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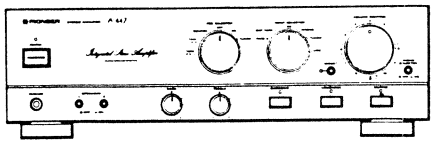
Service Manual



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

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.

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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 servic ar handling circuit boards and other components which contain lead in in solder, avo: protected skin contact with the solder. Also, when soldering do not inhale any smoke o: lumes produced.

1. SAFETY INFORMATION

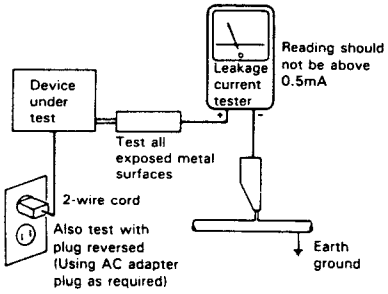
(FOR USA MODEL ONLY)

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

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

2. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES:

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

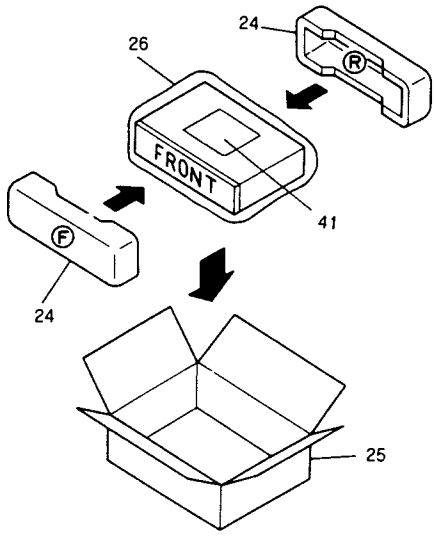
2.1 PARTS LIST OF A-447/HE

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

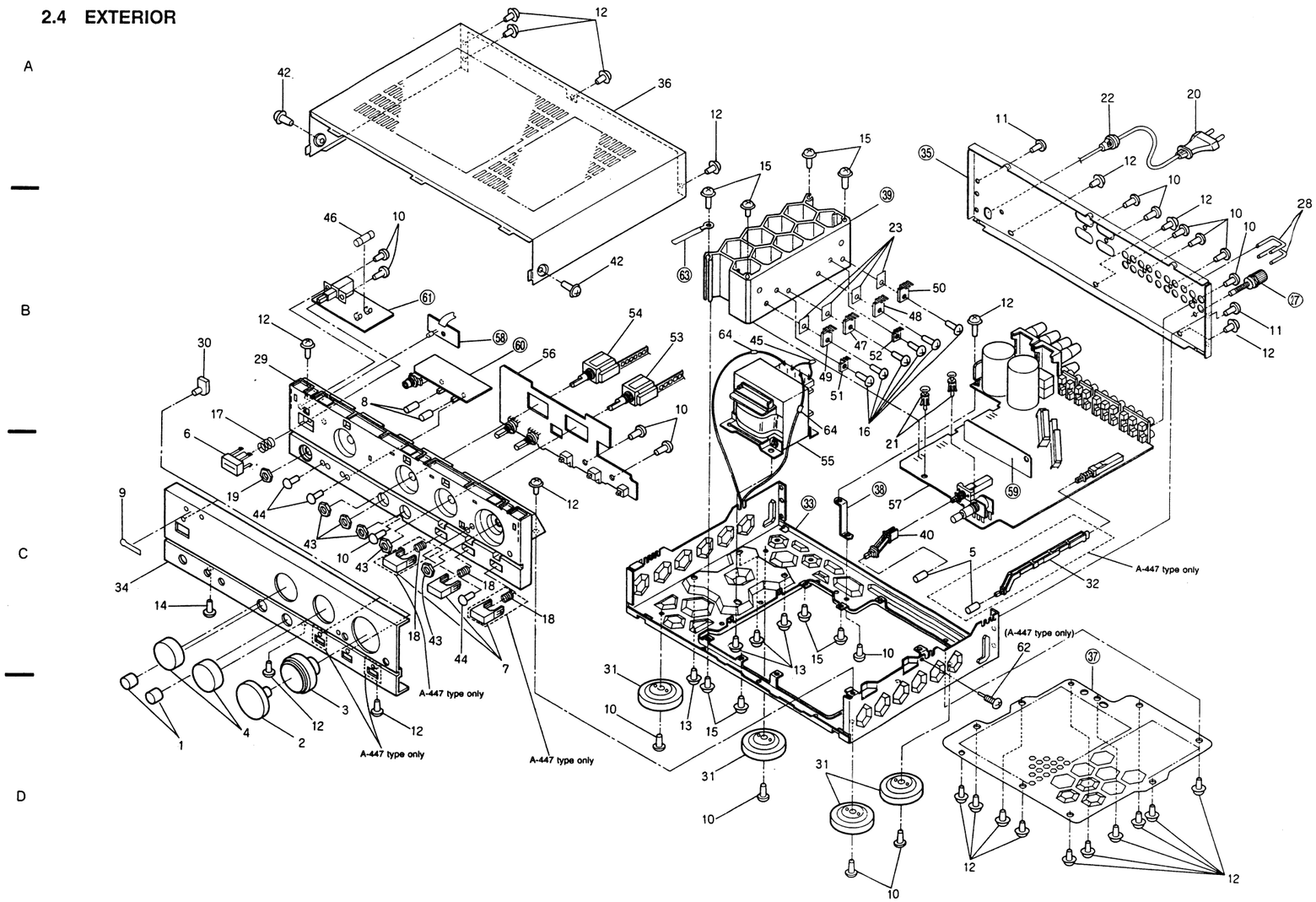
2.2 PARTS LIST OF A-337/HE

Mark	No.	Description	Parts No.
	1	ROTARY KNOB S (PLS)	AAB1155
	2	ROTARY KNOB L (PLS)	AAB1160
	3	ROTARY KNOB R (PLS)	AAB1162
	4	ROTARY KNOB M (PLS)	AAB1166
	5	PUSH KNOB C	AAD1366
	6	KNOB (POWER)	AAD1535
	7	PUSH KNOB	AAD1536
	8	PUSH KNOB C	AAD1803
	9	NAME PLATE (METAL)	AAM1029
	10	SCREW	ABA-298
	11	SCREW (STEEL)	ABA1009
	12	SCREW (STEEL)	ABA1011
	13	SCREW (STEEL)	ABA1016
	14	SCREW (STEEL)	ABA1048
	15	SCREW (STEEL)	ABA1050
	16	SCREW 3X14	ABA1082
	17	SPRING B	ABH-052
	18	SPRING B	ABH1034
	19	NUT	ABN-065
⚠	20	AC POWER CORD	ADG1049
	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
⚠	45	C1 CAPACITOR	CQMXA473J100
⚠	46	FU1 FUSE (T1.6A)	AEK-405
⚠	47	Q1 TRANSISTOR	2SC3181N
⚠	48	Q2 TRANSISTOR	2SC3181N
⚠	49	Q3 TRANSISTOR	2SA1264N
⚠	50	Q4 TRANSISTOR	2SA1264N
⚠	51	Q5 TRANSISTOR	2SC4137
⚠	52	Q6 TRANSISTOR	2SC4137
	53	S1 SWITCH	ASU1035
	54	S2 SWITCH	ASU1036
⚠	55	T1 POWER TRANSFORMER	ATS1278
	56	TONE ASS'Y	AWZ2866
	57	AF COMPLEX ASS'Y	AWZ2867
	58	LED ASS'Y	
	59	SHIELD ASS'Y	
	60	HEADPHONE ASS'Y	
	61	POWER SW ASS'Y	
	62	----------	
	63	BINDER	
	64	R1, R2 RESISTORS (HEWZ type only)	RD1/4PM100J

