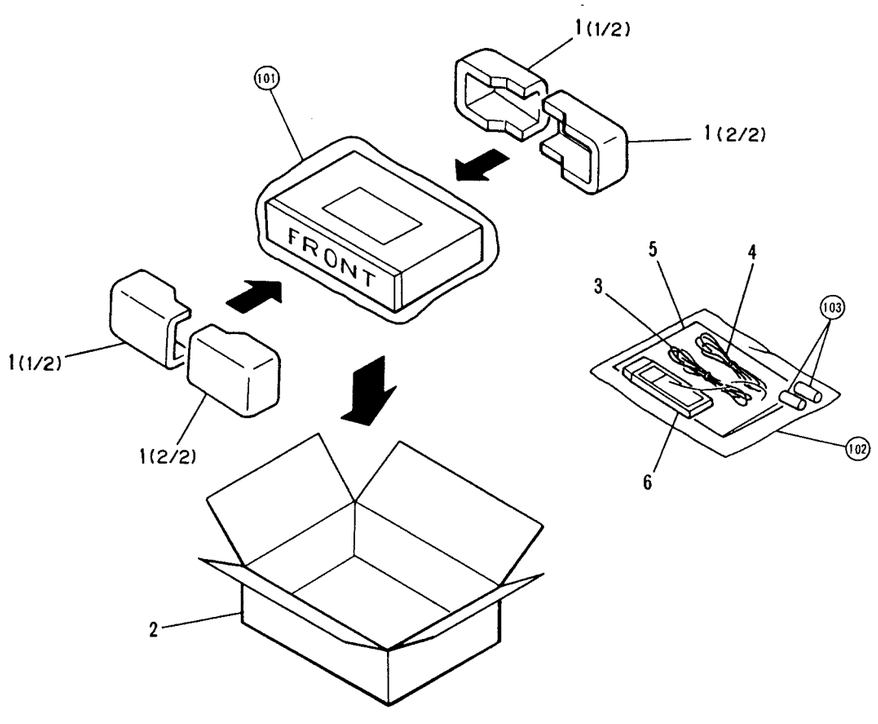
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. PACKING

Mark	No.	Parts No.	Description
	1	AHA1095	Front rear pad
	2	AHD1407	Packing case
	3	ADE−072	Connection cord with pin plug
	4	ADE−073	Connection cord with pin plug
	5	ARB1109	Operating instruction **(English)**
	6	AXD1049	Remote control unit
	101		Sheet
	102		
	103		Battery

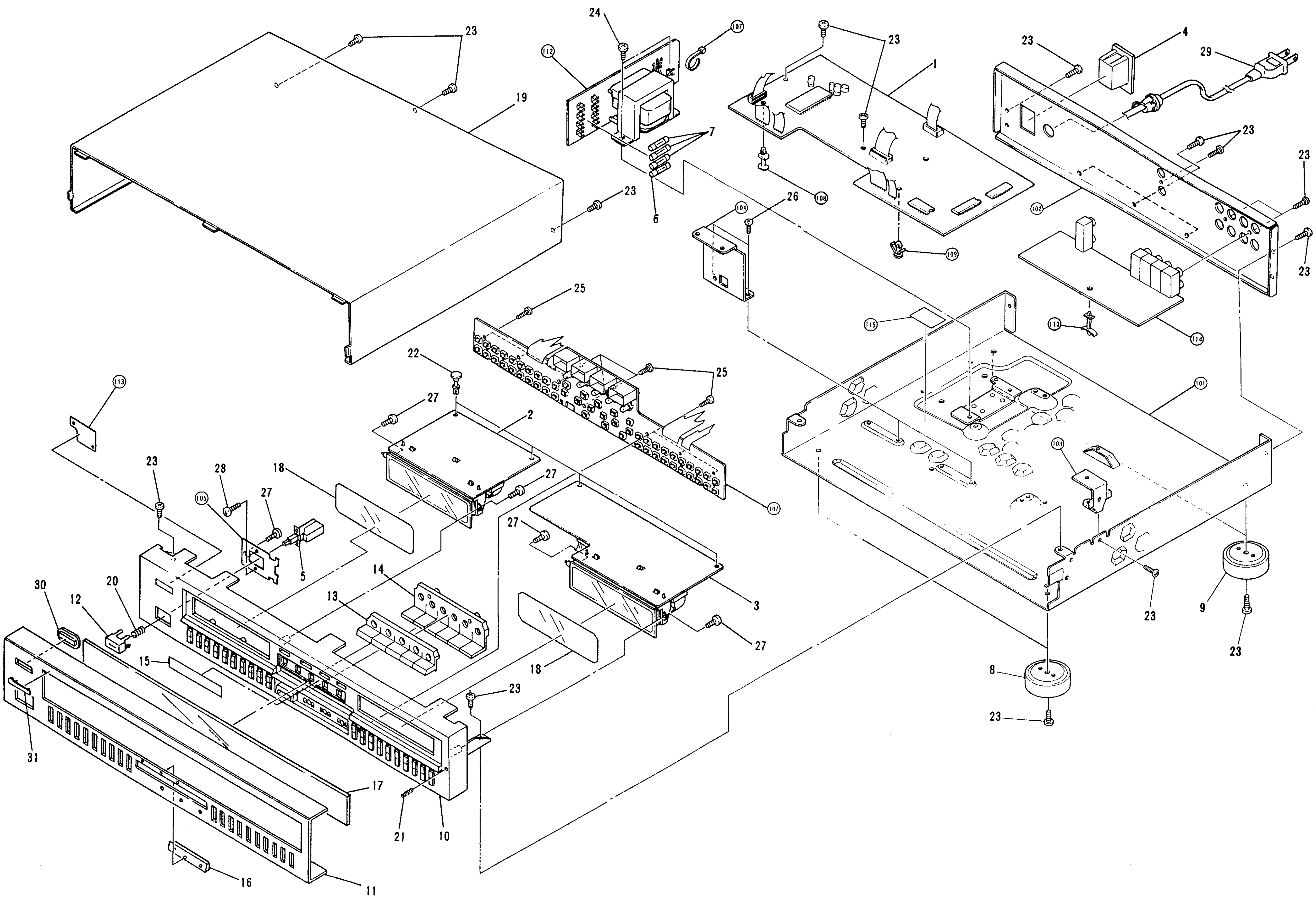
Note:
When using the new pads.
Spread the back and front pads apart at the center and attach them to the corners.



3. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Mark	No.	Parts No.	Description
	1	AWZ2006	Main assembly
	2	AWZ1856	FL (L) assembly
	3	AWZ1857	FL (R) assembly
	4	AKP−507	AC socket (1P)
⚠	5	ASG−549	Push switch (POWER,S1)
⚠	6	AEK−118	Fuse (800mA/125V,FU2)
⚠	7	AEK−136	Fuse (500mA/125V,FU3,FU4,FU5)
	8	AMR1350	Insulator assembly (FRONT)
	9	AMR1353	Insulator assembly (REAR)
	10	AMB1351	Panel base assembly
	11	ANB1235	Front panel assembly
	12	AAD1343	Knob (POWER)
	13	AAD1370	Tact knob (A)
	14	AAD1371	Tact knob (B)
	15	AAK1480	Display seat
	16	AAK1488	Indicator lens
	17	AAK1496	Display panel
	18	AAK1523	FL Filter
	19	AZN1744	Bonnet
	20	ABH−052	Coil spring
	21	ABH1036	Coil spring
	22	AEC−510	Nylon rivet
	23	ABA−298	Screw
	24	BBZ30P060FMC	Screw
	25	BBZ26P080FMC	Screw
	26	BBZ30P050FZK	Screw
	27	BBZ30P100FZK	Screw
	28	VMZ30P060FMC	Screw
	29	ADG−088	AC power cord
	30	AAK1333	Sensor acryic window
	31	AAM−030	Name plate
	101		Chassis assembly
	102		Real panel
	103		Bracket (A)
	104		Bracket (B)
	105		Bracket (SWITCH)
	106		.....
	107		Binder
	108		Print spacer
	109		P.C.B. spacer
	110		P.C.B. spacer
	111		Switch assembly
	112		Trans assembly
	113		SENSOR assembly
	114		INPUT assembly


