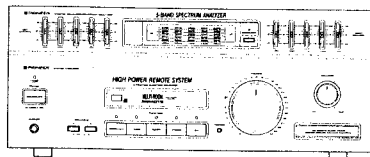


Service Manual

PIONEER
The future of sound and vision.



ORDER NO.
ARP2022

STEREO AMPLIFIER

SA-1520

SA-1520S

SA-1520 AND SA-1520S HAVE FOLLOWING VERSIONS.

Type	Applicable model		Power requirement	Destination
	SA-1520	SA-1520S		
KUC	○	○	AC120V only	U.S.A. and Canada
SD	○	○	AC110V, 120V-127V, 220V, 240V (switchable)	Kingdom of Saudi Arabia and general market

- This manual is applicable to the KUC type.
- As to the other types, refer to applicable service manuals.

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PIONEER ELECTRONIC [EUROPE] N.V. Keetberglaan 1, 2740 Beveren, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).

When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

1. SAFETY INFORMATION

(FOR USA MODEL ONLY)

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.

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.

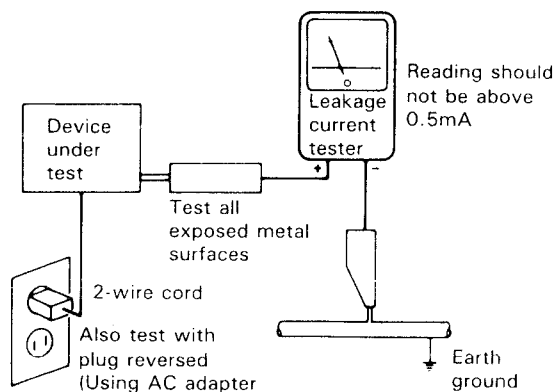
2. PRODUCT SAFETY NOTICE

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 Δ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does 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.



AC Leakage Test

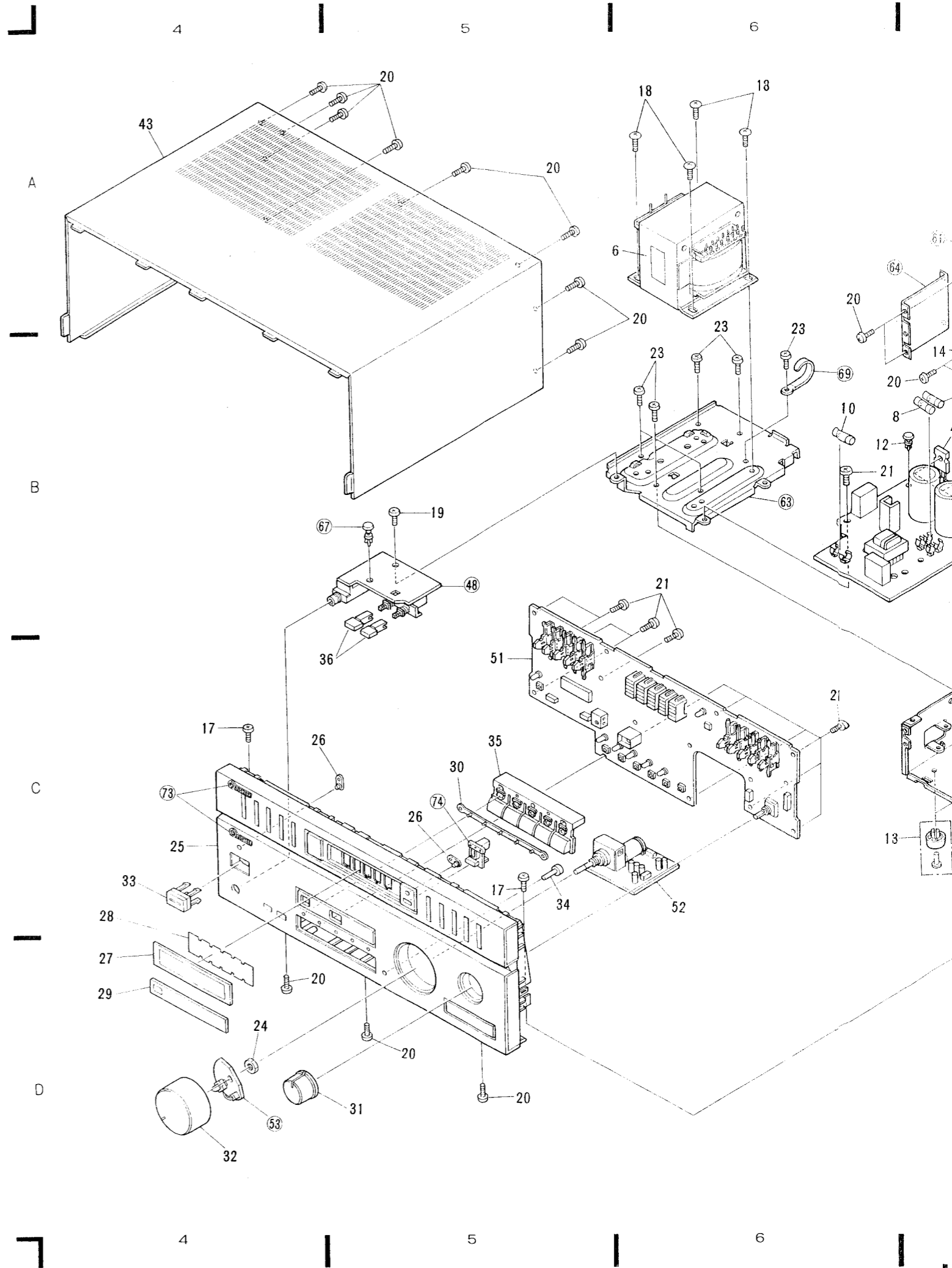
2. EXPLODED VIEW, PACKING AND PARTS LIST

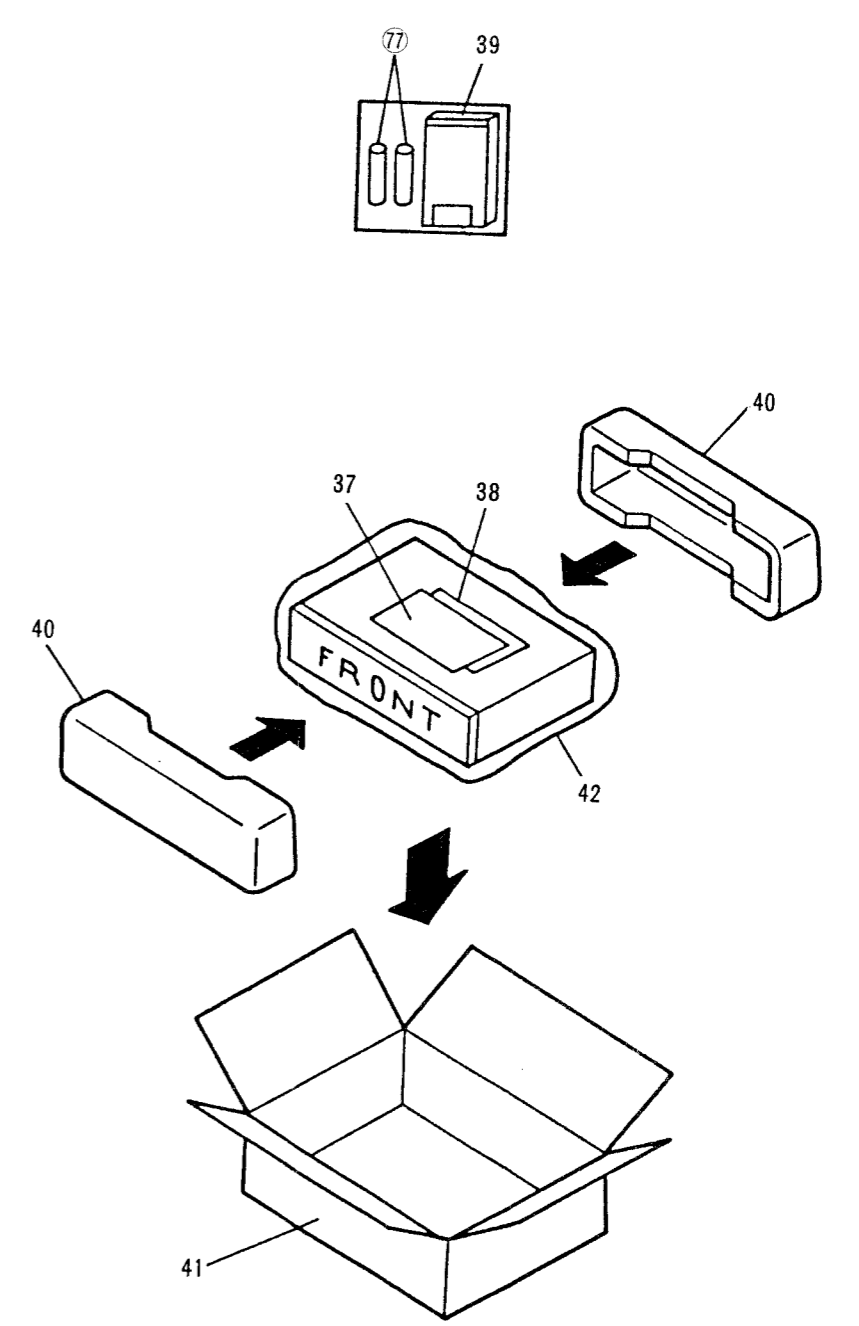
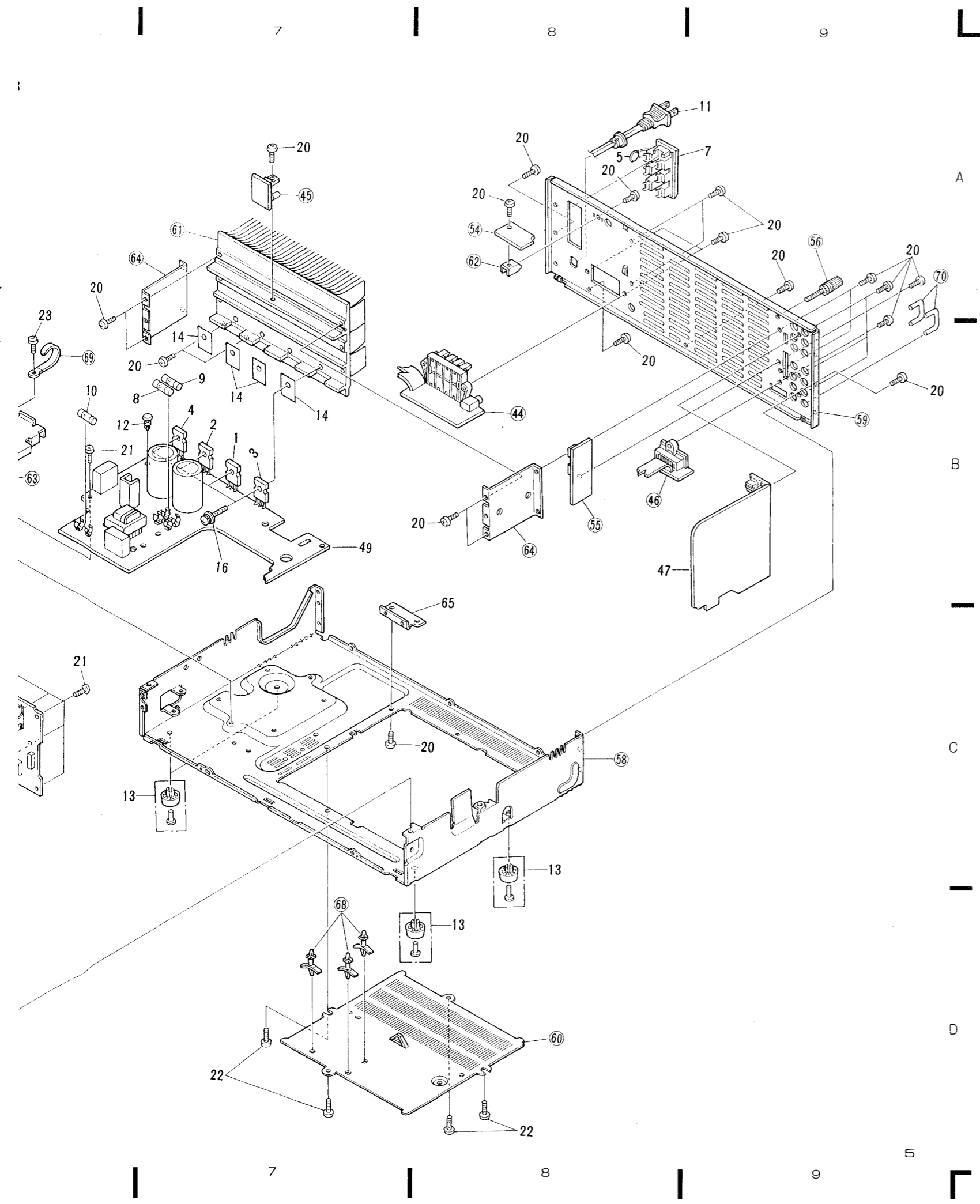
NOTES:

- Parts without part number cannot be supplied.
- The Δ 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 " \odot " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

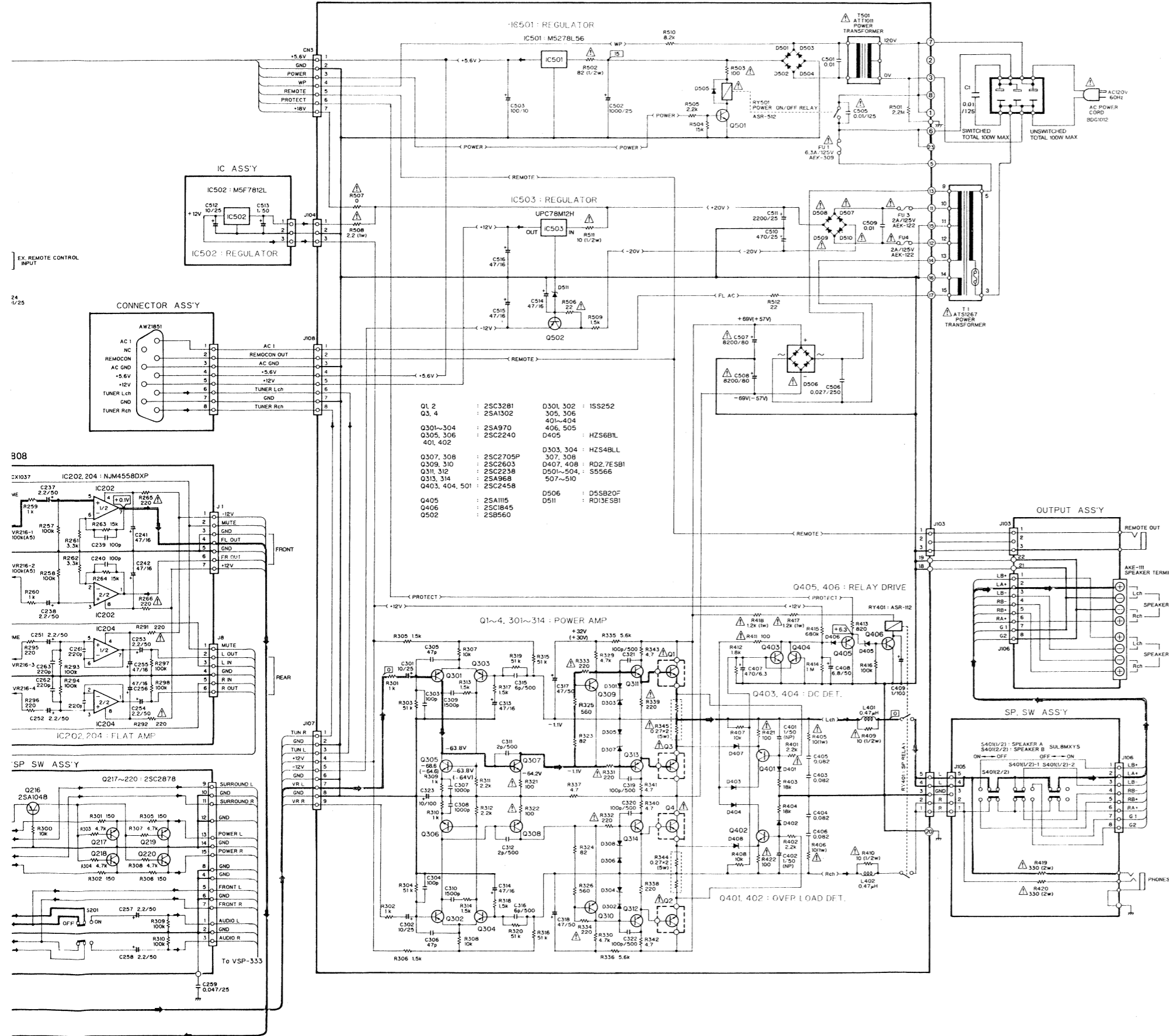
Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
Δ	1	2SA1302	Transistor (Q3)		42	AHG1016	Packing seat
Δ	2	2SA1302	Transistor (Q4)		43	ANE1186	Metal bonnet
Δ	3	2SC3281	Transistor (Q1)		44		Output assy
Δ	4	2SC3281	Transistor (Q2)		45		IC assy
Δ	5	ACG1003	Capacitor (Cl.0,01/AC125V)		46		Connector assy
Δ	6	ATS1267	Power transformer		47	AWZ2805	Input assy
Δ	7	AKP-515	AC socket 3-P		48		SP SW assy
Δ	8	AEK-122	Fuse (2A) (FU3)		49	AWZ2947	AF assy
Δ	9	AEK-122	Fuse (2A) (FU4)		50	
Δ	10	AEK-309	Fuse (6. 3A) (FU1)		51	AWZ2807	Control assy
Δ	11	BDG1012	AC power cord		52	AWZ2808	VOL assy
	12	AEC-510	Nylon rivet		53		LED assy
	13	AEC-784	Leg assembly		54		Remote assy
	14	AEE1014	Sheet		55		VSP SW assy
	15	ABA-115	Screw		56		Terminal screw
	16	ABA-258	Screw		57		Plug
	17	ABA1011	Screw		58		Chassis
	18	ABA1053	Screw		59		Rear panel
	19	BBT30P080FMC	Screw		60		Bottom plate
	20	BBT30P080FZK	Screw		61		Heat sink
	21	BBZ26P080FMC	Screw		62		PCB holder
	22	BBZ30P060FZK	Screw		63		Transformer frame
	23	BBZ30P080FZK	Screw		64		Heat sink holder
	24	NK90FUC	Nut		65		Heat sink holder
	25	AMB1624	Front panel assy		66		Nylon binder
	26	AAK1443	Lens		67		Pin grommet
	27	AAK1918	Panel A		68		PCB spacer
	28	AAK1919	Panel B		69		Clamper
	29	AAK1920	Acrylic Panel		70		Jumper plug
	30	AAK1921	Indicator lens		71	
	31	AAB1098	Rotary knob (BALANCE)		72	
	32	AA81142	Rotary knob assy (VOLUME)		73		Name plate
	33	AAD1535	Power knob (POWER)		74		Knob (plastic)
	34	AAD1609	Button (muting)		75	
	35	AAD1762	Knob (function)		76		Warranty card
	36	AAD1763	Push knob (SPEAKERS)		77		Battery
	37	ARB1244	Operating instructions				
	38	ARD1012	Operating instructions				
			(for SA-1520 type, CU-SA007)				
			Operating instructions				
			(for SA-1520S type, CU-AV007)				
	39	AXD1142	Remote control unit (CU-SA007)				
	40	AHA1239	Pad				
	41	AHD1849	Packing case (for SA-1520 type)				
		AHD1850	Packing case (for SA-1520S type)				





AF ASSY (AWZ2947)



Q1, 2	: 25C32B1	D303, 304	: HZS4BLL
Q3, 4	: 2SA1302	305, 306	
Q301~304	: 2SA970	401~404	
Q305, 306	: 25C2240	405	: HZS6BLL
401, 402		D303, 304	: HZS4BLL
Q307, 308	: 25C2705P	307, 308	
Q309, 310	: 25C2603	D407, 408	: RD2.7ESB1
Q311, 312	: 25C2238	D501~504	: S5566
Q313, 314	: 2SA968	507~510	
Q403, 404, 501	: 25C2458		
Q405	: 2SA1115	D506	: D55820*
Q406	: 25C1845	D511	: RD13ESB1
Q502	: 25B560		

- NOTE:**
- RESISTORS:**
Indicated in Ω, 1/8W & 1/4W, ±5% tolerance unless otherwise noted k; kΩ, M; MΩ, (F); ±1%, (G); ±2%, (K); ±10%, (M); ±20% tolerance
 - CAPACITORS:**
Indicated in capacity (μF)/voltage (V) unless otherwise noted p; pF. Indication without voltage is 50V except electrolytic capacitor.
 - VOLTAGE, CURRENT:**
□: DC voltage (V) at no input signal
Value in () is DC voltage at rated power.
mA; DC current at no input signal
 - OTHERS:**
⊕: Signal route.
⊙: Adjusting point.
- The Δ 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.
The underlined indicates the switch position.
- This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.
- SWITCHES:**
S201:
S601: TAPE
S602: STANDBY ON
S603: EQUALIZER ON/OFF
S604: PHONO
S605: TUNER
S606: VIDEO/AUX
S607: MUTING
S608: CD
S401: SPEAKERS A, B ON/OFF

A

B

C

D

4. P.C. BOARDS CONNECTION DIAGRAM

OUTPUT ASS'Y

AF ASS'Y (AWZ2947)