2.3 PACKING



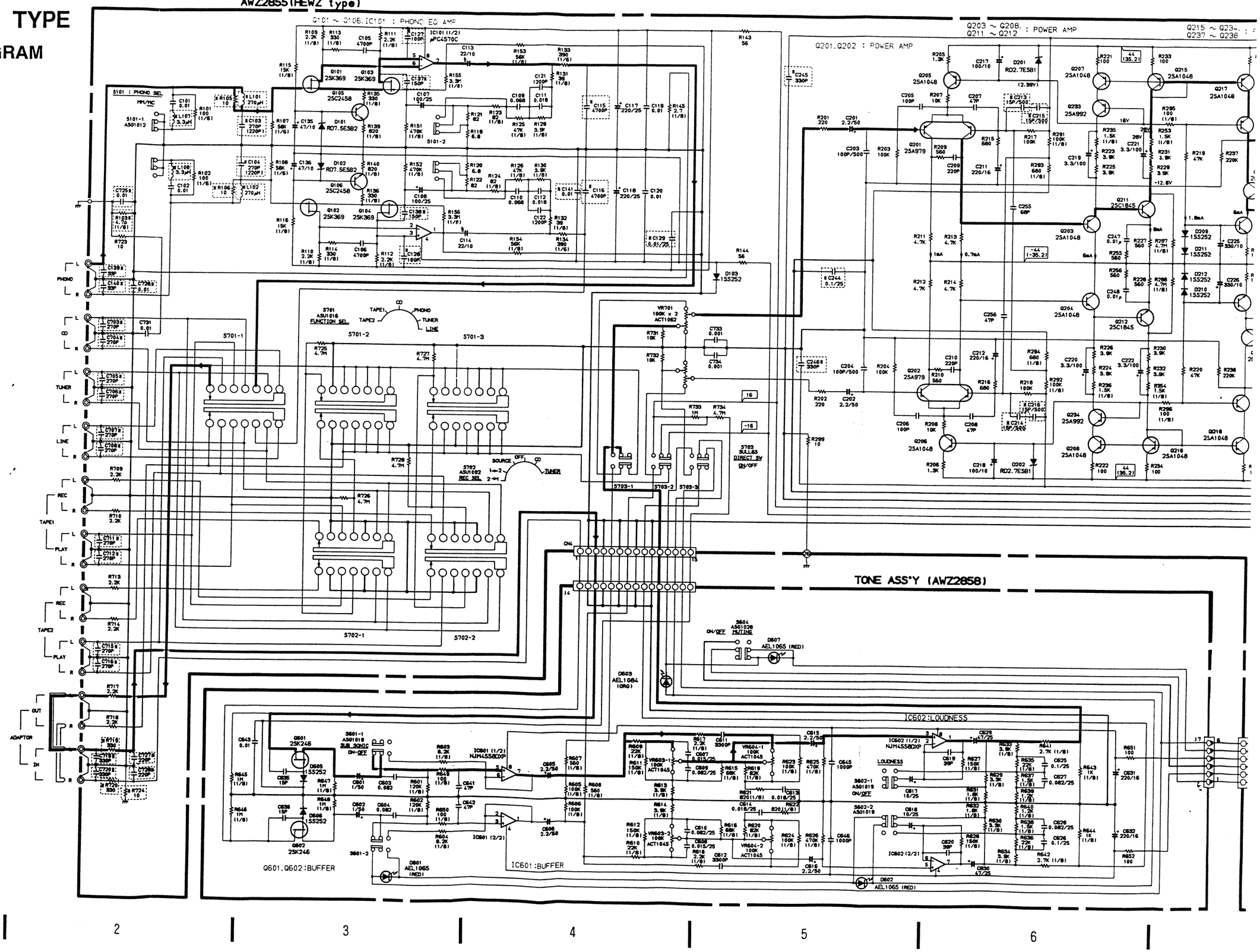
2.4 EXTERIOR

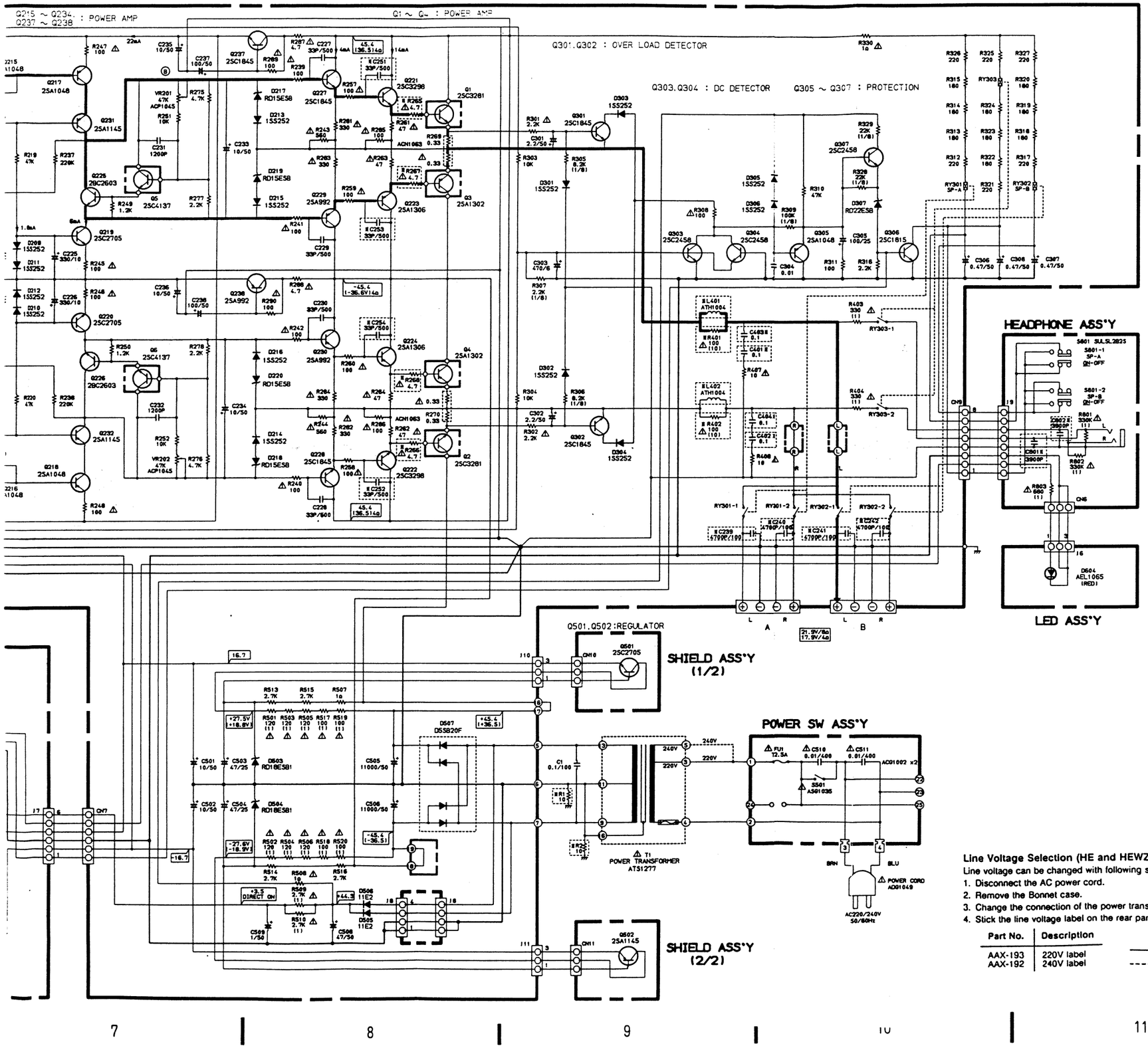


3. FOR A-447/HE TYPE

3.1 SCHEMATIC DIAGRAM

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





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
AAX-192	240V label

—— 220V

----- 240V

- 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.