A
B
C
D
23
24
107
112
19
7
6
1
108
109
26
104
4
29
102
114
110
115
101
103
25
22
27
2
113
28
105
18
5
14
13
3
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12
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15
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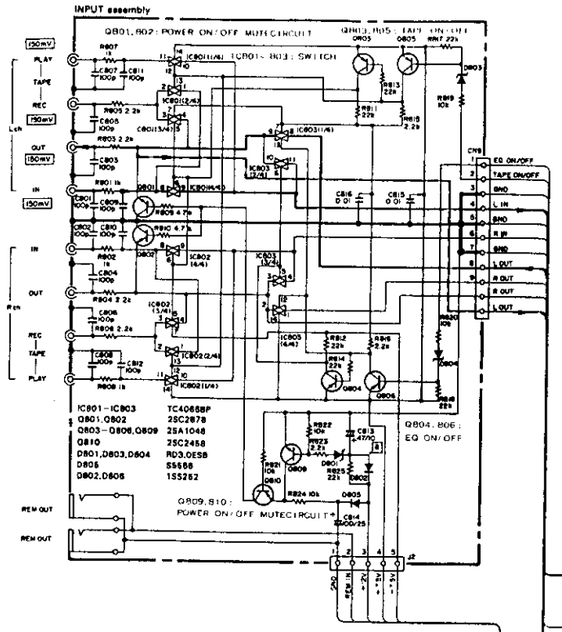
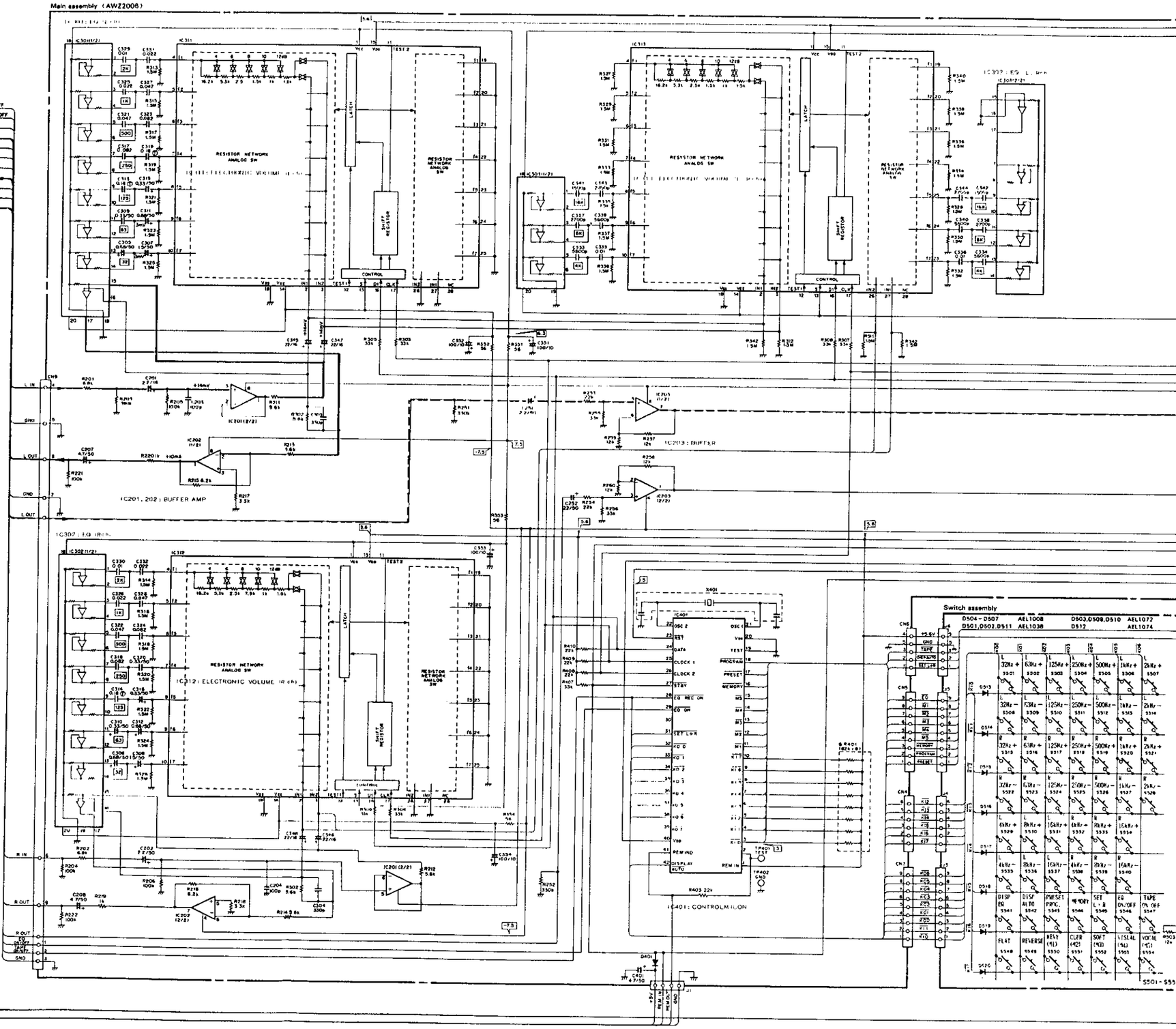
9

4. SCHEMATIC DIAGRAM





1 RESISTORS
Indicated in Ω, ¼W, ±5% tolerance unless otherwise noted k: kΩ, M: MΩ. (F) ±1%, (G) ±2%, (K) ±10%, (M) ±20% tolerance

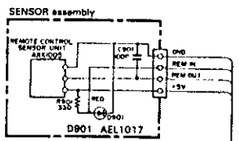
2 CAPACITORS
Indicated in capacity (μF/voltage (V)) unless otherwise noted p: pF
Indication without voltage is 50V except electrolytic capacitor

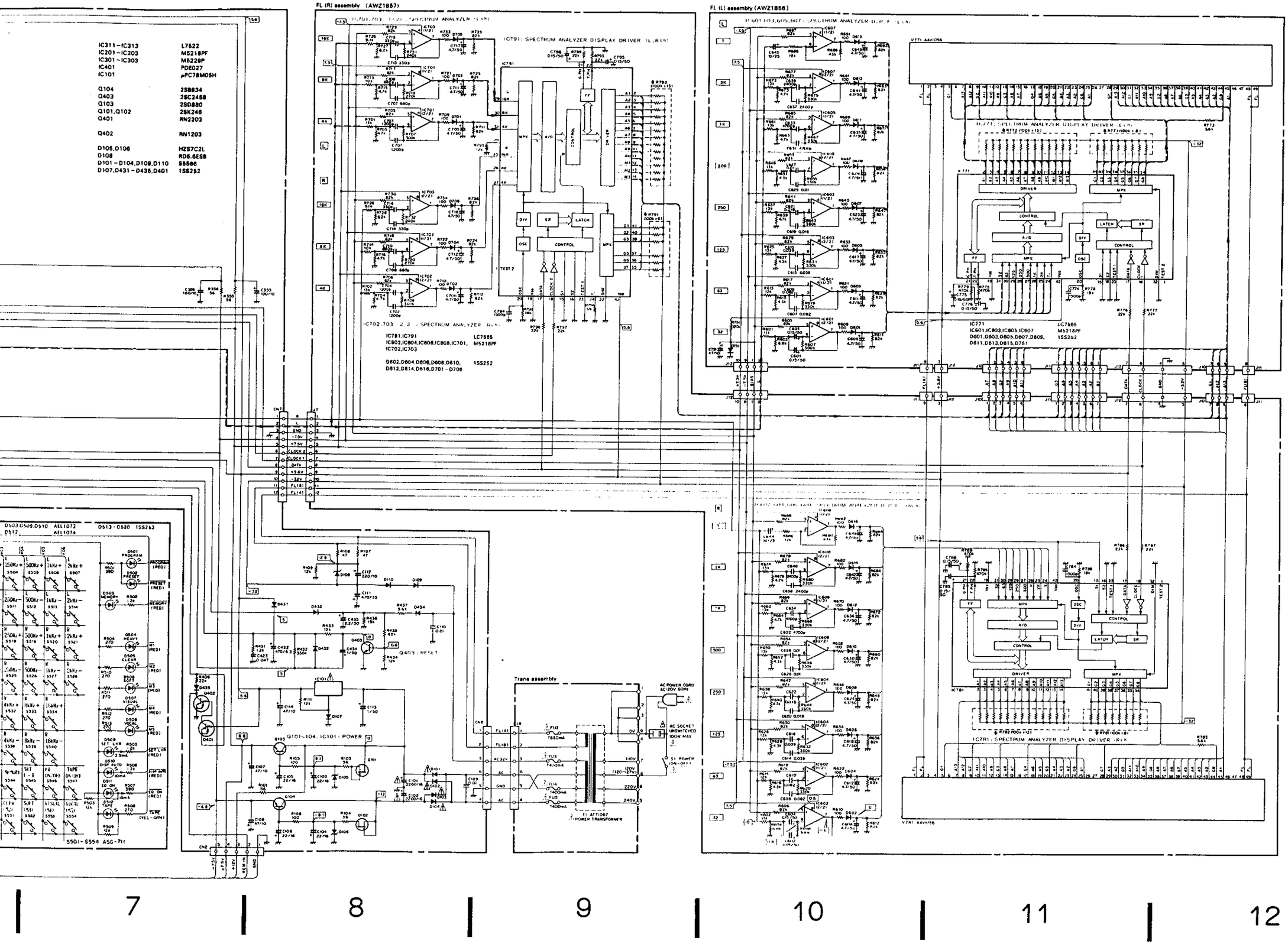
3 VOLTAGE CURRENT
DC voltage (V) at no input signal

