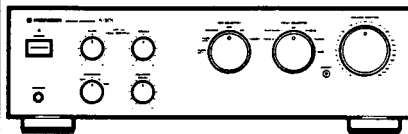


Service Manual



ORDER NO.
ARP2481

STEREO AMPLIFIER

A-301

A-301 HAS THE FOLLOWING :

Type	Power Requirement	Remarks
HE	AC220 - 230V, 230 - 240V (switchable)*	
HEWZ	AC220 - 230V, 240V (switchable)*	
KU	AC120V only	
SD	AC110V, 120 - 127V, 220V, 240V (switchable)	

* Change the connection of the power transformer's primary wiring.

- This manual is applicable to HE, HEWZ, KU and SD types.
- For HEWZ, KU and SD types, refer to page 25.
- 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
2. EXPLODED VIEWS, PACKING AND PARTS LIST ...	3
3. SCHEMATIC DIAGRAMS	7
4. PCB CONNECTIONS DIAGRAMS	11
5. PCB PARTS LIST	19
6. ADJUSTMENTS	22
6. REGLAGE	23
6. AJUSTE	24
7. FOR HEWZ, KU AND SD TYPES	25
8. PANEL FACILITIES	28
9. SPECIFICATIONS	31

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

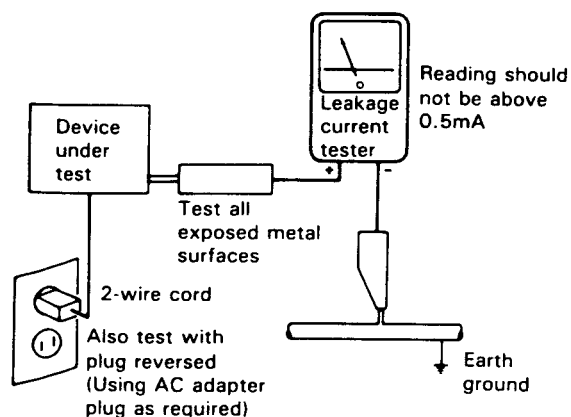
(FOR USA MODEL ONLY)

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.

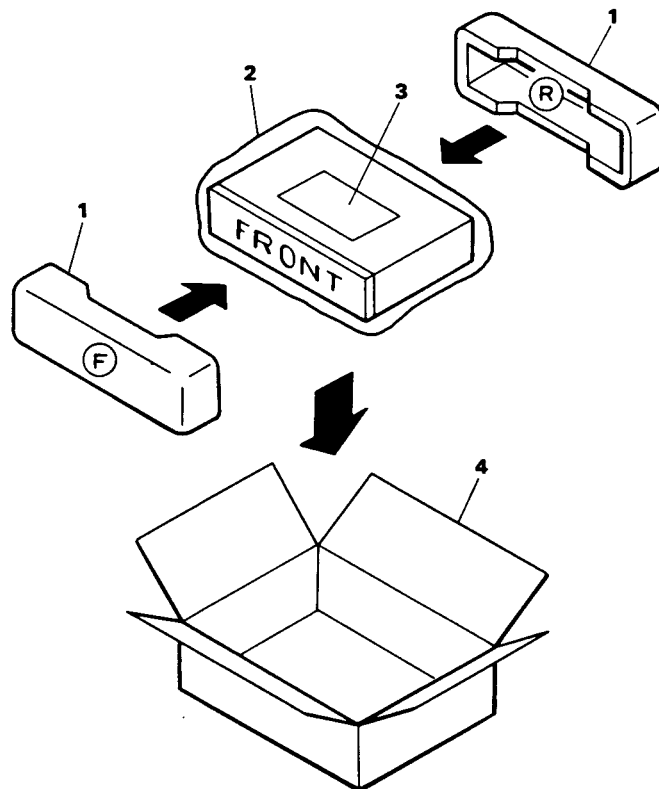
2. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES:

- The parts with an encircled number are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by “ \odot ” are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

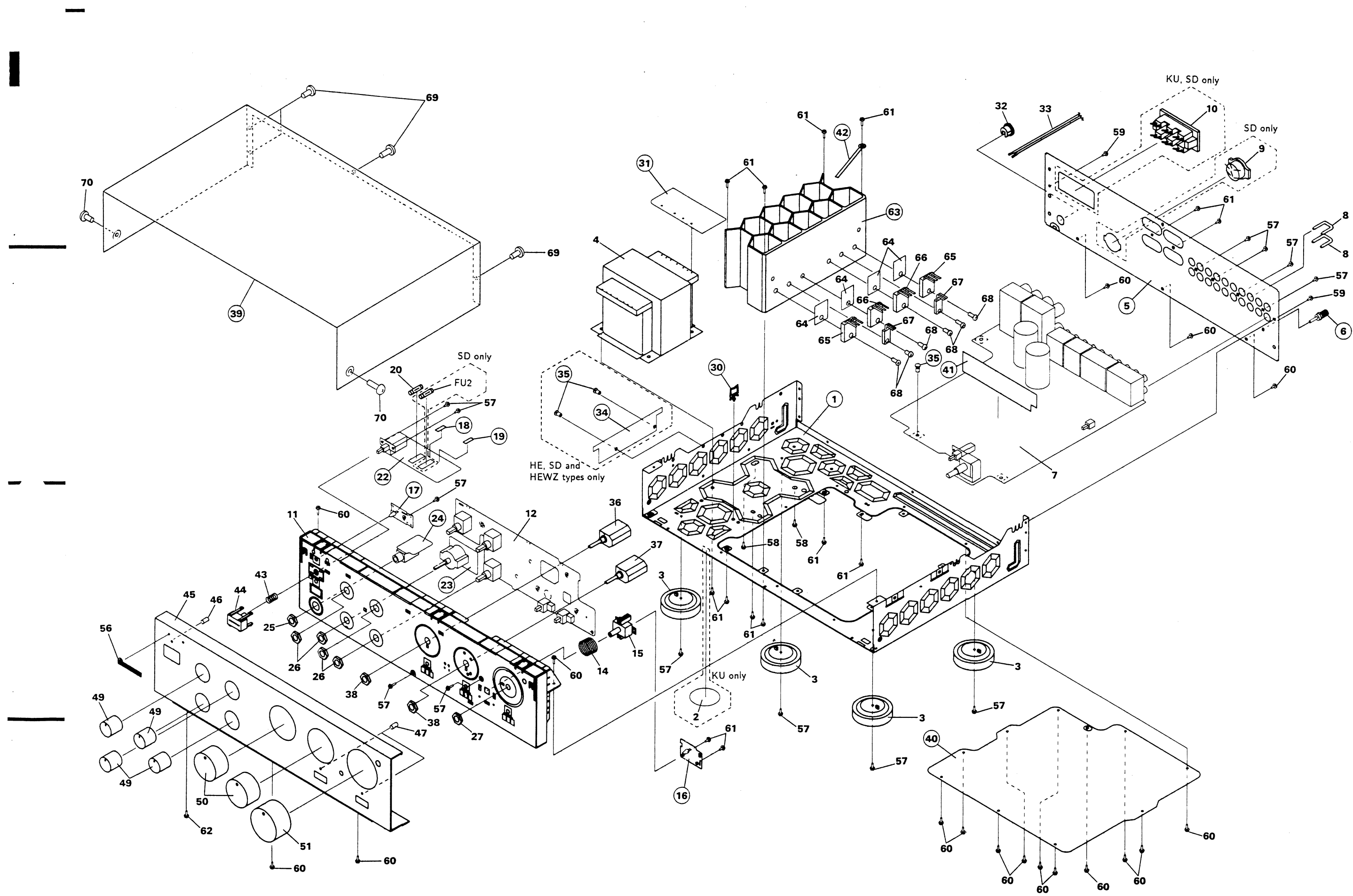
2.1 PACKING

Mark No.	Description	Parts No.
1	Front rear pad	AHA1335
2	Packing sheet	AHG1016
3	Operating instructions (English, French, German, Italian, Dutch, Swedish, Spanish, Portuguese)	ARE1227
4	Packing case	AHD2243



2.2 EXPLODED VIEWS

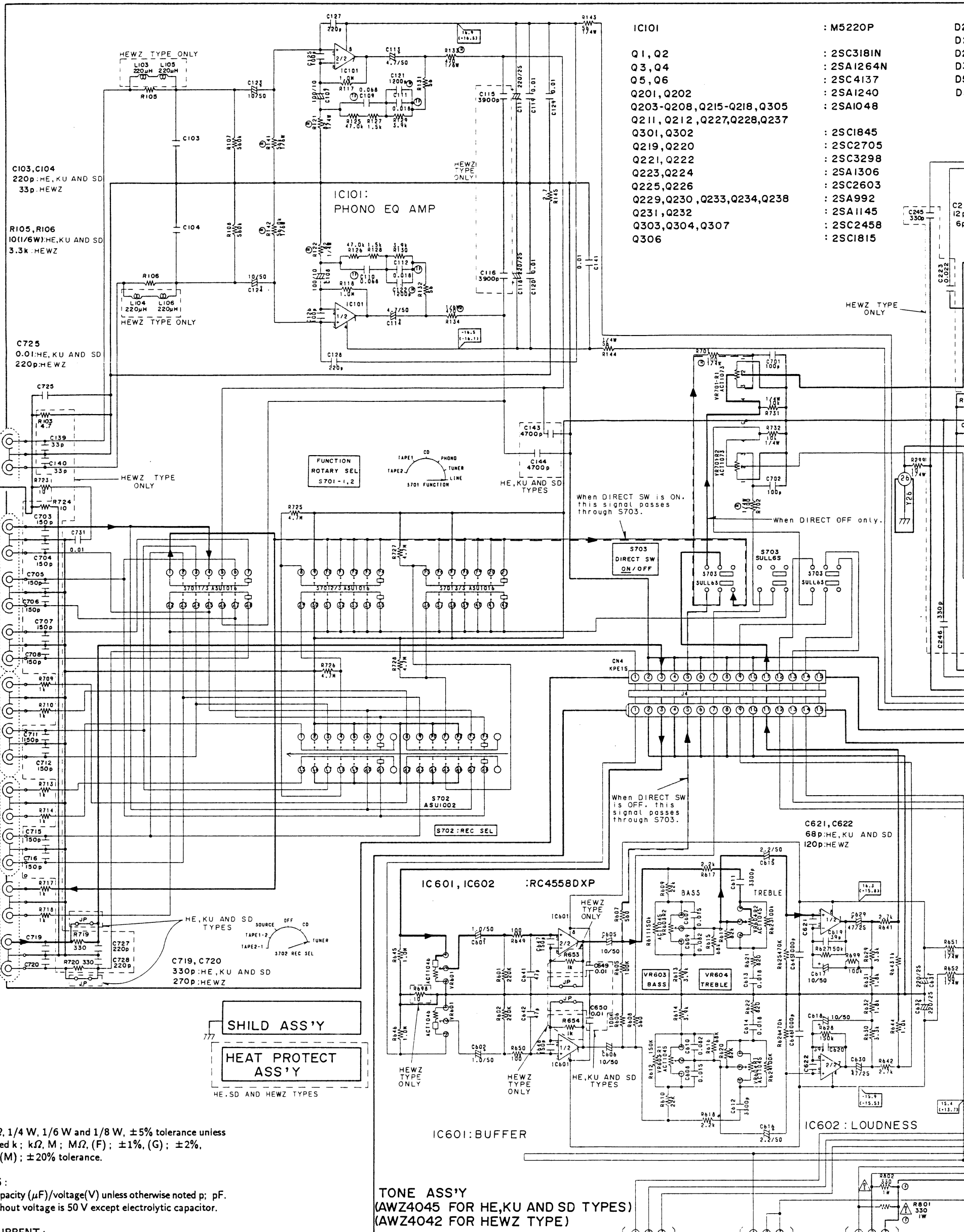
Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
	1 Chassis	ANA1065	36	Remote slide rotary switch	ASU1042
	2 UL caution card	AAX-313	37	Remote slide rotary switch	ASU1043
	3 Insulator assembly	AMR2140	38	Nut	NK90FUC
△	4 Power transformer	ATS1345	39	Bonnet	ANE1147
	5 Rear panel	ANC1547	40	Bottom plate	ANF1085
	6 Earth terminal	AKE-031	41	SHIELD assembly	AWZ4034
●	7 AF COMPLEX assembly	AWZ4043	42	Binder	AEF1004
	8 Pin jack with plug	AKM1004	43	Coil spring B	ABH-052
△	9 Voltage selector(SD only)	AKX-507	44	Power knob	AAD1984
△	10 3P AC outlet (KU, SD)	AKP-515	45	Front panel	ANB1496
	11 Panel base	AMB1961	46	LED lens (ABS)	PNW2019
●	12 TONE assembly	AWZ4045	47	LED lens	AMR1160
	13		48	.....
	14 Coil spring A	ABH1081	49	Rotary knob S	AAB1276
	15 Direct knob assembly	AAD2220	50	Rotary knob M	AAB1282
	16 Direct IND. assembly	AWZ4035	51	Rotary knob L	AAB1277
	17 LED assembly	AWZ4033	52	.....
	18 Fuse card	AAX1581	53	.....
	19 Fuse card	AAX-302	54	.....
△	20 FUSE (FU1, T2A/250V)	AEK-511	55	Push knob	AAD2221
	21		56	Name plate	AAM1029
	22 POWER SW assembly	AWZ4030	57	Bind B tyte	ABA-298
	23 SP. SELECT assembly	AWZ4036	58	Screw (4 × 16)	ABA1016
	24 HEAD PHONE assembly	AWZ4044	59	Screw	ABA1009
	25 Nut	ABN-065	60	Screw B tyte	ABA1011
	26 Nut	NK90FUC	61	Screw	ABA1050
	27 Nut	NK70FUC	62	Screw	ABA1048
	28		63	Heat sink	ANH1260
	29 Nylon rivet	AEC1160	64	Mica sheet	AEE1014
	30 Wire clip	AEC1388	△	65 Transistor (Q3, Q4)	2SA1264N
	31 POWER TRANS assembly	AWZ4047	△	66 Transistor (Q1, Q2)	2SC3181N
△	32 AC cord stopper	AEC-882	△	67 Transistor (Q5, Q6)	2SC4137
△	33 AC power cord	ADG1049		68 Screw	ABA1082
	34 HEAT PROTECT assembly	AWZ4038		69 Screw	ABA1011
	35 Nylon rivet	AEC1160		70 Screw	BBT30P060FZK