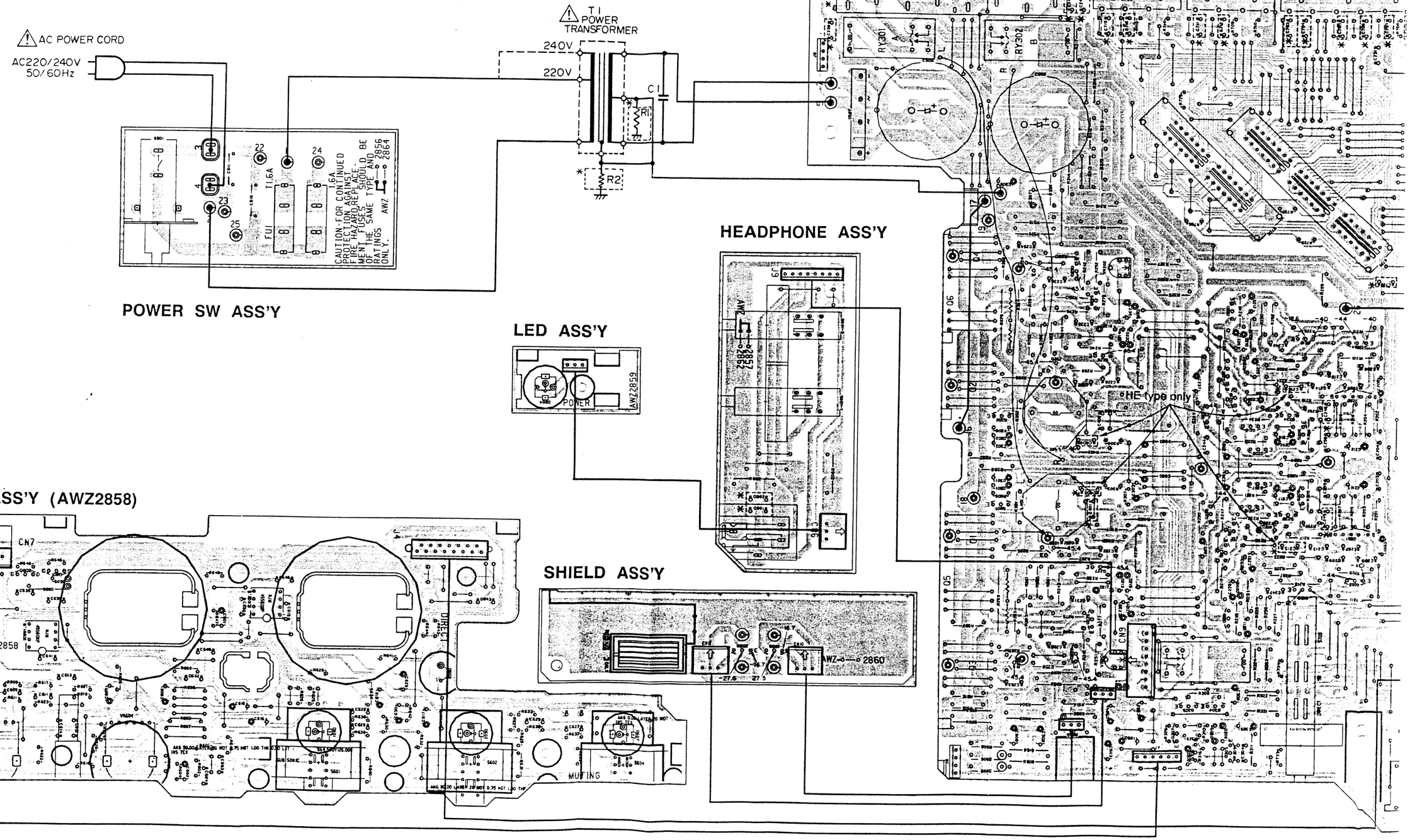
!* Marks are difference between two assemblies.	A-447/HE	A-447/HEWZ, A-447-S/HEWZ
AF COMPLEX ASS'Y	AWZ2861	AWZ2855
L101, L102	VACANT (OPEN)	ATH1010
L107, L108	VACANT (JAMPER WIRE)	LAU3R3K
L401, L402	ATH1004	ATH1009
C103, C104	CCCSL221J50	CCCSL271J50
C115, C116	CQMA472K50	CQMA392K50
C127, C128	VACANT (OPEN)	CCDSL101J50
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)	CQMXA472J100
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	CCDSL221J50
C726	VACANT (OPEN)	CKCYF103Z50
C727, C728	VACANT (JUMPER 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

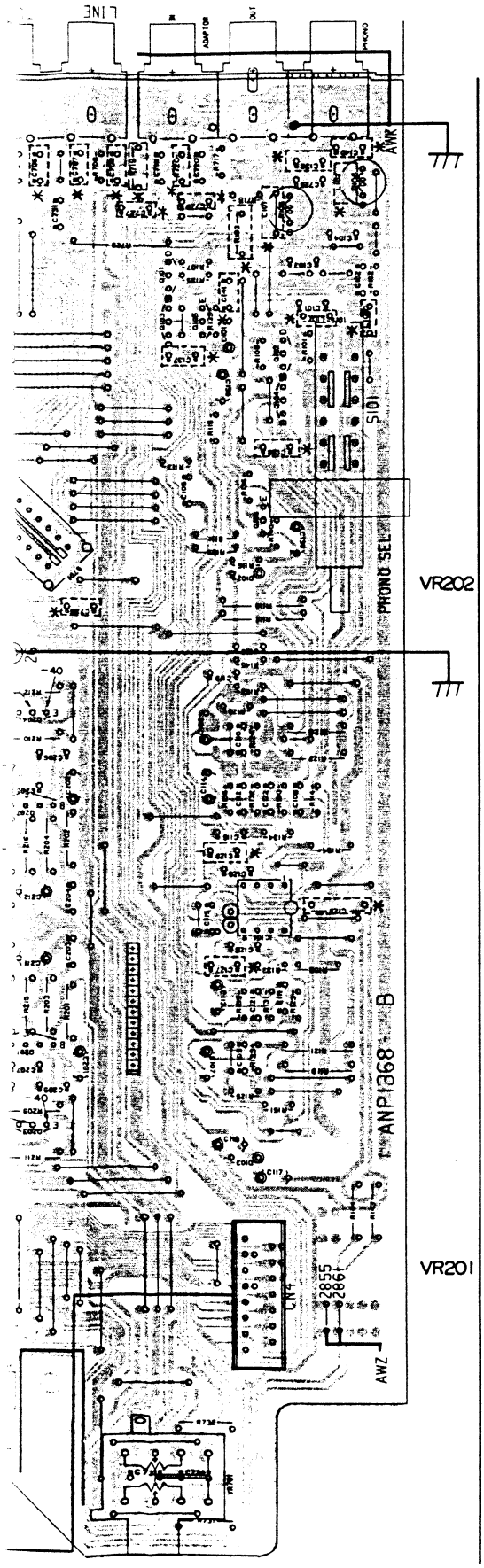
1. **RESISTORS:**
   Indicated in Ω, 1/8, 1/4W, ±5% tolerance unless otherwise noted K; kΩ, M; MΩ, (F); ±1%, (G); ±2%, (K); ±10%, (M); ±20% tolerance.
2. **CAPACITORS:**
   Indicated in capacity (μF) / voltage (V) unless otherwise noted p; pF.
   Indication without voltage is 50V except electrolytic capacitor.
3. **VOLTAGE CURRENT:**
   - [V] ; Signal voltage at (60W + 60W/8Ω, 80W + 80W/4Ω) output (1kHz).
   - ▭ ; 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.
4. **OTHERS**
   - →; Signal route.
   - ⊘ ; Adjusting point.
   - The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
   - ※ marked capacitor and resistor have parts number.
   - This is the basic schematic diagram, but the actual circuit way 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 (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)

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)





Q101
Q103
Q105
Q102
Q104

Q106

VR202 Q224
Q230
Q226
Q220
Q212
Q204
Q222
Q228
Q232
Q218
Q202
Q302 Q237
Q234
Q216
Q206 IC101
Q208
Q207
Q205
Q301 Q238
Q215
Q233
Q221 Q217
Q201
Q227 Q231
Q203

Q225 Q219

VR201 Q229
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
Q504 E	or E E	Transistor
Q215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Condenser (Polar type)
C518		Condenser (Non-polar type)