4 OTHERS
Signal route
——— : AUDIO SIGNAL
– – – – : FL SIGNAL
Adjusting point
The ☆ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
※ marked capacitors and resistors have parts numbers

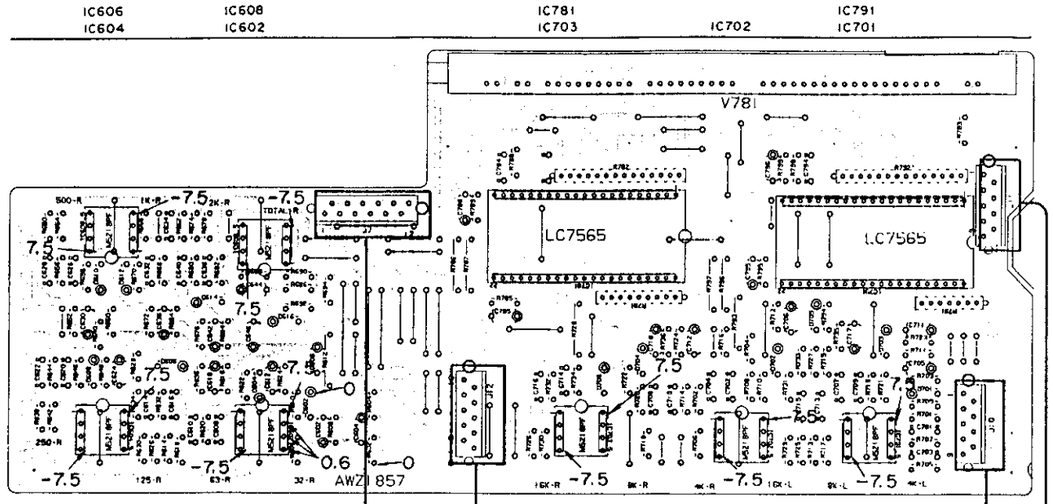
This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

5 SWITCHES
S601 – S554 Test switch



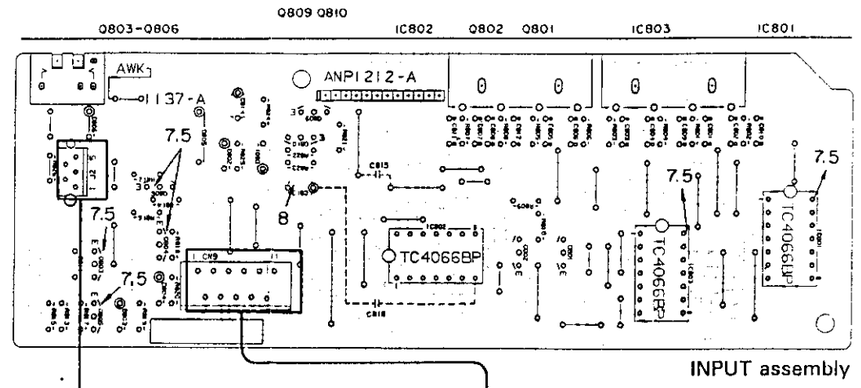

FL (R) assembly (AWZ1857)
FL (L) assembly (AWZ1856)
IC311 – IC313 L7622
IC201 – IC203 M5218PF
IC301 – IC303 M6229P
IC401 PDE027
IC101 μPC78M05H
Q104 2SB834
Q403 2SC2458
Q103 2SD880
Q101, Q102 2SK246
Q401 RN2203
Q402 RN1203
D106, D106 HZS7C2L
D108 RD6.8ESB
D101 – D104, D108, D110 S6686
D107, D431 – D435, D401 1SS252
IC781, IC791 LC7585
IC802, IC804, IC808, IC808, IC701, IC702, IC703 M5218PF
D802, D804, D806, D808, D810, D812, D814, D816, D701 – D706 1SS252
IC791: SPECTRUM ANALYZER DISPLAY DRIVER (L, R ch)
IC702, 703 2 2 : SPECTRUM ANALYZER (R ch)
IC771 AAV1056
IC771: SPECTRUM ANALYZER DISPLAY DRIVER (L ch)
IC771, IC801, IC803, IC805, IC807, D801, D803, D805, D807, D809, D811, D813, D815, D751 LC7585, Mb218PF, 1SS252
IC781: SPECTRUM ANALYZER DISPLAY DRIVER (R ch)
Q101 – 104, IC101 : POWER
Q403 : HEAT
Trans assembly
AC POWER CORD AC 120V 60Hz
AC SOCKET UNSWITCHED 100W MAX
S1 POWER (ON – OFF)
FL ATT067 POWER TRANSFORMER
S501 – S554 ASG-711
D501 PROGRAM
D502 PRESET
D503 MEMORY
D504 HEAVY
D505 CLEAR
D506 EQ1
D507 VISUAL
D508 EQ2
D509 SET LAB
D510 DISP AUTO
D511 EQ ON
D512 TAPE
D513 – D520 1SS252
AEL1072
AEL1074

5. P.C.BOARDS CONNECTION DIAGRAM

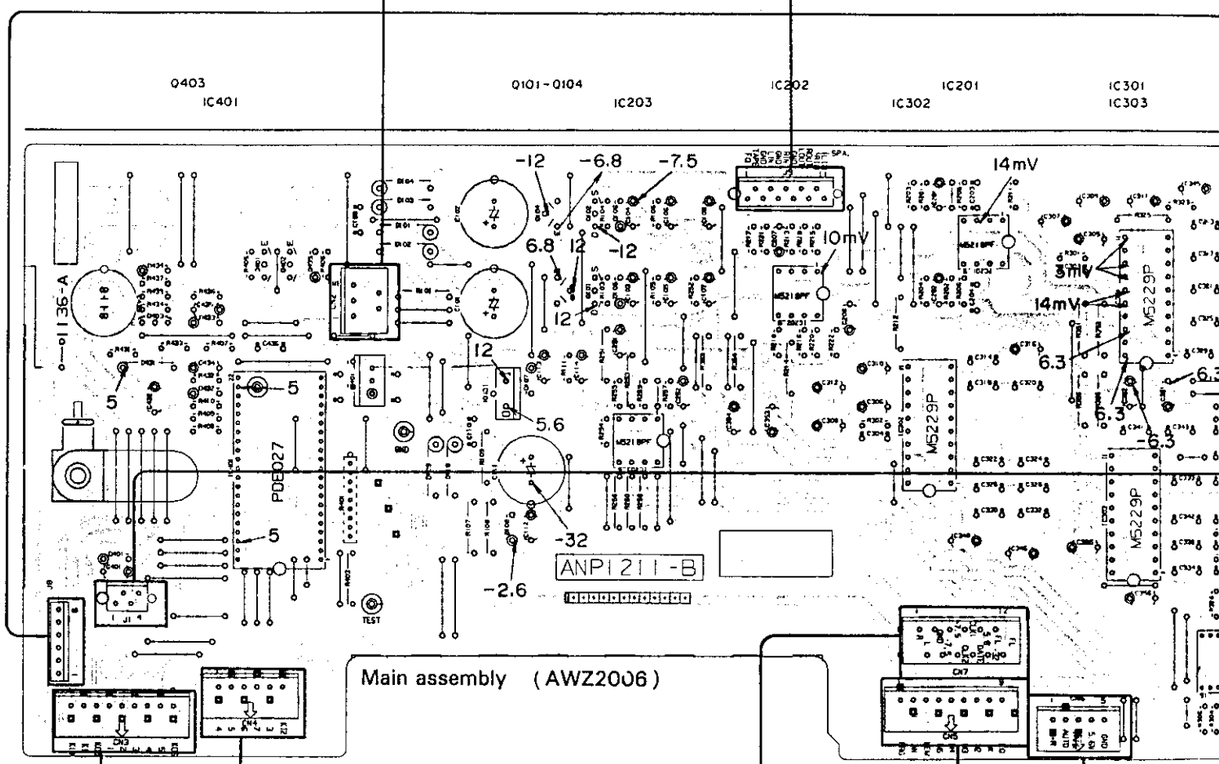


FL (R) assembly (AWZ1857)

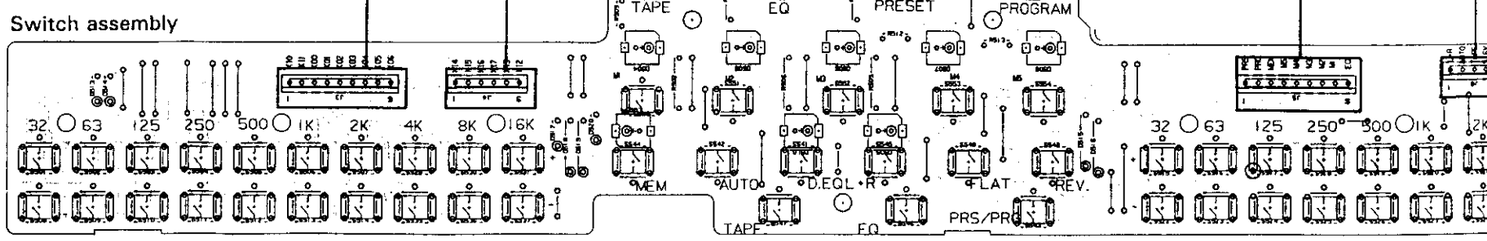
FL (L) assembly (AWZ1856)