3. SCHEMATIC DIAGRAMS

AF COMPLEX ASS'Y (AWZ4043 FOR HE, KU AND SD TYPES)
(AWZ4040 FOR HEWZ TYPE)

A
B
C
D
E
F



- RESISTORS :**
Indicated in Ω , 1/4 W, 1/6 W and 1/8 W, $\pm 5\%$ 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 50 V except electrolytic capacitor.
- VOLTAGE, CURRENT :**
 - V : Signal voltage at 40 W + 40 W, 8 Ω output (1 kHz).
 - DC voltage (V) at no input signal unless otherwise noted. Value in () is DC voltage at rated power.
 - mA : DC current at no input signal unless otherwise noted.
- OTHERS :**
 - Signal route
 - Adjustment point
- SWITCHES :** (The underline indicates the switch position.)
S 501 : ON - OFF

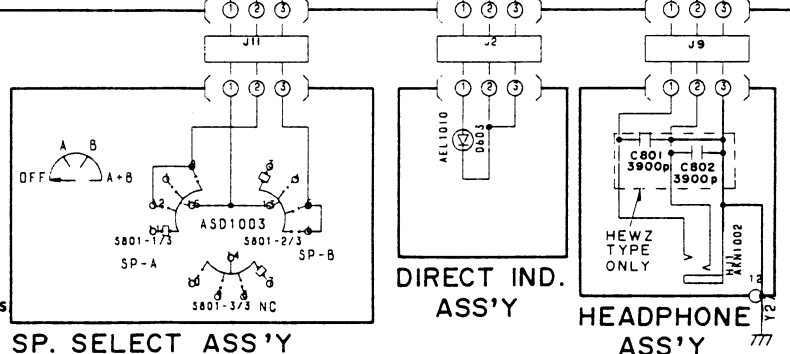
Line Voltage Selection

Line Voltage can be changed as follows :

- Disconnect the AC power cord.
- Remove the cover.
- Change the connection of the power transformer primary taps
- Stick the line voltage label on the rear panel.

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

SP. SELECT ASS'Y (AWZ4045 FOR HE, KU AND SD TYPES) (AWZ4042 FOR HEWZ TYPE)



SP. SELECT ASS'Y

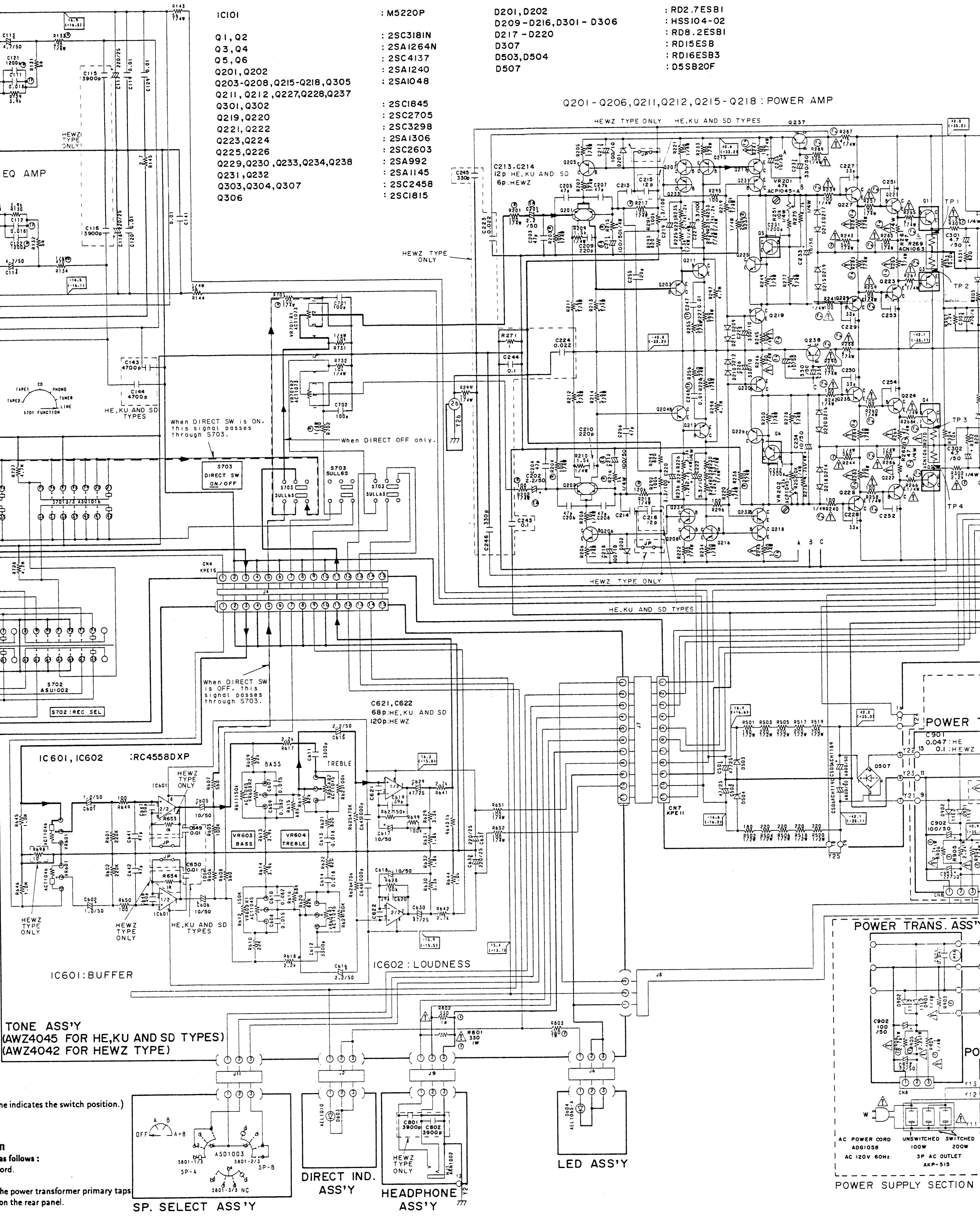
DIRECT IND. ASS'Y

HEADPHONE ASS'Y

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

SD TYPES)

)



- IC101 : M5220P
- Q1, Q2 : 2SC318IN
- Q3, Q4 : 2SA1264N
- Q5, Q6 : 2SC4137
- Q201, Q202 : 2SA1240
- Q203-Q208, Q215-Q218, Q305 : 2SA1048
- Q211, Q212, Q227, Q228, Q237 : 2SC1845
- Q301, Q302 : 2SC2705
- Q219, Q220 : 2SC3298
- Q221, Q222 : 2SA1306
- Q223, Q224 : 2SC2603
- Q225, Q226 : 2SA992
- Q229, Q230, Q233, Q234, Q238 : 2SA1145
- Q231, Q232 : 2SC2458
- Q303, Q304, Q307 : 2SC1815
- Q306 : 2SC1815

- D201, D202 : RD2.7ESB1
- D209-D216, D301-D306 : HSS104-02
- D217-D220 : RD8.2ESB1
- D307 : RD15ESB
- D503, D504 : RD16ESB3
- D507 : D5SB20F

Q201-Q206, Q211, Q212, Q215-Q218 : POWER AMP

EQ AMP

TAPE1 CD PHONO
TAPE2 TUNER LINE
3701 FUNCTION

S702 REC SEL

S702 ASU1002

IC601: BUFFER

TONE ASS'Y
(AWZ4045 FOR HE, KU AND SD TYPES)
(AWZ4042 FOR HEWZ TYPE)

... indicates the switch position.)

... as follows:

... the power transformer primary taps on the rear panel.