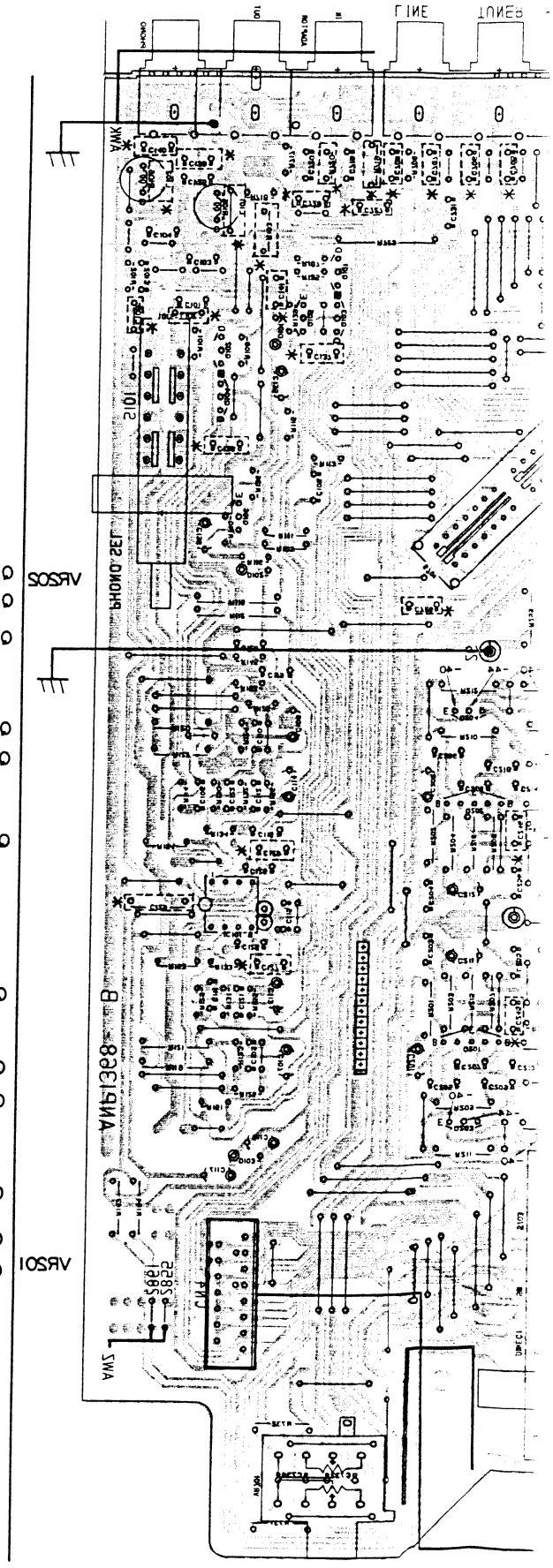
Others

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.

View from soldering side

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



A.V. P.C. BOARDS CONNECTION DIAGRAM

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

AV COMPLEX ASS'Y
AWZ2885 (HE type)
AWZ2885 (HEWZ type)

TONE ASS'Y (AWZ2828)

SHIELD ASS'Y

LED ASS'Y

HEADPHONE ASS'Y

POWER SW ASS'Y

AC POWER CORD
AC230/240V 50/60Hz

POWER TRANSFORMER
T1

1 2 3 4 5 6

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 ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

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

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

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

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

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 3-P	KPC3
HEADPHONE ASS'Y			
RESISTORS			
⚠	R801,R802	METAL OXIDE RESISTOR	RS1PMF331J
⚠	R803	METAL OXIDE RESISTOR	RS1LMF681J
SWITCH			
	S801	PUSH SWITCH	SUL5L2B2S
OTHERS			
	CN6	JUMPER CONNECTOR 3-P	KPC3
		JACK	AKN1002
POWER SW ASS'Y			
CAPACITORS			
⚠	C510,C511	CKA (0.01/AC400V)	ACG1002
SWITCH			
⚠	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□□□J
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	TRANS'	2SC1845
	Q215-Q218	TRANS	2SA1048
	Q219,Q220	TRANS	2SC2705
	Q221,Q222	TRANSI... R	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
	'219-R234	CARBON FILM RESISTOR	RD1/4PM□□□J
	237,R238	CARBON FILM RESISTOR	RDR1/4PM224J
	239-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

Mark	No.	Description	Parts No.
⚠	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 C RENT

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).

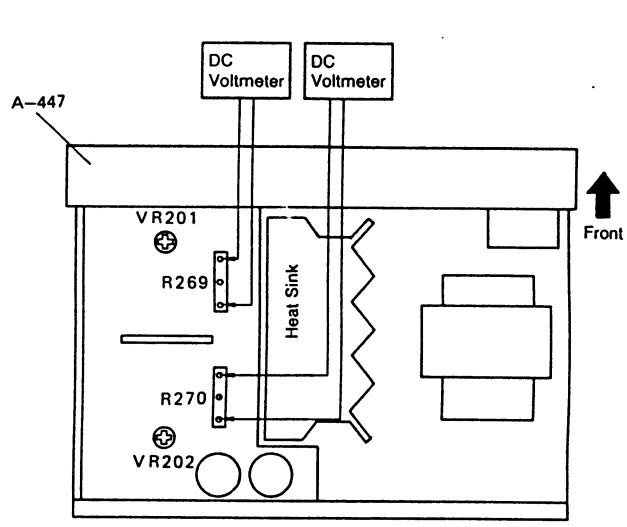
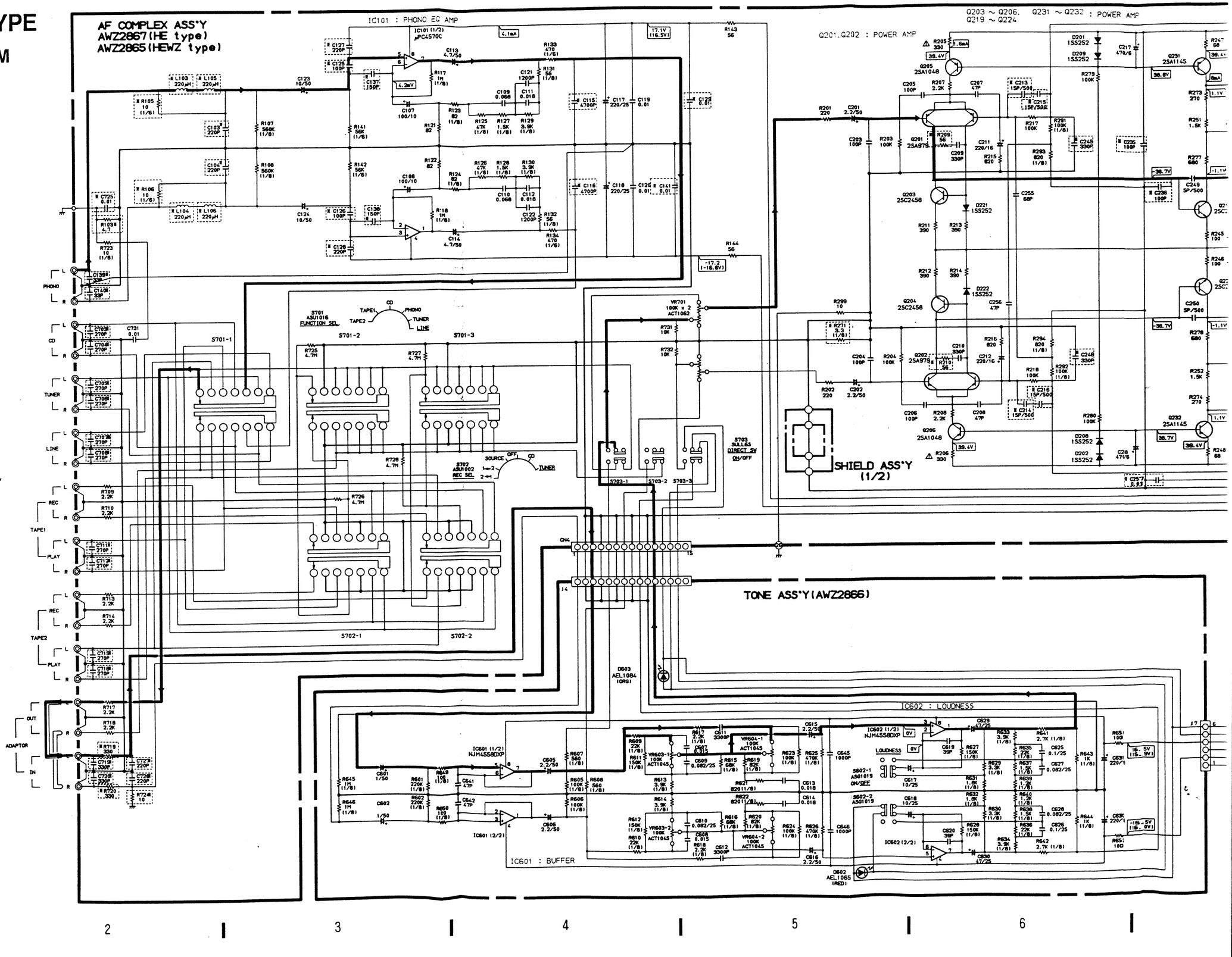
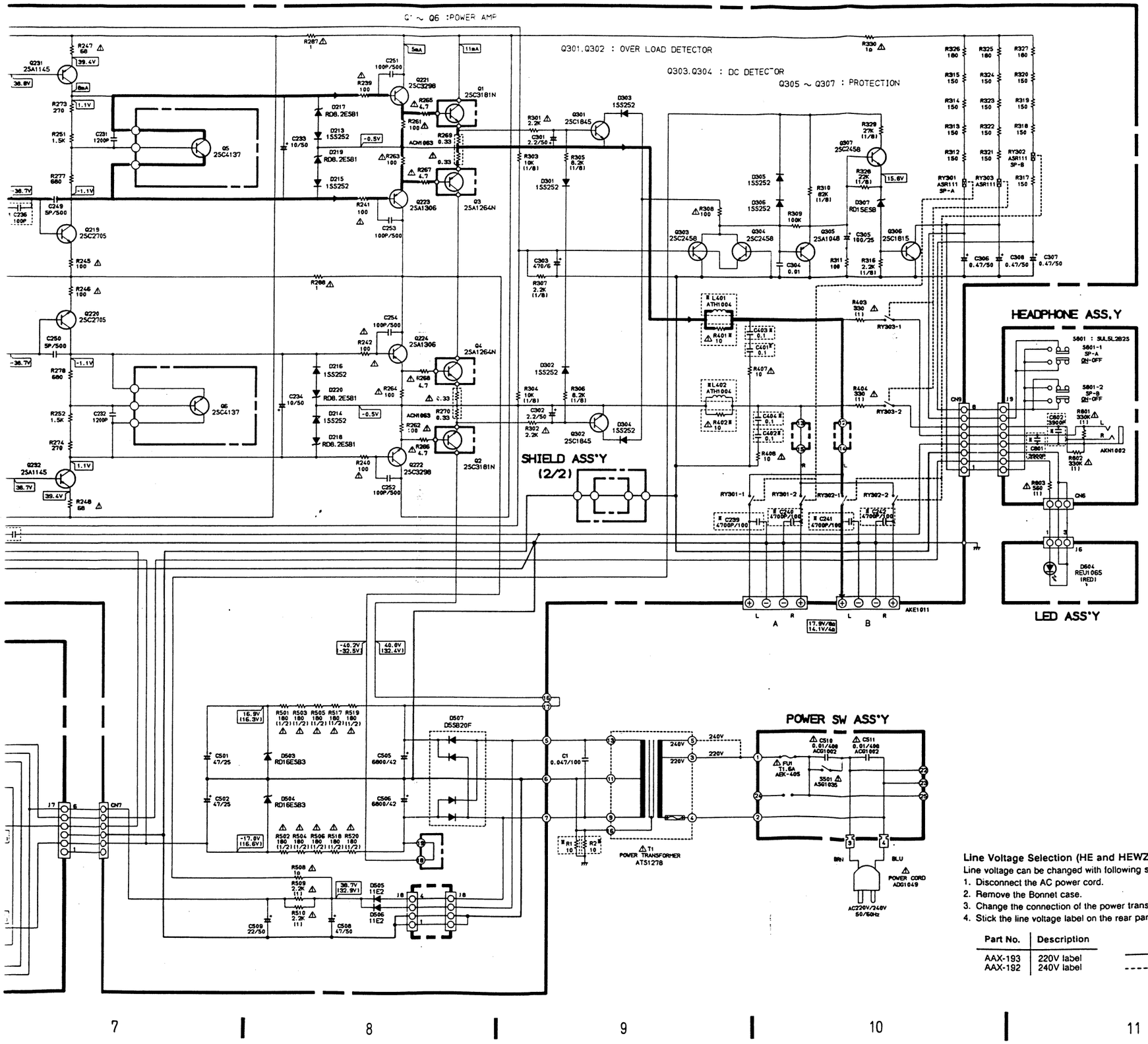