INPUT assembly



Main assembly (AWZ2006)



Switch assembly

NOTE

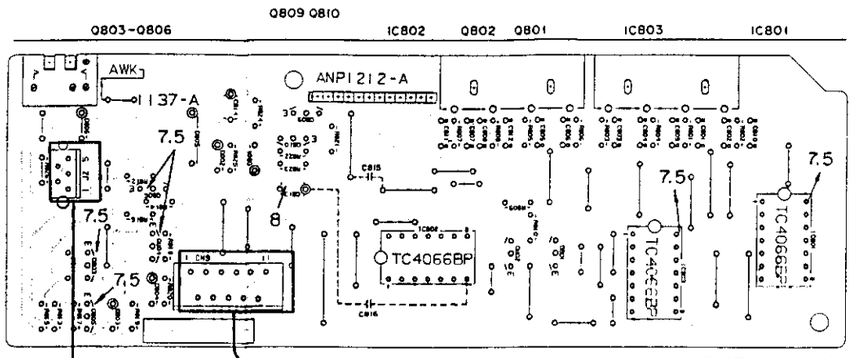
1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 E C	Q504 E C or E C	Transistor
Q215	Q215 or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	C513	Capacitor (Polarity)
C518	C518	Capacitor (Non-polarity)

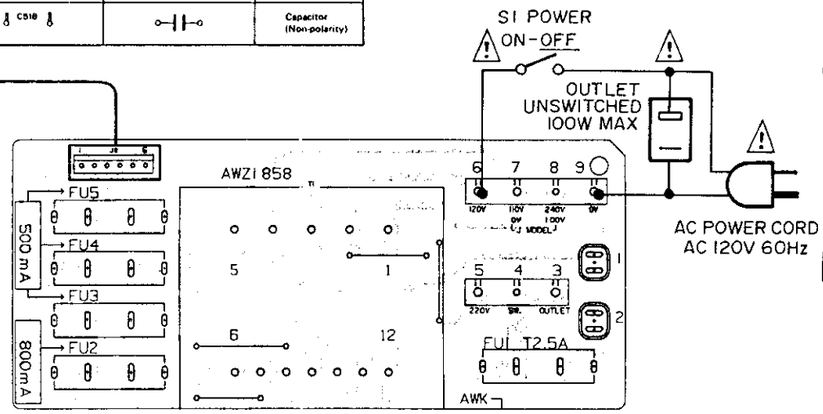
Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

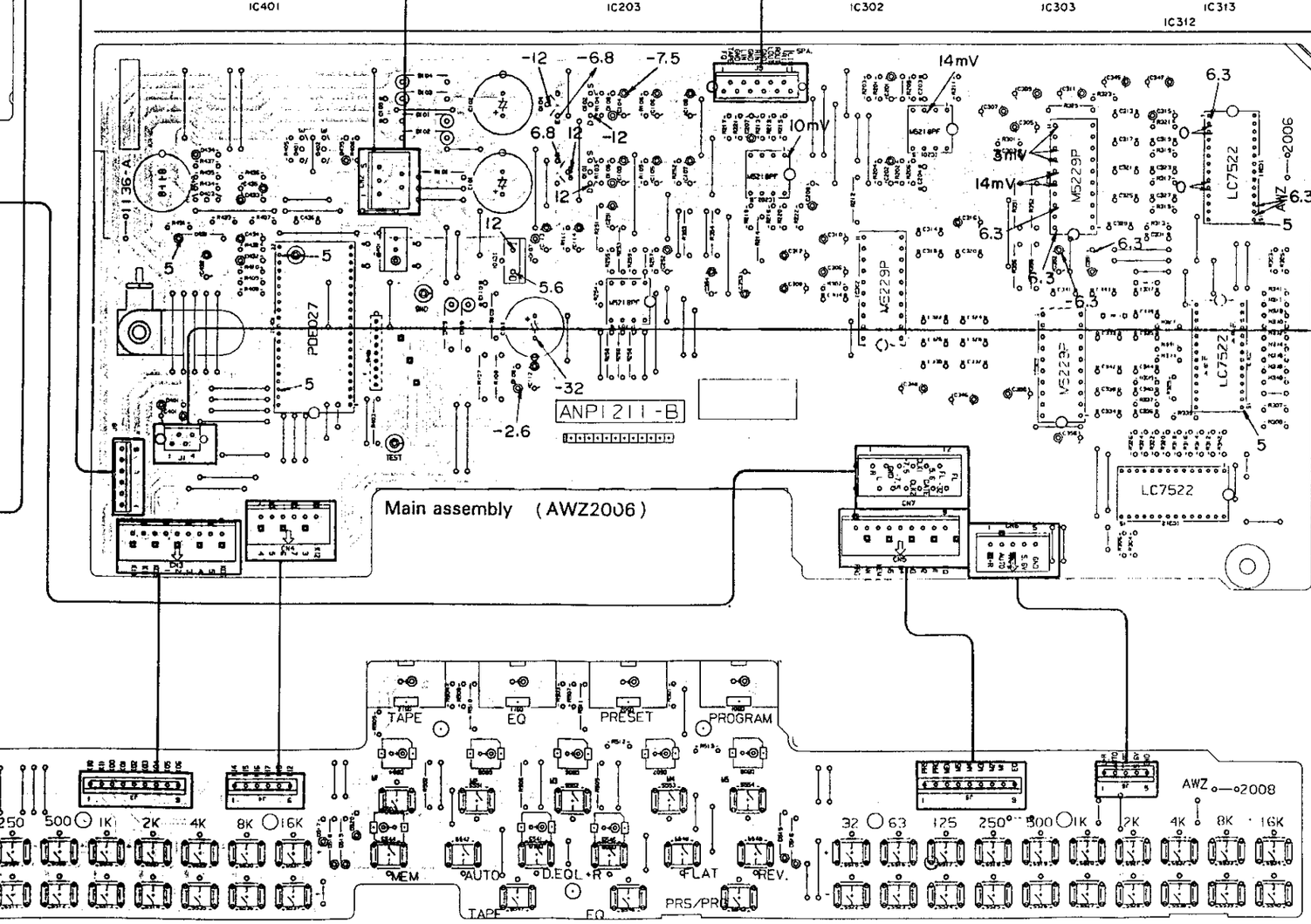
3. The capacitor terminal marked with ⊖(double circles) shows negative terminal.
4. The diode terminal marked with ⊖(double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter



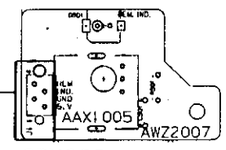
INPUT assembly



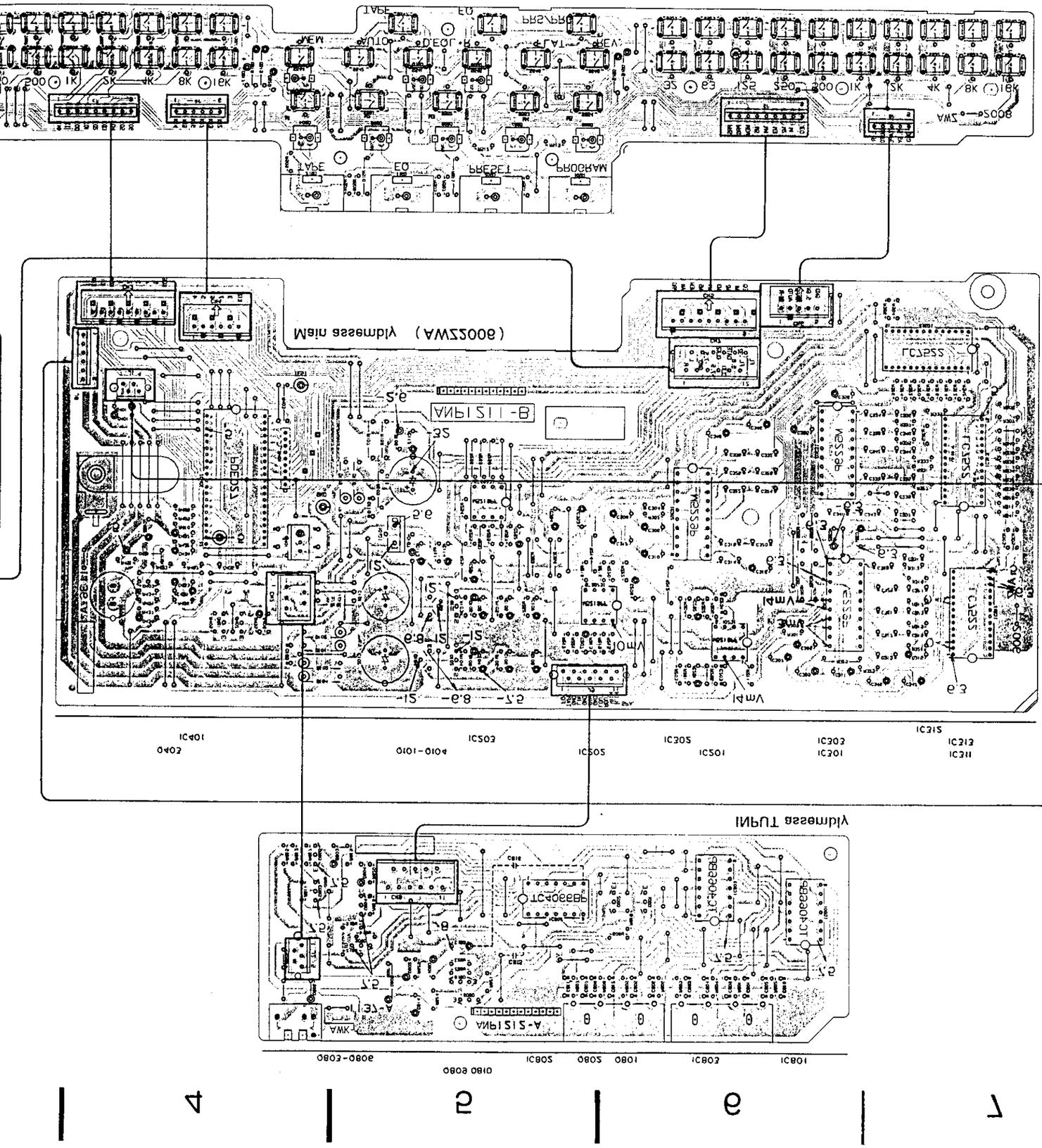
Trans assembly



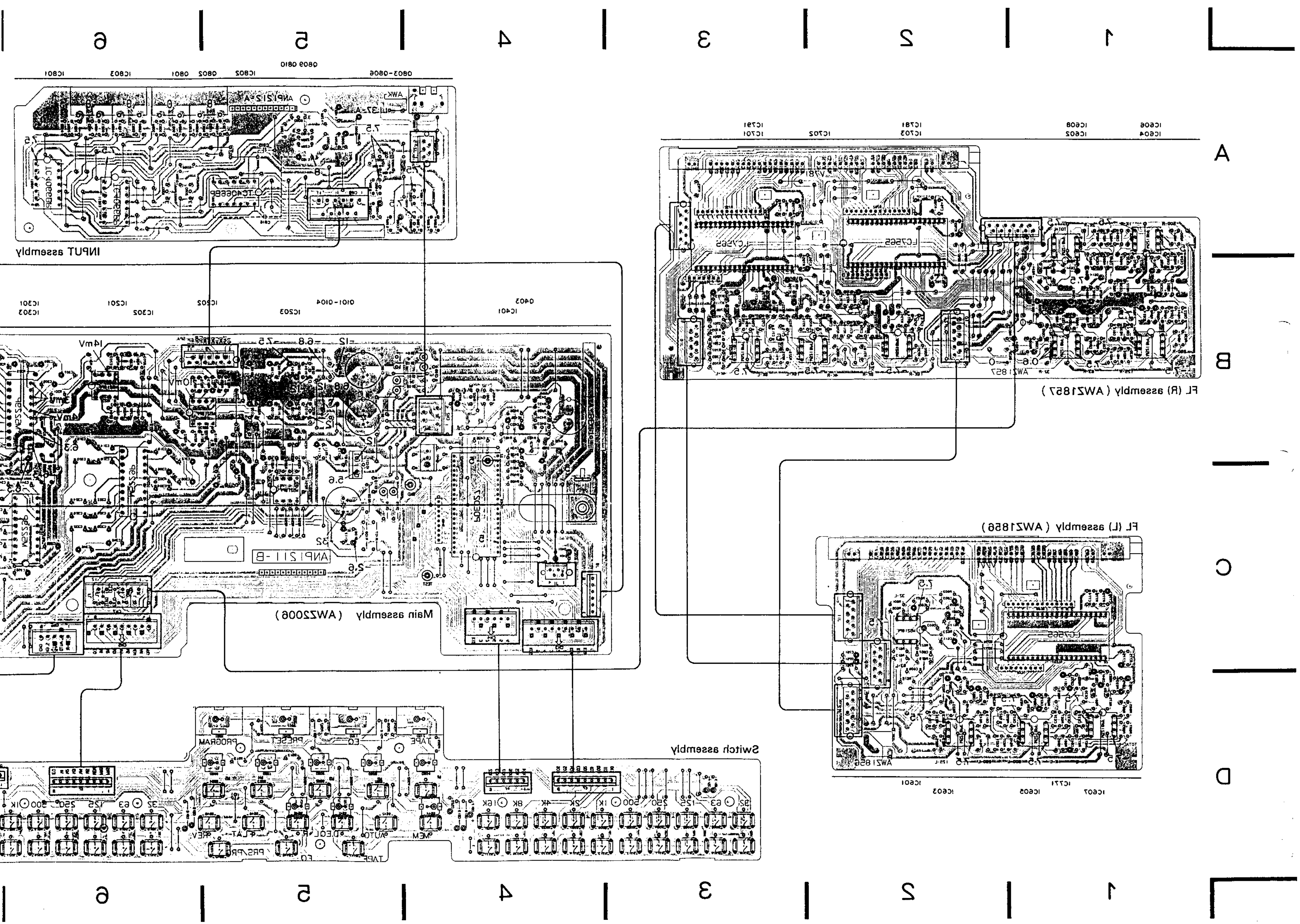
Main assembly (AWZ2006)



SENSOR assembly



NOTE:
This picture shows the foil side of the printed circuit.



INPUT assembly
Main assembly (AWZ2006)
FL (R) assembly (AWZ1857)
FL (L) assembly (AWZ1856)
Switch assembly
ANP1212-A
ANP1211-B
LC7565
PROGRAM
PRESET
EQ
TAPE
MEM
AUTO

6. ELECTRICAL PARTS LIST

NOTES:

- *Parts without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	*56 × 10¹*	*561*	*RD1/4PS 5 6 1 J*
47kΩ	*47 × 10³*	*473*	*RD1/4PS 4 7 3 J*
0.5Ω	*0R5*		*RN2H 0 R 5 K*
1Ω	*010*		*RS1P 0 1 0 K*

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	*562 × 10¹*	*5621*	*RN1/4SR 5 6 2 1 F*

Miscellaneous Parts

P.C.BOARD ASSEMBLIES

Mark	Symbol & Description	Part No.
	Main assembly	AWZ2006
	FL (L) assembly	AWZ1856
	FL (R) assembly	AWZ1857
	Switch assembly	
	SENSOR assembly	
	Trans assembly	
	INPUT assembly	

OTHERS

Mark	Symbol & Description	Part No.
⚠	AC socket (1P)	AKP−507
⚠	S1 Push switch (POWER)	ASG−549
⚠	FU2 Fuse (800mA/125V)	AEK−118
⚠	FU3,FU4,FU5 Fuse (500mA/125V)	AEK−136
⚠	AC Power cord	ADG−088

Main assembly (AWZ2006)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC311−IC313	L7522
	IC201−IC203	M5218PF
	IC301−IC303	M5229P
	IC401	PDE027
	IC101	μPC78M05H
	Q104	2SB834
	Q403	2SC2458
	Q103	2SD880
	Q101,Q102	2SK246
	Q401	RN2203
	Q402	RN1203
	D105,D106	HZS7C2L
	D108	RD5.6ESB
	D101−D104,D109,D110	S5566
	D107,D431−D435,D401	1SS252

CAPACITORS

Mark	Symbol & Description	Part No.
⚠	C109,C110 Power capacitor (0.01/150V)	ACG1005
	C433 (47000/5.5V)	ACH1070
	C203,C204	CCCSL101J50
	C309,C310,C315,C316	CEASR33M50
	C305,C306,C311,C312	CEASR68M50
	C113,C434	CEAS010M50
	C307,C308	CEAS1R5M50
	C351−C356	CEAS101M10
	C251,C252,C435	CEAS2R2M50
	C103−C106,C345−C348	CEAS220M16
	C112	CEAS221M10
	C101,C102	CEAS222M16
	C401	CEAS4R7M50
	C107,C108,C114	CEAS470M10
	C111	CEAS471M35
	C432	CEAS471M6
	C201,C202	CEYA2R2M50
	C207,C208	CEYA4R7M50
	C313,C314,C319,C320	CFTXA184J50
	C341,C342	CKCYB152K50
	C337,C338,C343,C344	CKCYB272K50
	C303,C304	CKCYB331K50
	C436	CKCYF103Z50
	C329,C330,C335,C336	CQMA103K50
	C325,C326,C331,C332	CQMA223K50