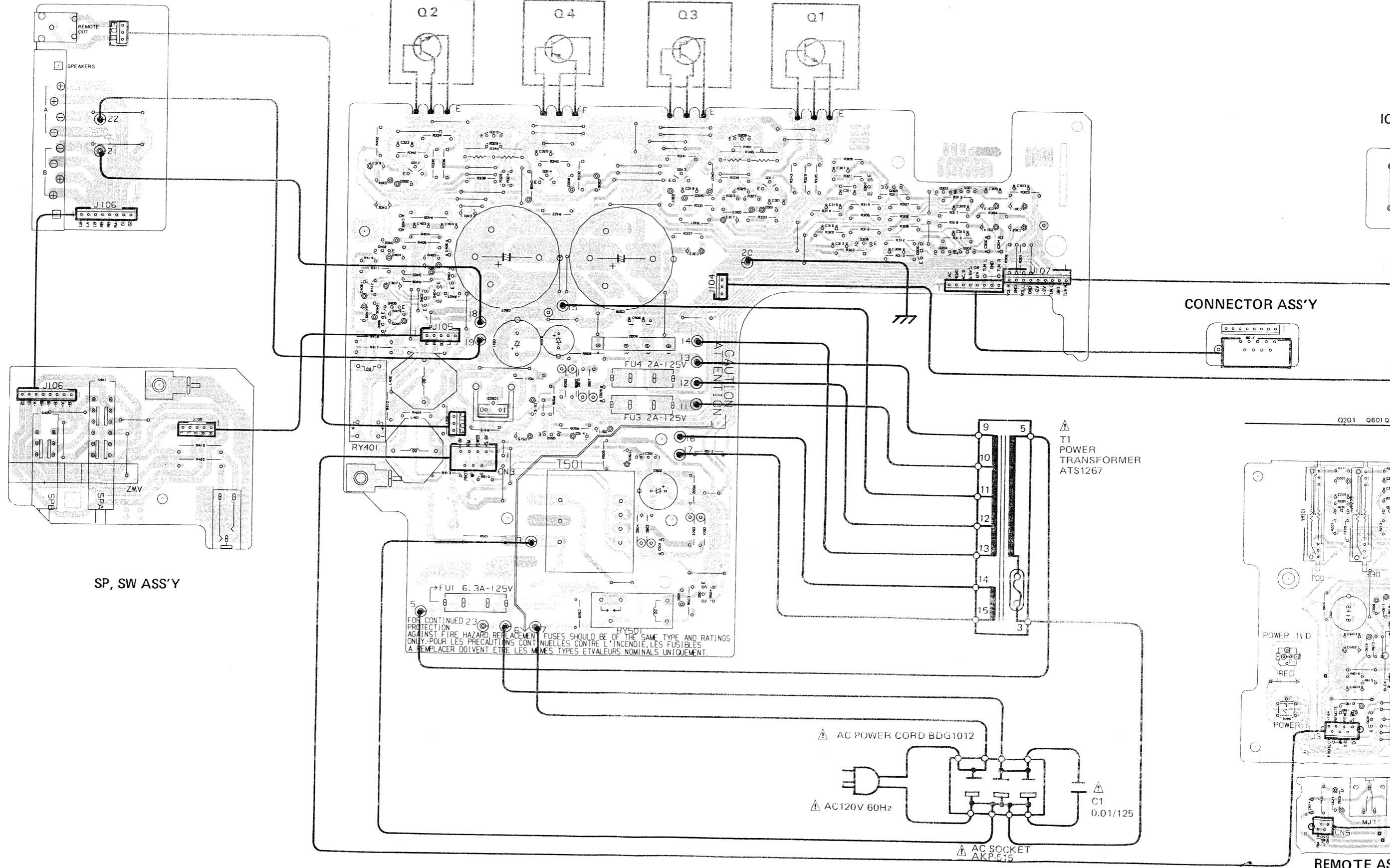
Q402 Q312 Q404 Q310 Q314 Q502 IC501 Q313 Q501 Q309 IC101 Q103 Q102 Q101 IC103
 Q406 Q405 Q403 Q401 IC503 Q502

A

B

C

D



CONNECTOR ASS'Y

SP, SW ASS'Y

T1
 POWER TRANSFORMER
 AT51267

AC POWER CORD BDG1012

AC120V 60Hz

C1
 0.01/125

AC SOCKET
 AKP-515

REMOTE AS

1

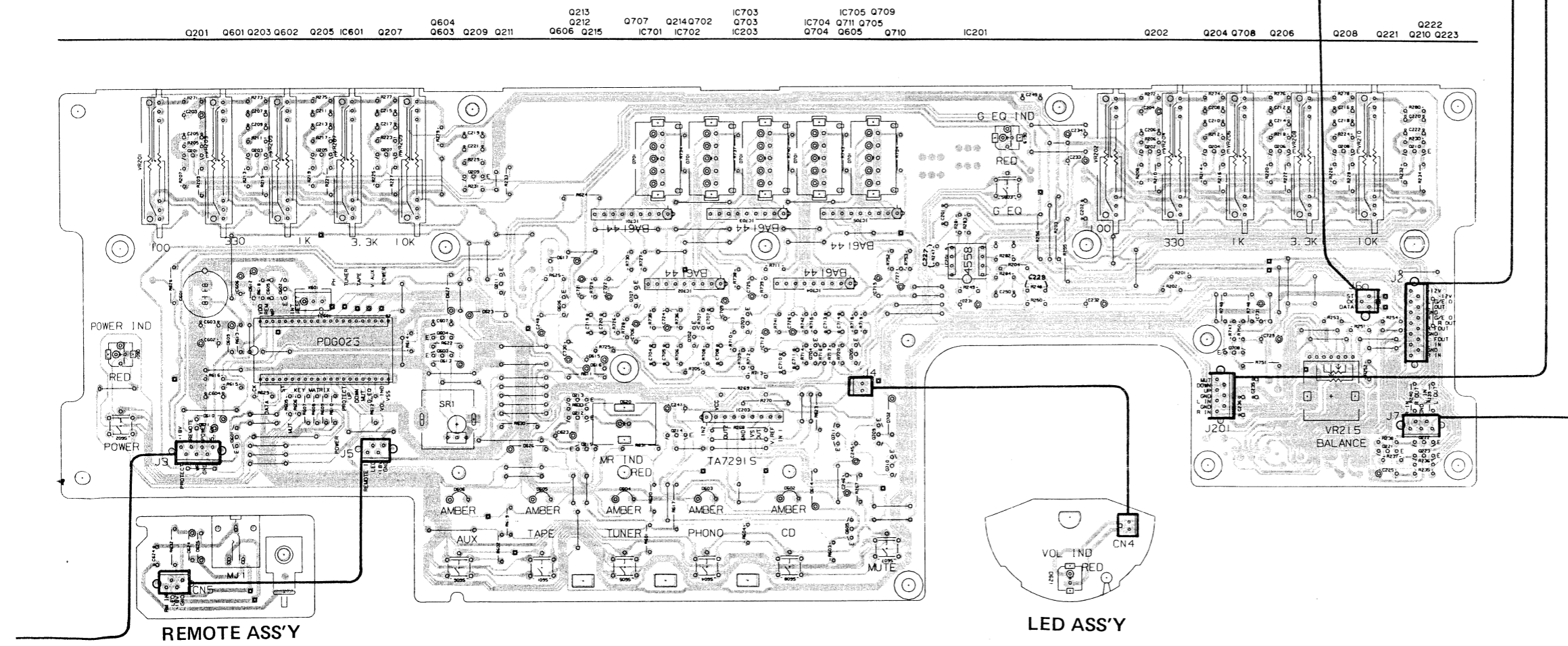
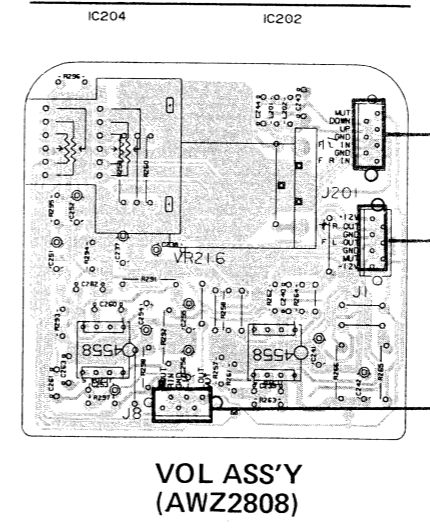
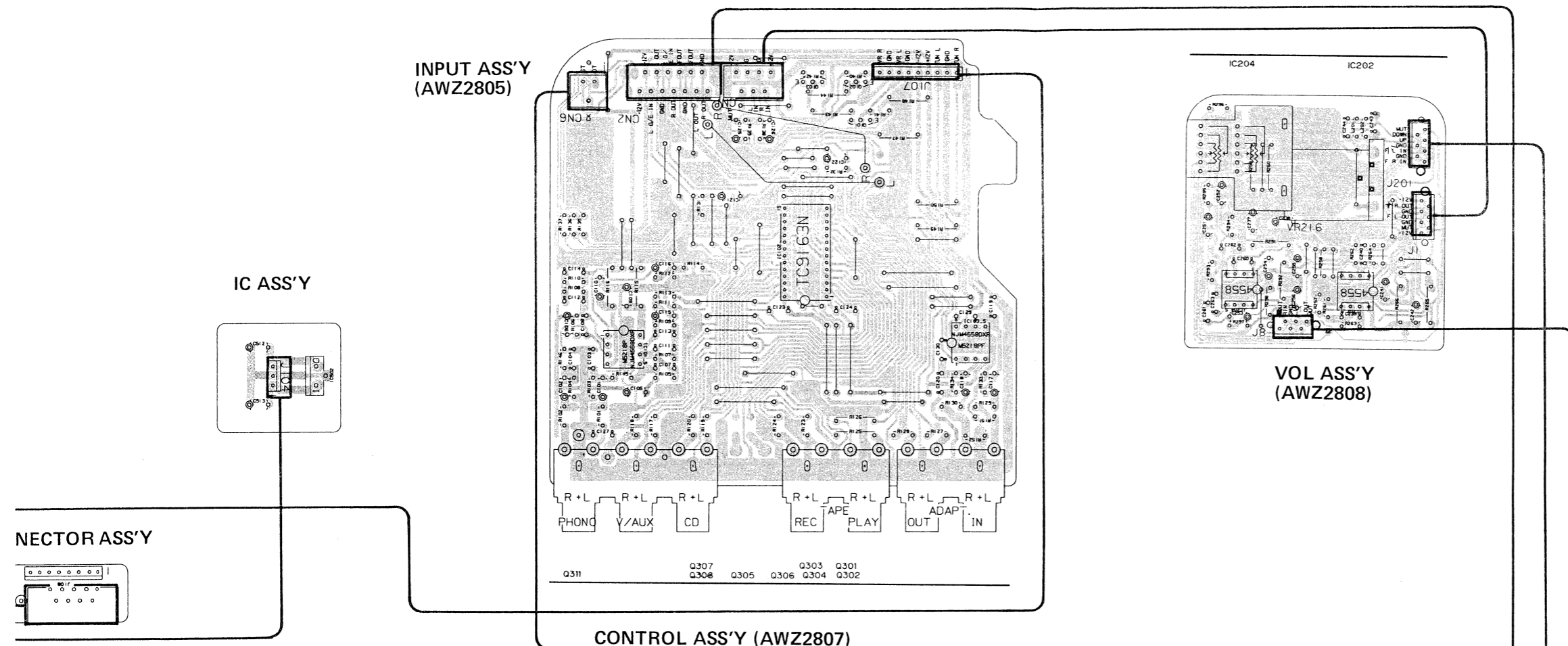
2

3

4

5

6



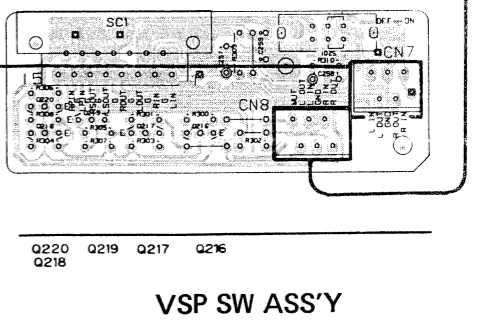
- NOTE
1. This P.C.B. connection diagram is viewed from the parts mounted side.
 2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504		Transistor
Q215		Radiator type transistor
D203		Diode
R237		Resistor
C513		Capacitor (Polarity)
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 \ominus (double circles) shows negative terminal.
4. The diode terminal marked with \ominus (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.



This P.C. B. connection diagram is viewed from the foil side.

