

Service Manual

PIONEER®
The Art of Entertainment

ORDER NO.
ARP2215

STEREO AMPLIFIER

A-449

A-449-S

A-339

A-339-S

A-449, A-449-S, A-339 AND A-339-S HAVE THE FOLLOWING :

Type	Model				Power Requirement	Remarks
	A-449	A-449-S	A-339	A-339-S		
KU	—	—	○	—	AC120V only	
HE	○	—	○	—	AC220-230V, 240V(switchable)*	
HEWZ	○	○	○	○	AC220-230V, 240V(switchable)*	
SD	○	—	○	—	AC110V,120V-127V, 220V, 240V(switchable)	
KC	○	—	—	—	AC120V only	

* Change the primary wiring.

- Refer to the service manual ARP2043, A-447/HE and A-337/HE.
- This manual is applicable to the A-449/HE, HEWZ, SD, KC, A-449-S/HEWZ, A-339/KU, HE, HEWZ, SD, and A-339-S/HEWZ types.
- The A-449-S is the same as the A-449 except for color.
- The A-339-S is the same as the A-339 except for color.

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1. FOR A-449/HE, HEWZ, SD, KC AND A-449-S/HEWZ TYPES

1.1 CONTRAST OF MISCELLANEOUS PARTS

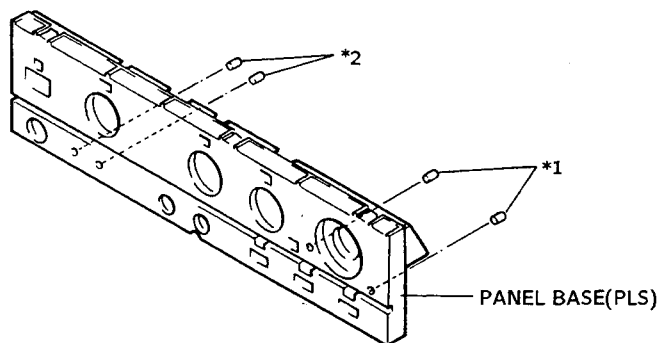
NOTES:

- 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.

The A-449/HE, HEWZ, SD, KC and A-449-S/HEWZ types are the same as the A-447/HE type with the exception of the following sections.

Mark	Symbol & Description	Part No.						Remarks
		A-447/HE	A-449/HE	A-449/SD	A-449/KC	A-449/HEWZ	A-449S/HEWZ	
⊙	AF COMPLEX assembly HEAD PHONE assembly POWER SW assembly	AWZ2861 Non supply Non supply	AWZ3628 Non supply Non supply	AWZ3628 Non supply Non supply	AWZ3628 Non supply Non supply	AWZ3627 Non supply Non supply	AWZ3627 Non supply Non supply	
△	AC power cord	ADG1049	ADG1049	ADG1051	ADG1058	ADG1049	ADG1049	
△	Fuse (FU1 T2.5A)	AEK-403	AEK-512	.....	.....	AEK-512	AEK-512	
△	Fuse (FU1 T5A)	.....	.....	.....	AEK-308	.....	.....
△	Fuse (FU1, FU2 2.5A)	.....	.....	AEK-123	.....	.....	.....
△	Power transformer(T1)	ATS1277	ATS1346	ATS1289	ATS1288	ATS1346	ATS1346	
	Resistors(R1, R2)	.....	.....	.....	.....	RD1/4PM100J	RD1/4PM100J	
	Resistor (R3)	.....	RD1/4PM010J	RD1/4PM010J	RD1/4PM010J	RD1/4PM010J	RD1/4PM010J	
△	AC socket(OUTLET 3P)	.....	.....	AKP-515	AKP-515	.....	.....
△	Voltage selector (S3)	.....	.....	AKX-507	.....	.....	.....
	Strain relief	AEC-882	AEC-882	AEC-882	AEP-113	AEC-882	AEC-882	
	Screw	BBT30P060FZK	BBT30P060FZK	BBT30P060FZK	BBT30P060FZK	BBT30P060FZK	ABA-274	
	Rotary knob S (PLS)	AAB1155	AAB1155	AAB1155	AAB1155	AAB1155	AAB1238	
	Rotary knob L (PLS)	AAB1160	AAB1160	AAB1160	AAB1160	AAB1160	AAB1161	
	Rotary knob R (PLS)	AAB1162	AAB1162	AAB1162	AAB1162	AAB1162	AAB1163	
	Rotary knob M (PLS)	AAB1164	AAB1164	AAB1164	AAB1164	AAB1164	AAB1167	
	Push knob C	AAD1366	AAD1366	AAD1366	AAD1366	AAD1366	AAD1367	*1
	Push knob C	AAD1803	AAD1366	AAD1366	AAD1366	AAD1366	AAD1367	*2
	Push knob	AAD1536	AAD1536	AAD1536	AAD1536	AAD1536	AAD1538	
	Knob (POWER)	AAD1535	AAD1984	AAD1984	AAD1984	AAD1984	AAD2040	
	Packing case	AHD1861	AHD2073	AHD2073	AHD2097	AHD2073	AHD2074	
	Insulator assembly	AMR2140	AMR2140	AMR2140	AMR2141	AMR2140	AMR2140	
	Front panel	ANB1395	ANB1458	ANB1458	ANB1458	ANB1458	ANB1459	
	Bonnet case	AZN1799	AZN1799	AZN1799	AZN1799	AZN1799	AZN1800	
	Panel base (PLS)	AMB1651	AMB1651	AMB1651	AMB1651	AMB1651	AMB1652	
	Operating instructions (English, French, German, Italian, Swedish, Dutch, Spanish, Portuguese)	ARE1162	ARE1196	.....	.....	.....	.....
	Operating instructions (German)	.....	.....	ARC1271	.....	ARC1270	ARC1270	
	Operating instructions (English, French)	.....	.....	ARE1197	ARE1197	.....	.....

*1, *2: Push knob C are assembled as shown below.



1.2 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 $\times 10^1$	561	RD1/4PS	5	6	1	J
47k Ω	47 $\times 10^3$	473	RD1/4PS	4	7	3	J
0.5 Ω	0R5		RD2H	0	R	5	K
1 Ω	010		RD1P	0	1	0	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	RD1/4SR	5	6	2	1	F
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1.2.1 For A-449/HE, SD and KC types

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
HEADPHONE ASSEMBLY			Q301,Q302	TRANSISTOR	2SC1845
SWITCHES			Q303,Q304	TRANSISTOR	2SC2458
	S801 PUSH SWITCH	SUL5L2B2S	Q305	TRANSISTOR	2SA1048
RESISTORS			Q306	TRANSISTOR	2SC1815
Δ	R801,R802 METAL OXIDE RESISTOR	RS1PMF331J	Q307	TRANSISTOR	2SC2458
Δ	R803 METAL OXIDE RESISTOR	RS1LMF681J	D101,D102	ZENER DIODE	RD7.5ESB2
OTHERS			D103	DIODE	1SS252
	JACK	AKN1002	D201,D202	ZENER DIODE	RD2.7ESB1
POWER SW ASSEMBLY			D209-D216	DIODE	1SS252
SWITCHES			D217-D220	ZENER DIODE	RD15ESB
	S501 PUSH SWITCH	ASG1035	D301-D306	DIODE	1SS252
CAPACITORS			D307	ZENER DIODE	RD22ESB
Δ	C510,C511 CKA (0.01/AC400V)	ACG1002	D503,D504	ZENER DIODE	RD18ESB1
●AF COMPLEX ASSEMBLY (AWZ3628)			D505,D506	DIODE	11E2
SEMICONDUCTORS			D507	DIODE	D5SB20F
	IC101 IC	UPC4570C	SWITCHES		
Q101-Q104	N-FET	2SK369	S101	PUSH SWITCH	ASG1012
Q105,Q016	TRANSISTOR	2SC2458	S701	SWITCH	ASU1016
Q203-Q208	TRANSISTOR	2SA1048	S702	SWITCH	ASU1002
Q211,Q212	TRANSISTOR	2SC1845	S703	PUSH SWITCH	SULL6S
Q215-Q218	TRANSISTOR	2SA1048	COIL		
Q219,Q220	TRANSISTOR	2SC2705	L401,L402	COIL	ATH1009
Q221,Q222	TRANSISTOR	2SC3298	CAPACITORS		
Q223,Q224	TRANSISTOR	2SA1306	C101,C102	AUDIO FILM CAPACITOR	CFTXA103J50
Q225,Q226	TRANSISTOR	2SC2603	C103,C104	CERAMIC CAPACITOR	CCCSL221J50
Q227,Q228	TRANSISTOR	2SC1845	C105,C106	CERAMIC CAPACITOR	CKCYB472K50
Q229,Q230	TRANSISTOR	2SA992	C107,C108	ELECTROLYTIC CAPACIT	CEXA101M25
Q231,Q232	TRANSISTOR	2SA1145	C109,C110	AUDIO FILM CAPACITOR	CFTXA683J50
Q233,Q234	TRANSISTOR	2SA992	C111,C112	AUDIO FILM CAPACITOR	CFTXA183J50
Q237	TRANSISTOR	2SC1845	C113,C114	ELECTR.CAPACITOR	CEANP220M10
Q238	TRANSISTOR	2SA992	C117,C118	ELECTROLYTIC CAPACIT	CEXA221M25
Q291-Q294	TRANSISTOR	2SA992	C119,C120	CERAMIC CAPACITOR	CKCYF103Z50
			C121,C122	MYLOR FILM CAPACITOR	CQMA122J50

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
	C135,C136 ELECTR.CAPACITOR	CEAS470M10	△	R239-R242 FUSIBLE RESISTOR	RFA1/4PS101J
	C143,C144 MYLOR FILM CAPACITOR	CQMA472K50	△	R243,R244 CARBON FILM RESISTOR	RD1/4PMF561J
	C201,C202 ELECTROLYTIC CAPACIT	CEEA2R2M50	△	R245-R248 FUSIBLE RESISTOR	RFA1/4PS101J
	C203,C204 CERAMIC CAPACITOR	CCCSL101K500		R249-R252 CARBON FILM RESISTOR	RD1/4PM□□□J
	C205,C206 CERAMIC CAPACITOR	CCCSL101J50		R255,R256 CARBON FILM RESISTOR	RD1/4PM561J
	C207,C208 CERAMIC CAPACITOR	CCCSL470J50	△	R257-R260 FUSIBLE RESISTOR	RFA1/4PS101J
	C209,C210 CERAMIC CAPACITOR	CCCSL181J50	△	R261-R264 FUSIBLE RESISTOR	RFA1/4PS470J
	C211,C212 ELECTROLYTIC CAPACIT	CEEA221M16	△	R265-R268 FUSIBLE RESISTOR	RFA1/4PS4R7J
	C213,C214 CERAMIC CAPACITOR	CCCSL120K500	△	R269,R270 RESISTOR (0.33, 5W)	ACN1063
	C215,C216 CERAMIC CAPACITOR	CCCSL120K500	△	R275-R278 CARBON FILM RESISTOR	RD1/4PM□□□J
	C217,C218 ELECTR.CAPACITOR	CEAS101M10	△	R281-R284 FUSIBLE RESISTOR	RFA1/4PS331J
	C219,C220 ELECTR.CAPACITOR	CEAS3R3M100	△	R285,R286 FUSIBLE RESISTOR	RFA1/4PS101J
	C221,C222 ELECTR.CAPACITOR	CEAS3R3M100	△	R287,R288 CARBON FILM RESISTOR	RD1/4PMF4R7J
	C225,C226 ELECTR.CAPACITOR	CEAS331M10	△	R289,R290 FUSIBLE RESISTOR	RFA1/4PS101J
	C227-C230 CERAMIC CAPACITOR	CCCSL330K500		R299 CARBON FILM RESISTOR	RD1/4PM100J
	C231,C232 CERAMIC CAPACITOR	CKCYB122K50	△	R301,R302 CARBON FILM RESISTOR	RD1/4PMF222J
	C233-C236 ELECTR.CAPACITOR	CEAS100M50	△	R308 CARBON FILM RESISTOR	RD1/4PMF101J
	C237,C238 ELECTR.CAPACITOR	CEAS101M50		R311-R315 CARBON FILM RESISTOR	RD1/4PM□□□J
	C247,C248 AUDIO FILM CAPACITOR	CFTXA103J50		R317-R327 CARBON FILM RESISTOR	RD1/4PM□□□J
	C251,C252 CERAMIC CAPACITOR	CCCSL330K500	△	R330 CARBON FILM RESISTOR	RD1/4PMF010J
	C253,C254 CERAMIC CAPACITOR	CCCSL330K500	△	R401,R402 CARBON FILM RESISTOR	RD1/4PMFL100J
	C255 CERAMIC CAPACITOR	CCCSL680J50	△	R403,R404 METAL OXIDE RESISTOR	RS1LMF331J
	C256 CERAMIC CAPACITOR	CCDSL470J50	△	R407,R408 CARBON FILM RESISTOR	RD1/4PMFL100J
	C301,C302 ELECTR.CAPACITOR	CEANP2R2M50	△	R501,R502 METAL OXIDE RESISTOR	RS1PMF121J
	C303 ELECTROLYTIC CAPACIT	CEAS471M6	△	R503,R504 METAL OXIDE RESISTOR	RS1LMF121J
	C304 CERAMIC CAPACITOR	CKCYF103Z50	△	R505,R506 METAL OXIDE RESISTOR	RS1PMF121J
	C305 ELECTR.CAPACITOR	CEAS101M25	△	R507,R508 CARBON FILM RESISTOR	RD1/4PMF010J
	C306-C308 ELECTR.CAPACITOR	CEASR47M50	△	R509,R510 METAL OXIDE RESISTOR	RS1LMF72J
	C401-C404 AUDIO FILM CAPACITOR	CFTXA104J50		R513-R515 CARBON FILM RESISTOR	RD1/4PM272J
	C501,C502 ELECTR.CAPACITOR	CEAS100M50		R516 CARBON FILM RESISTOR	RD1/4PMFL272J
	C503,C504 ELECTR.CAPACITOR	CEAS470M25	△	R517-R520 METAL OXIDE RESISTOR	RS1PMF010J
	C505 ELECTROLYTIC CAPACIT	ACH1196		R731,R732 CARBON FILM RESISTOR	RD1/4PM103J
	C506 ELECTROLYTIC CAPACIT	ACH1078		VR201,VR202 VR	ACP1045
	C508 ELECTR.CAPACITOR	CEAS470M50		VR701 VARIABLE(100K-20AX2)	ACT1062
	C509 ELECTR.CAPACITOR	CEAS220M50		Other resistors	RD1/8PM□□□J
	C719,C720 CERAMIC CAPACITOR	CKCYB331K50		OTHERS	
	C725,C731 CERAMIC CAPACITOR	CKCYF103Z50		PIN JACK(4P)	AKB1007
	C733,C734 CERAMIC CAPACITOR	CKDYF102Z50		PIN JACK(6P)	AKB1008
				PIN JACK(6P)	AKB1024
				SPEAKER TERMINAL 8-P	AKE1011
				CN4 CONNECTOR(15P)	KPE15
				CN9 JUMPER CONNECTOR	KPC8
				RY301,RY302 RELAY	ASR1037
				RY303 RELAY	ASR1038
RESISTORS					
	R101,R102 CARBON FILM RESISTOR	RDR1/6PU101J			
	R105-R108 CARBON FILM RESISTOR	RDR1/6PU□□□J			
	R119-R122 CARBON FILM RESISTOR	RDR1/4PM□□□J			
	R133,R134 CARBON FILM RESISTOR	RDR1/6PU391J			
	R143,R144 CARBON FILM RESISTOR	RD1/4PM560J			
	R201-R204 CARBON FILM RESISTOR	RDR1/4PM□□□J			
	R205-R214 CARBON FILM RESISTER	RD1/4PM□□□J			
	R215-R218 CARBON FILM RESISTOR	RDR1/4PM□□□J			
	R219-R234 CARBON FILM RESISTOR	RD1/4PM□□□J			
	R237,R238 CARBON FILM RESISTOR	RDR1/4PM224J			

1.2.2 For A-449/HEWZ and A-449-S/HEWZ types

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
POWER SW ASSEMBLY			Q305	TRANSISTOR	2SA1048
			Q306	TRANSISTOR	2SC1815
			Q307	TRANSISTOR	2SC2458
SWITCHES					
△	S501 PUSH SWITCH	ASG1035	D101,D102	ZENER DIODE	RD7.5ESB2
			D103	DIODE	1SS252
CAPACITORS			D201,D202	ZENER DIODE	RD2.7ESB1
△	C510,C511 CKA (0.01/AC400V)	ACG1002	D209-D216	DIODE	1SS252
			D217-D220	ZENER DIODE	RD15ESB
HEADPHONE ASSEMBLY			D301-D306	DIODE	1SS252
			D307	ZENER DIODE	RD22ESB
			D503,D504	ZENER DIODE	RD18ESB1
			D505,D506	DIODE	11E2
			D507	DIODE	D5SB20F
SWITCHES			SWITCHES		
	S801 PUSH SWITCH	SUL5L2B2S	S101	PUSH SWITCH	ASG1012
CAPACITORS			S701	SWITCH	ASU1016
	C801,C802 CERAMIC CAPACITOR	CKCYB392K50	S702	SWITCH	ASU1002
			S703	PUSH SWITCH	SULL6S
RESISTORS			COIL		
△	R801,R802 METAL OXIDE RESISTOR	RS1PMF331J	L101,L102	COIL	ATH1010
△	R803 METAL OXIDE RESISTOR	RS1LMF681J	L107,L108	AXIAL INDUCTOR	LAU3R3K
OTHERS			L401,L402	COIL	ATH1009
	JACK	AKN1002	CAPACITORS		
◎AF COMPLEX ASSEMBLY (AWZ3627)			C101,C102	AUDIO FILM CAPACITOR	CFTXA103J50
SEMICONDUCTORS			C103,C104	CERAMIC CAPACITOR	CCCSL271J50
	IC101 IC	UPC4570C	C105,C106	CERAMIC CAPACITOR	CKCYB472K50
			C107,C108	ELECTROLYTIC CAPACIT	CEXA101M25
			C109,C110	AUDIO FILM CAPACITOR	CFTXA683J50
	Q101-Q104 N-FET	2SK369	C111,C112	AUDIO FILM CAPACITOR	CFTXA183J50
	Q105,Q106 TRANSISTOR	2SC2458	C113,C114	ELECTR.CAPACITOR	CEANP220M10
	Q203-Q208 TRANSISTOR	2SA1048	C115,C116	MYLOR FILM CAPACITOR	CQMA392K50
	Q211,Q212 TRANSISTOR	2SC1845	C117,C118	ELECTROLYTIC CAPACIT	CEXA221M25
	Q215-Q218 TRANSISTOR	2SA1048	C119,C120	CERAMIC CAPACITOR	CKCYF103Z50
			C121,C122	MYLOR FILM CAPACITOR	CQMA122J50
	Q219,Q220 TRANSISTOR	2SC2705	C129	CERAMIC CAPACITOR	CKPYX103N25
	Q221,Q222 TRANSISTOR	2SC3298	C135,C136	ELECTR.CAPACITOR	CEAS470M10
	Q223,Q224 TRANSISTOR	2SA1306	C137,C138	CERAMIC CAPACITOR	CCCSL151J50
	Q225,Q226 TRANSISTOR	2SC2603	C139,C140	CERAMIC CAPACITOR	CCCSL330J50
	Q227,Q228 TRANSISTOR	2SC1845	C141	CERAMIC CAPACITOR	CKCYF103Z50
			C201,C202	ELECTROLYTIC CAPACIT	CEEA2R2M50
	Q229,Q230 TRANSISTOR	2SA992	C203,C204	CERAMIC CAPACITOR	CCCSL101K500
	Q231,Q232 TRANSISTOR	2SA1145	C205,C206	CERAMIC CAPACITOR	CCCSL101J50
	Q233,Q234 TRANSISTOR	2SA992	C207,C208	CERAMIC CAPACITOR	CCCSL470J50
	Q237 TRANSISTOR	2SC1845	C209,C210	CERAMIC CAPACITOR	CCCSL181J50
	Q238 TRANSISTOR	2SA992	C211,C212	ELECTROLYTIC CAPACIT	CEEA221M16
			C213,C214	CERAMIC CAPACITOR	CCCSL060D500
	Q291-Q294 TRANSISTOR	2SA992	C217,C218	ELECTR.CAPACITOR	CEAS101M10
	Q301,Q302 TRANSISTOR	2SC1845			
	Q303,Q304 TRANSISTOR	2SC2458			

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
	C219,C220 ELECTR.CAPACITOR	CEAS3R3M100	△	R257-R260 FUSIBLE RESISTOR	RFA1/4PS101J
	C221,C222 ELECTR.CAPACITOR	CEAS3R3M100	△	R261-R264 FUSIBLE RESISTOR	RFA1/4PS470J
	C225,C226 ELECTR.CAPACITOR	CEAS331M10	△	R265-R268 FUSIBLE RESISTOR	RFA1/4PS4R7J
	C227-C230 CERAMIC CAPACITOR	CCCSL330K500	△	R269,R270 RESISTOR (0.33, 5W)	ACN1063
	C231,C232 CERAMIC CAPACITOR	CKCYB122K50		R275-R278 CARBON FILM RESISTOR	RD1/4PM□□□J
	C233-C236 ELECTR.CAPACITOR	CEAS100M50	△	R281-R284 FUSIBLE RESISTOR	RFA1/4PS331J
	C237,C238 ELECTR.CAPACITOR	CEAS101M50	△	R285,R286 FUSIBLE RESISTOR	RFA1/4PS101J
	C239-C242 POLYESTER CAPACITOR	CQMXA472J100	△	R287,R288 CARBON FILM RESISTOR	RD1/4PMF4R7J
	C244 CERAMIC CAPACITOR	CKDYX104M25	△	R289,R290 FUSIBLE RESISTOR	RFA1/4PS101J
	C245,C246 CERAMIC CAPACITOR	CKCYB331K50		R299 CARBON FILM RESISTOR	RD1/4PM100J
	C247,C248 AUDIO FILM CAPACITOR	CFTXA103J50	△	R301,R302 CARBON FILM RESISTOR	RD1/4PMF222J
	C251-C254 CERAMIC CAPACITOR	CCCSL680K500	△	R308 CARBON FILM RESISTOR	RD1/4PMF101J
	C255 CERAMIC CAPACITOR	CCCSL680J50		R311-R315 CARBON FILM RESISTOR	RD1/4PM□□□J
	C256 CERAMIC CAPACITOR	CCDSL470J50		R317-R327 CARBON FILM RESISTOR	RD1/4PM221J
	C301,C302 ELECTR.CAPACITOR	CEAS2R2M50	△	R330 CARBON FILM RESISTOR	RD1/4PMF010J
	C303 ELECTROLYTIC CAPACIT	CEAS471M6	△	R401,R402 CARBON FILM RESISTOR	RD1/4PMFL101J
	C304 CERAMIC CAPACITOR	CKCYF103Z50	△	R403,R404 METAL OXIDE RESISTOR	RS1LMF331J
	C305 ELECTR.CAPACITOR	CEAS101M25	△	R407,R408 CARBON FILM RESISTOR	RD1/4PMFL100J
	C306-C308 ELECTR.CAPACITOR	CEASR47M50	△	R501,R502 METAL OXIDE RESISTOR	RS1PMF121J
	C401,C402 AUDIO FILM CAPACITOR	CFTXA473J50	△	R503,R504 METAL OXIDE RESISTOR	RS1LMF121J
	C501,C502 ELECTR.CAPACITOR	CEAS100M50	△	R505,R506 METAL OXIDE RESISTOR	RS1PMF121J
	C503,C504 ELECTR.CAPACITOR	CEAS470M25	△	R507,R508 CARBON FILM RESISTOR	RD1/4PMF010J
	C505 ELECTROLYTIC CAPACIT	ACH1196	△	R509,R510 METAL OXIDE RESISTOR	RS1LMF272J
	C506 ELECTROLYTIC CAPACIT	ACH1078		R513-R515 CARBON FILM RESISTOR	RD1/4PM272J
	C507 MYLOR FILM CAPACITOR	CQMA103K250		R516 CARBON FILM RESISTOR	RD1/4PMFL272J
	C508 ELECTR.CAPACITOR	CEAS470M50			
	C509 ELECTR.CAPACITOR	CEAS220M50	△	R517-R520 METAL OXIDE RESISTOR	RS1PMF101J
	C703-C708 CERAMIC CAPACITOR	CCCSL271J50		R731,R732 CARBON FILM RESISTOR	RD1/4PM103J
	C711,C712 CERAMIC CAPACITOR	CCCSL271J50		VR201,VR202 VR	ACP1045
	C715,C716 CERAMIC CAPACITOR	CCCSL271J50		VR701 VARIABLE(100K-20AX2)	ACT1062
	C719,C720 CERAMIC CAPACITOR	CCCSL271J50		Other resistors	RD1/8PM□□□J
	C725 CERAMIC CAPACITOR	CCDSL221J50			
	C726 CERAMIC CAPACITOR	CKCYF103Z50			
	C727,C728 CERAMIC CAPACITOR	CCCSL221J50			
	C731 CERAMIC CAPACITOR	CKCYF103Z50			
	C733,C734 CERAMIC CAPACITOR	CKDYF102Z50			
RESISTORS				OTHERS	
	R101,R102 CARBON FILM RESISTOR	RDR1/6PU101J		CN4 CONNECTOR(15P)	KPE15
	R107,R108 CARBON FILM RESISTOR	RDR1/6PU563J		CN9 JUMPER CONNECTOR	KPC8
	R119-R122 CARBON FILM RESISTOR	RDR1/4PM□□□J		RY301,RY302 RELAY	ASR1037
	R133,R134 CARBON FILM RESISTOR	RDR1/6PU391J		RY303 RELAY	ASR1038
	R143,R144 CARBON FILM RESISTOR	RD1/4PM560J		PIN JACK(4P)	AKB1007
	R201-R204 CARBON FILM RESISTOR	RDR1/4PM□□□J		PIN JACK(6P)	AKB1008
	R205-R214 CARBON FILM RESISTOR	RD1/4PM□□□J		PIN JACK(6P)	AKB1021
	R215-R218 CARBON FILM RESISTOR	RDR1/4PM□□□J		SPEAKER TERMINAL 8-P	AKE1011
	R219-R234 CARBON FILM RESISTOR	RD1/4PM□□□J			
	R237,R238 CARBON FILM RESISTOR	RDR1/4PM224J			
△	R239-R242 FUSIBLE RESISTOR	RFA1/4PS101J			
△	R243,R244 CARBON FILM RESISTOR	RD1/4PMF561J			
△	R245-R248 FUSIBLE RESISTOR	RFA1/4PS101J			
	R249-R252 CARBON FILM RESISTOR	RD1/4PM□□□J			
	R255,R256 CARBON FILM RESISTOR	RD1/4PM561J			

1.3 SCHEMATIC DIAGRAM

* Marks are difference between two assemblies.

	A-449/HE,SD,KC	A-449/HEWZ, A-449-S/HEWZ
AF COMPLEX ASS'Y	AWZ3628	AWZ3627
L101,L102	VACANT(OPEN)	ATH1010
L107,L108	VACANT(SHORT)	LAU3R3K
C103,C104	CCCSL221J50	CCCSL271J50
C115,C116	VACANT(OPEN)	CQMA392K50
C129	VACANT(OPEN)	CKPYX103N25
C137,C138	VACANT(OPEN)	CCCSL151J50
C139,C140	VACANT(OPEN)	CCCSL330J50
C141	VACANT(OPEN)	CKCYF103Z50
C143,C144	VACANT(OPEN)	CQMA472K50
C213,C214	CCCSL120K500	CCCSL060D500
C215,C216	CCCSL120K500	VACANT(SHORT)
C239-C242	VACANT(OPEN)	CQMXA472J100
C244	VACANT(OPEN)	CKDYX104M25
C245,C246	VACANT(OPEN)	CKCYB331K50
C251-C254	CCCSL330K500	CCCSL680K500
C301,C302	CEANP2R2M50	CEAS2R2M50
C401,C402	CFTXA104J50	CFTXA473J50
C403,C404	CFTXA104J50	VACANT(SHORT)
C703-C708	VACANT(OPEN)	CCCSL271J50
C711,C712	VACANT(OPEN)	CCCSL271J50
C715,C716	VACANT(OPEN)	CCCSL271J50
C719,C720	CKCYB331K50	CCCSL271J50
C725	CKCYF103Z50	CCDSL221J50
C726	VACANT(OPEN)	CKCYF103Z50
C727,C728	VACANT(OPEN)	CCCSL221J50
R103	VACANT(OPEN)	RD1/8PM4R7J
R105,R106	RDR1/6PU100J	RD1/8PM472J
R401,R402	RD1/4PMFL100J	RD1/4PMFL101J
R719,R720	VACANT(SHORT)	RD1/8PM331J
R724	VACANT(OPEN)	RD1/8PM100J
HEAD PHONE ASS'Y	Non supply	Non supply
C801,C802	VACANT(OPEN)	CKCYB392K50
OTHERS		
R1, R2	VACANT(OPEN)	RD1/4PM100J

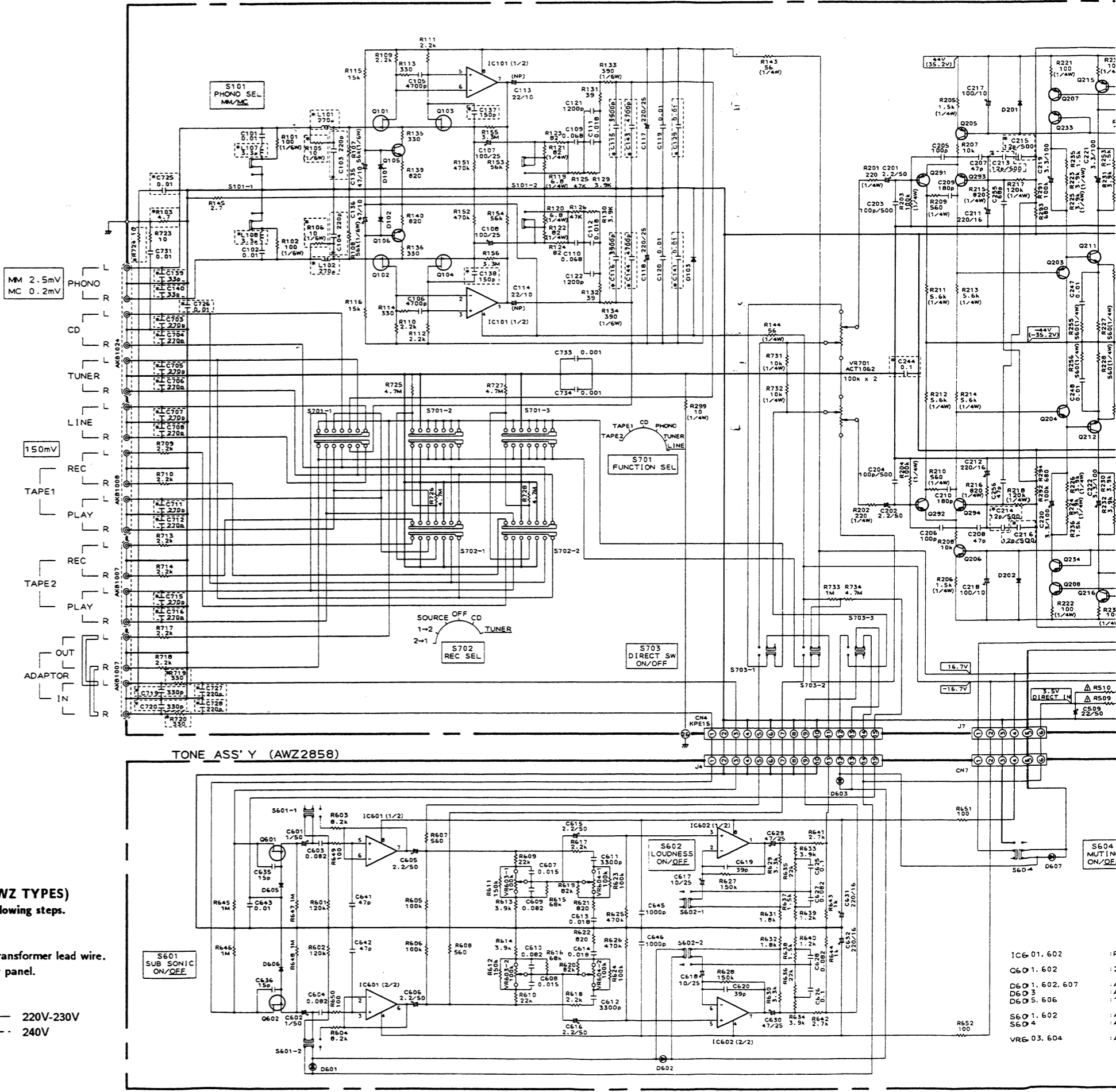
1. RESISTORS :
Indicated in Ω , 1/8, 1/6, 1/4W., $\pm 5\%$ tolerance unless otherwise noted k; k Ω , M; M Ω , (F); $\pm 1\%$, (G); $\pm 2\%$, (K); $\pm 10\%$, (M); $\pm 20\%$ tolerance.
2. CAPACITORS :
Indicated in capacity (μ F)/voltage(V) unless otherwise noted p; pF. Indication without voltage is 50V except electrolytic capacitor.
3. VOLTAGE, CURRENT :
V : Signal voltage at 60W+60W, 8 Ω /80W+80W, 4 Ω output(1kHz).
DC voltage (V) at no input signal.
Value in () is DC voltage at rated power.
mA ; DC current at no input signal.
4. OTHERS :
⊙ : 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.
5. SWITCHES : (The underline indicates the switch position)
S601 : SUBSONIC(ON-OFF)
S602 : LOUDNESS(ON-OFF)
S604 : MUTING(ON-OFF)
S101 : PHONO SEL(MM-MC)
S701 : FUNCTION SEL(TAPE2-TAPE1-CD-PHONO-TUNER-LINE)
S702 : REC SEL(2-1-1-2-SOURCE-OFF-CD-TUNER)
S703 : DIRECT SW(ON-OFF)
S801-1 : SPEAKERS-A(ON-OFF)
S801-2 : SPEAKERS-A(ON-OFF)
S501 : POWER SW(ON-OFF)

Line Voltage Selection (HE and HEWZ TYPES)

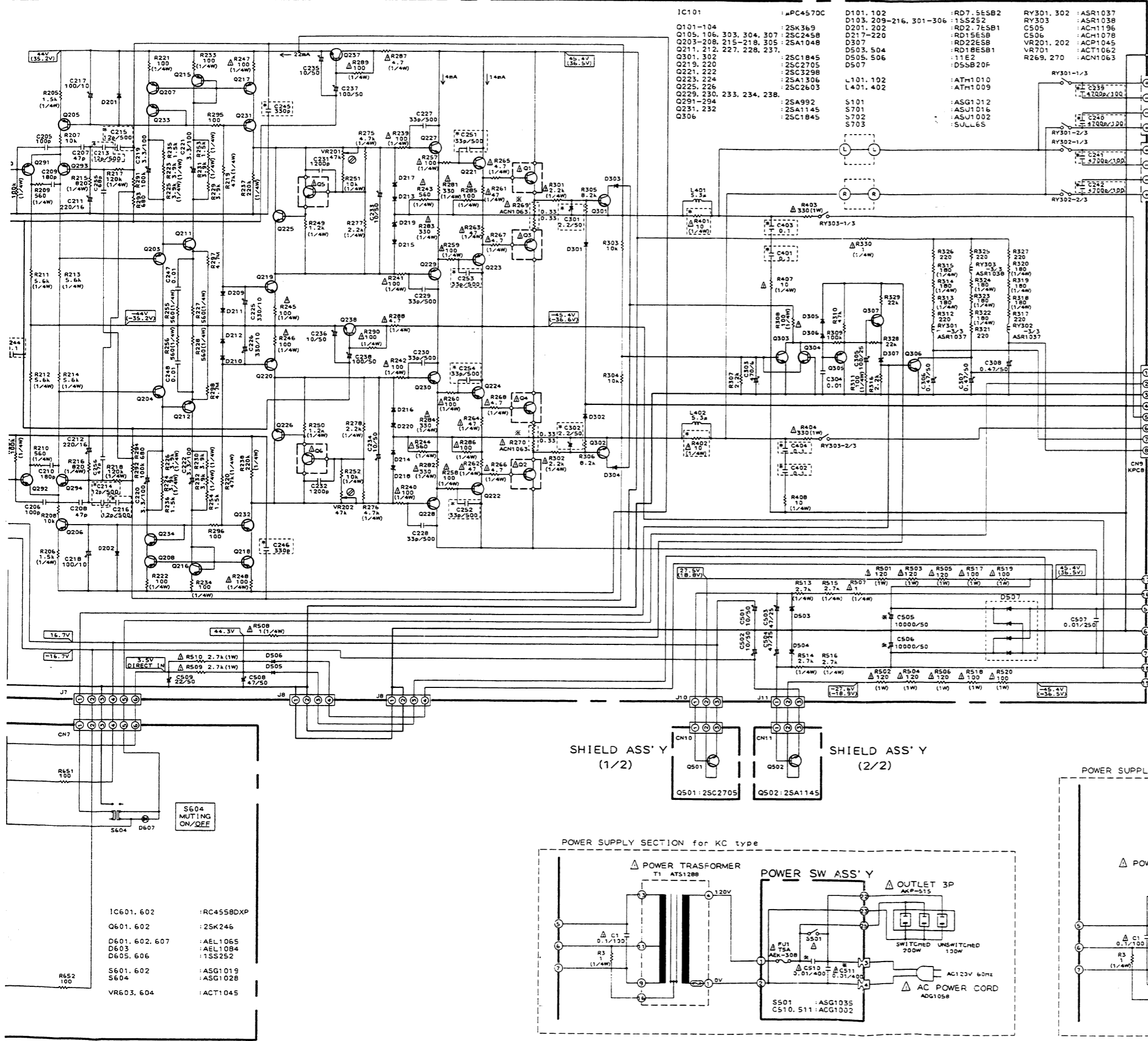
Line voltage can be changed with the following steps.

1. Disconnect the AC power cord.
2. Remove the top cover.
3. Change the connection of the power transformer lead wire.
4. Stick the line voltage label on the rear panel.