SP. SELECT ASS'Y

DIRECT IND. ASS'Y

HEADPHONE ASS'Y

LED ASS'Y

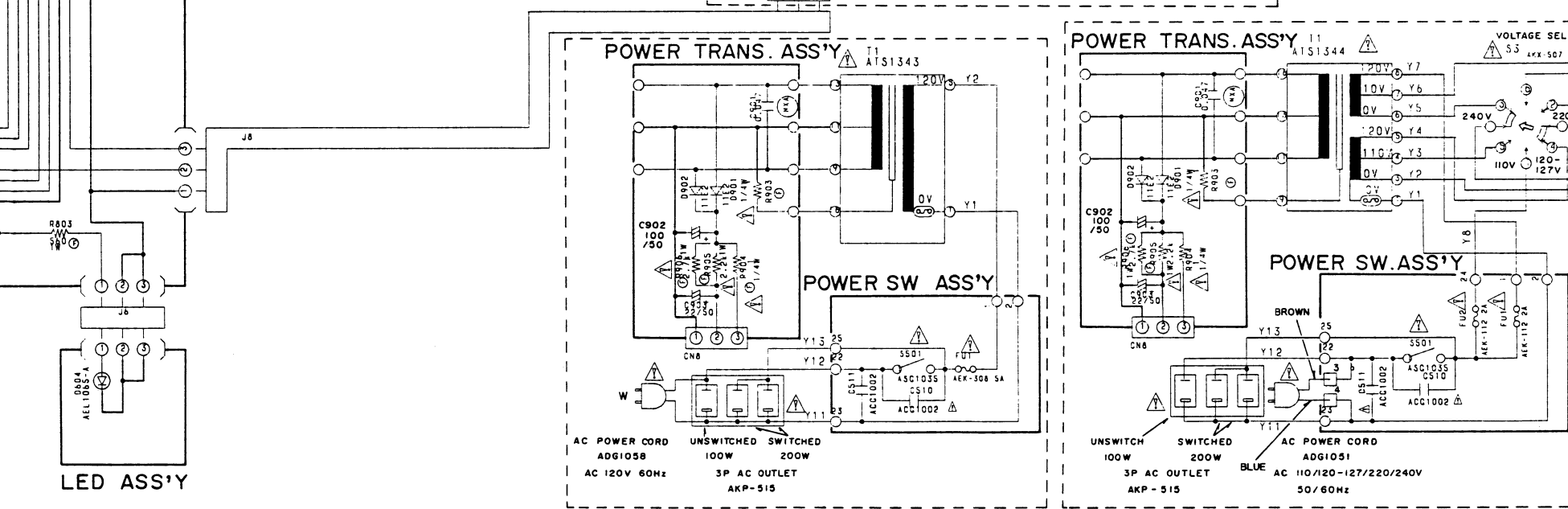
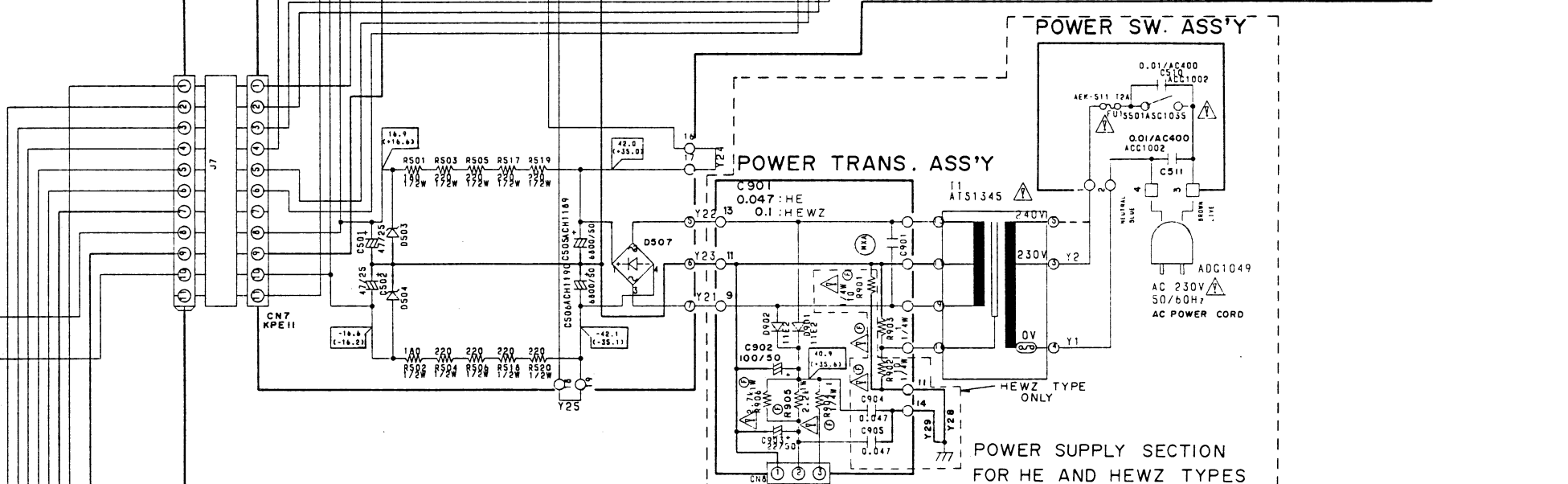
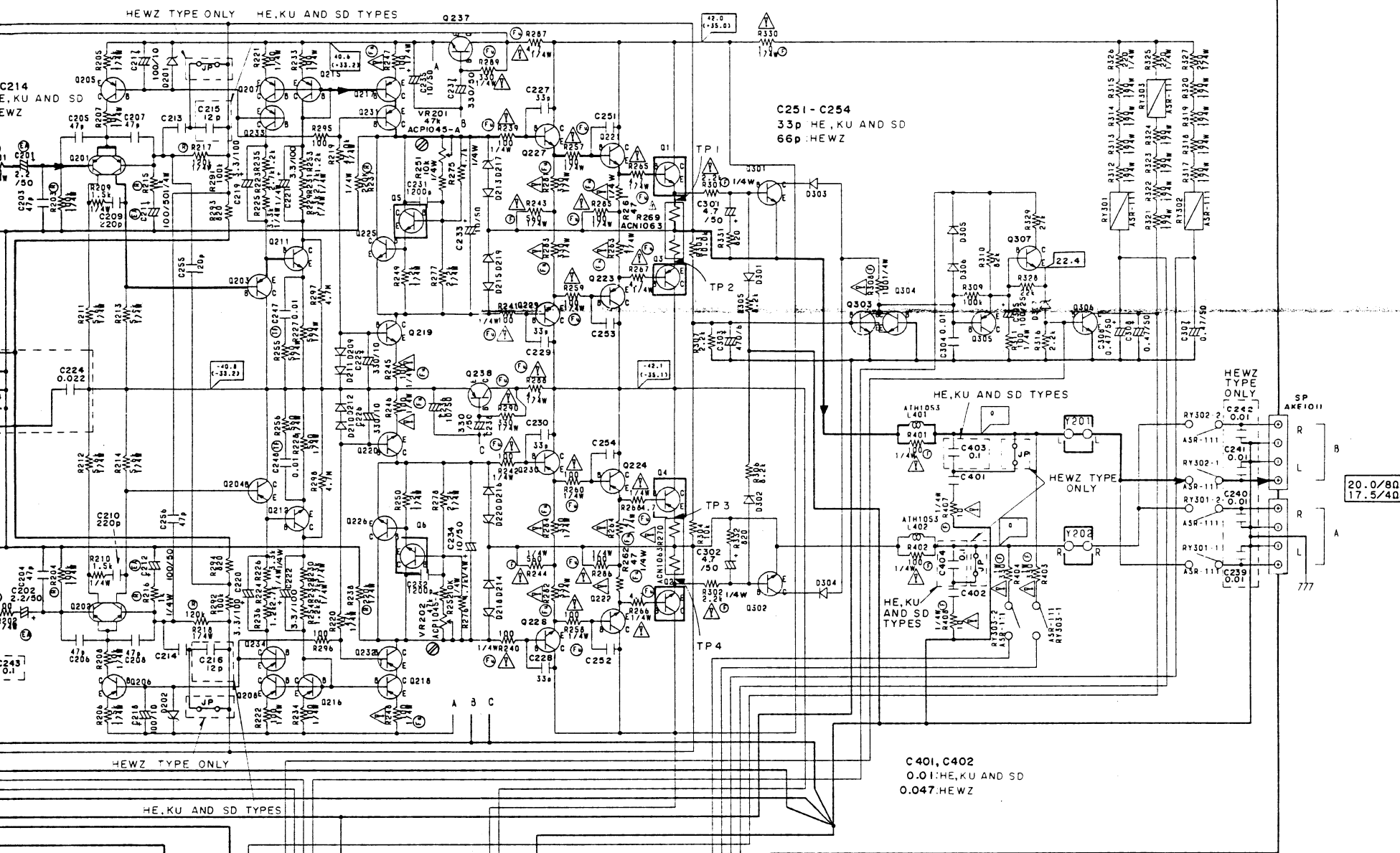
POWER TRANS. ASS'Y

POWER SUPPLY SECTION

1, D202
 9 - D216, D301 - D306
 7 - D220
 7
 3, D504
 7

: RD2.7ESB1
 : HSS104-02
 : RDB.2ESB1
 : RD15ESB
 : RD16ESB3
 : D5SB20F

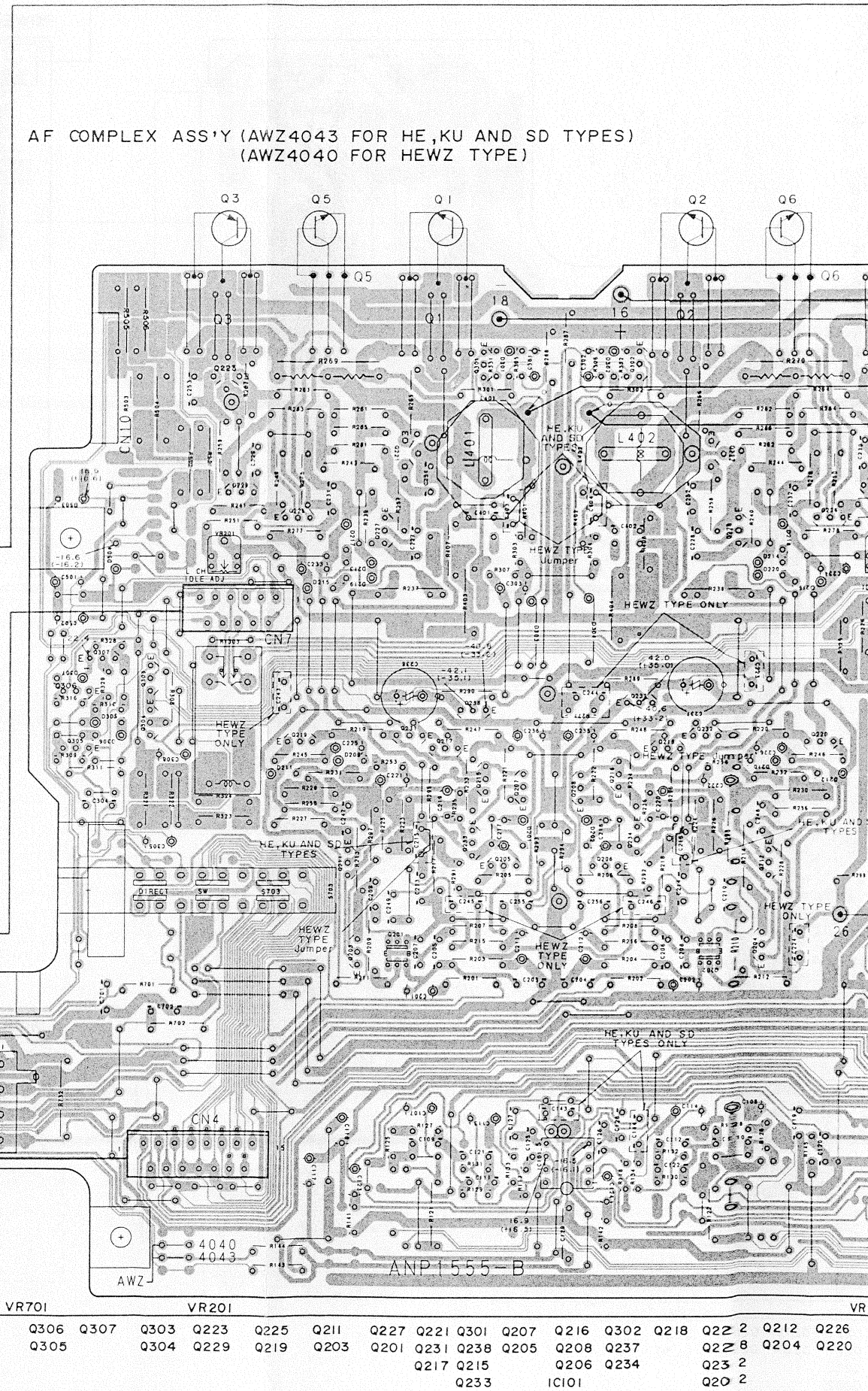
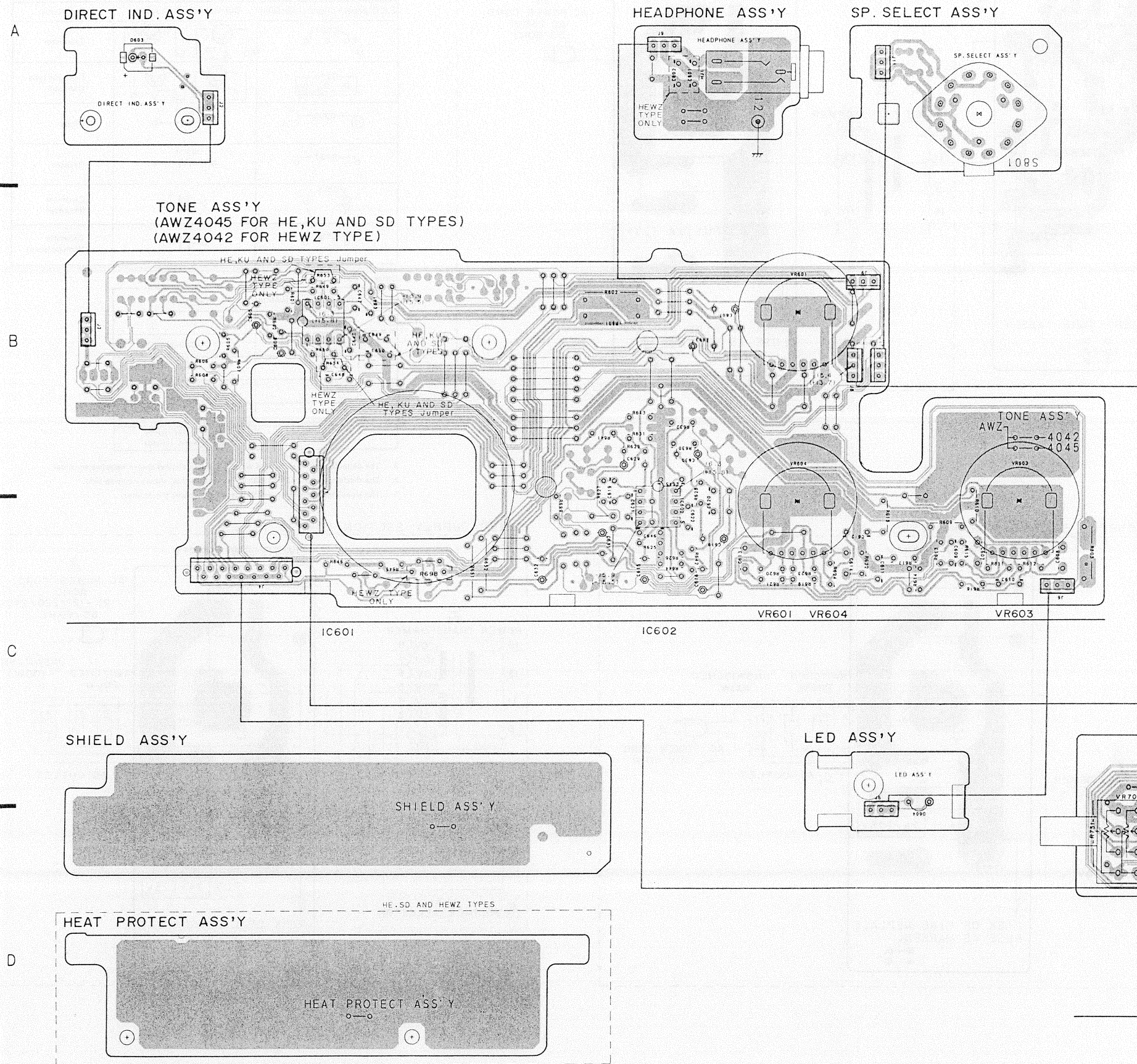
Q201 - Q206, Q211, Q212, Q215 - Q218 : POWER AMP