VOI 22A Y (WZ2808)

INPUT 22A Y (WZ3807)

IC 22A Y

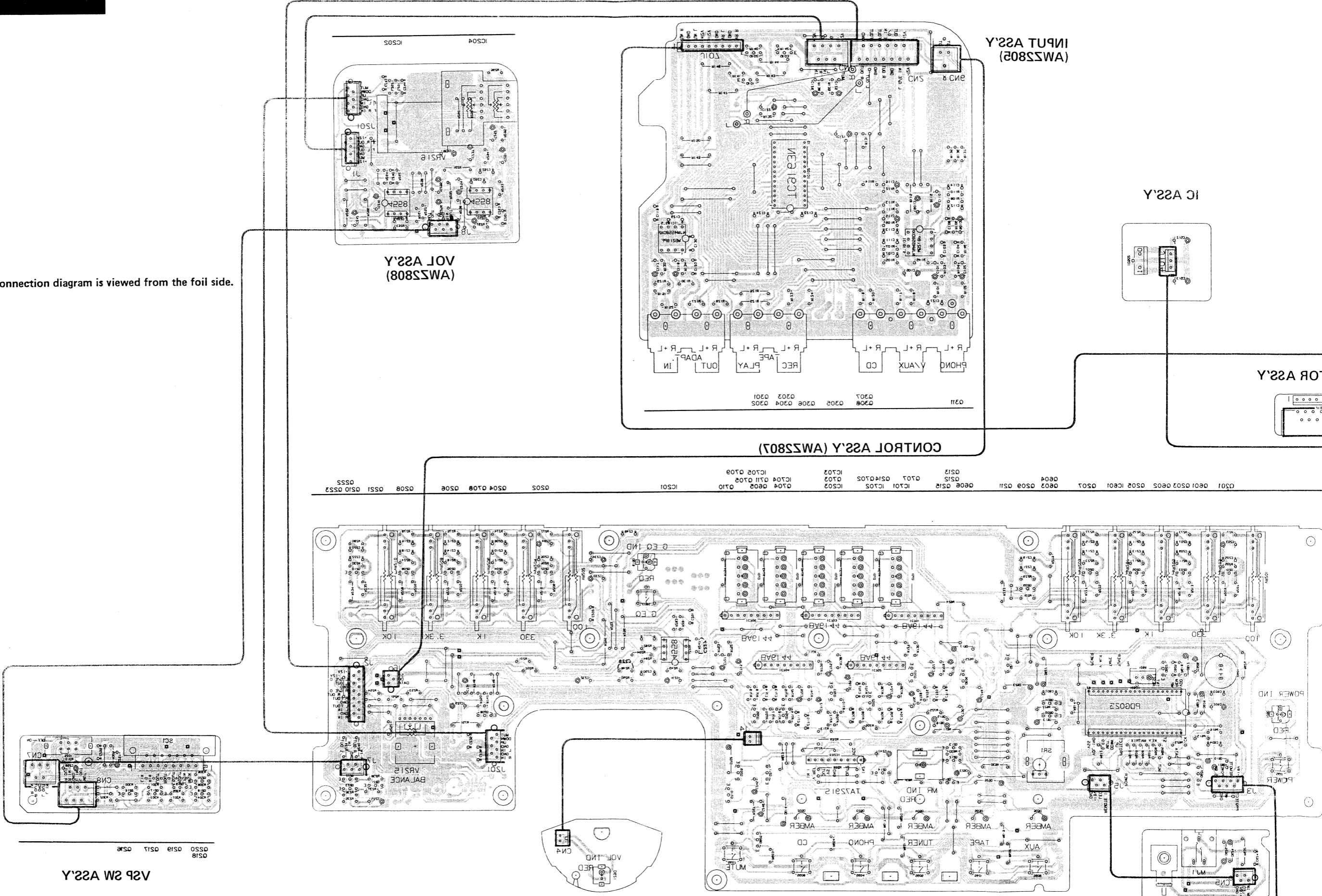
INJECTOR 22A Y

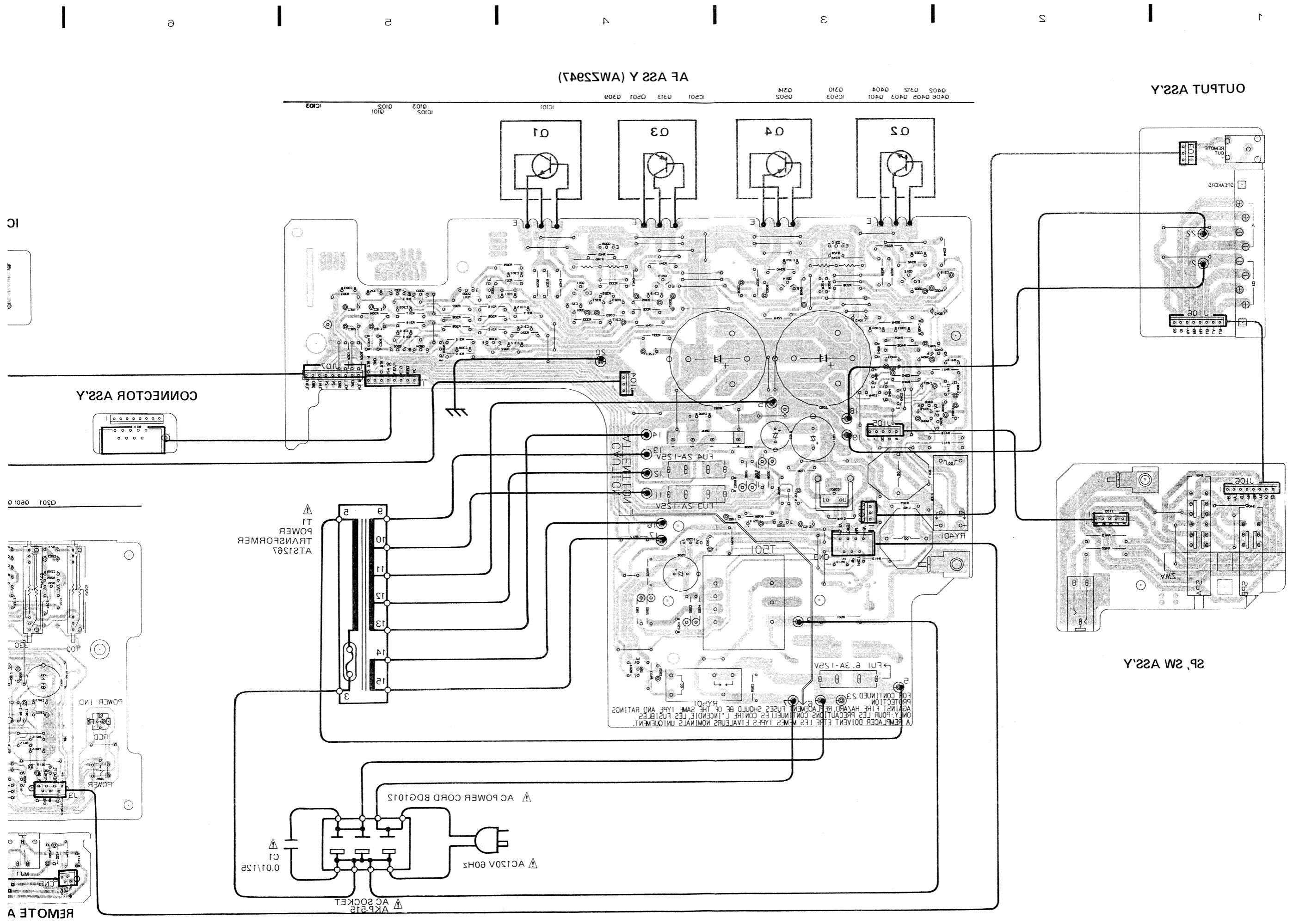
CONTROL 22A Y (WZ5807)

V2P 2M 22A Y

LED 22A Y

REMOTE 22A Y





AF ASSY (AW52947)

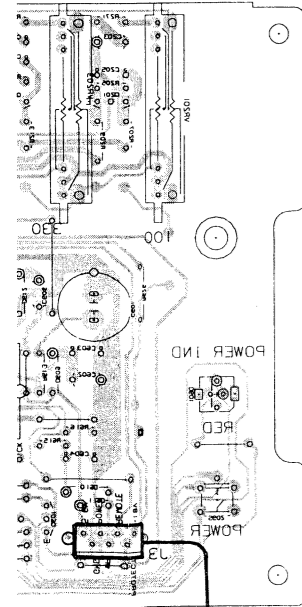
OUTPUT ASSY

IC101 0205 IC201 0310 IC301 0401 IC401 0402 IC402 0403 IC403 0404 IC404 0405 IC405 0406 IC406 0407 IC407 0408 IC408 0409 IC409 0410 IC410 0411 IC411 0412 IC412 0413 IC413 0414 IC414 0415 IC415 0416 IC416 0417 IC417 0418 IC418 0419 IC419 0420 IC420 0421 IC421 0422 IC422 0423 IC423 0424 IC424 0425 IC425 0426 IC426 0427 IC427 0428 IC428 0429 IC429 0430 IC430 0431 IC431 0432 IC432 0433 IC433 0434 IC434 0435 IC435 0436 IC436 0437 IC437 0438 IC438 0439 IC439 0440 IC440 0441 IC441 0442 IC442 0443 IC443 0444 IC444 0445 IC445 0446 IC446 0447 IC447 0448 IC448 0449 IC449 0450 IC450 0451 IC451 0452 IC452 0453 IC453 0454 IC454 0455 IC455 0456 IC456 0457 IC457 0458 IC458 0459 IC459 0460 IC460 0461 IC461 0462 IC462 0463 IC463 0464 IC464 0465 IC465 0466 IC466 0467 IC467 0468 IC468 0469 IC469 0470 IC470 0471 IC471 0472 IC472 0473 IC473 0474 IC474 0475 IC475 0476 IC476 0477 IC477 0478 IC478 0479 IC479 0480 IC480 0481 IC481 0482 IC482 0483 IC483 0484 IC484 0485 IC485 0486 IC486 0487 IC487 0488 IC488 0489 IC489 0490 IC490 0491 IC491 0492 IC492 0493 IC493 0494 IC494 0495 IC495 0496 IC496 0497 IC497 0498 IC498 0499 IC499 0500

CONNECTOR ASSY

SP, SW ASSY

D501 0801 0



REMOTE A

⚠ AC SOCKET
⚠ AC POWER CORD BDG1015
⚠ AC150V 60Hz
⚠ C1 0.0152F
⚠ T1 POWER TRANSFORMER AT128V

CAUTION: FUSES SA-152V. A REMPLACER DOIVENT ETRE LES MEMES TYPES ETVALEURS NOMINALES UNIFORMEMENT. UNY-POUR LES PRECAUTIONS CONTRE L'INCENDIE, LES FUSIBLES PROTECTION CONTRE LES DANGERS DE L'INCENDIE. FUSES SHOULD BE OF THE SAME TYPE AND RATINGS. FOR CONTINUED SAFETY.