Parts No.	Description	
AXX-193	220V label	— 220V-230V
AXX-192	240V label	----- 240V



IC601	602	F
C601	602	F
D601	602, 607	F
D603		F
D605	606	F
S601	602	F
S604		F
VR603	604	F



IC101: μ PC4570C

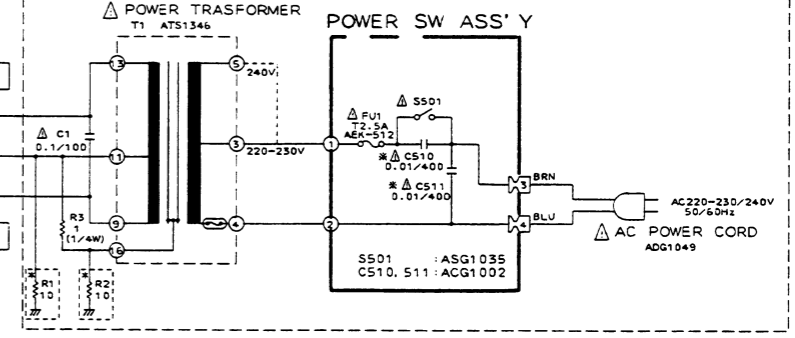
Q101-104	:2SK369	D101, 102	:RD7.5ESB2	RY301, 302	:ASR1037
Q105, 106, 303, 304, 307	:2SC2458	D103, 209-216, 301-306	:1S5252	RY303	:ASR1038
Q203-208, 215-218, 305	:2SA1048	D201, 202	:RD2.7ESB1	C505	:AC11196
Q211, 212, 227, 228, 237		D217-220	:RD15ESB	C506	:AC11078
Q301, 302	:2SC1845	D307	:RD22ESB	VR201, 202	:ACP1045
Q219, 220	:2SC2705	D503, 504	:RD1BESB1	VR701	:ACT1062
Q221, 222	:2SC3298	D505, 506	:11E2	R269, 270	:ACN1063
Q223, 224	:2SA1306	D507	:D5SB20F		
Q225, 226	:2SC2603				
Q229, 230, 233, 234, 238		L101, 102	:ATH1010		
Q291-294	:2SA992	L401, 402	:ATH1009		
Q231, 232	:2SA1145	S101	:ASG1012		
Q306	:2SC1845	S701	:ASJ1016		
		S702	:ASJ1002		
		S703	:SULL65		

21.9V/8R
17.9V/4R

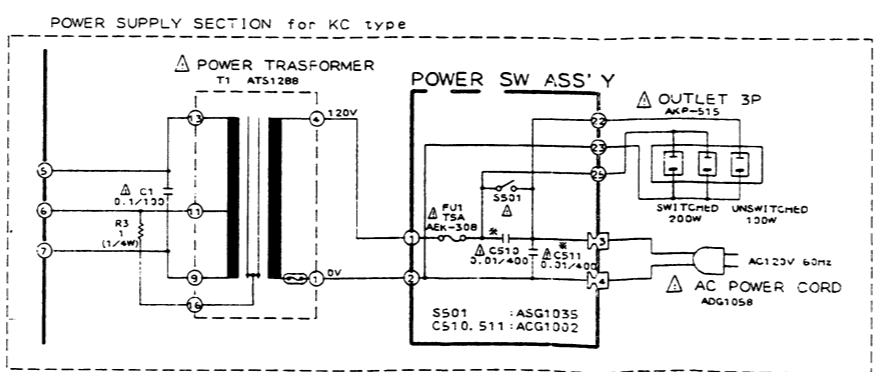
LED ASS'Y

HEAD PHONE ASS'Y

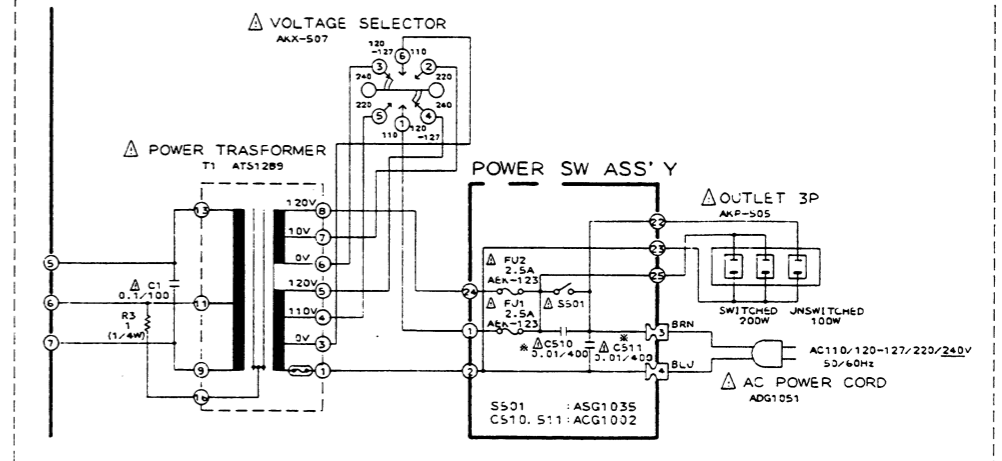
POWER SUPPLY SECTION for HE and HEWZ types



SHIELD ASS'Y (1/2) and (2/2)



POWER SUPPLY SECTION for SD type



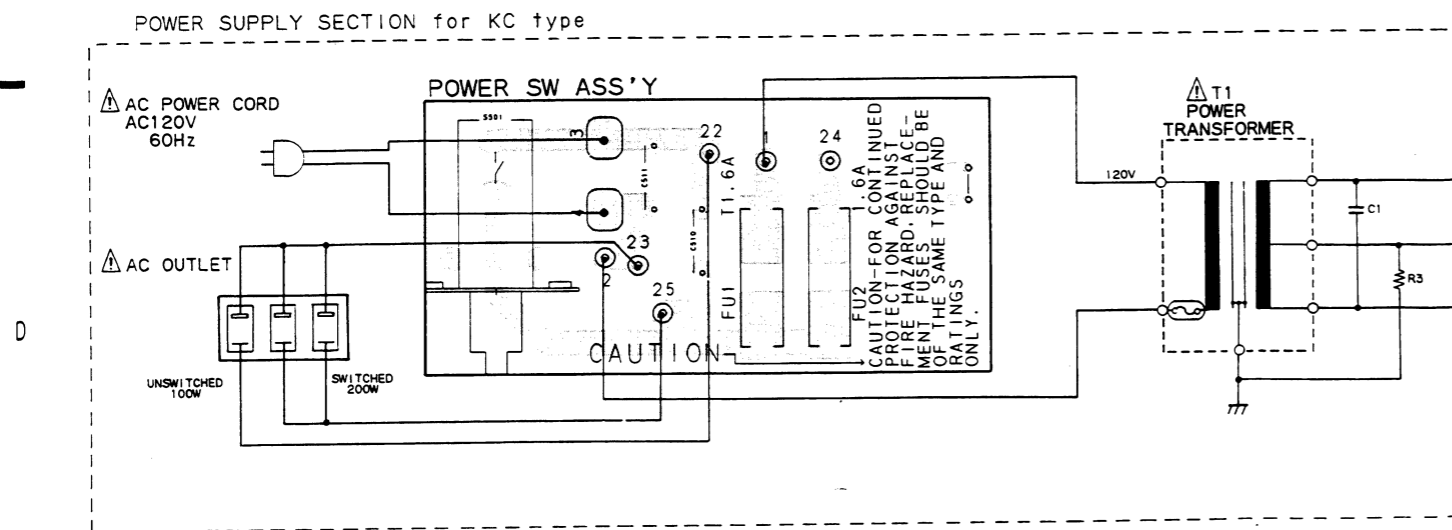
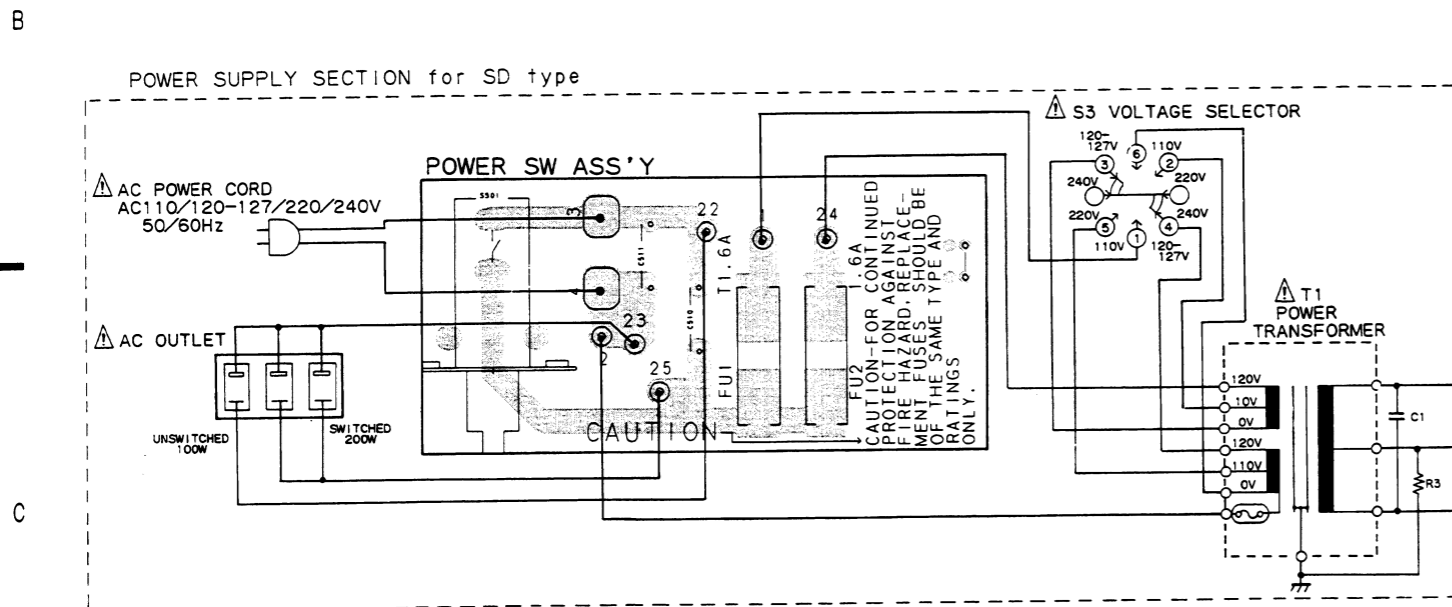
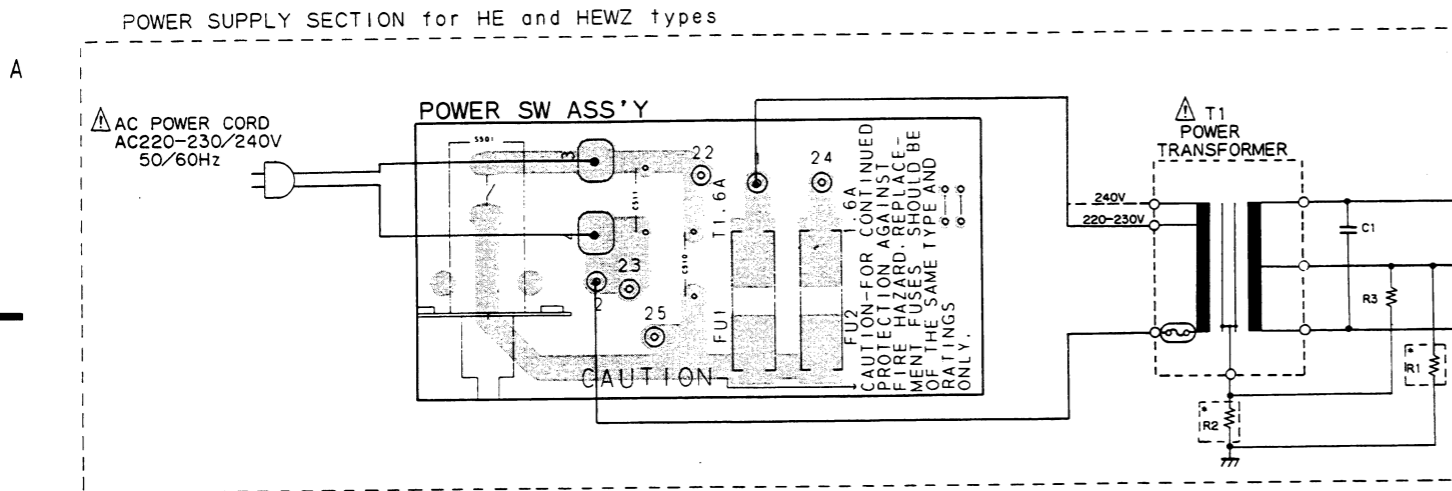
IC601, 602	:RC4558DXP
Q601, 602	:2SK246
D601, 602, 607	:AEL1065
D603	:AEL1084
D605, 606	:1S5252
S601, 602	:ASG1019
S604	:ASG1028
VR603, 604	:ACT1045

1.4 P.C.BOARDS CONNECTION DIAGRAM

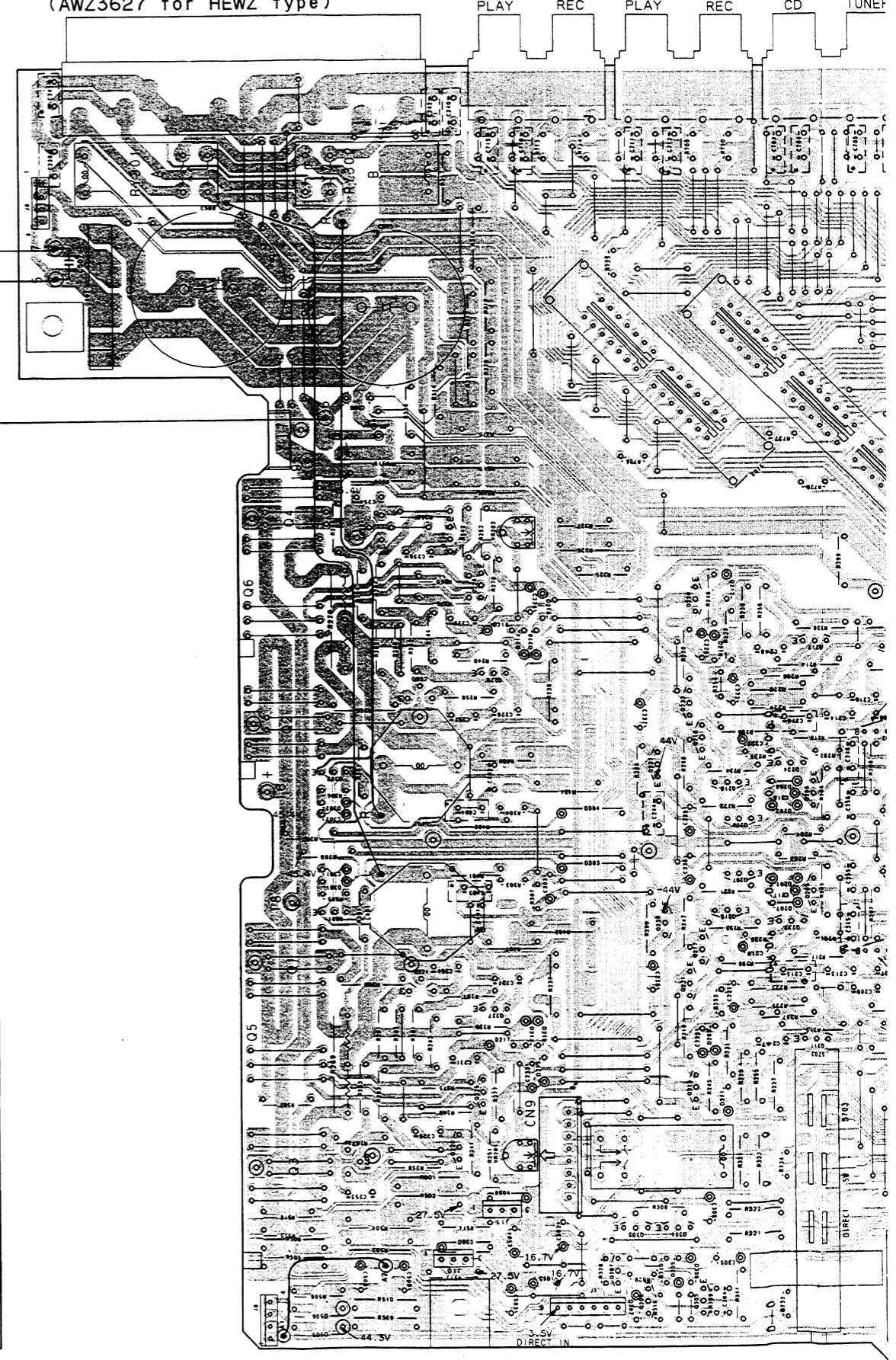
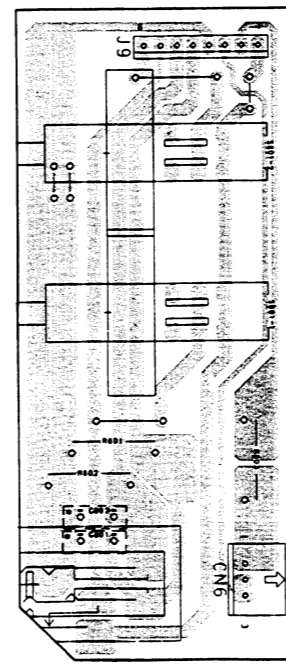
Parts with an asterisk (*) are different according to versions, HE, SD, KC or HEWZ. Refer to page 7 for details.

AF COMPLEX ASS'Y
(AWZ3628 for HE,SD and KC types)
(AWZ3627 for HEWZ type)

PLAY TAPE2 REC PLAY TAPE1 REC CD TUNEF

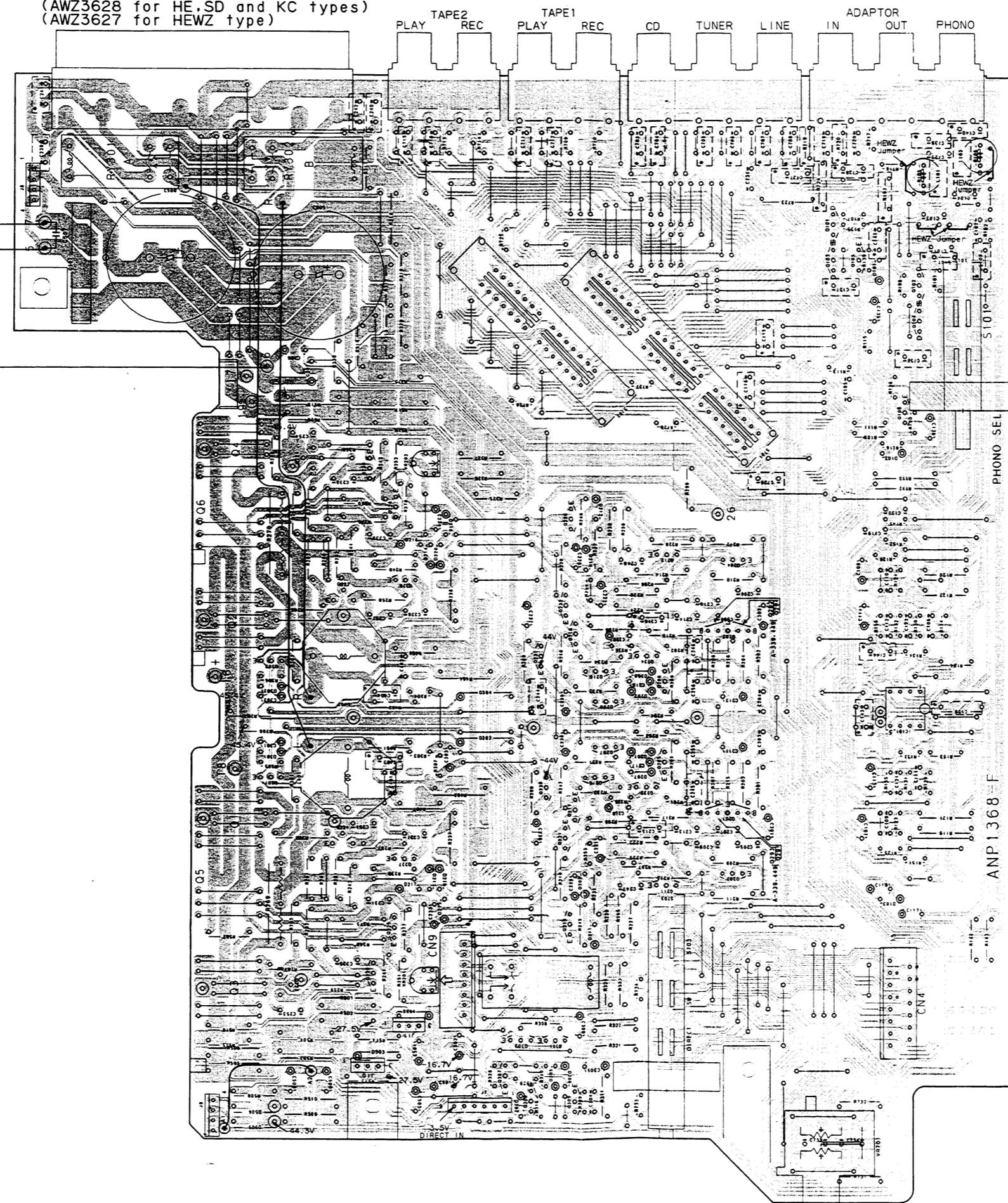
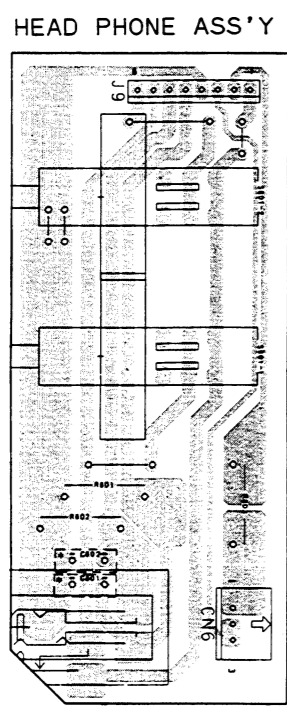
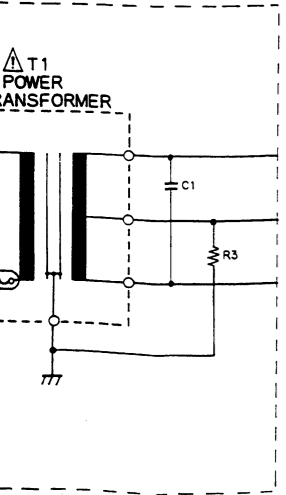
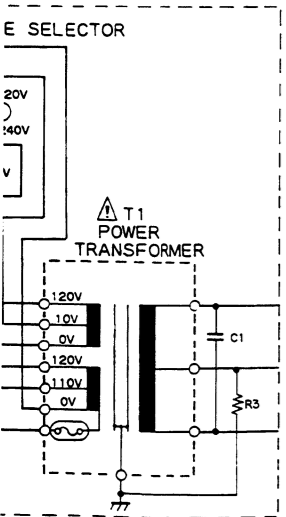
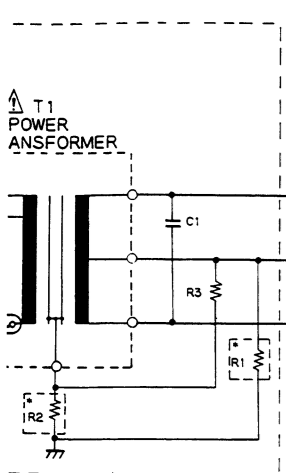


HEAD PHONE ASS'Y



nt according to

AF COMPLEX ASS'Y
(AWZ3628 for HE,SD and KC types)
(AWZ3627 for HEWZ type)



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

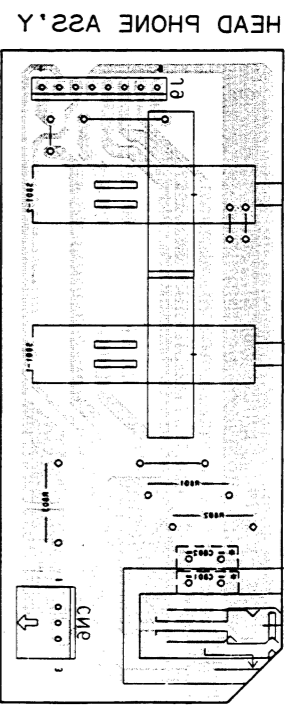
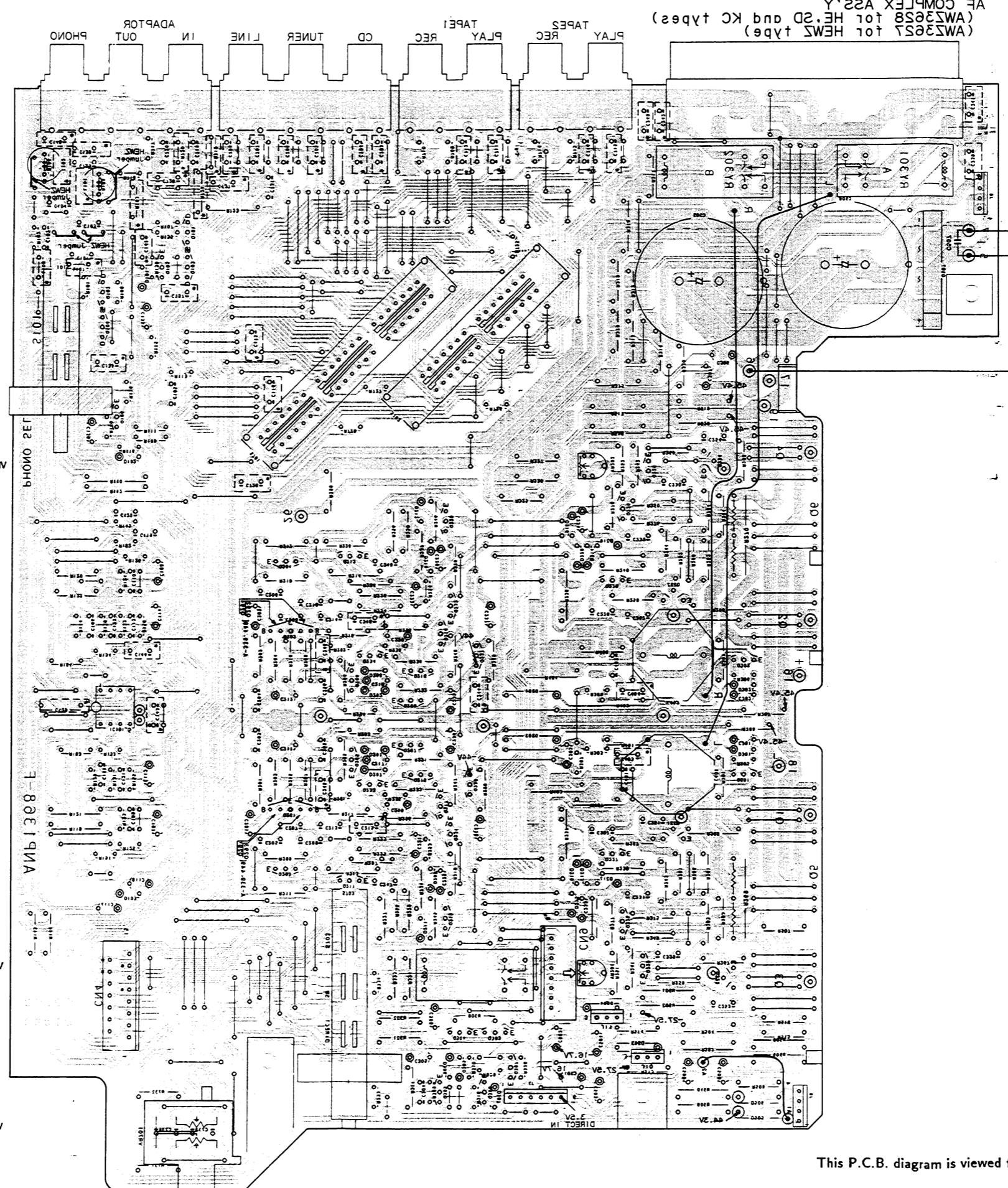
3. The capacitor terminal marked with ⊙ (double circles) shows negative terminal.
4. The diode terminal marked with ⊙ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

Q101
Q103 Q105
Q102
Q104
Q106
VR202 Q224 Q230
Q226
Q220
Q212 Q204
Q228
Q222
Q232
Q294 Q292
Q218
Q237 Q234
Q302 Q216
Q206
Q208
IC101
Q207
Q205
Q301 Q215
Q238 Q233
Q217
Q293 Q291
Q221 Q231
Q227
Q203
Q211
Q225 Q219
VR201 Q229
Q223
Q303 Q304
Q307
Q306 Q305
VR701

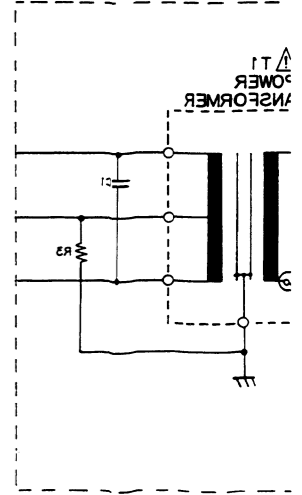
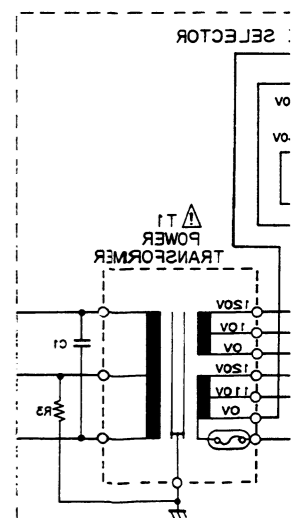
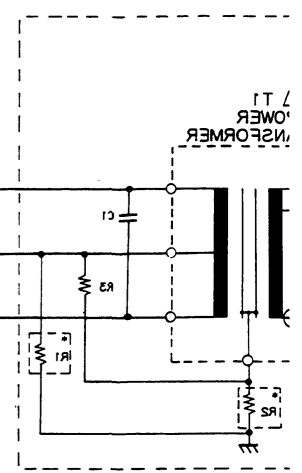
A
B
C
D

A B C D

8 7 6 5 4 3 2 1



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



1 according to

POWER TRANSFORMER

SELECTOR POWER TRANSFORMER

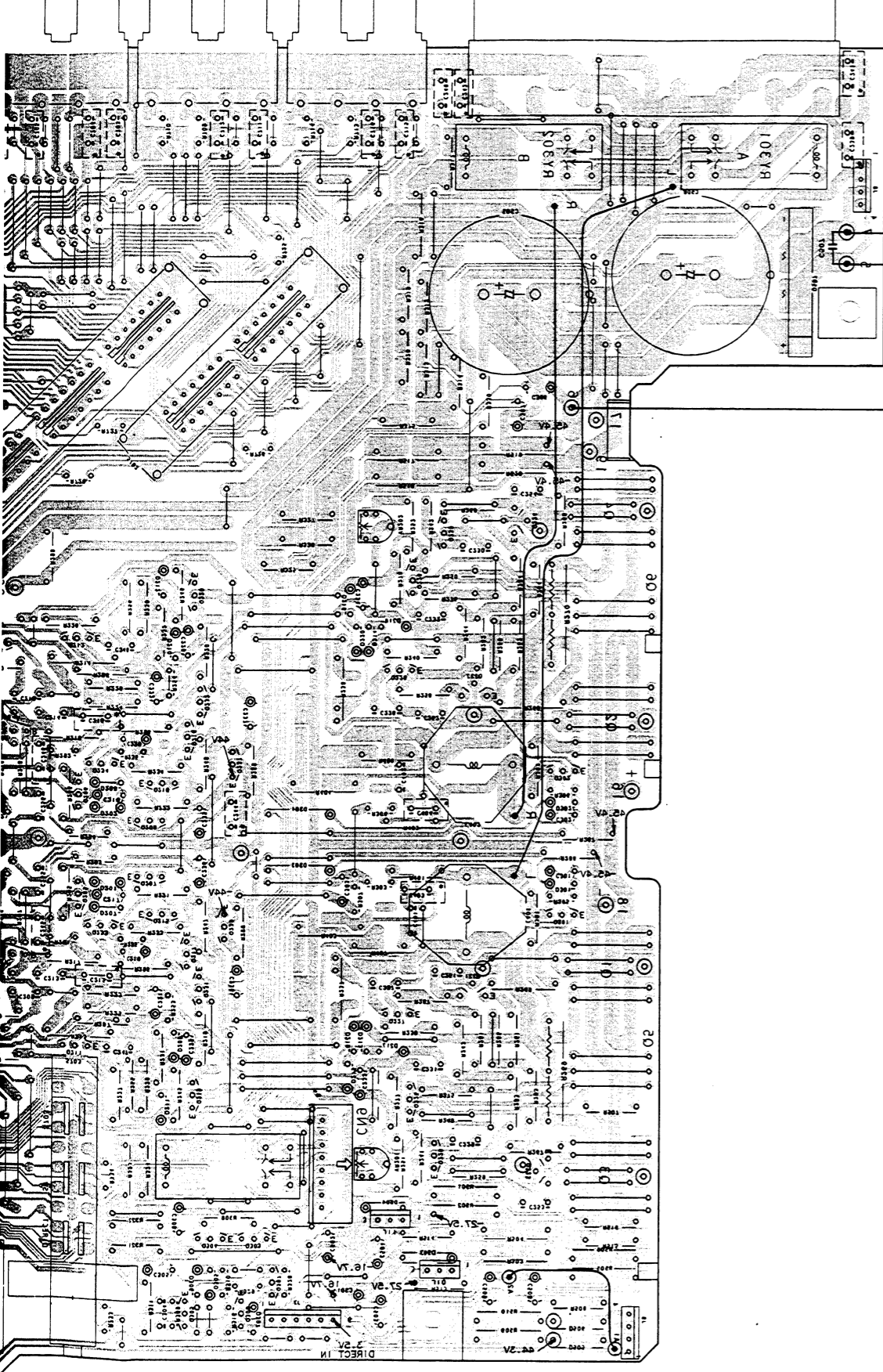
POWER TRANSFORMER

AF COMPLEX ASS'Y (AW3352 for HE, SD and KC types)

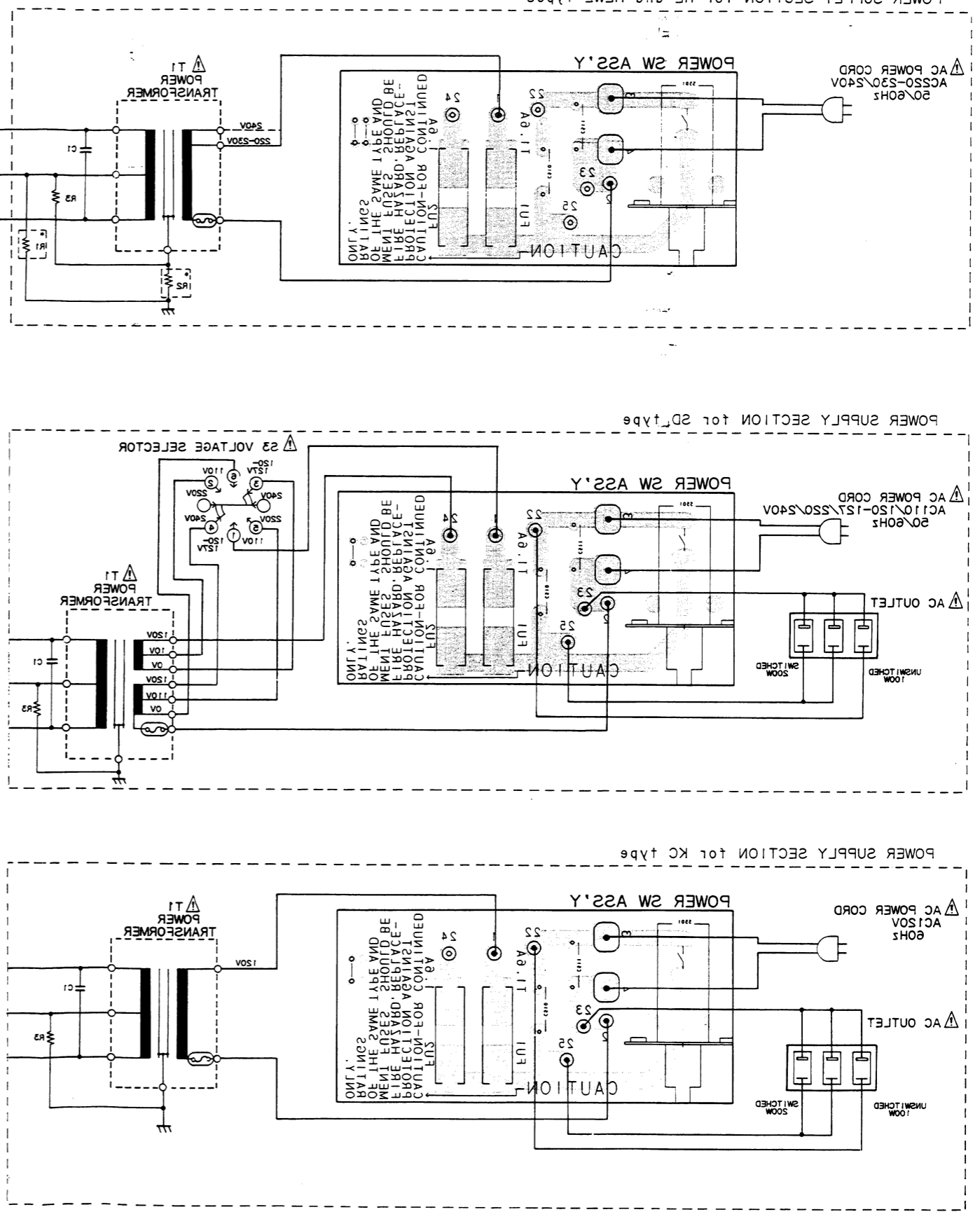
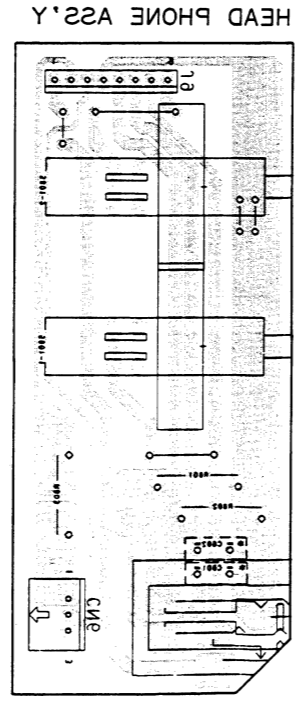
PLAY TAPES REC, PLAY TAPES REC, CD, TUNER, LINE, ADAPTOR, PHONO IN, PHONO OUT

Q101, Q102, Q103, Q104, Q105, Q106, Q530, Q531, Q532, Q533, Q534, Q535, Q536, Q537, Q538, Q539, Q540, Q541, Q542, Q543, Q544, Q545, Q546, Q547, Q548, Q549, Q550, Q551, Q552, Q553, Q554, Q555, Q556, Q557, Q558, Q559, Q560, Q561, Q562, Q563, Q564, Q565, Q566, Q567, Q568, Q569, Q570, Q571, Q572, Q573, Q574, Q575, Q576, Q577, Q578, Q579, Q580, Q581, Q582, Q583, Q584, Q585, Q586, Q587, Q588, Q589, Q590, Q591, Q592, Q593, Q594, Q595, Q596, Q597, Q598, Q599, Q600, Q601, Q602, Q603, Q604, Q605, Q606, Q607, Q608, Q609, Q610, Q611, Q612, Q613, Q614, Q615, Q616, Q617, Q618, Q619, Q620, Q621, Q622, Q623, Q624, Q625, Q626, Q627, Q628, Q629, Q630, Q631, Q632, Q633, Q634, Q635, Q636, Q637, Q638, Q639, Q640, Q641, Q642, Q643, Q644, Q645, Q646, Q647, Q648, Q649, Q650, Q651, Q652, Q653, Q654, Q655, Q656, Q657, Q658, Q659, Q660, Q661, Q662, Q663, Q664, Q665, Q666, Q667, Q668, Q669, Q670, Q671, Q672, Q673, Q674, Q675, Q676, Q677, Q678, Q679, Q680, Q681, Q682, Q683, Q684, Q685, Q686, Q687, Q688, Q689, Q690, Q691, Q692, Q693, Q694, Q695, Q696, Q697, Q698, Q699, Q700, Q701, Q702, Q703, Q704, Q705, Q706, Q707, Q708, Q709, Q710, Q711, Q712, Q713, Q714, Q715, Q716, Q717, Q718, Q719, Q720, Q721, Q722, Q723, Q724, Q725, Q726, Q727, Q728, Q729, Q730, Q731, Q732, Q733, Q734, Q735, Q736, Q737, Q738, Q739, Q740, Q741, Q742, Q743, Q744, Q745, Q746, Q747, Q748, Q749, Q750, Q751, Q752, Q753, Q754, Q755, Q756, Q757, Q758, Q759, Q760, Q761, Q762, Q763, Q764, Q765, Q766, Q767, Q768, Q769, Q770, Q771, Q772, Q773, Q774, Q775, Q776, Q777, Q778, Q779, Q780, Q781, Q782, Q783, Q784, Q785, Q786, Q787, Q788, Q789, Q790, Q791, Q792, Q793, Q794, Q795, Q796, Q797, Q798, Q799, Q800, Q801, Q802, Q803, Q804, Q805, Q806, Q807, Q808, Q809, Q810, Q811, Q812, Q813, Q814, Q815, Q816, Q817, Q818, Q819, Q820, Q821, Q822, Q823, Q824, Q825, Q826, Q827, Q828, Q829, Q830, Q831, Q832, Q833, Q834, Q835, Q836, Q837, Q838, Q839, Q840, Q841, Q842, Q843, Q844, Q845, Q846, Q847, Q848, Q849, Q850, Q851, Q852, Q853, Q854, Q855, Q856, Q857, Q858, Q859, Q860, Q861, Q862, Q863, Q864, Q865, Q866, Q867, Q868, Q869, Q870, Q871, Q872, Q873, Q874, Q875, Q876, Q877, Q878, Q879, Q880, Q881, Q882, Q883, Q884, Q885, Q886, Q887, Q888, Q889, Q890, Q891, Q892, Q893, Q894, Q895, Q896, Q897, Q898, Q899, Q900, Q901, Q902, Q903, Q904, Q905, Q906, Q907, Q908, Q909, Q910, Q911, Q912, Q913, Q914, Q915, Q916, Q917, Q918, Q919, Q920, Q921, Q922, Q923, Q924, Q925, Q926, Q927, Q928, Q929, Q930, Q931, Q932, Q933, Q934, Q935, Q936, Q937, Q938, Q939, Q940, Q941, Q942, Q943, Q944, Q945, Q946, Q947, Q948, Q949, Q950, Q951, Q952, Q953, Q954, Q955, Q956, Q957, Q958, Q959, Q960, Q961, Q962, Q963, Q964, Q965, Q966, Q967, Q968, Q969, Q970, Q971, Q972, Q973, Q974, Q975, Q976, Q977, Q978, Q979, Q980, Q981, Q982, Q983, Q984, Q985, Q986, Q987, Q988, Q989, Q990, Q991, Q992, Q993, Q994, Q995, Q996, Q997, Q998, Q999, Q1000.