Fig. 3-1 Adjustment Drawing

4. FOR A-337/HE TYPE

4.1 SCHEMATIC DIAGRAM





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

- 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	A-337/HEWZ, A-337-S/HEWZ
AF COMPLEX ASS'Y	AWZ2867	AWZ2865
L103 –L106	VACANT (OPEN)	LAU221K
L401, L402	ATH1004	ATH1009
C103, C104	CCCSL221J50	CCCSL330J50
C115, C116	CQMA472K50	CQMA392K50
C125, C126	VACANT (OPEN)	CCCSL101J50
C127, C128	VACANT (OPEN)	CCDSL221J50
C129	VACANT (OPEN)	CKPYX103N25
C139, C140	VACANT (OPEN)	CCDSL330J50
C141	VACANT (OPEN)	CKCYF103Z50
C213, C214	CCCSL150K500	CCCSL080D500
C215, C216	CCCSL150K500	VACANT (OPEN)
C235, C236	CCCSL101J50	CEASOR1M50
C239–C242	VACANT (OPEN)	CQMXA472J100
C245, C246	VACANT (OPEN)	CKCYB331K50
C257	VACANT (OPEN)	CKCYF103Z50
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	CCDSL221J50
C727, C728	VACANT (OPEN)	CCDSL221J50
R103	VACANT (OPEN)	RD1/8PM4R7J
R105, R106	RDR1/6PU100J	RD1/8PM332J
R209, R210	RD1/4PM331J	RD1/4PM560J
R271	VACANT (OPEN)	RD1/8PM3R3J
R401, R402	RD1/4PMFL100J	RD1/4PMFL101J
R719, R720	VACANT (JUMPER WIRE)	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

1. 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.

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

3. VOLTAGE CURRENT:
- V ; Signal voltage at (40W + 40W/8Ω, 50W + 50W/4Ω) output (1kHz).
- ; 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.

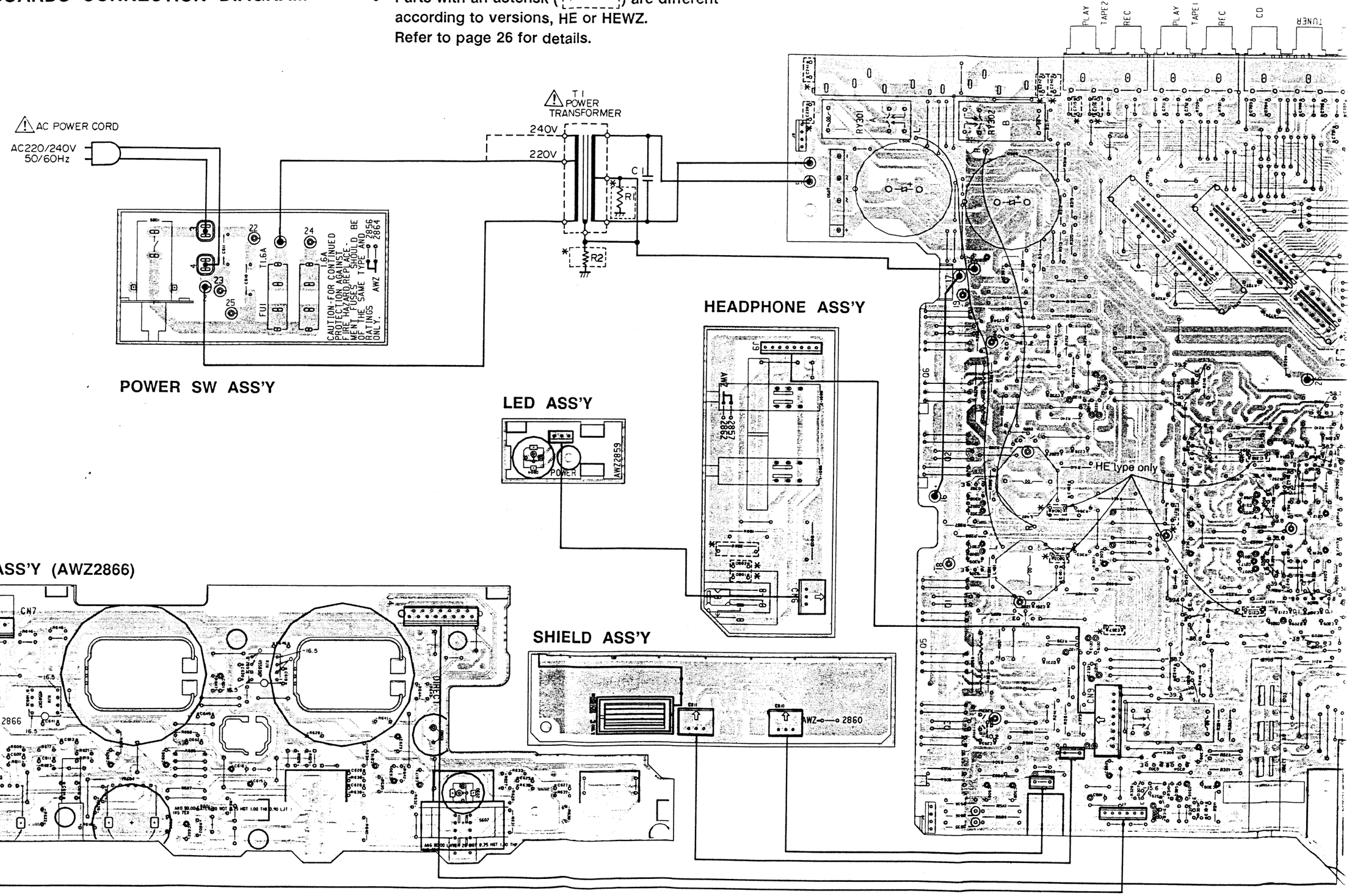
4. OTHERS
- →; Signal route.
- ⊘ ; Adjusting point.
- The ⚠ mark found on some component parts indicates the importane of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- ✱ marked capacitor and resistor have parts number.
- This is the basic schematic diagram, but the actual circuit way vary due to improvements in design.