A
B
C
D

5. P.C.B's 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 Δ 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%).
- 560 Ω 56 \times 10 1 \rightarrow 561.....RD1/4PS000J
 47k Ω 47 \times 10 3 \rightarrow 473.....RD1/4PS000J
 0.5 Ω 0R5.....RN2H000K
 1 Ω 010.....RS1P000K
- Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).
- 5.62k Ω 563 \times 10 1 \rightarrow 5621.....RN1/4R0000F

Mark NO	Description	Part NO	Mark NO	Description	Part NO
OUTPUT ASS'Y			C123, 124	CERAMIC CAPACITOR	CKCYX104M25
OTHERS			C125, 126	ELECTR. CAPACITOR	CEAS2R2M50
SPEAKER TERMINAL 8-P			C127	CERAMIC CAPACITOR	CKCYX104M25
JACK			C129, 130	CERAMIC CAPACITOR	CKMYB221K50
AKE-111			RESISTORS		
AKN-207			R101-114	CARBONFILM RESISTOR	RD1/8PM000J
IC ASSY			Δ R115, 116	CARBON FILM RESISTOR	RD1/4PMF331J
SEMICONDUCTORS			R117-120	CARBONFILM RESISTOR	RD1/8PM000J
IC502			R123-152	CARBONFILM RESISTOR	RD1/8PM000J
M5F7812L			OTHERS		
CAPACITORS			PHONO JACK 6-P		
C512 ELECTROLYTIC CAPACIT			AKB1007		
CEHAQ100M25			PHONO JACK 6-P		
C513 ELECTR. CAPACITOR			AKB1024		
CEHAQ010M50			CN1		
			KPE7		
			CN2		
			KPE13		
			CN6		
			KPE3		
CONNECTOR ASSY			SP SW ASSY		
OTHERS			SWITCHES		
9P SOCKET			S401 PUSH SWITCH		
AKP1014			SUL8LXYS		
INPUT ASSY (AWZ2805)			RESISTORS		
SEMICONDUCTORS			Δ R419, 420 METAL OXIDE RESISTOR		
IC101			RS2LMF331J		
IC102 E-SW IC			OTHERS		
TC9163N			JACK (PHONES)		
IC103			AKN1002		
NJM4558DXP			AF ASSY (AWZ2947)		
Q101, 102 TRANSISTOR			SEMICONDUCTORS		
2SC2878			IC501		
Q103 TRANSISTOR			M5278L56(A)		
2SA1048			IC503		
CEAS470M16			Q301-304 TRANSISTOR		
CEAS100M25			2SA970		
C103, 104 CERAMIC CAPACITOR			Q305, 306 TRANSISTOR		
CKMYB391K50			2SC2240		
C105, 106 ELECTR. CAPACITOR			Q307, 308 TRANSISTOR		
CEAS470M16			2SC2705P		
C107, 108 CERAMIC CAPACITOR			Q309, 310 TRANSISTOR		
CCMSL101J50			2SC2603		
C109, 110 ELECTR. CAPACITOR			Q311, 312 TRANSISTOR		
CEAS470M16			2SC2238		
C111, 112 CERAMIC CAPACITOR					
CKCYB222K50					
C113, 114 CERAMIC CAPACITOR					
CKCYB822K50					
C115-118 ELECTR. CAPACITOR					
CEAS2R2M50					
C119, 120 CERAMIC CAPACITOR					
CKMYB221K50					
C121, 122 ELECTR. CAPACITOR					
CEAS100M25					

SA-1520, SA-1520S

Mark NO	Description	Part NO	Mark NO	Description	Part NO
Q313,314	TRANSISTOR	2SA968		R335,336 CARBONFILM RESISTOR	RD1/2PM562J
Q401,402	TRANSISTOR	2SC2240	△	R337 CARBON FILM RESISTOR	RD1/4PMF4R7J
Q403,404	TRANSISTOR	2SC2458	△	R338,339 FUSLIBLE RESISTOR	RFA1/4PS221J
Q405	TRANSISTOR	2SA1115	△	R340-343 FUSLIBLE RESISTOR	RFA1/4PS4R7J
Q406	TRANSISTOR	2SC1845	△	R344,345 RESISTOR (0.27, 5W)	ACN1018
Q501	TRANSISTOR	2SC2458	△	R401,402 CARBON FILM RESISTOR	RD1/4PMF222J
Q502	TRANSISTOR	2SB560	△	R403,404 CARBONFILM RESISTOR	RD1/8PM183J
D301,302	DIODE	1SS252	△	R405,406 METAL OXIDE RESISTOR	RS1PMF100J
D303,304	ZENER DIODE	HZS4BLL	△	R407,408 CARBONFILM RESISTOR	RD1/8PM103J
D305,306	DIODE	1SS252	△	R409,410 CARBON FILM RESISTOR	RD1/2PMF100J
D307,308	ZENER DIODE	HZS4BLL	△	R411 FUSLIBLE RESISTOR	RFA1/4PS101J
D401-404	DIODE	1SS252	△	R412-416 CARBONFILM RESISTOR	RD1/8PM□□□J
D405 ZENER DIODE		HZS6B1L	△	R417,418 METAL OXIDE RESISTOR	RS1LMF122J
D406 DIODE		1SS252	△	R421,422 CARBON FILM RESISTOR	RD1/4PMF101J
D407,408 ZENER DIODE		RD2.7ESB1	△	R501 RESISTOR(2.2M, 1/2W)	ACN-208
D501-504 DIODE		S5566	△	R502 CARBON FILM RESISTOR	RD1/2PMFL820J
D505 DIODE		1SS252	△	R503 CARBON FILM RESISTOR	RD1/4PMF101J
D506 DIODE		D5SB20F	△	R504,505 CARBONFILM RESISTOR	RD1/8PM□□□J
D507-510 DIODE		S5566	△	R506,507 FUSLIBLE RESISTOR	RFA1/4PS□□□J
D511 ZENER DIODE		RD13ESB1	△	R508 METAL OXIDE RESISTOR	RS1PMF2R2J
COIL & FILTER & TRANSFORMERS				R509 CARBON FILM RESISTOR	RD1/4PM152J
L401,402 COIL		ATH1004	△	R510 CARBONFILM RESISTOR	RD1/8PM822J
△ T501 POWER TRANSFORMER		ATT1011		R511 CARBON FILM RESISTOR	RD1/2PMF100J
CAPACITORS				R512 CARBON FILM RESISTOR	RD1/4PM220J
C301,302 ELECTR.CAPACITOR		CEAS100M25		OTHERS	
C303,304 CERAMIC CAPACITOR		CCMSL101J50		SCREW	PBZ30P060FMC
C305,306 CERAMIC CAPACITOR		CCMSL470J50		CN3	KPE7
C307,308 CERAMIC CAPACITOR		CKMYB102K50		RY401 RELAY	ASR-112
C309,310 CERAMIC CAPACITOR		CKMYB152K50	△	RY501 RELAY	ASR-512
C311,312 CERAMIC CAPACITOR		CCCSL020C500		CONTROL ASSY (AWZ2807)	
C313,314 ELECTR.CAPACITOR		CEAS470M16		SEMICONDUCTORS	
C315,316 CERAMIC CAPACITOR		CCCSL060D500		IC201	NJM4558DXP
C317,318 ELECTR.CAPACITOR		CEAS470M50		IC203	TA7291S
C319-322 CERAMIC CAPACITOR		CCCSL101K500		IC601	PDG025-A
C323 ELECTROLYTIC CAPACIT		CEAS100M100		IC701-705	BA6144
C401,402 ELECTR.CAPACITOR		CEANP010M50		Q201-210 TRANSISTOR	2SC1740SLN
C403-406 AUDIO FILM CAPACITOR		CFTXA823J50		Q211,212 TRANSISTOR	RN2201
C407 ELECTROLYTIC CAPACIT		CEAS471M6		Q213,214 TRANSISTOR	RN1201
C408 ELECTROLYTIC CAPACIT		CEAS6R8M50		Q215 TRANSISTOR	RN2201
C409 ELECTR.CAPACITOR		CEAS010M100		Q221 TRANSISTOR	2SA1048
C501 CERAMIC CAPACITOR		CKCYF103Z50		Q222,223 TRANSISTOR	2SC1740S
C502 ELECTR.CAPACITOR		CEAS102M25		Q601 TRANSISTOR	RN1201
C503 ELECTR.CAPACITOR		CEAS101M10		Q602 TRANSISTOR	2SC2458
△ C505 CKA (0.01/AC400V)		ACG1003		Q603 TRANSISTOR	RN2201
C506 MYLOR FILM CAPACITOR		CQMA273K250		Q604 TRANSISTOR	RN1203
C507,508 ELECTROLYTIC CAPACIT		ACH1039		Q605 TRANSISTOR	2SC3377
C509 CERAMIC CAPACITOR		CKCYF103Z50		Q606 TRANSISTOR	2SC1740S
C510 ELECTROLYTIC CAPACIT		CEAS471M25		Q702-705 TRANSISTOR	2SC2458
C511 ELECTR.CAPACITOR		CEAS222M25		Q707,708 TRANSISTOR	2SC2458
C514-516 ELECTR.CAPACITOR		CEAS470M16		Q709 TRANSISTOR	2SA1515
RESISTORS				Q710 TRANSISTOR	RN2201
R301-320 CARBON FILM RESISTOR		RD1/4PM□□□J		Q711 TRANSISTOR	RN1203
△ R321,322 FUSLIBLE RESISTOR		RFA1/4PS101J		D601 LED(RED)	AEL1065
R323-328 CARBONFILM RESISTOR		RD1/8PM□□□J		D602-606 LED	AEL1077
R329,330 CARBON FILM RESISTOR		RD1/2PM472J		D609-616 DIODE	1SS252
△ R331-334 CARBON FILM RESISTOR		RD1/4PMF221J		D617 ZENER DIODE	RD33ESB
				D619 LED(RED)	AEL1065

Mark NO	Description	Part NO
D620	LED(RED)	AEL1038
D622, 623	DIODE	1SS252
D626	DIODE	1SS252
D701	LED	AEL1111
D702	DIODE	S5566
SWITCHES		
S601-608	SWITCH	ASG-703
CAPACITORS		
C201, 202	CERAMIC CAPACITOR	CKMYB561K50
C203, 204	ELECTROLYTIC CAPACIT	CEJAR33M50
C205, 206	CERAMIC CAPACITOR	CKDYX273M25
C207, 208	AUDIO FILM CAPACITOR	CFTXA104J50
C209, 210	CERAMIC CAPACITOR	CKDYX103M25
C211, 212	CERAMIC CAPACITOR	CKDYX273M25
C213, 214	CERAMIC CAPACITOR	CGMYX392M25
C215, 216	CERAMIC CAPACITOR	CKDYX103M25
C217, 218	CERAMIC CAPACITOR	CKMYB102K50
C219, 220	CERAMIC CAPACITOR	CGMYB272M25
C221, 222	CERAMIC CAPACITOR	CKMYB391K50
C225	ELECTR. CAPACITOR	CEAS100M25
C227, 228	CERAMIC CAPACITOR	CCMSL101J50
C231, 232	ELECTR. CAPACITOR	CEAS100M25
C233, 234	ELECTR. CAPACITOR	CEAS470M16
C235, 236	CERAMIC CAPACITOR	CCMSL101J50
C245	ELECTR. CAPACITOR	CEAS101M16
C246	ELECTR. CAPACITOR	CEAS100M25
C247	ELECTR. CAPACITOR	CEAS470M25
C248	ELECTR. CAPACITOR	CEAS100M25
C249, 250	CERAMIC CAPACITOR	CCMSL101J50
C601	CEA (47000/5.5V)	ACH1037
C602	ELECTR. CAPACITOR	CEAS101M10
C603-605	CERAMIC CAPACITOR	CKCYX104M25
C606	ELECTR. CAPACITOR	CEAS330M16
C607	CERAMIC CAPACITOR	CKMYB102K50
C623	ELECTR. CAPACITOR	CEJA2R2M50
C704, 705	CERAMIC CAPACITOR	CKCYX153M25
C706	ELECTR. CAPACITOR	CEASR33M50
C707, 708	CERAMIC CAPACITOR	CGMYX682M25
C709	ELECTR. CAPACITOR	CEASR33M50
C710, 711	CERAMIC CAPACITOR	CGMYB222M50
C712	ELECTR. CAPACITOR	CEASR33M50
C713, 714	CERAMIC CAPACITOR	CKMYB821K50
C715	ELECTR. CAPACITOR	CEASR33M50
C719, 720	CERAMIC CAPACITOR	CKCYX473M25
C721	ELECTR. CAPACITOR	CEASR33M50
C722	ELECTR. CAPACITOR	CEAS100M25
C724-727	ELECTR. CAPACITOR	CEAS100M25
C729	ELECTR. CAPACITOR	CEAS2R2M50
C730	ELECTR. CAPACITOR	CEAS470M16
C731	ELECTR. CAPACITOR	CEAS100M25
RESISTORS		
VR201-210	VR	ACU1025
VR215		ACS1052
R201-240	CARBONFILM RESISTOR	RD1/8PM□□□J
R247-254	CARBONFILM RESISTOR	RD1/8PM□□□J
R255, 256	FUSLIBLE RESISTOR	RFA1/4PS470J
R267, 268	CARBONFILM RESISTOR	RD1/8PM□□□J
R269	METAL OXIDE RESISTOR	RS1LMF820J