AF COMPLEX ASS'Y
(AW33628 for HE, SD and KC types)
(AW33627 for HEWZ type)



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



1.4 P.C. BOARDS CONNECTION DIAGRAM

Refer to page 7 for details.
Versions, HE, SD, KC or HEWZ.
(*) Parts with an asterisk (*) are different according to

POWER SUPPLY SECTION for HE and HEWZ types

POWER SUPPLY SECTION for SD type

POWER SUPPLY SECTION for KC type

A
B
C
D

2. FOR A-339/KU, HE, HEWZ, SD AND A-339-S/HEWZ TYPES

2.1 CONTRAST OF MISCELLANEOUS PARTS

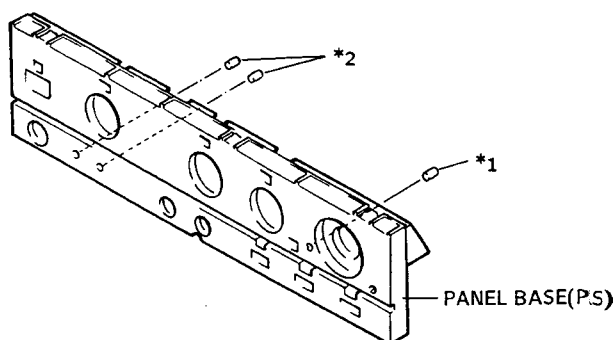
NOTES:

- 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.

The A-339/KU, HE, HEWZ, SD and A-339-S/HEWZ types are the same as the A-337/HE type with the exception of the following sections.

Mark	Symbol & Description	Part No.						Remarks
		A-337/HE	A-339/KU	A-339/HE	A-339/SD	A-339/HEWZ	A-339S/HEWZ	
●	AF COMPLEX assembly HEADPHONE assembly POWER SW assembly	AWZ2867 Non supply Non supply	AWZ3483 Non supply Non supply	AWZ3483 Non supply Non supply	AWZ3483 Non supply Non supply	AWZ3482 Non supply Non supply	AWZ3482 Non supply Non supply	
Δ	AC power cord	ADG1049	ADG1057	ADG1049	ADG1051	ADG1049	ADG1049	
Δ	Fuse (FU1 T2A)	AEK-405	.....	AEK-511	.....	AEK-511	AEK-511	
Δ	Fuse (FU1 T5A)	.....	AEK-308	.....	.....	.....	.....
Δ	Fuse (FU1, FU2 1.6A)	.....	.....	.....	AEK-122	.....	.....
Δ	Power transformer(T1)	ATS1278	ATS1343	ATS1345	ATS1344	ATS1345	ATS1345	
Δ	Capacitor(C1)	CQMXA473J100	CQMXA473J100	CQMXA473J100	CQMXA473J100	CQMXA104J100	CQMXA104J100	
	Resistors(R1, R2)	.....	.....	.....	.....	RD1/4PM100J	RD1/4PM100J	
	Resistor (R3)	.....	RD1/4PM010J	RD1/4PM010J	RD1/4PM010J	RD1/4PM010J	RD1/4PM010J	
Δ	AC socket(OUTLET 3P)	.....	AKP-515	.....	AKP-515	.....	.....
Δ	Voltage selector (S3)	.....	.....	.....	AKX-507	.....	.....
	Strain relief	AEC-882	.....	AEC-882	AEC-882	AEC-882	AEC-882	
	Screw	BBT30P060FZK	BBT30P060FZK	BBT30P060FZK	BBT30P060FZK	BBT30P060FZK	ABA-274	
	Rotary knob S (PLS)	AAB1155	AAB1155	AAB1155	AAB1155	AAB1155	AAB1238	
	Rotary knob L (PLS)	AAB1160	AAB1160	AAB1160	AAB1160	AAB1160	AAB1161	
	Rotary knob R (PLS)	AAB1162	AAB1162	AAB1162	AAB1162	AAB1162	AAB1163	
	Rotary knob M (PLS)	AAB1166	AAB1166	AAB1166	AAB1166	AAB1166	AAB1167	
	Push knob C	AAD1366	AAD1366	AAD1366	AAD1366	AAD1366	AAD1367	*1
	Push knob C	AAD1803	AAD1366	AAD1366	AAD1366	AAD1366	AAD1367	*2
	Push knob	AAD1536	AAD1536	AAD1536	AAD1536	AAD1536	AAD1538	
	Knob (POWER)	AAD1535	AAD1984	AAD1984	AAD1984	AAD1984	AAD2040	
	Packing case	AHD1863	AHD2098	AHD2075	AHD2075	AHD2075	AHD2076	
	Insulator assembly	AMR2140	AMR2141	AMR2140	AMR2141	AMR2140	AMR2140	
	Front panel	ANB1397	ANB1460	ANB1460	ANB1460	ANB1460	ANB1461	
	Bonnet case	AZN1799	AZN1799	AZN1799	AZN1799	AZN1799	AZN1800	
	Panel base (PLS)	AMB1651	AMB1651	AMB1651	AMB1651	AMB1651	AMB1652	
	Operating instructions (English, French, German, Italian, Swedish, Dutch, Spanish, Portuguese)	ARE1162	.....	ARE1196	.....	.....	.....
	Operating instructions (German)	.....	.....	.....	ARC1271	ARC1270	ARC1270	
	Operating instructions (English, French)	.....	ARE1197	.....	ARE1197	.....	.....

*1, *2: Push knob C are assembled as shown below.



2.2 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%).

560Ω	56 × 10 ¹	561	RD1/4PS	<table border="1"><tr><td>5</td><td>6</td><td>1</td></tr></table>	5	6	1	J
5	6	1							
47kΩ	47 × 10 ³	473	RD1/4PS	<table border="1"><tr><td>4</td><td>7</td><td>3</td></tr></table>	4	7	3	J
4	7	3							
0.5Ω	0R5		RD2H	<table border="1"><tr><td>0</td><td>R</td><td>5</td></tr></table>	0	R	5	K
0	R	5							
1Ω	010		RD1P	<table border="1"><tr><td>0</td><td>1</td><td>0</td></tr></table>	0	1	0	K
0	1	0							

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

5.62kΩ	562 × 10 ¹	5621	RD1/4SR	<table border="1"><tr><td>5</td><td>6</td><td>2</td><td>1</td></tr></table>	5	6	2	1	F
5	6	2	1							

2.2.1 For A-339/KU, HE, and SD types

<u>Mark</u>	<u>Symbol & Description</u>	<u>Part No.</u>	<u>Mark</u>	<u>Symbol & Description</u>	<u>Part No.</u>
HEADPHONE ASSEMBLY			Q223,Q224	TRANSISTOR	2SA1306
			Q225,Q226	TRANSISTOR	2SC2603
			Q227,Q228	TRANSISTOR	2SC1845
			Q229,Q230	TRANSISTOR	2SA992
			Q231,Q232	TRANSISTOR	2SA1145
SWITCHES					
S801	PUSH SWITCH	SUL5L2B2S			
RESISTORS			Q233,Q234	TRANSISTOR	2SA992
Δ R801,R802	METAL OXIDE RESISTOR	RS1PMF331J	Q237	TRANSISTOR	2SC1845
Δ R803	METAL OXIDE RESISTOR	RS1LMP561J	Q238	TRANSISTOR	2SA992
			Q291-Q294	TRANSISTOR	2SA992
			Q301,Q302	TRANSISTOR	2SC1845
OTHERS					
JACK		AKN1002	Q303,Q304	TRANSISTOR	2SC2458
			Q305	TRANSISTOR	2SA1048
			Q306	TRANSISTOR	2SC1815
			Q307	TRANSISTOR	2SC2458
POWER SW ASSEMBLY					
			D201,D202	ZENER DIODE	RD2.7ESB1
			D209-D216	DIODE	1SS252
			D217-D220	ZENER DIODE	RD8.2ESB1
			D301-D306	DIODE	1SS252
			D307	ZENER DIODE	RD15ESB
			D503,D504	ZENER DIODE	RD16ESB3
			D505,D506	DIODE	11E2
			D507	DIODE	D5SB20F
●AF COMPLEX ASSEMBLY (AWZ3483)					
SEMICONDUCTORS			SWITCHES		
IC101	OP-AMP-IC	M5220P	S701	SWITCH	ASU1016
			S702	SWITCH	ASU1002
			S703	PUSH SWITCH	SULL6S
			COIL		
Q203-Q208	TRANSISTOR	2SA1048	L401,L402	COIL	ATH1009
Q211,Q212	TRANSISTOR	2SC1845			
Q215-Q218	TRANSISTOR	2SA1048			
Q219,Q220	TRANSISTOR	2SC2705			
Q221,Q222	TRANSISTOR	2SC3298			

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
CAPACITORS				R215-R218 CARBON FILM RESISTOR	RDR1/4PM□□□J
	C103,C104 CERAMIC CAPACITOR	CCCSL221J50		R219-R234 CARBON FILM RESISTOR	RD1/4PM□□□J
	C107,C108 ELECTR.CAPACITOR	CEAS101M10		R237,R238 CARBON FILM RESISTOR	RDR1/4PM224J
	C109,C110 AUDIO FILM CAPACITOR	CFTXA683J50	△	R239-R242 FUSIBLE RESISTOR	RFA1/4PS101J
	C111,C112 AUDIO FILM CAPACITOR	CFTXA183J50	△	R243,R244 CARBON FILM RESISTOR	RD1/4PMF561J
	C113,C114 ELECTR.CAPACITOR	CEAS4R7M50			
	C117,C118 ELECTR.CAPACITOR	CEAS221M25	△	R245-R248 FUSIBLE RESISTOR	RFA1/4PS101J
	C119,C120 CERAMIC CAPACITOR	CKCYF103Z50	△	R249-R252 CARBON FILM RESISTOR	RD1/4PM□□□J
	C121,C122 MYLOR FILM CAPACITOR	CQMA122J50	△	R254 CARBONFILM RESISTOR	RD1/8PM122J
	C123,C124 ELECTR.CAPACITOR	CEAS100M50	△	R255,R256 CARBON FILM RESISTOR	RD1/4PM561J
	C143,C144 MYLOR FILM CAPACITOR	CQMA472K50	△	R257-R260 FUSIBLE RESISTOR	RFA1/4PS101J
	C201,C202 ELECTROLYTIC CAPACIT	CEEA2R2M50	△	R261-R264 FUSIBLE RESISTOR	RFA1/4PS470J
	C203,C204 CERAMIC CAPACITOR	CCCSL101K500	△	R265-R268 FUSIBLE RESISTOR	RFA1/4PS4R7J
	C205,C206 CERAMIC CAPACITOR	CCCSL101J50	△	R269,R270 RESISTOR (0.33, 5W)	ACN1063
	C207,C208 CERAMIC CAPACITOR	CCCSL470J50	△	R275-R278 CARBON FILM RESISTOR	RD1/4PM□□□J
	C209,C210 CERAMIC CAPACITOR	CCCSL181J50	△	R281-R284 FUSIBLE RESISTOR	RFA1/4PS331J
	C211,C212 ELECTROLYTIC CAPACIT	CEEA221M16	△	R285,R286 FUSIBLE RESISTOR	RFA1/4PS101J
	C213-C216 CERAMIC CAPACITOR	CCCSL120K500	△	R287,R288 FUSIBLE RESISTOR	RFA1/4PS4R7J
	C217,C218 ELECTR.CAPACITOR	CEAS101M10	△	R289,R290 FUSIBLE RESISTOR	RFA1/4PS101J
	C219-C222 ELECTR.CAPACITOR	CEAS3R3M100	△	R299 CARBON FILM RESISTOR	RD1/4PM100J
	C225,C226 ELECTR.CAPACITOR	CEAS331M10	△	R301,R302 CARBON FILM RESISTOR	RD1/4PMF222J
	C227-C230 CERAMIC CAPACITOR	CCCSL330K500	△	R308 CARBON FILM RESISTOR	RD1/4PMF101J
	C231,C232 CERAMIC CAPACITOR	CKCYB122K50		R311-R315 CARBON FILM RESISTOR	RD1/4PM□□□J
	C233-C236 ELECTR.CAPACITOR	CEAS100M50	△	R317-R327 CARBON FILM RESISTOR	RD1/4PM□□□J
	C237,C238 ELECTR.CAPACITOR	CEAS101M50	△	R330 CARBON FILM RESISTOR	RD1/4PMF010J
	C247,C248 AUDIO FILM CAPACITOR	CFTXA103J50	△	R401,R402 CARBON FILM RESISTOR	RD1/4PMFL101J
	C251-C254 CERAMIC CAPACITOR	CCCSL330K500	△	R403,R404 METAL OXIDE RESISTOR	RS1LMF331J
	C255 CERAMIC CAPACITOR	CCCSL680J50	△	R407,R408 CARBON FILM RESISTOR	RD1/4PMFL100J
	C256 CERAMIC CAPACITOR	CCDSL470J50	△	R501-R506 CARBON FILM RESISTOR	RD1/2PM□□□J
	C301,C302 ELECTR.CAPACITOR	CEANP2R2M50	△	R508 CARBON FILM RESISTOR	RD1/4PMF010J
	C303 ELECTROLYTIC CAPACIT	CEAS471M6	△	R509 METAL OXIDE RESISTOR	RS1LMF222J
	C304 CERAMIC CAPACITOR	CKCYF103Z50	△	R510 METAL OXIDE RESISTOR	RS1LMF272J
	C305 ELECTR.CAPACITOR	CEAS101M25		R517-R520 CARBONFILM RESISTOR	RD1/2PM221J
	C306-C308 ELECTR.CAPACITOR	CEASR47M50		R731,R732 CARBON FILM RESISTOR	RD1/4PM103J
	C401-C404 AUDIO FILM CAPACITOR	CFTXA104J50		VR201,VR202 VR	ACP1045
	C501,C502 ELECTR.CAPACITOR	CEAS470M25		VR701 VARIABLE(100K-20AX2)	ACT1062
	C505 ELECTROLYTIC CAPACIT	ACH1189			
	C506 ELECTROLYTIC CAPACIT	ACH1190		Other resistors	RD1/8PM□□□J
	C508 ELECTR.CAPACITOR	CEAS470M50			
	C509 ELECTR.CAPACITOR	CEAS220M50		OTHERS	
	C719,C720 CERAMIC CAPACITOR	CKCYB331K50		CN4 CONNECTOR(15P)	KPE15
	C725,C731 CERAMIC CAPACITOR	CKCYF103Z50		CN9 JUMPER CONNECTOR	KPC8
				RY301-RY303 RELAY	ASR1038
				PIN JACK(4P)	AKB1007
				PIN JACK(6P)	AKB1008
				PIN JACK(6P)	AKB1024
				SPEAKER TERMINAL 8-P	AKE1011
RESISTORS					
	R105,R106 CARBON FILM RESISTOR	RDR1/6PU100J			
	R121,R122 CARBON FILM RESISTOR	RDR1/4PM820J			
	R133,R134 CARBON FILM RESISTOR	RDR1/6PU471J			
	R141,R142 CARBON FILM RESISTOR	RDR1/6PU563J			
	R143,R144 CARBON FILM RESISTOR	RD1/4PM560J			
	R201-R204 CARBON FILM RESISTOR	RDR1/4PM□□□J			
	R205-R214 CARBON FILM RESISTER	RD1/4PM□□□J			

2.2.2 For A-339/HEWZ and A-339-S/HEWZ types

POWER SW ASSEMBLY

SWITCHES

△ S501 PUSH SWITCH ASG1035

CAPACITORS

△ C510,C511 CKA (0.01/AC400V) ACG1002

HEADPHONE ASSEMBLY

SWITCHES

S801 PUSH SWITCH SUL5L2B2S

CAPACITORS

C801,C802 CERAMIC CAPACITOR CKCYB392K50

RESISTORS

△ R801,R802 METAL OXIDE RESISTOR RS1PMF331J
△ R803 METAL OXIDE RESISTOR RS1LMF561J

OTHERS

JACK AKN1002

AF COMPLEX ASSEMBLY (AWZ3482)

SEMICONDUCTORS

IC101 OP-AMP-IC M5220P

Q203-Q208 TRANSISTOR 2SA1048
Q211,Q212 TRANSISTOR 2SC1845
Q215-Q218 TRANSISTOR 2SA1048
Q219,Q220 TRANSISTOR 2SC2705
Q221,Q222 TRANSISTOR 2SC3298

Q223,Q224 TRANSISTOR 2SA1306
Q225,Q226 TRANSISTOR 2SC2603
Q227,Q228 TRANSISTOR 2SC1845
Q229,Q230 TRANSISTOR 2SA992
Q231,Q232 TRANSISTOR 2SA1145

Q233,Q234 TRANSISTOR 2SA992
Q237 TRANSISTOR 2SC1845
Q238 TRANSISTOR 2SA992
Q291-Q294 TRANSISTOR 2SA992
Q301,Q302 TRANSISTOR 2SC1845

Q303,Q304 TRANSISTOR 2SC2458
Q305 TRANSISTOR 2SA1048
Q306 TRANSISTOR 2SC1815
Q307 TRANSISTOR 2SC2458

Mark Symbol & Description Part No.

D201,D202 ZENER DIODE RD2.7ESB1
D209-D216 DIODE 1SS252
D217-D220 ZENER DIODE RD8.2ESB1
D301-D306 DIODE 1SS252
D307 ZENER DIODE RD15ESB

D503,D504 ZENER DIODE RD16ESB3
D505,D506 DIODE 11E2
D507 DIODE D5SB20F

SWITCHES

S701 SWITCH ASU1016
S702 SWITCH ASU1002
S703 PUSH SWITCH SULL6S

COIL

L103-L106 AXIAL INDUCTOR LAU221K
L401,L402 COIL ATH1009

CAPACITORS

C103,C104 CERAMIC CAPACITOR CCCSL330J50
C107,C108 ELECTR.CAPACITOR CEAS101M10
C109,C110 AUDIO FILM CAPACITOR CFTXA683J50
C111,C112 AUDIO FILM CAPACITOR CFTXA183J50
C113,C114 ELECTR.CAPACITOR CEAS4R7M50

C115,C116 MYLOR FILM CAPACITOR CQMA392K50
C117,C118 ELECTR.CAPACITOR CEAS221M25
C119,C120 CERAMIC CAPACITOR CKCYF103Z50
C121,C122 MYLOR FILM CAPACITOR CQMA122J50
C123,C124 ELECTR.CAPACITOR CEAS100M50

C125,C126 CERAMIC CAPACITOR CCCSL101J50
C127,C128 CERAMIC CAPACITOR CCDSL221J50
C129 CERAMIC CAPACITOR CKPYX103N25
C139,C140 CERAMIC CAPACITOR CCDSL330J50
C141 CERAMIC CAPACITOR CKCYF103Z50

C201,C202 ELECTROLYTIC CAPACIT CEEA2R2M50
C203,C204 CERAMIC CAPACITOR CCCSL101K500
C205,C206 CERAMIC CAPACITOR CCCSL101J50
C207,C208 CERAMIC CAPACITOR CCCSL470J50
C209,C210 CERAMIC CAPACITOR CCCSL181J50

C211,C212 ELECTROLYTIC CAPACIT CEEA221M16
C213,C214 CERAMIC CAPACITOR CCCSL060D500
C217,C218 ELECTR.CAPACITOR CEAS101M10
C219-C222 ELECTR.CAPACITOR CEAS3R3M100
C225,C226 ELECTR.CAPACITOR CEAS331M10

C227-C230 CERAMIC CAPACITOR CCCSL330K500
C231,C232 CERAMIC CAPACITOR CKCYB122K50
C233-C236 ELECTR.CAPACITOR CEAS100M50
C237,C238 ELECTR.CAPACITOR CEAS101M50
C239-C242 POLYESTER CAPACITOR CQMXA472J100

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
	C244 CERAMIC CAPACITOR	CKDYX104M25	△	R308 CARBON FILM RESISTOR	RD1/4PMF101J
	C245,C246 CERAMIC CAPACITOR	CKCYB331K50		R311-R315 CARBON FILM RESISTOR	RD1/4PM□□□J
	C247,C248 AUDIO FILM CAPACITOR	CFTXA103J50		R317-R327 CARBON FILM RESISTOR	RD1/4PM□□□J
	C251-C254 CERAMIC CAPACITOR	CCCSL680K500	△	R330 CARBON FILM RESISTOR	RD1/4PMF010J
	C255 CERAMIC CAPACITOR	CCCSL680J50	△	R401,R402 CARBON FILM RESISTOR	RD1/4PMFL101J
	C256 CERAMIC CAPACITOR	CCDSL470J50	△	R403,R404 METAL OXIDE RESISTOR	RS1LMF331J
	C301,C302 ELECTR.CAPACITOR	CEAS2R2M50	△	R407,R408 CARBON FILM RESISTOR	RD1/4PMFL100J
	C303 ELECTROLYTIC CAPACIT	CEAS471M6		R501-R506 CARBON FILM RESISTOR	RD1/2PM□□□J
	C304 CERAMIC CAPACITOR	CKCYF103Z50	△	R508 CARBON FILM RESISTOR	RD1/4PMF010J
	C305 ELECTR.CAPACITOR	CEAS101M25	△	R509,R510 METAL OXIDE RESISTOR	RS1LMF□□□J
	C306-C308 ELECTR.CAPACITOR	CEASR47M50		R517-R520 CARBONFILM RESISTOR	RD1/2PM221J
	C401,C402 AUDIO FILM CAPACITOR	CFTXA473J50		R731,R732 CARBON FILM RESISTOR	RD1/4PM103J
	C501,C502 ELECTR.CAPACITOR	CEAS470M25		VR201,VR202 VR	ACP1045
	C505 ELECTROLYTIC CAPACIT	ACH1189		VR701 VARIABLE(100K-20AX2)	ACT1062
	C506 ELECTROLYTIC CAPACIT	ACH1190		Other resistors	RD1/8PM□□□J
	C508 ELECTR.CAPACITOR	CEAS470M50	OTHERS		
	C509 ELECTR.CAPACITOR	CEAS220M50		CN4 CONNECTOR(15P)	KPE15
	C703-C708 CERAMIC CAPACITOR	CCCSL271J50		CN9 JUMPER CONNECTOR	KPC8
	C711,C712 CERAMIC CAPACITOR	CCCSL271J50		RY301-RY303 RELAY	ASR1038
	C715,C716 CERAMIC CAPACITOR	CCCSL271J50		PIN JACK(4P)	AKB1007
				PIN JACK(6P)	AKB1008
	C719,C720 CERAMIC CAPACITOR	CCCSL271J50		PIN JACK(6P)	AKB1024
	C725 CERAMIC CAPACITOR	CCCSL221J50		SPEAKER TERMINAL 8-P	AKE1011
	C727,C728 CERAMIC CAPACITOR	CCCSL221J50			
	C731 CERAMIC CAPACITOR	CKCYF103Z50			

RESISTORS

	R121,R122 CARBON FILM RESISTOR	RDR1/4PM820J
	R133,R134 CARBON FILM RESISTOR	RDR1/6PU471J
	R141,R142 CARBON FILM RESISTOR	RDR1/6PU563J
	R143,R144 CARBON FILM RESISTOR	RD1/4PM560J
	R201-R204 CARBON FILM RESISTOR	RDR1/4PM□□□J
	R205-R214 CARBON FILM RESISTOR	RD1/4PM□□□J
	R215-R218 CARBON FILM RESISTOR	RDR1/4PM□□□J
	R219-R234 CARBON FILM RESISTOR	RD1/4PM□□□J
	R237,R238 CARBON FILM RESISTOR	RDR1/4PM224J
△	R239-R242 FUSIBLE RESISTOR	RFA1/4PS101J
△	R243,R244 CARBON FILM RESISTOR	RD1/4PMF561J
△	R245-R248 FUSIBLE RESISTOR	RFA1/4PS101J
	R249-R252 CARBON FILM RESISTOR	RD1/4PM□□□J
	R255,R256 CARBON FILM RESISTOR	RD1/4PM561J
△	R257-R260 FUSIBLE RESISTOR	RFA1/4PS101J
△	R261-R264 FUSIBLE RESISTOR	RFA1/4PS470J
△	R265-R268 FUSIBLE RESISTOR	RFA1/4PS4R7J
△	R269,R270 RESISTOR (0.33, 5W)	ACN1063
	R275-R278 CARBON FILM RESISTOR	RD1/4PM□□□J
△	R281-R284 FUSIBLE RESISTOR	RFA1/4PS331J
△	R285,R286 FUSIBLE RESISTOR	RFA1/4PS101J
△	R287,R288 FUSIBLE RESISTOR	RFA1/4PS4R7J
△	R289,R290 FUSIBLE RESISTOR	RFA1/4PS101J
	R299 CARBON FILM RESISTOR	RD1/4PM100J
△	R301,R302 CARBON FILM RESISTOR	RD1/4PMF222J

A-339

2.3 SCHEMATIC DIAGRAM

* Marks are difference between two assemblies.

	A-339/KU,HE,SD	A-339/HEWZ, A-339-S/HEWZ
AF COMPLEX ASS'Y	AWZ3483	AWZ3482
L103-L106	VACANT(OPEN)	LAU221K
C103,C104	CCCSL221J50	CCCSL330J50
C115,C116	VACANT(OPEN)	CQMA392K50
C125,C126	VACANT(OPEN)	CCCSL101J50
C127,C128	VACANT(OPEN)	CCDSL221J50
C129	VACANT(OPEN)	CKPYX103N25
C139,C140	VACANT(OPEN)	CCCSL330J50
C141	VACANT(OPEN)	CKCYF103Z50
C143,C144	VACANT(OPEN)	CQMA472K50
C213,C214	CCCSL120K500	CCCSL060D500
C215,C216	CCCSL120K500	VACANT(SHORT)
C239-C242	VACANT(OPEN)	CQMXA472J100
C244	VACANT(OPEN)	CKDYX104M25
C245,C246	VACANT(OPEN)	CKCYB331K50
C251-C254	CCCSL330K500	CCCSL680K500
C301,C302	CEANP2R2M50	CEAS2R2M50
C401,C402	CFTXA104J50	CFTXA473J50
C403,C404	CFTXA104J50	VACANT(SHORT)
C703-C708	VACANT(OPEN)	CCCSL271J50
C711,C712	VACANT(OPEN)	CCCSL271J50
C715,C716	VACANT(OPEN)	CCCSL271J50
C719,C720	CKCYB331K50	CCCSL271J50
C725	CKCYF103Z50	CCDSL221J50
C727,C728	VACANT(OPEN)	CCCSL221J50
R103	VACANT(OPEN)	RD1/8PM4R7J
R105,R106	RDR1/6PU100J	RD1/8PM332J
R719,R720	VACANT(SHORT)	RD1/8PM331J
R724	VACANT(OPEN)	RD1/8PM100J
HEAD PHONE ASS'Y	Non supply	Non supply
C801,C802	VACANT(OPEN)	CKCYB392K50
OTHERS		
R1, R2	VACANT(OPEN)	RD1/4PM100J

1.RESISTORS :

Indicated in Ω , 1/8, 1/6, 1/4W., $\pm 5\%$ tolerance unless otherwise noted k; k Ω , M; M Ω , (F); $\pm 1\%$, (G); $\pm 2\%$, (K); $\pm 10\%$, (M); $\pm 20\%$ tolerance.

2.CAPACITORS :

Indicated in capacity (μ F)/voltage(V) unless otherwise noted p; pF. Indication without voltage is 50V except electrolytic capacitor.

3.VOLTAGE, CURRENT :

\square V ; Signal voltage at 40W+40W, 8 Ω /50W+50W, 4 Ω output(1kHz).

\square ; DC voltage (V) at no input signal.

Value in () is DC voltage at rated power.

\leftarrow mA; DC current at no input signal.

4.OTHERS :

\odot ; 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.

5.SWITCHES : (The underline indicates the switch position)

S602 : LOUDNESS(ON-OFF)

S701 : FUNCTION SEL(TAPE2-TAPE1-CD-PHONO-TUNER-LINE)

S702 : REC SEL(2 \rightarrow 1-1 \rightarrow 2-SOURCE-OFF-CD-TUNER)

S703 : SULLES(ON-OFF)

S801-1 : SPEAKERS-A(ON-OFF)

S801-2 : SPEAKERS-B(ON-OFF)

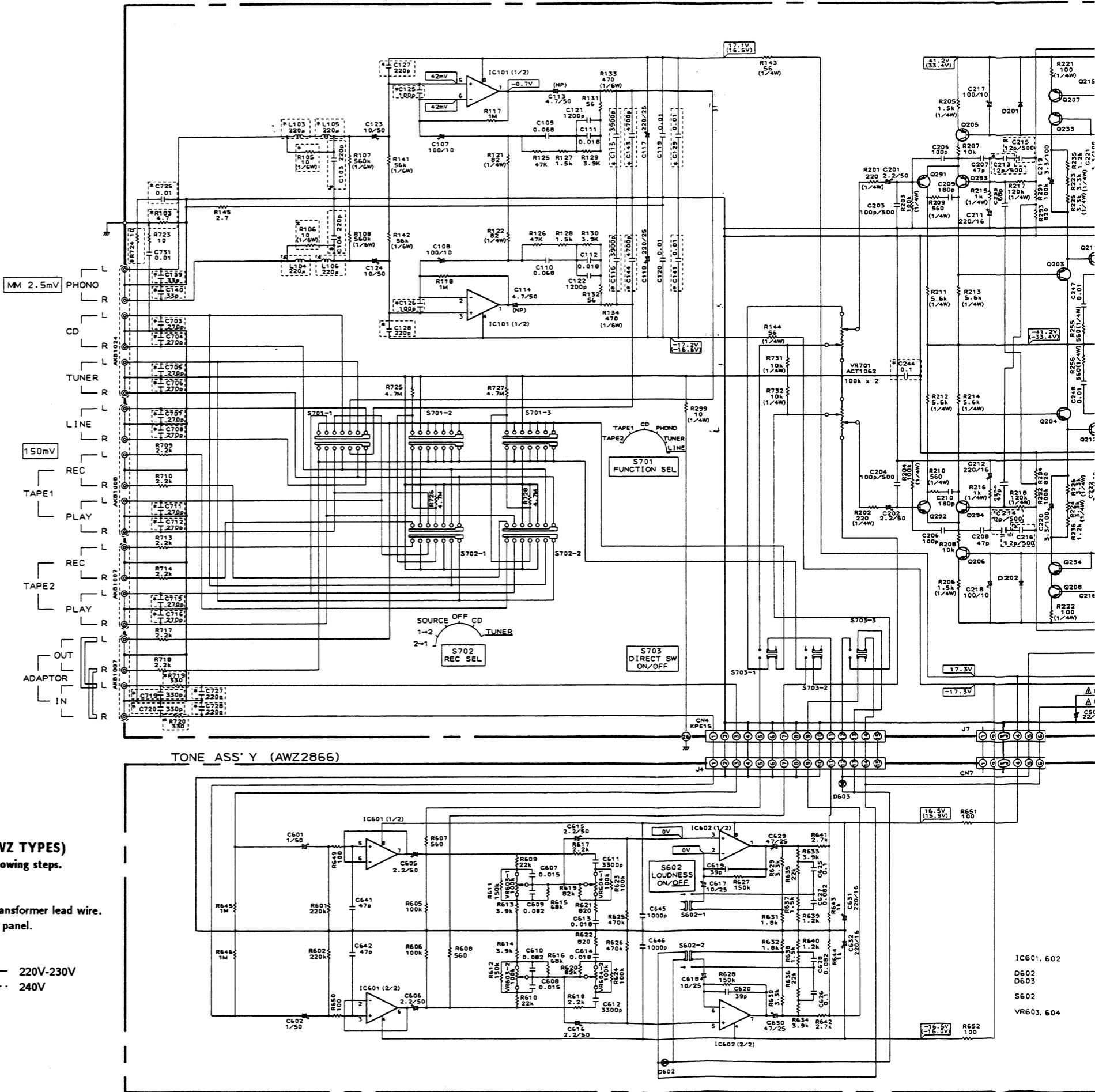
S501 : POWER SW(ON-OFF)

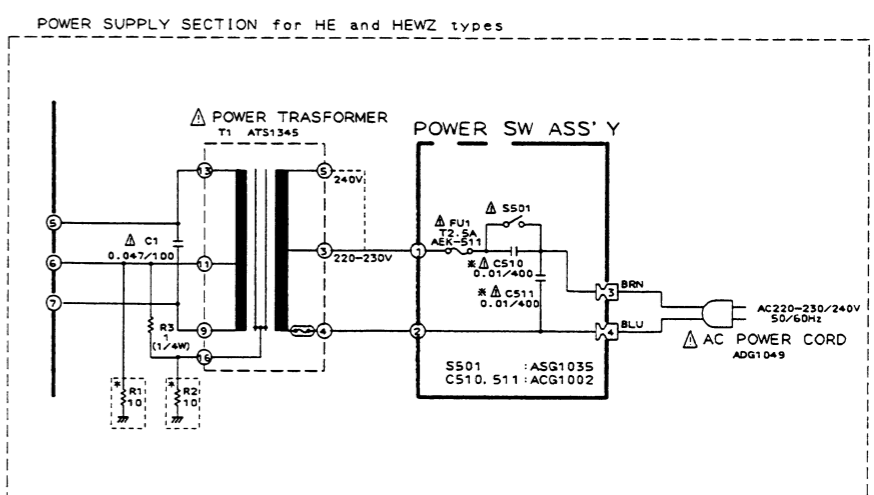
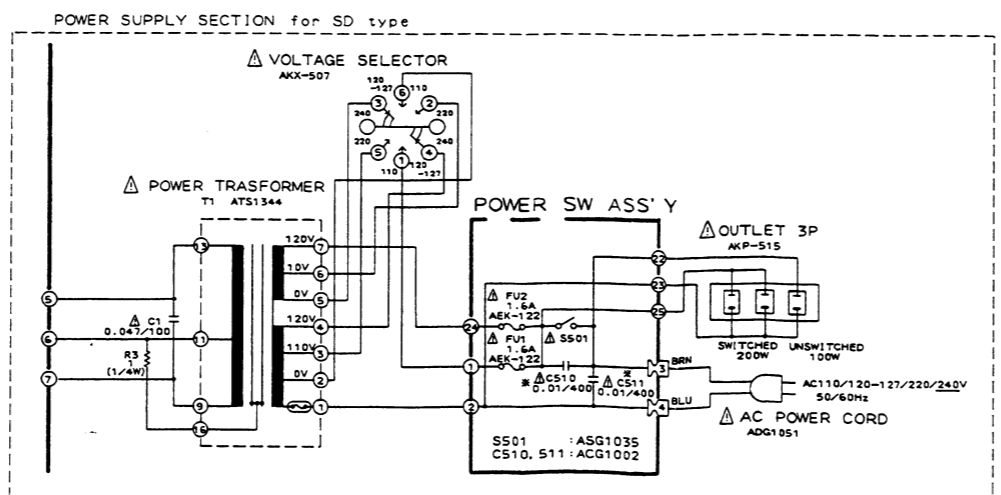
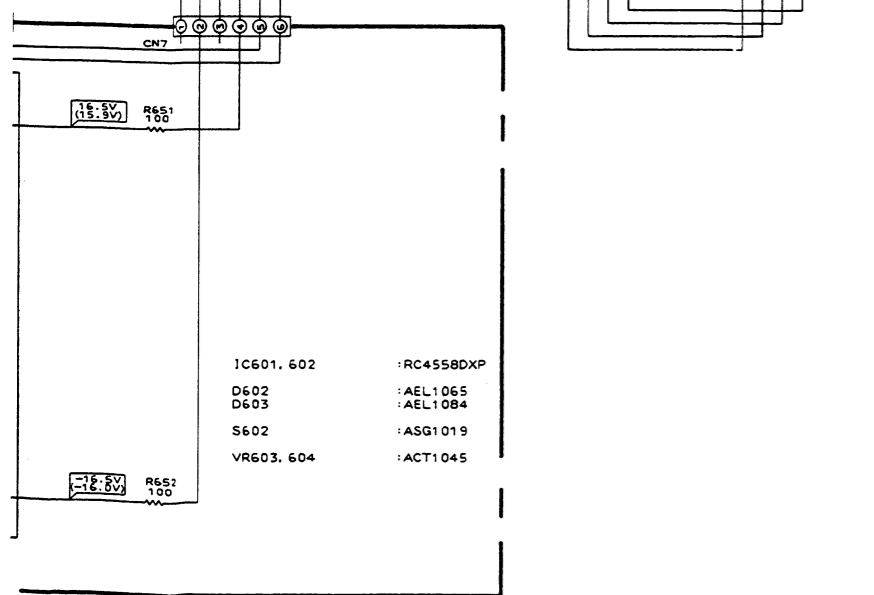
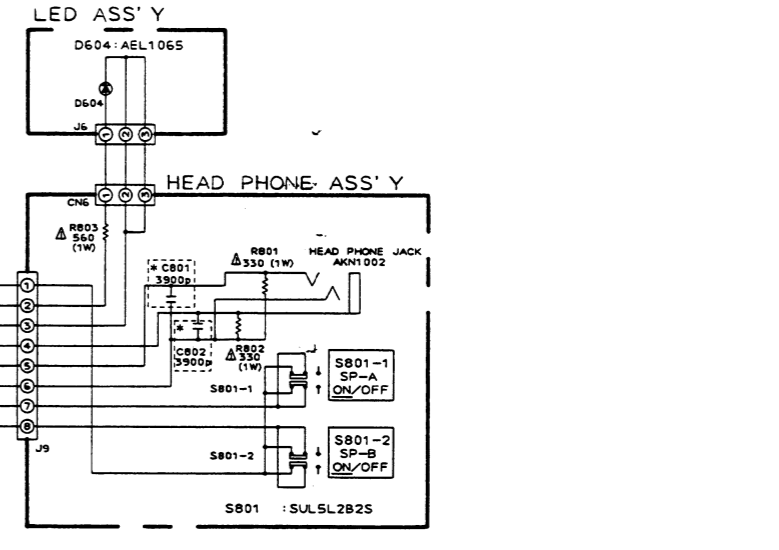
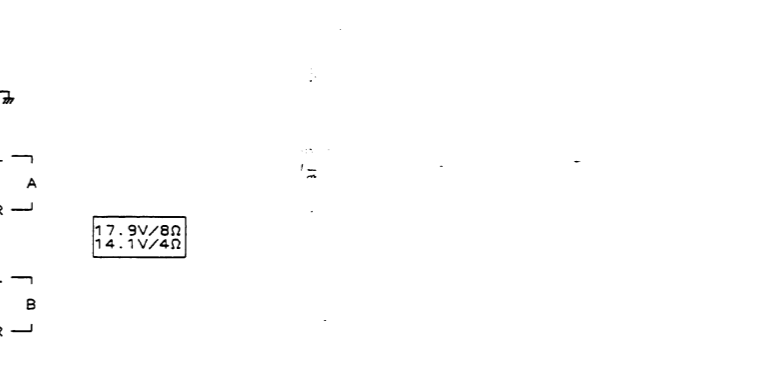
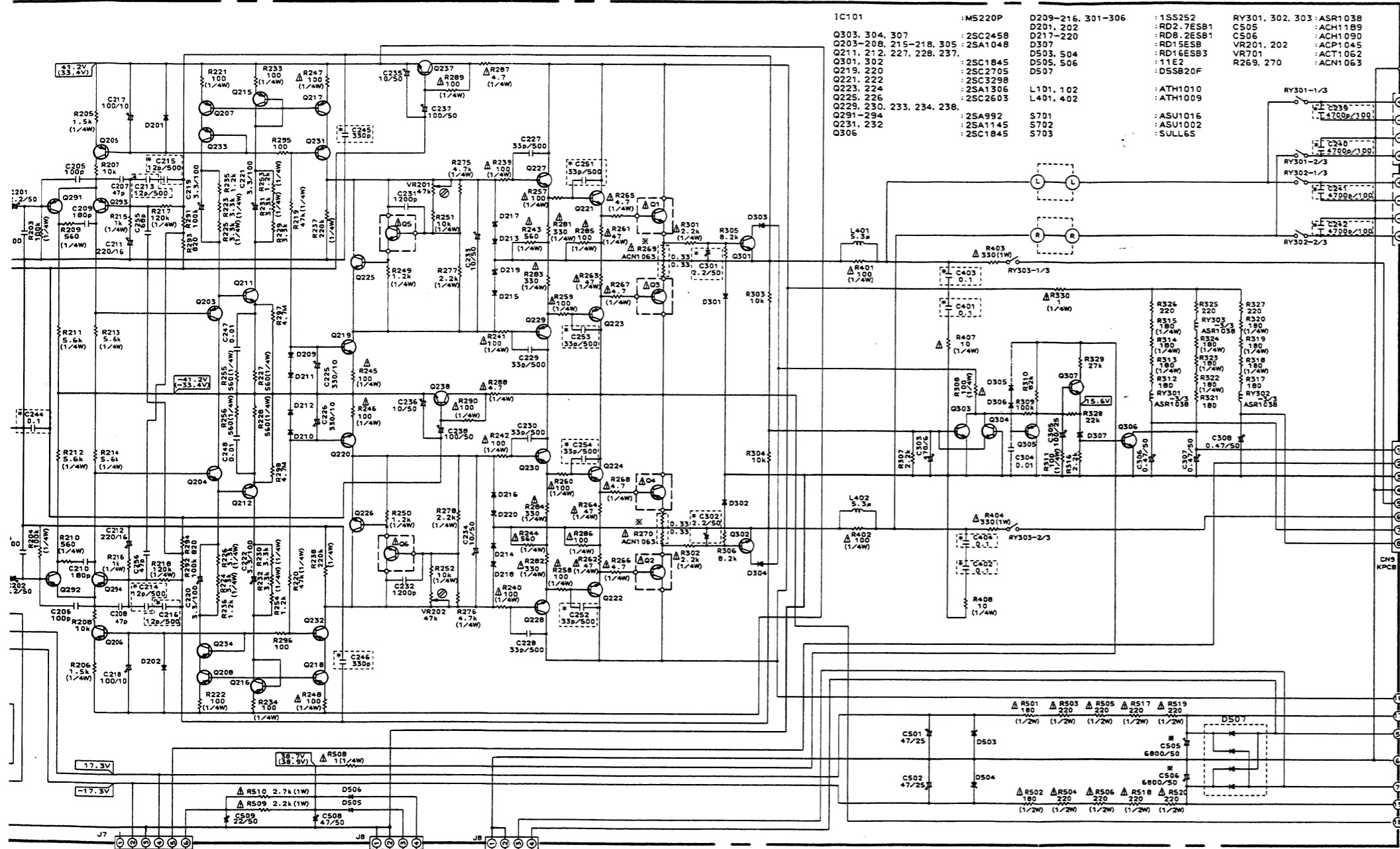
Line Voltage Selection (HE and HEWZ TYPES)

Line voltage can be changed with the following steps.