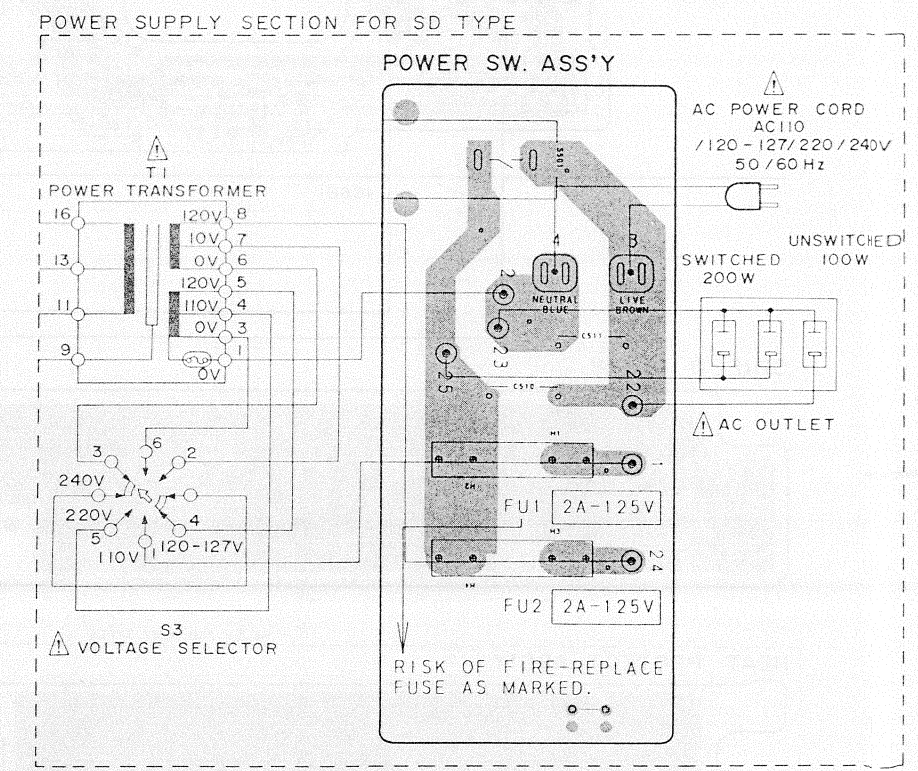
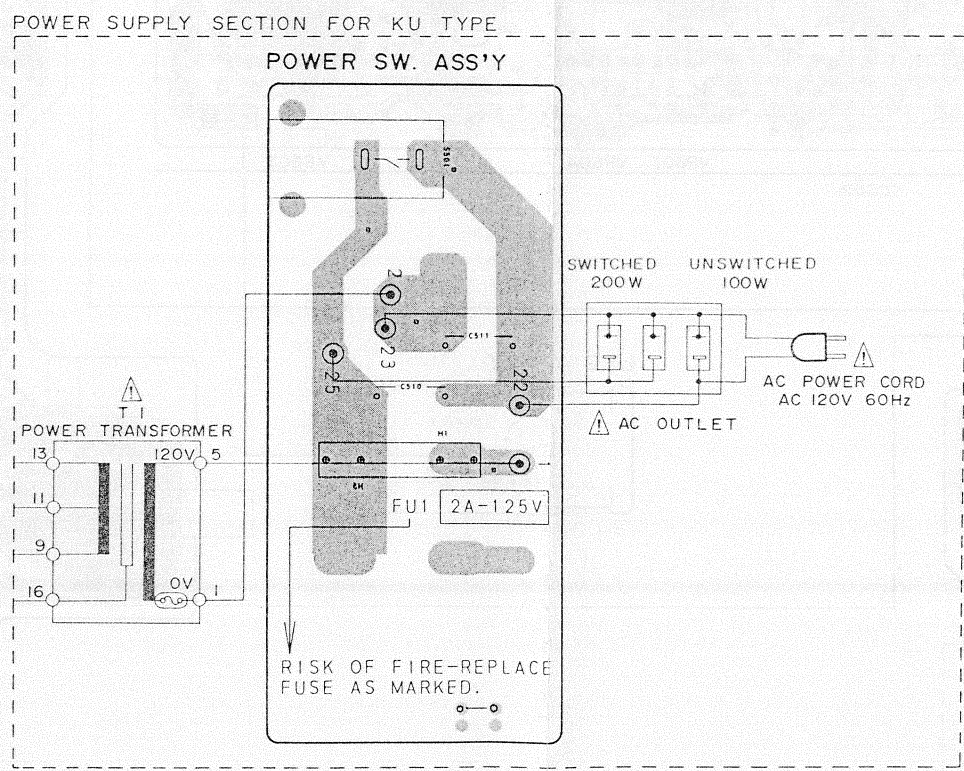
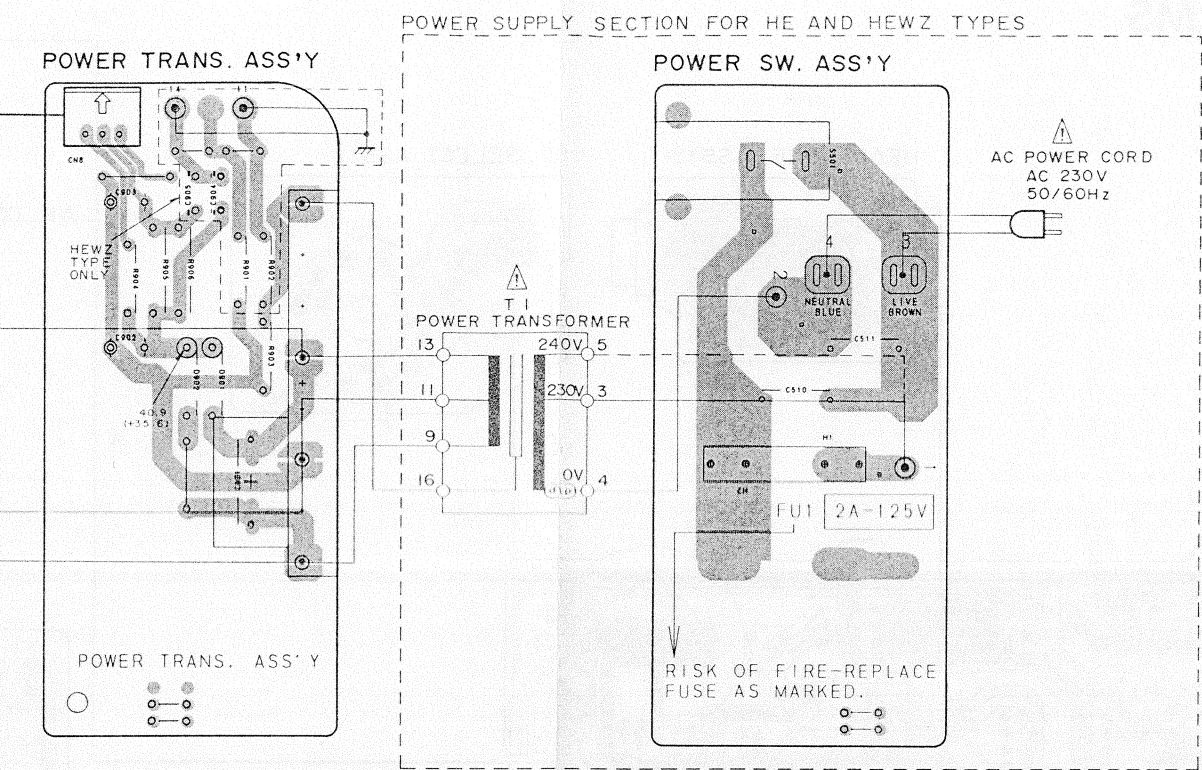
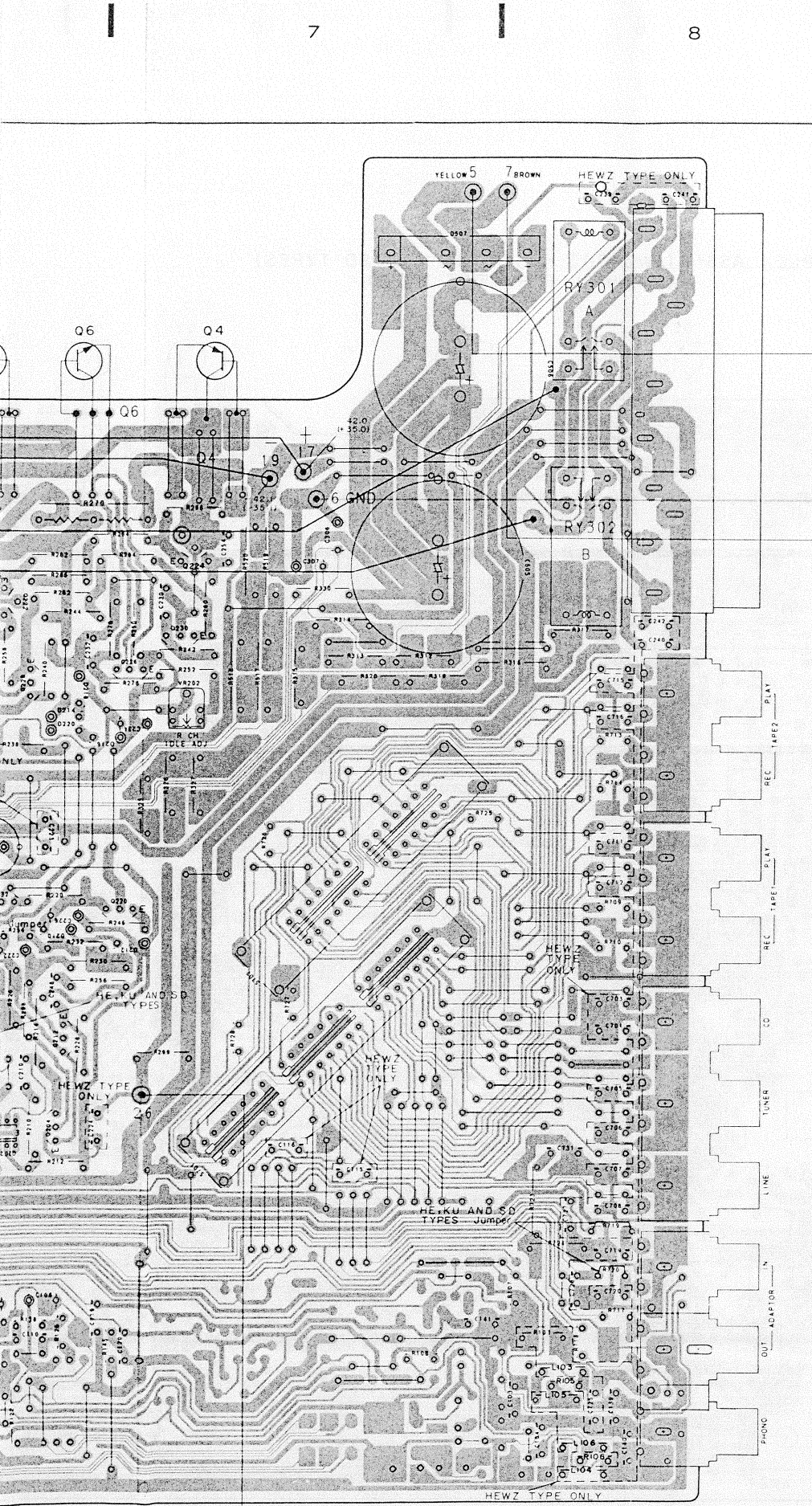


LED ASS'Y
 POWER SUPPLY SECTION FOR KU TYPE
 POWER SUPPLY SECTION FOR SD TYPE

A
 B
 C
 D
 E
 F

4. PCB CONNECTIONS DIAGRAMS





NOTE

- This P.C.B. connection diagram is viewed from the parts mounted side.
- 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
		Transistor
		Radiator type transistor
		Diode
		Resistor
		Capacitor (Polarity)
		Capacitor (Non-polarity)