Mark NO	Description	Part NO
△ R270	CARBON FILM RESISTOR	RD1/2PMF330J
R271-284	CARBONFILM RESISTOR	RD1/8PM□□□J
R601-620	CARBONFILM RESISTOR	RD1/8PM□□□J
R622	CARBONFILM RESISTOR	RD1/8PM472J
△ R623	CARBON FILM RESISTOR	RD1/2PMF470J
R624, 625	CARBONFILM RESISTOR	RD1/8PM□□□J
△ R626	CARBON FILM RESISTOR	RD1/4PMF102J
R629-631	CARBONFILM RESISTOR	RD1/8PM□□□J
R633	CARBONFILM RESISTOR	RD1/8PM222J
R705-720	CARBONFILM RESISTOR	RD1/8PM□□□J
R725-730	CARBONFILM RESISTOR	RD1/8PM□□□J
△ R734	CARBON FILM RESISTOR	RD1/2PMF680J
R735, 736	CARBONFILM RESISTOR	RD1/8PM103J
△ R737	CARBON FILM RESISTOR	RD1/2PMF680J
R738, 739	CARBONFILM RESISTOR	RD1/8PM103J
△ R740	CARBON FILM RESISTOR	RD1/2PMF680J
R741, 742	CARBONFILM RESISTOR	RD1/8PM103J
△ R743	CARBON FILM RESISTOR	RD1/2PMF680J
R747-750	CARBONFILM RESISTOR	RD1/8PM□□□J
△ R751	FUSLIBLE RESISTOR	RFA1/4PS470J
R752, 753	CARBONFILM RESISTOR	RD1/8PM103J
△ R754	CARBON FILM RESISTOR	RD1/2PMF680J
OTHERS		
2P HOUSING WIRE MATERIALS		ADX1189
REMOTE RECEIVER UNIT		AXX1010
X601 CERAMIC RESONATOR		ASS1025

VOL ASSY (AWZ2808)

SEMICONDUCTORS

1C202
1C204

NJM4558DXP
NJM4558DXP

COIL & FILTER & TRANSFORMERS

L201, 202 AXIAL INDUCTOR LAU100K

CAPACITORS

C237, 238 ELECTR. CAPACITOR CEJA2R2M50
C239, 240 CERAMIC CAPACITOR CCMSL101J50
C241, 242 ELECTR. CAPACITOR CEAS470M16
C243, 244 CERAMIC CAPACITOR CKCYX473M25
C251, 252 ELECTR. CAPACITOR CEJA2R2M50

C253, 254 ELECTR. CAPACITOR CEAS2R2M50
C255, 256 ELECTR. CAPACITOR CEAS470M16
C260-263 CERAMIC CAPACITOR CKMYB221K50

RESISTORS

VR216 VR

ACX1037

△ R257-264 CARBONFILM RESISTOR RD1/8PM□□□J
△ R265, 266 CARBON FILM RESISTOR RD1/4PMF221J
△ R291, 292 CARBON FILM RESISTOR RD1/4PMF221J
R293-298 CARBONFILM RESISTOR RD1/8PM□□□J

LED ASSY

SEMICONDUCTORS

D621 LED(RED)

AEL1040

SA-1520, SA-1520S

Mark NO	Description	Part NO
REMOTE ASSY		
SEMICONDUCTORS		
	D624 ZENER DIODE	RD6.8ESB
	D625 ZENER DIODE	RD5.1ESB
CAPACITORS		
	C624 CERAMIC CAPACITOR	CKDYX103M25
RESISTORS		
	R632 CARBONFILM RESISTOR	RD1/2PM471J
OTHERS		
	MINI JACK	AKN1020
VSP SW ASSY		
SEMICONDUCTORS		
	Q216 TRANSISTOR	2SA1048
	Q217-220 TRANSISTOR	2SC2878
SWITCHES		
	S201 SLIDE SWITCH	ASH1009
CAPACITORS		
	C257,258 ELECTR.CAPACITOR	CEAS2R2M50
	C259 CERAMIC CAPACITOR	CKCYX473M25
RESISTORS		
	R300-310 CARBONFILM RESISTOR	RD1/8PM000J
OTHERS		
	CN7	KPE5
	CN8	KPE6

6. REMOTE CONTROL UNIT (AXD1143) (FOR SA-1520S)

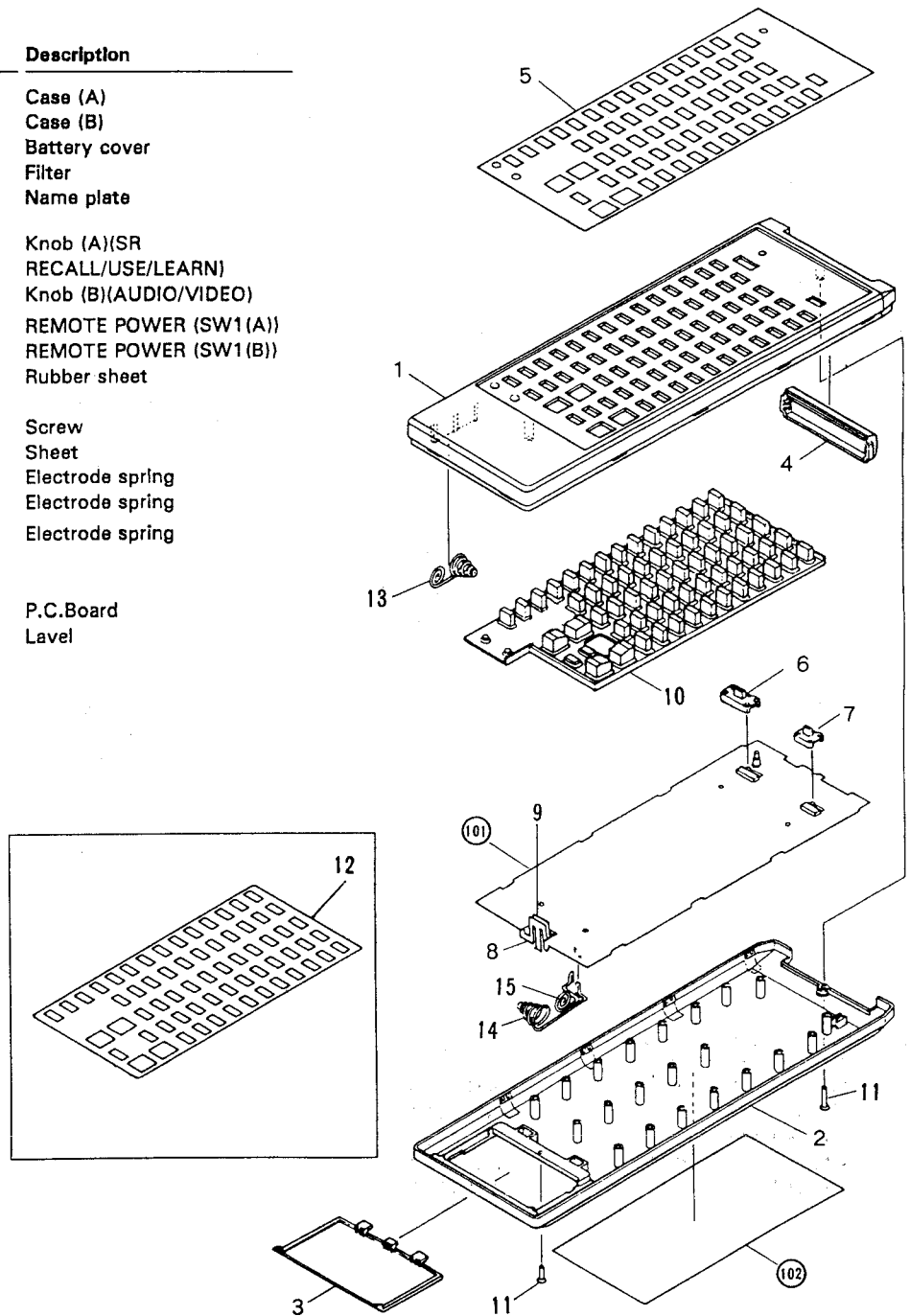
6.1 EXPLODED VIEWS AND PARTS LIST

NOTES:

- Parts without part number cannot be supplied.
- The Δ 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.

Parts List of Exterior

Mark	No.	Parts No.	Description
	1	AZA1968	Case (A)
	2	AZA1969	Case (B)
	3	AZA1970	Battery cover
	4	AZA1139	Filter
	5	AZA1242	Name plate
	6	AZA1142	Knob (A)(SR RECALL/USE/LEARN)
	7	AZA1143	Knob (B)(AUDIO/VIDEO)
	8	AZA1144	REMOTE POWER (SW1(A))
	9	AZA1177	REMOTE POWER (SW1(B))
	10	AZA1243	Rubber sheet
	11	AZA1146	Screw
	12	AZA1152	Sheet
	13	AZB1268	Electrode spring
	14	AZB1269	Electrode spring
	15	AZB1270	Electrode spring
101			P.C.Board
102			Level



6.2 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 Δ 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%).

560 Ω	56 $\times 10^1$	561.....	RD1/4PS	③	⑥	①	J
47k Ω	47 $\times 10^3$	473.....	RD1/4PS	④	⑦	③	J
0.5 Ω	0R5.....		RN2H	⑩	⑫	⑤	K
1 Ω	010.....		RS1P	⑩	①	⑩	K

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

5.62k Ω	562 $\times 10^1$	5621.....	RN1/4SR	③	⑥	②	①	F
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SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC1	PDG061-A
	IC2	AZC1232
	IC3	AZC1231
	Q1	AZC1229
	Q2	AZC1230
	D2	AZC1224
	D4	AZC1225
	D5	AZC1226
	D6-D9,D11	AZC1228
	D10	AZC1227

SWITCHES

Mark	Symbol & Description	Part No.
	S01,S06 Slide switch (AUDIO/VIDEO,SUR/AMP)	AZS1073
	S03,S04 Slide switch (SR RECALL/USE/LEARN)	AZS1074
	SW1 (A) REMOTE POWER	AZA1144
	SW1 (B) REMOTE POWER	AZS1177

CAPACITORS

Mark	Symbol & Description	Part No.
	C1,C2 (100 μ F/8V)	AZC1253
	C3 (10 μ F/16V)	AZC1254
	C4,C5 (100pF)	AZC1222
	C6,C8-C10 (0.01 μ F)	AZC1220
	C7 (1000pF)	AZC1221