1. Disconnect the AC power cord.
2. Remove the top cover.
3. Change the connection of the power transformer lead wire.
4. Stick the line voltage label on the rear panel.

Parts No.	Description	
AXX-193	220V label	—— 220V-230V
AXX-192	240V label	----- 240V

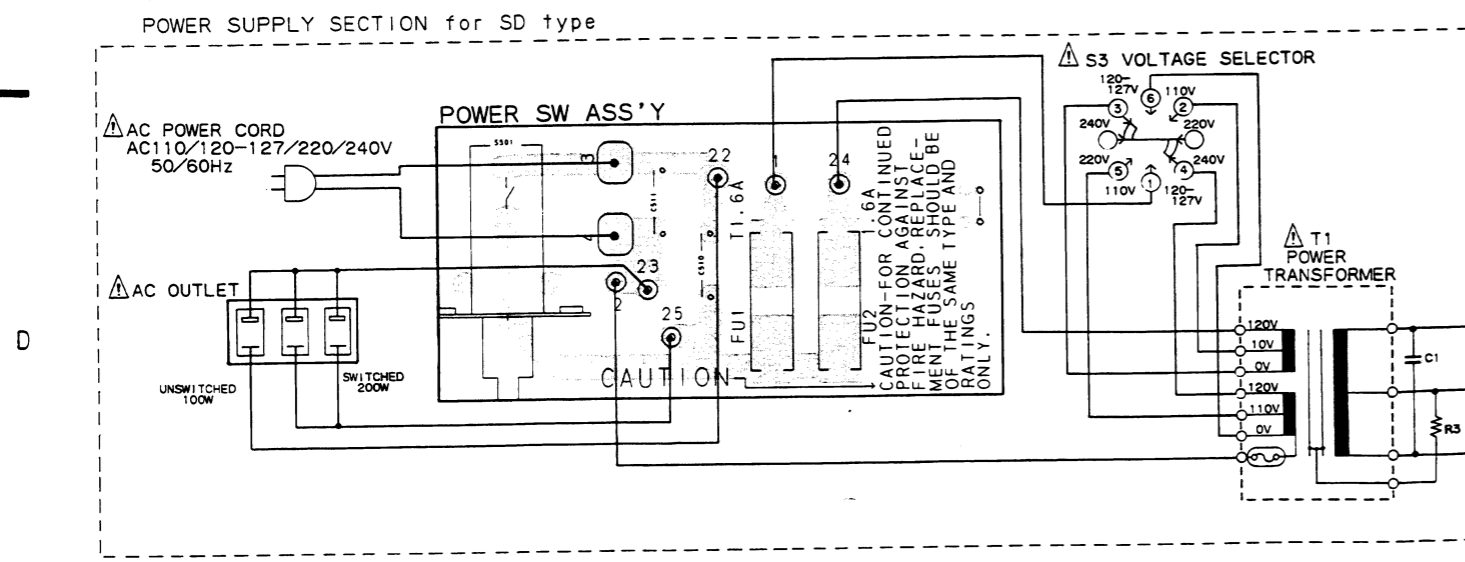
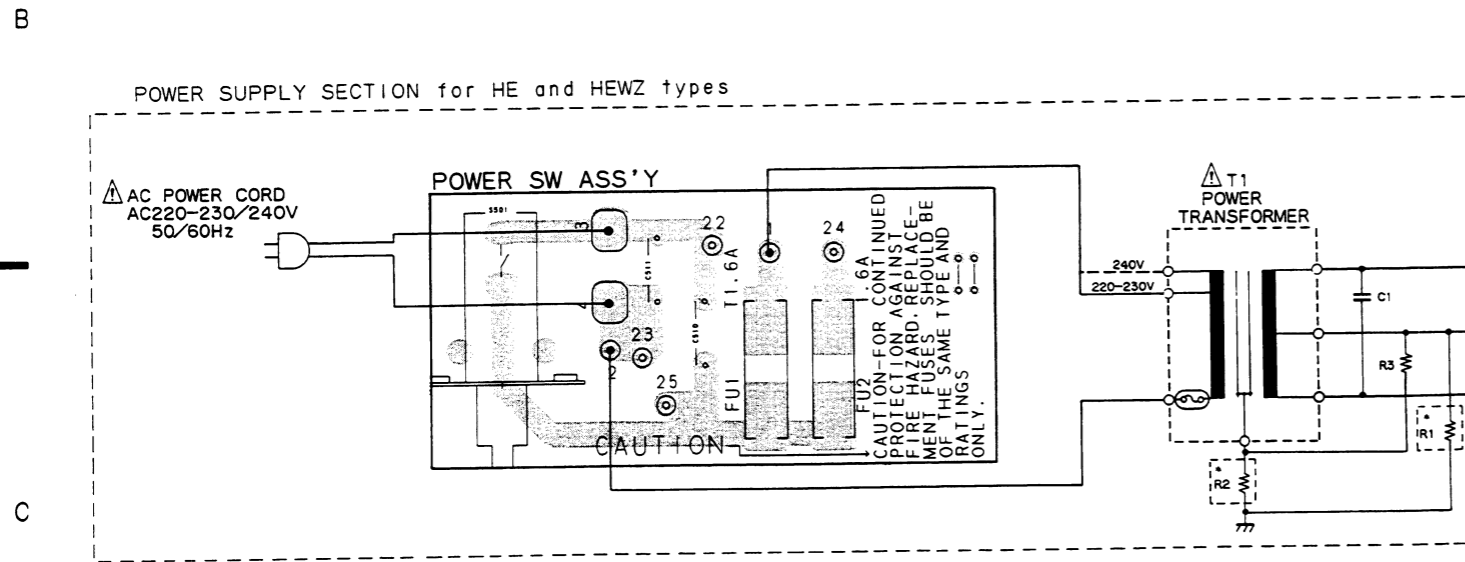
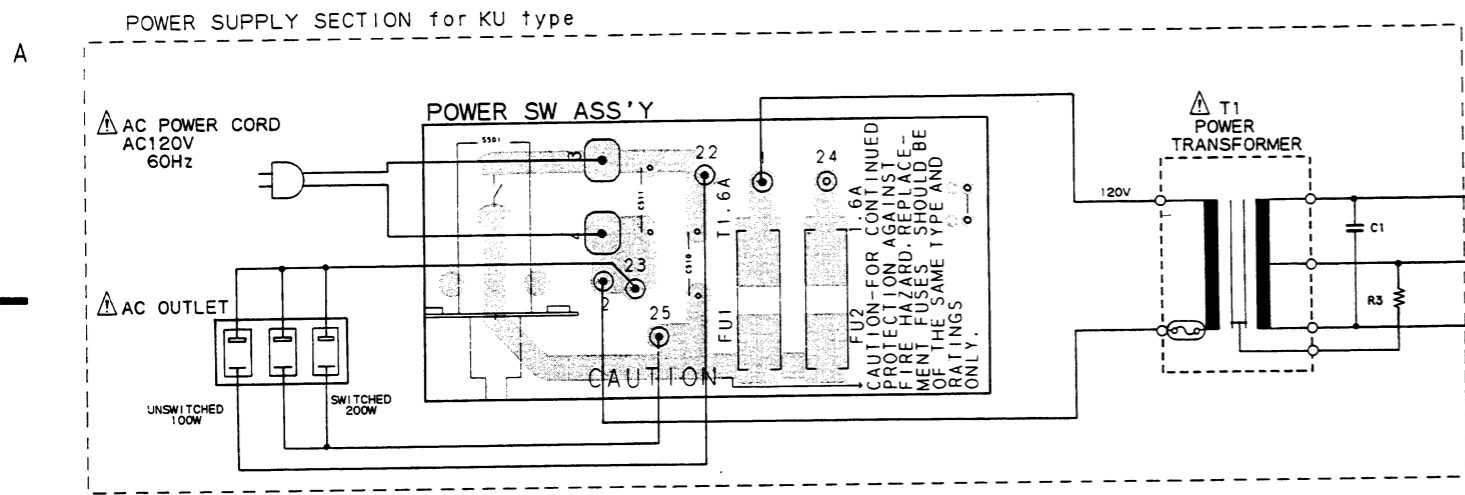




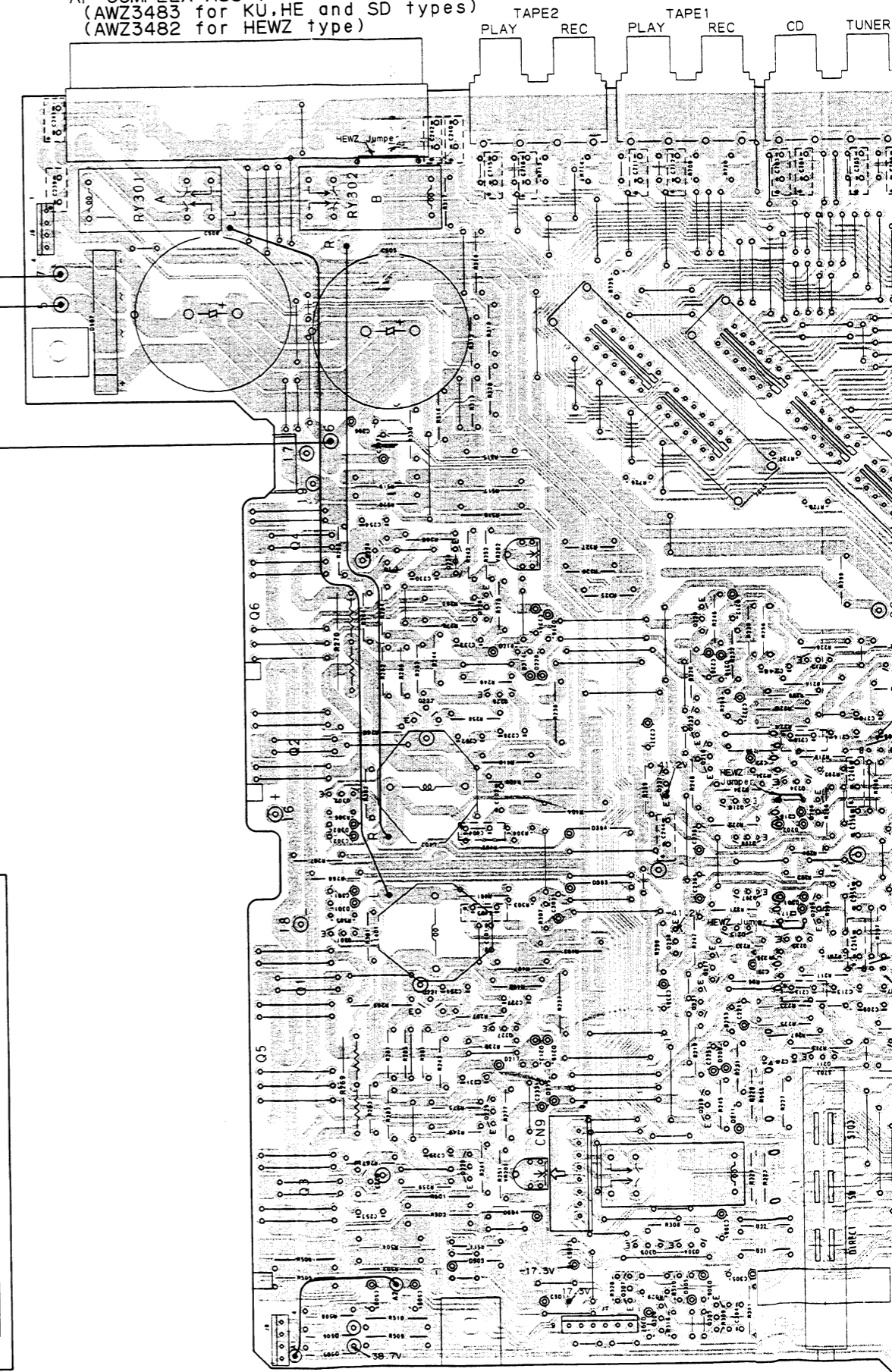
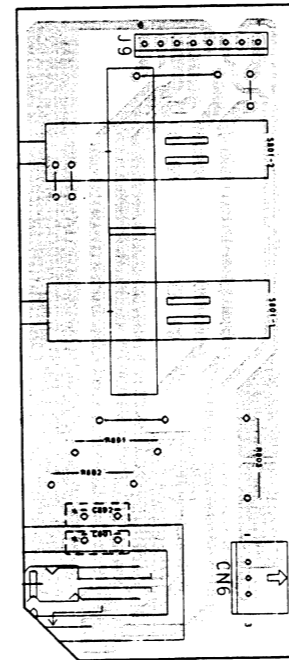
2.4 P.C.BOARDS CONNECTION DIAGRAM

• Parts with an asterisk (*) are different according to versions, KU, HE, SD or HEWZ.
Refer to page 23 for details.

AF COMPLEX ASS'Y
(AWZ3483 for KU, HE and SD types)
(AWZ3482 for HEWZ type)

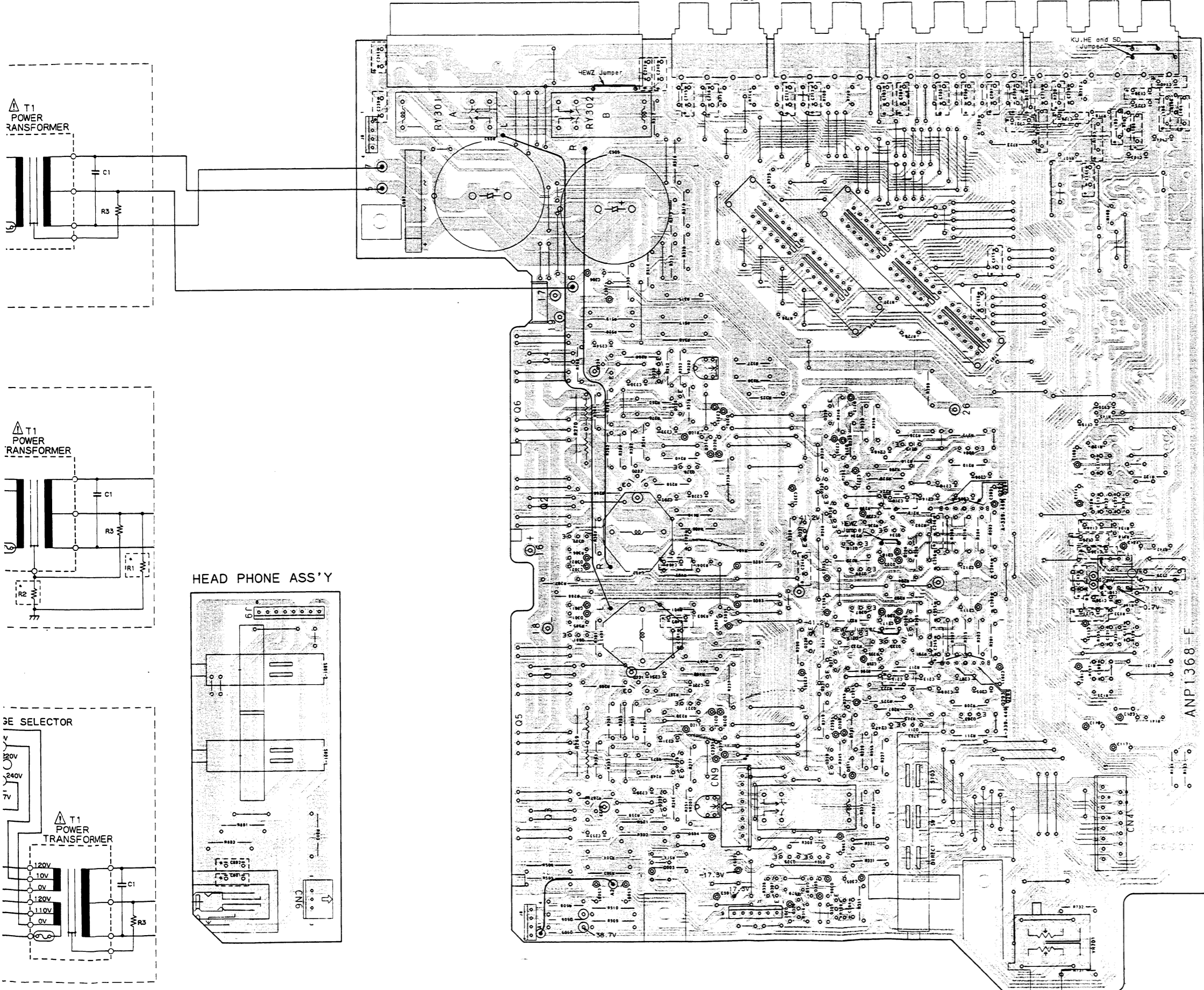


HEAD PHONE ASS'Y



Mount according to

AF COMPLEX ASS'Y
(AWZ3483 for KU,HE and SD types)
(AWZ3482 for HEWZ type)



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 O		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 ⊙ (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.

VR202 Q224 Q230
Q226 Q220
Q212 Q204
Q228 Q222
Q232 Q294 Q292
Q218 Q237 Q234
Q302 Q216
Q206
Q208
IC101
Q207
Q205
Q301 Q215
Q238 Q233
Q217
Q293 Q291
Q221 Q231
Q227
Q203
Q211
Q225 Q219
VR201 Q229 Q223
Q303 Q304
Q307
Q306 Q305
VR701

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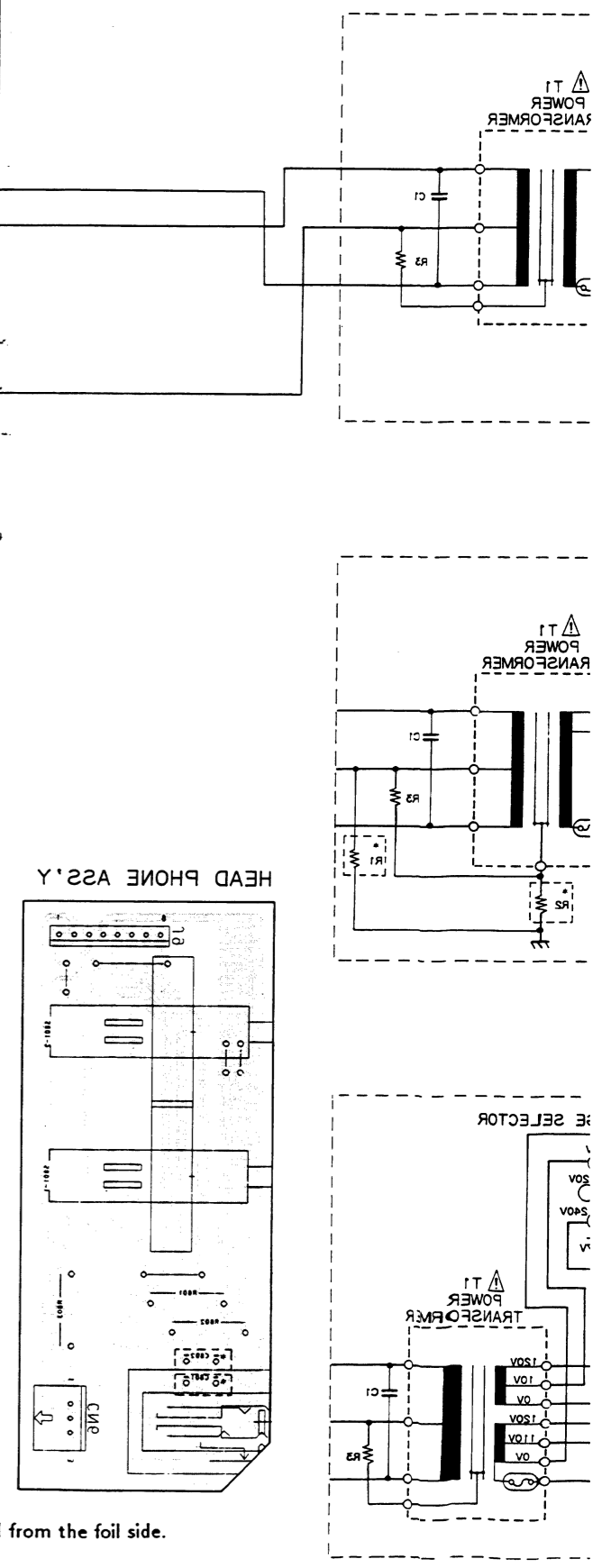
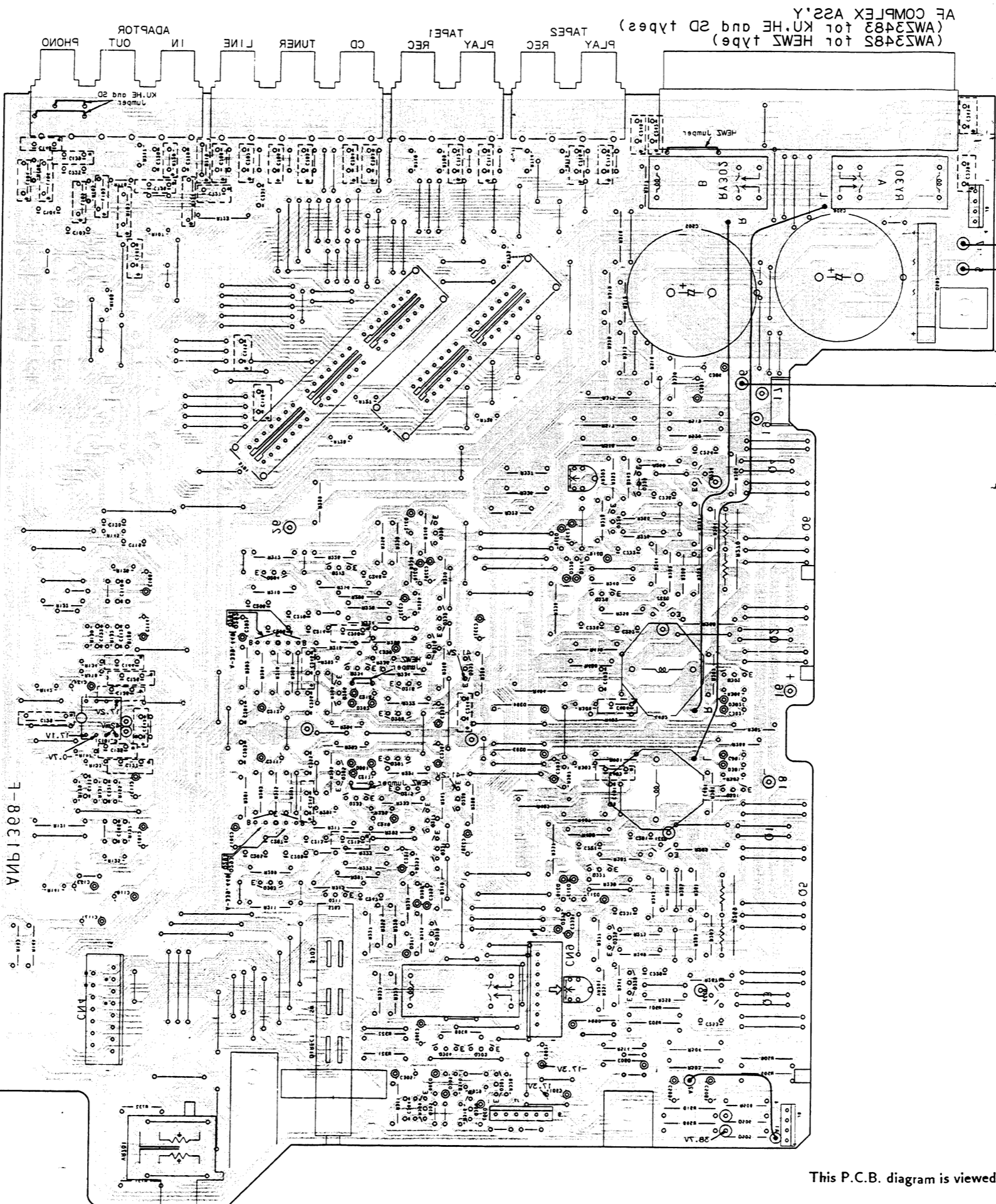
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Q308 Q302
Q301 Q301
Q302 Q302
Q303 Q303
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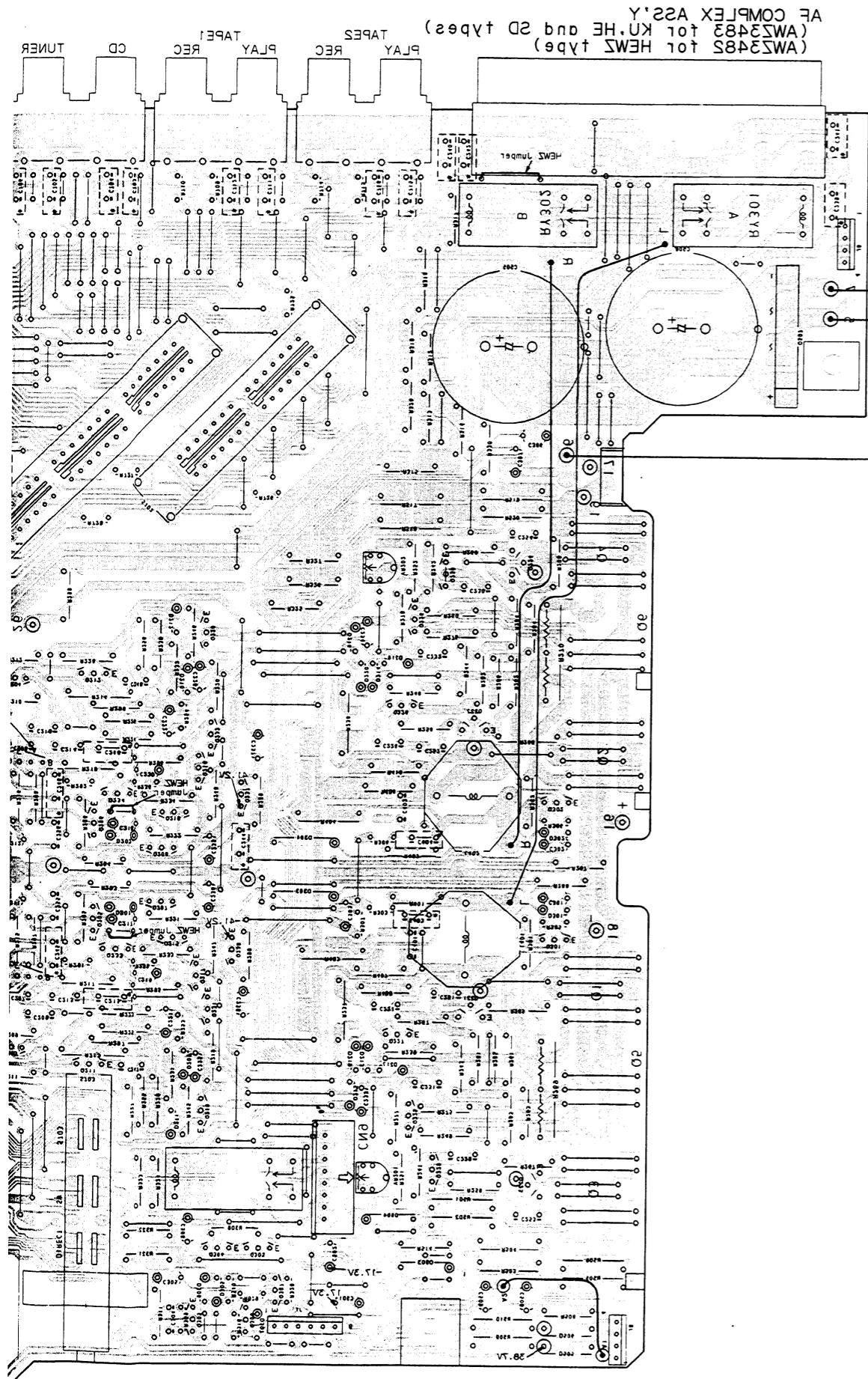
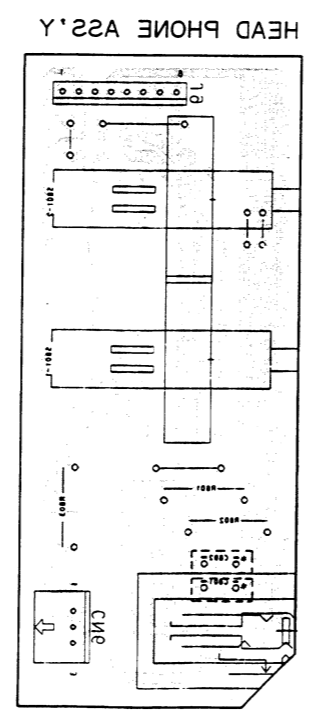
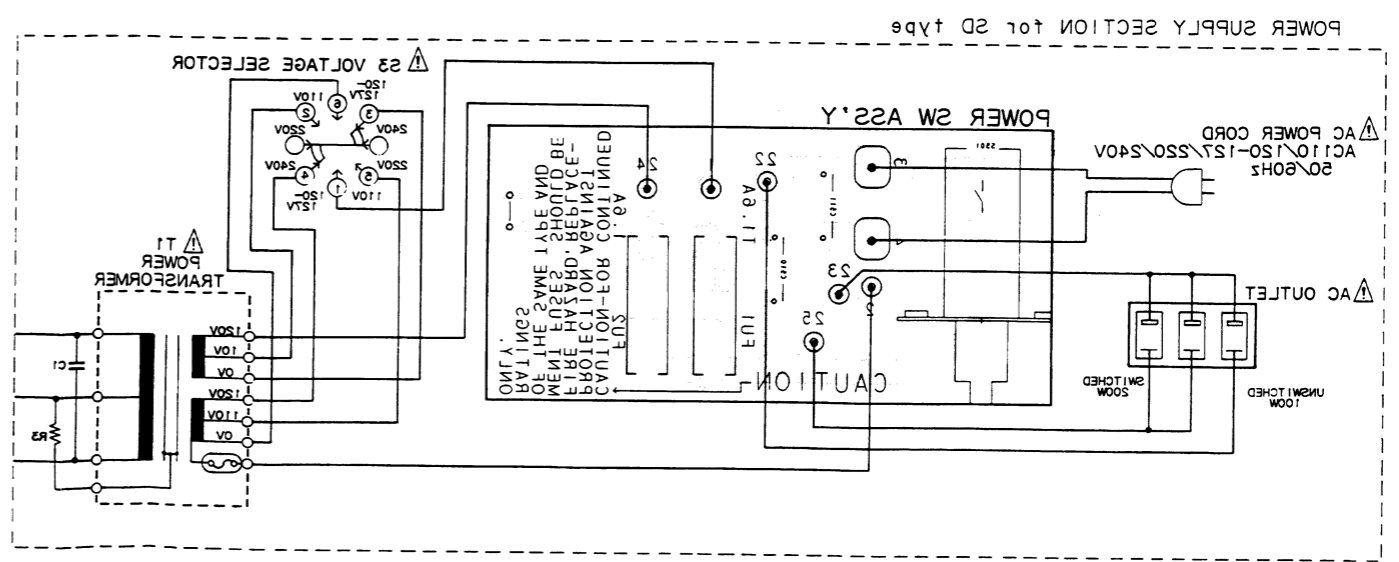
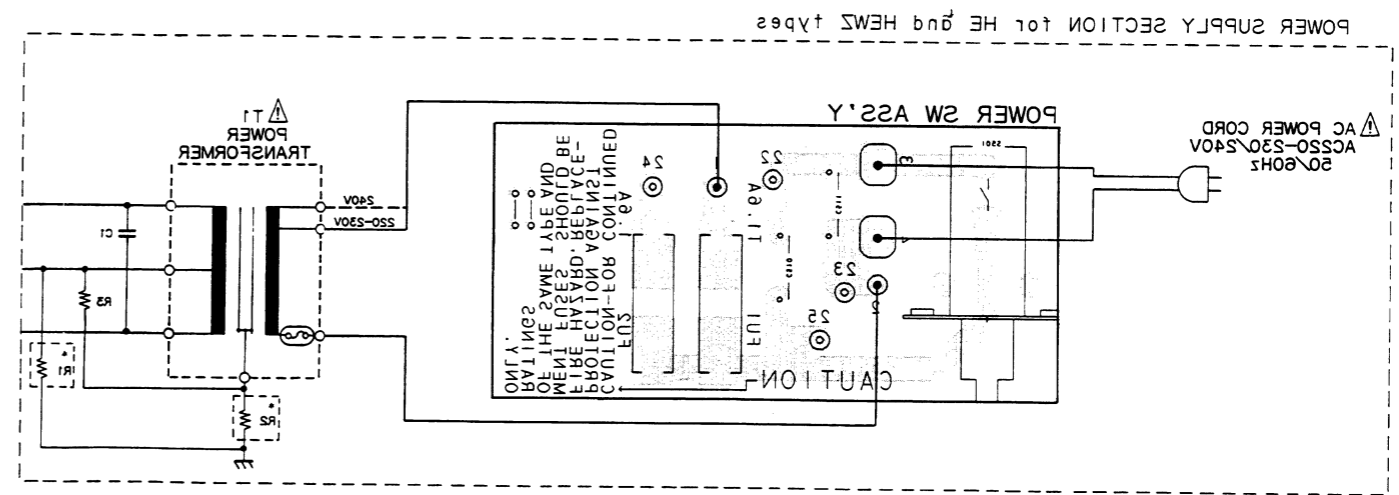
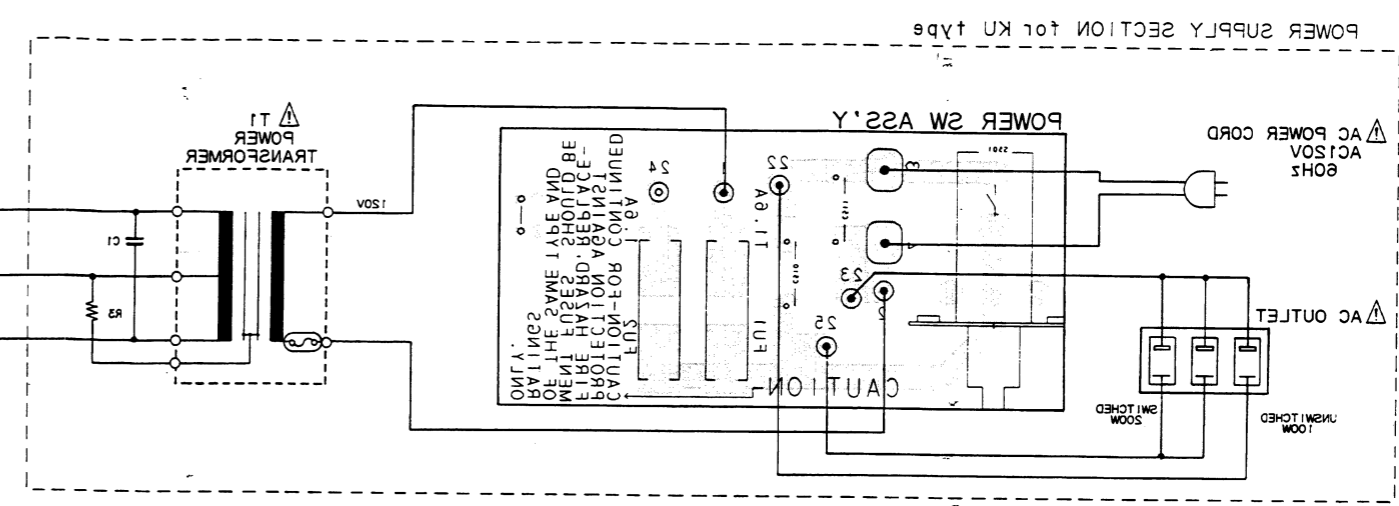


This P.C.B. diagram is viewed from the foil side.

not according to

2.4 P.C. BOARDS CONNECTION DIAGRAM

Refer to page 23 for details.
 Versions, KU, HE, 2D or HEWZ.
 * Parts with an asterisk (*) are different according to AF COMPLEX ASS'Y (AW3483 for KU, HE and 2D types) (AW3485 for HEWZ type)



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

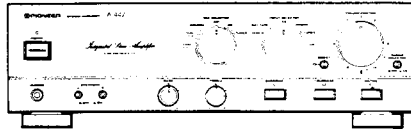
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Service Manual

PIONEER
The future of sound and vision.