5. 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)

4.2 P.C. BOARDS CONNECTION DIAGRAM

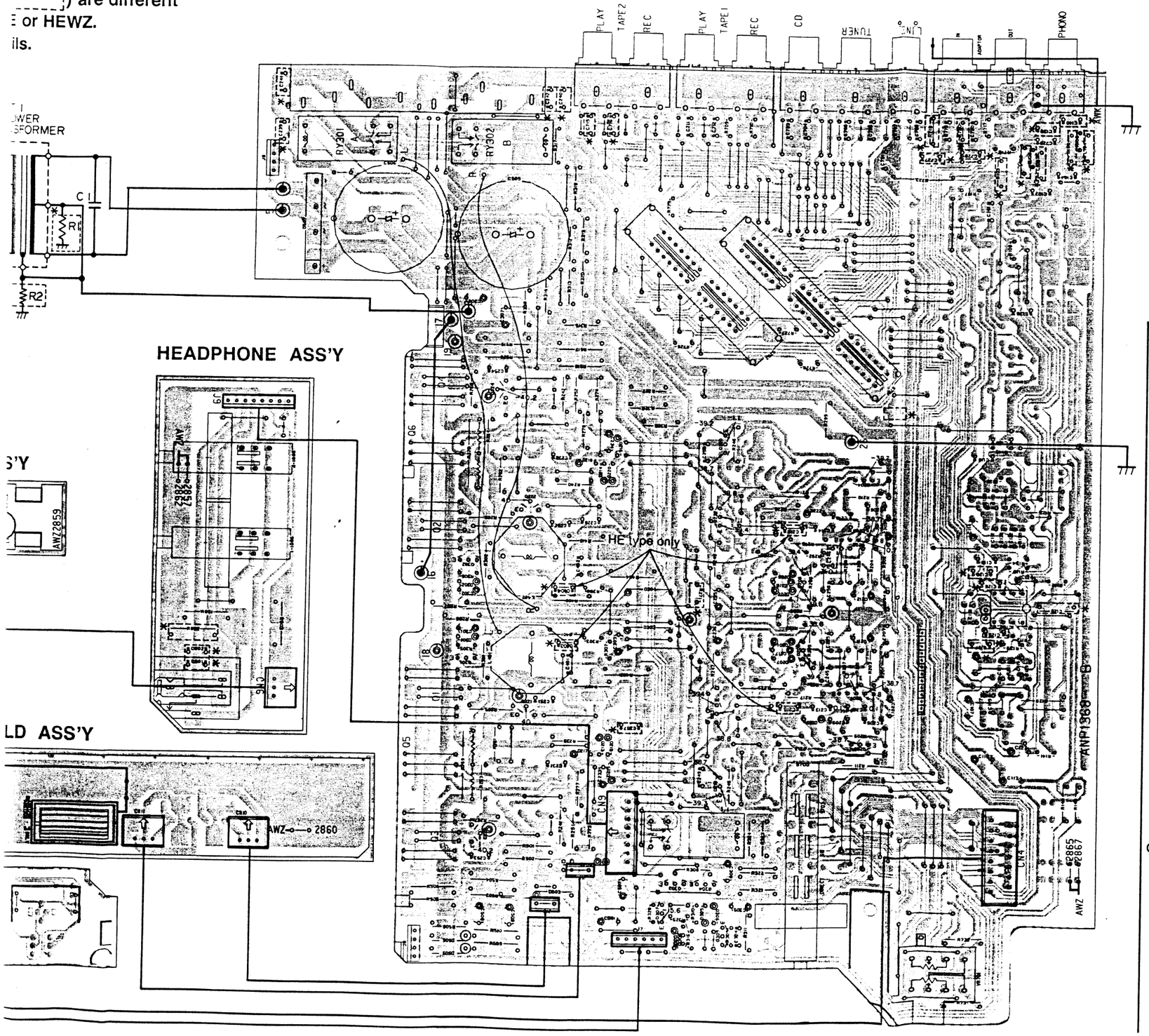
- Parts with an asterisk (*) are different according to versions, HE or HEWZ. Refer to page 26 for details.

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



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

) are different
E or HEWZ.
ils.



HEADPHONE ASS'Y

LD ASS'Y

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
Q504 E	or	Transistor
Q215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Condenser (Polar type)
C518		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	Vanable 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.

AM/SW ANTENNA ASS'Y

AM/SW ANTENNA ASS'Y

AM LOOP ANTENNA

AM LOOP ANTENNA

AC POWER TRANSFORMER

AC POWER TRANSFORMER

HEADPHONE ASS'Y

HEADPHONE ASS'Y

AT COMPLEX ASS'Y

AWZ2582 (HEWZ type)

AWZ2582 (HE type)

AT COMPLEX ASS'Y

(*) are different

, HE or HEWZ.

details.