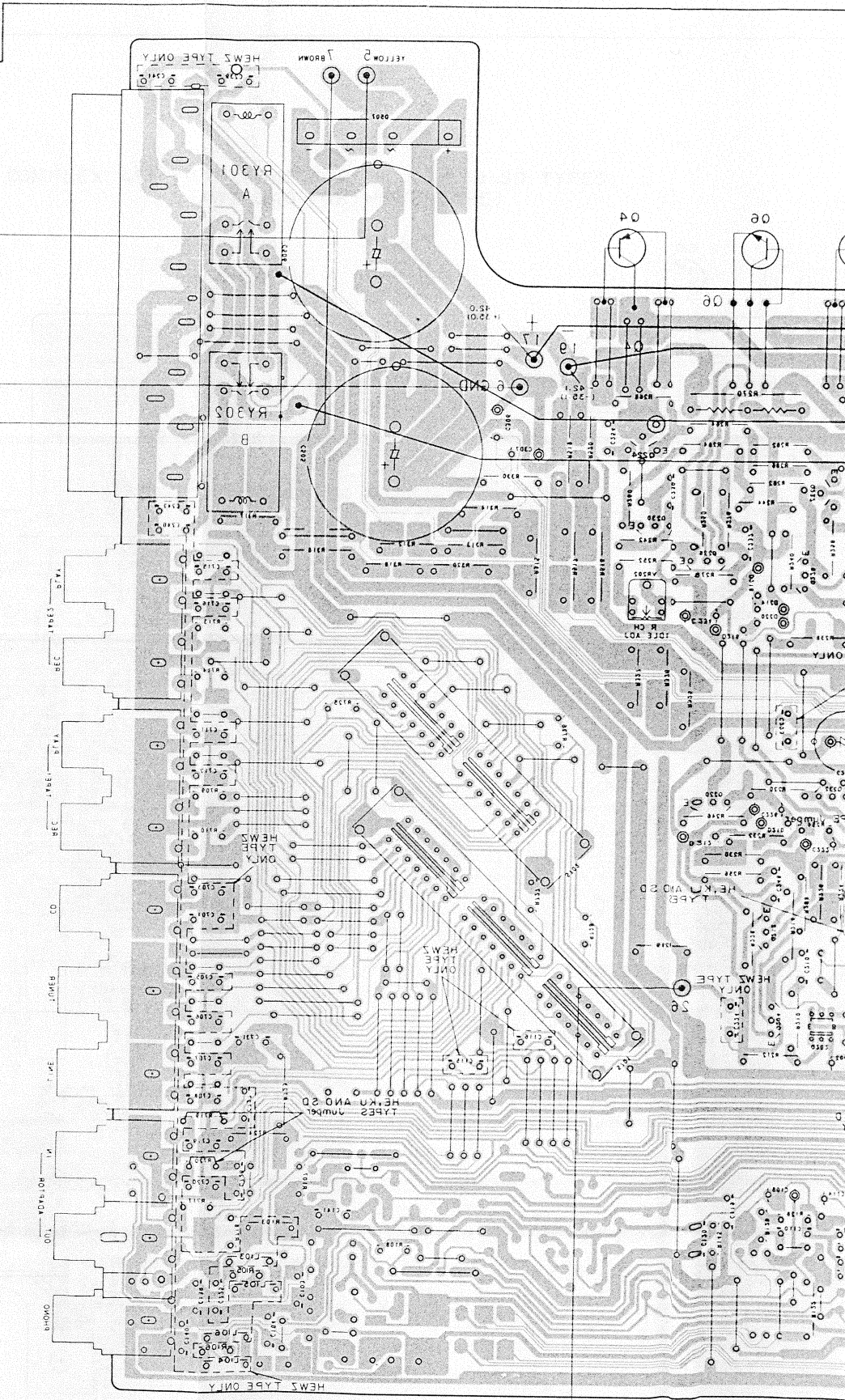
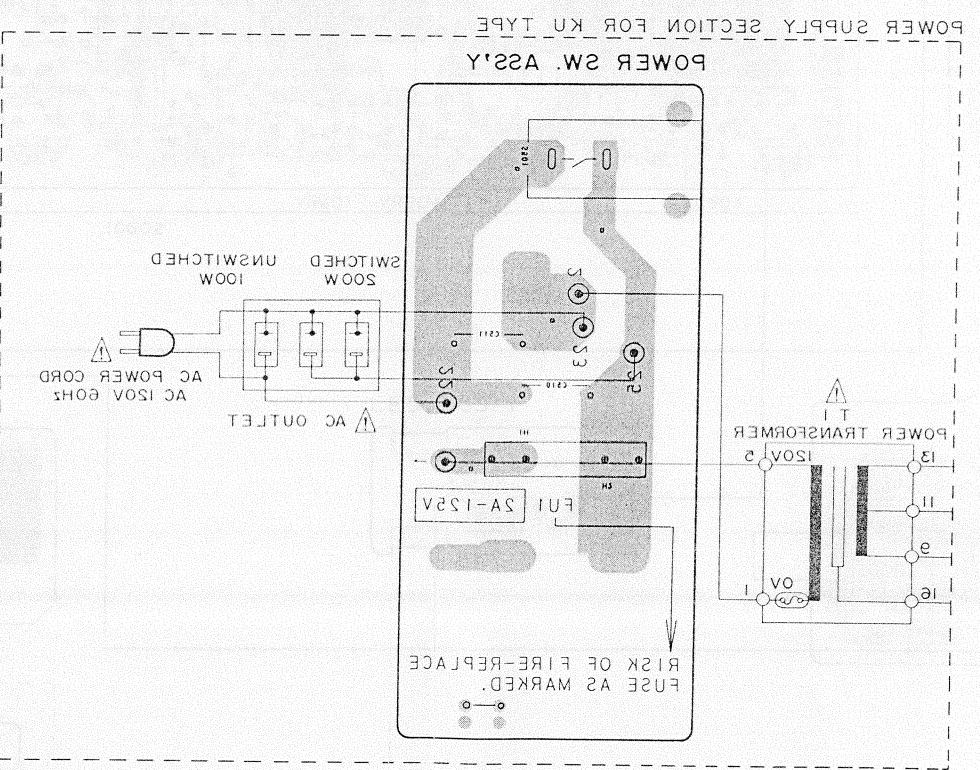
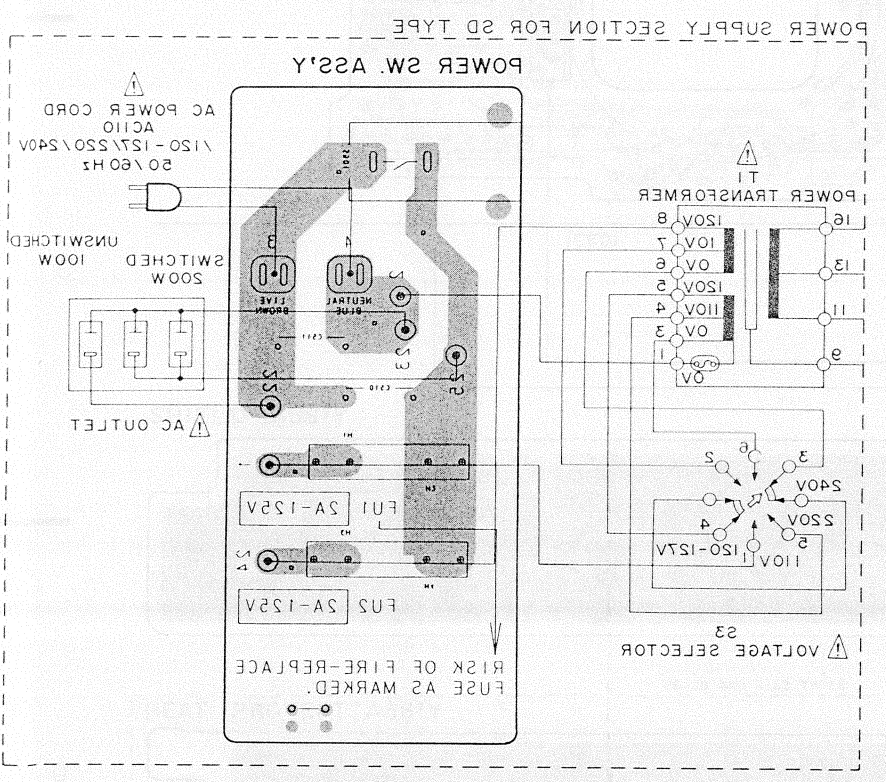
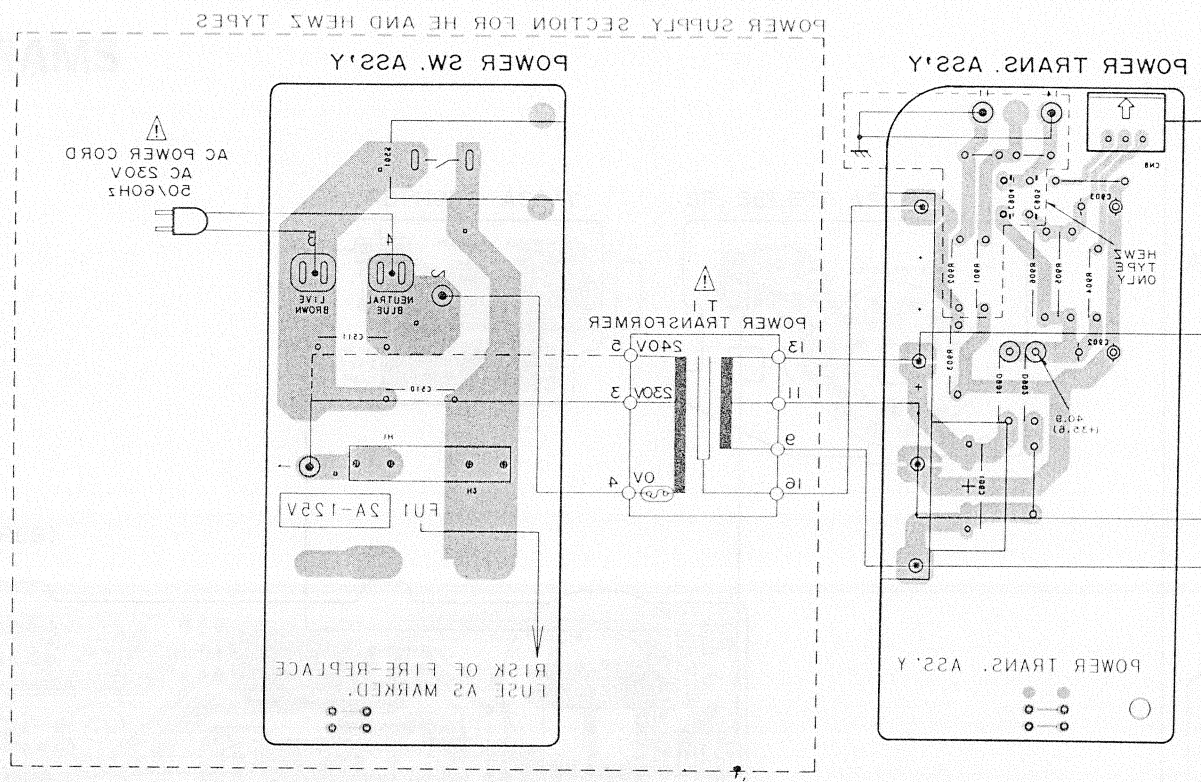
Others