The illustration shows model A-447.
L'illustration montre le modèle A-447.

ORDER NO.
ARP2043

STEREO AMPLIFIER

A-447

A-447-S

A-337

A-337-S

MODEL A-447, A-447-S, A-337 AND A-337-S HAVE FOLLOWING VERSIONS:

Type	Applicable model				Power requirement	Export destination
	A-447	A-447-S	A-337	A-337-S		
HE	○	—	○	—	AC220V, 240V (switchable) *	European continent
HEWZ	○	○	○	○	AC220V, 240V (switchable) *	West Germany
SD	○	—	○	—	AC110V, 120-127V, 220V, 240V (switchable)	Kingdom of Saudi Arabia and General market
KUC	—	—	○	—	AC120V only	U.S.A. and Canada
KC	○	—	—	—	AC120V only	Canada

* Change the primary wiring.

- This manual is applicable to the A-447/HE, HEWZ, A-447-S/HEWZ, A-337/HE, HEWZ and A-337-S/HEWZ types.
- As to the A-447/HEWZ and A-447-S/HEWZ types, refer to pages 34 - 36.
- The A-447-S is the same as the A-447 except for color.
- As to the A-337/HEWZ and A-337-S/HEWZ types, refer to pages 37 - 39.
- The A-337-S is the same as the A-337 except for color.
- Ce manuel pour le service comprend les explications de réglage en français.
- Este manual de servicio trata del método ajuste escrito en español.

CONTENTS

1. SAFETY INFORMATION	2	5. FOR A-447/HEWZ AND A-447-S/HEWZ TYPES	35
2. EXPLODED VIEWS, PACKING AND PARTS LIST	3	6. FOR A-337/HEWZ AND A-337-S/HEWZ TYPES	38
3. FOR A-447/HE TYPE	7	7. PANEL FACILITIES	41
4. FOR A-337/HE TYPE	23	8. SPECIFICATIONS	44

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SEV MAY. 1990 Printed in Jap

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

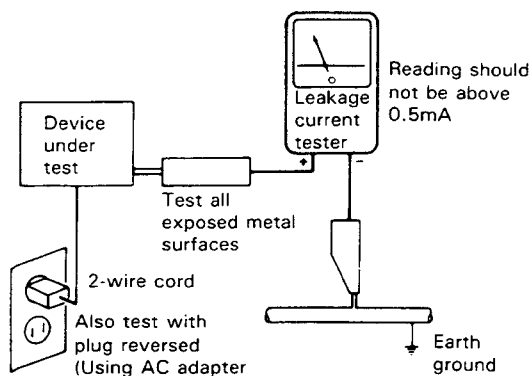
(FOR USA MODEL ONLY)

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.



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 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.

2. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES:

- Parts without part number cannot be supplied.
- The \triangle 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.

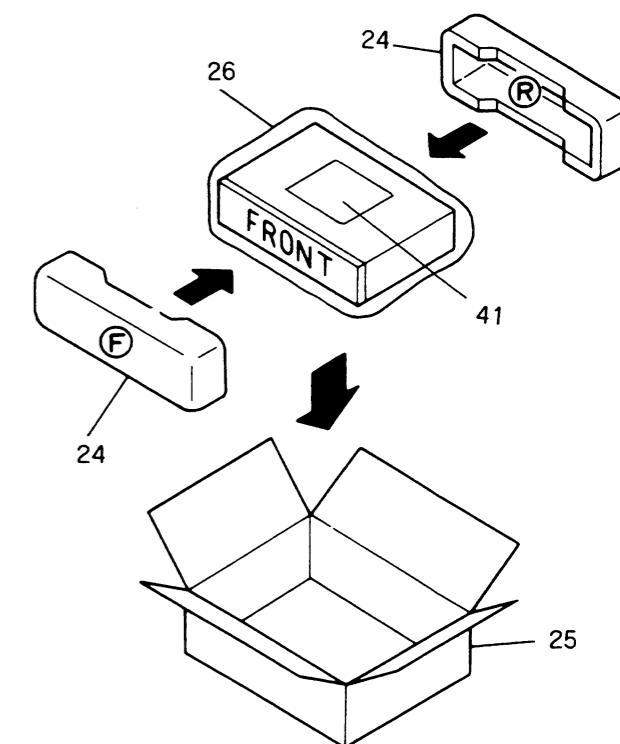
2.1 PARTS LIST OF A-447/HE

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	ROTARY KNOB S (PLS)	AAB1155		36	METAL BONNET	AZN1799
	2	ROTARY KNOB L (PLS)	AAB1160		37	BOTTOM PLATE	
	3	ROTARY KNOB R (PLS)	AAB1162		38	P.C.B HOLDER	
	4	ROTARY KNOB M (PLS)	AAB1164		39	HEAT SINK	
	5	PUSH KNOB C	AAD1366		40	ROD	ANR-879
	6	KNOB (POWER)	AAD1535		41	OPERATING INSTRUCTIONS	ARE1162
	7	PUSH KNOB	AAD1536		42	SCREW	BBT30P060FZK
	8	PUSH KNOB C	AAD1803		43	NUTS	NK90FZB
	9	NAME PLATE (METAL)	AAM1029		44	SCREW	VMZ30P060FCU
	10	SCREW	ABA-298	\triangle	45	C1 CAPACITOR	CQMXA104J100
	11	SCREW (STEEL)	ABA1009	\triangle	46	FU1 FUSE(T2.5A)	AEK-403
	12	SCREW (STEEL)	ABA1011	\triangle	47	Q1 TRANSISTOR	2SC3281
	13	SCREW (STEEL)	ABA1016	\triangle	48	Q2 TRANSISTOR	2SC3281
	14	SCREW (STEEL)	ABA1048	\triangle	49	Q3 TRANSISTOR	2SA1302
	15	SCREW (STEEL)	ABA1050	\triangle	50	Q4 TRANSISTOR	2SA1302
	16	SCREW 3X14	ABA1082	\triangle	51	Q5 TRANSISTOR	2SC4137
	17	SPRING B	ABH-052	\triangle	52	Q6 TRANSISTOR	2SC4137
	18	SPRING B	ABH1034		53	S1 SWITCH	ASU1035
	19	NUT	ABN-065		54	S2 SWITCH	ASU1036
\triangle	20	AC POWER CORD	ADG1049	\triangle	55	T1 POWER TRANSFORMER	ATS1277
	21	RIVET	AEC-441		56	TONE ASS'Y	AWZ2858
	22	STRAIN RELIEF	AEC-882		57	AF COMPLEX ASS'Y	AWZ2861
	23	SHEET	AEE1014		58	LED ASS'Y	
	24	STYROL PROTECTOR	AHA1335		59	SHIELD ASS'Y	
	25	PAKING CASE	AHD1861		60	HEADPHONE ASS'Y	
	26	COVER	AHG1016		61	POWER SW ASS'Y	
	27	TERMINAL SCREW			62	GND SCREW	ABA1047
	28	JUMPER PLUG	AKM1019		63	BINDER	
	29	PANEL BASE (PLS)	AMB1651		64	R1, R2 RESISTORS	RD1/4PM100J
	30	INDICATING LENS	AMR1160			(HEWZ type only)	
	31	INSULATOR ASS'Y	AMR2140				
	32	ARM	AMR2142				
	33	CHASSIS					
	34	FRONT PANEL	ANB1395				
	35	REAR PANEL					

2.2 PARTS LIST OF A-337/HE

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	ROTARY KNOB S (PLS)	AAB1155	\triangle	46	FU1 FUSE (T1.6A)	AEK-405
	2	ROTARY KNOB L (PLS)	AAB1160	\triangle	47	Q1 TRANSISTOR	2SC3181N
	3	ROTARY KNOB R (PLS)	AAB1162	\triangle	48	Q2 TRANSISTOR	2SC3181N
	4	ROTARY KNOB M (PLS)	AAB1166	\triangle	49	Q3 TRANSISTOR	2SA1264N
	5	PUSH KNOB C	AAD1366	\triangle	50	Q4 TRANSISTOR	2SA1264N
	6	KNOB (POWER)	AAD1535	\triangle	51	Q5 TRANSISTOR	2SC4137
	7	PUSH KNOB	AAD1536	\triangle	52	Q6 TRANSISTOR	2SC4137
	8	PUSH KNOB C	AAD1803		53	S1 SWITCH	ASU1035
	9	NAME PLATE (METAL)	AAM1029		54	S2 SWITCH	ASU1036
	10	SCREW	ABA-298	\triangle	55	T1 POWER TRANSFORMER	ATS1278
	11	SCREW (STEEL)	ABA1009		56	TONE ASS'Y	AWZ2866
	12	SCREW (STEEL)	ABA1011		57	AF COMPLEX ASS'Y	AWZ2867
	13	SCREW (STEEL)	ABA1016		58	LED ASS'Y	
	14	SCREW (STEEL)	ABA1048		59	SHIELD ASS'Y	
	15	SCREW (STEEL)	ABA1050		60	HEADPHONE ASS'Y	
	16	SCREW 3X14	ABA1082		61	POWER SW ASS'Y	
	17	SPRING B	ABH-052		62	-----	
	18	SPRING B	ABH1034		63	BINDER	
	19	NUT	ABN-065		64	R1, R2 RESISTORS	RD1/4PM100J
\triangle	20	AC POWER CORD	ADG1049			(HEWZ type only)	
	21	RIVET	AEC-441				
	22	STRAIN RELIEF	AEC-882				
	23	SHEET	AEE1014				
	24	STYROL PROTECTOR	AHA1335				
	25	PACKING CASE	AHD1863				
	26	COVER SHEET	AHG1016				
	27	TERMINAL SCREW					
	28	JUMPER PLUG	AKM1019				
	29	PANEL BASE (PLS)	AMB1651				
	30	INDICATING LENS	AMR1160				
	31	INSULATOR ASS'Y	AMR2140				
	32	-----					
	33	CHASSIS					
	34	FRONT PANEL	ANB1397				
	35	REAR PANEL					
	36	METAL BONNET	AZN1799				
	37	BOTTOM PLATE					
	38	P.C.B HOLDER					
	39	HEAT SINK					
	40	ROD	ANR-879				
	41	OPERATING INSTRUCTIONS	ARE1162				
	42	SCREW	BBT30P060FZK				
	43	NUTS	NK90FZB				
	44	SCREW	VMZ30P060FCU				
\triangle	45	C1 CAPACITOR	CQMXA473J100				

2.3 PACKING



2.4 EXTERIOR

A

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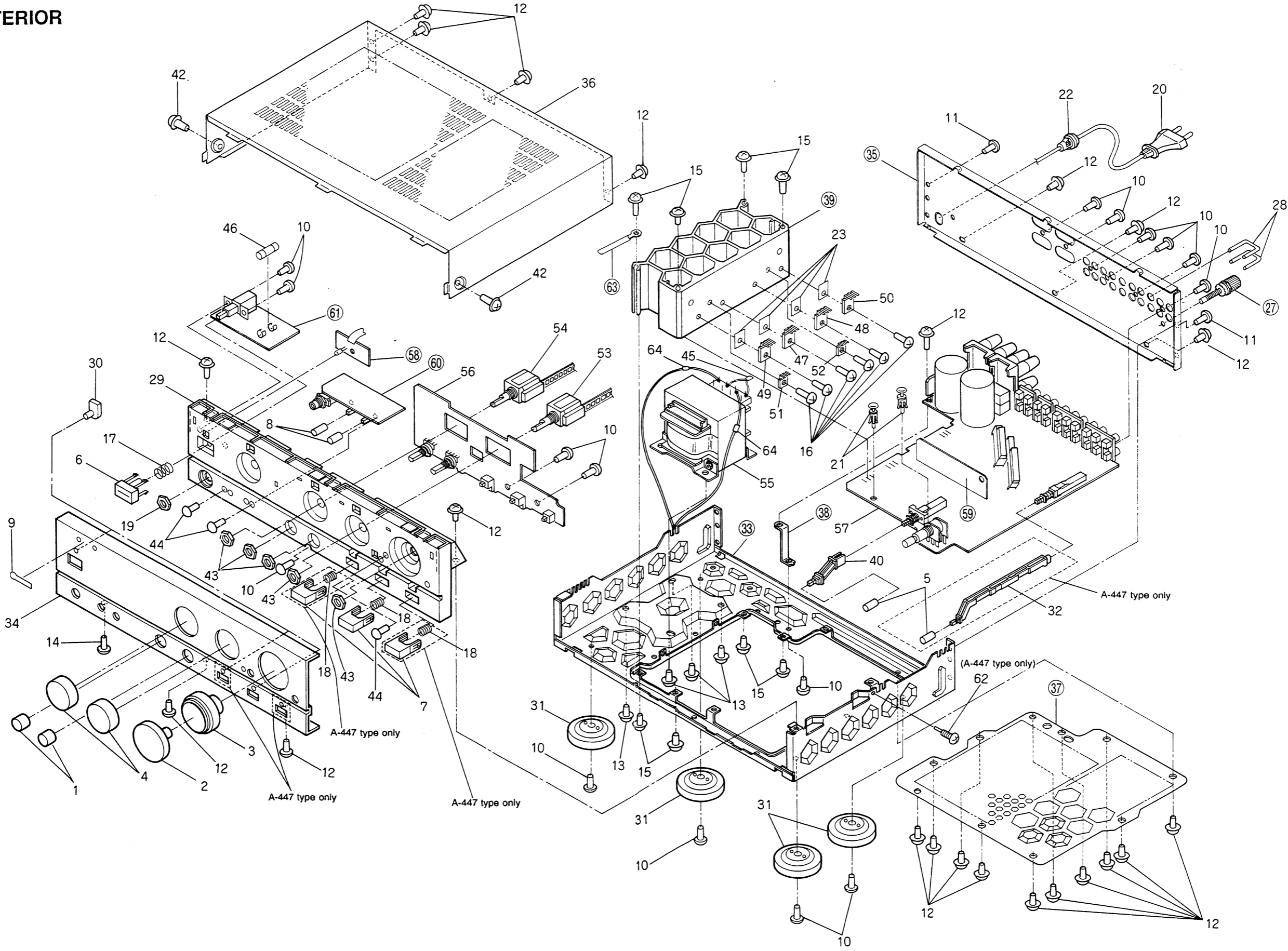
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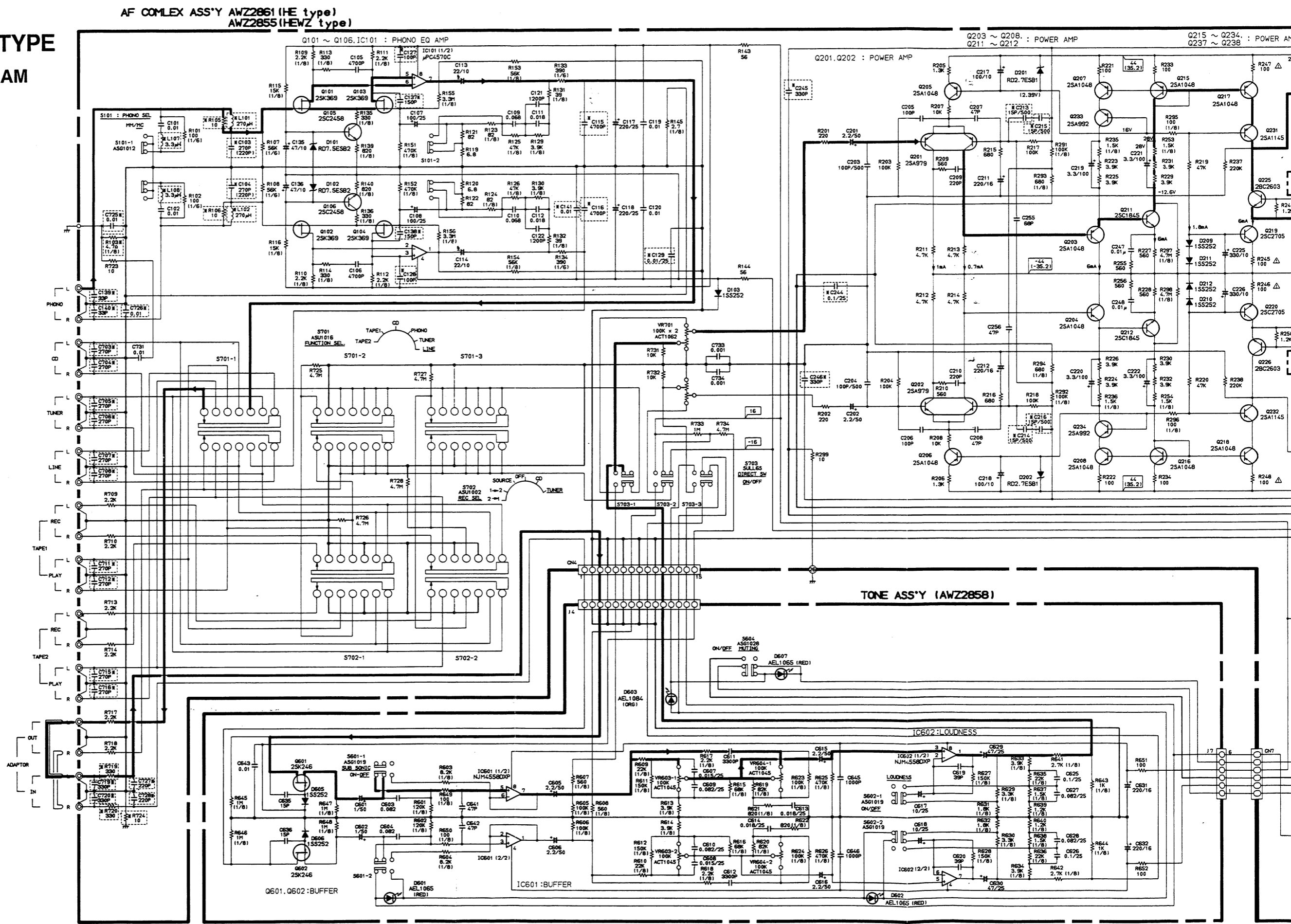
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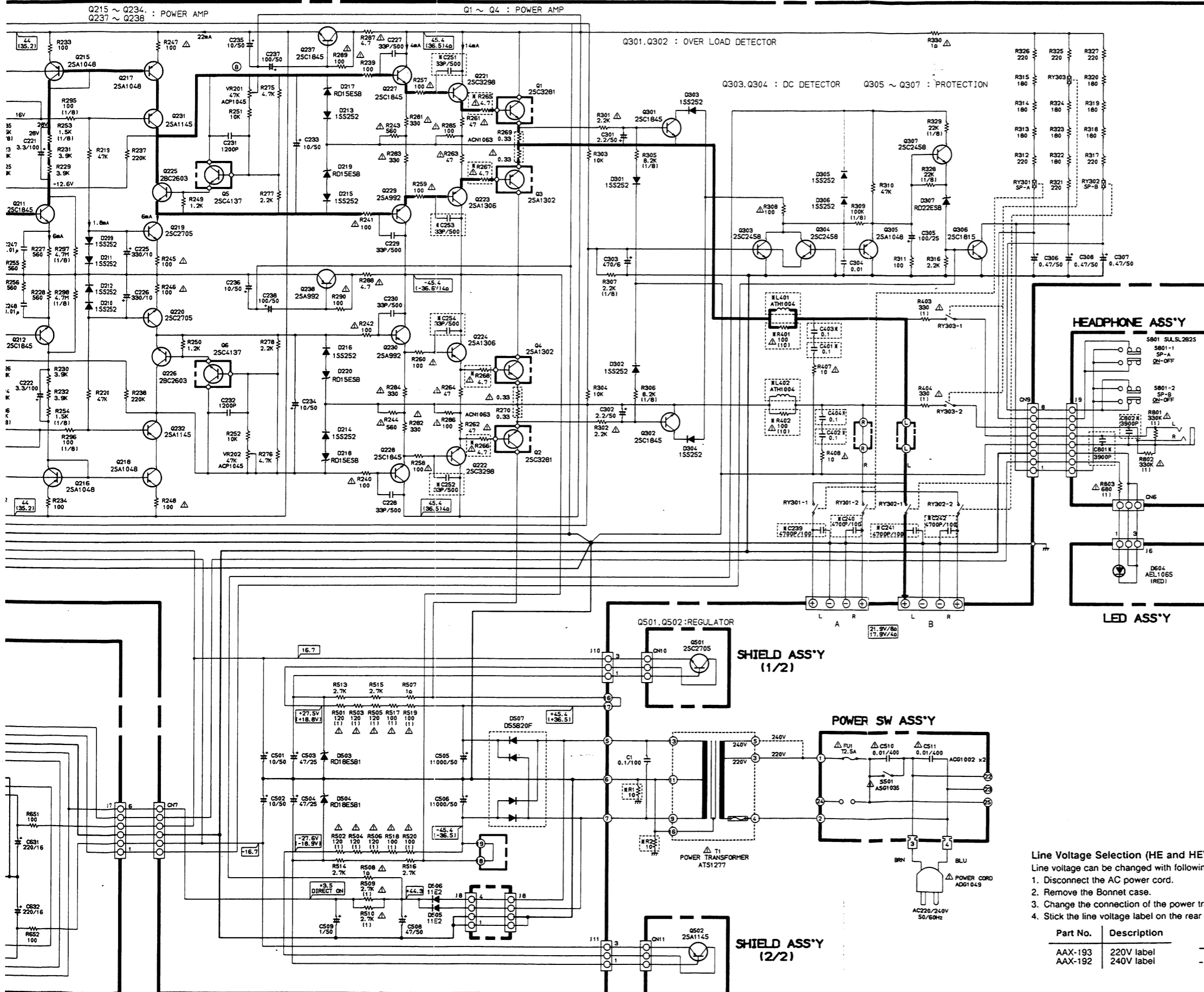
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3. FOR A-447/HE TYPE 3.1 SCHEMATIC DIAGRAM





- This circuit diagram is based on the HE version.
- Parts with an asterisk (*) are different from this prepared for the HEWZ version.
- Refer to the comparison list.

Marks are difference between two assemblies.

	A-447/HE	A-447/HEWZ, A-447-S/HEWZ
AF COMPLEX ASS'Y	AWZ2861	AWZ2855
L101, L102	VACANT (OPEN)	ATH1010
L107, L108	VACANT (JAMPER WIRE)	LAU3R3K
L401, L402	ATH1004	ATH1009
C103, C104	CCCSL221J50	CCCSL271J50
C115, C116	COMA472K50	COMA392K50
C127, C128	VACANT (OPEN)	CCCSL101J50
C129	VACANT (OPEN)	CKPYX103N25
C137, C138	VACANT (OPEN)	CCCSL151J50
C139, C140	VACANT (OPEN)	CCCSL330J50
C141	VACANT (OPEN)	CKCYF103Z50
C213, C214	CCCSL150K500	CCCSL080D500
C215, C216	CCCSL150K500	VACANT (JAMPER WIRE)
C239-C242	VACANT (OPEN)	COMXA472J100
C244	VACANT (OPEN)	CKDYX104M25
C245, C246	VACANT (OPEN)	CKCYB331K50
C251-C254	CCCSL330K500	CCCSL680K500
C401, C402	CFTXA104J50	CFTXA473J50
C403, C404	CFTXA104J50	VACANT (JAMPER WIRE)
C703-C708	VACANT (OPEN)	CCCSL271J50
C711, C712	VACANT (OPEN)	CCCSL271J50
C715, C716	VACANT (OPEN)	CCCSL271J50
C719, C720	CKCYB331K50	CCCSL271J50
C725	CKCYF103Z50	CCCSL221J50
C726	VACANT (OPEN)	CKCYF103Z50
C727, C728	VACANT (JAMPER WIRE)	CCCSL221J50
R103	VACANT (OPEN)	RD1/8PM4R7J
R105, R106	RDR1/6PU100J	RD1/8PM472J
R265-R268	RFA1/4PS4R7J	RFA1/4PS470J
R401, R402	RD1/4PMFL100J	RD1/4PMFL101J
R719, R720	VACANT (OPEN)	RD1/8PM331J
R724	VACANT (OPEN)	RD1/8PM100J
HEAD PHONE ASS'Y	AWZ2862	AWZ2857
C801, C802	VACANT (OPEN)	CKCYB392K50
OTHERS		
R1, R2	VACANT (OPEN)	RD1/4PM100J

- RESISTORS:**
Indicated in Ω , 1/8, 1/4W, $\pm 5\%$ tolerance unless otherwise noted
K; k Ω , M; M Ω , (F); $\pm 1\%$, (G); $\pm 2\%$, (K); $\pm 10\%$, (M); $\pm 20\%$ tolerance.
- CAPACITORS:**
Indicated in capacity (μ F) / voltage (V) unless otherwise noted p; pF.
Indication without voltage is 50V except electrolytic capacitor.
- VOLTAGE CURRENT:**
 - V : Signal voltage at (60W + 60W/8 Ω , 80W + 80W/4 Ω) output (1kHz).
 - DC : DC voltage (V) at no input signal.
 - Value in () is DC voltage at rated power.
 - mA : DC current at no input signal.
 - mV : Signal voltage at FM 400Hz ± 75 Hz DEV.

- 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 capacitor and resistor have parts number.
 - This is the basic schematic diagram, but the actual circuit way vary due to improvements in design.

- SWITCHES (The underline indicates the switch position)**
 - S601 : SUBSONIC (ON-OFF)
 - S602 : LOUDNESS (ON-OFF)
 - S604 : MUTING (ON-OFF)
 - S101 : PHONO SEL (MM-MC)
 - S701 : FUNCTION SEL (TAPE 2 - TAPE 1 - CD - PHONO - TUNER - LINE)
 - S702 : REC SEL (2-1 - 1-2 - SOURCE - OFF - CD - TUNER)
 - S703 : DIRECT SW (ON - OFF)
 - S801-1 : SPEAKERS-A (ON-OFF)
 - S801-2 : SPEAKERS-B (ON-OFF)
 - S501 : POWER SW (ON - OFF)

Line Voltage Selection (HE and HEWZ types)

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 power transformer lead wire.
4. Stick the line voltage label on the rear panel.

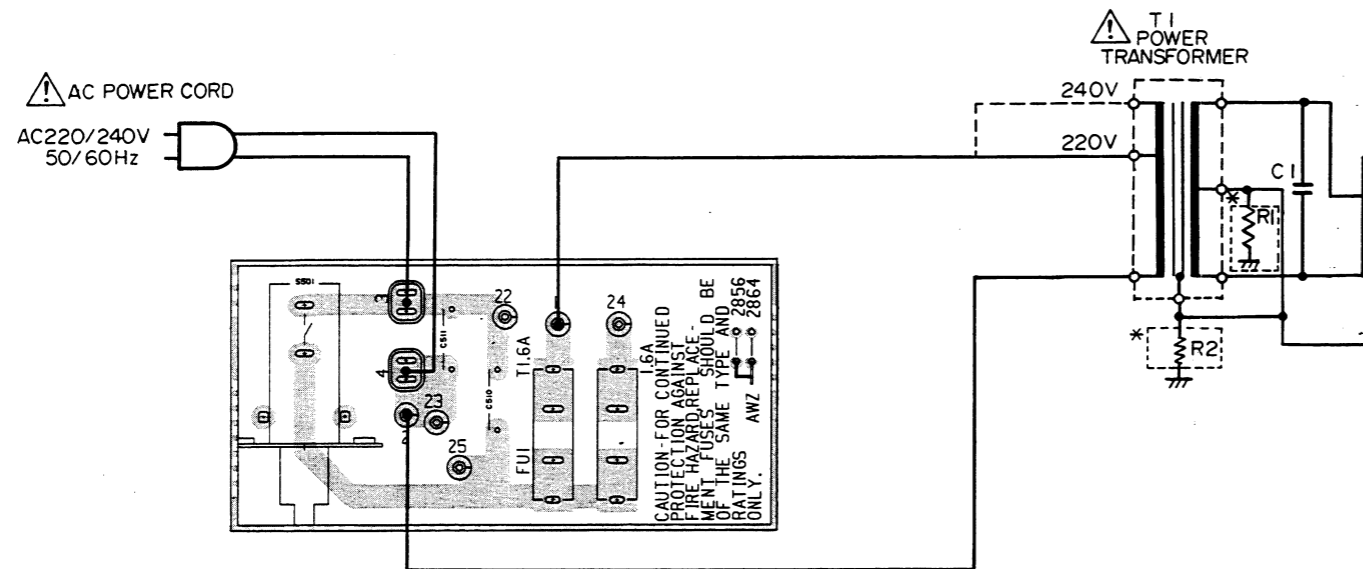
Part No.	Description	
AAX-193	220V label	— 220V
AAX-192	240V label	- - - 240V

3.2 P.C. BOARDS CONNECTION DIAGRAM

- Parts with an asterisk (*) are different according to versions, HE or HEWZ. Refer to page 10 for details.

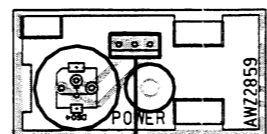
AF COMPLEX ASS'Y
 AWZ2861 (HE type)
 AWZ2855 (HEWZ type)

A

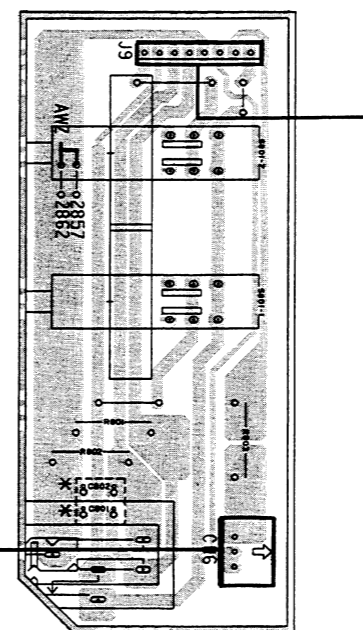


B

LED ASS'Y

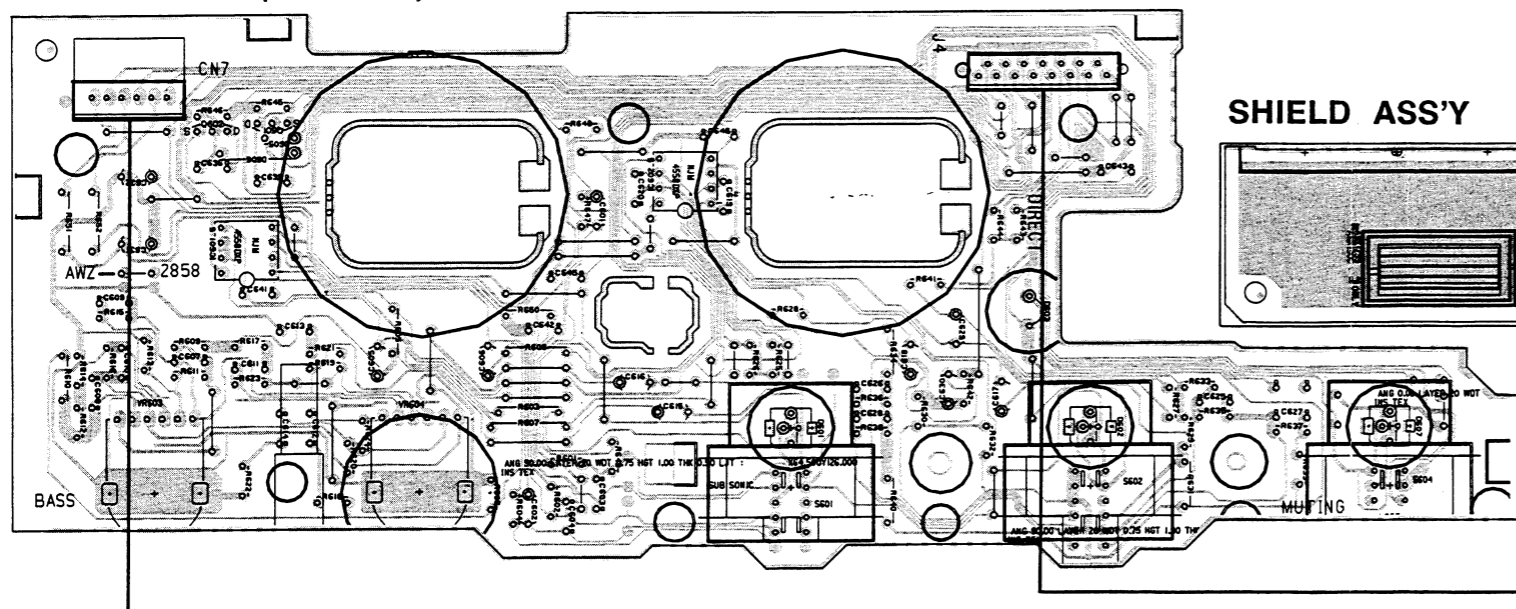


HEADPHONE ASS'Y

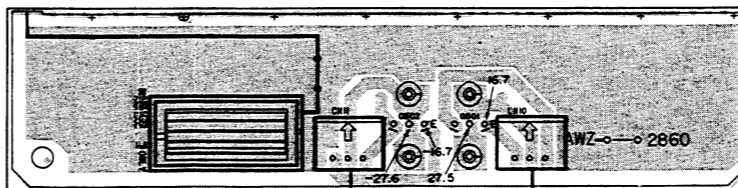


C

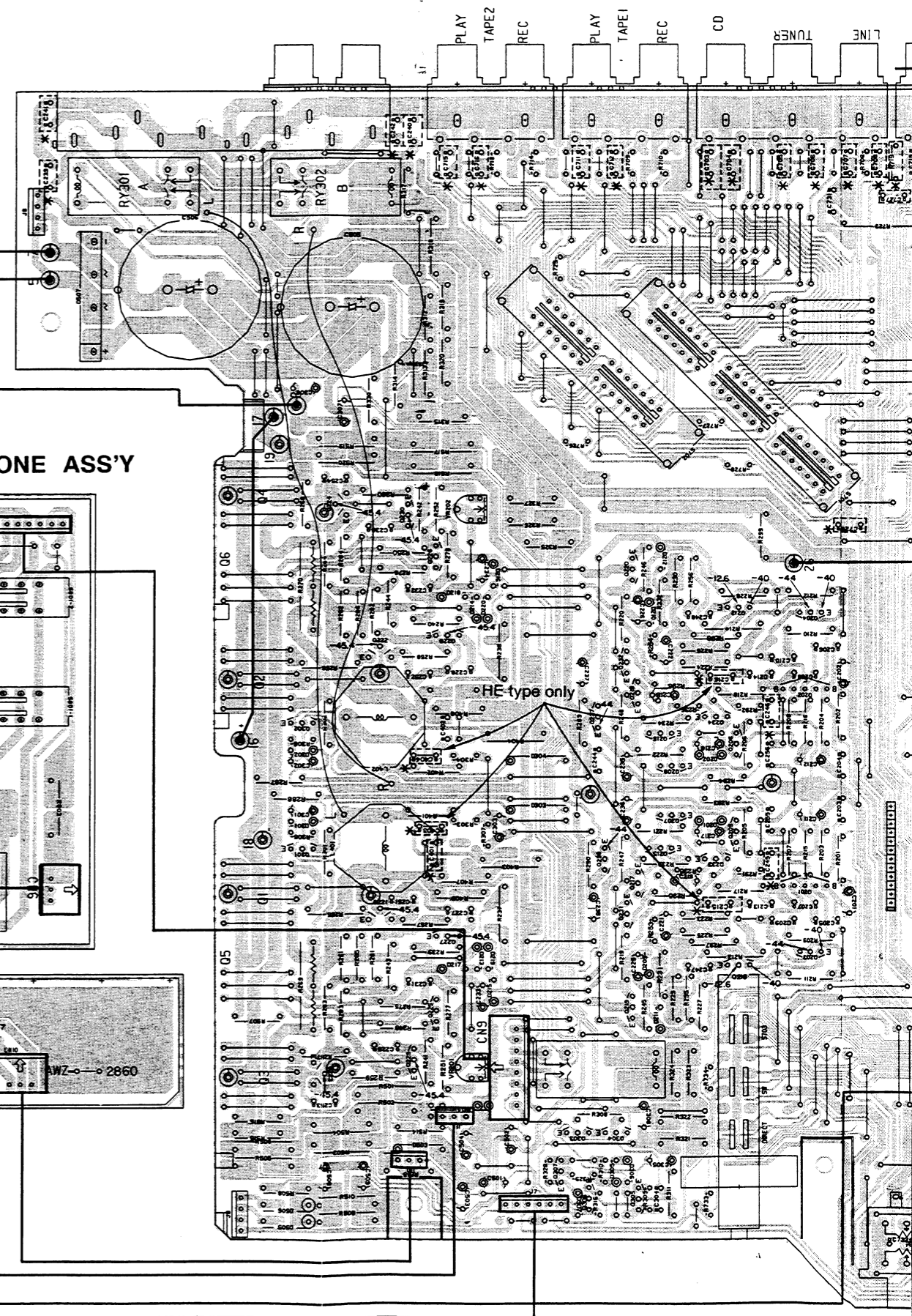
TONE ASS'Y (AWZ2858)



SHIELD ASS'Y



D



1

2

3

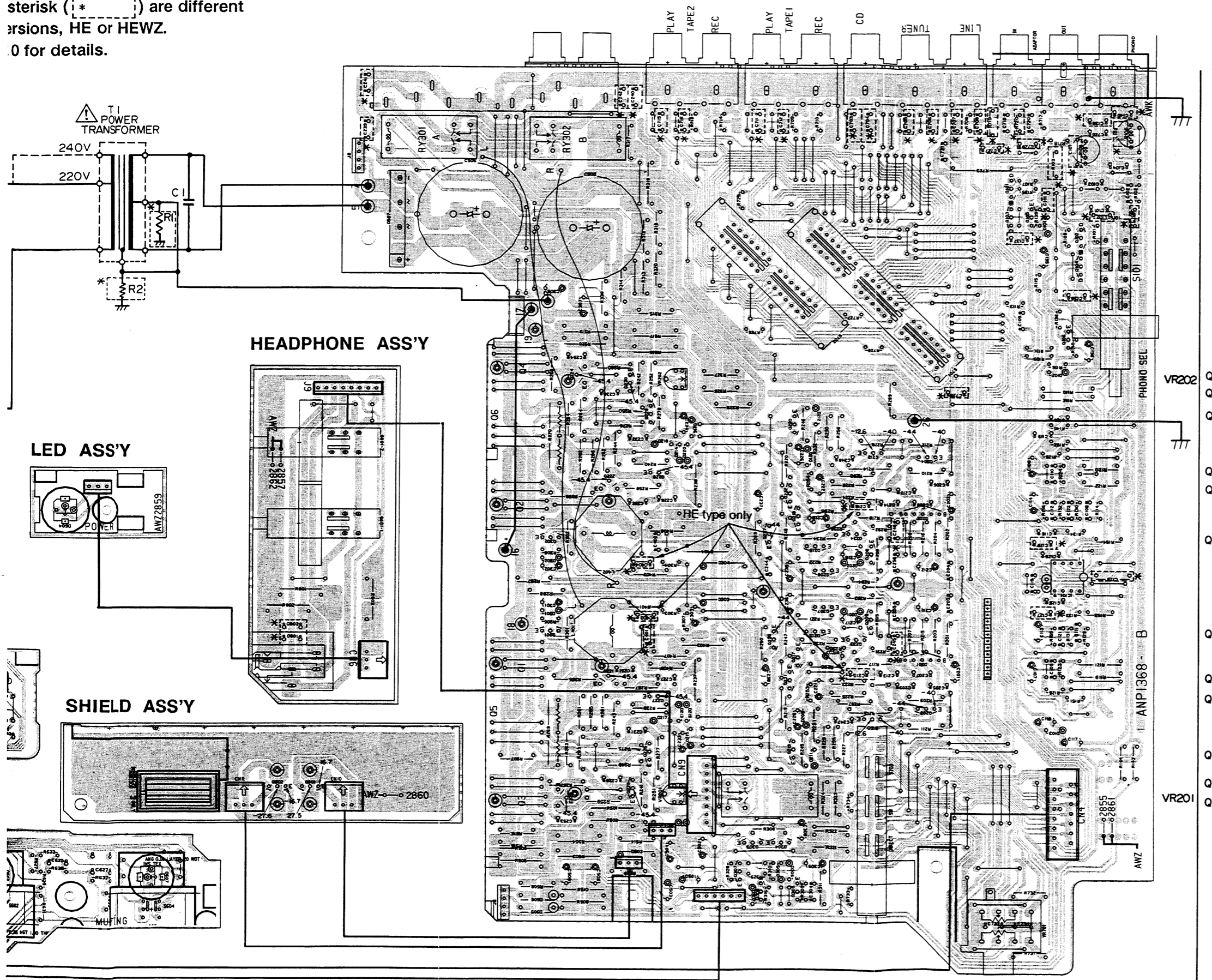
4

5

6

AF COMPLEX ASS'Y
AWZ2861 (HE type)
AWZ2855 (HEWZ type)

sterisk (*) are different versions, HE or HEWZ. 0 for details.