Mark	Symbol & Description	Part No.
	C321,C322,C327,C328	CQMA473K50
	C333,C334,C339,C340	CQMA562K50
	C317,C318,C323,C324	CQMA823K50

RESISTORS

Mark	Symbol & Description	Part No.
	R401 (8.2k×8)	ACN1022
	R107,R108,R101,R351−R356	RD1/4PM□□□J
	Other resistors	RD1/8PM□□□J

OTHER

Mark	Symbol & Description	Part No.
	X401 Ceramic resonator	ASS1025

FL (L) assembly (AWZ1856)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC771	LC7565
	IC601,IC603,IC605,IC607	M5218PF
	D601,D603,D605,D607,D609, D611,D613,D615,D751	1SS252

CAPACITORS

Mark	Symbol & Description	Part No.
	C601,C603,C775,C776	CEASR15M50
	C643	CEAS100M25
	C605,C611,C617,C623,C629, C635,C641,C645	CEAS4R7M50
	C751	CEAS470M10
	C774	CKCYB152K50
	C631,C633	CKCYB472K50
	C625,C627	CQMA103K50
	C619,C621	CQMA183K50
	C637,C639	CQMA242J50
	C613,C615	CQMA393K50
	C607,C609	CQMA823K50

RESISTORS

Mark	Symbol & Description	Part No.
	R771 (100k×8)	ACN1024
	R772 (100k×13)	ACN1025
	Other resistors	RD1/8PM□□□J

OTHER

Mark	Symbol & Description	Part No.
	V771 Fluorescent indicator tube	AAV1056

FL (R) assembly (AWZ1857)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC781,IC791	LC7565
	IC602,IC604,IC606,IC608,IC701, IC702,IC703	M5218PF
	D602,D604,D606,D608,D610, D612,D614,D616,D701−D706	1SS252

CAPACITORS

Mark	Symbol & Description	Part No.
	C602,C604,C785,C786,C795, C796	CEASR15M50
	C606,C612,C618,C624,C630, C642,C646,C705,C706,C711, C712,C717,C718	CEAS4R7M50
	C701−C704	CKCYB122K50
	C784,C794	CKCYB152K50
	C713−C716	CKCYB331K50
	C632,C634	CKCYB472K50
	C707−C710	CKCYB681K50
	C626,C628	CQMA103K50
	C620,C622	CQMA183K50
	C638,C640	CQMA242J50
	C614,C616	CQMA393K50
	C608,C610	CQMA823K50

RESISTORS

Mark	Symbol & Description	Part No.
	R791 (100k×6)	ACN1023
	R781	ACN1024
	R782,R792	ACN1025
	Other resistors	RD1/8PM□□□J

OTHER

Mark	Symbol & Description	Part No.
	V781 Fluorescent indicator tube	AAV1056

Switch assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	D504−D508	AEL1008
	D501,D502,D511	AEL1038
	D503,D509,D510	AEL1072
	D512	AEL1074
	D513−D520	1SS252

SWITCHES

Mark	Symbol & Description	Part No.
	S501−S554 Tact switch	ASG−711

RESISTORS

Mark	Symbol & Description	Part No.
	All resistors	RD1/8PM□□□J

Trans assembly

OTHER

Mark	Symbol & Description	Part No.
⚠	T1 Power transformer	ATT1067

SENSOR assembly

SEMICONDUCTOR

Mark	Symbol & Description	Part No.
	D901	AEL1017

CAPACITOR

Mark	Symbol & Description	Part No.
	C901	CCCSL101J50

RESISTOR

Mark	Symbol & Description	Part No.
	R901	RD1/8PM331J

OTHER

Mark	Symbol & Description	Part No.
	Remote control sensor unit	AXX1005

INPUT assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC801 – IC803	TC4066BP
	Q803 – Q806,Q809	2SA1048
	Q810	2SC2458
	Q801,Q802	2SC2878
	D801,D803,D804	RD3.0ESB
	D805	S5566
	D802	1SS252

CAPACITORS

Mark	Symbol & Description	Part No.
	C801 – C812	CCMSL101J50
	C814	CEAS101M25
	C813	CEAS470M10
	C818,C816	CKDYF103Z50

RESISTORS

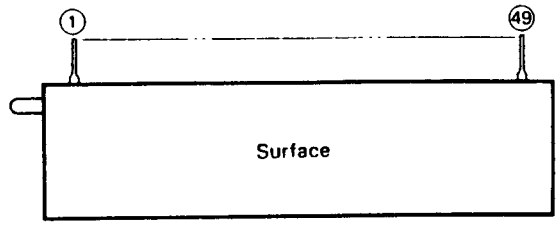
Mark	Symbol & Description	Part No.
	All resistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	4P Pin jack	AKB1007
	2P Mini jack	AKN1006

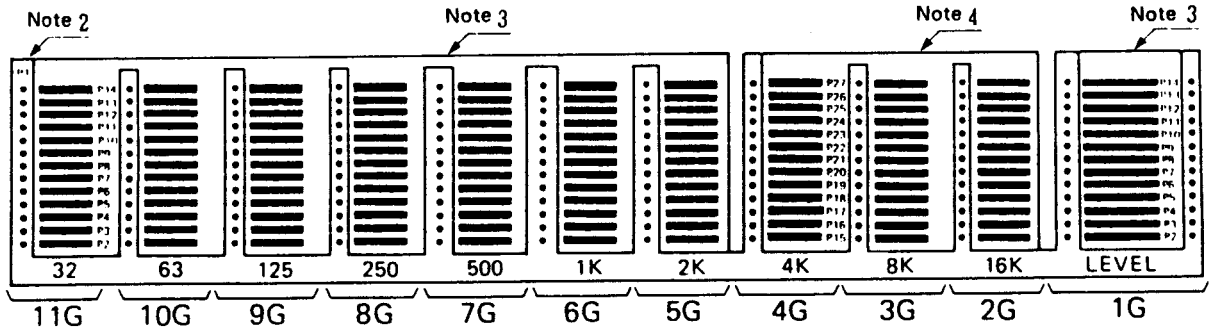
7. IC AND DISPLAY INFORMATION

AAV1056



Terminal No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Terminal name	F	F	NP	P1	11G	NP	P14	P13	10G	P12	P11	P10	9G	P9	P8	NP	8G	P7	P6	7G	P5	P4	P3	6G	P2	NP
Terminal No.	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49			
Terminal name	NP	5G	P27	P26	4G	P25	P24	P23	3G	P22	P21	P20	2G	P19	P18	P17	P16	1G	P15	NP	NP	F	F			

Note 1: F; filament, G; grid, P; anode, NP; no pin

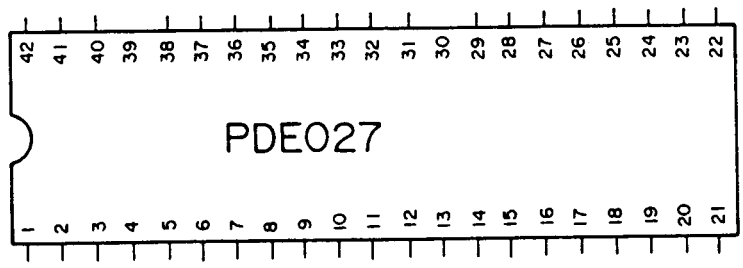


Note 2: P1 is used for all numeric and a alphabetioal characters and circle.

Note 3: Specifying "▬▬" as 1 segment.
The pins are placed in sequence of P2, P3..... P14 from the lowest row.

Note 4: Specifying "▬▬" as 1 segment.
The pins are placed in sequence of P15, P16..... p27 from the lowest row.