A ● View from soldering side

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

B

C

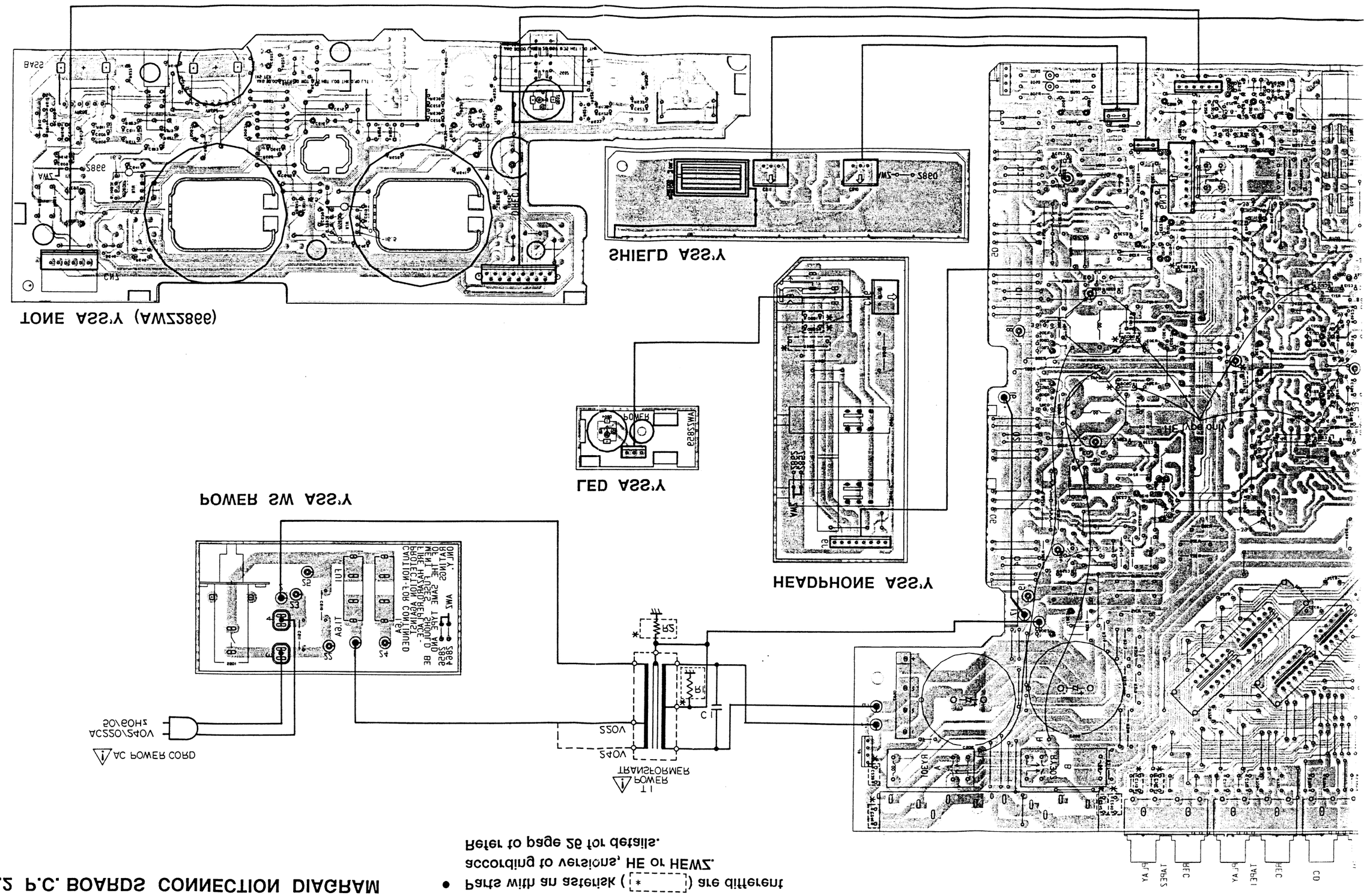
D

A.V. P.C. BOARDS CONNECTION DIAGRAM

- Parts with an asterisk ([*]) are different according to versions, HE or HEWZ.

Refer to page 52 for details.

AV COMPLEX ASS'Y
AWZ2862 (HEWZ type)
AWZ2867 (HE type)



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 ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

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

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

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

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

Mark	No.	Description	Parts No.
LED ASS'Y			
SEMICONDUCTOR			
	D604	LED(RED)	AEL1065
SHIELD ASS'Y			
	No parts supplied with the SHIELD Ass'y.		
HEADPHONE ASS'Y			
RESISTORS			
⚠	R801,R802	METAL OXIDE RESISTOR	RS1PMF331J
⚠	R803	METAL OXIDE RESISTOR	RS1LMF561J
SWITCH			
	S801	PUSH SWITCH	SUL5L2B2S
OTHERS			
		JACK	AKN1002
	CN6	JUMPER CONNECTOR 3-P	KPC3
POWER SW ASS'Y			
CAPACITORS			
⚠	C510,C511	CKA (0.01/AC400V)	ACG1002
SWITCH			
⚠	S501	PUSH SWITCH	ASG1035
TONE ASS'Y (AWZ2866)			
SEMICONDUCTORS			
	IC601,IC602	OP-AMP IC	NJM4558DXP
	D505,D506	DIODE	11E2
	D602	LED(RED)	AEL1065
	D603	LED	AEL1084
CAPACITORS			
	C601,C602	ELECTR. CAPACITOR	CEAS010M50
	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
	C641,C642	CERAMIC CAPACITOR	CCCSL470J50
	C645,C646	CERAMIC CAPACITOR	CKCYB102K50
RESISTORS			
	VR603,VR604	VARIABLE(100K-20AX2)	ACT1045
	R651,R652	CARBON FILM RESISTOR	RD1/4PM101J
		OTHER RESISTORS	RD1/8PM□□□J
SWITCH			
	S602	PUSH SWITCH	ASG1019
AF COMPLEX ASS'Y (AWZ2867)			
SEMICONDUCTORS			
	IC101	OP-AMP IC	M5220P
	Q201,Q202	TRANSISTOR	2SA979
	Q203,Q204	TRANSISTOR	2SC2458
	Q205,Q206	TRANSISTOR	2SA1048
	Q219,Q220	TRANSISTOR	2SC2705
	Q221,Q222	TRANSISTOR	2SC3298
	Q223,Q224	TRANSISTOR	2SA1306
	Q231,Q232	TRANSISTOR	2SA1145
	Q301,Q302	TRANSISTOR	2SC1845
	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	CEAS220M5(
	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 ⚠ 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 ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

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

560Ω	*56 × 10¹*	*561*	*RD1/4PS□□□J*
47kΩ	*47 × 10³*	*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 × 10¹*	*5621*	*RN1/4SR□□□F*

Mark	No.	Description	Parts No.
POWER SW ASS'Y			
CAPACITORS			
⚠	C510,C511	CKA (0.01/AC400V)	ACG1002
SWITCH			
⚠	S501	PUSH SWITCH	ASG1035
HEADPHONE ASS'Y			
CAPACITORS			
	C801,C802	CERAMIC CAPACITOR	CKCYB392K50
RESISTORS			
⚠	R801,R802	METAL OXIDE RESISTOR	RS1PMF331J
⚠	R803	METAL OXIDE RESISTOR	RS1LMF681J
SWITCH			
	S801	PUSH SWITCH	SUL5L2B2S
OTHERS			
	CN6	JUMPER CONNECTOR 3-P	KPC3
		JACK	AKN1002
AF COMPLEX ASS'Y (AWZ2855)			
SEMICONDUCTORS			
	IC101	IC	UPC4570C
	Q101-Q104	N-FET	2SK369
	Q105,Q106	TRANSISTOR	2SC2458
	Q201,Q202	TRANSISTOR	2SA979
	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
	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
COILS & FILTERS			
	L101,L102	COIL(270μH)	ATH1010
	L107,L108	COIL(270μH)	LAU3R3K
	L401,L402	COIL	ATH1009
CAPACITORS			
	C101,C102	AUDIO FILM CAPACITOR	CFTXA103J50
	C103,C104	CERAMIC CAPACITOR	CCCSL271J50
	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	CQMA392K50
	C117,C118	ELECTR. CAPACITOR	CEAS221M25
	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
	C139,C140	CERAMIC CAPACITOR	CCCSL330J50
	C141	CERAMIC CAPACITOR	CKCYF103Z50
	C201,C202	ELECTR. CAPACITOR	CEEA2R2M50
	C203,C204	CERAMIC CAPACITOR	CCCSL101K500
	C205,C206	CERAMIC CAPACITOR	CCCSL101J50
	C207,C208	CERAMIC CAPACITOR	CCCSL470J50
	C209,C210	CERAMIC CAPACITOR	CCCSL221J50
	C211,C212	ELECTR. CAPACITOR	CEEA221M16
	C213,C214	CERAMIC CAPACITOR	CCCSL080D500
	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
	C244	CERAMIC CAPACITOR	CKDYX104M25
	C245,C246	CERAMIC CAPACITOR	CKCYB331K50
	C247,C248	AUDIO FILM CAPACITOR	CFTXA103J50
	C251-C254	CERAMIC CAPACITOR	CCCSL680K500
	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,C402	AUDIO FILM CAPACITOR	CFTXA473J50
	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
	C703-C708	CERAMIC CAPACITOR	CCCSL271J50
	C711,C712	CERAMIC CAPACITOR	CCCSL271J50
	C715,C716	CERAMIC CAPACITOR	CCCSL271J50
	C725	CERAMIC CAPACITOR	CCDSL221J50
	C726	CERAMIC CAPACITOR	CKCYF103Z50
	C727,C728	CERAMIC CAPACITOR	CCCSL221J50
	C731	CERAMIC CAPACITOR	CKCYF103Z50
	C733,C734	CERAMIC CAPACITOR	CKDYF102Z50
RESISTORS			
	VR201,VR202	VR(47K)	ACP1045
	VR701	VARIABLE(100K-20AX2)	ACT1062
	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
	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-R268	FUSIBLE RESISTOR	RFA1/4PS470J
⚠	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	RD1/4PMFL101J
⚠	R403,R404	METAL OXIDE RESISTOR	RS1LMF331J
⚠	R407,R408	CARBON FILM RESISTOR	RD1/4PMFL100J
⚠	R501-R507	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 6-P	AKB1007
		PHONO JACK 6-P	AKB1008
		PHONO JACK 6-P	AKB1024
		SPEAKER TERMINAL 8-P	AKE1011