- Q101
- Q103
- Q105
- Q102
- Q104
- Q106

- Q224
- Q230
- Q226
- Q220
- Q212
- Q204
- Q228
- Q232
- Q218
- Q202
- Q302
- Q237
- Q234
- Q216
- Q206
- Q208
- Q207
- Q205
- Q301
- Q238
- Q215
- Q233
- Q221
- Q201
- Q227
- Q231
- Q203

- Q225
- Q219
- Q229
- Q223
- Q303
- Q304
- Q307
- Q306
- Q305

- This P.C.B connection diagram is seen from the parts mount side.
- The parts mounted on to the P.C.B can be replaced with those shown in the following correspondence table with wiring marks.

Indication of the P.C.B. pattern	Symbol of corresponding parts	Parts name
		Transistor
		Radiator type transistor
		Diode
		Resistor
		Condenser (Polar type)
		Condenser (Non-polar type)

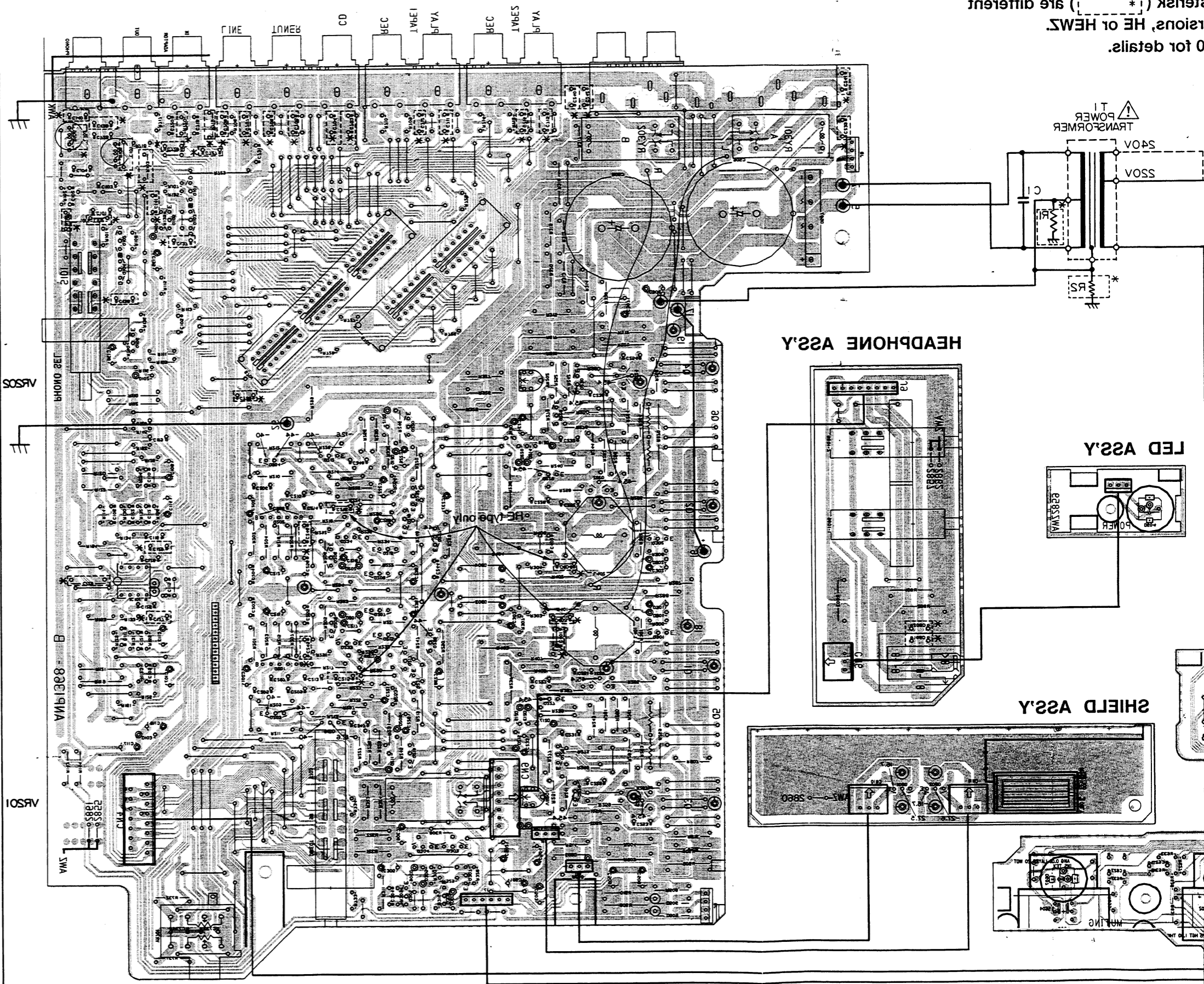
Others

Wiring mark on the P.C.B pattern diagram	Parts list
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or semi-fixed resistor

- The condenser terminal marked with double circles (©) represents (-) terminal.
- The diode terminal marked with double circles (©) represents the cathode side.
- The transistor terminal marked with "E" represents an emitter.

AW5285 (HEWS type)
AF COMPLEX ASSY
AW5281 (HE type)

0 for details.
tions, HE or HEWS.
sterisk (*) are different



- 0101
- 0103
- 0102
- 0105
- 0104
- 0106
- 0554
- 0530
- 0556
- 0550
- 0515
- 0504
- 0555
- 0558
- 0518
- 0505
- 0537
- 0534
- 0516
- 0506
- 0508
- 0507
- 0502
- 0502
- 0501
- 0517
- 0533
- 0531
- 0503
- 0552
- 0519
- 0559
- 0553
- 0303
- 0304
- 0307
- 0306
- 0302

HEADPHONE ASSY

SHIELD ASSY

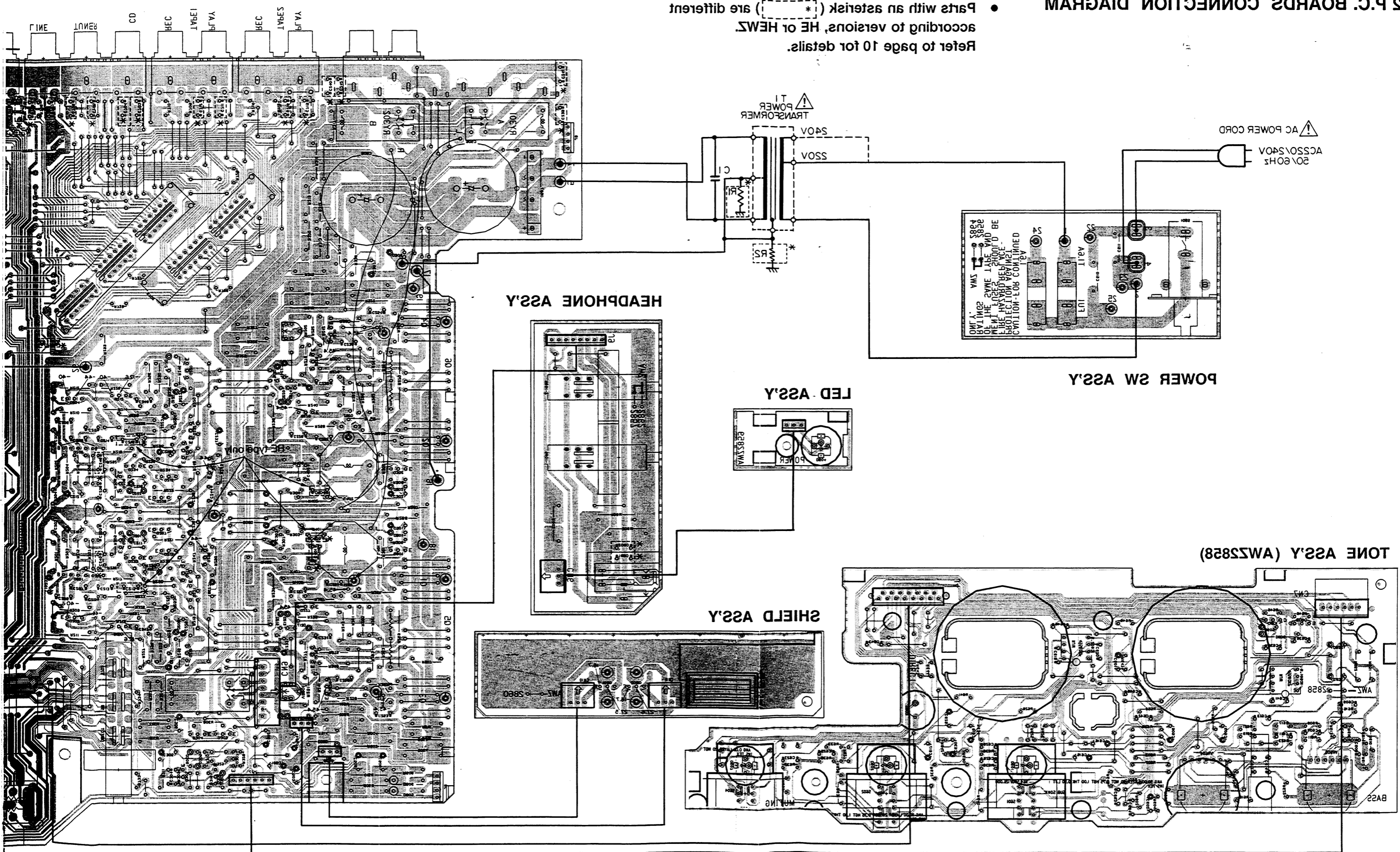
LED ASSY

POWER TRANSFORMER

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

3.2 P.C. BOARDS CONNECTION DIAGRAM

- Parts with an asterisk (*) are different according to versions HE or HEWS. Refer to page 10 for details.



AWZ5285 (HEWS type)
 AWZ5281 (HE type)
 AF COMPLEX ASSY

A

B

C

D

3.3 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%).

560Ω	56 × 10 ¹	561.....	RD1/4PS	Ⓜ	Ⓜ	Ⓜ	J
47kΩ	47 × 10 ³	473.....	RD1/4PS	Ⓜ	Ⓜ	Ⓜ	J
0.5Ω	0R5.....		RN2H	Ⓜ	Ⓜ	Ⓜ	K
1Ω	010.....		RS1P	Ⓜ	Ⓜ	Ⓜ	K

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

5.62kΩ	562 × 10 ¹	5621.....	RN1/4SR	Ⓜ	Ⓜ	Ⓜ	F
--------	-----------------------	-----------	---------	---	---	---	---

Mark	No.	Description	Parts No.
------	-----	-------------	-----------

LED ASS'Y

		SEMICONDUCTOR	
	D604	LED(RED)	AEL1065

SHIELD ASS'Y

		SEMICONDUCTORS	
	Q501	TRANSISTOR	2SC2705
	Q502	TRANSISTOR	2SA1145

OTHERS

	CN10,CN11	JUMPER CONNECTOR	KPC3
		3-P	

HEADPHONE ASS'Y

		RESISTORS	
Δ	R801,R802	METAL OXIDE RESISTOR	RS1PMF331J
Δ	R803	METAL OXIDE RESISTOR	RS1LMF681J

SWITCH

	S801	PUSH SWITCH	SUL5L2B2S
--	------	-------------	-----------

OTHERS

	CN6	JUMPER CONNECTOR 3-P	KPC3
		JACK	AKN1002

POWER SW ASS'Y

		CAPACITORS	
Δ	C510,C511	CKA (0.01/AC400V)	ACG1002

SWITCH

Δ	S501	PUSH SWITCH	ASG1035
---	------	-------------	---------

tone ASS'Y (AWZ2858)

		SEMICONDUCTORS	
	IC601,IC602	IC	NJM4558DXP
	Q601,Q602	N-FET	2SK246
	D601,D602	LED(RED)	AEL1065
	D603	LED	AEL1084
	D605,D606	DIODE	1SS252
	D607	LED(RED)	AEL1065

Mark	No.	Description	Parts No.
------	-----	-------------	-----------

CAPACITORS

	C601,C602	ELECTR.CAPACITOR	CEAS010M50
	C603,C604	AUDIO FILM CAPACITOR	CFTXA823J50
	C605,C606	ELECTR. CAPACITOR	CEAS2R2M50
	C607,C608	CERAMIC CAPACITOR	CKDYX153M25
	C609,C610	CERAMIC CAPACITOR	CKDYX823M25

	C611,C612	CERAMIC CAPACITOR	CKCYB332K50
	C613,C614	CERAMIC CAPACITOR	CKDYX183M25
	C615,C616	ELECTR. CAPACITOR	CEAS2R2M50
	C617,C618	ELECTR. CAPACITOR	CEAS100M25
	C619,C620	CERAMIC CAPACITOR	CCDSL390J50

	C625,C626	CERAMIC CAPACITOR	CKDYX104M25
	C627,C628	CERAMIC CAPACITOR	CKDYX823M25
	C629,C630	ELECTR. CAPACITOR	CEAS470M25
	C631,C632	ELECTR. CAPACITOR	CEAS221M16
	C635,C636	CERAMIC CAPACITOR	CCDSL150J50

	C641,C642	CERAMIC CAPACITOR	CCCSL470J50
	C643	CERAMIC CAPACITOR	CKCYF103Z50
	C645,C646	CERAMIC CAPACITOR	CKCYB102K50

RESISTORS

	VR603,VR604	VARIABLE(100K-20AX2)	ACT1045
	R651,R652	CARBON FILM RESISTOR	RD1/4PM101J
		OTHER RESISTORS	RD1/8PM□□□□

SWITCHES

	S601,S602	PUSH SWITCH	ASG1019
	S604	PUSH SWITCH	ASG1028

AF COMPLEX ASS'Y (AWZ2861)

SEMICONDUCTORS

	IC101	IC	UPC4570C
	Q101-Q104	N-FET	2SK369
	Q105,Q106	TRANSISTOR	2SC2458
	Q201,Q202	TRANSISTOR	2SA979
	Q203-Q208	TRANSISTOR	2SA1048

Mark	No.	Description	Parts No.
	Q211,Q212	TRANSISTOR	2SC1845
	Q215-Q218	TRANSISTOR	2SA1048
	Q219,Q220	TRANSISTOR	2SC2705
	Q221,Q222	TRANSISTOR	2SC3298
	Q223,Q224	TRANSISTOR	2SA1306
	Q225,Q226	TRANSISTOR	2SC2603
	Q227,Q228	TRANSISTOR	2SC1845
	Q229,Q230	TRANSISTOR	2SA992
	Q231,Q232	TRANSISTOR	2SA1145
	Q233,Q234	TRANSISTOR	2SA992
	Q237	TRANSISTOR	2SC1845
	Q238	TRANSISTOR	2SA992
	Q301,Q302	TRANSISTOR	2SC1845
	Q303,Q304	TRANSISTOR	2SC2458
	Q305	TRANSISTOR	2SA1048
	Q306	TRANSISTOR	2SC1815
	Q307	TRANSISTOR	2SC2458
	D101,D102	ZENER DIODE	RD7.5ESB2
	D103	DIODE	1SS252
	D201,D202	ZENER DIODE	RD2.7ESB1
	D209-D216	DIODE	1SS252
	D217-D220	ZENER DIODE	RD15ESB
	D301-D306	DIODE	1SS252
	D307	ZENER DIODE	RD22ESB
	D503,D504	ZENER DIODE	RD18ESB1
	D505,D506	DIODE	11E2
	D507	DIODE	D5SB20F
CAPACITORS			
	C101,C102	AUDIO FILM CAPACITOR	CFTXA103J50
	C103,C104	CERAMIC CAPACITOR	CCCSL221J50
	C105,C106	CERAMIC CAPACITOR	CKCYB472K50
	C107,C108	ELECTR. CAPACITOR	CEXA101M25
	C109,C110	AUDIO FILM CAPACITOR	CFTXA683J50
	C111,C112	AUDIO FILM CAPACITOR	CFTXA183J50
	C113,C114	ELECTR. CAPACITOR	CEANP220M10
	C115,C116	MYLOR FILM CAPACITOR	CQMA472K50
	C117,C118	ELECTR. CAPACITOR	CEAS221M25
	C119,C120	CERAMIC CAPACITOR	CKCYF103Z50
	C121,C122	MYLOR FILM CAPACITOR	CQMA122J50
	C135,C136	ELECTR. CAPACITOR	CEAS470M10
	C201,C202	ELECTR. CAPACITOR	CEEA2R2M50
	C203,C204	MICA CAPACITOR	CCCSL101K500
	C205,C206	CERAMIC CAPACITOR	CCCSL101J50
	C207,C208	CERAMIC CAPACITOR	CCCSL470J50
	C209,C210	CERAMIC CAPACITOR	CCCSL221J50
	C211,C212	ELECTR. CAPACITOR	CEEA221M16
	C213-C216	CERAMIC CAPACITOR	CCCSL150K500
	C217,C218	ELECTR. CAPACITOR	CEAS101M10

Mark	No.	Description	Parts No.
	C219-C222	ELECTR. CAPACITOR	CEAS3R3M100
	C225,C226	ELECTR. CAPACITOR	CEAS331M10
	C227-C230	CERAMIC CAPACITOR	CCCSL330K500
	C231,C232	CERAMIC CAPACITOR	CKCYB122K50
	C233-C236	ELECTR. CAPACITOR	CEAS100M50
	C237,C238	ELECTR. CAPACITOR	CEAS101M50
	C247,C248	AUDIO FILM CAPACITOR	CFTXA103J50
	C251-C254	CERAMIC CAPACITOR	CCCSL330K500
	C255	CERAMIC CAPACITOR	CCCSL680J50
	C256	CERAMIC CAPACITOR	CCDSL470J50
	C301,C302	ELECTR. CAPACITOR	CEAS2R2M50
	C303	ELECTR. CAPACITOR	CEAS471M6
	C304	CERAMIC CAPACITOR	CKCYF103Z50
	C305	ELECTR. CAPACITOR	CEAS101M25
	C306-C308	ELECTR. CAPACITOR	CEASR47M50
	C401-C404	AUDIO FILM CAPACITOR	CFTXA104J50
	C501,C502	ELECTR. CAPACITOR	CEAS100M50
	C503,C504	ELECTR. CAPACITOR	CEAS470M25
	C505,C506	ELECTR. CAPACITOR (16000/5V)	ACH1078
	C508	ELECTR. CAPACITOR	CEAS470M50
	C509	ELECTR. CAPACITOR	CEAS010M50
	C719,C720	CERAMIC CAPACITOR	CKCYB331K50
	C725	CERAMIC CAPACITOR	CKCYF103Z50
	C731	CERAMIC CAPACITOR	CKCYF103Z50
	C733,C734	CERAMIC CAPACITOR	CKDYF102Z50

COILS & FILTERS

L401,L402	COIL	ATH1004
-----------	------	---------

RESISTORS

VR201,VR202	SEMI-FIXED(47K)	ACP1045
VR701	VARIABLE(100K-20AX2)	ACT1062
R101,R102	CARBON FILM RESISTOR	RDR1/6PU101J
R105-R108	CARBON FILM RESISTOR	RDR1/6PU□□□J
R119-R122	CARBON FILM RESISTOR	RDR1/4PM□□□J
R133,R134	CARBON FILM RESISTOR	RDR1/6PU391J
R143,R144	CARBON FILM RESISTOR	RD1/4PM560J
R201-R204	CARBON FILM RESISTOR	RDR1/4PM□□□J
R205-R214	CARBON FILM RESISTOR	RD1/4PM□□□J
R215-R218	CARBON FILM RESISTOR	RDR1/4PM□□□J
R219-R234	CARBON FILM RESISTOR	RD1/4PM□□□J
R237,R238	CARBON FILM RESISTOR	RDR1/4PM224J
△ R239-R242	FUSIBLE RESISTOR	RFA1/4PS101J
△ R243,R244	CARBON FILM RESISTOR	RD1/4PMF561J
△ R245-R248	FUSIBLE RESISTOR	RFA1/4PS101J
R249-R252	CARBON FILM RESISTOR	RD1/4PM□□□J
R255,R256	CARBON FILM RESISTOR	RD1/4PM561J
△ R257-R260	FUSIBLE RESISTOR	RFA1/4PS101J
△ R261-R264	FUSIBLE RESISTOR	RFA1/4PS470J
△ R265-R268	FUSIBLE RESISTOR	RFA1/4PS4R7J

<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Parts No.</u>
△	R269,R270	RESISTOR (0.33, 5W)	ACN1063
	R275-R278	CARBON FILM RESISTOR	RD1/4PM□□□J
△	R281-R284	FUSIBLE RESISTOR	RFA1/4PS331J
△	R285,R286	FUSIBLE RESISTOR	RFA1/4PS101J
△	R287,R288	CARBON FILM RESISTOR	RD1/4PMF4R7J
△	R289,R290	FUSIBLE RESISTOR	RFA1/4PS101J
	R299	CARBON FILM RESISTOR	RD1/4PM100J
△	R301,R302	CARBON FILM RESISTOR	RD1/4PMF222J
△	R308	CARBON FILM RESISTOR	RD1/4PMF101J
	R311-R315	CARBON FILM RESISTOR	RD1/4PM□□□J
	R317-R327	CARBON FILM RESISTOR	RD1/4PM□□□J
△	R330	CARBON FILM RESISTOR	RD1/4PMF010J
△	R401,R402	CARBON FILM RESISTOR	RD1/4PMFL100J
△	R403,R404	METAL OXIDE RESISTOR	RS1LMF331J
△	R407,R408	CARBON FILM RESISTOR	RD1/4PMFL100J
△	R501,R502	METAL OXIDE RESISTOR	RS1PMF121J
△	R503,R504	METAL OXIDE RESISTOR	RS1LMF121J
△	R505,R506	METAL OXIDE RESISTOR	RS1PMF121J
△	R507,R508	CARBON FILM RESISTOR	RD1/4PMF010J
△	R509,R510	METAL OXIDE RESISTOR	RS1LMF272J
	R513-R516	CARBON FILM RESISTOR	RD1/4PM272J
△	R517-R520	METAL OXIDE RESISTOR	RS1PMF101J
	R731,R732	CARBON FILM RESISTOR	RD1/4PM103J
	OTHER RESISTORS		RD1/8PM□□□J
SWITCHES			
	S101	PUSH SWITCH	ASG1012
	S701	SWITCH	ASU1016
	S702	SWITCH	ASU1002
	S703	PUSH SWITCH	SULL6S
OTHERS			
	CN4	JUMPER CONNECTOR	KPE15
	CN9	JUMPER CONNECTOR	KPC8
	RY301,RY302	RELAY	ASR-112
	RY303	RELAY	ASR-111
		PHONO JACK 4-P	AKB1007
		PHONO JACK 6-P	AKB1008
		PHONO JACK 6-P	AKB1024
		SPEAKER TERMINAL 8-P	AKE1011

3.4 ADJUSTMENT

ADJUSTMENT OF IDLE CURRENT

1. Connect wire as shown in Fig. 3-1.
2. After power ON, aging lasts for 5 mins with no-load.
3. In the Lch VR201 should be adjusted so that both terminal voltages of R269 may attain to 20 mV (± 3 mV).
4. In the Rch VR202 should be adjusted so that both terminal voltages may attain to 20 mV (± 3 mV).

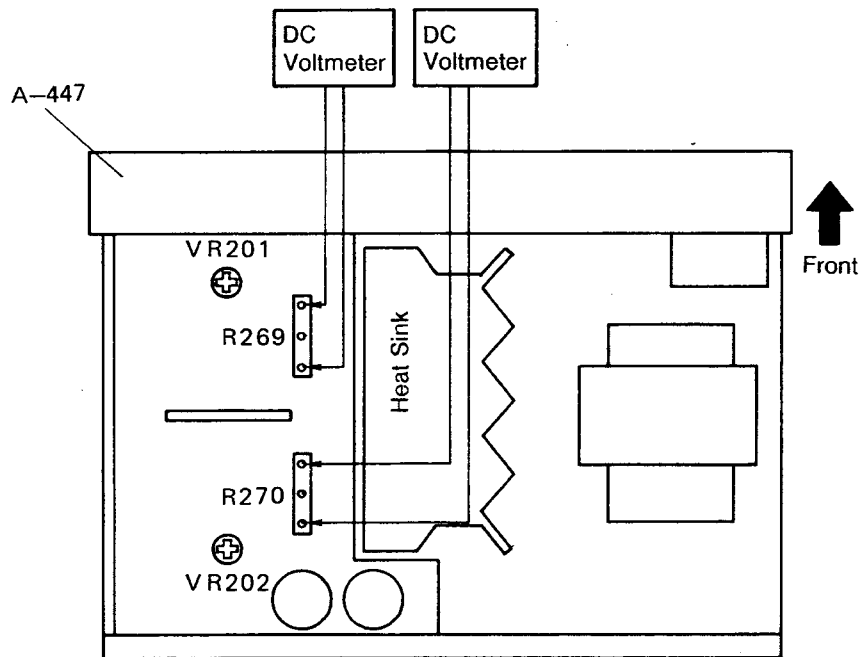


Fig. 3-1 Adjustment Drawing

3.4 RÉGLAGE

RÉGLAGE DU COURANT DÉWATTÉ

1. Brancher les fils comme indiqué dans la fig. 3-1.
2. Après la mise sous tension, le moteur dure 5 minutes et n'introduire charge.
3. VR 201 sera réglé dans le canal gauche de manière que les deux tensions de bornes de R269 atteignent 20 mV (± 3 mV).
4. VR 202 sera réglé dans le canal droit de manière que les deux tensions de bornes atteignent 20 mV (± 3 mV).

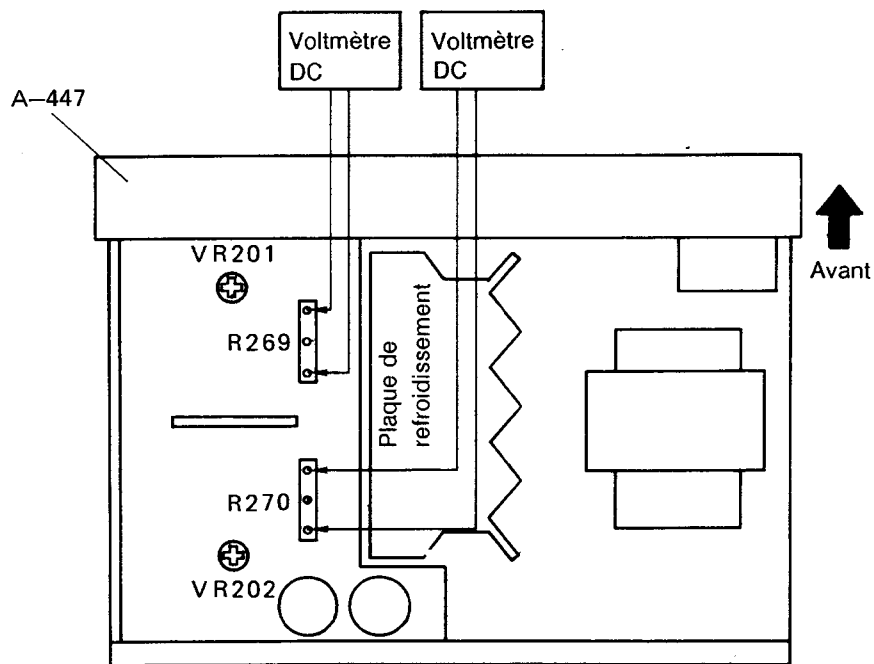


Fig. 3-1 Schéma du réglage

3.4 AJUSTE

AJUSTE DE LA CORRIENTE DEVIADA

1. Conecte el cable como lo ilustra la Fig. 3-1.
2. El motor funciona por 5 minutos después de encender la unidad, sin introduzca.
3. El VR201 del canal izquierdo debe ajustarse de modo que la tensión entre ambos bornes de R269 llegue a 20 mV (± 3 mV).
4. El VR202 del canal derecho debe ajustarse de modo que la tensión entre ambos bornes llegue a 20 mV (± 3 mV).

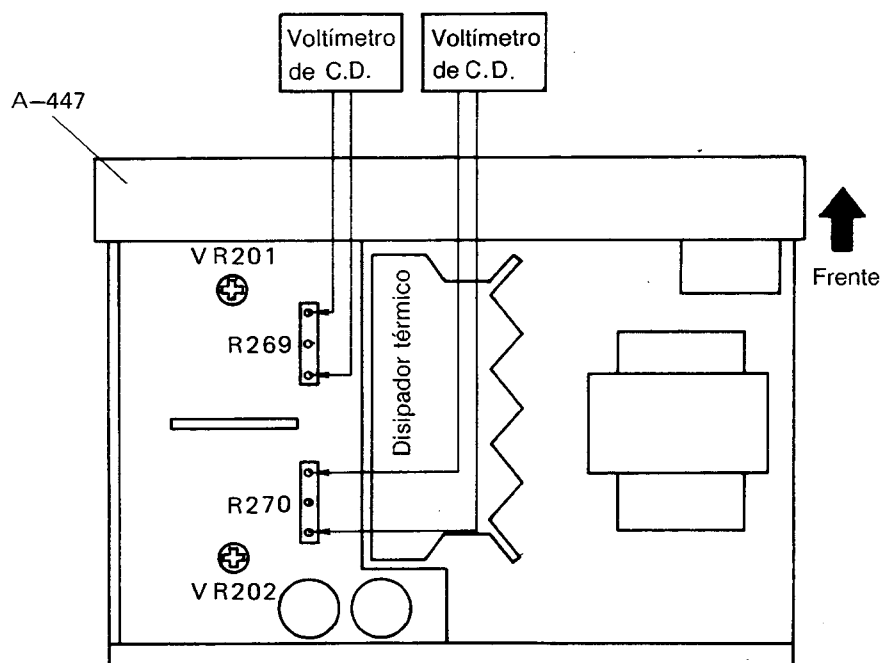
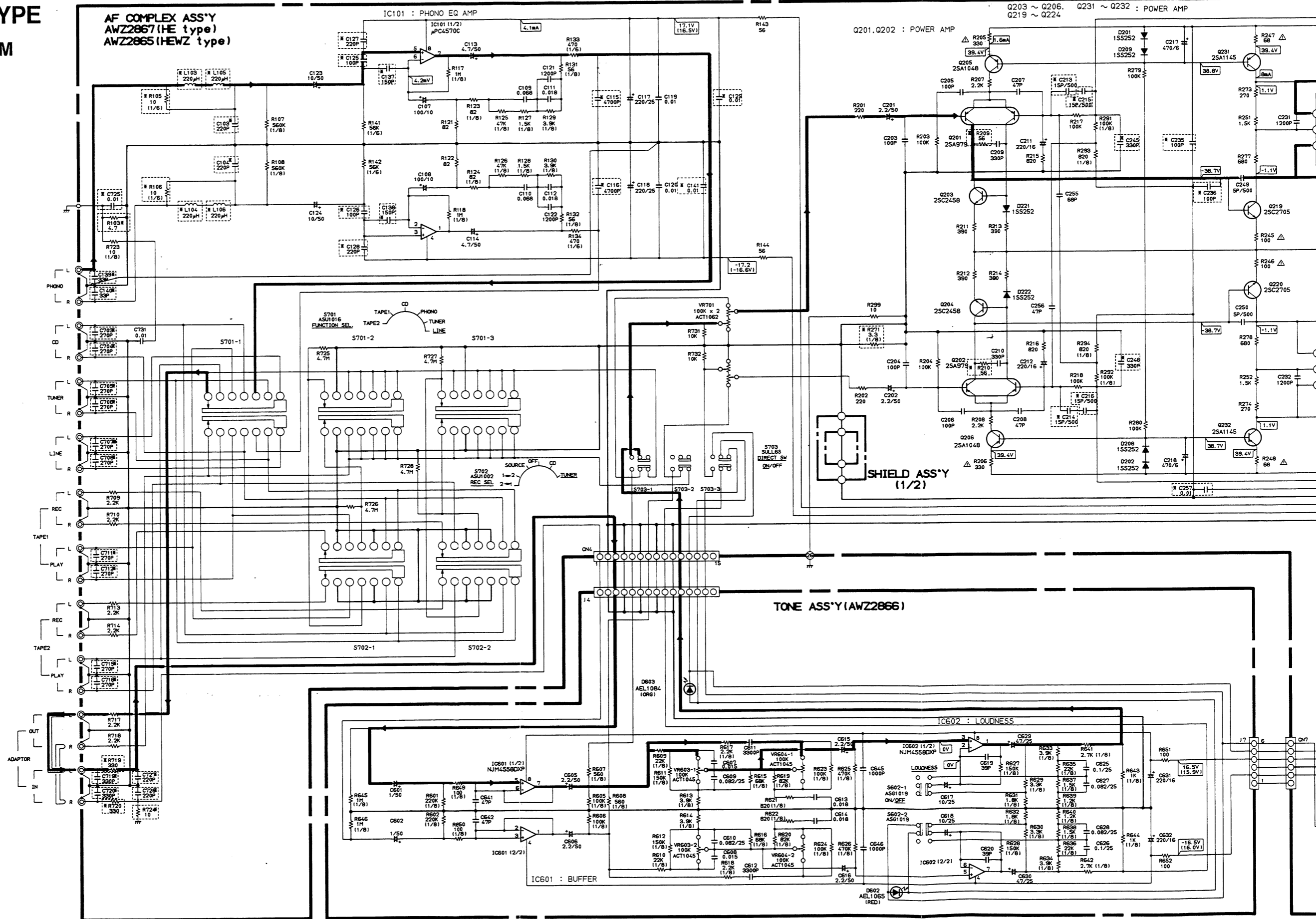
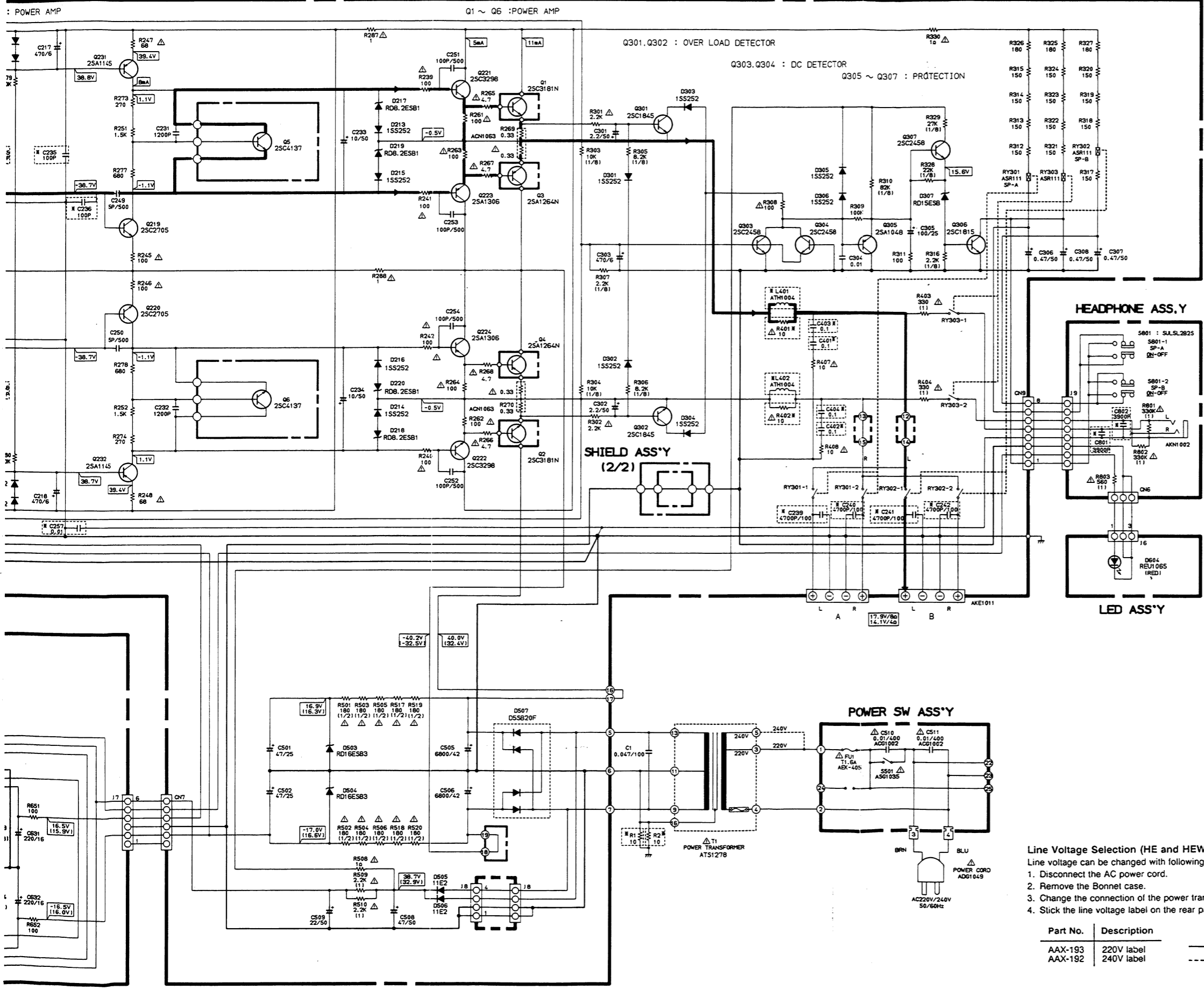


Fig. 3-1 Diagrama de ajuste

4. FOR A-337/HE TYPE

4.1 SCHEMATIC DIAGRAM





- This circuit diagram is based on the HE version.
- Parts with an asterisk (*) are different from this prepared for the HEWZ version.
- Refer to the comparison list.