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

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

VR202
Q222 Q212 Q226 Q224
Q228 Q204 Q220 Q230
Q232
Q202

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



A

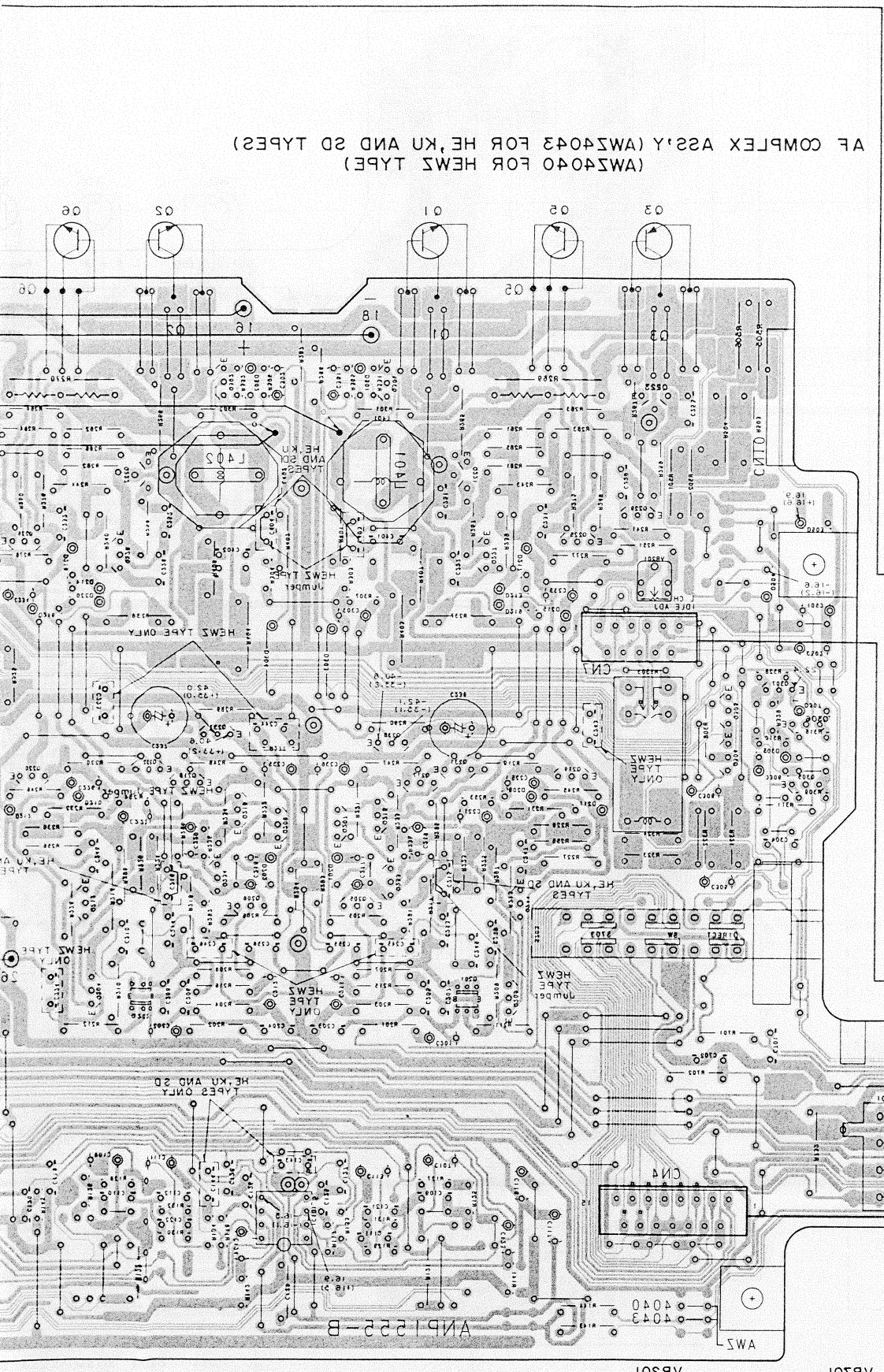
B

C

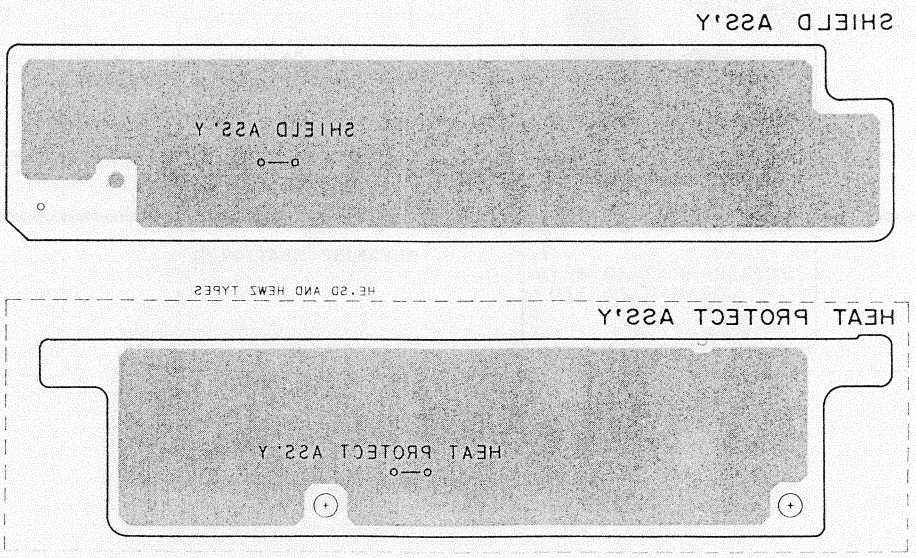
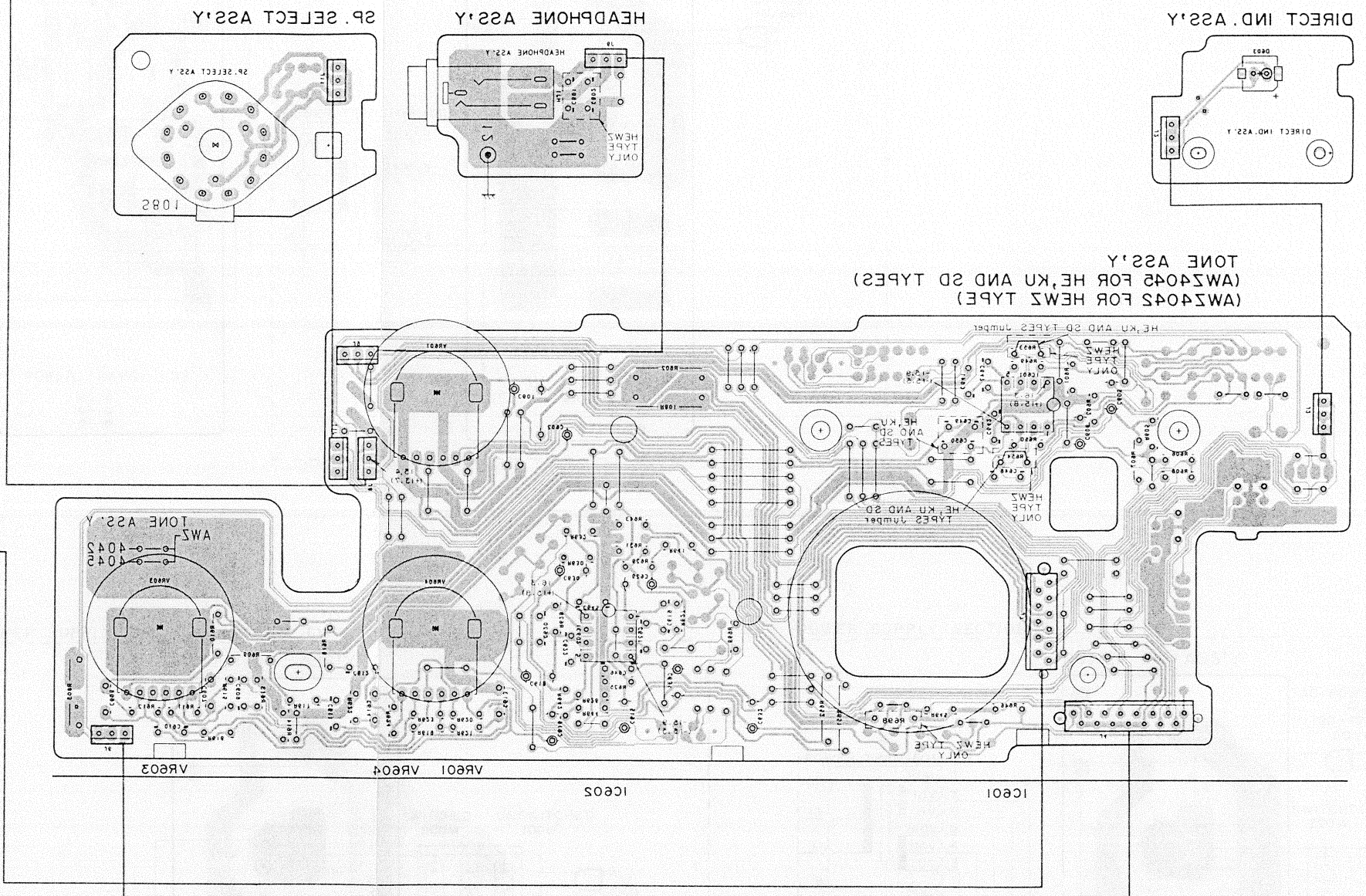
D

0505
0535
0538
0504
0529
0530
0535
0515
0528
0534

4. PCB CONNECTIONS DIAGRAMS



AF COMPLEX ASSY (AW2403 FOR HE, KU AND 2D TYPES)
(AW2404 FOR HEW2 TYPE)



A
B
C
D

0302	0304	0305	0306	0307	0308	0309	0310	0311	0312	0313	0314	0315	0316	0317	0318	0319	0320	0321	0322	0323	0324	0325	0326	0327	0328	0329	0330	0331	0332	0333	0334	0335	0336	0337	0338	0339	0340	0341	0342	0343	0344	0345	0346	0347	0348	0349	0350	0351	0352	0353	0354	0355	0356	0357	0358	0359	0360	0361	0362	0363	0364	0365	0366	0367	0368	0369	0370	0371	0372	0373	0374	0375	0376	0377	0378	0379	0380	0381	0382	0383	0384	0385	0386	0387	0388	0389	0390	0391	0392	0393	0394	0395	0396	0397	0398	0399	0400
------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

VR501 VR502 VR503 VR504 VR505 VR506 VR507 VR508 VR509 VR510 VR511 VR512 VR513 VR514 VR515 VR516 VR517 VR518 VR519 VR520 VR521 VR522 VR523 VR524 VR525 VR526 VR527 VR528 VR529 VR530 VR531 VR532 VR533 VR534 VR535 VR536 VR537 VR538 VR539 VR540 VR541 VR542 VR543 VR544 VR545 VR546 VR547 VR548 VR549 VR550 VR551 VR552 VR553 VR554 VR555 VR556 VR557 VR558 VR559 VR560 VR561 VR562 VR563 VR564 VR565 VR566 VR567 VR568 VR569 VR570 VR571 VR572 VR573 VR574 VR575 VR576 VR577 VR578 VR579 VR580 VR581 VR582 VR583 VR584 VR585 VR586 VR587 VR588 VR589 VR590 VR591 VR592 VR593 VR594 VR595 VR596 VR597 VR598 VR599 VR600 VR601 VR602 VR603 VR604 VR605 VR606 VR607 VR608 VR609 VR610 VR611 VR612 VR613 VR614 VR615 VR616 VR617 VR618 VR619 VR620 VR621 VR622 VR623 VR624 VR625 VR626 VR627 VR628 VR629 VR630 VR631 VR632 VR633 VR634 VR635 VR636 VR637 VR638 VR639 VR640 VR641 VR642 VR643 VR644 VR645 VR646 VR647 VR648 VR649 VR650 VR651 VR652 VR653 VR654 VR655 VR656 VR657 VR658 VR659 VR660 VR661 VR662 VR663 VR664 VR665 VR666 VR667 VR668 VR669 VR670 VR671 VR672 VR673 VR674 VR675 VR676 VR677 VR678 VR679 VR680 VR681 VR682 VR683 VR684 VR685 VR686 VR687 VR688 VR689 VR690 VR691 VR692 VR693 VR694 VR695 VR696 VR697 VR698 VR699 VR700 VR701 VR702 VR703 VR704 VR705 VR706 VR707 VR708 VR709 VR710 VR711 VR712 VR713 VR714 VR715 VR716 VR717 VR718 VR719 VR720 VR721 VR722 VR723 VR724 VR725 VR726 VR727 VR728 VR729 VR730 VR731 VR732 VR733 VR734 VR735 VR736 VR737 VR738 VR739 VR740 VR741 VR742 VR743 VR744 VR745 VR746 VR747 VR748 VR749 VR750 VR751 VR752 VR753 VR754 VR755 VR756 VR757 VR758 VR759 VR760 VR761 VR762 VR763 VR764 VR765 VR766 VR767 VR768 VR769 VR770 VR771 VR772 VR773 VR774 VR775 VR776 VR777 VR778 VR779 VR780 VR781 VR782 VR783 VR784 VR785 VR786 VR787 VR788 VR789 VR790 VR791 VR792 VR793 VR794 VR795 VR796 VR797 VR798 VR799 VR800 VR801 VR802 VR803 VR804 VR805 VR806 VR807 VR808 VR809 VR810 VR811 VR812 VR813 VR814 VR815 VR816 VR817 VR818 VR819 VR820 VR821 VR822 VR823 VR824 VR825 VR826 VR827 VR828 VR829 VR830 VR831 VR832 VR833 VR834 VR835 VR836 VR837 VR838 VR839 VR840 VR841 VR842 VR843 VR844 VR845 VR846 VR847 VR848 VR849 VR850 VR851 VR852 VR853 VR854 VR855 VR856 VR857 VR858 VR859 VR860 VR861 VR862 VR863 VR864 VR865 VR866 VR867 VR868 VR869 VR870 VR871 VR872 VR873 VR874 VR875 VR876 VR877 VR878 VR879 VR880 VR881 VR882 VR883 VR884 VR885 VR886 VR887 VR888 VR889 VR890 VR891 VR892 VR893 VR894 VR895 VR896 VR897 VR898 VR899 VR900 VR901 VR902 VR903 VR904 VR905 VR906 VR907 VR908 VR909 VR910 VR911 VR912 VR913 VR914 VR915 VR916 VR917 VR918 VR919 VR920 VR921 VR922 VR923 VR924 VR925 VR926 VR927 VR928 VR929 VR930 VR931 VR932 VR933 VR934 VR935 VR936 VR937 VR938 VR939 VR940 VR941 VR942 VR943 VR944 VR945 VR946 VR947 VR948 VR949 VR950 VR951 VR952 VR953 VR954 VR955 VR956 VR957 VR958 VR959 VR960 VR961 VR962 VR963 VR964 VR965 VR966 VR967 VR968 VR969 VR970 VR971 VR972 VR973 VR974 VR975 VR976 VR977 VR978 VR979 VR980 VR981 VR982 VR983 VR984 VR985 VR986 VR987 VR988 VR989 VR990 VR991 VR992 VR993 VR994 VR995 VR996 VR997 VR998 VR999 VR1000

5. PCB PARTS LIST

NOTES:

- Part 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	RD1/8PM	$\boxed{5}\boxed{6}\boxed{1}J$
47kΩ	47 × 10 ³	473	RD1/4PS	$\boxed{4}\boxed{7}\boxed{3}J$
0.5Ω	0R5		RN2H	$\boxed{0}\boxed{R}\boxed{5}K$
1Ω	010		RS1P	$\boxed{0}\boxed{1}\boxed{0}K$

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

5.62kΩ	562 × 10 ¹	5621	RN1/4SR	$\boxed{5}\boxed{6}\boxed{2}\boxed{1}F$
--------	-----------------------	------	---------	---