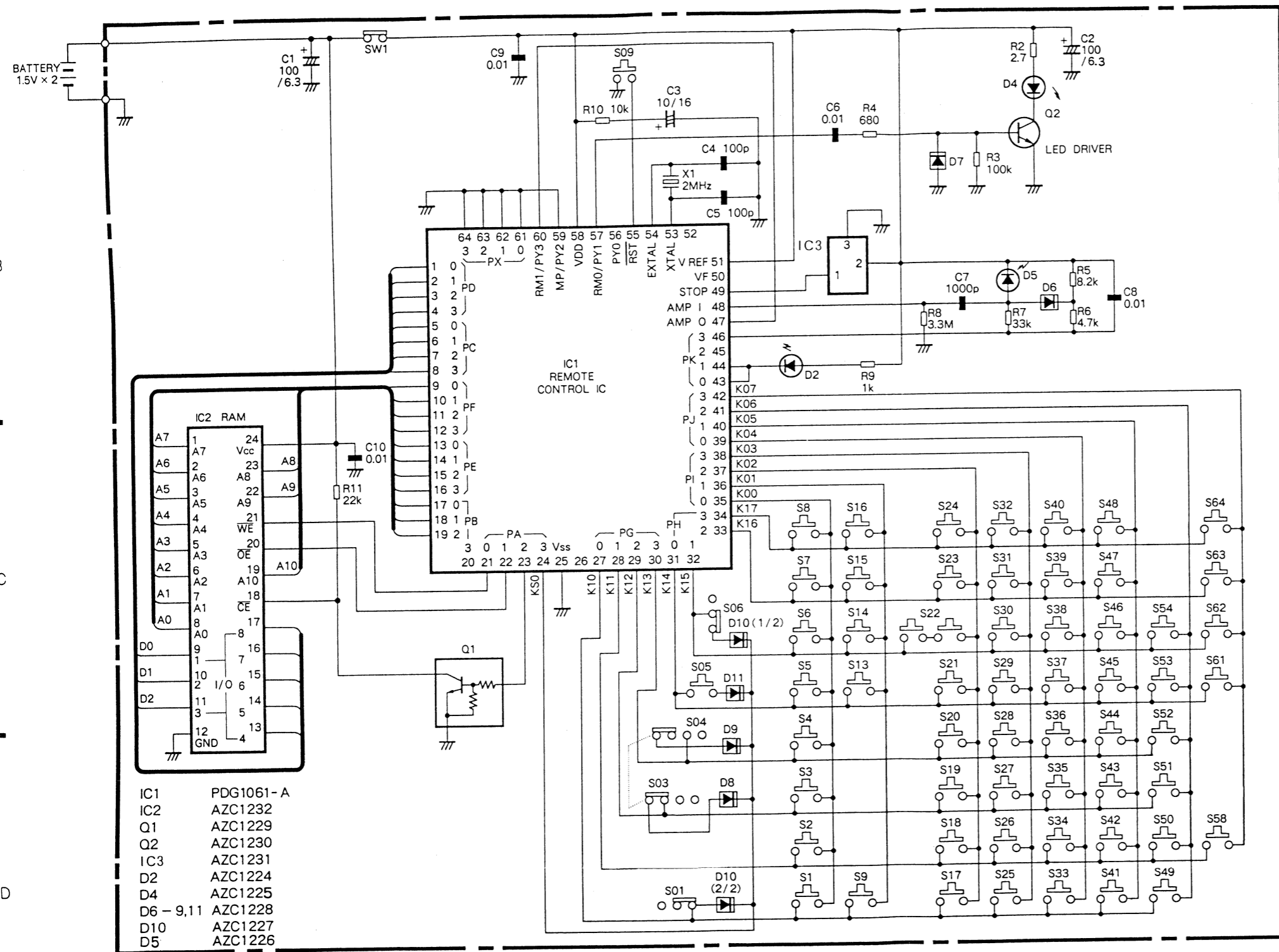
RESISTORS

Mark	Symbol & Description	Part No.
	R2 (2.7 Ω)	AZC1219
	R3 (100k Ω)	AZC1210
	R4 (680 Ω)	AZC1217
	R5 (8.2k Ω)	AZC1214
	R6 (4.7k Ω)	AZC1215
	R7 (33k Ω)	AZC1211
	R8 (3.3M Ω)	AZC1218
	R9 (1k Ω)	AZC1216
	R10 (10k Ω)	AZC1213
	R11 (22k Ω)	AZC1212

OTHER

Mark	Symbol & Description	Part No.
	X1 Ceramic resonator (2.0MHz)	AZC1223

6.3 SCHEMATIC DIAGRAM



1. RESISTORS :
Indicated in Ω, 1/4W, 1/6W and 1/8W, ± 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. OTHERS :
→ : Signal route.
⊗ : Adjusting point.
The Δ 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.

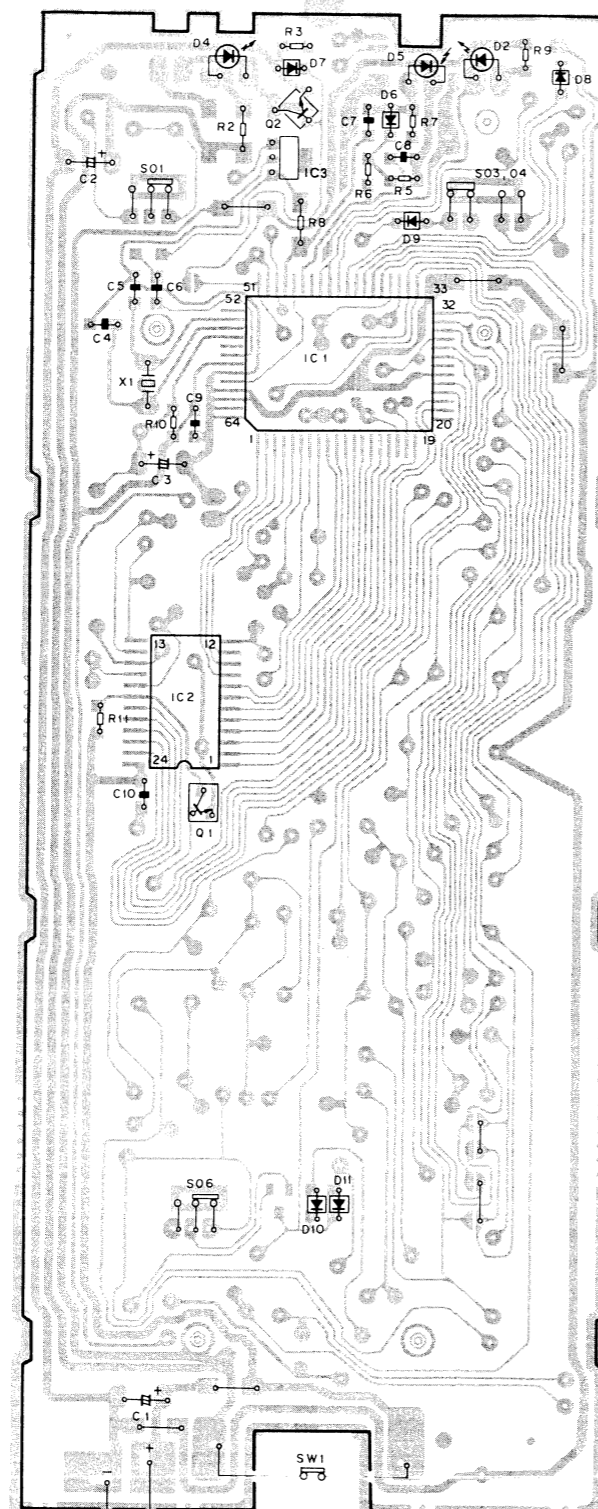
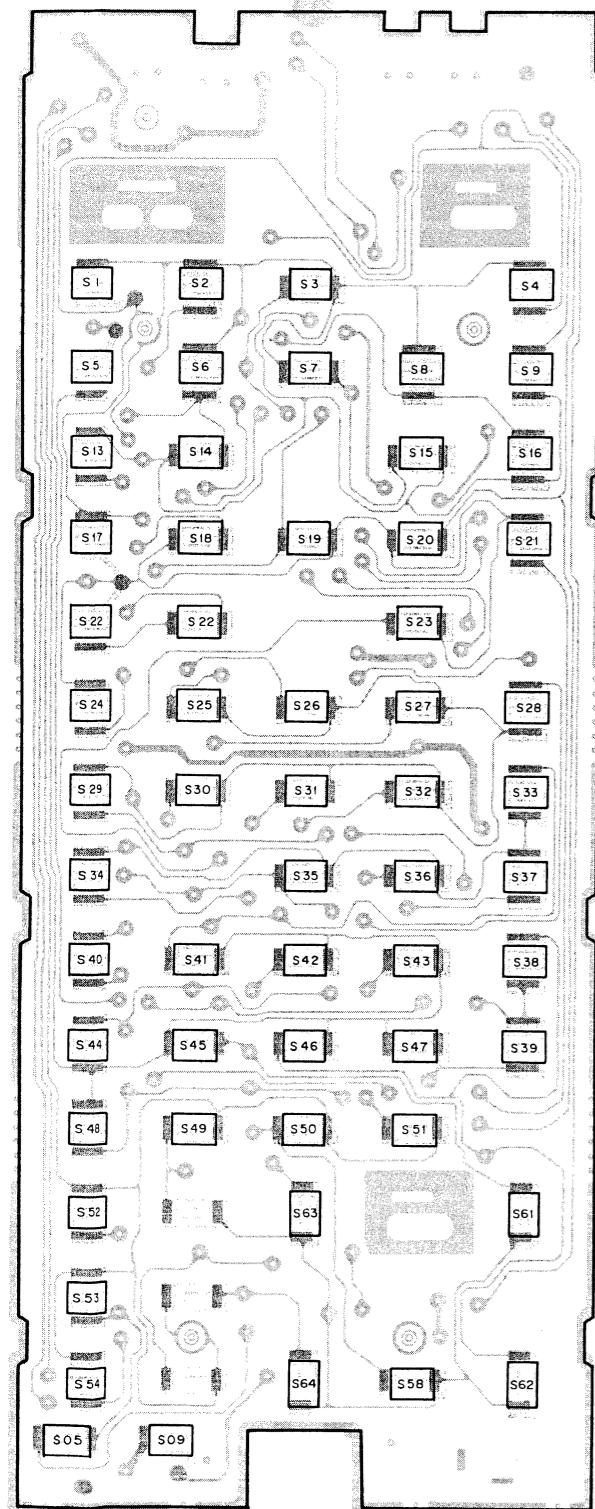
4. SWITCHES : (The underlined indicates the switch position)
SW1 : REMOTE POWER
S01 : AUDIO/VIDEO