--- Marks are difference between two assemblies.

	A-337/HE AWZ2867	A-337/HEWZ AWZ2865
AF COMPLEX ASS'Y		
L103 -L106 L401, L402	VACANT (OPEN) ATH1004	LAU221K ATH1009
C103, C104 C115, C116 C125, C126 C127, C128 C129	CCCSL221J50 COMA472K50 VACANT (OPEN) VACANT (OPEN) VACANT (OPEN)	CCCSL330J50 COMA392K50 CCCSL101J50 CCCSL221J50 CKPYX103N25
C139, C140 C141	VACANT (OPEN) VACANT (OPEN)	CCDSL330J50 CKCYF103Z50
C213, C214 C215, C216 C235, C236	CCCSL150K500 CCCSL150K500 CCCSL101J50	CCCSL080D500 VACANT (OPEN) CEASOR1M50
C239-C242 C245, C246 C257	VACANT (OPEN) VACANT (OPEN) VACANT (OPEN)	COMXA472J100 CKCYB331K50 CKCYF103Z50
C401, C402 C403, C404	CFTXA104J50 CFTXA104J50	CFTXA473J50 VACANT (JAMPER WIRE)
C703-C708, C711, C712 C715, C716 C719, C720 C725	VACANT (OPEN) VACANT (OPEN) VACANT (OPEN) CKCYB331K50 CKCYF103Z50	CCCSL271J50 CCCSL271J50 CCCSL271J50 CCCSL271J50 CCDSL221J50
C727, C728 R103 R105, R106 R209, R210 R271	VACANT (OPEN) VACANT (OPEN) RDR1/6PU100J RD1/4PM332J VACANT (OPEN)	CCDSL221J50 RD1/8PM4R7J RD1/8PM332J RD1/4PM560J RD1/8PM3R3J
R401, R402 R719, R720 R724	RD1/4PMFL100J VACANT (JUMPER WIRE) VACANT (OPEN)	RD1/4PMFL101J RD1/8PM331J RD1/8PM100J
HEAD PHONE ASS'Y	AWZ2862	AWZ2867
C801, C802	VACANT (OPEN)	CKCYB392K50
OTHERS		
R1, R2	VACANT (OPEN)	RD1/4PM100J

- RESISTORS:**
Indicated in Ω, 1/8, 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:**
V : Signal voltage at (40W + 40W/8Ω, 50W + 50W/4Ω) output (1kHz).
V : DC voltage (V) at no input signal.
Value in () is DC voltage at rated power.
mA : DC current at no input signal.
mV : Signal voltage at FM 400Hz ± 75Hz DEV.

- 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 capacitor and resistor have parts number.
 - This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

- SWITCHES (The underline indicates the switch position)**
 - S501 : POWER SW (ON-OFF)
 - S602 : LOUDNESS (ON-OFF)
 - S701 : FUNCTION SEL (TAPE 2 - TAPE 1 - CD - PHONO - TUNER - LINE)
 - S702 : REC SEL (2-1 - 1-2 - SOURCE - OFF - CD - TUNER)
 - S703 : SULLES (ON - OFF)
 - S801-1 : SPEAKERS-A (ON-OFF)
 - S801-2 : SPEAKERS-B (ON-OFF)

Line Voltage Selection (HE and HEWZ types)

- 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 power transformer lead wire.
 4. Stick the line voltage label on the rear panel.

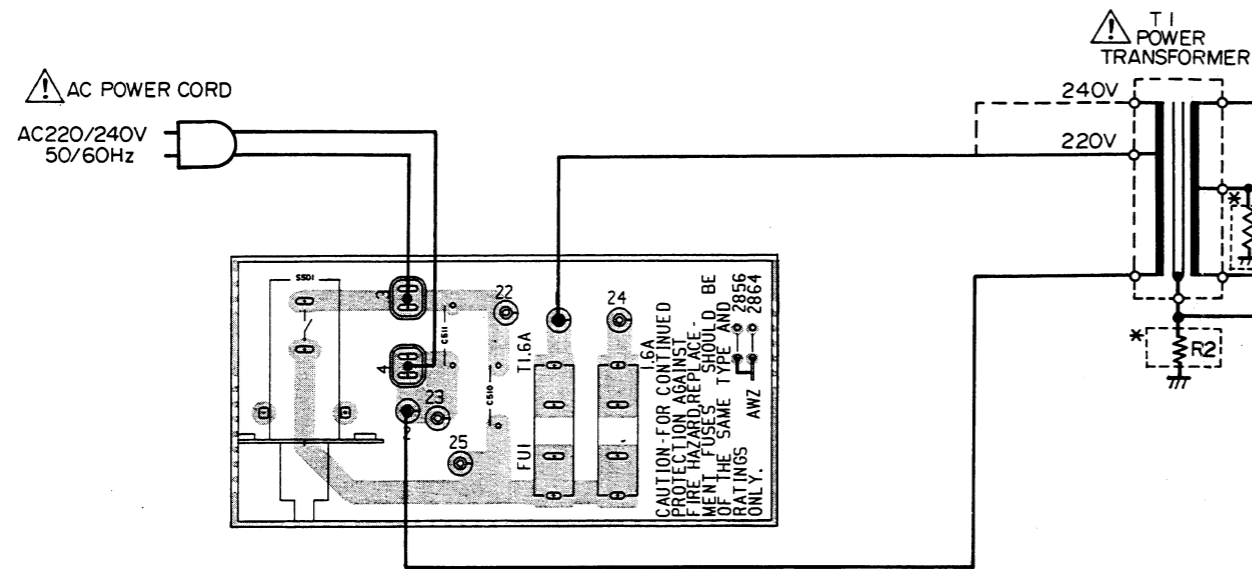
Part No.	Description	
AAX-193	220V label	— 220V
AAX-192	240V label	----- 240V

4.2 P.C. BOARDS CONNECTION DIAGRAM

AF COMPLEX ASS'Y
 AWZ2867 (HE type)
 AWZ2865 (HEWZ type)

- Parts with an asterisk (*) are different according to versions, HE or HEWZ. Refer to page 26 for details.

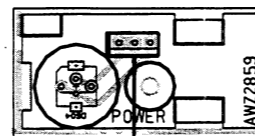
A



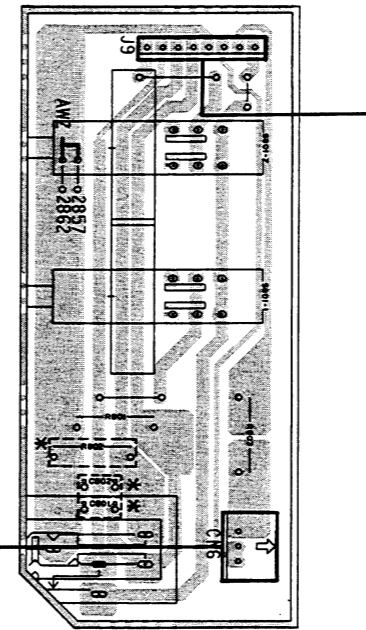
POWER SW ASS'Y

B

LED ASS'Y



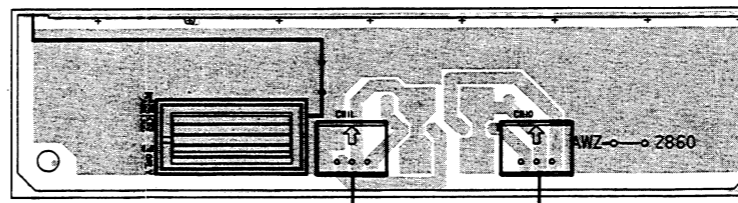
HEADPHONE ASS'Y



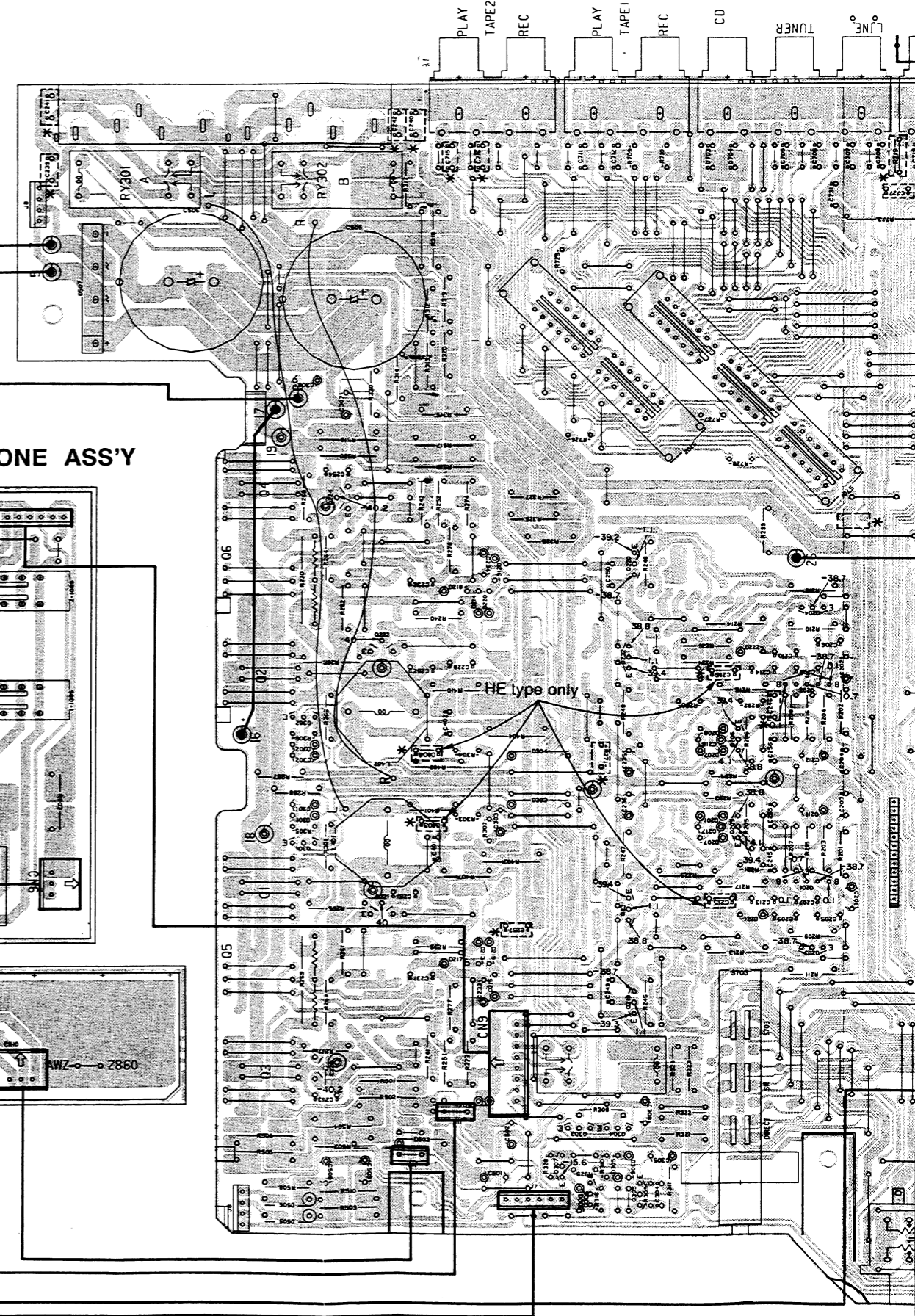
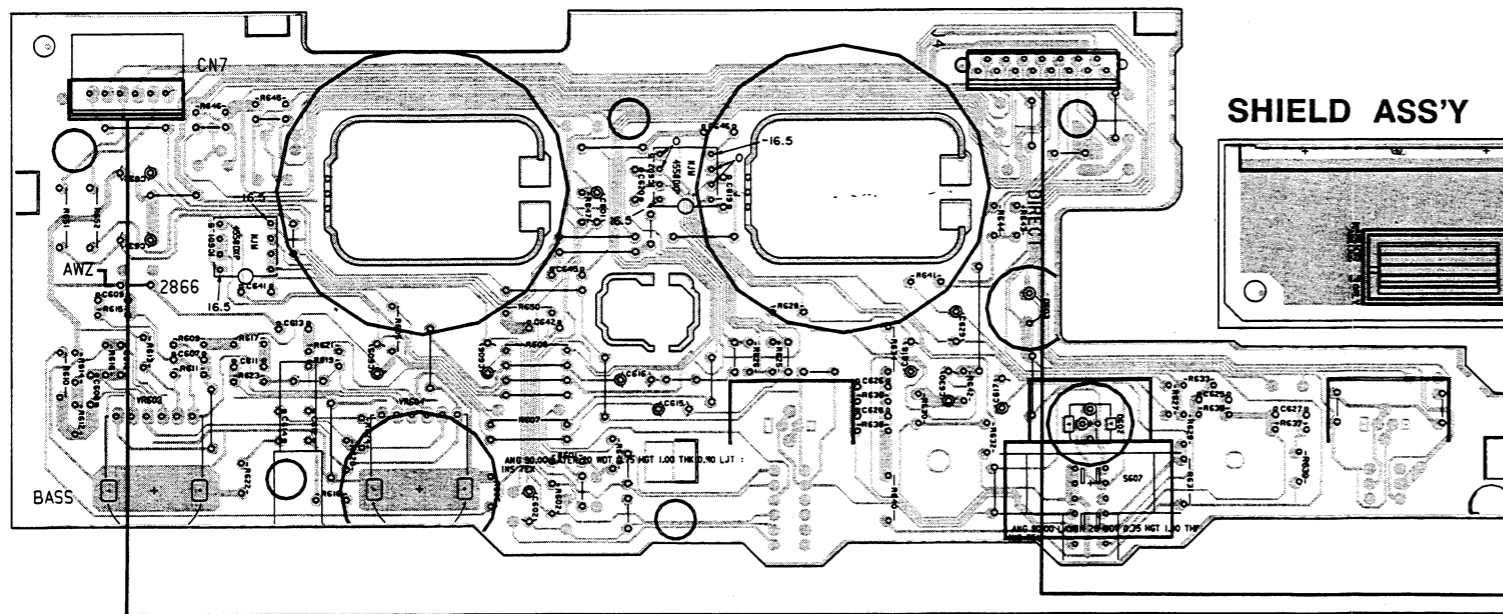
C

TONE ASS'Y (AWZ2866)

SHIELD ASS'Y



D



1

2

3

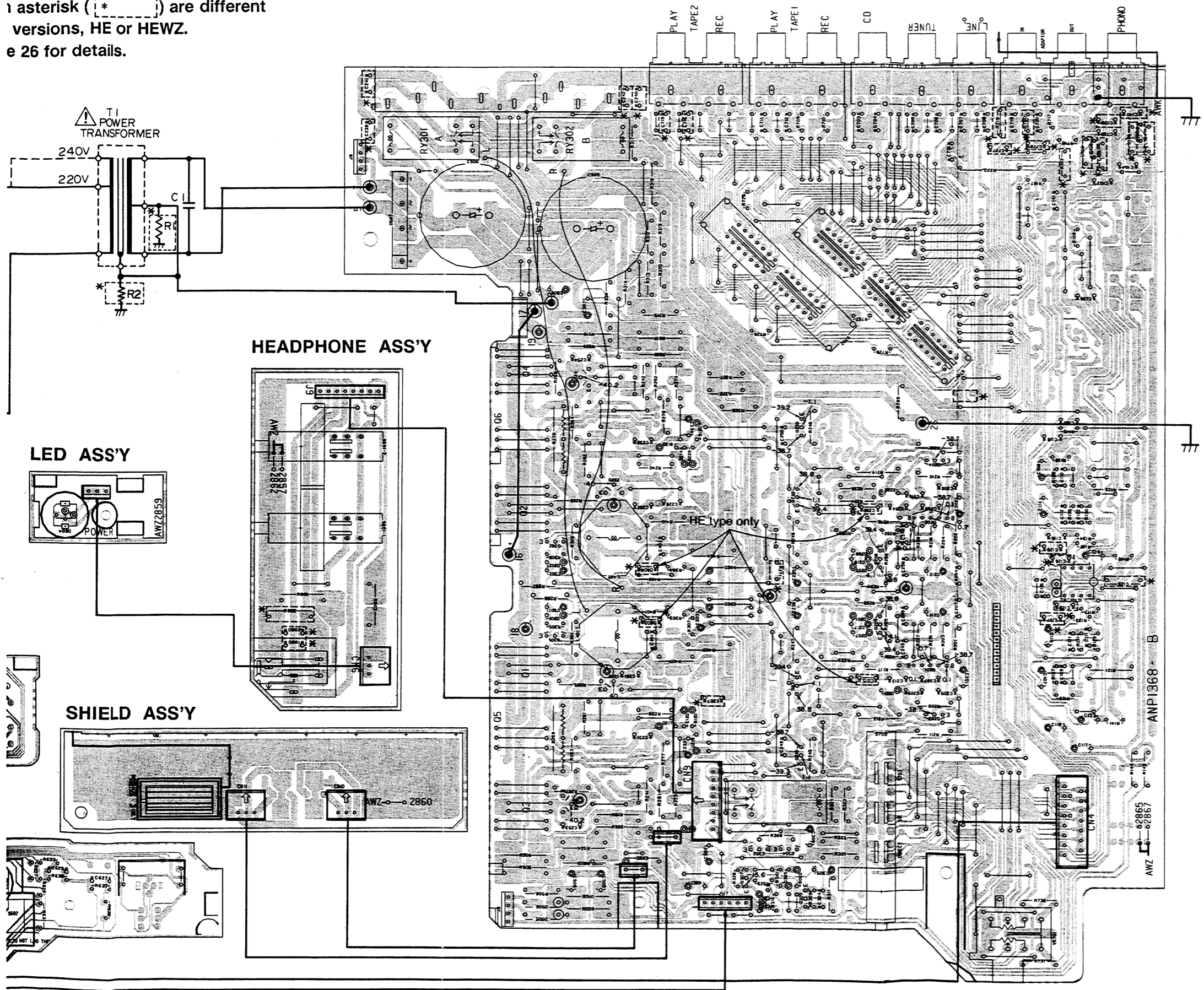
4

5

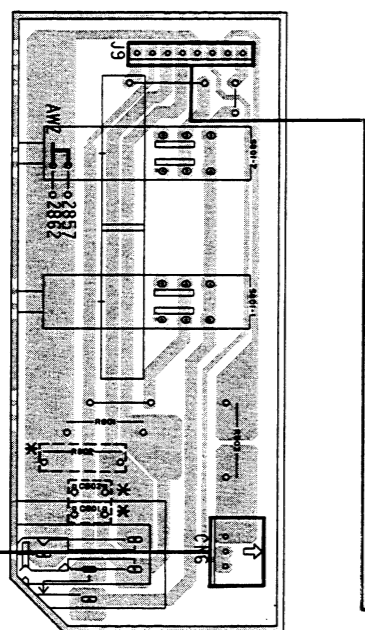
6

AF COMPLEX ASS'Y
AWZ2867 (HE type)
AWZ2865 (HEWZ type)

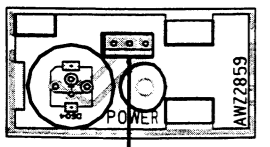
1 asterisk (*) are different versions, HE or HEWZ. See page 26 for details.



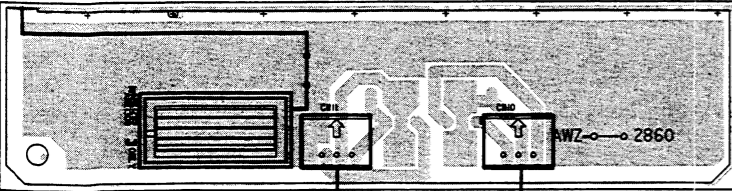
HEADPHONE ASS'Y



LED ASS'Y

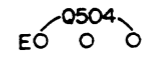
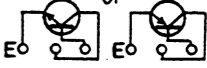
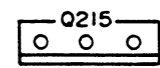
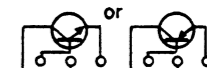
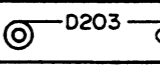
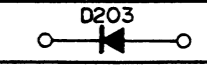
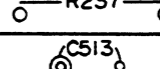
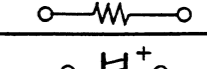
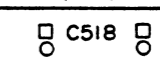
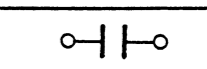

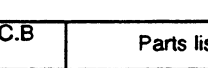


SHIELD ASS'Y



- Q224
- Q220
- Q204
- Q222
- Q232
- Q202
- Q302
- Q206
- IC101
- Q205
- Q301
- Q201
- Q221
- Q231
- Q203
- Q219
- Q223
- Q303
- Q304
- Q307
- Q306
- Q305

1. This P.C.B connection diagram is seen from the parts mount side.
2. The parts mounted on to the P.C.B can be replaced with those shown in the following correspondence table with wiring marks.

Indication of the P.C.B. pattern	Symbol of corresponding parts	Parts name
		Transistor
		Radiator type transistor
		Diode
		Resistor
		Condenser (Polar type)
		Condenser (Non-polar type)

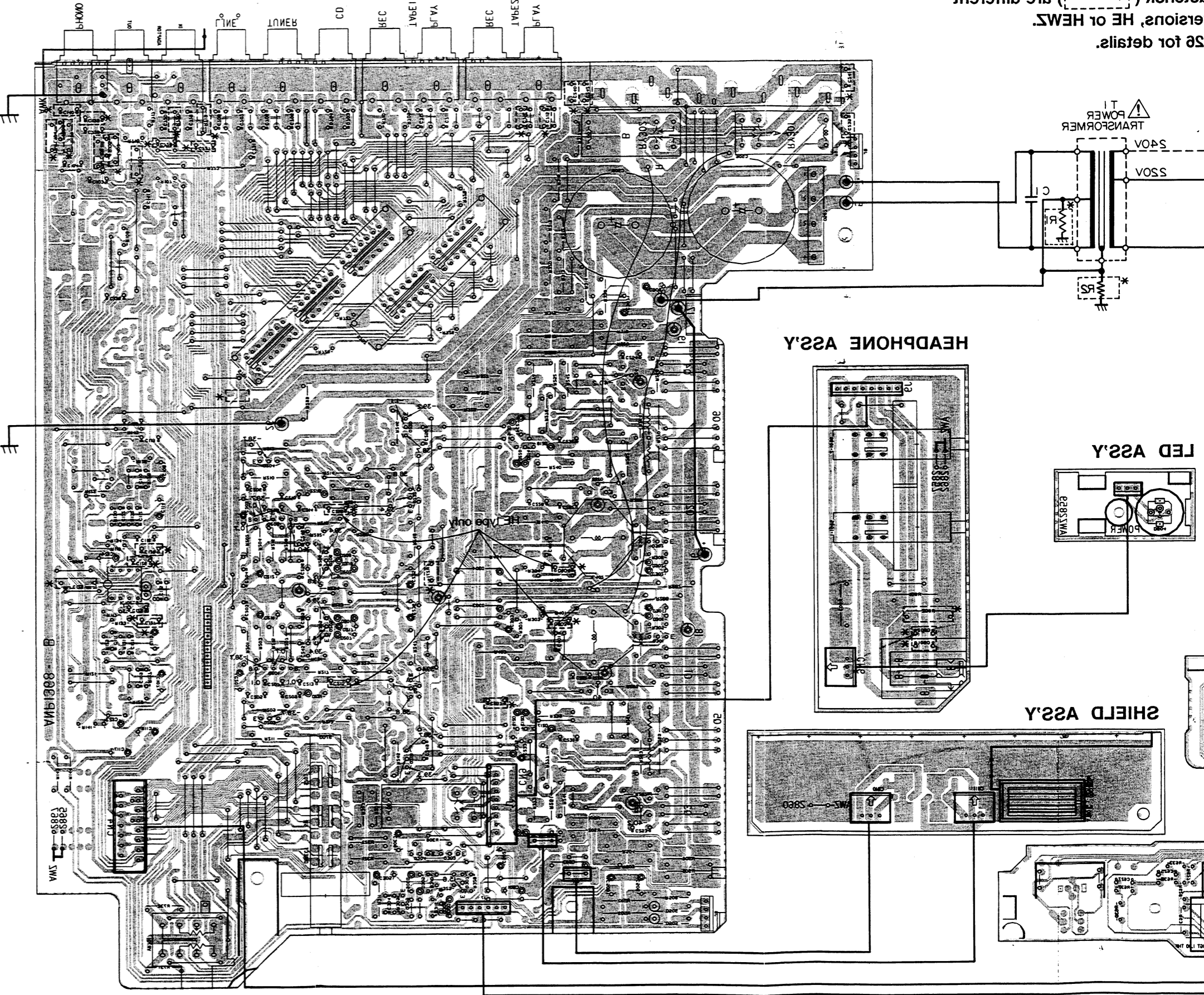
Others

Wiring mark on the P.C.B pattern diagram	Parts list
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or semi-fixed resistor

3. The condenser terminal marked with double circles (⊙) represents (-) terminal.
4. The diode terminal marked with double circles (⊙) represents the cathode side.
5. The transistor terminal marked with "E" represents an emitter.

AW52862 (HEW5 type)
AW52862 (HE type)
AF COMPLEX ASSY

versions HE or HEW5.
asterisk (*) are different
See for details.



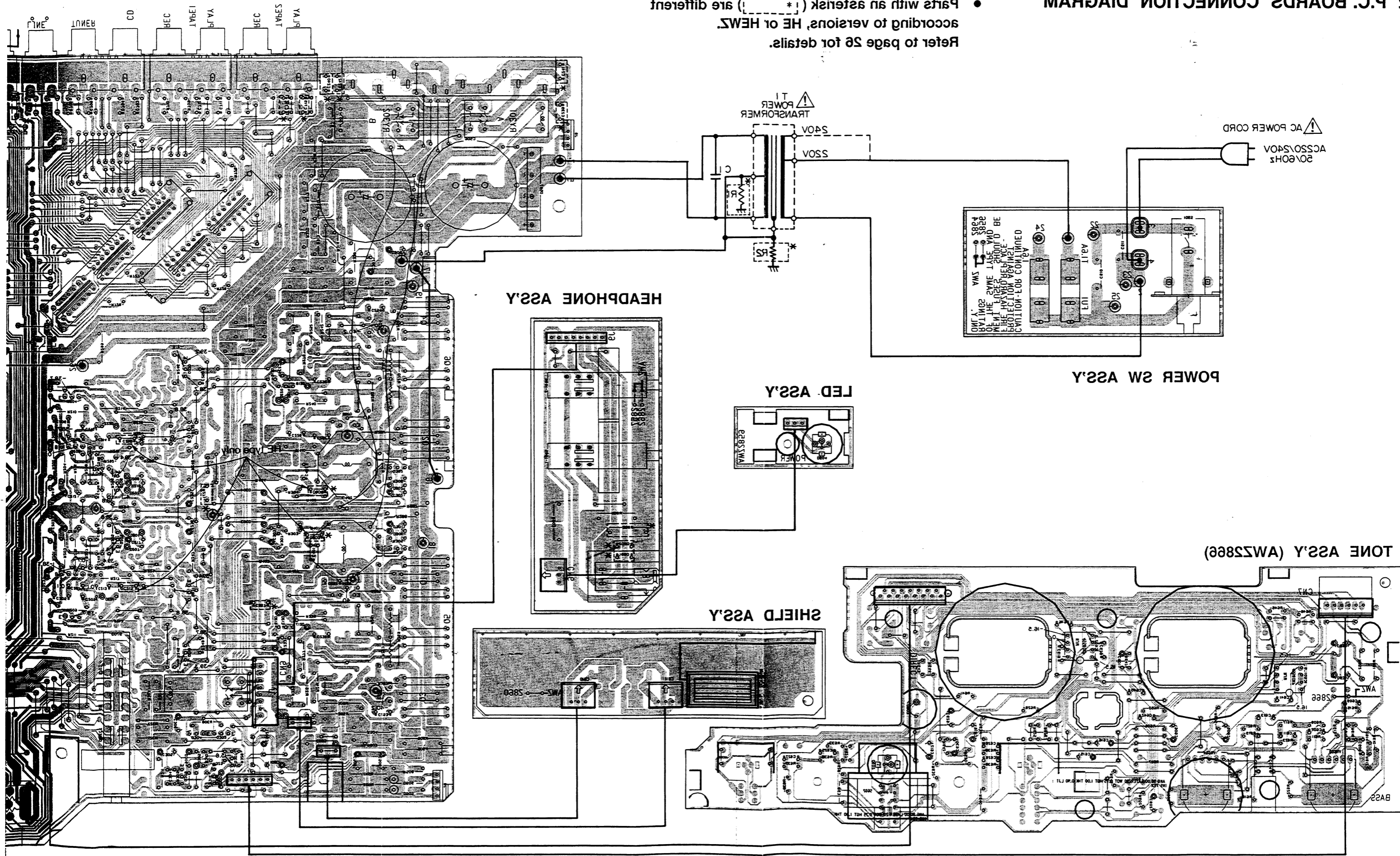
● View from soldering side

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

4.2 P.C. BOARDS CONNECTION DIAGRAM

- Parts with an asterisk (*) are different according to versions, HE or HEWS. Refer to page 26 for details.

AW2382 (HEWS type)
AW2382 (HE type)
AF COMPLEX ASSY



A
B
C
D

4.3 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%).

560Ω	56 × 10 ¹	561.....	RD1/4PS	5	6	1	J
47kΩ	47 × 10 ³	473.....	RD1/4PS	4	7	3	J
0.5Ω	0R5.....		RN2H	0	5		K
1Ω	010.....		RSIP	0	1	0	K

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

5.62kΩ	562 × 10 ¹	5621.....	RN1/4SR	5	6	2	1	F
--------	-----------------------	-----------	---------	---	---	---	---	---

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.	
LED ASS'Y				C609,C610	CERAMIC CAPACITOR		CKDYX823M25	
SEMICONDUCTOR				C611,C612	CERAMIC CAPACITOR		CKCYB332K50	
	D604	LED(RED)	AEL1065	C613,C614	CERAMIC CAPACITOR		CKDYX183M25	
SHIELD ASS'Y				C615,C616	ELECTR. CAPACITOR		CEAS2R2M50	
No parts supplied with the SHIELD Ass'y.				C617,C618	ELECTR. CAPACITOR		CEAS100M25	
HEADPHONE ASS'Y				C619,C620	CERAMIC CAPACITOR		CCDSL390J50	
RESISTORS				C625,C626	CERAMIC CAPACITOR		CKDYX104M25	
Δ	R801,R802	METAL OXIDE RESISTOR	RS1PMF331J	C627,C628	CERAMIC CAPACITOR		CKDYX823M25	
Δ	R803	METAL OXIDE RESISTOR	RS1LMF561J	C629,C630	ELECTR. CAPACITOR		CEAS470M25	
SWITCH				C631,C632	ELECTR. CAPACITOR		CEAS221M16	
	S801	PUSH SWITCH	SUL5L2B2S	C641,C642	CERAMIC CAPACITOR		CCCSSL470J50	
OTHERS				C645,C646	CERAMIC CAPACITOR		CKCYB102K50	
		JACK	AKN1002	RESISTORS				
	CN6	JUMPER CONNECTOR 3-P	KPC3	VR603,VR604	VARIABLE(100K-20AX2)		ACT1045	
POWER SW ASS'Y				R651,R652	CARBON FILM RESISTOR		RD1/4PM101J	
CAPACITORS				OTHER RESISTORS				RD1/8PM□□□J
Δ	C510,C511	CKA (0.01/AC400V)	ACG1002	SWITCH				
SWITCH				S602	PUSH SWITCH		ASG1019	
Δ	S501	PUSH SWITCH	ASG1035	AF COMPLEX ASS'Y (AWZ2867)				
AF COMPLEX ASS'Y (AWZ2867)				SEMICONDUCTORS				
TONE ASS'Y (AWZ2866)				IC101	OP-AMP IC		M5220P	
SEMICONDUCTORS				Q201,Q202	TRANSISTOR		2SA979	
IC601,IC602	OP-AMP IC		NJM4558DXP	Q203,Q204	TRANSISTOR		2SC2458	
D505,D506	DIODE		11E2	Q205,Q206	TRANSISTOR		2SA1048	
D602	LED(RED)		AEL1065	Q219,Q220	TRANSISTOR		2SC2705	
D603	LED		AEL1084	Q221,Q222	TRANSISTOR		2SC3298	
CAPACITORS				Q223,Q224	TRANSISTOR		2SA1306	
C601,C602	ELECTR. CAPACITOR		CEAS010M50	Q231,Q232	TRANSISTOR		2SA1145	
C605,C606	ELECTR. CAPACITOR		CEAS2R2M50	Q301,Q302	TRANSISTOR		2SC1845	
C607,C608	CERAMIC CAPACITOR		CKDYX153M25	Q303,Q304	TRANSISTOR		2SC2458	
				Q305	TRANSISTOR		2SA1048	
				Q306	TRANSISTOR		2SC1815	
				Q307	TRANSISTOR		2SC2458	
				D201,D202	DIODE		1SS252	
				D207,D208	DIODE		1SS252	

Mark	No.	Description	Parts No.
	D213-D216	DIODE	1SS252
	D217-D220	ZENER DIODE	RD8.2ESB1
	D221,D222	DIODE	1SS252
	D301-D306	DIODE	1SS252
	D307	ZENER DIODE	RD15ESB
	D503	ZENER DIODE	RD16ESB3
	D504	ZENER DIODE	RD16ESB3
	D507	DIODE	D5SB20F
COILS & FILTERS			
	L401,L402	COIL	ATH1004
CAPACITORS			
	C103,C104	CERAMIC CAPACITOR	CCCSL221J50
	C107,C108	ELECTR. CAPACITOR	CEAS101M10
	C109,C110	AUDIO FILM CAPACITOR	CFTXA683J50
	C111,C112	AUDIO FILM CAPACITOR	CFTXA183J50
	C113,C114	ELECTR. CAPACITOR	CEAS4R7M50
	C115,C116	MYLOR FILM CAPACITOR	CQMA472K50
	C117,C118	ELECTR. CAPACITOR	CEAS221M25
	C119,C120	CERAMIC CAPACITOR	CKCYF103Z50
	C121,C122	MYLOR FILM CAPACITOR	CQMA122J50
	C123,C124	ELECTR. CAPACITOR	CEAS100M50
	C201,C202	ELECTR. CAPACITOR	CEEA2R2M50
	C203-C206	CERAMIC CAPACITOR	CCCSL101J50
	C207,C208	CERAMIC CAPACITOR	CCCSL470J50
	C209,C210	CERAMIC CAPACITOR	CKCYB331K50
	C211,C212	ELECTR. CAPACITOR	CEEA221M16
	C213-C216	CERAMIC CAPACITOR	CCCSL150K500
	C217,C218	ELECTR. CAPACITOR	CEAS471M6
	C231,C232	CERAMIC CAPACITOR	CKCYB122K50
	C233,C234	ELECTR. CAPACITOR	CEAS100M50
	C235,C236	CERAMIC CAPACITOR	CCCSL101J50
	C249,C250	CERAMIC CAPACITOR	CCCSL050C500
	C251-C254	CERAMIC CAPACITOR	CCCSL101K500
	C255	CERAMIC CAPACITOR	CCCSL680J50
	C256	CERAMIC CAPACITOR	CCDSL470J50
	C301,C302	ELECTR. CAPACITOR	CEAS2R2M50
	C303	ELECTR. CAPACITOR	CEAS471M6
	C304	CERAMIC CAPACITOR	CKCYF103Z50
	C305	ELECTR. CAPACITOR	CEAS101M25
	C306-C308	ELECTR. CAPACITOR	CEASR47M50
	C401-C404	AUDIO FILM CAPACITOR	CFTXA104J50
	C501,C502	ELECTR. CAPACITOR	CEAS470M25
	C505,C506	ELECTR. CAPACITOR (6800/42V)	ACH1077
	C508	ELECTR. CAPACITOR	CEAS470M50
	C509	ELECTR. CAPACITOR	CEAS220M50
	C719,C720	CERAMIC CAPACITOR	CKCYB331K50
	C725	CERAMIC CAPACITOR	CKCYF103Z50
	C731	CERAMIC CAPACITOR	CKCYF103Z50

Mark	No.	Description	Parts No.
RESISTORS			
	VR701	VARIABLE(100K-20AX2)	ACT1062
	R105,R106	CARBON FILM RESISTOR	RDR1/6PU100J
	R121,R122	CARBON FILM RESISTOR	RDR1/4PM820J
	R133,R134	CARBON FILM RESISTOR	RDR1/6PU471J
	R141,R142	CARBON FILM RESISTOR	RDR1/6PU563J
	R143,R144	CARBON FILM RESISTOR	RD1/4PM560J
	R201-R204	CARBON FILM RESISTOR	RDR1/4PM□□□J
△	R205,R206	CARBON FILM RESISTOR	RD1/4PMF331J
	R207-R214	CARBON FILM RESISTOR	RD1/4PM□□□J
	R215-R218	CARBON FILM RESISTOR	RDR1/4PM□□□J
△	R239-R242	FUSLIBLE RESISTOR	RFA1/4PS101J
△	R245,R246	FUSLIBLE RESISTOR	RFA1/4PS101J
△	R247,R248	CARBON FILM RESISTOR	RD1/4PMF680J
	R251,R252	METALFILM RESISTER	RN1/4PQ1501F
△	R261-R264	CARBON FILM RESISTOR	RD1/4PMF101J
△	R265-R268	FUSLIBLE RESISTOR	RFA1/4PS4R7J
△	R269,R270	RESISTOR (0.33, 5W)	ACN1063
	R273,R274	CARBON FILM RESISTOR	RD1/4PM271J
	R277-R280	CARBON FILM RESISTOR	RD1/4PM□□□J
△	R287,R288	CARBON FILM RESISTOR	RD1/4PMF010J
	R299	CARBON FILM RESISTOR	RD1/4PM100J
△	R301,R302	CARBON FILM RESISTOR	RD1/4PMF222J
△	R308	CARBON FILM RESISTOR	RD1/4PMF101J
	R311-R315	CARBON FILM RESISTOR	RD1/4PM□□□J
	R317-R327	CARBON FILM RESISTOR	RD1/4PM□□□J
△	R330	CARBON FILM RESISTOR	RD1/4PMF010J
△	R401,R402	CARBON FILM RESISTOR	RD1/4PMFL100J
△	R403,R404	METAL OXIDE RESISTOR	RS1LMF331J
△	R407,R408	CARBON FILM RESISTOR	RD1/4PMFL100J
	R501-R506	CARBON FILM RESISTOR	RD1/2PM181J
△	R508	CARBON FILM RESISTOR	RD1/4PMF010J
△	R509,R510	METAL OXIDE RESISTOR	RS1LMF222J
	R517-R520	CARBON FILM RESISTOR	RD1/2PM181J
	R731,R732	CARBON FILM RESISTOR	RD1/4PM103J
	OTHER RESISTORS		RD1/8PM□□□J
SWITCHES			
	S701	SWITCH	ASU1016
	S702	SWITCH	ASU1002
	S703	PUSH SWITCH	SULL6S
OTHERS			
	CN4	JUMPER CONNECTOR	KPE15
	CN9	JUMPER CONNECTOR	KPC8
	RY301-RY303	RELAY	ASR-111
		PHONO JACK 6-P	AKB1007
		PHONO JACK 6-P	AKB1008
		PHONO JACK 6-P	AKB1024
		SPEAKER TERMINAL 8-P	AKE1011

5. FOR A-447/HEWZ AND A-447-S/HEWZ TYPES

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.