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
LIST OF ASSEMBLIES			D503,504	ZENER DIODE	RD16ESB3
●	AF COMPLEX ASSY	AWZ4043	D507	DIODE	D5SB20F
	POWER SW ASSY		SWITCHES		
	HEAD PHONE ASSY		S701	SWITCH	ASU1016
●	TONE ASSY	AWZ4045	S702	SWITCH	ASU1002
	LED ASSY		S703	PUSH SWITCH	SULL6S
	SHIELD ASSY		RELAYS		
	DIRECT IND. ASSY		RY301 - 303		RELAY
	SP. SELECT ASSY		ASR - 111		
	HEAT PROTECT ASSY		COILS, FILTERS		
	POWER TRANS ASSY		L401,402	COIL	ATH1053
●AF COMPLEX ASSY(AWZ4043)			CAPACITORS		
SEMICONDUCTORS			C103,104	CERAMIC CAPACITOR	CCCSL221J50
IC101	OP-AMP-IC	M5220P	C107,108	ELECTR.CAPACITOR	CEAS101M10
Q201,202	DUAL TRANSISTOR	2SA1240	C109,110	AUDIO FILM CAPACITOR	CFTXA 683J50
Q203-208	TRANSISTOR	2SA1048	C111,112	AUDIO FILM CAPACITOR	CFTXA 183J50
Q211,212	TRANSISTOR	2SC1845	C113,114	ELECTR.CAPACITOR	CEAS4R7M50
Q215-218	TRANSISTOR	2SA1048	C117,118	ELECTR.CAPACITOR	CEAS221M25
Q219,220	TRANSISTOR	2SC2705	C119,120	CERAMIC CAPACITOR	CKCYF103Z50
Q221,222	TRANSISTOR	2SC3298	C121,122	MYLAR FILM CAPACITOR	CQMA 1 22J50
Q223,224	TRANSISTOR	2SA1306	C123,124	ELECTR.CAPACITOR	CEAS100M50
Q225,226	TRANSISTOR	2SC2603	C125,126	CERAMIC CAPACITOR	CCCSL 101J50
Q227,228	TRANSISTOR	2SC1845	C127,128	CERAMIC CAPACITOR	CCCSL221J50
Q229,230	TRANSISTOR	2SA992	C129	CERAMIC CAPACITOR	CKPYX 103N25
Q231,232	TRANSISTOR	2SA1145	C141	CERAMIC CAPACITOR	CKCYF 103Z50
Q233,234	TRANSISTOR	2SA992	C143,144	MYLAR FILM CAPACITOR	CQMA 472K50
Q237	TRANSISTOR	2SC1845	C201,202	ELECTROLYTIC CAPACIT	CEXA2R2M50
Q238	TRANSISTOR	2SA992	C203,204	CERAMIC CAPACITOR	CCCSL470K500
Q301,302	TRANSISTOR	2SC1845	C205-208	CERAMIC CAPACITOR	CCCSL470J50
Q303,304	TRANSISTOR	2SC2458	C209,210	CERAMIC CAPACITOR	CCCSL221J50
Q305	TRANSISTOR	2SA1048	C211,212	ELECTROLYTIC CAPACIT	CEXA1 01M50
Q306	TRANSISTOR	2SC1815	C213-216	CERAMIC CAPACITOR	CCCSL 120K500
Q307	TRANSISTOR	2SC2458	C217,218	ELECTR.CAPACITOR	CEAS101M10
D201,202	ZENER DIODE	RD2.7ESB1	C219-222	ELECTR.CAPACITOR	CEAS3R3M100
D209-216	DIODE	HSS104-02	C225,226	ELECTR.CAPACITOR	CEAS331M10
D217-220	ZENER DIODE	RD8.2ESB1	C227-230	CERAMIC CAPACITOR	CCCSL330K500
D301-306	DIODE	HSS104-02	C231,232	CERAMIC CAPACITOR	CKCYB 122K50
D307	ZENER DIODE	RD15ESB			

Mark No.	Description	Parts No.
C613,614	CERAMIC CAPACITOR	CKCYX183M25
C615,616	ELECTR.CAPACITOR	CEAS2R2M50
C617,618	ELECTR.CAPACITOR	CEAS100M50
C619,620	CERAMIC CAPACITOR	CCCSL390J50
C621,622	CERAMIC CAPACITOR	CCCSL680J50
C629,630	ELECTR.CAPACITOR	CEAS470M25
C631,632	ELECTR.CAPACITOR	CEAS221M25
C641,642	CERAMIC CAPACITOR	CCCSL470J50
C645,646	CERAMIC CAPACITOR	CKCYB102K50
C647,648	CERAMIC CAPACITOR	CCCSL151J50
C649,650	CERAMIC CAPACITOR	CKCYF103Z50

RESISTORS

VR601	VARIABLE(100K - BX2)	ACT1046
VR603,604	VARIABLE(100K - 20AX2)	ACT1045
R651,652	CARBON FILM RESISTOR	RD1/4PM101J
△ R801,802	METAL OXIDE RESISTOR	RS1PMF331J
△ R803	METAL OXIDE RESISTOR	RS1LMF561J
	Other resistors	RD1/8PM□□□J

LED ASSY**SEMICONDUCTORS**

D604	LED(RED)	AEL1065
------	----------	---------

SHIELD ASSY

Shield assy has no service part.

DIRECT IND. ASSY**SEMICONDUCTORS**

D603	LED	AEL1010
------	-----	---------

SP.SELECT ASSY**SWITCHES**

S801	SWITCH	ASD1003
------	--------	---------

HEAT PROTECT ASSY

Heat protect assy has no service part.

POWER TRANS ASSY**SEMICONDUCTORS**

D901,902	DIODE	11E2
----------	-------	------

CAPACITORS

C901	POLYESTER CAPACITOR	CQMXA473J100
C902	ELECTR.CAPACITOR	CEAS101M50
C903	ELECTR.CAPACITOR	CEAS220M50

RESISTORS

△ R903,904	CARBON FILM RESISTOR	RD1/4PMF010J
△ R905	METAL OXIDE RESISTOR	RS1LMF222J
△ R906	METAL OXIDE RESISTOR	RS1LMF272J

6. ADJUSTMENTS

IDLE CURRENT ADJUSTMENT

1. Connect measuring instrument as Fig. 6-1.
2. Set the VOLUME CONTROL to minimum.
3. Set the POWER switch to ON.
4. Adjust VR201 (VR202) so that the voltage between TP1 (TP3) and TP2 (TP4) becomes $20\text{mV} \begin{matrix} + 3\text{mV} \\ -15\text{mV} \end{matrix}$.

NOTE)

After turning on the power, wait at least 5 minutes before adjustment.

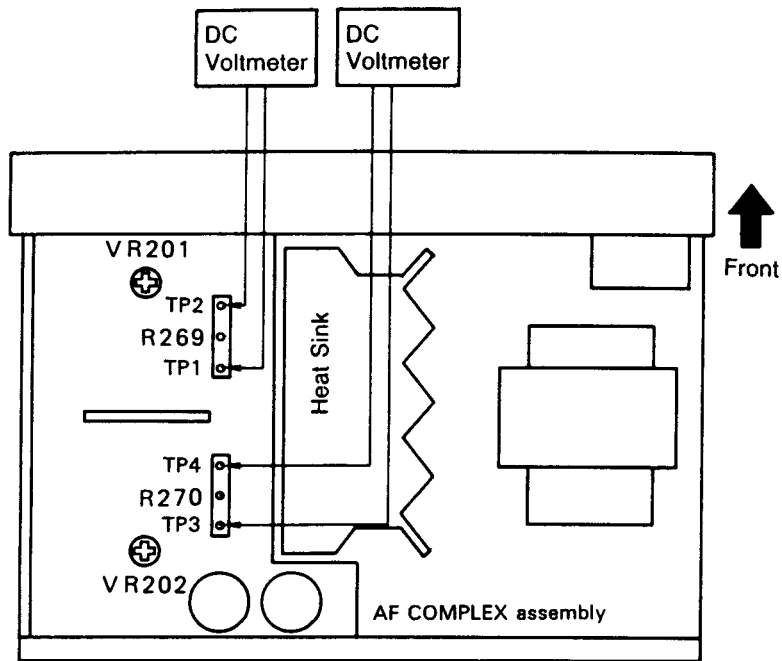


Fig. 6-1. Adjustment Method

6. REGLAGE

REGLAGE DU COURANT DEWATTE

1. Brancher les fils comme indiqué dans la fig. 6-1.
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 $20 \text{ mV} \begin{pmatrix} + 3\text{mV} \\ -15\text{mV} \end{pmatrix}$.
4. VR 202 sera réglé dans le canal droit de manière que les deux tensions de bornes atteignent $20 \text{ mV} \begin{pmatrix} + 3\text{mV} \\ -15\text{mV} \end{pmatrix}$.

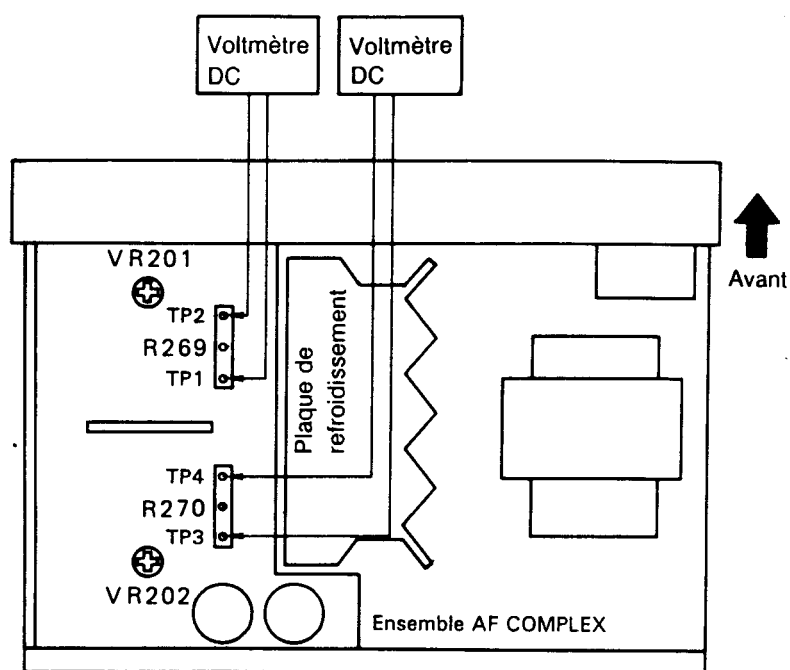


Fig. 6-1. Schéma du réglage

6. AJUSTE

AJUSTE DE LA CORRIENTE DEVATIADA

1. Conecte el cable como lo ilustra la Fig. 6-1.
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 $20\text{ mV} \left(\begin{smallmatrix} +3\text{mV} \\ -15\text{mV} \end{smallmatrix} \right)$.
4. El VR202 del canal derecho debe ajustarse de modo que la tensión entre ambos bornes llegue a $20\text{ mV} \left(\begin{smallmatrix} +3\text{mV} \\ -15\text{mV} \end{smallmatrix} \right)$.

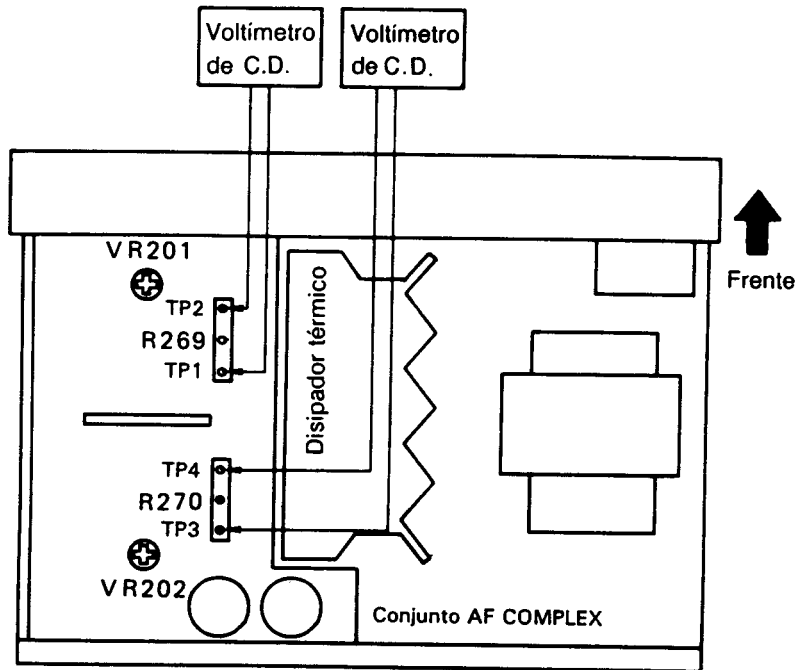


Fig. 6-1. Diagrama de ajuste

7. FOR HEWZ, KU AND SD TYPES

CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- Part 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.