PDE027



Name and function of terminals

No.	Terminal name	I/O	Level	
1	REM.IN	I	H	Remote control signal (SR) input
2	TEST	I	L	RESET input at L to start test program
3	KEY IN 0	I	L	Key matrix return data input
4	KEY IN 1	I	L	
5	KEY IN 2	I	L	
6	KEY IN 3	I	L	
7	KEY IN 4	I	L	
8	KEY IN 5	I	L	
9	KEY IN 6	I	L	
10	KEY IN 7	I	L	
11	LED PRESET 1	O	L	LED output ports corresponding to RESET 1 to 5 Initializing causes all LEDs to go off. f_{11} to f_{16} key input causes all LEDs to go off.
12	LED PRESET 2	O	L	
13	LED PRESET 3	O	L	
14	LED PRESET 4	O	L	
15	LED PRESET 5	O	L	
16	LED MEMORT	O	L	5sec blinking after MEMORY key input
17	LED PROGRAM	O	L	
18	LED MANUAL	O	L	
19	TEST			Unused, to GND
20	Vss			GND
21	OSC.1			4.0MHz ceramic oscillator connection between termianals
22	OSC.2			
23	RESET	I	L	RESET input
24	DATA	O	H	G.E. attenuator and FL driver control output
25	CLOCK1	O	H	
26	CLOCK2	O	H	
27	STBY	I	L	Interruption at L causes the system to enter the standby mode.
28	LED TAPE	O	L	TAPE ON/OFF key input causes LED to go on/off.
29	LED EQ	O	L	EQ ON/OFF key input causes LED to go on/off.
30	PG2	O		Unused
31	LED SET L+R	O	L	SET L+R ON/OFF key input causes LED to go on/off.
32	KEY OUT0	O	L	Key matrix strobe output
33	KEY OUT1	O	L	
34	KEY OUT2	O	L	
35	KEY OUT3	O	L	
36	KEY OUT4	O	L	
37	KEY OUT5	O	L	
38	KEY OUT6	O	L	
39	KEY OUT7	O	L	
40	Vdd			+5V
41	LED REM.	O	L	Remote control signal (SR) input causes LED to blink.
42	LED AUTO DISP.	O	L	AUTO DISP key input causes to go on.

8. FOR SD, SD/G, AND HEZ TYPES

8.1 CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

The GR−777/SD, SD/G, and HEZ types are the same as the GR−777/KUC type with the exception of the following sections.

Mark	Symbol & Description	Part No.				Remarks
		KUC type	SD type	SD/G type	HEZ type	
⚠	Fuse (800mA/125V,FU2)	AEK−118	.....	.....	.....	
⚠	Fuse (T630mA/250V,FU2)	.....	AEK−406	AEK−406	AEK−406	
⚠	Fuse (500mA/125V,FU3,FU4,FU5)	AEK−136	.....	.....	.....	
⚠	Fuse (T400mA/250V,FU3,FU4 ,FU5)	.....	AEK−407	AEK−407	AEK−407	
⚠	Fuse (T2.5A/250V,FU1)	.....	.....	.....	AEK−403	
⚠	AC power cord	ADG−088	ADG1015	ADG1015	ADG1022	
	FL Filter	AAK1523	AAK1523	AAK1523	AAK1478	
⚠	AC socket(OUTLET,1P)	AKP−507	AKP−507	AKP−507	AKP−508	
⚠	Line voltage selector switch (S2)	.....	AKX1007	AKX1007	.....	
	Operating instruction	ARB1109	ARB1109	ARB1109	.....	
	Operating instruction	.....	.....	.....	ARE1098	
	Operating instruction	.....	ARH1053	ARH1053	.....	

8.2 SCHEMATIC DIAGRAM

NOTES:

- *Parts without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*

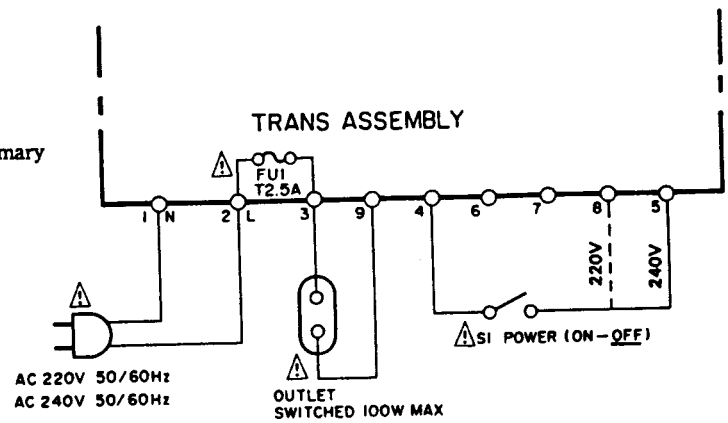
• FOR HEZ TYPE

220V, 240V, type Line Voltage Selection

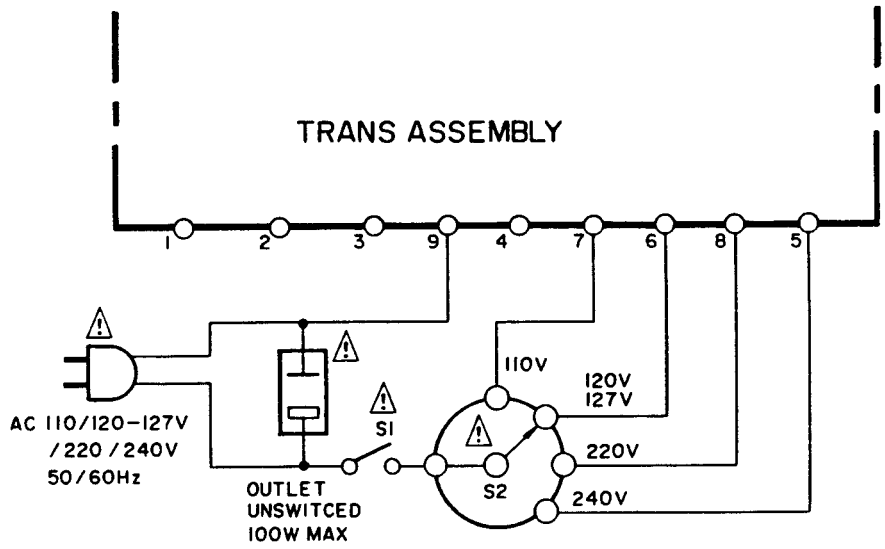
Line voltage can be changed with following steps.

1. Disconnect the AC power cord.
2. Remove the Bonnet case.
3. Change the connection of the TRANS ASSEMBLY primary pins.
4. Stick the line voltage label on the rear panel.