5.1 Contrast of Miscellaneous Parts

The A-447/HEWZ and A-447-S/HEWZ types are the same as the A-447/HE type with the exception of the following sections.

Mark	Symbol & Description	Parts No.			Remarks
		A-447/HE type	A-447/HEWZ type	A-447-S/HEWZ type	
	AF COMPLEX ASS'Y	AWZ2861	AWZ2855	AWZ2855	
	HEADPHONE ASS'Y	Non supply	Non supply	Non supply	
	POWER SW ASS'Y	Non supply	Non supply	Non supply	
	ROTARY KNOB S (PLS)	AAB1155	AAB1155	AAB1156	
	ROTARY KNOB L (PLS)	AAB1160	AAB1160	AAB1161	
	ROTARY KNOB R (PLS)	AAB1162	AAB1162	AAB1163	
	ROTARY KNOB M (PLS)	AAB1164	AAB1164	AAB1165	
	PUSH KNOB C	AAD1366	AAD1366	AAD1367	
	KNOB (POWER)	AAD1535	AAD1535	AAD1537	
	PUSH KNOB	AAD1536	AAD1536	AAD1538	
	PUSH KNOB C	AAD1803	AAD1803	AAD1804	
	SCREW	BBT30P060FZK	BBT30P060FZK	ABA-274	
	PACKING CASE	AHD1861	AHD1861	AHD1862	
	PANEL BASE (PLS)	AMB1651	AMB1651	AMB1652	
	FRONT PANEL	AMB1395	AMB1395	AMB1396	
	BONNET CASE	AZN1799	AZN1799	AZN1800	
	OPERATING INSTRUCTIONS	ARE1162	-----	-----	
	OPERATING INSTRUCTIONS	-----	ARC1213	ARC1213	
	R1, R2	-----	RD1/4PM100J	RD1/4PM100J	

5.2 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%).

560Ω	56 × 10 ¹	561.....	RD1/4PS	□	□	□	J
47kΩ	47 × 10 ³	473.....	RD1/4PS	□	□	□	J
0.5Ω	0R5.....		RN2H	□	□	□	K
1Ω	010.....		RS1P	□	□	□	K

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

5.62kΩ	562 × 10 ¹	5621.....	RN1/4SR	□	□	□	F
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Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.	
POWER SW ASS'Y				Q237 TRANSISTOR				2SC1845
CAPACITORS				Q238 TRANSISTOR				2SA992
Δ	C510,C511	CKA (0.01/AC400V)	ACG1002	Q301,Q302 TRANSISTOR				2SC1845
SWITCH				Q303,Q304 TRANSISTOR				2SC2458
Δ	S501	PUSH SWITCH	ASG1035	Q305 TRANSISTOR				2SA1048
HEADPHONE ASS'Y				Q306 TRANSISTOR				2SC1815
CAPACITORS				Q307 TRANSISTOR				2SC2458
	C801,C802	CERAMIC CAPACITOR	CKCYB392K50	D101,D102 ZENER DIODE				RD7.5ESB2
RESISTORS				D103 DIODE				1SS252
Δ	R801,R802	METAL OXIDE RESISTOR	RS1PMF331J	D201,D202 ZENER DIODE				RD2.7ESB1
Δ	R803	METAL OXIDE RESISTOR	RS1LMF681J	D209-D216 DIODE				1SS252
SWITCH				D217-D220 ZENER DIODE				RD15ESB
	S801	PUSH SWITCH	SUL5L2B2S	D301-D306 DIODE				1SS252
OTHERS				D307 ZENER DIODE				RD22ESB
	CN6	JUMPER CONNECTOR 3-P JACK	KPC3 AKN1002	D503,D504 ZENER DIODE				RD18ESB1
AF COMPLEX ASS'Y (AWZ2855)				D505,D506 DIODE				11E2
SEMICONDUCTORS				D507 DIODE				D5SB20F
	IC101	IC	UPC4570C	COILS & FILTERS				
	Q101-Q104	N-FET	2SK369	L101,L102 COIL(270μH)				ATH1010
	Q105,Q106	TRANSISTOR	2SC2458	L107,L108 COIL(270μH)				LAU3R3K
	Q201,Q202	TRANSISTOR	2SA979	L401,L402 COIL				ATH1009
	Q203-Q208	TRANSISTOR	2SA1048	CAPACITORS				
	Q211,Q212	TRANSISTOR	2SC1845	C101,C102 AUDIO FILM CAPACITOR				CFTXA103J50
	Q215-Q218	TRANSISTOR	2SA1048	C103,C104 CERAMIC CAPACITOR				CCCSL271J50
	Q219,Q220	TRANSISTOR	2SC2705	C105,C106 CERAMIC CAPACITOR				CKCYB472K50
	Q221,Q222	TRANSISTOR	2SC3298	C107,C108 ELECTR. CAPACITOR				CXA101M25
	Q223,Q224	TRANSISTOR	2SA1306	C109,C110 AUDIO FILM CAPACITOR				CFTXA683J50
	Q225,Q226	TRANSISTOR	2SC2603	C111,C112 AUDIO FILM CAPACITOR				CFTXA183J50
	Q227,Q228	TRANSISTOR	2SC1845	C113,C114 ELECTR. CAPACITOR				CEANP220M10
	Q229,Q230	TRANSISTOR	2SA992	C115,C116 MYLOR FILM CAPACITOR				CQMA392K50
	Q231,Q232	TRANSISTOR	2SA1145	C117,C118 ELECTR. CAPACITOR				CEAS221M25
	Q233,Q234	TRANSISTOR	2SA992	C119,C120 CERAMIC CAPACITOR				CKCYF103Z50
				C121,C122 MYLOR FILM CAPACITOR				CQMA122J50
				C127,C128 CERAMIC CAPACITOR				CCDSL101J50
				C129 CERAMIC CAPACITOR				CKPYX103N25
				C135,C136 ELECTR. CAPACITOR				CEAS470M10
				C137,C138 CERAMIC CAPACITOR				CCCSL151J50

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
C139,C140		CERAMIC CAPACITOR	CCCSL330J50	R219-R234		CARBON FILM RESISTOR	RD1/4PM□□□J
C141		CERAMIC CAPACITOR	CKCYF103Z50	R237,R238		CARBON FILM RESISTOR	RDR1/4PM224J
C201,C202		ELECTR. CAPACITOR	CEEA2R2M50	△ R239-R242		FUSIBLE RESISTOR	RFA1/4PS101J
C203,C204		CERAMIC CAPACITOR	CCCSL101K500	△ R243,R244		CARBON FILM RESISTOR	RD1/4PMF561J
C205,C206		CERAMIC CAPACITOR	CCCSL101J50	△ R245-R248		FUSIBLE RESISTOR	RFA1/4PS101J
C207,C208		CERAMIC CAPACITOR	CCCSL470J50	R249-R252		CARBON FILM RESISTOR	RD1/4PM□□□J
C209,C210		CERAMIC CAPACITOR	CCCSL221J50	R255,R256		CARBON FILM RESISTOR	RD1/4PM561J
C211,C212		ELECTR. CAPACITOR	CEEA221M16	△ R257-R260		FUSIBLE RESISTOR	RFA1/4PS101J
C213,C214		CERAMIC CAPACITOR	CCCSL080D500	△ R261-R268		FUSIBLE RESISTOR	RFA1/4PS470J
C217,C218		ELECTR. CAPACITOR	CEAS101M10	△ R269,R270		RESISTOR (0.33, 5W)	ACN1063
C219-C222		ELECTR. CAPACITOR	CEAS3R3M100	R275-R278		CARBON FILM RESISTOR	RD1/4PM□□□J
C225,C226		ELECTR. CAPACITOR	CEAS331M10	△ R281-R284		FUSIBLE RESISTOR	RFA1/4PS331J
C227-C230		CERAMIC CAPACITOR	CCCSL330K500	△ R285,R286		FUSIBLE RESISTOR	RFA1/4PS101J
C231,C232		CERAMIC CAPACITOR	CKCYB122K50	△ R287,R288		CARBON FILM RESISTOR	RD1/4PMF4R7J
C233-C236		ELECTR. CAPACITOR	CEAS100M50	△ R289,R290		FUSIBLE RESISTOR	RFA1/4PS101J
C237,C238		ELECTR. CAPACITOR	CEAS101M50	R299		CARBON FILM RESISTOR	RD1/4PM100J
C239-C242		POLYESTER CAPACITOR	CQMXA472J100	△ R301,R302		CARBON FILM RESISTOR	RD1/4PMF222J
C244		CERAMIC CAPACITOR	CKDYX104M25	△ R308		CARBON FILM RESISTOR	RD1/4PMF101J
C245,C246		CERAMIC CAPACITOR	CKCYB331K50	R311-R315		CARBON FILM RESISTOR	RD1/4PM□□□J
C247,C248		AUDIO FILM CAPACITOR	CFTXA103J50	R317-R327		CARBON FILM RESISTOR	RD1/4PM□□□J
C251-C254		CERAMIC CAPACITOR	CCCSL680K500	△ R330		CARBON FILM RESISTOR	RD1/4PMF010J
C255		CERAMIC CAPACITOR	CCCSL680J50	△ R401,R402		CARBON FILM RESISTOR	RD1/4PMFL101J
C256		CERAMIC CAPACITOR	CCDSL470J50	△ R403,R404		METAL OXIDE RESISTOR	RS1LMF331J
C301,C302		ELECTR. CAPACITOR	CEAS2R2M50	△ R407,R408		CARBON FILM RESISTOR	RD1/4PMFL100J
C303		ELECTR. CAPACITOR	CEAS471M6	△ R501-R507		METAL OXIDE RESISTOR	RS1PMF121J
C304		CERAMIC CAPACITOR	CKCYF103Z50	△ R507,R508		CARBON FILM RESISTOR	RD1/4PMF010J
C305		ELECTR. CAPACITOR	CEAS101M25	△ R509,R510		METAL OXIDE RESISTOR	RS1LMF272J
C306-C308		ELECTR. CAPACITOR	CEASR47M50	R513-R516		CARBON FILM RESISTOR	RD1/4PM272J
C401,C402		AUDIO FILM CAPACITOR	CFTXA473J50	△ R517-R520		METAL OXIDE RESISTOR	RS1PMF101J
C501,C502		ELECTR. CAPACITOR	CEAS100M50	R731,R732		CARBON FILM RESISTOR	RD1/4PM103J
C503,C504		ELECTR. CAPACITOR	CEAS470M25	OTHER RESISTORS			RD1/8PM□□□J
C505,C506		ELECTR. CAPACITOR (16000/5V)	ACH1078	SWITCHES			
C508		ELECTR. CAPACITOR	CEAS470M50	S101		PUSH SWITCH	ASG1012
C509		ELECTR. CAPACITOR	CEAS010M50	S701		SWITCH	ASU1016
C703-C708		CERAMIC CAPACITOR	CCCSL271J50	S702		SWITCH	ASU1002
C711,C712		CERAMIC CAPACITOR	CCCSL271J50	S703		PUSH SWITCH	SULL6S
C715,C716		CERAMIC CAPACITOR	CCCSL271J50	OTHERS			
C725		CERAMIC CAPACITOR	CCDSL221J50	CN4		JUMPER CONNECTOR	KPE15
C726		CERAMIC CAPACITOR	CKCYF103Z50	CN9		JUMPER CONNECTOR	KPC8
C727,C728		CERAMIC CAPACITOR	CCCSL221J50	RY301,RY302		RELAY	ASR-112
C731		CERAMIC CAPACITOR	CKCYF103Z50	RY303		RELAY	ASR-111
C733,C734		CERAMIC CAPACITOR	CKDYF102Z50			PHONO JACK 6-P	AKB1007
RESISTORS						PHONO JACK 6-P	AKB1008
VR201,VR202		VR(47K)	ACP1045			PHONO JACK 6-P	AKB1024
VR701		VARIABLE(100K-20AX2)	ACT1062			SPEAKER TERMINAL 8-P	AKE1011
R101,R102		CARBON FILM RESISTOR	RDR1/6PU101J				
R107,R108		CARBON FILM RESISTOR	RDR1/6PU563J				
R119-R121		CARBON FILM RESISTOR	RDR1/4PM□□□J				
R133,R134		CARBON FILM RESISTOR	RDR1/6PU391J				
R143,R144		CARBON FILM RESISTOR	RD1/4PM560J				
R201-R204		CARBON FILM RESISTOR	RDR1/4PM□□□J				

6. FOR A-337/HEWZ AND A-337-S/HEWZ TYPES

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.

6.1 Contrast of Miscellaneous Parts

The A-337/HEWZ and A-337-S/HEWZ types are the same as the A-337/HE type with the exception of the following sections.

Mark	Symbol & Description	Parts No.			Remarks
		A-337/HE type	A-337/HEWZ type	A-337-S/HEWZ type	
	AF COMPLEX ASS'Y	AWZ2867	AWZ2865	AWZ2865	
	HEADPHONE ASS'Y	Non supply	Non supply	Non supply	
	POWER SW ASS'Y	Non supply	Non supply	Non supply	
	ROTARY KNOB S (PLS)	AAB1155	AAB1155	AAB1156	
	ROTARY KNOB L (PLS)	AAB1160	AAB1160	AAB1161	
	ROTARY KNOB R (PLS)	AAB1162	AAB1162	AAB1163	
	ROTARY KNOB M (PLS)	AAB1166	AAB1164	AAB1167	
	PUSH KNOB C	AAD1366	AAD1366	AAD1367	
	KNOB (POWER)	AAD1535	AAD1535	AAD1537	
	PUSH KNOB	AAD1536	AAD1536	AAD1538	
	PUSH KNOB C	AAD1803	AAD1803	AAD1804	
	SCREW	BBT30P060FZK	BBT30P060FZK	ABA-274	
	PACKING CASE	AHD1863	AHD1863	AHD1864	
	PANEL BASE (PLS)	AMB1651	AMB1651	AMB1652	
	FRONT PANEL	AMB1397	AMB1397	AMB1398	
	BONNET CASE	AZN1799	AZN1799	AZN1800	
	OPERATING INSTRUCTIONS	ARE1162	-----	-----	
	OPERATING INSTRUCTIONS	-----	ARC1213	ARC1213	
	R1, R2	-----	RD1/4PM100J	RD1/4PM100J	

6.2 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 $\times 10^1$	561.....	RD1/4PS	5	6	1	J
47k Ω	47 $\times 10^3$	473.....	RD1/4PS	4	7	3	J
0.5 Ω	0R5.....		RN2H	0	5		K
1 Ω	010.....		RS1P	0	1	0	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	5	6	2	1	F
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Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
POWER SW ASS'Y				D213-D216	DIODE	1SS252	
CAPACITORS				D217-D220	ZENER DIODE	RD8.2ESB1	
Δ	C510,C511	CKA (0.01/AC400V)	ACG1002	D221,D222	DIODE	1SS252	
				D301-D306	DIODE	1SS252	
				D307	ZENER DIODE,	RD15ESB	
SWITCH				D503,D504	ZENER DIODE	RD16ESB3	
Δ	S501	PUSH SWITCH	ASG1035	D507	DIODE	D5SB20F	
HEADPHONE ASS'Y				COILS & FILTERS			
CAPACITORS				L103-L106	AXIAL INDUCTOR	LAU221K	
	C801,C802	CERAMIC CAPACITOR	CKCYB392K50	L401,L402	COIL	ATH1009	
RESISTORS				CAPACITORS			
Δ	R801,R802	METAL OXIDE RESISTOR	RS1PMF331J	C103,C104	CERAMIC CAPACITOR	CCCSL330J50	
Δ	R803	METAL OXIDE RESISTOR	RS1LMF561J	C107,C108	ELECTR. CAPACITOR	CEAS101M10	
SWITCH				C109,C110	AUDIO FILM CAPACITOR	CFTXA683J50	
	S801	PUSH SWITCH	SUL5L2B2S	C111,C112	AUDIO FILM CAPACITOR	CFTXA183J50	
OTHERS				C113,C114	ELECTR. CAPACITOR	CEAS4R7M50	
	CN6	JUMPER CONNECTOR 3-P JACK	KPC3 AKN1002	C115,C116	MYLOR FILM CAPACITOR	CQMA392K50	
AF COMPLEX ASS'Y (AWZ2865)				C117,C118	ELECTR. CAPACITOR	CEAS221M25	
SEMICONDUCTORS				C119,C120	CERAMIC CAPACITOR	CKCYF103Z50	
	IC101	OP-AMP IC	M5220P	C121,C122	MYLOR FILM CAPACITOR	CQMA122J50	
	Q201,Q202	TRANSISTOR	2SA979	C123,C124	ELECTR. CAPACITOR	CEAS100M50	
	Q203,Q204	TRANSISTOR	2SC2458	C125,C126	CERAMIC CAPACITOR	CCCSL101J50	
	Q205,Q206	TRANSISTOR	2SA1048	C127,C128	CERAMIC CAPACITOR	CCDSL221J50	
	Q219,Q220	TRANSISTOR	2SC2705	C129	CERAMIC CAPACITOR	CKPYX103N25	
	Q221,Q222	TRANSISTOR	2SC3298	C139,C140	CERAMIC CAPACITOR	CCDSL330J50	
	Q223,Q224	TRANSISTOR	2SA1306	C141	CERAMIC CAPACITOR	CKCYF103Z50	
	Q231,Q232	TRANSISTOR	2SA1145	C201,C202	ELECTR. CAPACITOR	CEEA2R2M50	
	Q301,Q302	TRANSISTOR	2SC1845	C203,C206	CERAMIC CAPACITOR	CCCSL101J50	
	Q303,Q304	TRANSISTOR	2SC2458	C207,C208	CERAMIC CAPACITOR	CCCSL470J50	
	Q305	TRANSISTOR	2SA1048	C209,C210	CERAMIC CAPACITOR	CKCYB331K50	
	Q306	TRANSISTOR	2SC1815	C211,C212	ELECTR. CAPACITOR	CEEA221M16	
	Q307	TRANSISTOR	2SC2458	C213,C214	CERAMIC CAPACITOR	CCCSL080D500	
	D201,D202	DIODE	1SS252	C217,C218	ELECTR. CAPACITOR	CEAS471M6	
	D207,D708	DIODE	1SS252	C231,C232	CERAMIC CAPACITOR	CKCYB122K50	
				C233,C234	ELECTR. CAPACITOR	CEAS100M50	
				C235,C236	ELECTR. CAPACITOR	CEAS0R1M50	

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	C239-C242	POLYESTER CAPACITOR	CQMXA472J100	△	R403,R404	METAL OXIDE RESISTOR	RS1LMF331J
	C245,C246	CERAMIC CAPACITOR	CKCYB331K50	△	R407,R408	CARBON FILM RESISTOR	RD1/4PMFL100J
	C249,C250	CERAMIC CAPACITOR	CCCSL050C500		R501-R506	CARBON FILM RESISTOR	RD1/2PM181J
	C251-C254	CERAMIC CAPACITOR	CCCSL101K500	△	R508	CARBON FILM RESISTOR	RD1/4PMF010J
	C255	CERAMIC CAPACITOR	CCCSL680J50	△	R509,R510	METAL OXIDE RESISTOR	RS1LMF222J
	C256	CERAMIC CAPACITOR	CCDSL470J50		R517-R520	CARBON FILM RESISTOR	RD1/2PM181J
	C257	CERAMIC CAPACITOR	CKCYF103Z50		R731,R732	CARBON FILM RESISTOR	RD1/4PM103J
	C301,C302	ELECTR. CAPACITOR	CEAS2R2M50		OTHER RESISTORS		RD1/8PM□□□J
	C303	ELECTR. CAPACITOR	CEAS471M6		SWITCHES		
	C304	CERAMIC CAPACITOR	CKCYF103Z50		S701	SWITCH	ASU1016
	C305	ELECTR. CAPACITOR	CEAS101M25		S702	SWITCH	ASU1002
	C306-C308	ELECTR. CAPACITOR	CEASR47M50		S703	PUSH SWITCH	SULL6S
	C401,C402	AUDIO FILM CAPACITOR	CFTXA473J50		OTHERS		
	C501,C502	ELECTR. CAPACITOR	CEAS470M25		CN4	JUNPER CONNECTOR	KPE15
	C505,C506	ELECTR. CAPACITOR (6800/42V)	ACH1077		CN9	JUMPER CONNECTOR	KPC8
	C508	ELECTR. CAPACITOR	CEAS470M50		RY301-RY303	RELAY	ASR-111
	C509	ELECTR. CAPACITOR	CEAS220M50			PHONO JACK 4-P	AKB1007
	C703-C720	CERAMIC CAPACITOR	CCCSL271J50			PHONO JACK 6-P	AKB1008
	C725-C728	CERAMIC CAPACITOR	CCDSL221J50			PHONO JACK 6-P	AKB1024
	C731	CERAMIC CAPACITOR	CKCYF103Z50			SPEAKER TERMINAL 8-P	AKE1011

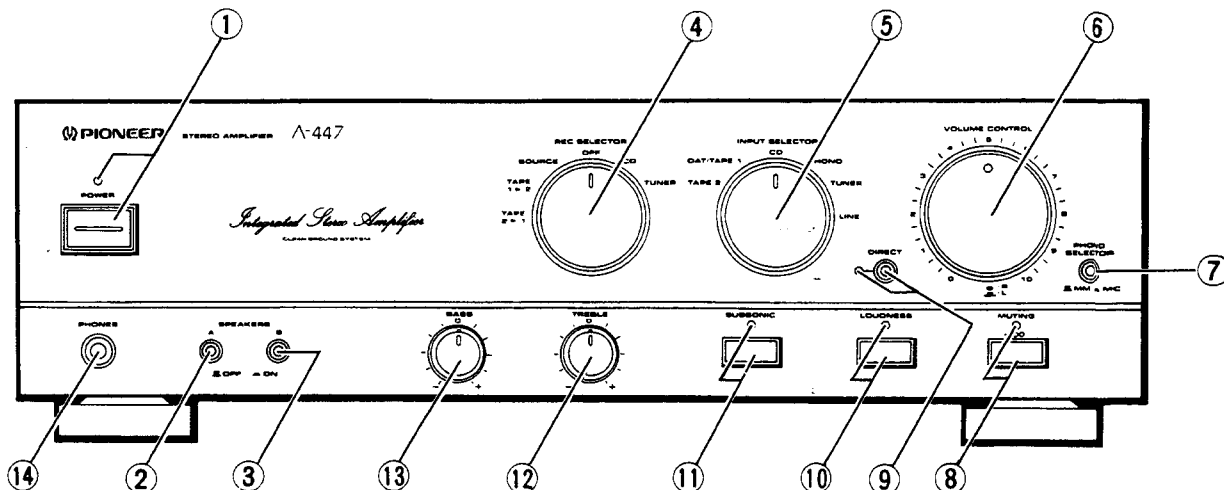
RESISTORS

	VR701	VARIABLE(100K-20AX2)	ACT1062
	R121,R122	CARBON FILM RESISTOR	RDR1/4PM820J
	R133,R134	CARBON FILM RESISTOR	RDR1/6PU471J
	R141,R142	CARBON FILM RESISTOR	RDR1/6PU563J
	R143,R144	CARBON FILM RESISTOR	RD1/4PM560J
	R201-R204	CARBON FILM RESISTOR	RDR1/4PM□□□J
△	R205,R206	CARBON FILM RESISTOR	RD1/4PMF331J
	R207-R214	CARBON FILM RESISTOR	RD1/4PM□□□J
	R215-R218	CARBON FILM RESISTOR	RDR1/4PM□□□J
△	R239-R246	FUSLIBLE RESISTOR	RFA1/4PS101J
△	R247,R248	CARBON FILM RESISTOR	RD1/4PMF680J
	R251,R252	METALFILM RESISTER	RN1/4PQ1501F
△	R261-R264	CARBON FILM RESISTOR	RD1/4PMF101J
△	R265-R268	FUSLIBLE RESISTOR	RFA1/4PS4R7J
△	R269,R270	RESISTOR (0.33, 5W)	ACN1063
	R273,R274	CARBON FILM RESISTOR	RD1/4PM271J
	R277-R280	CARBON FILM RESISTOR	RD1/4PM□□□J
△	R287,R288	CARBON FILM RESISTOR	RD1/4PMF010J
	R299	CARBON FILM RESISTOR	RD1/4PM100J
△	R301,R302	CARBON FILM RESISTOR	RD1/4PMF222J
△	R308	CARBON FILM RESISTOR	RD1/4PMF101J
	R311-R315	CARBON FILM RESISTOR	RD1/4PM□□□J
	R317-R327	CARBON FILM RESISTOR	RD1/4PM□□□J
△	R330	CARBON FILM RESISTOR	RD1/4PMF010J
△	R401,R402	CARBON FILM RESISTOR	RD1/4PMFL101J

7. PANEL FACILITIES

[FRONT PANEL]

The illustration shows model A-447.
Model A-337 is not equipped ⑦, ⑧ and ⑩.



① POWER switch/indicator

Press to turn power to the unit ON and OFF.
When the power is on, the indicator lights.

② SPEAKERS A selector switch

Use this switch to listen to the speaker systems connected to SPEAKERS A terminals.

ON (▲):

Depressed position: Sound is heard from the speaker systems.

OFF (■):

Released position: No sound is heard from the speaker systems. Set to this position when listening with headphones.

③ SPEAKERS B selector switch

Use this switch to listen to the speaker systems connected to SPEAKERS B terminals.

ON (▲):

Depressed position: Sound is heard from the speaker systems.

OFF (■):

Released position: No sound is heard from the speaker systems. Set to this position when listening with headphones.

④ REC SELECTOR switch

When this switch is set to a position other than SOURCE or OFF, the equipment selected by REC SELECTOR switch can be recorded from, irrespective of the settings of INPUT SELECTOR and DIRECT switches.

TUNER:

To record from the equipment connected to TUNER terminals.

CD:

To record from the equipment connected to CD terminals.

OFF:

In this position, nothing from REC terminals of DAT/TAPE 1 and TAPE 2 is output. Set to this position when not recording; the cassette deck will be disconnected, improving sound quality.

SOURCE:

To record from the equipment selected by INPUT SELECTOR switch.

TAPE:

1 ► 2:

To record (copy) from the cassette deck of DAT/TAPE 1 terminals, to the cassette deck of TAPE 2 terminals.

2 ► 1:

To record (copy) from the cassette deck of TAPE 2 terminals, to the cassette deck of DAT/TAPE 1 terminals.

⑤ INPUT SELECTOR switch

Use to select the playback source.

LINE:

For playback with a component connected to LINE terminal.

TUNER:

For AM or FM broadcast reception with a tuner.

PHONO:

For record playback with a turntable.

NOTE:

- With the A-337, you can use an MM cartridge or a high-output MC cartridge (over 1 mV).
- According to the type of cartridge used with the A-447, you can select MM or MC with the PHONO SELECTOR switch.

CD:

For compact disc playback with a CD player.

DAT/TAPE 1:

For playback with a cassette deck or digital audio tape deck connected to DAT/TAPE 1 terminals.

TAPE 2:

For playback with a cassette deck connected to TAPE 2 terminals.

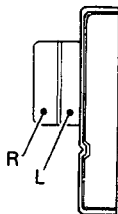
⑥ VOLUME CONTROL

Use to adjust the volume level.

This volume knob consists of two volume controls. Because you can adjust L (left) and R (right) channel volume levels independently, it also functions as a balance control.

[Example]

To raise R (right) channel volume level, prevent the L knob from turning with one hand, and turn the R knob with the other hand.



NOTE:

This unit is equipped with a circuit that attenuates LOUDNESS and TONE effect as volume is turned up.

⑦ PHONO SELECTOR switch (A-447 only)

Set in accordance with the type of cartridge used with your turntable.

MM (■):

Set to this position when using a moving magnet cartridge, or a moving coil cartridge with a high output of 1 mV or more.

MC (▲):

Set to this position when using a moving coil cartridge.

⑧ MUTING switch (A-447 only)

Use to temporarily cut sound volume.

on: The indicator lights.

The sound is cut off.

off: The indicator goes off.

The sound will return to its previous volume.

⑨ DIRECT switch/indicator

Use this switch/indicator when you do not wish to pass the output from input terminal equipment through the various frequency adjusting circuits (BASS, TREBLE, SUBSONIC, LOUDNESS) and adaptor terminals (ADAPTOR).

on:

The indicator lights: The signals input through the input terminals are reproduced without passing through the various frequency adjusting circuits. This results in flat, pure sound which is a more faithful reproduction of the input source.

off:

The indicator goes out: The signal passes through the various frequency adjusting circuits.

⑩ LOUDNESS switch/indicator

Use when listening at low volume levels.

on:

The indicator lights: Boosts low and high frequencies to give added punch to playback even at low volume levels.

off:

The indicator goes off: Should normally be left in this position.

NOTE:

This switch does not operate when DIRECT switch is in the on position.

⑪ SUBSONIC filter switch/indicator (A-447 only)

Use this switch when playing records with coarse grooves.

on:

The indicator lights: In this position, frequencies of 17 Hz and below are cut, eliminating super-low-frequency noise caused by coarse record grooves, and thus helping prevent sound distortion.

off:

The indicator goes off: Leave in this position for normal playback.

NOTE:

This switch does not operate when DIRECT switch is in the on position.

⑫ TREBLE tone control

Use to adjust the high-frequency tone. The center position is the flat (normal) position. When turned to the right, high-frequency tones are emphasized; when turned to the left, high-frequency tones are de-emphasized.

NOTE:

- This control does not operate when DIRECT switch is in the on position.

- At volume levels lower than "4", the set tone control effect is obtained.

- At volume levels higher than "4", the effect becomes increasingly weaker.

⑬ BASS tone control

Use to adjust the low-frequency tone. The center position is the flat (normal) position. When turned to the right, low-frequency tones are emphasized; when turned to the left, low-frequency tones are de-emphasized.

NOTE:

- This control does not operate when DIRECT switch is in the on position.

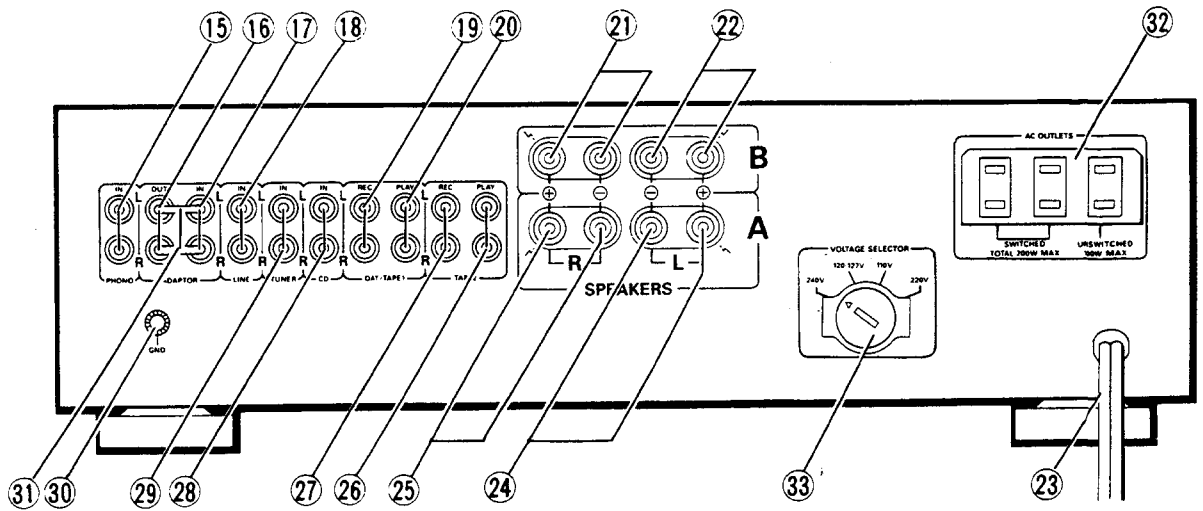
- At volume levels lower than "4", the set tone control effect is obtained.

- At volume levels higher than "4", the effect becomes increasingly weaker.

⑭ PHONES jack

When using headphones, insert the plug into this jack.

[REAR PANEL]



- ①⑤ PHONO terminals
- ①⑥ ADAPTOR OUT terminals
- ①⑦ ADAPTOR IN terminals
- ①⑧ LINE terminals
- ①⑨ DAT/TAPE 1 REC terminals
- ①⑩ DAT/TAPE 1 PLAY terminals
- ①⑪ SPEAKERS B terminals (right channel)
- ①⑫ SPEAKERS B terminals (left channel)
- ①⑬ Power cord
Connect this cord to an AC wall socket, or the AC outlet of an audio timer.
- ①⑭ Shorting bars
- ①⑮ AC OUTLETS
- ①⑯ VOLTAGE SELECTOR (multi-voltage models)
- ②④ SPEAKERS A terminals (left channel)
- ②⑤ SPEAKERS A terminals (right channel)
- ②⑥ TAPE 2 PLAY terminals
- ②⑦ TAPE 2 REC terminals
- ②⑧ CD terminals
- ②⑨ TUNER terminals
- ③⑩ Turntable ground terminal (GND)
- ③③ VOLTAGE SELECTOR (multi-voltage models)

8. SPECIFICATIONS

[A-447]

Amplifier Section

Continuously Average Power Output is 60 Watts per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz, with no more than 0.009%** total harmonic distortion.

Continuous power output (both channels driven at 20 Hz to 20 kHz)**	
T.H.D. 0.009 %, 8 Ω	60 W + 60 W*
T.H.D. 0.02 %, 4 Ω	80 W + 80 W*
Dynamic power output (on EIA dynamic test signal)	
8 Ω/4 Ω/2 Ω	75 W/110 W/150 W
Total harmonic distortion **	
20 Hz to 20 kHz, 60 W, 8 Ω	0.009 %*
20 Hz to 20 kHz, 80 W, 4 Ω	0.02 %*
Input sensitivity/impedance	
PHONO (MM)	2.5 mV/50 kΩ
PHONO (MC)	0.2 mV/100 Ω
CD, TUNER, LINE, TAPE	150 mV/40 kΩ
PHONO overload level	
1 kHz, T.H.D. 0.008 % (MM/MC)	150 mV/12 mV
Output level/impedance	
TAPE REC, ADAPTOR OUTPUT	150 mV/2.2 kΩ
Frequency response	
PHONO (MM)	20 Hz to 20 kHz ± 0.3 dB
PHONO (MC)	20 Hz to 20 kHz ± 0.5 dB
CD, TUNER, LINE, TAPE	5 Hz to 100 kHz ± 0.5 dB*
Tone control (volume control set at -30 dB position)	
BASS	± 8 dB (100 Hz)
TREBLE	± 8 dB (10 kHz)
Loudness contour (volume control set at -30 dB position)	
	+5 dB (100 Hz)/+3 dB (10 kHz)
Filter (SUBSONIC)	17 Hz (12 dB/oct.)
Signal-to-Noise ratio (IHF short circuit, A network)	
PHONO (MM, 5 mV input/MC, 0.5 mV input)	93 dB/74 dB*
CD, TUNER, LINE, TAPE	108 dB*
Muting	-∞

Power Supply/Miscellaneous

Power requirements	
Canadian model	AC 120 V, 60 Hz
Other destination models	AC 110 V/120-127 V/220 V, 240 V (Switchable), 50/60 Hz
Power Construction	
Canadian model	430 VA (CSA)
Other destination models	550 W
AC outlets	
switched (x 2)	200 W
unswitched (x 1)	100 W
Dimensions	420 (W) x 352 (D) x 126 (H) mm 16-9/16 (W) x 13-7/8 (D) x 5 (H) in
Weight (without package)	8.1 kg (17 lb 14 oz)

Accessories

Operating instructions	1
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NOTE:

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

* Measured with DIRECT switch set to on.

** Measured by Audio Spectrum Analyzer.

[A-337]

Amplifier Section

Continuous Average Power Output is 40 watts*** per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz, with no more than 0.02%** total harmonic distortion.

Continuous power output (both channels driven at 20 Hz to 20 kHz)**	
T.H.D. 0.02 %, 8 Ω	40 W + 40 W*
T.H.D. 0.03 %, 4 Ω	50 W + 50 W*
Dynamic power output (on EIA dynamic test signal)	
8 Ω/4 Ω/2 Ω	55 W/90 W/100 W
Total harmonic distortion **	
20 Hz to 20 kHz, 40 W, 8 Ω	0.02 %*
20 Hz to 20 kHz, 50 W, 8 Ω	0.03 %*
Input sensitivity/impedance	
PHONO (MM)	2.5 mV/50 kΩ
CD, TUNER, LINE, TAPE	150 mV/40 kΩ
PHONO overload level	
1 kHz, T.H.D. 0.02 % (MM)	150 mV
Output level/impedance	
TAPE REC, ADAPTOR OUTPUT	150 mV/2.2 kΩ
Frequency response	
PHONO (MM)	20 Hz to 20 kHz ± 0.3 dB
CD, TUNER, LINE, TAPE	5 Hz to 100 kHz ± 0.5 dB*
Tone control (volume control set at -30 dB position)	
BASS	± 8 dB (100 Hz)
TREBLE	± 8 dB (10 kHz)
Loudness contour (volume control set at -30 dB position)	
	+5 dB (100 Hz)/+3 dB (10 kHz)
Signal-to-Noise ratio (IHF short circuit, A network)	
PHONO (MM, 5 mV input)	89 dB*
CD, TUNER, LINE, TAPE	108 dB*

Power Supply/Miscellaneous

Power requirements	
U.S., Canadian models	AC 120 V, 60 Hz
Other destination models	AC 110 V/120-127 V/220 V, 240 V (Switchable), 50/60 Hz
Power Construction	
U.S., Canadian model	260 W (UL), 330 VA (CSA)
Other destination models	410 W
AC outlets	
switched (x 2)	200 W
unswitched (x 1)	100 W
Dimensions	420 (W) x 352 (D) x 126 (H) mm 16-9/16 (W) x 13-7/8 (D) x 5 (H) in
Weight (without package)	6.9 kg (15 lb 3 oz)

Accessories

Operating instructions	1
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NOTE:

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

* Measured with DIRECT switch set to on.

** Measured by Audio Spectrum Analyzer.

*** Measured pursuant to the Federal Trade Commission's Trade Regulation rules on Power Output Claims for Amplifiers.