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

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

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 ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

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

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

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

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

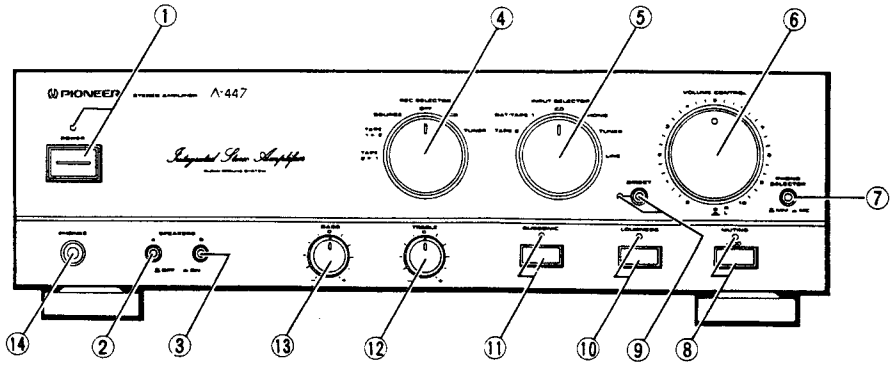
Mark	No.	Description	Parts No.
POWER SW ASS'Y			
CAPACITORS			
⚠	C510,C511	CKA (0.01/AC400V)	ACG1002
SWITCH			
⚠	S501	PUSH SWITCH	ASG1035
HEADPHONE ASS'Y			
CAPACITORS			
	C801,C802	CERAMIC CAPACITOR	CKCYB392K50
RESISTORS			
⚠	R801,R802	METAL OXIDE RESISTOR	RS1PMF331J
⚠	R803	METAL OXIDE RESISTOR	RS1LMF561J
SWITCH			
	S801	PUSH SWITCH	SUL5L2B2S
OTHERS			
	CN6	JUMPER CONNECTOR 3-P	KPC3
		JACK	AKN1002
AF COMPLEX ASS'Y (AWZ2865)			
SEMICONDUCTORS			
	IC101	OP-AMP IC	M5220P
	Q201,Q202	TRANSISTOR	2SA979
	Q203,Q204	TRANSISTOR	2SC2458
	Q205,Q206	TRANSISTOR	2SA1048
	Q219,Q220	TRANSISTOR	2SC2705
	Q221,Q222	TRANSISTOR	2SC3298
	Q223,Q224	TRANSISTOR	2SA1306
	Q231,Q232	TRANSISTOR	2SA1145
	Q301,Q302	TRANSISTOR	2SC1845
	Q303,Q304	TRANSISTOR	2SC2458
	Q305	TRANSISTOR	2SA1048
	Q306	TRANSISTOR	2SC1815
	Q307	TRANSISTOR	2SC2458
	D201,D202	DIODE	1SS252
	D207,D708	DIODE	1SS252
	D213-D216	DIODE	1SS252
	D217-D220	ZENER DIODE	RD8.2ESB1
	D221,D222	DIODE	1SS252
	D301-D306	DIODE	1SS252
	D307	ZENER DIODE	RD15ESB
	D503,D504	ZENER DIODE	RD16ESB3
	D507	DIODE	D5SB20F
COILS & FILTERS			
	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	ELECTR. CAPACITOR	CEEA2R2M50
	C203,C206	CERAMIC CAPACITOR	CCCSL101J50
	C207,C208	CERAMIC CAPACITOR	CCCSL470J50
	C209,C210	CERAMIC CAPACITOR	CKCYB331K50
	C211,C212	ELECTR. CAPACITOR	CEEA221M16
	C213,C214	CERAMIC CAPACITOR	CCCSL080D500
	C217,C218	ELECTR. CAPACITOR	CEAS471M6
	C231,C232	CERAMIC CAPACITOR	CKCYB122K50
	C233,C234	ELECTR. CAPACITOR	CEAS100M50
	C235,C236	ELECTR. CAPACITOR	CEAS0R1M50

Mark	No.	Description	Parts No.
	C239-C242	POLYESTER CAPACITOR	CQMXA472J100
	C245,C246	CERAMIC CAPACITOR	CKCYB331K50
	C249,C250	CERAMIC CAPACITOR	CCCSL050C500
	C251-C254	CERAMIC CAPACITOR	CCCSL101K500
	C255	CERAMIC CAPACITOR	CCCSL680J50
	C256	CERAMIC CAPACITOR	CCDSL470J50
	C257	CERAMIC CAPACITOR	CKCYF103Z50
	C301,C302	ELECTR. CAPACITOR	CEAS2R2M50
	C303	ELECTR. CAPACITOR	CEAS471M6
	C304	CERAMIC CAPACITOR	CKCYF103Z50
	C305	ELECTR. CAPACITOR	CEAS101M25
	C306-C308	ELECTR. CAPACITOR	CEASR47M50
	C401,C402	AUDIO FILM CAPACITOR	CFTXA473J50
	C501,C502	ELECTR. CAPACITOR	CEAS470M25
	C505,C506	ELECTR. CAPACITOR (6800/42V)	ACH1077
	C508	ELECTR. CAPACITOR	CEAS470M50
	C509	ELECTR. CAPACITOR	CEAS220M50
	C703-C720	CERAMIC CAPACITOR	CCCSL271J50
	C725-C728	CERAMIC CAPACITOR	CCDSL221J50
	C731	CERAMIC CAPACITOR	CKCYF103Z50
	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
⚠	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	JUNPER CONNECTOR	KPE15
	CN9	JUMPER CONNECTOR	KPC8
	RY301-RY303	RELAY	ASR-111
		PHONO JACK 4-P	AKB1007
		PHONO JACK 6-P	AKB1008
		PHONO JACK 6-P	AKB1024
		SPEAKER TERMINAL 8-P	AKE1011

7. PANEL FACILITIES

[FRONT PANEL]

The illustration shows model A-447.
Model A-337 is not equipped ⑦, ⑧ and ⑪.



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.

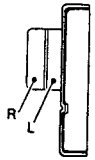
⑥ VOLUME CONTROL

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 temporaliry 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.

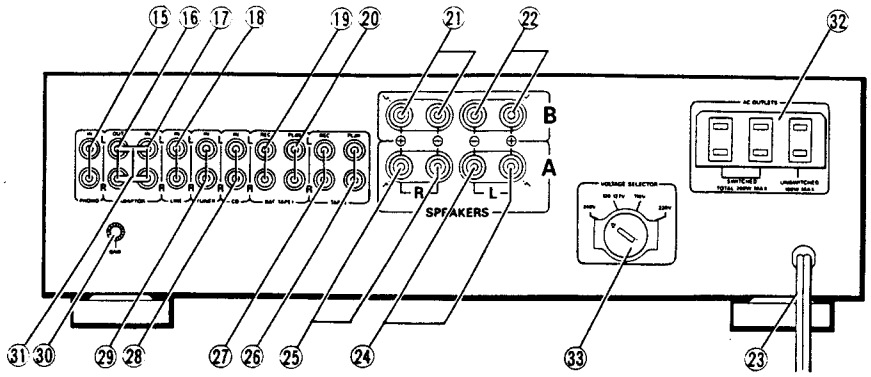
NOTE:

- *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**

⑳ **DAT/TAPE 1 PLAY terminals**

㉑ **SPEAKERS B terminals (right channel)**

㉒ **SPEAKERS B terminals (left channel)**

㉓ **Power cord**

Connect this cord to an AC wall socket, or the AC outlet of an audio timer.

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**

㉚ **Turntable ground terminal (GND)**

㉛ **Shorting bars**

㉜ **AC OUTLETS**

㉝ **VOLTAGE SELECTOR (multi-voltage models)**

8. SPECIFICATIONS

[A-447]

Amplifier Sectio

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 $^{+0}_{-3}$ 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

NOTE:
Specificatios 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. 0.0[illegible] %, 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 $^{+0}_{-3}$ 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

NOTE:
Specificatios 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.