Part No.	Description
AAX-193	220V label
AAX-192	240V label



• FOR SD, SD/G TYPES

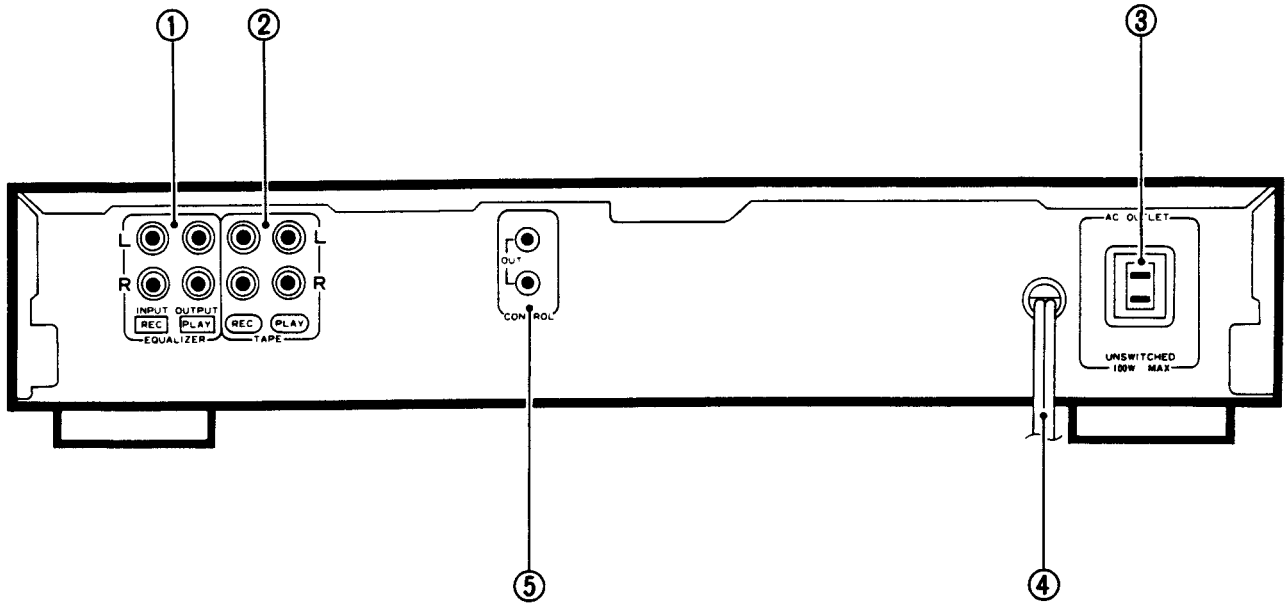


SI : POWER ON-OFF

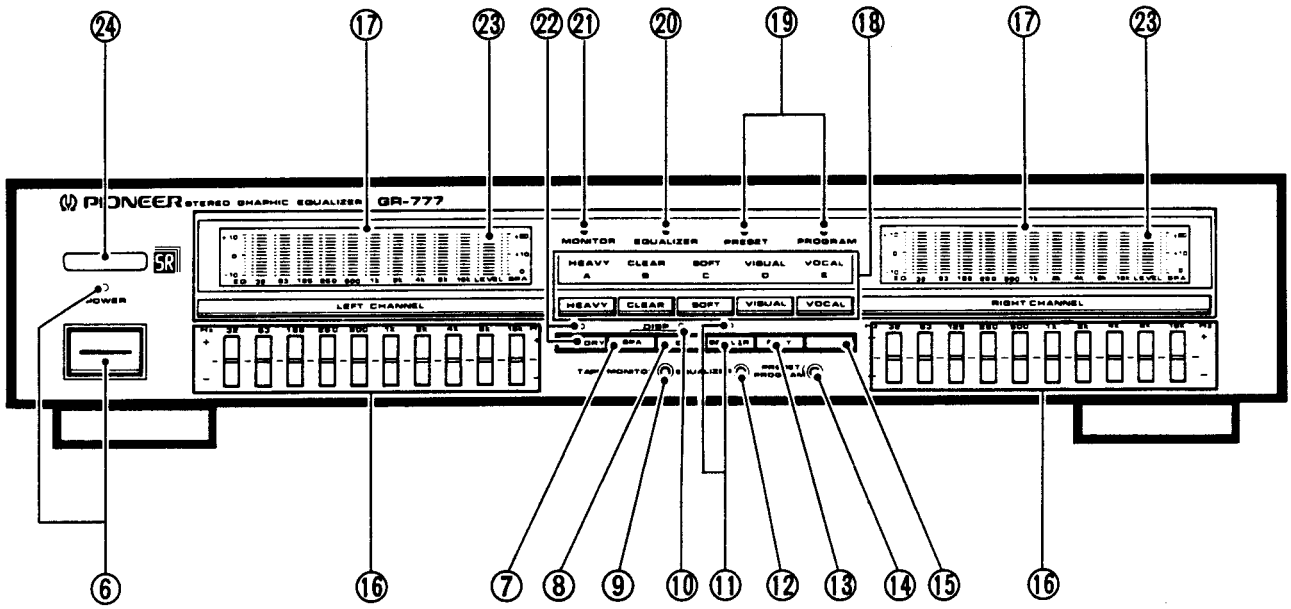
S2: VOLTAGE SELECTOR
110V/120-127V/220V/240V

9. PANEL FACILITIES AND SPECIFICATIONS

[REAR PANEL]



[FRONT PANEL]



REAR PANEL FACILITIES

① EQUALIZER jacks
Connect these jacks to your amplifier tape or adaptor jacks.

② TAPE jacks
Connect a tape deck to these jacks.

③ AC OUTLET (UNSWITCHED 100W MAX)
Other units may be plugged into this outlet if total power consumption does not exceed 100 watts. Power is always available even if the equalizer is switched off.
Unplug the AC power cord from the wall socket when not using this unit regularly (when on vacation).

NOTE:
Do not use this outlet for connection of electric irons, heaters, TV sets, or other appliances that use much power. Malfunction of the equalizer and overheating or fire may result.

④ Power cord
Connect to auxiliary AC outlet on amplifier.

⑤ CONTROL OUT terminals
Connect to the control in terminals of other Pioneer components bearing the SR mark.

FRONT PANEL FACILITIES

⑥ POWER switch/indicator
Press once to turn on. Press again to turn off.
The indicator lights when power is turned on. The indicator flashes when receiving commands from the remote control unit.
Even when the power switch is off, the transformer remains connected to the AC power source. Unplug the AC power cord from the wall socket when not using this unit regularly.

⑦ SPA (spectrum analyzer) switch
Press to switch to spectrum analyzer display. Graphic equalizer display reappears for five seconds when a memory recall switch or control switch is pressed.

⑧ EQ (equalizer) switch
Press to switch to graphic equalizer display.

⑨ TAPE MONITOR switch
For listening to a tape deck connected to the rear panel TAPE jacks. During playback, press this switch so that the MONITOR indicator lights. Turn this switch off when listening to other music sources.
Do not press this switch after you begin recording; it may cause gaps in the sound.

⑩ EQ (Equalizer) indicator
Lights when the EQ switch is pressed.

⑪ SET L & R switch (and indicator)
When this switch is on, you can use the control switches of either channel to provide simultaneous adjustment of both channels. (The indicator lights when this is on.)

NOTE:
This does not make both sides have the same settings, it only lets you adjust the same frequency band on the left and right channels at the same time.

⑫ EQUALIZER switch
Turn this switch on to apply equalization to the sound. Turn it off when you do not want equalization.

⑬ FLAT switch
Press this switch to reset all frequency bands to their center "0" positions.

⑭ PRESET/PROGRAM switch
This selects PRESET or PROGRAM operation for the five "memory recall" switches, as confirmed by the PRESET and PROGRAM indicators.
(The five "memory recall" switches can be used to recall the factory preset curves or your own programmed curves.)

⑮ REV (Reverse) switch
This inverts the current equalization curve, so the boosted frequencies are reduced and the reduced frequencies boosted.

⑯ Control switches
Press the plus side to boost the level; press the minus side to reduce it.

NOTE:
Tweeters may be damaged if you boost the high frequencies excessively and then play music at high volume. Keep the amplifier volume at a suitable level when using equalization curves that emphasize the treble tones.

⑰ SPECTRUM ANALYZER/EQUALIZER display
When operating as a spectrum analyzer, this shows the effect of your equalization upon the actual output signal.
When operating as a graphic equalizer display, it shows the equalization curve.

⑱ Memory recall switches/indicators
There are five memory switches A through E. When the PRESET indicator is lit, these select the factory presets:
HEAVY: a powerful, heavy bass sound.
CLEAR: a bright, clear sound.
SOFT: a soft sound, free from harshness.
VISUAL: useful with video soundtracks and TV.
VOCAL: adds presence to vocals.
When the PROGRAM indicator is lit, these switches select the equalization curves that you have stored.

⑲ PRESET and PROGRAM indicators
These indicate whether you have selected the PRESET or the PROGRAM equalization curves.

⑳ EQUALIZER indicator
This lights when the EQUALIZER switch is on.

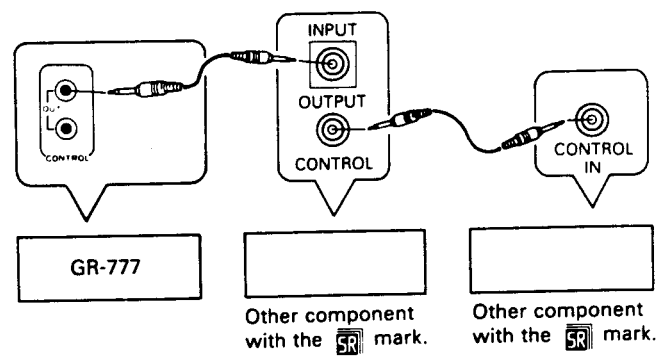
㉑ MONITOR indicator
This lights when the TAPE MONITOR switch is on.

㉒ MEMORY switch/indicator
Use when storing equalization curves in the memory recall switches (A–E) ⑱.

㉓ Level meter
Shows signal level.

㉔ REMOTE SENSOR window
Point top of remote control unit at this window during operation.

NOTE:
When making connections between CONTROL IN/OUT terminals for extended remote control, other components bearing the SR mark may be connected to the equalizer. However, the equalizer has only a CONTROL OUT terminal, so it should be at the end of the chain.



SPECIFICATIONS

Graphic Equalizer Section

Number of bands ..... 10 + 10
Equalizer bands
Center frequencies..... 32 Hz, 63Hz, 125 Hz, 250 Hz, 500 Hz, 1 kHz, 2 kHz, 4kHz, 8kHz, 16kHz
Variable range..... ± 10dB
SN ratio (IHF, A network, short circuit, 1 V) ..... 110 dB
SN ratio (DIN 500 mV) ..... 90 dB
Harmonic distortion (20 Hz – 20 kHz, output 1 V)..... 0.02%
Frequency response ..... 5 Hz – 70 kHz $^{+0}_{-3}$dB
Input (Sensitivity/Impedance)..... 150 mV/50 kΩ
Output (Level/Impedance)..... 150 mV/3.3 kΩ

Spectrum analyzer section

Number of bands ..... 10 + 10
Center frequencies ..... 32 Hz, 63Hz, 125 Hz, 250 Hz, 500 Hz, 1 kHz, 2 kHz, 4kHz, 8kHz, 16kHz
Resolution ..... 2 dB step 13 point

Miscellaneous

Power requirements
U.S and Canadian models ..... AC 120 V, 60 Hz
Other destination model ..... AC 110 V/120 – 127 V/220 V/240 V (switchable), 50/60 Hz
Power consumption ..... 18 W
External dimensions .....420 (W) x 311.5 (D) x 85.5 (H) mm
16-9/16 (W) x 12-1/4 (D) x 3-3/8 (H) in.
Weight .....4.0 kg (8 lb 13 oz)

ACCESSORIES

Stereo connection cords 2
Operating instructions 1
Remote control unit 1
Battery 2

Specifications and design subject to possible change without notice, due to improvements.