A-301/HEWZ, KU, SD and A-301/HE have the same construction except for the following :

Mark	Symbol & Description	Part No.				Remarks
		HE type	HEWZ type	KU type	SD type	
⊙	TONE assembly	AWZ4045	AWZ4042	AWZ4045	AWZ4045	
⊙	AF COMPLEX assembly	AWZ4043	AWZ4040	AWZ4043	AWZ4043	
	POWER SW. assembly	Non supply	Non supply	Non supply	Non supply	
	HEADPHONE assembly	Non supply	Non supply	Non supply	Non supply	
	POWER TRANS assembly	Non supply	Non supply	Non supply	Non supply	
	HEAT PROTECT assembly	Non supply	Non supply	.....	Non supply	
Δ	3P AC outlet	.....	.....	AKP-515	AKP-515	
	Insulator assembly	AMR2140	AMR2140	AMR2141	AMR2140	
Δ	AC power cord	ADG1049	ADG1049	ADG1058	ADG1051	
Δ	AC cord stopper	AEC-882	AEC-882	AEP-113	AEC-882	
Δ	Fuse(FU1, T2A/250V)	AEK-511	AEK-511	.....	.....
Δ	Fuse(FU1, 5A)	.....	.....	AEK-308	.....
Δ	Fuse (FU1, FU2, 2A/125V)	.....	.....	.....	AEK-122	
Δ	Voltage selector (AC110/120-127/220/240V)	.....	.....	.....	AKX-507	
Δ	Power transformer	ATS1345	ATS1345	ATS1343	ATS1344	
	Packing case	AHD2243	AHD2243	AHD2245	AHD2243	
	Operating instructions (English, French, German, Italian, Dutch, Swedish, Spanish, Portuguese)	ARE1227	.....	.....	.....
	Operating instructions (German)	.....	ARC1333	.....	.....
	Operating instructions (English, French)	.....	.....	ARE1228	ARE1228	
	Operating instruction (Spanish)	.....	.....	.....	ARC1335	

TONE ASSEMBLY

The TONE assembly(AWZ4042) and the TONE assembly(AWZ4045) have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWZ4045	AWZ4042	
	C621, 622 C649, 650	CCCSL680J50 CKCYF103Z50	CCCSL121J50	
	R653, 654 R698	..... .....	RD1/8PM102J RD1/8PM100J	

AF COMPLEX ASSEMBLY

The AF COMPLEX assembly(AWZ4040) and the AF COMPLEX assembly(AWZ4043) have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWZ4043	AWZ4040	
	C103, 104 C115, 116 C139, 140 C143, 144 C213, 214	CCCSL221J50 CQMA472K50 CCCSL120K500	CCCSL330J50 CQMA392K50 CCCSL330J50 CCCSL060D500	
	C215, 216 C223, 224 C239-242 C243, 244 C245, 246	CCCSL120K500 ..... ..... ..... .....	..... CKCYF223Z50 CQMA103K250 CKCYX104M25 CKCYB331K50	
	C251-254 C301, 302 C401, 402 C403, 404 C703-708,711, 712, 715, 716	CCCSL330K500 CEANP4R7M50 CFTXA104J50 CFTXA104J50	CCCSL680K500 CEAS4R7M50 CFTXA473J50 CCCSL151J50	
	C719, 720 C725 C727, 728	CKCYB331K50 CKCYF103Z50	CCCSL271J50 CCCSL221J50 CCCSL221J50	
	L103-L106	.....	LAU221K	
	R103 R105, 106 R271 R719, 720 R724	..... RDR1/6PU100J	RD1/8PM4R7J RD1/8PM332J RD1/8PM010J RD1/8PM331J RD1/8PM100J	

HEADPHONE ASSEMBLY

HEADPHONE assemblies of KU, SD and HE types are the same.

HEADPHONE assemblies of HEWZ and HE types have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		HE type	HEWZ type	
	C801, 802	.....	CKCYB392K50	

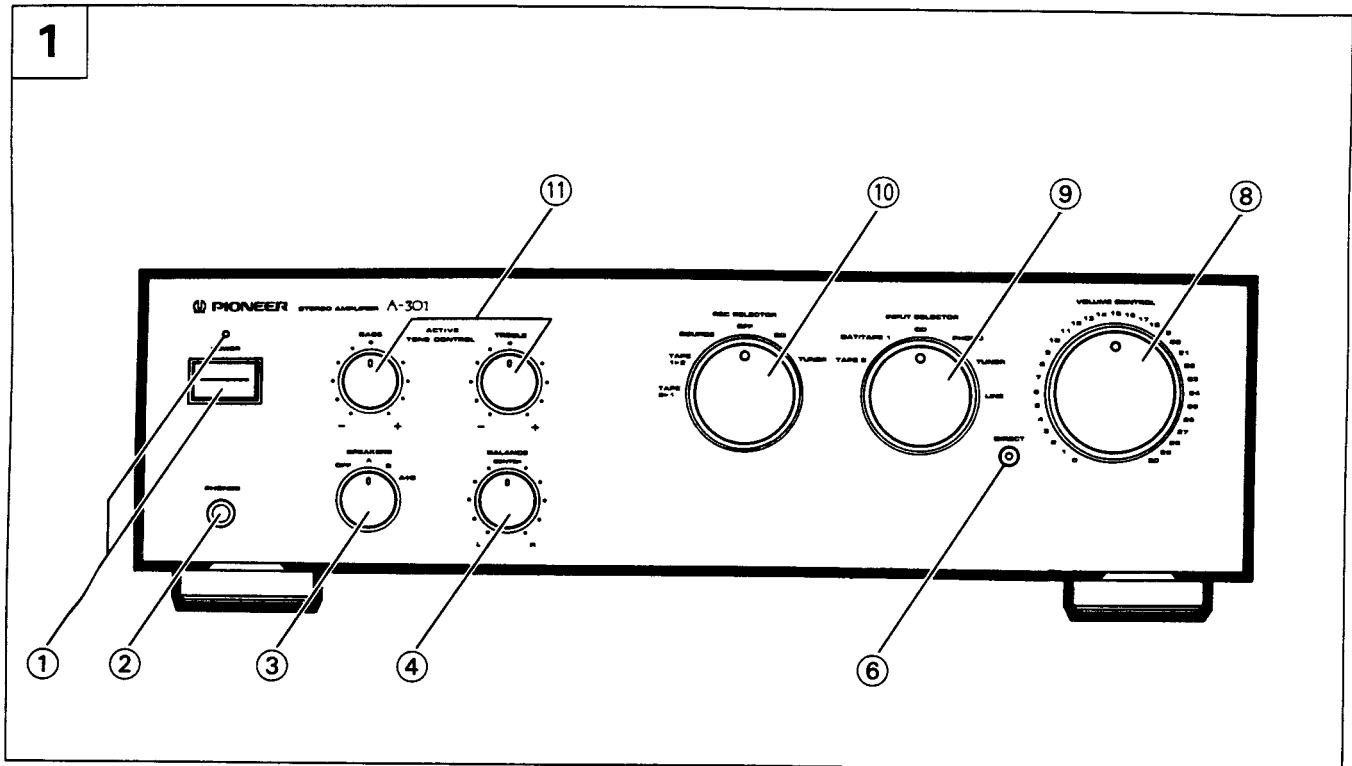
POWER TRANS. ASSEMBLY

POWER TRANS. assemblies of KU, SD and HE types are the same.

POWER TRANS. assemblies of HEWZ and HE types have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		HE type	HEWZ type	
	C901 C904, 905	CQMXA473J500	CQMXA104J100 CKDYF473Z50	
	R901, 902	.....	RD1/4PMF100J	

8. PANEL FACILITIES



FRONT PANEL

See Fig. 1

① POWER switch/indicator

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

② PHONES jack

When using headphones, insert the plug into this jack.

③ SPEAKERS selector switch

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

OFF:

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

A:

For reproduction of sound with the speaker system connected to the SPEAKERS A terminals.

B:

For reproduction of sound with the speaker system connected to the SPEAKERS B terminals.

A + B:

For reproduction of sound with the speaker systems connected to SPEAKERS A and B terminals.

④ BALANCE control

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

NOTE:

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

⑥ 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) 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 off: The signal passes through the various frequency adjusting circuits.

⑧ VOLUME CONTROL

Use to adjust the volume level.

⑨ 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.

CD:

For compact disc playback with a CD player.

DAT/TAPE 1:

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

TAPE 2:

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

⑩ 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.

⑪ ACTIVE TONE CONTROL

Ordinarily, the more the volume control is turned down, the more obvious the loudness characteristics become. Since the effects of this unit's tone control settings are increasingly emphasized as the volume is turned down, you can obtain the same kind of effect as loudness characteristics by using suitable tone control settings.

TREBLE tone control

Use to adjust the high-frequency tone at low volume level. 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:

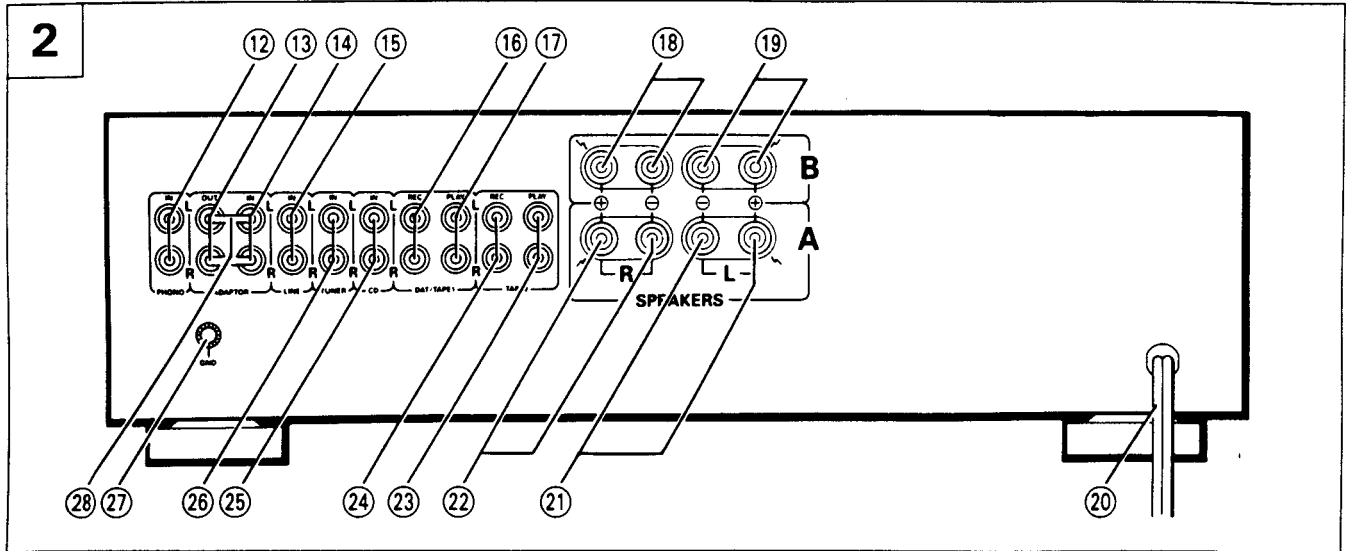
- This control does not operate when DIRECT switch is in the ON position.
- At volume levels lower than "8", the set tone control effect is obtained.
At volume levels higher than "8", the effect becomes increasingly weaker.

BASS tone control

Use to adjust the low-frequency tone at low volume level. 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 "8", the set tone control effect is obtained.
At volume levels higher than "8", the effect becomes increasingly weaker.



REAR PANEL

See Fig. 2

- ⑫ PHONO terminals
- ⑬ ADAPTOR OUT terminals
- ⑭ ADAPTOR IN terminals
- ⑮ LINE terminals
- ⑯ DAT/TAPE 1 REC terminals
- ⑰ DAT/TAPE 1 PLAY terminals
- ⑱ SPEAKERS B terminals (right channel)
- ⑲ SPEAKERS B terminals (left channel)
- ⑳ Power cord
- ㉑ SPEAKERS A terminals (left channel)
- ㉒ SPEAKERS A terminals (right channel)
- ㉓ TAPE 2 PLAY terminals
- ㉔ TAPE 2 REC terminals
- ㉕ CD terminals
- ㉖ TUNER terminals
- ㉗ Turntable ground terminal (GND)
- ㉘ Shorting bars

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

9. SPECIFICATIONS

Amplifier Section

Continuous power output (both channels driven at 20 Hz to 20 kHz) **	
T.H.D. 0.01 %, 8 Ω	40 W + 40 W*
T.H.D. 0.02 %, 4 Ω	50 W + 50 W*
DIN Continuous power output (both channels driven at 1 kHz)	
T.H.D. 1.0 %, 8 Ω	55 W + 55 W
T.H.D. 1.0 %, 4 Ω	75 W + 75 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	0.01 %*
20 Hz to 20 kHz, 50 W, 4 Ω	0.02 %*
* Above specifications are applicable when power supply is 230 V.	

Input sensitivity/impedance

PHONO (MM)	2.5 mV/50 k Ω
CD, TUNER, LINE, TAPE	150 mV/40 k Ω

PHONO overload level

1 kHz, T.H.D. 0.02 % (MM)	150 mV
---------------------------------	--------

Output level/impedance

TAPE REC, ADAPTOR OUTPUT	150 mV/1 k Ω
--------------------------------	---------------------

Frequency response

PHONO (MM)	20 Hz to 20 kHz ± 0.3 dB
CD, TUNER, LINE, TAPE	5 Hz to 100 kHz $\pm \frac{1}{2}$ dB*

Tone control (volume control set at -30 dB position)

BASS	± 8 dB (100 Hz)
TREBLE	± 8 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*

Signal-to-Noise ratio (DIN, continuous power/50 mW)

PHONO (MM)	73 dB/63 dB*
CD, TUNER, LINE, TAPE	87 dB/65 dB*

Power Supply/Miscellaneous

Power Requirements	a.c. 220 - 230 Volts, 50/60 Hz
Power Consumption	410 W
Dimensions	420 (W) x 347 (D) x 126 (H) mm
Weight (without package)	6.9 kg

Accessories

Operating instructions	1
------------------------------	---

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.