	SR RECALL	USE	LEARN
S03	ON	OFF	OFF
S04	OFF	OFF	ON

- S05 : M - CLR
- S06 : SUR/AMP
- S09 : RESET

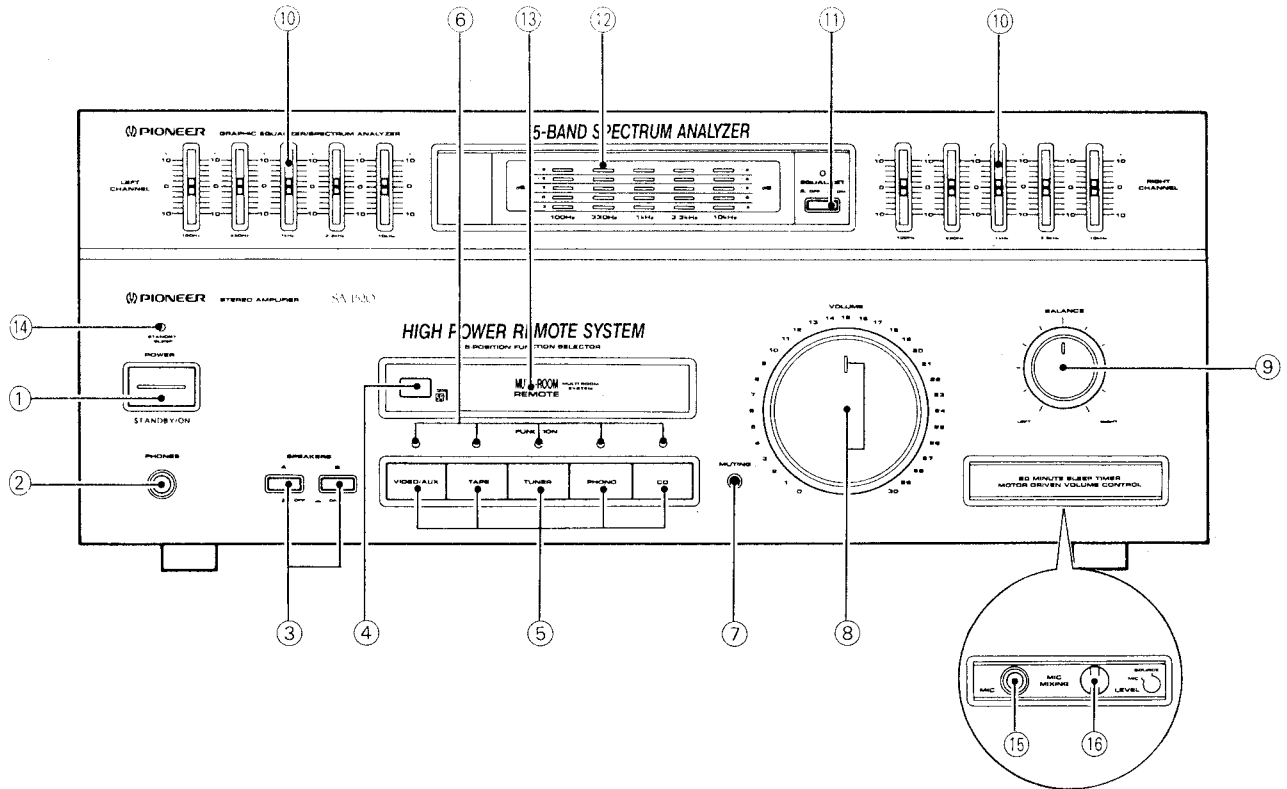
- S1 : AMP
- S2 : TV POWER
- S3 : VCR
- S4 : SLEEP AMP/TV
- S5 : V/AUX
- S6 : TAPE
- S7 : TUNER/VCR1
- S8 : PHONO/VCR2
- S9 : CD/VDP
- S13 : PGM
- S14 : DISC/DISPLAY
- S15 : CHP/FR - TM
- S16 : SEARCH
- S17 : CD/VDP
- S18 : (REC)
- S23 : TV/VCR TAPE (DECK II) /VCR
- S25 : TV/VCR TAPE (DECK I) /VCR
- S26 : TV/VCR TAPE (DECK I) /VCR
- S27 : TV/VCR TAPE (DECK I) /VCR
- S28 : TV/VCR TAPE (DECK I) /VCR
- S29 : TV/VCR TAPE (DECK I) /VCR
- S30 : TV/VCR TAPE (DECK I) /VCR
- S31 : TV/VCR TAPE (DECK I) /VCR
- S32 : TV/VCR TAPE (DECK I) /VCR
- S33 : TV/VCR TAPE (DECK I) /VCR
- S34 : TV/VCR TAPE (DECK I) /VCR
- S35 : TV/VCR TAPE (DECK I) /VCR
- S36 : TV/VCR TAPE (DECK I) /VCR
- S37 : TV/VCR TAPE (DECK I) /VCR
- S38 : TV/VCR TAPE (DECK I) /VCR
- S39 : TV/VCR TAPE (DECK I) /VCR
- S40 : TV/VCR TAPE (DECK I) /VCR
- S41 : TV/VCR TAPE (DECK I) /VCR
- S42 : TV/VCR TAPE (DECK I) /VCR
- S43 : TV/VCR TAPE (DECK I) /VCR
- S44 : TV/VCR TAPE (DECK I) /VCR
- S45 : TV/VCR TAPE (DECK I) /VCR
- S46 : TV/VCR TAPE (DECK I) /VCR
- S47 : TV/VCR TAPE (DECK I) /VCR
- S48 : TV/VCR TAPE (DECK I) /VCR
- S49 : TV/VCR TAPE (DECK I) /VCR
- S50 : TV/VCR TAPE (DECK I) /VCR
- S51 : TV/VCR TAPE (DECK I) /VCR
- S52 : TV/VCR TAPE (DECK I) /VCR
- S53 : TV/VCR TAPE (DECK I) /VCR
- S54 : TV/VCR TAPE (DECK I) /VCR
- S55 : TV/VCR TAPE (DECK I) /VCR
- S56 : TV/VCR TAPE (DECK I) /VCR
- S57 : TV/VCR TAPE (DECK I) /VCR
- S58 : TV/VCR TAPE (DECK I) /VCR
- S61 : MASTER VOLUME +
- S62 : MASTER VOLUME -
- S63 : SUR. MODE
- S64 : DELAY

6.4 P.C. BOARD PATTERN



BATTERY
1.5V X 2

7. PANEL FACILITIES



① POWER (STANDBY/ON) switch

- The accessory remote control unit can also be used to operate STANDBY/ON function of this switch.

ON When set to the ON position, power is supplied and the unit becomes operational.

STANDBY .. When set to STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.

- When not using the unit for a long period, disconnect the wall socket.
- When the power is turned on, the protection circuitry operates and during that time the volume indicator flashes.

② PHONES jack

When using headphones, insert their plug into this jack.

③ SPEAKERS A, B (ON /OFF) switches

- [ON]** – Depressed position: Sound is heard from the speaker system.
- [OFF]** – Released position: No sound is heard from the speaker system.

NOTE:

When the speaker system is connected to only one speaker terminal (A or B) and both A and B selector switches are ON, there will be no sound.

Turn ON only the selector to which the speaker system is connected.

④ REMOTE SENSOR window

⑤ FUNCTION switches

Use to select playback source.

[CD] – Press when listening to compact disc playback with a CD player.

[PHONO] – Press when listening to record playback on a turntable.

[TUNER] – Press when listening to AM or FM broadcasts with a tuner.

[TAPE] – Press when listening to tape playback with a cassette deck.

[VIDEO/AUX] – Press when listening to programs from a component connected to the VIDEO/AUX terminals.

Selection can also be performed with the accessory remote control unit.

⑥ FUNCTION indicators

These indicators light to show the setting of FUNCTION switches.

⑦ MUTING switch

Use to temporarily cut out all audio signals.

When this function is ON, sounds will be cut off (VOLUME indicator will flash).

When turned OFF, the sound returns to its previous level. The muting ON/OFF function can also be operated by the accessory remote control unit.

⑧ VOLUME control/indicator

Use to adjust sound volume.

When operated by remote control, this control will rotate with the knob indicator flashing.

Adjustment can also be performed with the accessory remote control unit.

⑨ BALANCE control

Should normally be left in the center position. Adjust balance if the sound is louder from one of the speakers. If the right side is louder, turn toward the LEFT position, and if the left side is louder, turn toward the RIGHT position.

⑩ GRAPHIC EQUALIZER controls

These controls can be used to emphasize or de-emphasize sounds in the frequency bands 100 Hz, 330 Hz, 1 kHz, 3.3 kHz, and 10 kHz, thus allowing you to control tone quality. The center position of each control is the normal (flat) setting. When raised above the center position, the control frequency band is emphasized; when lowered, the band is de-emphasized.

⑪ EQUALIZER ON/OFF switch/indicators

When this switch is pressed, the GRAPHIC EQUALIZER control's indicators turn on, and its functions become operative.

When pressed once again, the indicators are turned off. Use this switch in the following manner:

[ON] : When using the equalizer to add sound compensation while performing program sources, and playing back and/or recording results.

[OFF] : When not using the equalizer, but playing back or recording program sources without compensation.

NOTE:

Equalizer ON/OFF indication is provided by a light on the equalizer switch itself on U.S. and Canadian models, or by control knob indicators on other models.

⑫ SPECTRUM ANALYZER

This display shows the condition of sound signals compensated with the graphic equalizer controls.

(Because the level indicator is connected to the input side, the indication does not change when the VOLUME control is turned.)

⑬ MULTI-ROOM indicator

This indicator is always lit, but if you connect an MR-100 optional Multi-Room remote control unit, it will flash when the MR-100 is receiving a remote control signal.

⑭ STANDBY/SLEEP indicator

- This indicator flashes when the accessory remote control unit is used to turn SLEEP key. When SLEEP key is ON, the indicator will flash. (Initially it will flash slowly, then gradually become faster.)

- Sixty minutes after the sleep timer is turned ON, the power switch will be turned to STANDBY automatically.

- This indicator lights when the accessory remote control unit or this unit is used to turn POWER key.

⑮ MIC jack

Connects to a six millimeter microphone plug.

⑯ MIC LEVEL control

Use to adjust microphone input level.

NOTE:

⑮ and ⑯ do not exist on U.S. and Canadian models.

This component features a built-in microcomputer which will recall the last-set positions of the following switches for up to about several days after the power cord is disconnected. As a result, when the power is turned ON again, the previously set positions will be recalled automatically:

- MUTING switch
- FUNCTION switch
- EQUALIZER ON/OFF switch

When the unit is not used for more than several days, the memorized setting positions will be erased, and returned to the following settings:

- MUTING switch OFF
- FUNCTION switches TUNER
- EQUALIZER ON/OFF switch OFF

8. SPECIFICATIONS

Amplifier Section

U.S., Canadian models

Continuous average power output is 130 watts* per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz with no more than 0.05 % total harmonic distortion.**

Other destination models

Music power
1 kHz, T.H.D. 10 %, 8 Ω 350 W + 350 W
Peak music power
L + R channels 1,400W

Same for all models

Total harmonic distortion**
20 Hz to 20 kHz, 130 W, 8 Ω 0.05 %
Input (Sensitivity/Impedance)
PHONO 2.5 mV/50 k Ω
CD, VIDEO/AUX, TUNER, TAPE PLAY, ADAPTOR IN
..... 150 mV/50 k Ω
Phono Overload Level (T.H.D. 0.1 %, 1 kHz) 100 mV
Output (Level/Impedance)
TAPE REC, ADAPTOR OUT 150 mV/2.2 k Ω
Frequency Response
PHONO 20 Hz to 20 kHz (RIAA equalization)
U.S., Canadian, U.S. Military models \pm 1 dB
Other destination models \pm 2 dB
CD, VIDEO/AUX, TUNER, TAPE PLAY, ADAPTOR IN
10 Hz to 50 kHz, U.S., Canadian, U.S. Military models \pm 3 dB
20 Hz to 50 kHz, Other destination models \pm 3 dB
Muting $-\infty$
Graphic equalizer
100 Hz \pm 8 dB
330 Hz \pm 8 dB
1 kHz \pm 8 dB
3.3 kHz \pm 8 dB
10 kHz \pm 8 dB
Signal-to-Noise Ratio (IHF, Short circuited, A network)
U.S., Canadian, U.S. Military models
PHONO 72 dB
CD, VIDEO/AUX, TUNER, TAPE PLAY, ADAPTOR IN 96 dB
Other destination models
PHONO 66 dB
CD, VIDEO/AUX, TUNER, TAPE PLAY, ADAPTOR IN 92 dB

Miscellaneous

Power Requirements

U.S., Canadian models AC 120 V, 60 Hz
Other destination models
..... AC 110 V/120 V – 127 V/220 V/240 V
(Switchable), 50/60 Hz

Power Consumption

U.S., Canadian models 480 W (UL), 620 VA (CSA)
Other destination models 690 W

Dimensions 420 (W) x 170 (H) x 336 (D) mm
16-1/2 (W) x 6-11/16 (H) x 13-1/4 (D) in

Weight (without package) 9.1 kg (19 lb 10 oz)

Furnished parts

Remote Control Unit 1
Dry-cell batteries 2
Operating Instructions
(Stereo amplifier and tuner) 1
(Remote control unit) 1

NOTE:

* Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Claims for Amplifier.

** Measured by audio spectrum analyzer.

NOTE:

• Specifications and design subject to possible modification without notice due to improvements.